UPC 110498
Rehabilitation of John G. Lewis Memorial Bridge along Featherbed Lane over Catoctin Creek

Scoping Meeting

March 8, 2017
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Link to the project webpage:
http://www.virginiadot.org/projects/northernvirginia/route_673_over_catoctin_creek.asp
Project Information

• State Project No. - - - - - - 0673-053-082
• Charge Codes:
  • UPC - - - - - - - - 110498
  • Activity - - - - - - 6xx Series
Agenda

• Introductions
• Project Background
• Purpose and Need
• Section 106
• Project Schedule
Project Background
Project Background

Existing Bridge
Project Background cont’d

John G. Lewis Memorial Bridge Along Featherbed Lane (Route 673) over Catoctin Creek:

1.) Single span steel pin connected Pratt through truss with a timber deck and asphalt overlay, supported on stringers and floor beams.

2.) 157 feet long, 14 feet wide, 11 feet 2 inches face-to-face of rails, and carries one alternating traffic lane.

3.) Originally erected in 1889 on the Leesburg & Alexandria Turnpike (Route 7) over Goose Creek.

4.) In 1932 the bridge was dismantled and moved to its current location.

5.) Was posted 15 tons in 2004 and reduced to 3 tons in 2013 due to insufficient capacity.

6.) Has an average traffic count of 60 vehicles per day with daily truck traffic less than 3 trucks in 2015.

7.) Was posted in the National Register of Historic Places on June 25, 1974.
Historic Bridge Named In Honor Of Loudoun Preservation Pioneer

John G. Lewis Memorial Bridge

The newly named John G. Lewis Memorial Bridge was the site of the gathering of the preservationist’s former colleagues, friends and admirers to celebrate the legacy of a man who led efforts to record information about Loudoun’s historic structures and sites.

The 1889 Pratt Truss bridge that spans the north fork of Catoctin Creek between Waterford and Taylorstown received a new name Tuesday.

The John G. Lewis Memorial Bridge was the site of the gathering of the preservationist’s former colleagues, friends and admirers to celebrate the legacy of a man who led efforts to record information about Loudoun’s historic structures and sites. He is cited as an essential figure in Loudoun’s historic preservation movement by those who followed him.

The bridge once spanned Goose Creek on Rt. 7 east of Leesburg, but was moved to Featherbed Lane in 1932. The rare remaining example of late 19th century American engineering is one of only eight in existence in the country and one of two in Virginia still carrying traffic.
PURPOSE: (VDOT Mission Statement)

Our mission is to plan, deliver, operate, and maintain a transportation system that is safe, enables easy movement of people and goods, enhances the economy and improves our quality of life.

NEED:

• Safety – both structurally and functionally
• Provide for the movement of people and goods
• Provide a 75 year service life
• Maintain the Historical Significance of the Existing Bridge
• Make the bridge serviceable
• Make the best use of limited resources
• Enhance the community
SECTION 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in regulations issued by ACHP. Revised regulations, “Protection of Historic Properties” (36 CFR Part 800), became effective August 5, 2004.
FHWA and VDOT held meetings with consulting parties on the project on March 26, 2015; July 23, 2015; September 16, 2015; and February 23, 2016.

1.) Discussed the current condition of the structure (including number and location of identified cracking that may have resulted from the prior metallization of the structure – 15 known and 6 suspected)
2.) Discussed VDOT’s anticipated efforts to identify historic properties within the project’s APE (Area of Potential Effects)
3.) Discussed eight (8) proposed options for bridge rehabilitation/replacement (Consulting parties requested that VDOT eliminate from consideration Options 4, 5, 6, and 7).
4.) Requested VDHR to provide a preliminary opinion to VDOT and consulting parties concerning which Option (1, 2, 2A, or 3) would preserve enough of its design and materials to retain its NRHP eligibility.
Dear Mr. Ezell:

At its regularly scheduled meeting on 12 November 2015, the Department of Historic Resources’ (DHR) Architectural Evaluation Team considered the question of which proposed Virginia Department of Transportation (VDOT) alternative, if any, would result in Catoctin Creek Bridge (aka the Featherbed Lane Bridge; aka the John G. Lewis Memorial Bridge; aka Bridge No. 6051), DHR Inventory No. 053-0131 in Loudoun County would result in the historic structure remaining listed in the National Register of Historic Places (NRHP). The VDOT alternatives discussed were Alternatives 1, 2, 2A, and 3. Of these, the Architectural Evaluation Team decided that only Alternative 2A would preserve enough of the bridge’s historic design and materials to keep it listed in the NRHP. The Team members did, however, caution that VDOT would need to continue to consult closely with DHR on the scope of work for the undertaking to ensure that the plans as generally articulated in the Alternative 2A description are carried through to completion.

If you have any questions regarding our comments, please call me at (804) 482-6090.

