

FHWA-KY-SEIS-12-01-F

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

REVISED RECORD OF DECISION

U.S. Department of Transportation
Federal Highway Administration

In Consultation with:

Indiana Department of Transportation
Kentucky Transportation Cabinet

June 19, 2012

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1.0 DECISION

This Revised Record of Decision (Revised ROD) documents the decision to approve the Modified Selected Alternative as the selected alternative for the Louisville – Southern Indiana Ohio River Bridges (LSIORB) Project. This Revised ROD approves the Modified Selected Alternative as described in the Supplemental Final Environmental Impact Statement (SFEIS) signed by the Federal Highway Administration (FHWA) and the Kentucky Transportation Cabinet (KYTC) on April 20, 2012, and the Indiana Department of Transportation (INDOT) on April 19, 2012. The notice of availability for the SFEIS was published in the *Federal Register* on May 4, 2012.

The decision to approve the Modified Selected Alternative for the LSIORB Project is based on FHWA’s review of the entire project record, including the 2003 Final Environmental Impact Statement (FEIS) and the 2012 SFEIS, as well as technical reports, correspondence, and other information developed as part of the environmental review process for the project.

The Modified Selected Alternative is located within the Louisville Metropolitan Planning Area (LMPA) (see figures 1-1 and 1-2). As more fully described in the SFEIS, the Modified Selected Alternative includes:

- Downtown Crossing: a new I-65 Bridge immediately upstream of the existing I-65/Kennedy Bridge (Alignment C-1), as well as redecking of the existing I-65/Kennedy Bridge, and improved and expanded approach roadways for the I-65 bridges, including the I-65 approach in Jeffersonville, and the I-65/I-64/I-71 Kennedy Interchange, reconstructed in-place, in Louisville.
- East End Crossing: a new bridge and approach roadways connecting KY 841 (Gene Snyder Freeway) in eastern Jefferson County, Kentucky with S.R. 265 (Lee Hamilton Highway) in eastern Clark County, Indiana (Alignment A-15).
- Electronic toll facilities for both of the I-65 bridges and for the new East End Bridge.
- Transportation Management (TM) elements, including enhanced bus service.

The Louisville Metropolitan Planning Organization (MPO) has amended the *Horizon 2030* Metropolitan Transportation Plan (MTP), the region’s long-range transportation plan, to include the Modified Selected Alternative and tolling as a funding source. FHWA has determined that *Horizon 2030*, with the Modified Selected Alternative, satisfies fiscal constraint requirements and air quality conformity requirements under federal planning and air quality statutes.

The Modified Selected Alternative is incorporates extensive measures to avoid, minimize, and mitigate impacts to the natural and human environment. These commitments are documented in Chapter 8 of the SFEIS. The U.S. Environmental Protection Agency’s (USEPA) letter of June 4, 2012 (see Revised ROD Appendix B.1), notes the selected alternative “appears to have the least amount of direct impacts to resources of concern among alternatives analyzed in this SEIS.” Based on the analysis in the SFEIS, as well as the minimization and mitigation commitments that have been incorporated into the project, FHWA finds that the Modified Selected Alternative is the environmentally preferable alternative. FHWA also finds that the Modified Selected

Alternative is the only financially feasible alternative that will meet the purpose and need for the action.

This Revised ROD grants FHWA's approval of the Modified Selected Alternative. Implementation of the Modified Selected Alternative will require additional federal permits and approvals, which are summarized in Section 5.14, *Permits*, in the SFEIS.

This Revised ROD is executed in conformance with the Council on Environmental Quality (CEQ) regulations that implement the National Environmental Policy Act (NEPA), and documents FHWA compliance with NEPA and all other applicable Federal statutes, regulations, and requirements. In the event of any inconsistency in wording, this Revised ROD takes precedence over the SFEIS, unless otherwise noted.

