



**PROGRAMMATIC 4(f) FOR HISTORIC BRIDGES**

County Ballard State KY

Item No. 01-1140

Description/Location of Historic Bridge: Built between 1936 and 1938 near the confluence of the Ohio and Mississippi Rivers, the US 51 Bridge provides the westernmost crossing of the Ohio River. The US 51 Cairo Bridge carries two lanes of traffic between Alexander County, Illinois and Ballard County, Kentucky connecting the two communities of Wickliffe, KY and Cairo, IL. Figure 1 in the Additional Documentation (attached) provides the project location map and other pertinent project information..

Is the bridge located within and a contributing element of an historic district?  YES  NO  
 If YES, complete an individual 4(f).

Consult the Nationwide Section 4(f) Evaluation (attached) as it relates to the following items. Any response in a box requires additional information prior to approval. This determination will be attached to the applicable CE or FONSI.

	YES	NO
Will the bridge be replaced with federal funds?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will the project require the "use" of a historic structure which is on or is eligible for listing on the National Register of Historic Places?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will the project impair the historic integrity of the bridge either by demolition or rehabilitation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has the bridge been determined to be a National Historic Landmark?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Alternatives Considered**

Consult the Nationwide Programmatic Section 4 (f) Evaluation for the generic reasons that might be addressed.

	YES	NO
All reasonable alternatives to avoid any use of the Historic bridge have been evaluated.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The "No Build" alternative has been studied and does not meet the purpose and need of the project.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Was building on a new location considered?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Was rehabilitation of the existing bridge considered?	<input checked="" type="checkbox"/>	<input type="checkbox"/>



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**Measures to Minimize Harm**

	YES	NO
The project includes all possible planning to minimize harm as the following apply?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The existing bridge was made available for an alternative use through a marketing process in accordance with an executed MOA for the project. Advertisements and marketing documents are attached. No responsible party agreeing to maintain and preserve the bridge at a new site was found.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The FHWA, SHPO and ACHP have reached agreement through the Section 106 process on the measures to minimize harm in the absence of a bridge relocation agreement. These are outlined in the executed MOA (copy attached.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Determination and Approval**

The project meets the applicability criteria set forth in the Nationwide Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that necessitate the Use of Historic Bridges dated July 5, 1983.

That all of the alternatives set forth in the Findings section of the above National Section 4(f) Evaluation have been fully evaluated. Based on those Findings, it is determined that there is no feasible and prudent alternative to the use of the historic **US 51 Bridge Replacement over the Ohio River**

Wickliffe, KY

Ballard County

01-1140

That the project complies with the Measures to Minimize Harm Section of the above Nationwide Section 4(f) Evaluation has been completed and agreement reached between the FHWA and SHPO and ACHP has been reached.

Accordingly, the FHWA approves the proposed use of the historic

**US 51 Bridge Replacement over the Ohio River**

Wickliffe, KY

Ballard

01-1140

and/or the construction of a replacement bridge and approaches under the above Nationwide Section 4(f) Evaluation issued July 5, 1983.

\_\_\_\_\_  
 Date

Approved

\_\_\_\_\_  
 System Performance Team Leader

## Applicability of Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges

The US 51 Bridge project will result in the use of a bridge that has been determined eligible for inclusion on the National Register of Historic Places. The following information documents that the project meets criteria and requirements of the Programmatic 4(f) for Historic Bridges. It is to be attached to the TC 58-57 form that KYTC utilizes to process programmatic evaluations for the use of historic bridges.

The programmatic Section 4(f) evaluation applies to the US 51 Bridge project as it meets the following criteria:

- The bridge is to be replaced or rehabilitated with Federal funds.
- The project will require the use of a historic bridge structure which is on or is eligible for listing on the National Register of Historic Places.
- The bridge is not a National Historic Landmark.
- The FHWA Division Administrator determines that the facts of the project match those set forth in the sections of this document labeled Alternatives, Findings, and Mitigation.
- Agreement among the FHWA, the State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) has been reached through procedures pursuant to Section 106 of the NHPA

## Introduction

The US 51 Bridge Project (Project) is a bi-state cross river mobility project between the Kentucky Transportation Cabinet (KYTC) and Illinois Department of Transportation (IDOT) and is identified by KYTC Item No. 01-1140.00. KYTC owns the existing bridge that is jointly maintained with IDOT. The Project involves the Cairo Ohio River Bridge (also referred to as the US 51 Bridge), bridge # 004B00021N, which connects Wickliffe, Ballard County, Kentucky to Cairo, Alexander County, Illinois.

The Project utilized a project development process that followed Federal Highway Administration's (FHWA) Planning and Environmental Linkages (PEL) initiative during the planning phase. This included a collaborative and integrated approach to transportation decision-making that 1) considered environmental, community, and economic goals early in the transportation planning process, and 2) used the information, analysis, and products developed during planning to inform the environmental review process. The results of this process are documented in January 2014 US 51 Alternative Selection Report. The findings of the planning report were used in completing FHWA's Planning and Environmental Linkages Questionnaire to document how the study met the requirements of 23 CFR §§ 450.212 or 450.318. This information was then utilized during the environmental phase to focus the alternative development process within the recommended corridor from the planning study.

### *Purpose and Need*

The purpose of the Project is to improve cross river mobility between Wickliffe, Kentucky and Cairo, Illinois by addressing the existing US 51 Bridge deficiencies, including narrow lane widths, lack of shoulders, and tight curve, flooding issues, and lack of seismic design, that cause safety and reliability issues for traveling motorists.

### Project Need: Improved Bridge Structure

The identified project need is to provide an improved bridge structure that meets current state/national design standards and that can serve modern vehicle and traffic needs including anticipated 2045 vehicle volumes. The Cairo Ohio River Bridge was designed by Modjeski and Masters Engineers and constructed from 1936 to 1938. It is a continuous span cantilever Warren truss bridge with anchor arm spans at each end. The Missouri Valley Bridge and Iron Company constructed the

substructure while the Mount Vernon Bridge Company was responsible for construction of the superstructure. The main spans are four steel Cantilever Warren trusses that total 2,830 feet in length. The Cairo Ohio River Bridge is the longest cantilever truss in Kentucky. The main spans are flanked by Warren deck truss approaches at each end; the approach spans on the Illinois side are 570 feet in length, while the Kentucky approach spans are 2,684 feet in length.