Sincerely,

Marc Holma, Architectural Historian
Division of Review and Compliance
Section 106 cont’d

On April 11, 2016, VDHR signed the Letter of Concurrence on the No Adverse Effect as long as VDOT fulfills the following commitments:

1.) Reduce the bridge superstructure depth;
2.) Replace the replaceable cracked truss components;
3.) Update the 1974 NRHP nomination form;
4.) New bridge piers and abutments with drystack faux-stone architectural treatment with a color scheme that matches the existing bridge abutments;
5.) Provide 60% and 90% bridge design plans to VDHR and consulting parties for review and comment for the purpose of verifying VDOT's fulfillment of these commitments.
CONCURRENCE

VDOT Project No.: 0673-053-082; UPC 105898 (Featherbed Lane Bridge); VDHR File: 2015-0356.

The Virginia Department of Historic Resources (DHR) concurs with the Virginia Department of Transportation’s (VDOT) determination that:

the John G Lewis Bridge (Featherbed Lane) project will have No Adverse Effect upon the John G. Lewis Bridge (Structure No. 6051/DHR No. 053-0131), provided that VDOT fulfills its commitments, described above, to: reduce the depth of design, to the extent possible, of any new continuous steel beams beneath the deck in order to minimize any visual impacts to the bridge; replace the replaceable cracked truss components to strengthen the structure; update the 1974 NRHP nomination form to reflect the existing condition of the bridge; and design any new bridge piers and abutments to be characterized by faux-stone architectural treatment with a color scheme that matches the existing bridge abutments, and the pattern of the faux-stone treatment will be similar to Virginia Drystack. The VDOT shall provide 60% and 90% bridge design plans to the VDHR and consulting parties for review and comment for the purpose of verifying VDOT’s fulfillment of these commitments.

Ms. Julie V. Langan
Director, Virginia Department of Historic Resources
Virginia State Historic Preservation Officer

[Signature]

April 2016

Date

2015-0356
The Alternatives
Alternative 1

Features

Provide new 2-span continuous thru-girders along the fascia of the existing bridge to support the existing truss bridge

- Existing truss to remain: 157’ span steel pin connected Pratt through truss with new glu-lam timber deck and floor beams
- Restores 15 ton vehicular capacity
- Maintain one-lane bridge (11’-2” clear width) with 2-way traffic
- Functionally Obsolete bridge roadway width (12’ min.) per Chapter 32 of the VDOT BDM Vol. V, Part 2
- New pier and abutment widening
- Estimated Cost $1.6M to $2.6M
Alternative 1
Add Steel Thru Girders to Fascia of Existing Truss Bridge
Alternative 2

Features

Replace bridge with new two-span continuous steel beam bridge (80’-80’) spans with glu-lam timber deck

- Attach existing truss members to the new bridge to maintain the appearance of the existing truss bridge
- Provide one-lane bridge (14’ clear width) with 2-way traffic
- Eliminates Functionally Obsolete bridge roadway width (12’ min.) per Chapter 32 of the VDOT BDM Vol. V, Part 2
- Designed for AASHTO LRFD HL-93 loading plus weight of truss members
- New Pier and Abutments
- Estimated Cost $3.0M to $4.0M
Alternative 2
New Two-Span Continuous Steel Beam Bridge with Existing Truss Members Attached
Alternative 2 – Roadway Plan

- Tar and Chip Treatment at Bridge Approaches
- Reconstructed Gravel Roadway East and West of Bridge
- Existing 30’ Prescriptive Right-of-Way Expanded to Accommodate Wider Bridge and Approaches
- New Two-Span Continuous Steel Beam Bridge with Timber Deck and Truss Members as Architectural Treatment
- Existing Entrance Guardrail on Each Approach Replaced per Current Standards
- Existing Culvert Over Tributary to Catoctin Creek
- Route 673 (Featherbed Lane) Reconstructed Single Lane Gravel Roadway on Each Approach to repair Pot Holes
- Existing Entrance
- New Gravel Roadway
- Tar/chip Treatment
- New Guardrail

Ex. Prescriptive R/W
Proposed R/W
Alternative 2A

Features

Replace bridge with new two-span continuous steel beam bridge (80’-80’) spans with glu-lam timber deck

• Attach existing truss members to the new bridge to maintain the appearance of the existing truss bridge
• Provide one-lane bridge (10’-2” clear width) with 2-way traffic
• Does not eliminate Functionally Obsolete bridge roadway width (12’ min.) per Chapter 32 of the VDOT BDM Vol. V, Part 2
• New steel beams designed for at least 15-ton vehicular capacity
• New Pier and Abutments
• Estimated Cost $3.0M to $4.0M
Alternative 2A
New Two-Span Continuous Steel Beam Bridge with Existing Truss Members Attached

John G. Lewis Memorial Bridge over Catoctin Creek
ALTERNATIVE 2A - Two Span Continuous Steel Beam and Timber Deck Bridge with Existing Truss Members Attached. Maintain Existing Bridge Width
Alternative 3

Features

Provide internal arch along existing truss members to restore 15-ton vehicular capacity and add structural redundancy

