



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

Kentucky Division

330 W. Broadway  
Frankfort, KY 40601

**FHWA-KY-SEIS-11-01-D**

**Louisville-Southern Indiana Ohio River Bridges Project**  
Jefferson County, Kentucky and Clark County, Indiana

**Supplemental Draft Environmental Impact Statement and Section 4(f) Evaluation**

Submitted Pursuant to 42 U.S.C. 4332(2)(c) and 49 U.S.C. 303

by the

U.S. Department of Transportation  
Federal Highway Administration (FHWA)

and

Kentucky Transportation Cabinet (KYTC)

and

Indiana Department of Transportation (INDOT)

Cooperating Agencies: U.S. Coast Guard, Eighth District and  
U.S. Army Corps of Engineers, Louisville District

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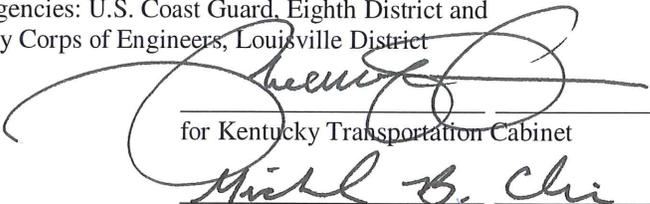
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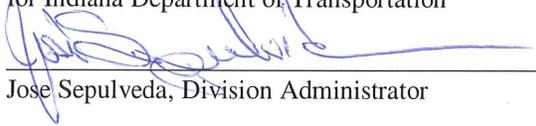
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On April 8, 2003 a Final Environmental Impact Statement (FEIS) was prepared for the Louisville – Southern Indiana Ohio River Bridges Project. This was followed by a Record of Decision on September 6, 2003. The preferred alternative as described in the FEIS provides the improvement of cross-river mobility between Jefferson County, Kentucky, and Clark County, Indiana. The preferred alternative is a two bridges/highway alternative. It provides for a new Ohio River Bridge between Louisville, KY and Jeffersonville, IN immediately upstream and adjacent to the existing I-65 and for a second new Ohio River bridge, approximately 8 miles upstream of the existing I-65 crossing, which provides connections in the eastern part of Jefferson and Clark Counties between KY 841 (Gene Snyder Freeway) in Kentucky and SR 265 in Indiana. The preferred alternate also provides for the reconstruction of the Kennedy Interchange (Interstates I-65, I-64, and I-71) near Downtown Louisville and the approaches in Jeffersonville to the new Ohio River bridge.

On February 15, 2011, a Notice was placed in the *Federal Register* establishing that a Supplemental Environmental Impact Statement (SEIS) would be prepared for the project. This Supplemental DEIS provides a discussion of new circumstances or relevant information to environmental concerns that have risen since completion of the FEIS. This document will discuss modifications that have occurred in the basic design, effects associated with consideration of tolling as a financing mechanism, and environmental elements that might have changed because of the passage of time since the completion of the original EIS.

This Supplemental DEIS is expected to be published in the *Federal Register* on Friday, November 25, 2011. Comments on this Supplemental DEIS are due by January 9, 2012. Comments are to be sent to the individuals listed above.



## SUMMARY

### S.1 Proposed Action

This Supplemental Draft Environmental Impact Statement (SDEIS) has been prepared by the Federal Highway Administration (FHWA), the Indiana Department of Transportation (INDOT), and the Kentucky Transportation Cabinet (KYTC) for the Louisville-Southern Indiana Ohio River Bridges (LSIORB) Project. The SDEIS responds to the National Environmental Policy Act (NEPA) regulations issued by the Council on Environmental Quality (CEQ) regarding documenting “substantial changes in the proposed action that are relevant to environmental concerns.” [40 CFR 1502.9(c)(1)(i)].

The SDEIS format generally follows the section-heading outline used in the 2003 Final Environmental Impact Statement (FEIS). Changes to the project and/or conditions in the project area that have occurred since the FEIS are described in their respective sections; and where the information presented in the 2003 FEIS remains valid, such is noted. While the SDEIS builds upon and incorporates work already completed as part of the project development process, it does not reproduce in full the voluminous FEIS and Record of Decision (ROD) documentation. Instead, it incorporates information from those documents by reference, where applicable. The FEIS and ROD are available for review at the Community Transportation Solutions’ (CTS) office located at the Forum Office Park III, 305 North Hurstbourne Parkway, Suite 100, Louisville, Kentucky. These documents can also be reviewed on the project website: [www.kyinbridges.com](http://www.kyinbridges.com).

This SDEIS examines the impacts of proposed modifications to the “Two Bridges/Highway Alternative” (comprised of Alternatives A-15 and C-1) identified as the Preferred Alternative in the FEIS/Section 4(f) Evaluation completed on April 8, 2003; and as the Selected Alternative in the ROD approved on September 6, 2003. The SDEIS has been prepared to evaluate the impacts of tolling to assist in funding the project, which was determined necessary through the Metropolitan Transportation Planning process; to evaluate cost-saving modifications in the design of the Selected Alternative to minimize the amount of toll based revenue needed; and to update information and data where necessary to address changes to the project and the affected environment since the approval of the 2003 FEIS/ROD.

The major components of the Selected Alternative from the ROD included:

- A new bridge across the Ohio River connecting KY 841/I-265 (Gene Snyder Freeway) in northeastern Jefferson County, Kentucky, with S.R. 265 at S.R. 62 in southeastern Clark County, Indiana (Alternative A-15).
- A new interstate bridge parallel to the Kennedy Bridge (Alternative C-1) as well as the reconstruction of the Kennedy Interchange to the south.
- Non-motorized facility enhancements (17-foot-wide pedestrian and bicycle paths on both bridges), expanded employer-based trip reduction programs, expanded Intelligent

Transportation System (ITS) applications, expanded incident management programs, and enhanced cross-river bus service, as well as numerous mitigation commitments.

The proposed cost saving modifications to the Selected Alternative include:

- Reconstructing the Kennedy Interchange within its existing location instead of relocating it to the south.
- Reducing the East End Bridge, roadway, and tunnel from six to four lanes.
- Eliminating the pedestrian/bike path from the Downtown Bridge because a similar facility will be provided on the nearby Big Four Bridge as a separate project.

Since the issuance of the ROD, INDOT and KYTC divided the Selected Alternative into the following six Design Sections (Figure S.1-1):

- Section 1 – Reconstruction of the Kennedy Interchange to the South. (Also referred to as the “Kennedy Interchange Section.”)
- Section 2 – New I-65 Northbound Bridge over the Ohio River. (Includes the reconfiguration of the existing seven-lane Kennedy Bridge to a six-lane bridge to accommodate I-65 southbound traffic.) (Also referred to as the “Downtown Bridge Section.”)
- Section 3 – I-65 in Indiana north of the Kennedy Bridge. (Also referred to as the “Downtown Indiana Approach Section.”)
- Section 4 – Extension of I-265 in Kentucky from I-71 to the new Ohio River East End Bridge. (Also referred to as the “East End Kentucky Approach Section.”)
- Section 5 – New Ohio River Bridge on the I-265 extension. (Also referred to as the “East End Bridge Section.”)
- Section 6 – Extension of S.R. 265 in Indiana from the S.R. 62 interchange to the new Ohio River East End Bridge. (Also referred to as the “East End Indiana Approach Section.”)