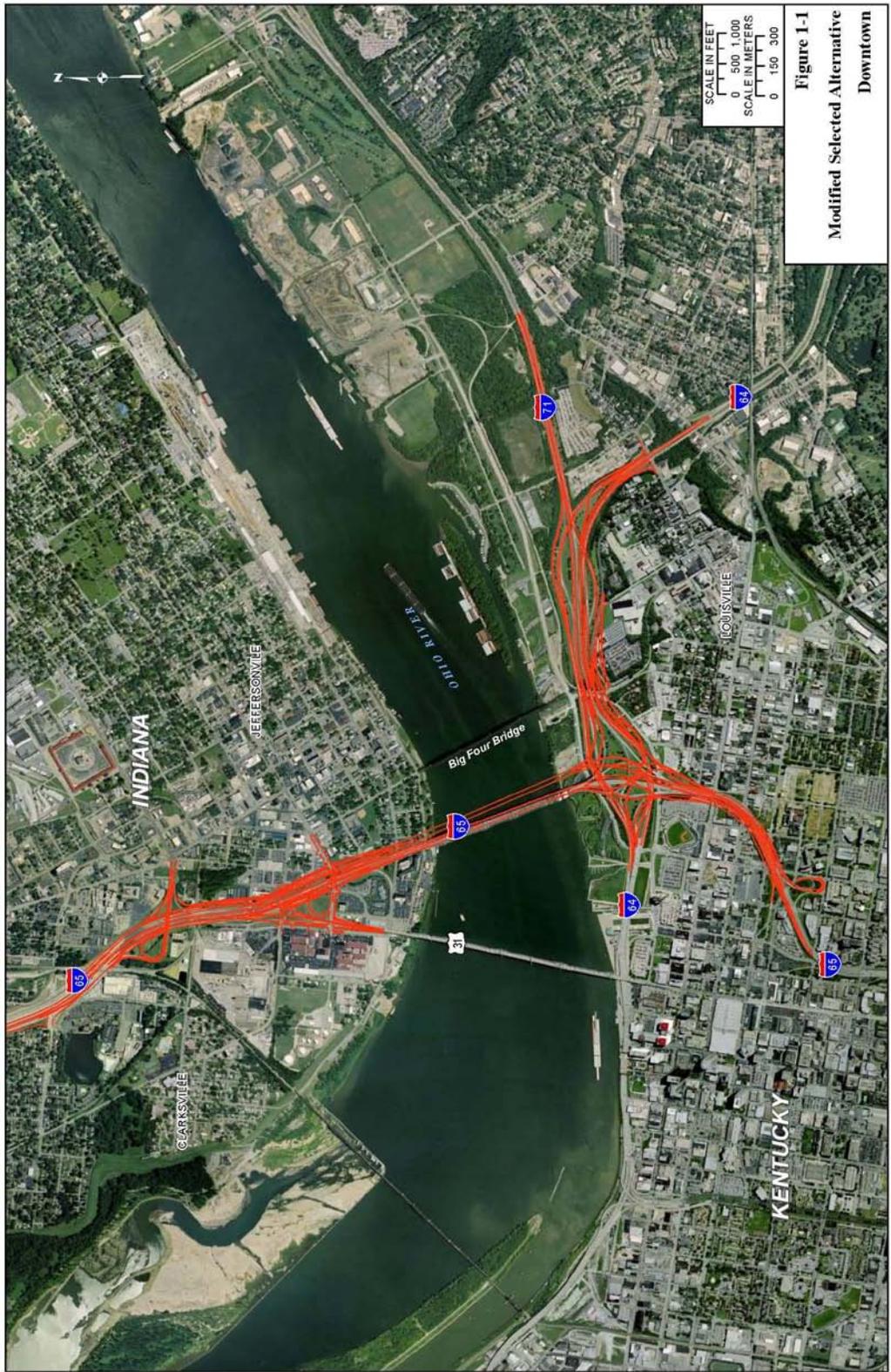
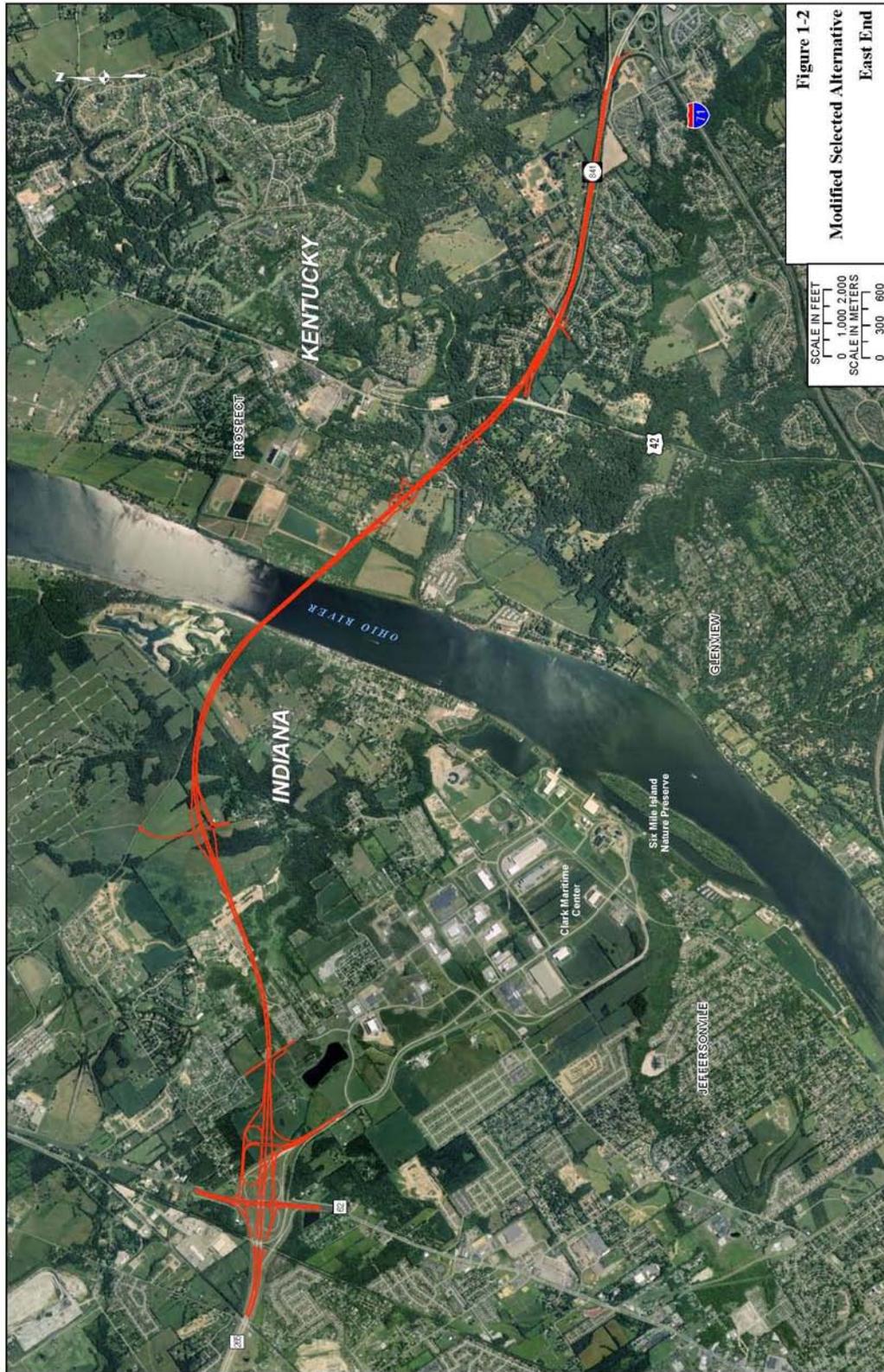