- Existing truss to remain: 157’ span steel pin connected Pratt thru truss with new glu-lam timber deck
- Maintains one-lane bridge (11’-2” clear width) with 2-way traffic
- Does not eliminate Functionally Obsolete bridge roadway width (12’ min.) per Chapter 32 of the VDOT BDM Vol. V, Part 2
- Requires additional steel arches, hangers, floor beams and bottom tension cables
- Abutment Widening

- Estimated Cost $1.5M to $2.5M
Alternative 3
Add Steel Internal Arch to Existing Truss Bridge
Alternative 4

Features

Replace existing Pratt thru truss bridge with a new similar, wider Pratt through truss bridge

- Will carry two lanes, one lane each direction
- Meets minimum GS-4 criteria with two 10’ lanes and 1’ offsets to the railing on each side
- Designed for AASHTO LRFD HL-93 loading
- New Abutments
- Estimated Cost $3.0M to $4.0M
Alternative 4 – View 1
New Steel Thru Truss Bridge
Alternative 4 – View 2
New Steel Thru Truss Bridge
Alternative 4 – View 3
New Steel Thru Truss Bridge
Alternative 5

Features

Construct new two-span continuous steel beam bridge (80’-80’) spans with concrete deck parallel to the existing truss Bridge. Retain existing truss bridge as-is to carry only pedestrian and bicycle traffic.

- New Bridge will carry two lanes, one lane each direction
- Meets minimum GS-4 criteria with two 10’ lanes and 1’ offsets to the railing on each side
- Designed for AASHTO LRFD HL-93 loading
- New Pier and Abutments
- Estimated Cost $3.0M to $4.0M
Alternative 5 – View 1
New Two-Span Continuous Steel Beam Bridge and Existing Truss Bridge for Pedestrians
Alternative 5 – View 2
New Two-Span Continuous Steel Beam Bridge and Existing Truss Bridge for Pedestrians
Alternative 5 – View 3
New Two-Span Continuous Steel Beam Bridge and Existing Truss Bridge for Pedestrians
Alternative 5 – Roadway Plan

- Existing 30’ Prescriptive Right-of-Way Expanded to Accommodate New Bridge, Approaches and Pull-Offs
- New Two-Span Continuous Steel Beam Bridge with Concrete Deck Parallel to the Existing Truss Bridge
- Tar and Chip Treatment at Bridge Approaches
- Reconstructed Gravel Roadway East and West of Bridge
- Existing Culvert Over Tributary to Catoctin Creek
- Guardrail on Each Approach Replaced per Current Standards
- Reconstructed Gravel Roadway Widens from Existing Single Lane to Meet New Two-Lane Bridge on Each Approach
- Existing Entrance (tie to new pull-off)
- Existing Steel Truss Bridge to Remain and Be Limited to Pedestrians and Bicycle (No Vehicular Traffic)
- New Gravel Pull-Off/Parking Areas East and West of Bridges for Visiting Historic Bridge and Overlook, Connected to Existing Bridge by Gravel Path
- Ex. Prescriptive R/W
- Proposed R/W
- New Gravel Roadway
- Tar/chip Treatment
- New Guardrail

Route 673 (Featherbed Lane)
Alternative 6

Features

Construct new single span steel pony truss bridge (160’) with concrete deck

- Will carry two lanes, one lane each direction
- Meets minimum GS-4 criteria with two 10’ lanes and 1’ offsets to the railing on each side
- Designed for AASHTO LRFD HL-93 loading
- New Abutments
- Estimated Cost $2.5M to $3.5M
Alternative 6 – View 1
New Steel Pony Truss Bridge
Alternative 6 – View 2
New Steel Pony Truss Bridge
Alternative 6 – View 3
New Steel Pony Truss Bridge
Alternative 7

Features

Replace existing Pratt thru truss bridge with a new through truss bridge similar in appearance

- Will carry one reversible lane
- Designed for AASHTO LRFD HL-93 loading
- Increases horizontal clearance between the bridge railings from 11’-2” to 14’
- Crash tested bridge safety railing
- Timber Glu-lam Deck
- New Abutments

- Estimated Cost $3.0M to $4.0M
Alternative 7: New Single Lane Steel Thru Truss Bridge

John G. Lewis Memorial Bridge over Catoctin Creek

ALTERNATIVE 7 - New Single Lane Steel Thru Truss Bridge
Selected Alternative (Alternative 2A)
Alternative 2A - Final
New Two/Three-Span Continuous Steel Beam Bridge with Existing Truss Members Attached

John G. Lewis Memorial Bridge over Catoctin Creek
ALTERNATIVE 2A - Two Span Continuous Steel Beam and Timber Deck Bridge with Existing Truss Members Attached. Maintain Existing Bridge Width
Project Schedule
(Anticipated)

- Public Hearing ....................... Nov. 01, 2018
- Right-of-Way .......................... Feb. 27, 2020
- PAC Meeting ........................... Oct. 22, 2020
- Ad Date ................................. Feb. 09, 2021
Stay tuned for the consultant’s presentation....