Right-of-way acquisition within these Design Sections began in 2010 but was put on hold as a result of the proposed design modifications. Some right-of-way acquisition did occur prior to 2010 but was limited to either hardship cases or advanced acquisitions. Only a few properties have been acquired in the Louisville and Jeffersonville downtown areas. The majority of properties have been acquired on the East End of the project in both Kentucky and Indiana.

The purpose and need for the project as identified in the 2003 FEIS/ROD was reevaluated as part of the SEIS process and documented in a *Purpose and Need White Paper* (see Appendix A.1). A draft version of this document was distributed to resource agencies for comments and feedback on June 3, 2011, and to the public during the public information meetings held June 27<sup>th</sup> and 28<sup>th</sup>. The draft document was also provided on the project website. Based upon feedback as well as the analysis from the draft document, it was determined that the purpose and need, as defined in the 2003 FEIS/ROD, remains valid.



The following text identifies the purpose and need as presented in Chapter 2 of the 2003 FEIS/ROD.

*The purpose of this proposed action is to improve cross-river mobility between Jefferson County, Kentucky, and Clark County, Indiana. Several specific factors demonstrate the need for action, including:*

- *Inefficient mobility for existing and planned growth in population and employment in the downtown area and in eastern Jefferson and southeastern Clark Counties;*
- *Traffic congestion on the Kennedy Bridge and within the Kennedy Interchange;*
- *Traffic safety problems within the Kennedy Interchange and on the Kennedy Bridge and its approach roadways;*

- *Inadequate cross-river transportation system linkage and freeway rerouting opportunities in the eastern portion of the Louisville Metropolitan Planning Area (LMPA); and*
- *Locally adopted transportation plans that call for two new bridges across the Ohio River and the reconstruction of the Kennedy Interchange. (2003 FEIS, p 2-1)*

## S.2 Alternatives

### S.2.1 Re-Assessment of FEIS Alternative Screening Decisions

For this SDEIS, the range of alternatives considered and evaluated in the FEIS has been re-assessed. As part of this process, an *Alternatives Evaluation Document* was developed (see Appendix A.3). The *Alternatives Evaluation Document* presents the original process that was used to develop and evaluate the range of alternatives in the 2003 FEIS, and the process that was used to re-assess those alternatives for the SDEIS. It also presents the following recommended range of alternatives to be studied in the SDEIS:

- **No-Action**

This alternative assumes that all of the projects in the current *Horizon 2030* MTP will be implemented. This does not take into account improvements associated with the LSIORB Project.

- **FEIS Selected Alternative (without Tolls)**

This alternative is generally the same as the Selected Alternative approved in the 2003 ROD, which does not include tolls. Given the current economic conditions that exist within the region and the nation as a whole and the amount of funding that is reasonably available from federal and state sources (as determined by the Louisville Metropolitan Planning Organization), this alternative is no longer considered to be a reasonable alternative because it is not financially feasible; it is being considered in the SDEIS as a baseline for comparison with the modifications to this alternative proposed with the Modified Selected Alternative. See Section S.2.2.2, below, for a more detailed description of the FEIS Selected Alternative.

- **Modified Selected Alternative (with Tolls)**

This alternative would include many of the elements of the Selected Alternative, but would be modified in two ways to improve its financial feasibility: 1) it would include several cost-saving design changes and 2) it would include the use of tolls. The cost-saving design changes include: a reduction in the width of the proposed East End Bridge, tunnel, and roadway; reconstruction of the Kennedy Interchange in downtown Louisville in-place; and elimination of a proposed pedestrian/bikeway facility from the new Downtown Bridge. See Section S.2.2.3, below, for a more detailed description of the Modified Selected Alternative.

### **S.2.1.1 Review of Conceptual Alternatives**

This step involves a re-assessment of the conceptual alternatives considered in the 2003 FEIS and presented in the *Alternatives Evaluation Document*; and of each alternative's ability to meet the project's purpose and need. As shown in Table S.2-1, none of the conceptual alternatives considered in the 2003 FEIS meet the purpose and need, except for the Two Bridges/Highway Alternative.

### **S.2.1.2 Review of Alignment Selection**

This step involves a re-assessment of the selection of alignments A-15 and C-1 as the preferred alignments in the Far East (herein referred to as East End) and Downtown LSIORB Project areas, respectively. As noted in the *Alternatives Evaluation Document*, the screening process for the 2003 FEIS identified a range of reasonable alignments for consideration in the East End and Downtown. Those alignments were studied in detail in the 2003 FEIS, and then a preferred alignment was identified for the East End (A-15) and Downtown (C-1). At each stage, the dismissal or advancement of alignments was based primarily on environmental factors, as documented in the 2003 FEIS.

This re-assessment focuses on determining whether there have been any changes in the affected environment that have the potential to alter the underlying basis for the decision to select alignments A-15 and/or C-1.

#### ***Alternatives Eliminated During Initial Screening***

As part of the initial alternatives screening process, the following alternatives evaluated in the 2003 FEIS were dismissed from further consideration in this SDEIS. These alternatives are described in the *Alternatives Evaluation Document* in Appendix A.3, and in FEIS sections 3.4.1 (pages 3-45 through 3-53), 3.4.2 (pages 3-53 and 3-54), and 3.4.3 (pages 3-54 through 3-57).

- Alternatives A-1, A-3, A-4, A-5, A-6, A-7, A-8, A-10, A-11, A-12, and A-14
- Alternative B-2
- Alternatives C-2 and C-3
- Oldham County Corridor Alternative

No additional environmental or other considerations have been identified during this SDEIS process that would alter the decision to dismiss these alternatives from detailed analysis. In fact, additional residential and industrial growth in the area would likely add to the impacts of many of the alternatives that were originally dismissed and would increase their social/community effects.

**TABLE S.2-1  
EVALUATION OF CONCEPTUAL ALTERNATIVES**

Alternatives	Summary	Conclusion
<b>No-Action</b>	Does not meet the purpose and need.	Carried forward as a baseline comparison to other alternatives in the SDEIS per NEPA guidelines.
<b>TDM, TSM, TM, and Mass Transit</b>	Does not meet the purpose and need.	Dismissed as standalone options
<b>Kennedy Interchange Reconstruction</b>	Does not meet the purpose and need.	Dismissed as a standalone option
<b>One Bridge/Highway w/Kennedy Interchange Reconstruction</b>		
Downtown Bridge Only	Does not meet the purpose and need.	Dismissed.
East End Bridge Only	Does not meet the purpose and need.	Dismissed.
<b>Two Bridges/Highway w/Kennedy Interchange Reconstruction</b>		
Oldham County/Downtown Corridor	Meets purpose and need, but its greater length results in much higher impacts and cost, and would result in reduced traffic usage.	Dismissed.
West/Downtown Corridor	Does not meet purpose and need; also, greater length results in much higher impacts and cost.	Dismissed.
East Corridor River Tunnel Highway System/Downtown Corridor	Meets purpose and need, but tunneling results in much higher cost, which far exceeds the cost of other alternatives.	Dismissed.
Near East/Downtown Corridor	Meets purpose and need.	Carried forward for further evaluation.
Far East/Downtown Corridor	Meets purpose and need.	Carried forward for further evaluation.

