November 17, 2022

Antidegradation Assessment for 401 Water Quality Certification

US Route 67
Illinois River Bridge at Beardstown
Beardstown, Cass & Schuyler Counties, Illinois

Introduction

The project consists of removing and replacing the structure (SN 009-0001) that spans over the Illinois River as well as the reconstruction of the roadway approaches and the 6th Street/US 67 intersection near Beardstown, IL. The proposed structure (SN 009-0504) will be built approximately 162 feet west (downstream) from the existing bridge and will be 16 spans consisting of 4 units and will use steel web plate girders. The substructure will be drilled shafts. The total length of the structure will be 3,563'-9". The existing structure will be demolished after the proposed roadway and structure are constructed and open to traffic.

A. Identification and Characterization of the Affected Water Body.

Illinois River

- AUID IL_D-31
- Hydrologic Unit Code (HUD): 0713000310
- Layer: 305(b) Streams 2016
- Use attainment: F582, N583, N585, X590
    1. F582: Fully supporting aquatic life
    2. N583: Not supporting fish consumption
    3. N585: Not supporting primary contact recreation
    4. X590: Not assessed for aesthetic quality
- Causes: 274, 348, 400
    1. 274: Mercury
    2. 348: Polychlorinated biphenyls
    3. 400: Fecal Coliform
- Sources: 10, 140
    1. 10: Atmospheric Deposition - toxics
    2. 140: Source Unknown
- IEPA Basin: 13
- Cat: 5
- The Illinois River at this location is not listed on the Nationwide Rivers Inventory (NRI) of Wild and Scenic River candidate streams by the National Park Service.
- There is no rating for the Illinois River at the project location for a biologically significant stream under the IDNR publication: Integrating Multiple Taxa in a Biological Stream Rating System.
- The Illinois River at the project location is not an Illinois Natural Areas Inventory site.
- The drainage area for the Illinois River at this location is 24,227 square miles.
- The following impacted wetlands were identified by INHS:

INHS Wetland Site #	Area Impacted (Acres)	Community Type of Wetland:	NWI Code	Floristic Quality Index	Mean "C"
3	0.75	Farmed Wetland	U	N/A	N/A
4	0.16	Farmed Wetland	U	N/A	N/A
6	0.23	Wet Floodplain Forest	PFO1Ch	N/A	N/A
7	4.60	Wet Floodplain Forest	PFO1Ah, PFO1Ch, PEM1Fh, L2UBGh	10.6	2.7
9	1.10	Wet Floodplain Forest	PFO1Ah, PUBGx, U	11.5	2.9
10	0.10	Wetland Pond	PUBGx	8.9	4.0
12	1.33	Wet Floodplain Forest	PFO1A, U	17.1	3.3
13	0.81	Wetland Pond/Wet Shrubland	U	10.3	3.6
14	0.00	Wet Meadow	U	6.0	1.4
15	0.45	Wetland Pond	L2ABGx, U	6.3	2.1
16	0.40	Marsh/Wet Meadow	PEM1C, U	15.5	2.6
Total	**9.92**				

B. (1) Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses

It has been determined that there will be a total of 9.92 acres of impact to existing wetlands as summarized in the table above. Wetland mitigation is proposed to occur at the LaGrange Wetland Mitigation Bank which is approximately 4.5 miles away from the project.

Stormwater runoff from US Route 67 currently flows into roadside swales adjacent to the pavement and flows into drainage ditches or the Illinois River. The proposed stormwater management techniques to be utilized for the new US Route 67 bridge include drainage scuppers that discharge directly to the Illinois River, roadside swales on the roadway approaches to the Illinois River, and inlets at each end of the new bridge.

Salt spray and splash typically are concentrated within the shoulder limits of the roadway. The transport is dependent upon the traffic volumes and speeds as well as wind direction and deicing application rates. Efficiently draining storm water from the roadway minimizes splash from the roadway; storm water on the US Route 67 roadway will be managed through a combination of an open ditch system and a closed storm sewer system.

Project construction may have minor effects of on the surface water quality; however, the effects will be temporary. A Stormwater Management and Erosion Control Plan will be developed prior to construction, in accordance with the [redacted] Drainage Manual and Bureau of Design & Environment Manual.

Several measures will be utilized to reduce effects to water resources during construction:

- Surface water will be protected using standard best management practices (BMPs).
- A Storm Water Pollution Prevention Plan (SWPPP) will be implemented with proposed countermeasures to address runoff collection and sedimentation.
- Staging areas for equipment repair and maintenance will be located away from drainage courses and surface waters. A wash down area for equipment will be designated.
- A Section 404 permit will be obtained from the Rock Island Corps of Engineers.

The increased runoff will not have significant effect on surface waters in the project area. There will be slight increases in the amounts of runoff due to additional impervious surfaces resulting from the proposed improvement. As this project does not include widening and added lanes for capacity, the increase in impervious areas is minimal. The increase in impervious surfaces may increase the concentrations of heavy metals in stormwater runoff.

B. (2) Fate and Effect of Parameters Proposed for Increased Loading

To minimize the surface water impacts during construction, appropriate erosion and sediment control Best Management Practices will be implemented in accordance with local, state, and federal regulations. With proper implementation of BMPs and compliance with the National Pollution Discharge Elimination System construction permit, short-term construction-related water quality impacts will be avoided or minimized. Per the NPDES permit, a uniform perennial vegetative cover with a density of 70 percent of the native background vegetative cover for the area must be established on all unpaved areas and areas not covered by permanent structure. The [redacted] will verify this occurs prior to closing out the contract.