Figure 1-1
Modified Selected Alternative
Downtown



2.0 ALTERNATIVES CONSIDERED

The environmental review process for the proposed LSIORB Project has included two separate studies. The first round of environmental review resulted in a Final Environmental Impact Statement (FEIS), which was issued in April 2003. Based on that FEIS, FHWA issued a Record of Decision in September 2003. After the 2003 ROD was issued, KYTC and INDOT proceeded with design work on the project, as well as other project activities, but construction did not begin due to a lack of funding. In 2010, KYTC and INDOT requested that the Louisville MPO amend its long-range transportation plan to include the LSIORB Project with tolls as a funding source. At the same time, KYTC and INDOT examined potential design changes to reduce the cost of the project. These efforts—consideration of tolling and cost-saving design changes—led to the decision to initiate a second round of environmental review in early 2011. The second round of environmental review included preparation of a Supplemental Environmental Impact Statement (SEIS). The SEIS consisted of a Supplemental Draft Environmental Impact Statement (SDEIS), followed by the Supplemental Final Environmental Impact Statement (SFEIS).

The preparation of an SEIS for the LSIORB process was initiated with publication of a Notice of Intent in the *Federal Register* on February 15, 2011. The notice announced that FHWA, KYTC, and INDOT intended to prepare an SEIS to examine the impacts of proposed changes to the alternative approved in the 2003 ROD (“FEIS Selected Alternative”). The notice stated that the “proposed modification includes revising several design elements and using innovative financing sources, including collecting tolls.” The notice referred to the FEIS Selected Alternative, with these modifications, as the “Modified Selected Alternative.”