### *Alternatives Advanced for Detailed Evaluation in the 2001 DEIS*

In the 2001 DEIS, build alternative alignments in each of the three corridors—Far East, Near East, and Downtown—were advanced for detailed evaluations.

In the Far East Corridor, as documented in the 2003 FEIS, Alternatives A-2, A-9, A-13, A-15, and A-16 were carried forward for detailed evaluation, as described in Section 3.4.1 on pages 3-45 through 3-53 of the FEIS. When compared to Alternative A-15, however, these alternatives were eliminated and Alternative A-15 was identified as the Preferred Alternative in the 2003 FEIS.

In the Near East Corridor, Alternative B-1 had similar impacts to Alternative B-2, which was previously dismissed during the initial screening phase. No revisions to the effects of this alternative, as described in the FEIS (p. 3-93), have been identified; therefore, the decision to dismiss this option remains valid for the SDEIS.

In the Downtown Corridor, only Alternative C-1 is carried forward for detailed evaluation in this SDEIS. In the 2003 FEIS, Alternative C-1 provided two options for the reconstruction of the Kennedy Interchange—an option to reconstruct the interchange in-place and an option to reconstruct the interchange to the south of the existing interchange. The FEIS Selected Alternative includes the reconstruction of the interchange to the south, and Modified Selected Alternative includes the reconstruction on the interchange in-place.

### *Conclusion*

Based on the re-assessment of the alternatives evaluated in the 2003 FEIS, the decisions reached in the 2003 FEIS remain valid. This re-assessment has confirmed the selection of the Two Bridges/Highway Alternative consisting of Alternatives A-15 and C-1. The alternatives that were eliminated in the FEIS will not be re-considered further.

#### **S.2.1.3 Cost/Financial Feasibility**

The FEIS Selected Alternative currently has a year of expenditure cost estimate of \$4.1 billion, an increase of \$1.6 billion over the \$2.5 billion year-of-expenditure cost estimate in the 2003 FEIS (FEIS p. S-11). The Louisville Metropolitan Planning Organization's (MPO) Metropolitan Transportation Plan (MTP) *Horizon 2030* currently states that KYTC, INDOT, and FHWA can reasonably be expected to provide up to \$1.9 billion from traditional federal and state programs for the Project. This leaves a shortfall of approximately \$2.2 billion. In response to this shortfall, two strategies have been identified: evaluate additional revenue options, including tolling, and modify design features to reduce costs, as follows:

- Tolling has been identified in the current MTP as an additional revenue source for the LSIORB Project. This and other possible additional revenue sources would provide the ability for the Louisville MPO to meet the requirement that the MTP be fiscally

constrained. For more information see Appendix G.2, *Financial Demonstration for the Ohio River Bridges Project in Support of the Louisville (KY-IN) Metropolitan Transportation Plan (September 2011)*.

- The following modifications to the FEIS Selected Alternative are being considered to reduce costs:
  - Reconstructing the Kennedy Interchange within its existing location instead of relocating it to the south.
  - Reducing the East End Bridge, roadway, and tunnel from six to four lanes.
  - Eliminating the pedestrian/bike path from the Downtown Bridge because a similar facility will be provided on the nearby Big Four Bridge as a separate project.

During the public involvement process, some public comments recommended FHWA consider re-evaluating the tunnel in the East End Corridor in Kentucky (Alternative A-15) as a cost saving measure. For reasons described in the *Construction Options at U.S. 42 and Drumanard Estate Historic District* (see Appendix D.5), removal of the tunnel or additional modification to the tunnel design are not reasonable and will not be evaluated further in this SDEIS.

The Project design modifications are projected to result in a \$1.2 billion savings from the estimated \$4.1 billion cost of FEIS Selected Alternative. Therefore, the estimated cost of the Modified Selected Alternative is \$2.9 billion. Based on preliminary estimates in the *Revenue Estimates and Indicative Financial Capacity SEIS Modified Selected Alternative Tolled Scenario* memo in Appendix G.5, tolling revenues are expected to generate from \$800 million to \$1.2 billion<sup>1</sup> in funding capacity. The projected toll funding, in combination with the \$1.9 billion from traditional funding sources that are reasonably expected to be available according to the MTP, would provide total funding in the range of \$3 billion, which would be sufficient to meet the \$2.9 billion cost of the Modified Selected Alternative. It has therefore been concluded that a Modified Selected Alternative (with tolling) is financially feasible and warrants detailed study in the SDEIS. These cost and -funding estimates are preliminary, and are being presented at this time solely as a basis for evaluating the reasonableness of alternatives.

The FEIS Selected Alternative has an estimated year-of-expenditure cost of \$4.1 billion, because it does not include the cost-saving design changes that are incorporated into the Modified Selected Alternative. As noted above, the total funds available for construction (from traditional and toll-based funding) would be in the range of \$3 billion, if tolls are set at the same rates as assumed for the Modified Selected Alternative (i.e., \$1.50 for cars, \$3.00 for small trucks, and \$6.00 for large trucks). While the cost and funding estimates are preliminary, a shortfall of this magnitude (approximately \$1 billion) would make the FEIS Selected Alternative financially infeasible. Therefore, as part of this SEIS process, a separate analysis was conducted to assess the level at which toll rates would need to be set in order to provide sufficient funding (along with the \$1.9 billion from traditional sources) to cover the \$4.1 billion cost of the FEIS Selected

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<sup>1</sup> This amount represents the net toll funding available for construction costs after subtracting the costs associated with operation and maintenance, along with debt service.

Alternative. (For more information see Appendix G.4, *Financial Feasibility Revenue Estimates for the FEIS Selected Alternative*). This new analysis documents that toll funding could generate approximately \$1.4 billion to \$2.1 billion in funding capacity. At the upper end of this range, it is conceivable that toll funding plus traditional funding could nearly cover the \$4.1 billion cost of the FEIS Selected Alternative. However, toll rates would need to be much higher than assumed for the Modified Selected Alternative – for example, the analysis assumes passenger cars would pay a toll of \$9.00 southbound in the morning and \$10.00 northbound in the evening on both bridges in the year 2030 (expressed in year 2010 dollars). Toll rates at this level are unlikely to be accepted by the public and in any event are unnecessary given that an acceptable, lower-cost alternative (the Modified Selected Alternative) is available and can be implemented with much lower toll rates.

Therefore, while the current MTP state that the FEIS Selected Alternative is financially feasible with alternative funding sources, such as tolling, this new traffic forecasting and updated revenue analysis indicates that (1) tolling funding would be insufficient to cover the \$4.1 billion year-of-expenditure cost estimate for the FEIS Selected Alternative if that alternative is tolled at the same rates as the Modified Selected Alternative, and (2) if the FEIS Selected Alternative were tolled at extremely high rates, toll revenues would still fall somewhat short of the funding needed, and the toll rates themselves would likely be considered unacceptable. Based on these findings, the FEIS Selected Alternative is not financially feasible. However, this alternative is being carried forward for detailed study in the SDEIS as a baseline for analysis as the currently approved alternative.