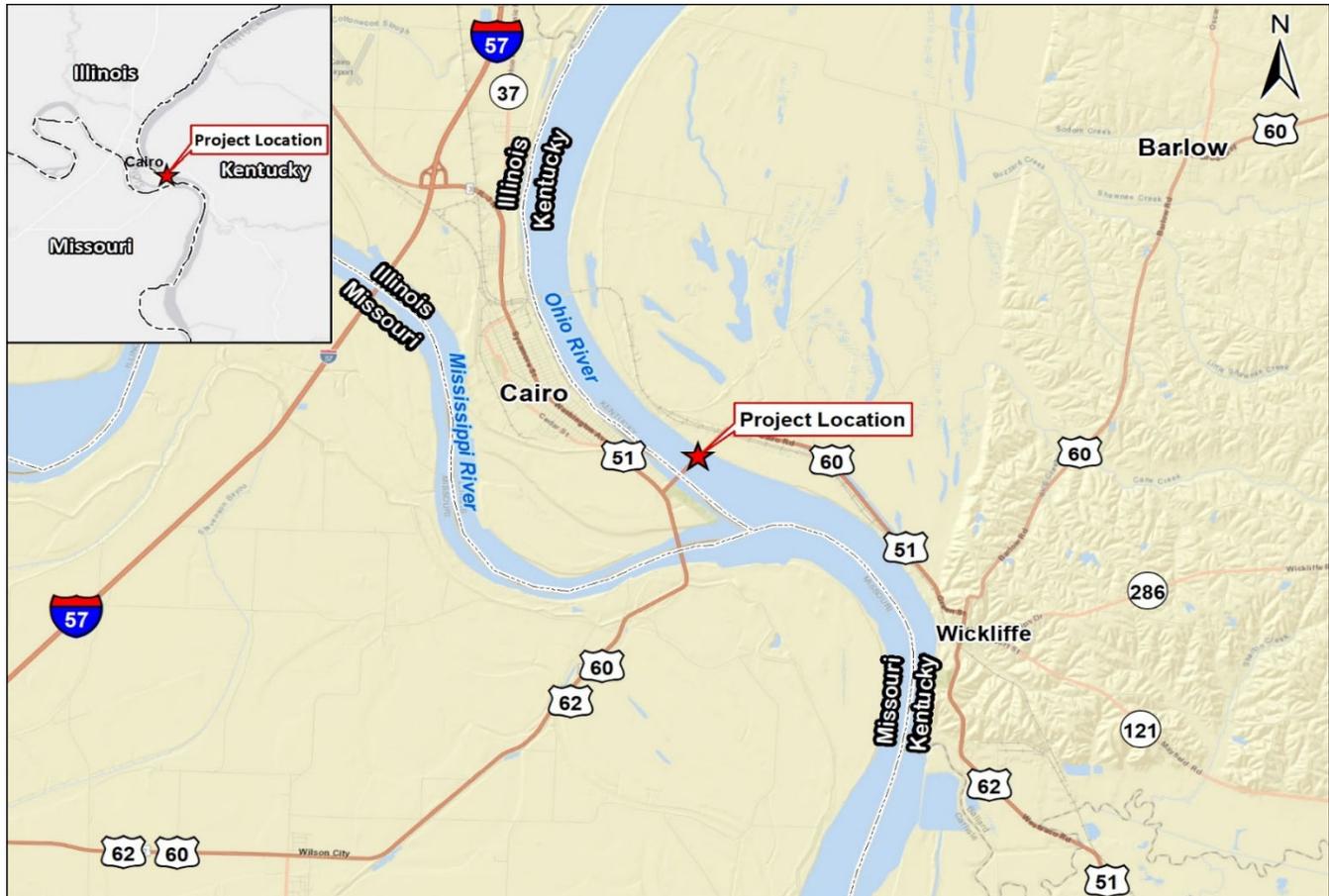


Figure 1. US 51 Bridge Replacement Project Location Map

### *Operational Characteristics*

Cross-river connectivity is important/critical to the local communities and businesses in the Wickliffe, Kentucky/Cairo, Illinois area. These communities and businesses rely on the bridge for connections to employment, farming operations, emergency response and health services, community resources and recreational opportunities. If the US 51 Bridge were not available for local traffic, the trip between Wickliffe and Cairo increases from 7 miles to a 98-plus mile detour either direction, with the nearest bridge crossing being on I-24 near Metropolis, Illinois. The US 51 Bridge plays an important role in the daily lives of the residents of the area. The US 51 Bridge and the Ohio River beneath it have historically been common corridors providing the movement of employees between the two communities and the movement of goods and supplies produced by these communities.

1. The bridge is an important route for truck traffic, as sizeable numbers of crossings (35% of existing traffic) are associated with the local paper mill and other companies accessing the bridge for interstate travel. This river crossing is an important connection for not only these two communities but for areas surrounding them and commercial truck traffic throughout the region.
2. While the bridge does not currently provide specific accommodations for pedestrian or bicycle traffic, the US 51 project corridor including the bridge and its approaches are listed within online bicycle route resources as

being available to bicycle enthusiasts. The US 51 route is part of the Ramblin' River Bike Tour, the Illinois' Mississippi River Trail, and the Great River Road scenic byway.

3. Cairo (IL), and Wickliffe (KY) have limited community facilities. Neither community has a grocery store nor medical facilities. The nearest medical clinics and pharmacies are on the Kentucky side of the river. For significant medical issues, residents must travel to Paducah, Kentucky or Cape Girardeau, Missouri, both of which are approximately 35 miles from the bridge in opposite directions. For residents wishing to access a healthcare facility in a different state from their residence, the US 51 Bridge is a critical link. Community input noted that older residents are reluctant to cross the narrow bridge to get to healthcare.
4. The bridge is important/critical for residents commuting and utilizing the bridge to reach their place of employment. For example:
  - a. 25 percent of the Cairo Unit School District reside on the Kentucky side of the river and must use the bridge daily during the school year.
  - b. 30 to 40 percent of the approximate 100 employees of Waterfront Services, Company use the bridge daily.
  - c. The bridge is critical to the movement of regional freight, which results in sizeable truck volumes (35%) intermingled with the commuter traffic.
  - d. Farmers use the bridge extensively to move equipment between farming operations and move harvested crops to storage/shipping facilities.
  - e. The community considers any closure periods or traffic impacts during construction as a negative but the added jobs from a construction project as a positive.

### *Safety and Physical Condition*

The 2014 US 51 Alternative Selection Report identified existing conditions within the project area, including the US 51 Bridge, bridge # 004B00021N, which carries US 51 over the Ohio River. The existing bridge is a two-lane bridge with a 10-foot lane in each direction. The 2014 US 51 Alternative Selection Report also identified existing geometric deficiencies and issues with the US 51 Bridge including the following:

- Narrow 10-foot lanes and Narrow 1'-3" shoulders do not meet current design criteria in Illinois or in Kentucky, which do not allow for wide loads and/or farm equipment without restriction of traffic.
- Sag curve beginning in Span 2 does not meet headlight sight distance requirements
- 465-foot horizontal curve on the Kentucky approach does not meet 45 mph design criteria
- Designed before seismic design was required criteria and applying today's seismic preliminary estimates indicate that severe damage or collapse is probable in the event of a major earthquake
- Bridge approaches prone to flooding or overtopping during significant flood events

Furthermore, over the past 20 years the US 51 Bridge has been closed approximately 55 days due to flood levels. When the bridge is closed, a detour route must be used which is 98 miles in each direction. A Bridge Inspection was conducted in August 2018 and rated the bridge deck geometry as '2 Intolerable – Replace' based on the National Bridge Inventory (NBI) rating.

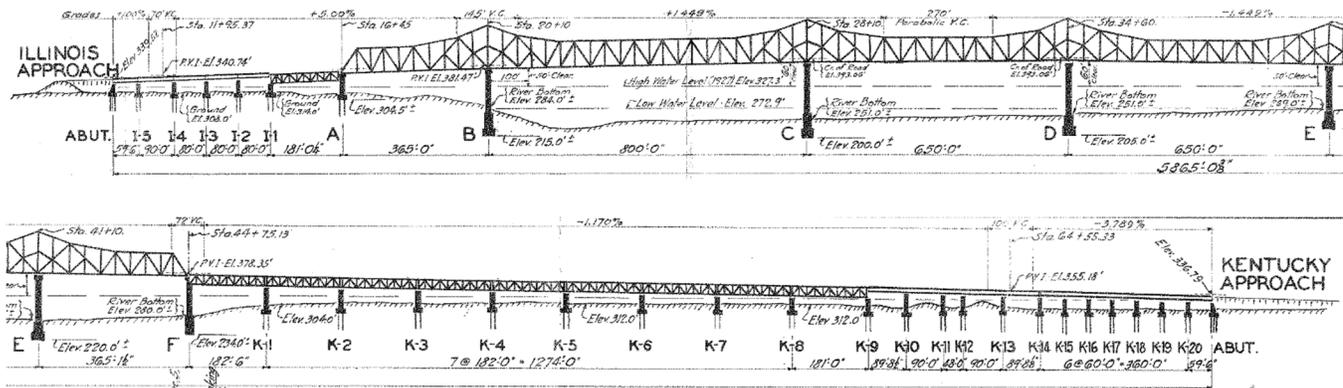


Figure 2. As Built Profile of Existing US 51 Bridge (Cairo Ohio River Bridge)



Photo 1. US 51 Bridge (Cairo Ohio River Bridge), bridge #004B00021N

## Evaluation of Alternatives

Building off the 2014 US 51 Alternatives Selection Report, the alternative analysis during the NEPA phase focused upon three build alternatives within Combined Alternative Corridor 2. The Project's environmental documentation is a Categorical Exclusion (CE) Level 3. This Programmatic Section 4(f) for Historic Bridges is part of the NEPA process and is attached to the aforementioned CE.