The SEIS process began with a review of the purpose and need from the 2003 FEIS. This review included a review of updated transportation forecasts and demographic information for the

History of LSIORB Alternatives

- 1998-2001: Develop broad range of Alternative Concepts and Alignments Options.
- 2001 DEIS: Eliminate several Alternative Concepts and Alignment Options due to fatal flaws or failure to meet purpose and need.
- 2003 FEIS: Eliminate additional Alternative Concepts and Alignment Options due to impacts.
- 2003 ROD: Select Two Bridges/Highway Alternative Concept, consisting of Alignments A-15 and C-1, relocation of Kennedy Interchange to the south, and Transportation Management (TM) elements.
- 2003-2010: Design the FEIS Selected Alternative, including minor modifications to the 2003 alignment, such as the divergent diamond interchange at S.R. 62 and ramp configurations in the Kennedy Interchange.
- 2011: Re-evaluate financial forecasts and identify cost-saving elements that comprise the **Modified Selected Alternative**, including tolls, reconstruction of the Kennedy Interchange in place, and TM elements.
- 2011 SDEIS: Re-evaluate the 2001-2003 EIS Alternative Concepts and Alignments; evaluate and compare the FEIS Selected (non-tolled), Modified Selected (tolled), and the No-Action alternatives.
- 2012 SFEIS: Advance comparison of the FEIS Selected (non-tolled), Modified Selected (tolled), and the No-Action alternatives; identify Modified Selected Alternative as the Preferred Alternative.
- 2012 Revised ROD: Select **Modified Selected Alternative**.

LMPA. It also included circulation of a white paper on purpose and need, and an opportunity for public and agency comment. Based on this review, FHWA, KYTC, and INDOT concluded that the purpose and need as defined in the 2003 FEIS remained valid. (See SFEIS Appendix A-1, *SEIS Purpose and Need White Paper*.)

The SEIS process also included a comprehensive review of the alternatives analyses in the 2003 FEIS. All of the alternatives considered in the 2003 FEIS were re-evaluated and reassessed, including travel demand management (TDM), transportation system management (TSM), mass transit, and bridge/highway options, along with the No-Action Alternative. This review confirmed (1) that a combination of two new bridges and reconstruction of the Kennedy interchange is needed to meet the purpose and need, and (2) the alignments that best minimize impacts while meeting the purpose and need are alignment C-1 for the Downtown (I-65) bridges and alignment A-15 for the East End Bridge. (See SFEIS Appendix A-3, *Alternative Evaluation Document*.)

This alternatives evaluation during the SEIS process also included an assessment of financial feasibility, which concluded among other things that (1) the FEIS Selected Alternative was not financially feasible, and (2) the Modified Selected Alternative had the potential to be financially feasible. Based on this review, FHWA decided to carry forward the FEIS Selected Alternative as the baseline for analysis, in addition to the Modified Selected Alternative and the No-Action Alternative.

The SDEIS included a detailed evaluation of these three alternatives—the No-Action Alternative, the FEIS Selected Alternative, and Modified Selected Alternative. The SDEIS identified the Modified Selected Alternative as the “preferred alternative.” The SFEIS incorporated the analysis from the SDEIS, with updates where needed to respond to comments received on the SDEIS. The SFEIS also identified the Modified Selected Alternative as the “preferred alternative.”

The history of the alternatives evaluation is summarized in the text box above. The evaluation process and factors that led to FHWA’s final decision regarding the Modified Selected Alternative are summarized in the following sections and are described in detail in the SFEIS.

2.1 Purpose and Need

The purpose of this project 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 County, Kentucky, and southeastern Clark County, Indiana.
- 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 LMPA.
- Locally approved transportation plans that call for two new bridges across the Ohio River and the reconstruction of the Kennedy Interchange.

Performance measures were developed for each of these factors and were used in evaluating alternatives. The project's purpose and need, and the performance measures, are described in Chapter 2 of the SFEIS.

2.2 2001-2003 EIS Alternatives Evaluation

The 2001–2003 EIS alternatives evaluation included a two-step screening process, as follows:

Step 1 included the development and evaluation of alternative concepts and alignments, which resulted in the elimination or advancement of alternative corridor concepts and alignments based on whether they met the purpose and need, had a fatal flaw, or had excessive impacts.

Step 2 included an evaluation of the alternatives carried forward (identified in Table 2-1) and concluded with the selection of a build alternative in the 2003 ROD. The Selected Alternative was the Two Bridges/Highway Alternative consisting of alignments C-1 and A-15, reconstructing the Kennedy Interchange to the south of its current location, and TM elements.

Table 2-1, herein, summarizes the results of the two-step evaluation process, identifying the alternative concept corridors and alignments carried forward or eliminated, the reasons for either action, and (in bold text) the corridor and alignments that comprised the Selected Alternative described in the 2003 ROD.