#### **S.2.1.4 Summary of Findings**

The following is a summary of findings from the re-assessment of the 2003 FEIS alternatives:

- The decisions reached in the 2001 DEIS and 2003 FEIS regarding the dismissal of conceptual alternatives and alignment alternatives remain valid in this SDEIS.
- The FEIS Selected Alternative cannot be constructed with currently available or reasonably anticipated funds, but should continue to be considered as a baseline for comparison with the Modified Selected Alternative.
- The FEIS Selected Alternative with the addition of tolls is not financially feasible because projected toll revenues would not be sufficient to cover the funding gap for this alternative.
- The FEIS Selected Alternative with design modifications (i.e., the Modified Selected Alternative), but without tolls, is not financially feasible because, even with cost-saving design changes, the cost of the Modified Selected Alternative would still far exceed the available and anticipated traditional revenue sources.
- The Modified Selected Alternative with tolls is a financially feasible alternative and is

therefore carried forward for detailed evaluation in this SDEIS.

- The basis for selecting alignments A-15 and C-1 as the preferred alignments in the East End and Downtown corridors, respectively, remains valid, and these alignments continue to be considered for both the FEIS Selected Alternative and the Modified Selected Alternative.

Based on these findings, three alternatives will be evaluated in detail in this SDEIS: (1) No-Action Alternative, (2) the FEIS Selected Alternative, and (3) the Modified Selected Alternative (with tolls).

## **S.2.2 Description of Alternatives**

### **S.2.2.1 No-Action Alternative**

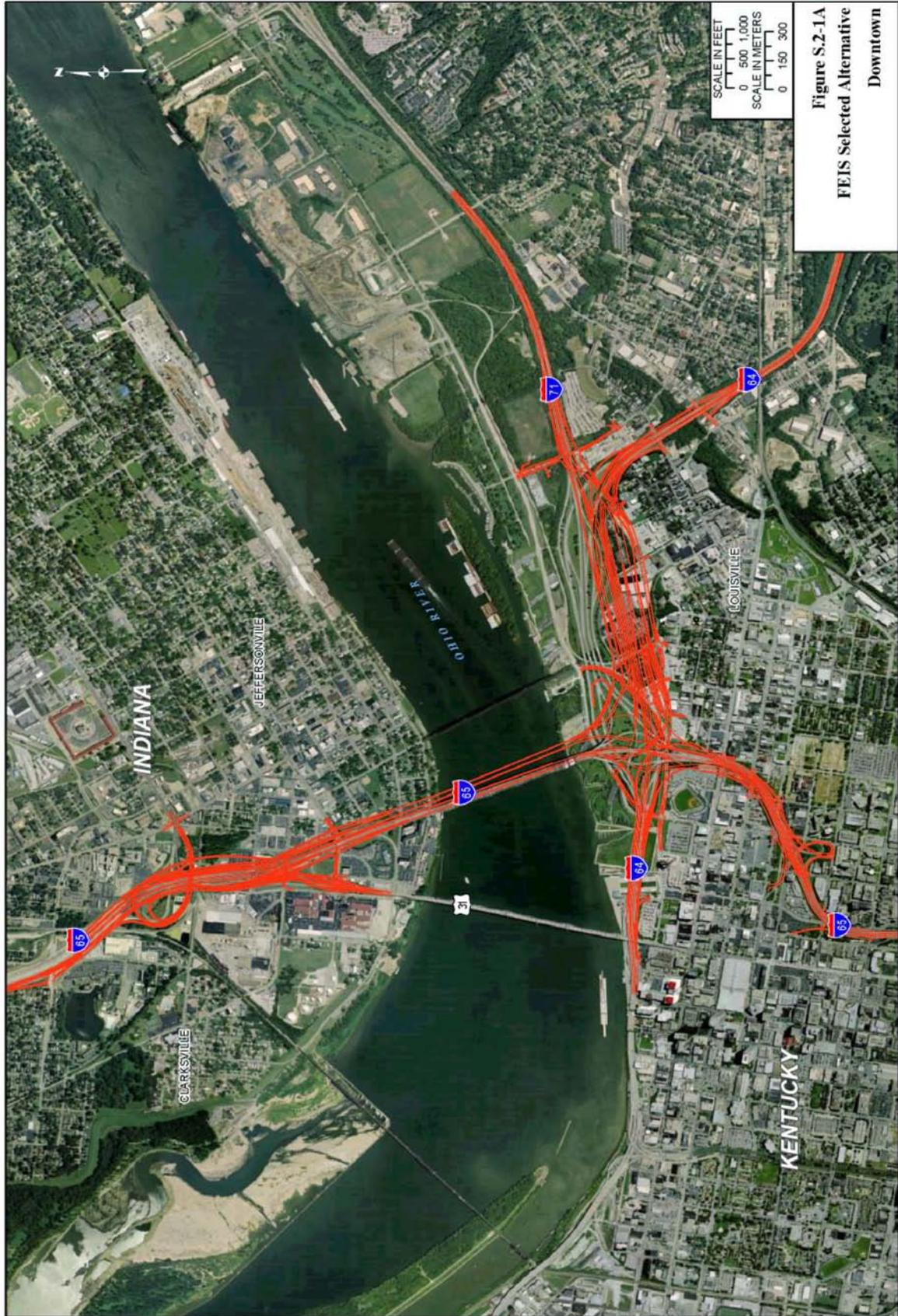
The No-Action Alternative assumes that all of the projects listed in the *Horizon 2030* MTP will be implemented, with the exception of the LSIORB Project, which includes two new bridges over the Ohio River (i.e., Downtown/I-65 and East End/I-265), reconstruction of the Kennedy Interchange, and enhanced bus service improvements (i.e., KIPDA ID #s 52 and 185). For a more detailed description of other major planned projects in the vicinity of the project area, see Section 3.2.1 and Figure 3.2-1 in Chapter 3.