As part of the CE alternative analysis, five alternatives were considered for the Project. These alternatives include:

- No-Build
- Rehabilitation
- New Structure/Location Alternatives
  - Alternative 1- new bridge 1800 feet upstream of existing bridge
  - Alternative 2- new bridge 980 feet upstream of existing bridge
  - Alternative 3- new bridge 85 feet upstream of existing bridge

### No-Build Alternative

The No-Build alternative would leave US 51 Bridge in its existing condition. This would require routine preventative maintenance and minor rehabilitation as needed in order to slow the bridge's deterioration and to keep the bridge open for as long as possible with minimal economic outlay. The bridge would likely require additional monitoring and inspection during its life, and those costs are included in the cost estimate below. The bridge is load posted for legal trucks. Under the No-Build Alternative, estimates indicate that more restrictive load restrictions are likely by 2030. Estimates indicate that the bridge could remain functional under these assumed traffic restrictions until 2040. At this time, traffic would either shift onto a new bridge structure, or no bridge crossing would be available at this location. In addition, traffic restrictions due to inspection and maintenance will increase as the bridge deteriorates. Single lane closures have been estimated at two weeks per year over 20 years of operation.

Preventative maintenance and minor repair work needed would include: Bridge Deck Patching; Steel Member Repairs; Concrete Patching on Substructure; Deck Joint Repair; Bridge Rail Repair. The following repairs would be considered as part of a larger rehabilitation project: New Paint System; Bridge Deck Replacement; Strengthening of Structural Steel Members; Seismic Retrofit.

Under the No Build alternative, the existing bridge deficiencies including narrow lane and shoulder widths would not be improved. Issues related to incident management and accommodating wide loads/farm equipment would not be addressed. Because of the length of through truss bridge and deck truss bridge, widening the structure to correct these deficiencies was deemed to be impractical.

The No-Build alternative would involve an investment of approximately \$4.2 million in direct costs through 2040, at which time the existing structure would cease to be operational. Full closures for repairs were estimated at one week every two years over the 20-year period. Additional costs not included in this estimate are the economic impact costs of having no bridge, the cost of bridge replacement, and user costs.

The No-Build alternative is not feasible and prudent due to the following:

- a. It does not satisfy the purpose and need of the project.
- b. Normal maintenance is not considered adequate to preserve the bridge far into the future, due to the increasing costs and frequency of maintenance activities over time, plus the limited remaining service life of the existing bridge.
- c. The do nothing alternative does not correct the geometric issues that cause the bridge to be considered deficient.
- d. The do nothing alternative does not address the vulnerability of the bridge to seismic events.
- e. Eventual closure of the bridge would have devastating impacts upon the communities, businesses and economy of the area as it provides a critical link for employment opportunities; shipping of manufactured products paper mill raw materials and products; agricultural goods movement, farming operations, medical treatment, grocery shopping, educational opportunities, and tourism.

- f. Eventual closure would result in a serious disruption of established travel patterns noted above and a 98-mile detour route.

### Rehabilitation Alternative

The Rehabilitation alternative would include a major rehabilitation effort to improve the bridge's structural capacity, thereby improving the safety of the traveling public. The major rehabilitation effort would include a full inspection, a new bridge deck, new paint system, rehabilitation engineering, steel member strengthening and repair, and seismic retrofits, all of which would occur over an 18- to 24-month period. With this alternative, the NBI condition rating would be increased from 'Poor' to 'Good'.

The Rehabilitation alternative would increase the service life of the bridge by approximately 30 years. After the major rehabilitation work is performed, the bridge is anticipated to be fully operational (no load postings) until 2050. In 2050, a similar evaluation to this one would again need to be performed with regard to major rehabilitation work. If only preventative maintenance and minor rehabilitation work were done from 2050 onward, the bridge would likely remain functional (not fully operational) for approximately ten to twenty years, ceasing to be operational. At that time, traffic would either shift onto a new bridge structure, or no bridge crossing would be available at this location.

The Rehabilitation alternative would involve an investment of approximately \$223 million in direct costs through 2070. Not included in the cost estimate are user costs, the economic impact costs of having no bridge, and the cost of bridge replacement after 2070. Excluded from the cost estimate is \$1.8 million in non-direct costs associated with approximately 52 weeks of single-lane closure during the rehabilitation plus an estimated 10 weeks of single-lane closure for routine inspection and associated preventative maintenance and minor rehabilitation work from 2025-2055.

The rehabilitation alternative is not feasible and prudent due to the following:

- a. It would not satisfy the purpose and need of the project.
- b. It does not correct the geometric issues that cause the bridge to be considered deficient. Therefore, it will not satisfy the purpose and need of the project. Because of the length of through truss bridge and deck truss bridge, widening the structure to correct these deficiencies was deemed to be impractical and would adversely affect the historic integrity of the bridge.
- c. The length of the closure during rehabilitation and frequency/duration of maintenance closures of this critical link would adversely affect the communities and economy of the area. The 98-mile detour during closures would be a serious disruption of established travel patterns and the daily lives of the residents of the area.

### *New Location Alternative Without Demolition of the Existing Bridge*

The programmatic 4(f) evaluation requires that a build alternative on new location without using/demolishing the old bridge be investigated. Alternatives 1,2, and 3 all could be built on new locations upstream of the existing bridge. Investigations were conducted that considered leaving the existing bridge in place as a pedestrian facility or as part of a one-way couplet in combination with the new location alternatives noted above.

- Keeping the bridge open (even if just for pedestrian use), would require substantial repairs, and continued maintenance expenditures, which would fall to the owner, including liability issues. These costs would be in addition to that of the new bridge.
- Using the existing bridge as part of a one-way couplet is not prudent. To continue to use the existing bridge for vehicular traffic would not address the geometric deficiencies of the bridge and the safety issues caused by them.

- Building a parallel bridge immediately adjacent to the existing bridge would not be feasible nor prudent as alignment options in this area which must avoid crossing over the existing railroad bridges and maintain a 100-foot spacing from the ends of each railroad bridge.
- A two-lane facility provides adequate capacity for future forecasted vehicular traffic volumes at this location. The added capacity provided by a couplet is not warranted.
- The existing bridge's 630ft clear span, if left in place, would also present an unreasonable impediment to river navigation and have a substantial impact upon fleeting operations as compared to a situation without two bridges in such close proximity.

Weighing all of these factors together: additional right-of-way and construction cost, ongoing cost of maintaining two facilities, the necessity to include costly repair and maintenance of the existing bridge, it is our finding that avoidance build alternatives which included leaving the existing US 51 Bridge in place, while feasible, would not be prudent.

### New Location/Structure Alternatives

The New Structure Alternatives include building a new bridge alignment and typical sections that would meet the KYTC and IDOT Design requirements for safety of the traveling public. Three alignment options were evaluated, Alternative 1, Alternative 2, and Alternative 3 (Figure 3 and 4). Each alternative would involve the demolition of the existing US 51 bridge and the construction of a new 2 lane bridge that will meet the forecasted traffic volumes for the Project.