**TABLE 2-1
EVALUATION OF CONCEPTUAL AND ALIGNMENT ALTERNATIVES**

Alternatives	Summary	Conclusion
No-Action	Does not meet the purpose and need	Carried forward as a baseline comparison to other alternatives in the EIS per NEPA guidelines.
TDM, TSM, TM, and Mass Transit	Does not meet the purpose and need.	Dismissed as standalone options.
Kennedy Interchange Reconstruction	Does not meet the purpose and need.	Dismissed as a standalone option.
One Bridge/Highway w/ Kennedy Interchange Reconstruction		
Downtown Bridge Only	Does not meet the purpose and need.	Dismissed.
East End Bridge Only	Does not meet the purpose and need.	Dismissed.
Two Bridges/Highway w/ Kennedy Interchange Reconstruction		
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 (Alignments B and C)	Meet purpose and need criteria; those dismissed have greater impacts.	Carried forward for further evaluation—Alignments B-1, C-1, C-2, C-3 Dismissed—Alignment B-2
Far East / Downtown Corridor (Alignments A and C)	Meet purpose and need criteria; those dismissed have greater impacts.	Carried forward for further evaluation—Alignments A-2, A-9, A-13, A-15 , A-16, C-1 , C-2, C-3 Dismissed—Alignment A-1, A-3, A-4, A-5, A-6, A-7, A-8, A-10, A-11, A-12, A-14

The 2003 FEIS Two Bridges/Highway Alternative was composed of the following alignments:

Alignment A-15

This alternative is a 6-lane freeway on new alignment that would connect 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.

Alignment C-1

This alternative includes the reconstruction (redecking) and 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 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.

2.3 FEIS Selected and Modified Selected Alternatives

FEIS Selected Alternative

The FEIS Selected Alternative evaluated in the SFEIS generally represents the same alternative that was presented in the 2003 FEIS as the Preferred Alternative and in the 2003 ROD as the Selected Alternative. As noted above, this alternative is referred to in the 2003 FEIS as a Two Bridges/Highway Alternative and is composed of alignments A-15 and C-1.

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 2003 FEIS were made. Consequently, the FEIS Selected Alternative analyzed and addressed throughout the SEIS process and documents is reflective of the most current design, which includes the following differences, 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 3rd 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.

Consistent with the description of this alternative in the 2003 FEIS, the FEIS Selected Alternative would be non-tolled. A tolled version of the FEIS Selected Alternative was considered as part of the alternatives screening process during the development of the SFEIS, and was dismissed as financially infeasible (see SFEIS Section 3.1.1.3, *Cost/Financial Feasibility*).

Modified Selected Alternative

In the 2003 FEIS/ROD, the Selected Alternative was projected to have a year-of-expenditure cost of approximately \$2.5 billion. In October 2007, a detailed project cost estimate plan (the *Initial Financial Plan [IFP]*, described in SFEIS Chapter 1) was prepared in response to a Federal requirement for a financial plan for all “Major Projects.” (See 23 U.S.C. § 106(h)). The plan estimated a cost increase, due to inflation, that would raise the estimated year-of-expenditure cost to approximately \$4.1 billion (\$1.61 billion more than the 2003 FEIS/ROD projection); and proposed funding the project entirely through traditional Federal and state transportation program funding sources. The IFP noted that planned annual updates would include “the potential to employ alternative funding approaches” (see IFP p. 4-12). Tolling options were listed among the potential alternative funding approaches.

In July 2010, the Louisville and Southern Indiana Bridges Authority¹, KYTC, and INDOT submitted to the Louisville MPO the *Financial Demonstration* (see SFEIS Section 1.4) that provided a “synopsis of the potential sources of funding” to meet anticipated project funding needs. The *Financial Demonstration* analyzed the cost estimates associated with the project and concluded that the project could not be funded solely through traditional revenue sources. The document also identified an estimated year-of-expenditure project cost of approximately \$4.1 billion, and noted (p. 5) that the Bridges Authority was “exploring the full range of alternative funding sources potentially available for the Project,” including toll revenues.

Of the estimated \$4.1 billion amount, the Louisville MPO determined (as documented in *Horizon 2030*) that \$1.9 billion will be available from traditional Federal and state funds, based on past history in both states. This would leave a shortfall of approximately \$2.2 billion, which would need to be obtained from other sources if the 2003 FEIS Selected Alternative were to be constructed.

In response to the \$2.2 billion shortfall, the Indiana and Kentucky Governors and the Louisville Mayor asked INDOT, KYTC, and FHWA in January 2011 to pursue cost-saving adjustments to the 2003 plan for building two new bridges and rebuilding the Kennedy Interchange. Consequently, design modifications to the 2003 FEIS Selected Alternative were evaluated to reduce the overall cost of the project and, thereby, minimize the amount of additional revenue required. The evaluation showed that costs could be substantially reduced with the following proposed modifications:

¹ The Bridges Authority was established by the Commonwealth of Kentucky and State of Indiana and charged with overseeing the development of a financial plan for the project. The Bridges Authority’s first meeting was in February 2010.