### **S.2.2.2 FEIS Selected Alternative**

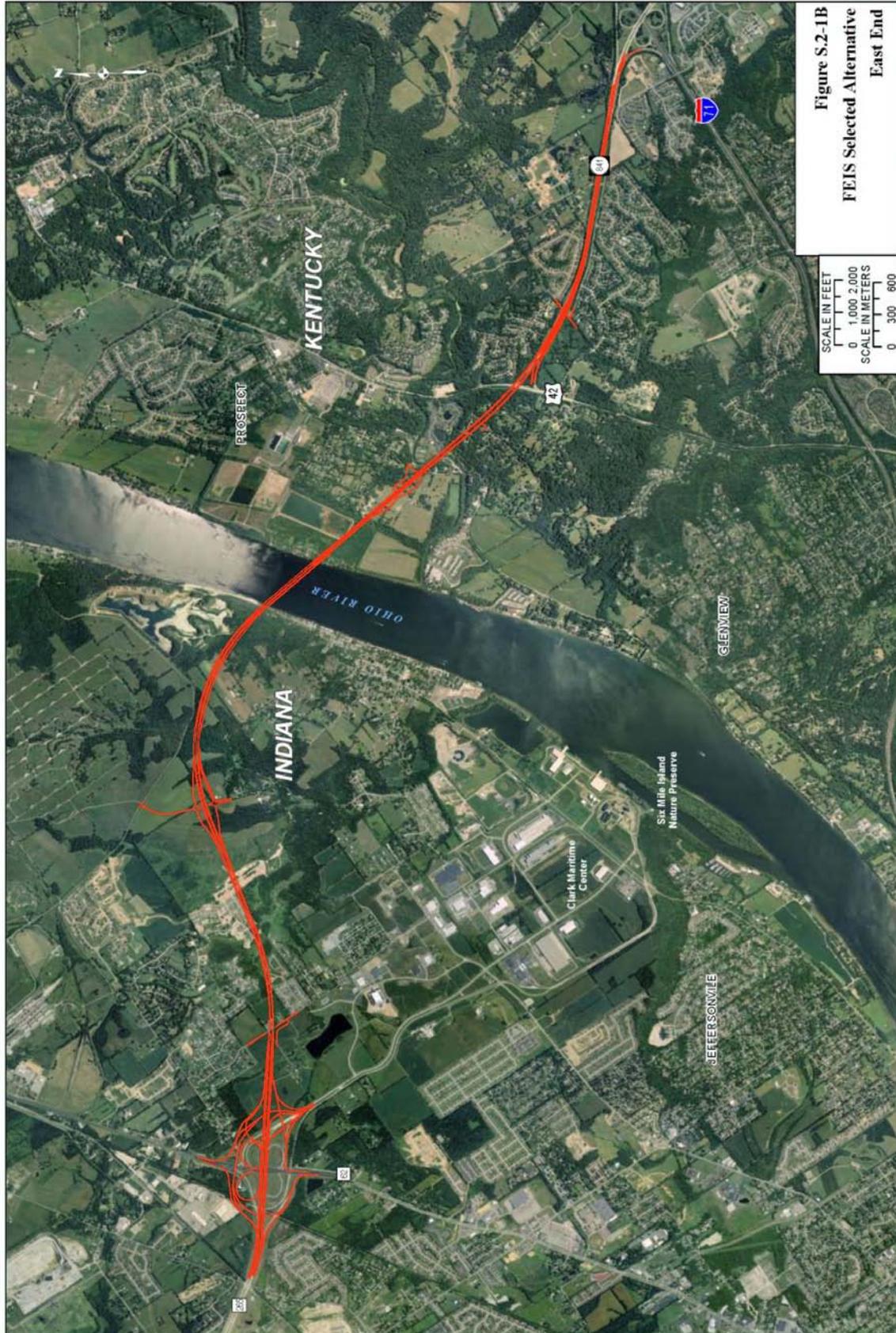
The FEIS Selected Alternative represents the same alternative that was presented in the 2003 FEIS as the Preferred Alternative and in the 2003 ROD as the Selected Alternative (see Figures S.2-1A and S.2-1B for the Downtown and East End corridors, respectively). This alternative is referred to in the FEIS as a Two Bridges/Highway Alternative and is composed of the following alignment Alternatives A-15 and C-1:

#### *Alternative A-15*

This alternative includes a 6-lane freeway on new alignment that would connect I-265/KY 841 (Gene Snyder Freeway) in Kentucky with S.R. 265 (Lee Hamilton Highway) in Indiana. This alternative includes a new 6-lane bridge over the Ohio River and a 6-lane tunnel under the historic Drumanard Property in Kentucky. It also includes interchanges at U.S. 42 (half diamond) in Kentucky and at Salem Road and S.R. 265/S.R. 62 in Indiana.



**Figure S.2-1A**  
**FEIS Selected Alternative**  
**Downtown**



**Figure S.2-1B**  
**FETIS Selected Alternative**  
**East End**

### *Alternative C-1*

This alternative includes the reconfiguration of the existing 7-lane Kennedy Bridge to a 6-lane bridge to accommodate I-65 southbound traffic and the construction of a new 6-lane bridge, plus a 17-foot wide pedestrian/bicycle lane, over the Ohio River just east of the Kennedy Bridge to accommodate I-65 northbound traffic. This alternative also includes the reconstruction of the Kennedy Interchange to the south of the existing interchange and an interchange with I-71/Frankfort Avenue in Kentucky, and the reconfiguration of I-65 and U.S. 31 in Indiana.

This alternative also includes the following elements of the Transportation Management Alternative that was presented in the FEIS (Note: More detailed descriptions of these elements are provided in the *Alternatives Evaluation Document* in Appendix A.3.):

- TDM—non-motorized facility enhancements and employer-based trip reductions.
- TSM—expanded Intelligent Transportation System applications.
- Mass Transit—enhanced bus service. Future options for enhanced bus service will be coordinated with Transit Authority of River City (TARC).

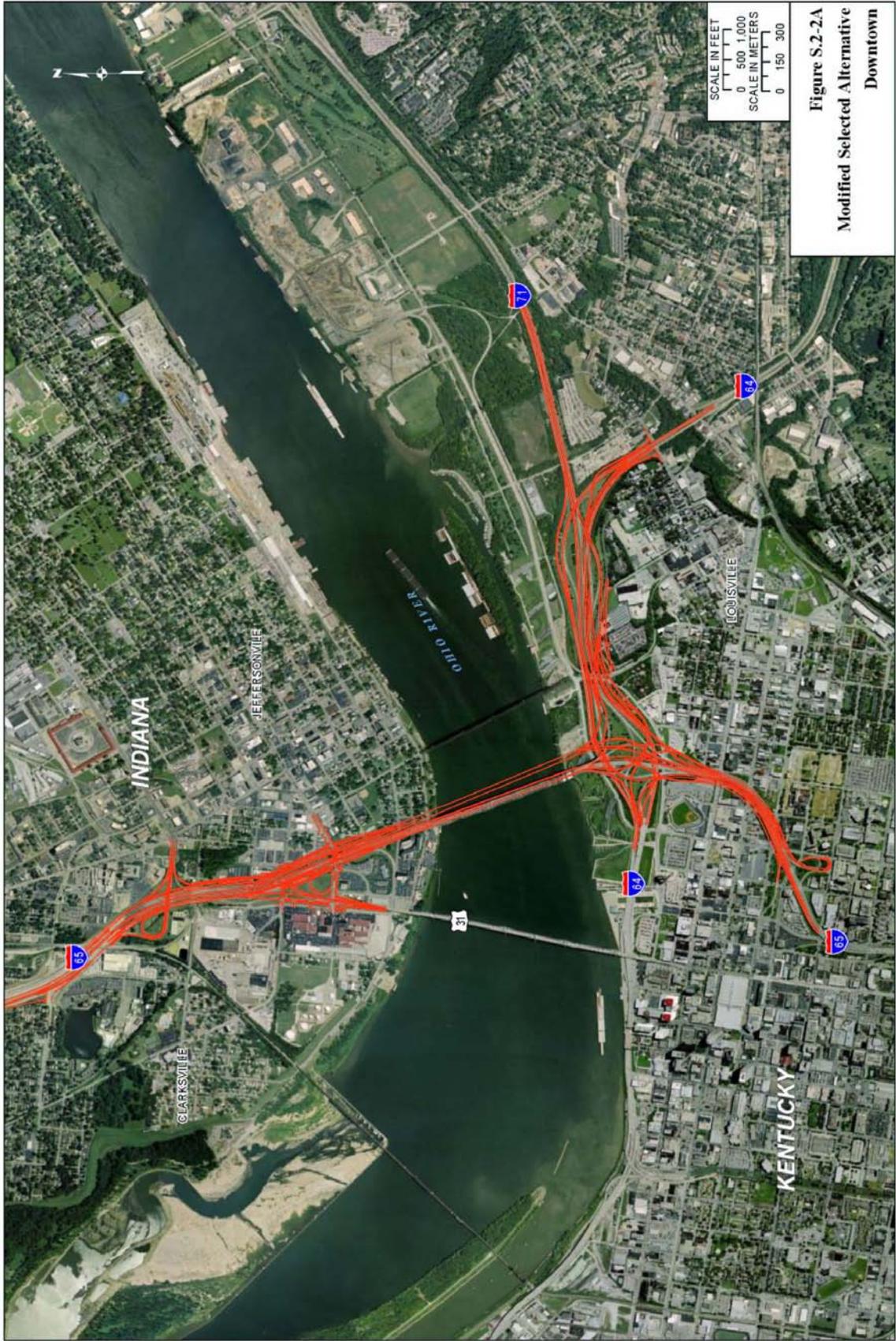
Starting in 2003 INDOT and KYTC selected design consultants to begin work on the design phase of the project. The design consultants conducted field surveys, performed geotechnical investigations, completed bridge type selections, and prepared right-of-way plans (which are used by the right-of-way agents to acquire land). During the seven-year design process, based on new information, public involvement and further engineering refinement, adjustments to the designs in the FEIS were made. Consequently, the FEIS Selected Alternative analyzed and addressed throughout this SDEIS process and document is reflective of the most current design. The most current design of the FEIS Selected Alternative includes the following differences, as compared to the 2003 design of the same alternative:

- Overall lower Kennedy Interchange ramps and structure elevations
- Reduced width of the Kennedy Interchange over the Louisville Waterfront Park
- Removal of the 3<sup>rd</sup> Street ramp in downtown Louisville and addition of an exit ramp from I-64 to River Road in downtown Louisville to serve the same traffic
- Modified Indiana East End Corridor interchange with S.R. 62 from a “standard diamond” design to a “divergent diamond” design.

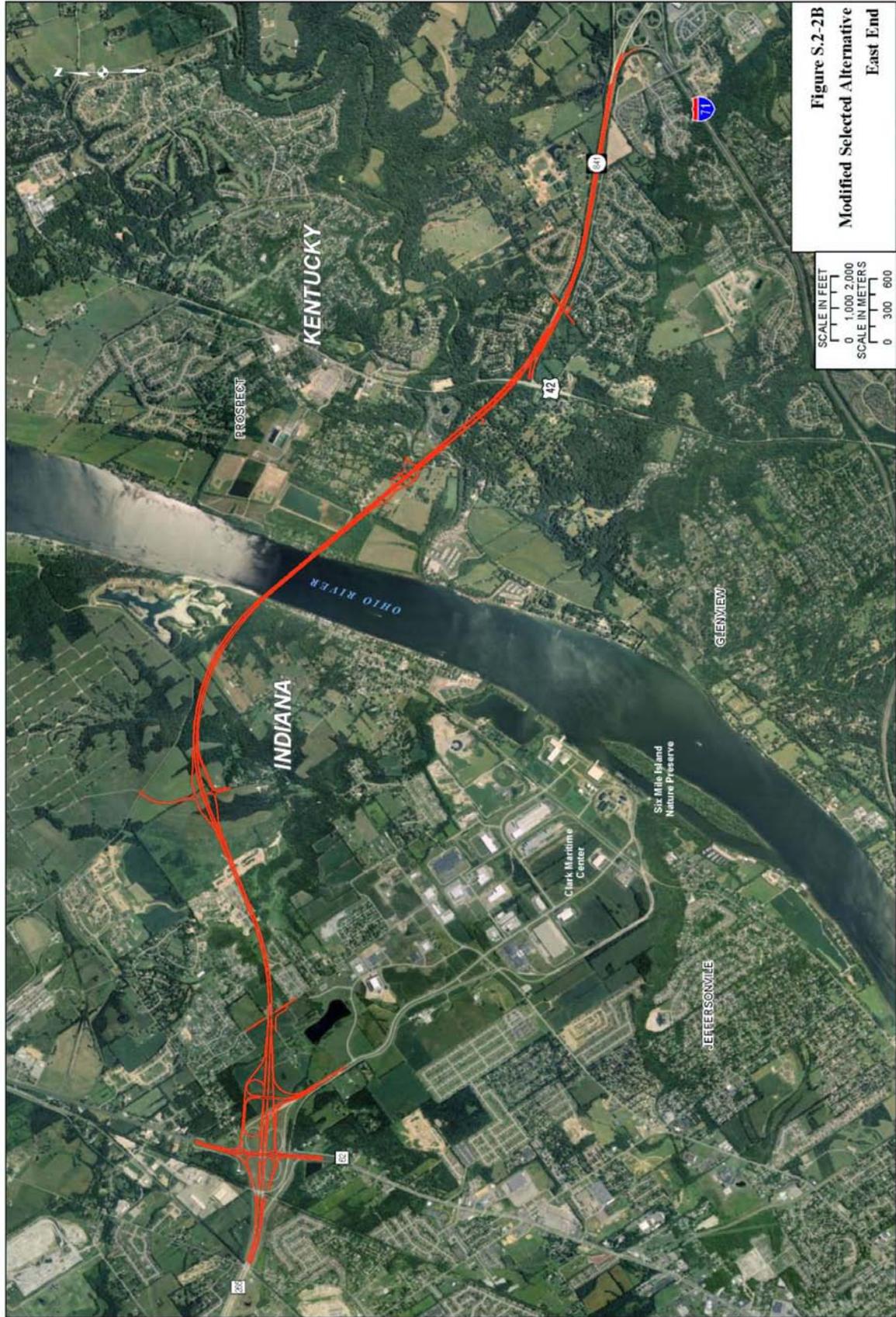
Each of these modifications was communicated to the local leaders and the public during the design process, and before the issuance of the NOI for this SDEIS.

### **S.2.2.3 Modified Selected Alternative**

This alternative would include many of the same elements as the FEIS Selected Alternative, but with the following modifications (see Figures S.2-2A and S.2-2B for the Downtown and East End corridors, respectively):



**Figure S.2-2A**  
**Modified Selected Alternative**  
**Downtown**



**Figure S.2-2B**  
**Modified Selected Alternative**  
**East End**

- Electronic tolls would be added on both the downtown I-65 river crossings (i.e., the Kennedy Bridge and the new downtown bridge) and the new East End Bridge. The use of electronic tolls would not require toll booths/plazas on the bridges. For the purposes of this SDEIS, the following baseline toll rates were estimated:

Cars: \$1.50  
Small Trucks: \$3.00  
Large Trucks: \$6.00

These baseline toll rates are subject to change during the design and financing process. As presented in the *Traffic Forecast* (see Appendix H.1) a toll sensitivity test was conducted to better understand the impacts of different toll rates on travel patterns. The range of toll rates considered was from \$1/\$2/\$4 to \$2/\$4/\$8 for the three different types of vehicles. This analysis showed that these variations in toll rates would have less than a 1% difference in total cross-river traffic volumes.