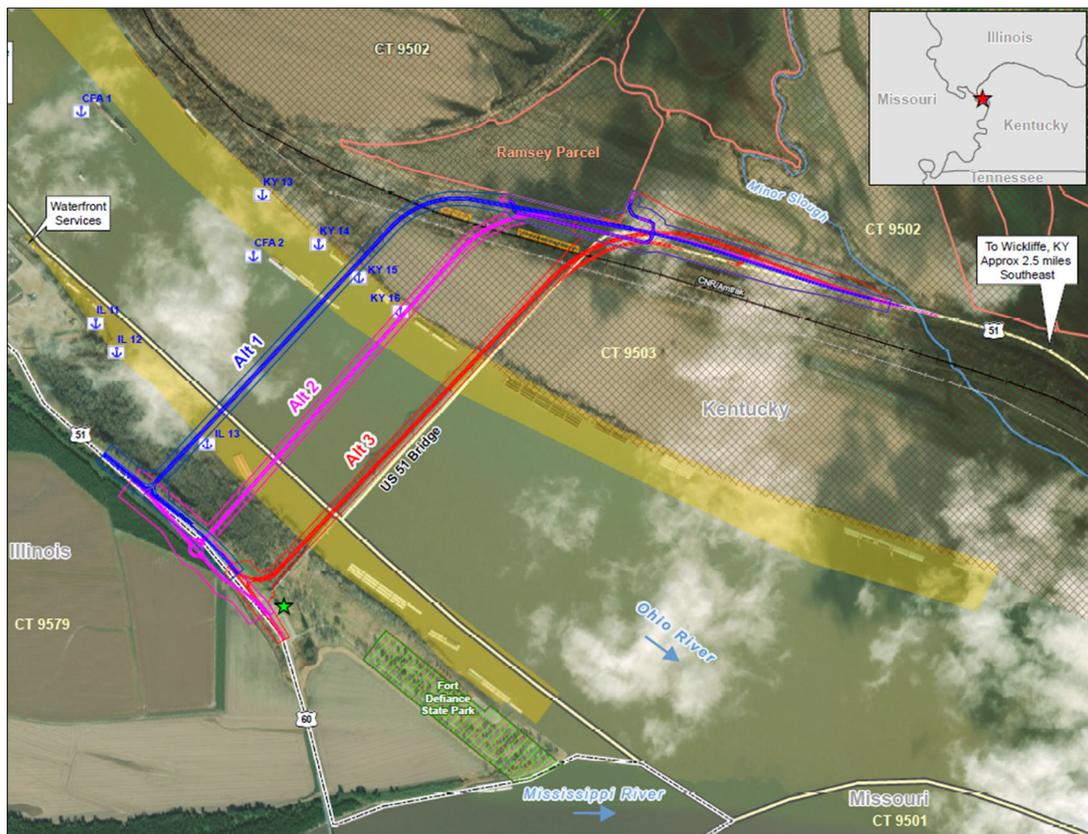


Figure 3. US 51 Bridge Project Alignment Alternatives 1, 2, and 3

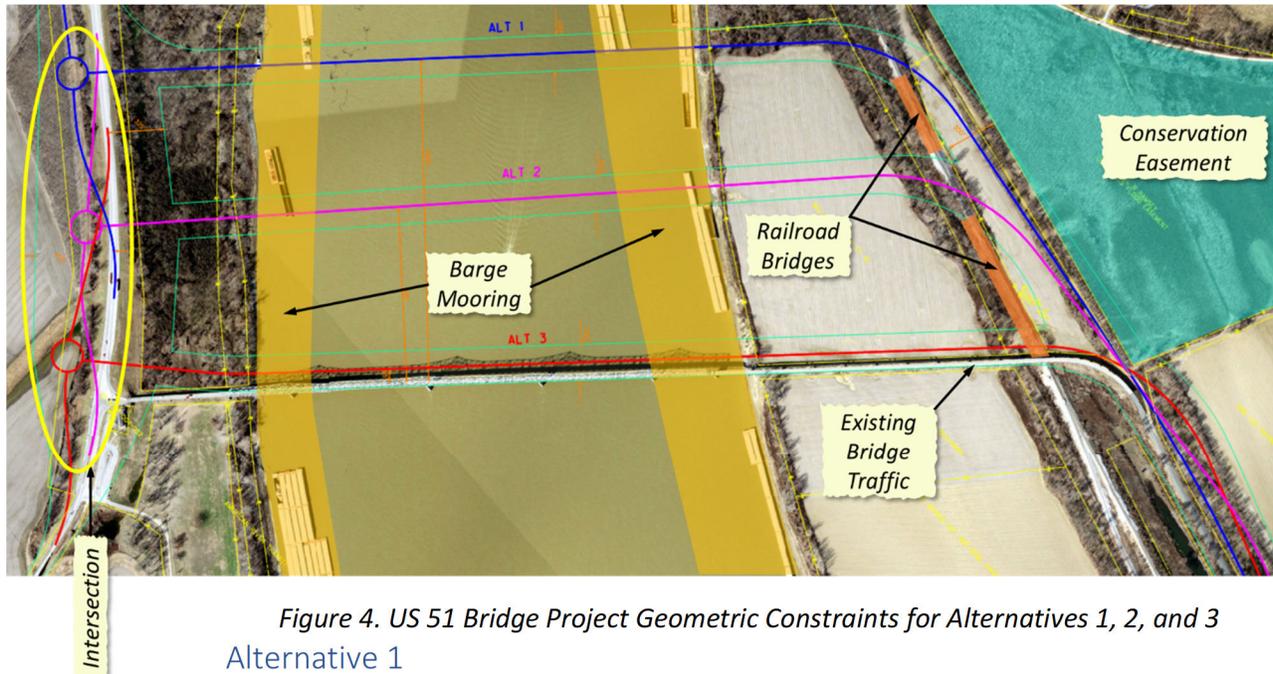


Figure 4. US 51 Bridge Project Geometric Constraints for Alternatives 1, 2, and 3  
Alternative 1

Alternative 1 is located approximately 1800 feet upstream of the existing bridge and is 2.03 miles long. The design speed is 55 mph until coming to the intersection on US 51 and US 60 / US 62. The proposed alignment pulls away from the existing roadway just past Minor Slough Bridge, holding the same elevation as the existing roadway. It threads the needle between the USDA parcel and the existing bridge before curving to cross the railroad over 100' west of the railroad bridge. It then continues across the Ohio River at 90°. The profile provides 23 feet of clearance above the railroad and 60 feet above the High-Water Mark across the 800' minimum required main span. A max 4.4% grade is used to tie back to US 60 / US 62. Alternative 1 was the least preferred alternative during the navigation simulations and had the most significant impacts to the fleeting and mooring operations. Alternative 1 also requires the longest approach crossing to the river and therefore has the highest cost of the alternatives.

### Alternative 2

Alternative 2 (Purple) - Alternative 2 is located approximately 1,000 feet upstream of the existing bridge and is 1.94 miles long. The design speed is 55 mph until coming to the intersection on US 51 and US 60 / US 62. The proposed alignment also pulls away from the existing roadway just past Minor Slough Bridge, and again holds the same elevation as the existing roadway. It threads the needle between the USDA parcel and the existing bridge before curving through the River. Alt 2 crosses the railroad in the middle of both railroad bridges – approximately 300 feet in both directions. It then continues across the Ohio River at 90°. The profile is much like Alt 1, providing 23 feet of clearance above the railroad and 60 feet above the High-Water Mark across the 800' minimum required main span. A max 4.0% grade is used to tie back to US 60 / US 62.

Alternative 2 is the least expensive option and was shown to be preferred during the Seamen's Church Institute navigation simulation and the Citizen's Advisory / Environmental Justice Group. Alternative 2 includes impacts to local mooring and fleeting operations which will need to be mitigated. This alternative has minimal impact to the human and natural environment. As it is constructed away from the existing facilities, it has minimal impact to maintenance of traffic using the existing bridge. Alternative 2 is the preferred alternative, best satisfying the engineering needs, minimizing the environmental impacts, and best satisfying the needs of the public as documented in public comments.

### Alternative 3

Alternative 3 (Red) - Alternative 3 crosses the river approximately 85 feet upstream of the existing bridge and is 1.88 miles long. The design speed is 55 mph until coming to the intersection on US 51 and US 60 / US 62. Once again, the proposed alignment pulls away from the existing roadway just past Minor Slough Bridge and again holds the same elevation as the existing roadway. To have a 55-mph curve, the alignment must swing wider, away from the existing roadway. Because of the railroad requirement to maintain 100 feet away from the bridge, the alignment crossed the existing bridge. To minimize bridge closings, a temporary bridge would need to be constructed. This would still require at least a week closure to tie the temporary bridge in. From there, the alignment continues across the Ohio River at 90°. The profile is much like Alt 1 and Alt 2, providing 23 feet of clearance above the railroad and 60 feet above the High-Water Mark across the 800' minimum required main span. A max 4.0% grade is used to tie back to US 60 / US 62. The added risks due to the temporary bridge construction, and re-alignment to avoid impacting the railroad increased both risk and cost of construction favoring the selection of Alternative 2.

### Purpose and Need Evaluation of Alternatives

An alternative comparison was conducted among the five alternatives. The tables below demonstrate how the No-Build and Rehabilitation Alternatives do not address the bridge deficiencies, the safety issues on the bridge and its approaches, and therefore do not provide a reliable cross river connection.