- Reconstructing the Kennedy Interchange on the existing footprint (i.e., in-place) instead of to the south, eliminating the I-71/Frankfort Avenue interchange, and reducing the length of roadway improvements along the I-65, I-64, and I-71 approaches.
- Reducing the number of lanes associated with Alignment A-15 from six lanes to four lanes, and acquiring right-of-way that would allow for an ultimate six-lane facility; building major structures (which would have a 75- to 100-year design life) to accommodate six lanes. When traffic demand warrants, the width of the structures would allow for a restriping to six lanes and the width of right-of-way would allow for the construction of the additional travel 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.

As of January 2011, these changes were projected to result in a \$1.2 billion savings. While this cost reduction would narrow the funding gap, it would not close it; therefore, the Modified Selected Alternative included provisions for tolling the I-65 bridges in the Downtown Corridor and the new bridge in the East End Corridor.

The proposed addition of tolls and design modifications to reduce costs resulted in the reevaluation of the project and its environmental impacts, as required by NEPA. On February 15, 2011, to comply with NEPA, FHWA, KYTC, and INDOT published in the *Federal Register* a Notice of Intent to prepare an SEIS to document the changes since the 2003 FEIS that would be associated with the proposed tolling options, design modifications, and changes in the project area.

The design modifications and tolling option comprised a new build alternative—the “**Modified Selected Alternative**”—that is evaluated in the SFEIS. The SFEIS considers how a Modified Selected Alternative could affect the environment compared with the originally selected “Two Bridges/Highway Alternative” without tolls (i.e., the 2003 FEIS Selected Alternative), and the No-Action Alternative; and addresses the requirements of environmental laws, regulations and Executive Orders that are applicable to the project.

The project design modifications are projected to result in a \$1.2 billion savings from the estimated \$4.1 billion cost of the FEIS Selected Alternative. Therefore, the estimated cost of the Modified Selected Alternative is \$2.9 billion². Based on preliminary estimates in the *Revenue Estimates and Indicative Financial Capacity SEIS Modified Selected Alternative Tolled Scenario* memo (see SFEIS Appendix G.5), tolling revenues are expected to generate from \$800 million to \$1.2 billion³ 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

² Since the publication of the SDEIS, both states have announced options to accelerate the project schedule, which could reduce the overall year-of-expenditure costs by approximately \$300 million; and continue to seek other cost saving measures. While 2022 is the target year for construction used in the project economic analysis, it is anticipated that an accelerated project schedule could result in completion of the east end portion by 2017 and the downtown portion by 2018.

³ This amount represents the net toll funding available for construction costs after subtracting the costs associated with operation and maintenance, along with debt service.

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 was therefore concluded that a Modified Selected Alternative (with tolling) was financially feasible and warranted detailed study in the SFEIS. The cost and funding estimates presented in the SFEIS and in this Revised ROD are preliminary and are presented solely as a basis for evaluating the reasonableness of the alternatives.

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

The new traffic forecasting and updated revenue analysis conducted for the SEIS indicated that (1) tolling revenues would be insufficient to cover the gap between the \$4.1 billion year-of-expenditure cost estimate for the FEIS Selected Alternative and available traditional funding if that alternative is tolled at the same rates as the Modified Selected Alternative; and (2) if the FEIS Selected Alternative were tolled at much higher rates, toll revenues would still fall somewhat short of the funding needed, and the toll rates themselves would likely be considered unacceptable. (See SFEIS Chapter 3, *Alternatives*, for a detailed discussion of tolling revenues.) Based on these findings, the FEIS Selected Alternative—either with or without tolls—would not be financially feasible. However, this alternative (without tolls) was carried forward for detailed study in the SFEIS as a baseline for analysis as the currently approved alternative.

As previously mentioned, 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. The SFEIS cited 2022 as the anticipated open-to-traffic date. The SFEIS noted that the states intend to compress the schedule by use of various factors such as design-build methods for delivery rather than traditional design-bid-build. This accelerated project schedule is anticipated to result in completion of the east end portion by 2017 and the downtown portion by 2018 and reduce overall project costs by an additional \$300 million, to an approximate \$2.6 billion. The states will continue to pursue methods to save costs and advance the project schedule. Table 2-2 presents a cost comparison between the two alternatives by design section. 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.