- The number of lanes on the roadway, bridge, and tunnel associated with Alternative A-15 would be reduced from six lanes to four lanes.
- The Kennedy Interchange would be reconstructed on the existing alignment (i.e., in-place) instead of to the south, and would eliminate the I-71/Frankfort Avenue interchange. In addition, it would reduce the length of roadway improvements along the I-65, I-64, and I-71 approaches.
- The 17-foot-wide pedestrian/bicycle path would be removed from the new downtown I-65 bridge because a 22-foot-wide pedestrian/bicycle access across the river will be provided on the Big Four Bridge as a separate project. On the Kentucky side of the Big Four Bridge Project, the ramps have been completed and rehabilitation of the bridge began in 2011 and is currently under construction. On the Indiana side, construction is expected to begin in 2012. A Finding of No Significant Impact (FONSI) was approved for the bridge on the Kentucky side of the project by the USACE on July 16, 2007. A FONSI was approved for the Indiana side of the project by FHWA on October 19, 2011, which included an Individual 4(f) Evaluation for both sides of the river and the bridge itself.

As with the FEIS Selected Alternative, this alternative would also include the following elements of the Transportation Management Alternative as presented in the original FEIS (Note: More detailed descriptions of these elements are provided in the *Alternatives Evaluation Document* in Appendix A.3.):

- TDM—non-motorized facility enhancements and employer-based trip reductions.
- TSM—expanded Intelligent Transportation System applications.
- Mass Transit—enhanced bus service. Future options for enhanced bus service will

be coordinated with TARC.

### **S.2.3 Evaluation of Alternatives**

The original EIS evaluated the alternatives in terms of their ability to meet the following five elements of the Purpose and Need:

- Inefficient cross river mobility for existing and planned growth in population and employment in the Downtown area and eastern Jefferson and southeastern Clark Counties
- Traffic congestion on the Kennedy Bridge and within the Kennedy Interchange
- Traffic safety problems within the Kennedy Interchange and on the Kennedy Bridge and its approach roadways
- Inadequate cross-river system linkage and freeway rerouting opportunities in the Eastern portion of the Louisville Metropolitan Area
- Locally approved transportation plans that call for two new bridges across the Ohio River and the reconstruction of the Kennedy Interchange

While these elements of the Purpose and Need have remained consistent, the criteria used to evaluate alternatives' ability to achieve the purpose and need have been refined as part of the preparation of the SDEIS. The refined set of alternatives evaluation criteria are described and explained in Table S.2-2. In general, an alternative meets the Purpose and Need if it meets all four of the Project purposes, as measured by the evaluation criteria.

The Purpose and Need also identifies a fifth need – “Locally approved transportation plans that call for two new bridges across the Ohio River and the reconstruction of the Kennedy Interchange.” The plan itself is based on the other needs. Therefore, an alternative is assumed to be compatible with the goals of the plan if it meets all four of the other elements of the Purpose and Need.

Table S.2-3 summarizes the purpose and need measures of effectiveness for the No-Action, FEIS Selected, and Modified Selected Alternatives. There is very little difference in measures of effectiveness between the FEIS Selected Alternative and the Modified Selected Alternative. Although it provides fewer capacity improvements than the FEIS Selected Alternative, the Modified Selected Alternative meets the purpose and need of the project because it:

- improves mobility in the region (decreases VHD);
- reduces traffic congestion on the Kennedy Bridge and within the Kennedy Interchange;
- improves traffic safety within the Kennedy Interchange;

**TABLE S.2-2**  
**ALTERNATIVES EVALUATION CRITERIA**

Project Purpose	Evaluation Criteria
Improving Cross-River Mobility	<ul style="list-style-type: none"> <li>• Reduce Vehicle Hours of Delay (VHD) in the LMPA region<sup>2</sup></li> </ul>
Reduce Congestion on Kennedy Interchange and Kennedy Bridge <sup>3</sup>	<ul style="list-style-type: none"> <li>• Improve the Level of Service (LOS) to a D or better on the Kennedy Bridge.</li> <li>• Improves the bridge demand as percent of capacity.<sup>4</sup></li> <li>• Improves the Kennedy Interchange operating speed during the peak hour.</li> <li>• Improves the Kennedy Interchange Peak Hour throughput to be closer to 100%<sup>5</sup></li> <li>• Improves the Kennedy Interchange average link density such that each individual roadway “link” within the interchange also has reduced congestion and improves the level of service on each link to a LOS of D or better.</li> </ul>
Improve Safety on Kennedy Bridge and Kennedy Interchange <sub>2</sub>	<ul style="list-style-type: none"> <li>• Improves the geometrics of the Kennedy Bridge and Kennedy Interchange to meet the American Association of State Highway and Transportation Officials (AASHTO) recommended minimum design guidance.</li> </ul>
Improve System Linkage and Freeway Re-Routing Opportunities	<ul style="list-style-type: none"> <li>• Completes the eastern cross-river transportation system (i.e., by providing an additional highway connection across the Ohio River on the east end of the LMPA).</li> </ul>

<sup>2</sup> The 2003 FEIS also considered an alternative’s effect on vehicle hours of travel (VHT) and vehicle miles of travel (VMT), in addition to vehicle hours of delay (VHD), when evaluating the alternatives’ ability to improve cross-river mobility. Both of these factors continue to be considered in this SEIS as part of the comparison of build and no-build alternatives. However, for purposes of determining whether an alternative meets the goal of improving cross-river mobility, the reassessment of alternatives for SEIS focuses on VHD. FHWA, KYTC, and INDOT determined that VHD is the measure that most closely correlates with the goal of improving cross-river mobility because it measures the total amount of delay. As such, a reduction in VHD means that drivers are spending less time sitting in congested traffic and are experiencing more efficient cross-river travel. Reductions in VMT and VHT also may be correlated with an improvement in mobility, but an improvement in mobility could also be correlated with an increase in VMT or even VHT. The availability of a shorter and/or less congested route may increase VMT or even VHT, because its allow for faster travel, which in turn may result in an increase in the number and length of trips as those trips become more attractive.

<sup>3</sup> With regard to the criteria used for evaluating congestion on the Kennedy Interchange and Kennedy Bridge, it is possible for strong performance on some evaluation criteria to outweigh weak or negative performance on others.

<sup>4</sup> Bridge demand as percent of capacity is a measure of the ratio of the weekday volume of traffic that desires to cross a given bridge relative to the design capacity of that bridge. The capacity is a function of the maximum Level of Service D traffic flow rates, the proportion of daily traffic that occurs in the peak hour of travel, and the number of lanes on the bridge.

<sup>5</sup> Throughput is the percentage of peak hour traffic entering the Kennedy Interchange that can pass through the interchange without experiencing undue delay or congestion. If throughput is less than 100 percent of demand, traffic congestion and diversions result.

**TABLE S.2-3  
MEASURES OF EFFECTIVENESS SUMMARY**

Alternative	System Efficiency* (Percent Change VHD)	User Benefits \$(Billion)	Traffic Congestion								Traffic Safety	System Linkage	Local Plan Compatibility
			Total Cross-River Demand as % of Capacity	Bridge Levels of Service				Kennedy Interchange Peak-Hour Operations					
				Sherman Minton	Clark Memorial	Kennedy Memorial	East End	Improves Average Speed	Improves Throughput	Improves Link Density			
No-Action	NA	-	111%	F	C	F	-	NA	NA	NA	No	No	No
FEIS Selected	-12.9	1.26	70%	E	C	D	C	Yes	Yes	Yes	Yes	Yes	Yes
Modified Selected	-12.1	1.29	73%	E	C	D	D**	Yes	Yes	Yes	Yes	Yes	Yes

\* These numbers are a measure of the efficiency of the LMPA network. Negative numbers represent an increase in the LMPA efficiency.