Table 1. US 51 Bridge Project Alternative Purpose and Need Evaluation for Bridge Deficiencies

Impact Categories	No Build	Rehabilitation	Alternative 1	Alternative 2	Alternative 3
<b>Improve Bridge Deficiencies</b>					
Improves bridge service life	No Improvement	Some Improvement	Most Improvement	Most Improvement	Most Improvement
Improves bridge condition rating	No Improvement	Some Improvement	Most Improvement	Most Improvement	Most Improvement
Provides sufficient roadway width to divert traffic during crashes or bridge maintenance	No	No	Yes	Yes	Yes
Improves functional operation of bridge	No Improvement	No Improvement	Yes	Yes	Yes
Meets FHWA seismic guidance	No	Improved	Yes	Yes	Yes
Meets current load standards	No	Yes	Yes	Yes	Yes

Table 2. US 51 Bridge Project Alternative Purpose and Need Evaluation for Safety Issues

Impact Categories	No Build	Rehabilitation	Alternative 1	Alternative 2	Alternative 3
<b>Address Existing Safety Issues on the Bridge and Approaches</b>					
Improves Bridge Safety – Addresses narrow lanes.	No	No	Yes	Yes	Yes
Addresses width of bridge approach roadways	No	No	Yes	Yes	Yes
Addresses high crash locations	No	No	Yes	Yes	Yes
Improves Entrance/Intersection Safety	No	No	Yes	Yes	Yes
Improves headlight sight distance	No	No	Yes	Yes	Yes

Table 3. US 51 Bridge Project Alternative Purpose and Need Evaluation for Cross-River Connectivity

Impact Categories	No Build	Rehabilitation	Alternative 1	Alternative 2	Alternative 3
<b>Improve/Maintain a Cross-River Link Between Cairo and Wickliffe</b>					
Duration of bridge closure	Some	Worst	None	None	Some
Minimizes travel time and disruption (Wickliffe to Cairo) during construction	Some	No	Yes	Yes	No
Minimizes closures due to maintenance activities after construction	No	Some	Yes	Yes	Yes
Improves connectivity for local traffic demand	No	Some	Yes	Yes	Yes
Addresses frequency of approach roadway closures due to flooding	No	No	Yes	Yes	Yes

## Findings

The No-Build and Rehabilitation do not meet the purpose and need of the Project and therefore, were not chosen to move forward. Additionally, they were determined not to be feasible nor prudent due to the reasons listed above. While a New Location Alternative Without Demolition of the Existing Bridge would meet the purpose and need of the project, it was determined not reasonable or prudent due to construction cost, the ongoing cost of maintaining two facilities, the necessity to include costly repair and maintenance of the existing bridge and the impacts upon navigation and fleeting operations.

All of the New Structures Alternatives, Alternative 1, Alternative 2, and Alternative 3, meet the purpose and the need, however, all would have an adverse effect upon the NRHP and Section 4(f) resource, the US 51 Bridge (Cairo Ohio River Bridge). Avoidance and minimization measures were not possible in order to address the existing bridge geometric deficiencies, safety concerns, and current design standards. Therefore, there are no feasible and prudent alternatives to using the Section 4(f) resource.

## Coordination

Coordination activities conducted during the development of the Categorical Exclusion for the US 51 Bridge Project are summarized within that document and detailed information contained within its appendices. This includes coordination conducted with the Kentucky Heritage Council (also referred to as KY SHPO) and Illinois State Historic Preservation Officer (SHPO), along with other consulting parties, as part of the Section 106 process.

## Mitigation and Minimization

The New Structure Alternatives will remove the existing Section 4(f) resource and build a new bridge; therefore, mitigation will be required. These measures will include: advertising and marketing documents making the bridge available for alternative use, funding of alternative mitigation, virtual modeling, and the drafting of a Section 106 MOA outlining measures to minimize harm.

### Marketing

In consultation with the SHPO, the KYTC will prepare a marketing plan for the Project which will include the following elements:

- A Marketing Brochure providing information about the bridge, including but not limited to:
  - Photographs of the bridge
  - A bridge location map
  - Summary of the bridge's historic significance
  - Information on any costs to the recipient
  - Information on any funds available to assist the recipient
  - Notification that the recipient will be required to maintain the bridge or rehabilitate it as needed in accordance with the recommended approaches in The Secretary of Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (US Department of Interior, National Park Service, 1983)
- A distribution list of potential recipients
- An advertising plan and schedule
  - Advertised in at least one statewide newspaper and one local newspaper
- A schedule for receiving and reviewing offers

The KYTC and SHPO will review all responses to the marketing plan to determine that an acceptable proposal has been received. If an acceptable proposal has been received, KYTC shall accept the offer. The selected recipient must agree to accept delivery of the bridge within a period of time to be established by the KYTC and SHPO at the time of selection in order for the offer to remain valid. Any delays in acceptance of the bridge must be approved in advance by the KYTC

and SHPO.

If there are no responses to the marketing announcement or if there are no acceptable found within the allotted time period, the SHPO and KYTC will consult and determine if further mitigation measures, such as salvaging parts or items of architectural significance, should be considered. If it is determined no further mitigation measures are warranted, then the bridge may be demolished.

#### Alternative Mitigation

Provide up to \$150,000 to aid in the rehabilitation of a historic bridge to be selected at a later date via discussion between KYTC, FHWA, the SHPO, and identified Consulting Parties. This dollar amount will be reduced by the amount necessary to complete the stipulations below.

KYTC will retain a consultant to complete State Level Documentation of the Cairo Ohio River Bridge as follows:

- The Cairo Bridge will be documented as follows by an SOI-qualified Architectural Historian or Historian (Preservation Professional). One bound copy of the entire State Level Documentation package will be submitted to the SHPO for review and, upon acceptance, an additional bound copy of the entire package shall be provided to a local agency, archive, university, or preservation organization. The SHPO will not be responsible for delivering this additional copy to the local repository. In addition, a digital version of the State Level Documentation package will be made available online on a web page hosted by KYTC. The State Level Documentation package shall include the following required components:
  - A Kentucky Historic Resources Individual Survey Form (KHC survey form) or a Group Survey Form (KHC group form) shall be completed or updated as applicable. To avoid duplicate numbering and for guidance on which KHC survey form is appropriate, the KHC Survey Coordinator should be contacted in advance. The completed KHC survey form should be included with but separate from the main documentation package, printed in color, and stapled in the top left corner.
  - A Historic context, providing a synthesis of archival research and current information, will be written for inclusion in the documentation package as well as the "Historical Information" section of the KHC survey form. Archival research, thorough but less intensive than a stand-alone historic context, will be conducted to gather specific information about the history and significance of the bridge as well as the history of the area or adjacent neighborhoods. This context should include general location maps as well as site-specific exhibits illustrating the bridge and surrounding structures, as appropriate.
  - Digital photographs showing all exterior elevations as well as Close-ups of significant, character-defining features (i.e. portal views, barrel shots, interior web, upper and lower chord connections, hanger and floor beams, abutments, piers, etc.), surrounding environmental setting, views from each approach, and other significant, character-defining details. Acceptable image resolution is no less than 6 megapixels (2000 x 3000 pixel image) or greater, with images in Tag Image File (TIFF) or RAW format. Digital images should be included on a smart drive and an archive-quality DVD-R submitted with the documentation package. A selection of photographs printed on archival quality, acid-free paper at a minimum size of 5" x 7" (maximum size of 8" x 10") will be provided. Images should be presented in the documentation package in archival sleeves. Using an archival photo labeling pen, each image will be labeled as appropriate with resource names and addresses, KHC survey number, direction of view, dimensions, names of the field workers and drawing preparer, the preparer's organization, date of the drawing, scale bar, north arrow for plans, and construction detail notes.
  - Original Construction Plans, along with any illustrations of architectural details or any other field plans or records maintained for the bridge, shall be provided in pdf and hard copy formats. If existing drawings/plans are not available, they will be prepared by the Preservation Professional in an acceptable format (hand drawn, 3-dimensional laser scanning or photogrammetry, or Computer Aided Design) at a

## Section 4(f) Evaluation- Supporting Documentation for Programmatic 4(f)

preferred scale of 1/4" per 1'-0", though larger structures may be drawn at smaller scales. The drawings label construction details, alterations, and additions. If applicable, drawings of bridge details shall be created at a scale of 1/2" per 1'-0". Each drawing/image file shall be labeled as described above and accompanied by a written description of the bridge as well as an explanation of construction details. Hand drawings will be done in pencil on archival- quality, acid-free vellum. For formats such as 3-dimensional laser scanning/photogrammetry or Computer-Aided Design/CAD, native digital plans shall be presented in .pdf format along with a hard copy set of plans, and all original data files shall be included on the smart drive and archival quality DVD- R.

