Subject: Chatham - Mitchell River Bridge Project Section 106 MOA

Dear consulting parties,

The final Memorandum of Agreement for the Mitchell River Bridge Project is being sent to you in hard tomorrow morning. The language below is included in the letter accompanying the MOA. Please note that we are including information about the logistics in getting the MOA signed.

In addition, we are providing a letter from URS (attached) as an enclosure to the package.

Thanks very much for your involvement.

Damaris

Damaris Santiago
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Subject: Chatham – Mitchell River Bridge Replacement Project
Section 106 – Final Memorandum of Agreement (MOA)

Dear –Consulting Party-:

Enclosed for your information please find a copy of the final Section 106 Memorandum of Agreement (MOA) for the Mitchell River Bridge Replacement project in Chatham, Massachusetts. The Federal Highway Administration (FHWA) has considered all written and verbal comments received from the Section 106 consulting parties in response to the revised draft MOA distributed on January 26, 2012, and has incorporated those comments as appropriate into this final MOA.

I have signed the final MOA for FHWA and Frank DePaola has signed for the Massachusetts Department of Transportation (MassDOT). FHWA next will submit the final MOA with original signatures to the Chatham Board of Selectmen and then to the Massachusetts State Historic Preservation Officer. Once those signatory parties have had the opportunity to sign, FHWA will circulate copies of the signed document concurrently to the concurring parties, each of whom will be asked to sign within two weeks

of receipt. FHWA will submit the MOA to the Advisory Council on Historic Preservation for the final signature after all other signatories and concurring parties have had the opportunity to sign.

This final MOA reflects MassDOT's decision to construct its Preferred Alternative #3 as the primary mitigation for the adverse effect to be caused by the proposed removal of the National Register-eligible Mitchell River Bridge. As described in Stipulation #1 of the MOA, the proposed new bridge will be comprised of a single-leaf bascule draw span and five approach spans. The principal structural members of the proposed new bascule draw span will be steel girders and steel floor beams and the principal structural members of the five approach spans will be glue-laminated (glulam) timber beams. The decking, sidewalks, bridge railings, and at-curb barriers on all six spans will be constructed of timber. All connections on the superstructure will be made with steel fasteners. The substructure of the proposed new bridge will be comprised of two reinforced concrete abutments, one reinforced concrete bascule pier, and five concrete-filled steel pipe pile piers. The outer elevations of the bascule pier and the wingwalls of the abutments will be clad with stone.

The Preferred Alternative #3 is a significant departure from the three-span, fully modern concrete and steel structure that MassDOT initially presented to the public in September 2009. In response to concerns expressed by the Section 106 consulting parties, MassDOT's Preferred Alternative #3 incorporates a substantial number of structural timber elements (plus other, non-structural wooden features) into the superstructure of the proposed new bridge. FHWA is satisfied that MassDOT and their professional engineers have investigated all recommendations suggested by the Section 106 consulting parties and have incorporated as much timber into the design of the new bridge as is prudent. The Preferred Alternative #3 balances sound engineering, fiscal responsibility, and context sensitivity to adequately mitigate the removal of the individually National Register-eligible Mitchell River Bridge.

In its consideration of this final MOA, FHWA has identified three outstanding issues among the Section 106 consulting parties that relate to the use of additional wood structural members in the design of the proposed replacement bridge: (1) the incorporation of more wood and less steel into the bascule span; (2) the use of wood (Greenhart) piles for the substructure; and (3) the material and aesthetic treatments to be used for the pier caps. MassDOT has undertaken extensive research into the engineering performance of structural materials in marine environments and it is FHWA's opinion that MassDOT has adequately justified their decisions regarding these three issues, as discussed below.

Regarding the bascule span, MassDOT has indicated that the current design uses the least amount of steel that is required to provide a safe and reliable moveable span that meets the most current AASHTO criteria. MassDOT has evaluated alternative designs offered by the Section 106 consulting parties and determined that any design utilizing more wood would compromise the safety and reliability of the structure, would require unsightly mechanical components that would be exposed above the bridge deck, and would result in increased maintenance costs for the Town of Chatham. The latest concept for the bascule span as submitted by Mr. John Smolen on behalf of the Friends of the Mitchell River Wooden Drawbridge has been evaluated and it has been determined that this concept is not practical or appropriate to construct. For reference, a detailed evaluation and recommendation from URS to MassDOT has been enclosed. As a result, it is not prudent to reduce the amount of steel in the bascule and this issue will not be open for further discussion under the MOA.

MassDOT also has evaluated comments relative to the use of wood (Greenhart) piles in the water. As stated previously by MassDOT, there is no available history on the use of Greenhart piles for a bridge application in this type of marine environment. The closest example is that of the Powder Point Bridge

in Duxbury, which was constructed of wooden (Ekki) piles in 1984 and is currently rated in poor condition as a result of the severe deterioration of those piles. Although not identical species, the properties of Ekki and Greenhart are extremely similar with the same claims made by distributors for durability and resistance to marine wood borers. MassDOT has indicated that they agree with claims from the consulting parties in that wood, ***under certain circumstances,*** can last as long or longer than steel and concrete. However, these circumstances involve a fully submerged pile that is never exposed to air, such as those used to support building foundations in the filled areas of Boston. This is not the case for the proposed Mitchell River Bridge as the piles will be exposed to air and will be in a salt water tidal environment. Based on all available data, past experience, consultation with suppliers and independent peer reviews, wood piles are not expected to last longer than 25 years in this marine environment and their incorporation into the design of the replacement bridge will not be open for further discussion under the MOA. The MOA, however, will allow for further consultation regarding the paint coating system and the use of black, green, or brown for the color of the concrete-filled steel pipe piles.

Regarding the comments received about pier cap construction, MassDOT has indicated that structural wood material, wood cladding, or colored form liners will be evaluated with input from the Section 106 consulting parties as a potential means to replace or conceal the proposed concrete pier caps. A commitment cannot be made in the MOA, however, until the design has progressed and is evaluated by MassDOT and FHWA engineers to determine whether or not any of these revisions is a prudent option to incorporate into the final design. MassDOT has indicated that inspection of the concrete pier caps may be a challenge if covered with wood cladding and that wooden pier caps may not be adequate to accommodate the loading of the superstructure without additional piers in the water. The final MOA requires continued consultation for the pier cap material and treatment.

It is important to note that the Chatham Board of Selectmen (BOS), which is responsible for the care, custody, and control of the Mitchell River Bridge on behalf of the Town, notified MassDOT, in a letter dated June 2, 2011, that the BOS voted four to one to support Alternative 3 as the "most prudent balance of aesthetic, functional, and financial benefits for the Town." The BOS has expressed that their priorities for the replacement bridge are to ensure public safety, to provide navigable waterways, and to be fiscally prudent now, and for future generations. FHWA also understands that it is the desire of the community to incorporate as much wood into the final design of the replacement structure as is prudent, while providing a reliable and safe structure for all users.

FHWA would like to take this opportunity to thank all of the consulting parties for their participation in the Section 106 consultation process. This process has been instrumental in the development of a context-sensitive design for the replacement bridge that we believe adequately mitigates the removal of the existing National Register-eligible Mitchell River Bridge. Please do not hesitate to contact Damaris Santiago at (617) 494-2419 or DSantiago@dot.gov, should you have any comments or questions regarding the final MOA.

Sincerely,

/s/
Pamela S. Stephenson
Division Administrator