[redacted] implements the following Winter Operations Best Management Practices:

- ID Annual training for low operators to improve the efficiency of de-icing application and to reduce loss of de-icing chemicals.
- [redacted] utilizes calibrated spreaders equipped with ground sensors that can accurately control the rate of spreading.
- Pre-wetting solid deicing chemicals/mixtures for better adhesion to the pavement surface and for melting of the ice/snow.
- Adjusting the application rates of de-icing chemicals according to pavement temperature and weather conditions.

The wetland mitigation proposed to occur at the LaGrange Wetland Mitigation Bank is 35.92 acres as summarized on the Wetland Impacts Evaluation (WIE) form attached.

C. Purpose and Social and Economic Benefits of the Proposed Activity

The Beardstown Bridge removal and replacement is one component of the larger U.S. 67 improvement project, which is part of a statewide plan to improve regional transportation continuity and enhance the linkage of west central Illinois to major economic markets. This improvement will connect sections of highway to the north and south that are currently either under construction or are in the planning phase.

The purpose of the Proposed Action is to provide a transportation facility between Jacksonville and Macomb, Illinois, that provides improved transportation continuity, enhanced economic stability and development, upgraded rural access, and improved travel efficiency while connecting the project area to other major transportation systems and communities in western Illinois. The project will provide a new facility across the Illinois River that is more reliable and meets current design standards. The existing US Route 67 Beardstown Bridge (Structure Number 009-0001) was constructed in 1955 and later rehabilitated in 1985.

D. Assessment of Alternatives

A total of four (4) alternatives as categorized below were developed and analyzed:
a. No-Build (Alternative 1A)
b. Rehabilitation Existing Structure (Alternative 1B)
c. Build Bridge on new location without impacting the existing bridge (Alternatives 1C)
d. Remove and replace the existing bridge (Alternatives 1D)

The analysis was conducted on seven (7) basic criteria: Bridge/Roadway Deficiencies, Safety, Regional Mobility, Local Access/Mobility, Economic Impacts, Cultural/Historical Resources, and Natural Resources. The following summarizes the alternatives.

Alternative 1A: No-Build
The No-Build alternative would require the existing Beardstown Bridge to remain in place with no improvements made and its substandard features retained. Only routine repairs and maintenance would be provided as needed. The No-Build alternative overlooks the basic transportation purpose and need and for this reason, is not feasible and prudent.

Alternative 1B: Rehabilitation Existing Structure
Under Alternative 1B, the existing Beardstown Bridge would undergo a major rehabilitation attempt to address its structural deficiencies and allow the bridge to remain. This alternative is not feasible and prudent, and it does not satisfy the project's purpose because rehabilitation would not address the existing structural/geometric deficiencies, the truss type bridge cannot be widened, the existing bridge is nearing the end of its useful service life and continued maintenance and rehabilitation would not adequately extend its service life and while rehabilitation would temporarily improve the structural deficiencies of the bridge, this alternative would not address the long-term need of providing an adequate structure to carry the anticipated traffic levels.

Alternative 1C: Build Bridge on New Location Without Impacting the Existing Bridge
This alternative consists of building on new location without impacting the existing bridge. The existing bridge could be maintained as a coupler, with a new bridge constructed in a new location and the existing Beardstown Bridge could be used as a one-way couple to the new bridge. Northbound US 67 would use the existing structure and southbound traffic would use the new structure. This alternative retains the existing bridge. The new bridge, in combination with the existing structure, would service all roadway transportation modes. However, this alternative does not satisfy the purpose and need of this project and is not feasible and prudent since preservation of the existing bridge in place would create another obstacle for navigational river traffic and the existing structure would continue to incur costs to be maintained in a state of good repair.

Alternative 1D: Remove and Replace the Existing Bridge
This alternative proposes that a new bridge would be constructed 161.5' southwest of the existing Beardstown Bridge to provide access across the Illinois River. The existing bridge would remain in place to maintain traffic during construction and would then be removed after the new bridge is complete and servicing traffic. This alternative meets the project purpose and need to provide safe and reliable connectivity across the Illinois River for all modes of traffic by addressing the structural and geometric deficiencies of the existing bridge, while also minimizing impacts to the environment and surrounding area.

Alternative #1D (Remove and Replace the Existing Bridge) was selected as the Preferred Alternative.

E. Summary Comments of the Illinois Department of Natural Resources, Regional Planning Commissions, and Other Entities

An Environmental Impact Statement (EIS) was prepared for the overarching US 67 project and the Federal Highway Authority (FHWA) signed a Record of Decisions (ROD) for the project on March 6, 2003. In the approved ROD, the Beardstown Bridge over the Illinois River was planned to be a four-lane structure. A re-evaluation was conducted and dictated that the structure will be two-lanes, requiring less right-of-way and reduced wetland impacts. The reduction in the number of lanes on the bridge was to account for lower than forecasted traffic volumes and funding constraints.

Subsequent to the approval of the ROD, the Federal Highway Administration (FHWA) reviewed and evaluated the documentation dated December 15, 2021, for the subject project and determined that (1) the approved environmental document remains valid for the requested FHWA action (2) there are no new significant environmental impacts, and (3) a supplemental environmental impact statement is therefore not required. The Illinois Department of Natural Resources and U.S. Fish & Wildlife Service have been involved with the planning of this project as a Cooperating Agency.

This project was developed using the Context Sensitive Solutions process. The project was presented to the public at a public involvement meeting on June 23, 2022. The event was held at the Beardstown High School cafeteria in Beardstown. The public meeting had 73 known attendees. Any comments were reviewed and addressed with the participants and the presentation team.