- The bridge plates on the Cairo Bridge will be removed from the bridge and placed with a local entity, to be determined, for display. In addition, the plates will be scanned and the resulting 3D imagery will be available online on the web page hosted by KYTC along with the digital version of the State Level Documentation package.
- In the event that no acceptable bridge can be identified to receive the remediation funds referenced above within two years of the execution of the MOA, information obtained from the State Level Documentation through use of the original 2D as-built plans, the following shall be substituted at a comparable cost.
  - Virtual 3D Model using a combination of images captured via LiDAR and photogrammetry and scans of the original as-built plans, a virtual 3D model of the Cairo bridge will be developed with embedded links to plan sections or photographs showing details of specific areas or elements of the bridge.
  - StoryMaps will be developed that will incorporate the historic context for the bridge, the 3D model, and GIS data and satellite imagery of the bridge and surrounding areas.
    - The virtual 3D model and the StoryMaps will be linked on the KYTC DEA web page and accessible to the public.

The SHPO shall be advised and consulted during the process, and the completed documentation for the bridge will be submitted to the SHPO for review and acceptance.

## Public Notice Historic Bridge Offered for Relocation



In Fiscal Year **2028**, the Federal Highway Administration (FHWA) and the Kentucky Transportation Cabinet (KYTC) will initiate construction of a replacement bridge on US 51 over the Ohio River between Wickliffe and Ballard County, KY and Cairo, IL. The existing US 51 Bridge consists of 32 spans with 4 distinct bridge types.

### The Illinois Approach:

- Spans 1-5 consist of simply supported two-girder spans measuring 60-90 feet in length.
- Span 6 is a simple span deck truss measuring 181 feet in length.

### Main Truss:

- Spans 7-11 are a variable depth cantilever truss with cantilever spans at spans 9 and 10 and a drop-in span at span 8.
- The span lengths for the main river crossing are as follows: 365 feet, 800 feet (main navigation channel), 650 feet, 650 feet, and 365 feet.

### Kentucky Approach:

- Spans 12-20 consist of simply supported deck truss spans measuring 181-182 feet in length.
- Spans 21, 23 and 25 are simply supported two-girder spans measuring 48-90 feet with cantilevered ends to support the shallow multi-girder drop-in Spans 22 and 24 which measure 90 feet each. Spans 26-32 are simply supported two-girder spans measuring approximately 60 feet in length each. It has been determined eligible for the National Register of Historic Places by the Kentucky State Historic Preservation Officer (SHPO).

In an effort to preserve this historic bridge, the FHWA and the KYTC in cooperation with the State Historic Preservation Office (SHPO) are seeking to locate a city, county or state government, SHPO-approved historic preservation organization or SHPO-approved individual entity, interested in having this bridge moved to a new site in Kentucky for preservation and reuse. If relocated to an appropriate setting, the bridge may still be eligible for the National Register.

If a recipient agency, organization or individual is found, the FHWA and KYTC will pay all expenses associated with match marking, disassembly, transportation to the new site, and off-loading of the bridge in the amount of which shall not exceed the estimated cost for demolition.

The recipient agency, organization or individual will be responsible for all costs associated with site preparation and re-assembly of the bridge. The recipient will also be responsible for any structural work required for the proposed use (e.g. new deck or replacement of members), liability and long-term maintenance, and any required permits. Any additional costs that the project might bear will be determined on a case-by-case basis. The recipient will keep intact the historic fabric of the bridge, making no alterations or modifications to it without the written consent of the SHPO. The bridge will be utilized for purposes consistent with its historic character and obtain SHPO approval prior to any alteration, modification or construction.

Before submitting a Letter of Interest and Proposal, any interested agency, organization or individuals are encouraged to

Section 4(f) Evaluation- Supporting Documentation for Programmatic 4(f)

contact the KYTC, Lexington District 7 Office in order to obtain a bridge "Marketing Brochure" and bridge condition information. Bridge records and inspection reports are available and can be examined by appointment.

Letters of Interest and Proposals for this bridge will be accepted until sixty days after the date of publication. If no recipient is located or selected, the bridge will be documented to Historic American Engineering Record specifications and demolished as a part of the bridge replacement project. For more information, or to submit a written proposal, you may contact the following listed officer:

Brad Whybark Environmental Coordinator  
Kentucky Transportation Cabinet Highway District 1  
5501 Kentucky Dam Road  
Paducah, KY 42003

## MARKETING BROCHURE

### I. DESCRIPTION OF BRIDGE:

In Fiscal Year 2028, the Federal Highway Administration (FHWA) and the Kentucky Transportation Cabinet (KYTC) will initiate construction of a replacement bridge on US 51 over the Ohio River between Wickliffe and Ballard County, KY and Cairo, IL. The US 51 Bridge consists of 32 spans with 4 distinct bridge types.

The Illinois Approach:

- Spans 1-5 consist of simply supported two-girder spans measuring 60-90 feet in length.
- Span 6 is a simple span deck truss measuring 181 feet in length.

Main Truss:

- Spans 7-11 are a variable depth cantilever truss with cantilever spans at spans 9 and 10 and a drop-in span at span 8.
- The span lengths for the main river crossing are as follows: 365 feet, 800 feet (main navigation channel), 650 feet, 650 feet, and 365 feet.

Kentucky Approach:

- Spans 12-20 consist of simply supported deck truss spans measuring 181-182 feet in length.
- Spans 21, 23 and 25 are simply supported two-girder spans measuring 48-90 feet with cantilevered ends to support the shallow multi-girder drop-in Spans 22 and 24 which measure 90 feet each. Spans 26-32 are simply supported two-girder spans measuring approximately 60 feet in length each.

It has been determined eligible for the National Register of Historic Places by the Kentucky State Historic Preservation Officer (SHPO). A complete description is available at the Department of Highways, District 1 Office in Paducah.

### II. PRESERVATION OBLIGATIONS:

The Commonwealth of Kentucky shall:

KYTC agrees to pay the costs of relocating the bridge in the amount of which shall not exceed the estimated cost for demolition, associated with the relocation activities such as:

1. Match-mark and disassemble the bridge; and
2. Transport the disassembled bridge to the location of the Recipient; and
3. Off-load and stockpile the bridge at the new site.

If the bridge is relocated, the Recipient shall:

1. Reconstruct the bridge as it was originally; and
2. Complete the reconstruction within one year of receipt of all the elements of the disassembled bridge; and
3. Post a performance bond from a surety acceptable to the Commonwealth of Kentucky; and
4. Allow the Kentucky Heritage Council staff to make an archaeological assessment of the site where the bridge to be reconstructed; and
5. Maintain the relocated bridge for 20 years according to the Secretary of Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (US Department of Interior, National Park Service, 1983); and
6. Allow public visitation to the bridge; and
7. Not object to the bridge being listed on the National Register of Historic Places; and
8. Pay all costs associated with reconstruction of the bridge; and
9. Advise the Secretary of Transportation when the bridge has been reconstructed.

### III. PROCEDURES FOR SUBMITTING PROPOSALS:

Interested governmental agencies, SHPO-approved private individuals, and SHPO-approved private organizations should submit, in writing, a proposal for preservation and reuse of the bridge. The proposal should be as complete as possible and should identify and describe the intended purpose of the bridge, the new site location, and source

Section 4(f) Evaluation- Supporting Documentation for Programmatic 4(f)

of funding for the bridge. Proposals must be submitted within the prescribe time period to:

Brad Whybark Environmental Coordinator  
Kentucky Transportation Cabinet Highway District 1  
5501 Kentucky Dam Road, Paducah, KY 42003



COMMONWEALTH OF KENTUCKY  
TRANSPORTATION CABINET

transportation.ky.gov

Andy Beshear  
GOVERNOR

Jim Gray  
SECRETARY

August 24, 2021

Mr. John Ballantyne  
Environment, Planning and System Performance – Team Leader  
Federal Highway Administration  
John C. Watts Federal Building  
330 West Broadway  
Frankfort, KY 40601

SUBJECT: Memorandum of Agreement  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County, Kentucky  
KYTC Item No. 1-1140

Dear Mr. Ballantyne,

Enclosed with this letter is one copy of the Memorandum of Agreement for the proposed replacement of the Cairo Ohio River Bridge in Ballard County. The Cairo Ohio River Bridge has been determined to be eligible for inclusion in the National Register of Historic Places (National Register). However, the FHWA, in consultation with the SHPO, has determined that the adverse effects of the roadway project cannot be avoided. This MOA outlines the stipulations that shall be implemented to mitigate adverse effects to the historic property.

