



United States Department of the Interior



NATIONAL PARK SERVICE
Interior Region 1
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IN REPLY REFER TO:

1.A.2. (IR1-RSS)

Nikolas Tranchik
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Philadelphia District
100 Penn Square East
Philadelphia, Pennsylvania 19107-3390

Subject: +CENAP-OPR-2020-00382-96 – Headquarters Road Bridge, Tincum Township, Bucks County, PA Wild and Scenic Rivers Act Consistency Review/Section 7 Determination

Dear Mr. Tranchik:

The National Park Service (NPS) has completed the review of the Pennsylvania Department of Transportation's (PennDOT) plans (*SR-1012-BRC-E&S Plans 071620 and SR-1012 BRC- Site Plans 071720*) for the replacement of Headquarters Road Bridge over Tincum Creek, a component of the National Wild and Scenic Rivers System, for consistency with the Wild and Scenic Rivers Act.

Wild and Scenic Rivers Designation

The Lower Delaware Wild and Scenic River, including Tincum, Tohickon and Paunacussing Creeks were designated into the National Wild and Scenic Rivers System under Public Law 106-418 in 2000. The rivers were designated for their free-flowing condition, water quality, and their outstandingly remarkable values (ORVs) including cultural, ecological, recreational, geological, and scenic. These ORVs are described in detail in the *Lower Delaware River Management Plan (1997)*, *Lower Delaware Wild and Scenic River Study Report (1999)*, and the *Delaware River Basin National Wild and Scenic River Values (2012)*.

The Wild and Scenic Rivers Act establishes a national policy to “protect and enhance” the water quality, free-flowing character, and identified ORVs associated with designated rivers. In addition, Section 7 of the Act provides that:

“...no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which [a Wild and Scenic] river was established, as determined by the Secretary charged with its administration.”

The planned replacement of Headquarters Road Bridge meets the definition of a “federally assisted water resource development project” under Section 7 of the Act based upon the nature and scope of the project and the federal assistance provided through both the Federal Highway Administration (lead federal agency) and US Army Corps of Engineers (Clean Water Act permitting).

Project History and Background

The National Park Service has a long history of involvement and review with the Headquarters Road Bridge replacement project, dating to, and before, closure of the existing bridge in 2011 due to structural deficiencies. The present proposal brought forward by PennDOT is consistent with the alternative advanced by the November 2016 Draft Categorical Exclusion Evaluation (CEE) which outlined plans to replace the existing structure with a new, context-sensitive bridge. The NPS commented on the Draft CEE in general support of the preferred direction presented by PennDOT, and detailed three areas of concern related to the proposed project’s potential impacts to Wild and Scenic River values: Water Quality; Free-Flowing Character; and Historical/Cultural Values associated with the bridge’s contribution to the Ridge Valley Rural Historic District.

Historic/Cultural Values

In its January 2017 comment letter on the Draft CEE, the NPS concurred with the mitigation proposed pursuant to Section 106 of the National Historic Preservation Act by PennDOT for loss of the historically significant Headquarters Road Bridge. The draft Section 106 Memorandum of Agreement (MOA) was the result of substantial consultation with the Pennsylvania State Historic Preservation Officer, the Advisory Council on Historic Preservation and multiple consulting parties, including the NPS. It laid out a process for a Design Advisory Committee (DAC), to include NPS. This process has continued from Dec 2019- to the present, with input from the DAC on the aesthetic and historical features of the plans at the 30%, 60% and 90% design plan phases.

Key features of the design that NPS supports include:

- A two-span design that will preserve the feel and context of the original three span bridge
- Salvage and re-use of stone from the existing structure as facing for the proposed replacement bridge
- Utilization of the Design Advisory Committee to oversee and assist in implementation of the mitigation consistent with the 106 MOA

Free-Flowing Character

NPS has been concerned with free-flowing conditions existing at the site, as well as with the proposed new bridge design, as noted in the 2017 letter. Existing conditions, including upstream deposition, deposition within the structure itself, as well as present and historical erosion/scour associated with the western bridge abutment all indicate that existing conditions relative to “free-flow” are not ideal.

The proposed two span structure at Headquarters Road, as described in the permit application, has been designed to improve hydraulic capacity and flow conditions at the site by removing one pier and increasing the hydraulic capacity of the structure by approximately 18%. While NPS would normally recommend removing all supporting piers (single bridge span) as a means of maximally improving hydraulic capacity and free-flowing conditions, in this case, NPS supports the compromise of retaining a single center pier for historical aesthetic purposes.

The proposed lateral shift of the replacement structure (approximately 15-feet to the west) both meets transportation goals for improved safety and turning radius and places the new hydraulic opening of the bridge more in line with the current channel geometry of Tinicum Creek. The shift, however, does

expose the western streambank upstream and downstream of the bridge to the potential for increased erosion – particularly downstream, where the western streambank will no longer benefit from the same degree of “protection” provided by the western bridge abutment.

Hydraulic modeling presented by PennDOT have analyzed the erosive forces of Tinicum Creek under various flow conditions. The H&H report addressed the extent of the potential erosion for 500-foot upstream and downstream of the bridge location, and at 50 and 100 year storm levels. With respect to the western streambank downstream of the bridge, in all cases, results indicate that erosive forces will be very similar to existing conditions. Streambank stabilization associated with the immediate vicinity of the new structure has been reviewed and commented upon by NPS and is likely to be sufficient and appropriate as proposed. NPS considered requesting a two-dimensional hydraulic model of the site be developed by PennDOT, however, NPS ultimately concluded that such a study does not appear warranted, as it would be unlikely to change the overall understanding of future conditions at the site.