TABLE 2-2
COST COMPARISON OF BUILD ALTERNATIVES BY DESIGN SECTION

Project Sections	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 ⁽¹⁾	\$124.2	\$125.0	-\$0.8
TOTAL⁽²⁾	\$4,142.8	\$2,916.2	\$1,226.6

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

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

(2) Totals may not sum due to rounding.

On December 29, 2011, the Bridges Authority announced that Kentucky and Indiana had reached consensus on a basic plan to finance and build the project. The following agreement was reached, in principle, by Kentucky Governor Steve Beshear, Indiana Governor Mitch Daniels, and the Bridges Authority:

- Kentucky would be responsible for financing and constructing the downtown portion of the project—a new I-65 Bridge, a re-decked Kennedy Bridge, modernization of the Kennedy Interchange, and expansion of the I-65 approach in Indiana.
- Indiana would be responsible for financing and constructing the East End portion of the project—a new bridge near Utica, Indiana, and Prospect, Kentucky; a new highway linking the Lee Hamilton Expressway and Gene Snyder Freeway; and a tunnel in eastern Jefferson County.

On March 5, 2012, the Governors of Kentucky and Indiana signed a *Memorandum of Understanding Between the Commonwealth of Kentucky and the State of Indiana*, which defines “the roles and responsibilities for procurement, revenue sharing, financing, construction, tolling, operation and maintenance of the Louisville – Southern Indiana Ohio River Bridges Project...under a single comprehensive development plan.” The MOU is provided in SFEIS Appendix G.6.

2.3.1 Re-Evaluation of 2003 FEIS Alternative Evaluations in the SEIS

During the SEIS process, the range of alternatives evaluated and the screening decisions reached in the 2003 FEIS were re-evaluated and the re-evaluation was documented in the SDEIS and SFEIS (see *Alternatives Evaluation Document*, SFEIS Appendix A.3).

The re-evaluation confirmed that (1) the Two Bridges/Highway Alternative consisting of alignments A-15 and C-1 best provided a solution to the region's long-term cross-river mobility needs while balancing important environmental, community and economic values; and (2) the reasoning behind the elimination of alternatives in the 2003 FEIS remained valid and, therefore, would not be re-considered further in the SEIS. During the SEIS process, no additional environmental or other considerations were identified that would have altered the decision to dismiss these alternative concepts or alignments from detailed analysis in the SEIS.

2.3.2 Summary of Findings

The findings from the re-assessment of the 2003 FEIS alternatives, as summarized in SFEIS Section 3.1.1.4, are as follows:

- The decisions reached in the 2001 DEIS and 2003 FEIS regarding the dismissal of conceptual alternatives and alignment alternatives remain valid for the SFEIS.
- The FEIS Selected Alternative cannot be constructed with currently available or reasonably anticipated funds, but was still carried forward for detailed study in the SFEIS 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 exceed the available and anticipated traditional revenue sources.
- The Modified Selected Alternative with tolls is a financially feasible alternative and was, therefore, carried forward for detailed evaluation in the SFEIS.
- The bases for selecting alignments A-15 and C-1 as the preferred alignments in the East End and Downtown corridors, respectively, remain valid, and these alignments continue to be considered for both the FEIS Selected Alternative and the Modified Selected Alternative.

2.4 Developments Occurring Since Publication of the SFEIS

Since the publication of the SFEIS, the following new information regarding has become available and has been considered by FHWA in approving the Modified Selected Alternative: (1) the results of the Mobile Source Air Toxics (MSATs) quantitative assessment, (2) updates on the air quality attainment status, (3) archaeological site investigations, and (4) the Louisville MPO approval of Amendment 5 of MTP *Horizon 2030*.

Quantitative Assessment of MSATs

As stated in the SFEIS, FHWA has adopted interim guidance that identifies three categories of projects, based on their potential MSAT impacts: (1) exempt projects, which are those with no meaningful potential MSAT effects; (2) projects with low potential MSAT effects; and (3) projects with higher potential MSAT effects (SFEIS, p. 5-131). The guidance recommends a qualitative MSAT analysis for projects with “low potential” MSAT effects, and a quantitative MSAT analysis for projects with “higher potential” MSAT effects. The guidance also defines criteria for determining whether a project has “higher” potential MSAT effects. For this project, the key factor was whether the project would “create new or add significant capacity” on roadways where the average annual daily traffic “is projected to be in the range of 140,000 to 150,000 or greater by the design year” (SFEIS, p. 5-131).