\*\* The East End Bridge would have four lanes in the Modified Selected Alternative while it would have six lanes in the FEIS Selected Alternative.

Note: Percent change is relative to the No-Action Alternative. Population and Employment Growth and Traffic Congestion Measures are for a Year 2030 weekday.

- provides adequate cross-river transportation system linkage; and
- is consistent with locally adopted transportation plans.

**S.2.4 Costs/Schedule**

The current estimated total costs for the two build alternatives are \$2.9 billion for the Modified Selected Alternative and \$4.1 billion for the FEIS Selected Alternative. A breakdown of the cost comparison between these two alternatives by design section is presented in Table S.2-4. As the table indicates, the design modifications that were implemented for the Modified Selected Alternative have resulted in a total savings of approximately \$1.2 billion. It is estimated that construction of the project would begin in 2012 and be completed by 2022.

**S.3 Summary of Impacts**

Table S.3-1 summarizes the impacts associated with the FEIS Selected Alternative and the Modified Selected Alternative. As the table indicates, both alternatives would result in the same number of impacts to prime farmland, Section 4(f) properties, cultural resources, and agricultural properties. In addition, both alternatives would have no impacts to air quality and community

resources. The Modified Selected Alternative would result in fewer impacts with regard to noise (including historic properties), terrestrial/wildlife habitat, wetlands, streams, floodplains, and residential and commercial displacements. The most notable differences are that the Modified Selected Alternative would result in 10 and 56 fewer residential and commercial displacements, respectively, and would impact about 98 fewer acres of floodplains and 43 fewer acres of terrestrial/wildlife habitat compared to the FEIS Selected Alternative.

**TABLE S.2-4**  
**COST COMPARISON OF BUILD ALTERNATIVE BY DESIGN SECTION**

Project Segment	FEIS Selected Alternative	Modified Selected Alternative	Savings
Section 1 - Kennedy Interchange	\$1,530.0	\$728.2	\$801.8
Section 2 - Downtown Bridge	\$569.7	\$532.6	\$37.1
Section 3 - Downtown IN Approach	\$392.7	\$177.8	\$214.9
Section 4 - KY East End Approach	\$885.2	\$794.8	\$90.4
Section 5 - East End Bridge	\$406.2	\$326.2	\$80.0
Section 6 - IN East End Approach	\$234.8	\$231.7	\$3.1
Other Costs <sup>(2)</sup>	\$124.2	\$125.0	-\$0.8
<b>TOTAL<sup>(1)</sup></b>	<b>\$4,142.8</b>	<b>\$2,916.2</b>	<b>\$1,226.6</b>

*(Year-of-Expenditure (2022) Costs in \$, million).*

*(1) Totals may not sum due to rounding.*

*(2) Includes costs that are not section specific, including Project Oversight, Environmental Mitigation of Hazardous Materials, Wetland Remediation and Historic Preservation.*

**TABLE S.3-1  
SUMMARY OF IMPACTS**

<b>Quantitative Impacts To</b>	<b>FEIS Selected Alternative</b>	<b>Modified Selected Alternative</b>
<b>Agricultural Resources</b> Acres of prime farmland converted	57	57
<b>Section 4(f) Properties used</b>	8	8
<b>Cultural Resources</b> Number of historic districts impacted Number of historic sites impacted Number of archaeological sites impacted	11 16 11	11 16 11
<b>Air Quality Impacts</b>	None	None
<b>Noise</b> Number of impacted receptor sites Number of impacted Historic Properties	244 18	240 13
<b>Natural Resources</b> Acres of terrestrial wildlife/habitat impacted	237.3	194.4
<b>Wetlands</b> Acres of wetlands impacted	13.18	9.58
<b>Water Resources</b> Number of stream impacts (including Ohio River)	21	20
<b>Floodplains</b> Number of floodplains crossed Total acres of encroachment	6 178.35	5 80.03
<b>Number of Residential Displacements</b>	80	70
<b>Number of Commercial / Not-for Profit Facility Displacements</b>	80	24
<b>Number of Agricultural Properties Impacted</b>	18	18
<b>Number of Community Resources Displaced</b>	0	0

## **S.4 Permits Required**

This section of the 2003 FEIS listed the federal and state permits that are likely to be required for the project. The information presented in the FEIS is still valid and applicable. For more detailed information, see page S-33 of the FEIS. It is anticipated the permits will be obtained during or prior to the summer of 2012.

## **S.5 Preferred Alternative**

The Preferred Alternative for the LSIORB Project is the Modified Selected Alternative. As documented in this SDEIS, this alternative was selected as the Preferred Alternative because it would: 1) meet the project's purpose and need; 2) be financially feasible; and 3) result in less environmental impacts than the FEIS Selected Alternative. It was determined that the FEIS Selected Alternative would not be financially feasible and the No-Action Alternative would not meet the project's purpose and need.

## **S.6 Areas of Controversy**

A lawsuit was filed in September 2009 against the FHWA, challenging the 2003 ROD for this project. The lawsuit was filed by two groups, River Fields and the National Trust for Historic Preservation. The lawsuit remains pending in the United States District Court for the Western District of Kentucky, Case No. 3:10-cv-00007. All litigation deadlines have been stayed while this SEIS is prepared.

A major component of the Modified Selected Alternative is the proposed addition of tolls. Throughout the public involvement process, some individuals have expressed their opposition to the tolls and the potential financial impact it may cause to individuals and businesses. It has also been expressed that a less costly one bridge only option (i.e., East End or Downtown) be developed that would eliminate the need for tolls to fund the project.

Throughout the LMA, strongly held and often-conflicting opinions have been expressed about whether to build one or two bridges. Some residents say both bridges are badly needed; while others argue the East End Bridge should be the priority. Still others disapprove of any bridge and advocate a light rail cross-river option. A common concern is about which bridge to build first, if two are to be built.

Some argue that bridge options for the Downtown area and the East End should be considered separately. They say that the two locations are not related, but are two distinctively different projects. Others, however, believe they are related and that if a bridge is built to the east that it will impact the Downtown area.

Some argue that traffic safety and congestion, especially in the Kennedy Interchange underscore the need for downtown improvements to be the top priority. An East End bridge, they argue, would be a "sprawl" bridge and ruin the scenic, pastoral setting along the river and lead to

unwanted development. Those favoring an East End bridge believe that a cross-river outer beltway in eastern Clark and Jefferson Counties is long overdue to accommodate growth and to provide access to residents and to commercial traffic that now is routed through downtown.

### **S.7 Unresolved Issues with other Agencies**

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of their undertakings on historic properties and afford a reasonable opportunity for interested persons to comment on the proposed undertaking. Regulations by which a Federal agency meets its obligations under Section 106 are found at 36 CFR Part 800. The Section 106 Process for this SDEIS is still on-going.