In reviewing the proposed project in concert with PennDOT, PA DEP and the US Army Corps of Engineers, NPS has considered whether other design changes or in-channel treatments appear warranted (such as temporary or permanent flow deflection structures, additional streambank stabilization, or removal of the upstream gravel bar, for example), but has not found that such actions would improve or protect “free-flowing” character as compared to the proposed plan.

Water Quality

Water quality impacts associated with the removal of the existing structure and construction of the replacement bridge will be limited based on standard erosion and sediment control practices to be implemented in conjunction with state and federal permits. No significant or unusual roadway or bridge drainage issues which could result in long-term negative impacts are evident or anticipated. Some longer-term sediment transport/erosion through the project area (upstream or downstream) may occur in conjunction with the replacement structure, as the stream channel adjusts to the new bridge configuration. The extent to which this could become problematic or excessive with respect to stream channel stability, erosion and sedimentation has been the subject of substantial discussion among PennDOT, PA DEP, and the US Army Corps of Engineers through the permit review process.

Monitoring

The proposed project represents a compromise design, balancing issues including public safety, free-flowing condition, historical character, and other pertinent factors. As such, NPS believes uncertainties remain regarding the potential of unanticipated adverse erosion or stream channel stability issues which relate to the “free-flowing character” of the Wild and Scenic River segment. These uncertainties warrant monitoring of the project area above and below the bridge during and after construction.

To that end, NPS, PennDOT, PA DEP and the US Army Corps of Engineers have collaborated on the development of a monitoring protocol (attached). This monitoring protocol will ensure that stream channel conditions associated with project during and post-construction are monitored and reported, and that all four parties will meet on annual basis to review and evaluate the findings.

Conclusion

The National Park Service has determined on behalf of the Secretary of the Interior, pursuant to Section 7 of the Wild and Scenic Rivers Act, that the proposed Project would not have a “direct and adverse” effect on the Lower Delaware Wild and Scenic River's free-flowing condition, water quality, or outstandingly remarkable values, provided that the project is constructed consistent with the PennDOT *SR-1012-BRC-E&S Plans 071620 and SR-1012 BRC- Site Plans 071720*, and that avoidance and minimization measures and actions cited below are fully and properly fulfilled for the duration of the Project along with the implementation of the above-referenced monitoring protocol.

Required Project Measures/Conditions/Monitoring

The following provisions are considered essential permit conditions relied upon by NPS in this determination.

1. No hay bales shall be used for erosion and sediment controls; chemical-free straw bales are acceptable.
2. Biodegradable erosion control matting shall be used to stabilize all slopes steeper than 3H:1V. No plastic netting or welded joint poly-based matting shall be used.
3. Native seed mixes and plant species shall be used to reestablish vegetation. Woody plants for riparian areas shall include American sycamore (*Platanus occidentalis*), River birch (*Betula nigra*), and Hackberry (*Celtis occidentalis*). No borrow, loam, or fill material shall contain invasive species.
4. Downstream flows shall be maintained at all times, with water from dewatering operations filtered to remove excessive sediments and discharged in a manner that prevents a release of turbid water into downstream areas. Aquatic organisms entrapped by dewatering activities shall be timely released downstream to promote their safe recovery.
5. All stone fill above ordinary high water (OHW) shall be choked and covered with clean topsoil and seeded.
6. Water quality shall be maintained by implementing appropriate erosion prevention and sediment control practices from the Pennsylvania Department of Environmental Protection's *Erosion and Sediment Pollution Control Program Manual Final Technical Guidance Number 363-2134-008* (March 2012).
7. All fueling operations, lubricating, hydraulic topping off, fuel tank purging, and equipment maintenance/repairs shall be performed at an upland site outside of the one hundred-year floodplain. These activities shall take place on an approved pad with spill control/collection devices in place and the operator trained in their use.
8. Piers and abutment footings shall be removed to a depth of at least 2 feet below the finished streambed elevation or entirely, where feasible.
9. Rock for scour protection shall be depressed 2 feet below the finished streambed elevation and the river bed restored to its preconstruction condition.
10. Rock for bank protection shall be choked with retained streambed material if below OHW, or soil and seeded if above OHW. Grout is not acceptable.
11. All in-stream work must be kept to a minimum and conducted during the low flow periods for the area. In-stream construction work may not be conducted when flows are greater than a 1-year flow or if excessive turbidity is observed.
12. The attached *Headquarters Rd. Bridge Monitoring Requirement* (dated December 2020) shall be implemented for a period of not less than 3 years from the date the bridge is opened to the public for use.

Future notifications:

Any changes to the proposed project as described in the package submitted for evaluation, such as the plan set, special provisions, construction methods, or in-stream work schedule, will require consultation with the NPS before the work proceeds, and may also require additional Section 7 review/approvals.

Thank you for the opportunity to review this project for consistency with the Wild and Scenic designation of the Lower Delaware Wild and Scenic River. Please feel free to contact Jamie Fosburgh at jamie_fosburgh@nps.gov or 617 223-5191 if there are any questions regarding these comments.

Sincerely,

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cc:

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