We respectfully request your agency approval of the MOA. If you have any questions regarding this request, please contact myself or Connor Ouellette for assistance at (859) 967-8221 or [connor.ouellette@ky.gov](mailto:connor.ouellette@ky.gov)

Sincerely,

*Danny Peake*

Danny Peake, Director  
KYTC Division of Environmental Analysis

cc: Stephanie Lechert (DEA),  
Brad Whybark (District 1),  
Connor Ouellette (DEA),  
Dan Davis (DEA);  
Project File

**KENTUCKY TRANSPORTATION CABINET  
MEMORANDUM OF AGREEMENT  
PURSUANT TO 36 CFR PART 800.6  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County, Kentucky  
Kentucky Transportation Cabinet Item No. 1-1140**

**Signatories**

Federal Highway Administration - Kentucky Division  
John C. Watts Federal Building  
330 W. Broadway  
Frankfort, KY 40601

Kentucky State Historic Preservation Officer  
410 High Street  
Frankfort, Kentucky 40601

**Invited Signatories**

Kentucky Transportation Cabinet  
200 Mero Street  
Frankfort, Kentucky 40622

WHEREAS, the Federal Highway Administration (FHWA) has determined that the Cairo Ohio River Bridge replacement over the Ohio River will have an adverse effect on the Cairo Ohio River Bridge, a property determined to be eligible for inclusion in the National Register of Historic Places (National Register); and

WHEREAS, the FHWA has consulted with the Kentucky State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (54 U.S.C. 306108), and notified the Advisory Council on Historic Preservation (Council) of the adverse effect finding pursuant to 36 CFR § 800.6(a)(1); and

WHEREAS, the FHWA, in consultation with the SHPO, has determined that the Undertaking's adverse effects cannot be avoided, and that implementation of the stipulations herein will mitigate the Undertaking's adverse effects on the historic property; and

WHEREAS, the Kentucky Transportation Cabinet (KYTC) has participated in the consultation and has been invited to concur in the MOA;

NOW, THEREFORE, the FHWA and the SHPO agree that if the Undertaking proceeds, the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on historic properties, and further agree that these stipulations shall govern the Undertaking and all of its parts until this MOA expires or is terminated or all stipulations have been implemented.

**STIPULATIONS:**

The FHWA shall ensure that the following stipulations are carried out:

**I. Measures to Avoid, Minimize, or Mitigate Adverse Effects****A. Marketing**

(1) In consultation with the SHPO, the KYTC shall prepare a marketing plan for the Project which shall include the following elements:

(i) A Marketing Brochure providing information about the bridge, including but not limited to:

- a. Photographs of the bridge
- b. A bridge location map
- c. Summary of the bridge's historic significance
- d. Information on any costs to the recipient;
- e. Information on any funds available to assist the recipient;
- f. Notification that the recipient will be required to maintain the bridge or

rehabilitate it as needed in accordance with the recommended approaches in The Secretary of Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (US Department of Interior, National Park Service, 1983);  
and

(ii) A distribution list of potential recipients;

(iii) An advertising plan and schedule. The Project shall be advertised in at least one statewide newspaper and one local newspaper;

(iv) A schedule for receiving and reviewing offers

(2) Upon the SHPO's agreement with the marketing plan, the KYTC shall implement the plan.

(3) The KYTC and SHPO shall review all responses to the marketing plan. If the SHPO and KYTC determine that an acceptable proposal has been received, the KYTC shall accept the offer.

(4) The selected recipient must agree to accept delivery of the bridge within a period of time to be established by the KYTC and SHPO at the time of selection in order for the offer to remain valid. Any delays in acceptance of the bridge must be approved in advance by the KYTC and SHPO.

(5) If there are no responses to the marketing announcement or if no party acceptable to the SHPO and KYTC responds to the marketing announcement within the allotted time period, the SHPO and KYTC will consult and determine if further mitigation measures such as salvaging it for parts or items of architectural significance should be considered. If the SHPO and KYTC determine no further mitigation measures are warranted, then the bridge may be demolished.

**B. Alternative Mitigation**

(1) Provide up to \$150,000 to aid in the rehabilitation of a historic bridge to be selected at a later date via discussion between KYTC, FHWA, the SHPO, and identified Consulting Parties. Note that this dollar amount shall be reduced by the amount necessary to complete Stipulation C, Item 1, Sections (i-iv), below.

**C. Documentation**

KYTC will retain a consultant to complete State Level Documentation of the Cairo Ohio River Bridge as follows:

- (1) The Cairo Bridge will be documented as follows by an SOI-qualified Architectural Historian or Historian (Preservation Professional). One bound copy of the entire State Level Documentation package will be submitted to the SHPO for review and, upon acceptance, an additional bound copy of the entire package shall be provided to a local agency, archive, university, or preservation organization. Please note that the SHPO will not be responsible for delivering this additional copy to the local repository. In addition, a digital version of the State Level Documentation package will be made available online on a web page hosted by KYTC. The State Level Documentation package shall include the following required components:
- (i.) **A Kentucky Historic Resources Individual Survey Form (KHC survey form)** or a Group Survey Form (KHC group form) shall be completed or updated as applicable. To avoid duplicate numbering and for guidance on which KHC survey form is appropriate, the KHC Survey Coordinator should be contacted in advance. The completed KHC survey form should be included with but separate from the main documentation package, printed in color, and stapled in the top left corner.
  - (ii.) **A Historic context**, providing a synthesis of archival research and current information, shall be written for inclusion in the documentation package as well as the "Historical Information" section of the KHC survey form. Archival research, thorough but less intensive than a stand-alone historic context, shall be conducted to gather specific information about the history and significance of the bridge as well as the history of the area or adjacent neighborhoods. This context shall include general location maps as well as site-specific exhibits illustrating the bridge and surrounding structures, as appropriate.
  - (iii.) **Digital photographs** showing all exterior elevations as well as close-ups of significant, character-defining features (i.e. portal views, barrel shots, interior web, upper and lower chord connections, hanger and floor beams, abutments, piers, etc.), surrounding environmental setting, views from each approach, and other significant, character-defining details. Acceptable image resolution shall be no less than 6 megapixels (2000 x 3000 pixel image) or greater, with images in Tag Image File (TIFF) or RAW format. Digital images should be included on a smart drive and an archive-quality DVD-R submitted with the documentation package. A selection of photographs shall be printed on archival quality, acid-free paper at a minimum size of 5" x 7" (maximum size of 8" x 10"). Images should be presented in the documentation package in archival sleeves. Using an archival photo labeling pen, each image shall be labeled as appropriate with resource names and address(es), KHC survey number, direction of view, dimensions, name(s) of the field worker and drawing preparer, the preparer's organization, date of the drawing, scale bar, north arrow for plans, and construction detail notes.
  - (iv.) **Original Construction Plans**, along with any illustrations of architectural details or any other field plans or records maintained for the bridge, shall be provided in .pdf and hard copy formats. If existing drawings/plans are not available, they shall be prepared by the Preservation Professional in an acceptable format (hand drawn, 3-dimensional laser scanning or photogrammetry, or Computer Aided Design) at a preferred scale of ¼" per 1'-0", though larger structures may be drawn at smaller scales. The drawings label construction details, alterations, and additions. If applicable, drawings of bridge details shall be created at a scale of ½" per 1'-0". Each drawing/image file shall be labeled as described above and shall be accompanied by a written description of the bridge as well as an explanation of construction details. Hand drawings shall be in pencil on archival-quality, acid-free vellum. For formats such as 3-dimensional laser scanning/photogrammetry or Computer-Aided Design/CAD, native digital plans shall be presented in .pdf format along with a hard copy set of plans, and all original data files shall be included on the smart drive and archival quality DVD-R.

- (2) The bridge plates on the Cairo Bridge will be removed from the bridge and placed with a local entity, to be determined, for display. In addition, the plates will be scanned and the resulting 3D imagery will be available online on a web page hosted by KYTC along with the digital version of the State Level Documentation package.
- (3) *In the event that no acceptable bridge can be identified under B above within two years of the execution of this MOA*, information obtained from the State Level Documentation, above, and with the use of the original 2D as-built plans, the following shall be substituted for the suggested alternative mitigation, at a comparable cost. The SHPO shall be advised and consulted during the process, and the completed documentation for the bridge will be submitted to the SHPO for review and acceptance.
- (i.) **Virtual 3D Model using a combination of images captured via LiDAR and photogrammetry** and scans of the original as-built plans, a virtual 3D model of the Cairo bridge will be developed with embedded links to plan sections or photographs showing details of specific areas or elements of the bridge.
  - (ii.) **StoryMaps** will be developed that will incorporate the historic context for the bridge, the 3D model in (v.), above, and GIS data and satellite imagery of the bridge and surrounding areas. The virtual 3D model and the StoryMaps will be linked on the KYTC DEA web page and accessible to the public.

### III. Professional Qualifications

All historic preservation work undertaken and completed pursuant to this MOA will be accomplished by or under the direct supervision of a preservation professional meeting the qualifications set forth in the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. KYTC, through consultation with the SHPO, shall assure that the preservation professional selected to complete the work has been approved for such work by the SHPO.

### IV. Resolution of Disagreements

Should the SHPO object within 30 days to any plans, specifications, and reports or other actions submitted or undertaken pursuant to this Memorandum of Agreement, the FHWA shall consult with the SHPO to resolve the objection. If the FHWA determines that the objection cannot be resolved, the FHWA shall request the further comments of the Advisory Council pursuant to 36 CFR 800.6(b). Any Advisory Council comment provided in response to such a request will be taken into account by the FHWA in accordance with 36 CFR 800.6(c)(2) with reference only to the subject of the dispute; all actions under this Memorandum of Agreement that are not the subjects of the dispute will remain unchanged.

### V. Duration

This MOA shall remain in effect for 5 years following its execution. If the Undertaking has not been completed and the terms of this MOA implemented within this time, the term shall be extended an additional year then, and each anniversary date thereafter, unless a signatory objects. Parties to the MOA have the right to terminate or cancel this Agreement at any time upon thirty (30) days written notice to the other parties.

EXECUTION of this MOA by the FHWA and the SHPO, its transmittal to the Council in accordance with 36 CFR §800.6(b)(1)(iv), and subsequent implementation of its terms, shall evidence, pursuant to 36 CFR §800.6(c), that this MOA is an agreement with the Council for purposes of Section 110(1) of the National Historic Preservation Act of 1966 (54 U.S.C. 306101), and shall further evidence that the FHWA has afforded the Council an opportunity to comment on the Undertaking and its effects on historic properties, and that the FHWA has taken into account the effects of the Undertaking on historic properties.

**SIGNATORIES:**

Federal Highway Administration

By: \_\_\_\_\_ Date: \_\_\_\_\_  
John D. Ballantyne, Program Delivery Team Leader

Kentucky State Historic Preservation Officer

By:  \_\_\_\_\_ Date: 8-23-21  
Craig Potts, State Historic Preservation Officer

INVITED SIGNATORY:  
Kentucky Transportation Cabinet

By:  \_\_\_\_\_ Date: 8/4/2021  
James P. Gray II, Secretary  
Kentucky Transportation Cabinet

APPROVED AS TO FORM AND LEGALITY, KENTUCKY TRANSPORTATION CABINET

By:  \_\_\_\_\_ Date: 8/2/2021  
Will Fogle  
Executive Director/General Counsel  
KYTC, Office of Legal Services

Memorandum of Agreement  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County  
KYTC Item No. 1-1140

APPROVED FOR THE  
ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: \_\_\_\_\_

Date: \_\_\_\_\_

Memorandum of Agreement  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County  
KYTC Item No. 1-1140

In accordance with 36 CFR § 800.6(c)(3), as a Consulting Party for the subject project, I have been invited to concur in the Memorandum of Agreement to resolve the adverse effects to historic properties and endorse the terms as stipulated therein.

CONCURRING PARTIES:

---

William H. Adams  
Deputy Commissioner, Kentucky Department of Parks

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Date

Memorandum of Agreement  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County  
KYTC Item No. 1-1140

In accordance with 36 CFR § 800.6(c)(3), as a Consulting Party for the subject project, I have been invited to concur in the Memorandum of Agreement to resolve the adverse effects to historic properties and endorse the terms as stipulated therein.

CONCURRING PARTIES:

\_\_\_\_\_  
Todd Cooper

\_\_\_\_\_  
Date

Memorandum of Agreement  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County  
KYTC Item No. 1-1140

In accordance with 36 CFR § 800.6(c)(3), as a Consulting Party for the subject project, I have been invited to concur in the Memorandum of Agreement to resolve the adverse effects to historic properties and endorse the terms as stipulated therein.

CONCURRING PARTIES:

\_\_\_\_\_  
Carla Hildebrand

\_\_\_\_\_  
Date

Memorandum of Agreement  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County  
KYTC Item No. 1-1140

In accordance with 36 CFR § 800.6(c)(3), as a Consulting Party for the subject project, I have been invited to concur in the Memorandum of Agreement to resolve the adverse effects to historic properties and endorse the terms as stipulated therein.

CONCURRING PARTIES:

\_\_\_\_\_  
Nathan Holth

\_\_\_\_\_  
Date

Memorandum of Agreement  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County  
KYTC Item No. 1-1140

In accordance with 36 CFR § 800.6(c)(3), as a Consulting Party for the subject project, I have been invited to concur in the Memorandum of Agreement to resolve the adverse effects to historic properties and endorse the terms as stipulated therein.

CONCURRING PARTIES:

\_\_\_\_\_  
Diane Hunter

\_\_\_\_\_  
Date

Memorandum of Agreement  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County  
KYTC Item No. 1-1140

In accordance with 36 CFR § 800.6(c)(3), as a Consulting Party for the subject project, I have been invited to concur in the Memorandum of Agreement to resolve the adverse effects to historic properties and endorse the terms as stipulated therein.

CONCURRING PARTIES:

\_\_\_\_\_  
Becky Martin

\_\_\_\_\_  
Date

Memorandum of Agreement  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County  
KYTC Item No. 1-1140

In accordance with 36 CFR § 800.6(c)(3), as a Consulting Party for the subject project, I have been invited to concur in the Memorandum of Agreement to resolve the adverse effects to historic properties and endorse the terms as stipulated therein.

CONCURRING PARTIES:

\_\_\_\_\_  
David Phillips

\_\_\_\_\_  
Date

Memorandum of Agreement  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County  
KYTC Item No. 1-1140

In accordance with 36 CFR § 800.6(c)(3), as a Consulting Party for the subject project, I have been invited to concur in the Memorandum of Agreement to resolve the adverse effects to historic properties and endorse the terms as stipulated therein.

CONCURRING PARTIES:

\_\_\_\_\_  
Thomas Simpson

\_\_\_\_\_  
Date

Memorandum of Agreement  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County  
KYTC Item No. 1-1140

In accordance with 36 CFR § 800.6(c)(3), as a Consulting Party for the subject project, I have been invited to concur in the Memorandum of Agreement to resolve the adverse effects to historic properties and endorse the terms as stipulated therein.

CONCURRING PARTIES:

\_\_\_\_\_  
Allen Tappan

\_\_\_\_\_  
Date

Memorandum of Agreement  
Cairo Ohio River Bridge Replacement over the Ohio River  
Ballard County  
KYTC Item No. 1-1140

In accordance with 36 CFR § 800.6(c)(3), as a Consulting Party for the subject project, I have been invited to concur in the Memorandum of Agreement to resolve the adverse effects to historic properties and endorse the terms as stipulated therein.

CONCURRING PARTIES:

\_\_\_\_\_  
Chalen Tatum

\_\_\_\_\_  
Date