In the SDEIS, FHWA determined that the project had low potential to cause MSAT effects, because the project is projected to reduce average annual daily traffic (AADT) on the I-65 (downtown) crossing, and, while it will introduce new traffic on the east end crossing, the traffic volumes on that route will be well below 140,000 AADT. In preparing the SFEIS, FHWA decided that a quantitative MSAT analysis should be prepared, primarily because the total traffic volume in the downtown area (when including the I-65 bridges as well as the Clark Memorial Bridge) has an AADT that approaches the threshold of 140,000. FHWA decided that a quantitative assessment, consisting of a project emissions inventory, should be performed to quantify the project roadway network emissions for the existing 2010 scenario and the design year (2030) scenario (SFEIS, p. 5-136).

Because the quantitative MSAT analysis was initiated just prior to the publication of the SFEIS, the results were not yet available in time for inclusion in that document. Therefore, SFEIS Section 5.4 included the qualitative MSAT analysis and stated that a quantitative MSAT assessment would be included in this Revised ROD. The MSAT assessment report was circulated for public and agency comment via the LSIORB Project web site prior to issuance of this Revised ROD, and responses to comments on that analysis are included in Section 6.0 of this Revised ROD. In addition, the quantitative MSAT analysis is included herein as Appendix A, and the results are summarized below. The quantitative emissions inventory provides emissions inventories for the project area roadway network for the No-Action Alternative, the FEIS Selected Alternative, and the Modified Selected Alternative.

The quantitative MSAT analysis validates the qualitative analysis included in the SFEIS, both of which indicate that a decrease in MSAT emissions can be expected in the LSIORB project area from existing (2010) levels through future (2030) design year levels. The quantitative analysis

also validated that there would be no appreciable difference in overall MSAT emissions among the build alternatives, in comparison to the No-Action Alternative. The major mitigating factor in reducing MSAT emissions is the implementation of the USEPA's control standards of motor vehicle emissions and fuels. These include the reformulated gasoline program, the national low-emission vehicle standards, the Tier 2 motor vehicle emission standards and gasoline sulfur control requirements, and the heavy-duty engine and vehicle standards plus on-highway diesel fuel sulfur control requirements.

The ability to discern remarkable differences in emissions among project alternatives is difficult given the uncertainties associated with forecasting travel activity and emissions 20 years into the future. However, some differences in total MSAT emissions between the No-Action and build alternatives were found. Overall, reductions in MSAT emissions of over 47% are predicted (47.2% to 47.3% for the build alternatives and 47.4% to 49.1% for the No-Action Alternative).

Air Quality Attainment Status

In a letter dated June 1, 2012, the Kentucky Division for Air Quality provided the following comment regarding Section 4.4 (page 4-145).

The fourth sentence reads:

"The project area is still in attainment for carbon monoxide, but is now in a maintenance status for ozone (under the 8-hour standard), non-attainment status for PM_{2.5} under the annual standard, and non-attainment status for sulfur dioxide."

The sentence should be revised to read as follows:

"The project area is still in attainment for carbon monoxide, but is now in a maintenance status for ozone (under the 1997 8-hour standard), nonattainment status for PM_{2.5} under the annual standard (however, a redesignation request has been submitted to EPA), and anticipated to be designated nonattainment for sulfur dioxide in 2012."

Archaeological Investigations

An extensive evaluation of archaeological resources in the Kentucky and Indiana portions of the project corridor was provided in the 2003 FEIS and Section 4.3.2 of the SFEIS. Following is a summary of archaeological activities and updates to archaeological information since the publication of the SFEIS. See Revised ROD Appendix B.2 for coordination letters referenced below.

Kentucky—East End Corridor

As noted in Section 4.3.2 of the SFEIS, Phase II archaeological testing was conducted in March 2012 at three sites, and management summaries were being prepared that would recommend sites 15Jf679 and 15Jf719 as not eligible for listing in the National Register of Historic Places (NRHP), and Site 15Jf720 as requiring additional coordination with the KY-SHPO before eligibility could be determined. Because the management summaries were not completed prior to the publication of the SFEIS, the SFEIS stated that: "[T]he status of coordination with the SHPO

regarding the eligibility determination will be included in the Revised ROD” (p. 5-125). On May 2, 2012, KYTC submitted to the SHPO the management summary containing the following eligibility determinations:

- Sites 15Jf679 and 15Jf719 are not eligible because they lack integrity and do not have the potential to yield information significant to local or regional prehistory or history. No further archaeological investigation of either site was recommended.
- Site 15Jf720 “does possess integrity of two prehistoric deposits and possible (sic) a third prehistoric deposit, and is eligible for the NRHP.” Because it appears the site cannot be avoided by the project, it “should be subjected to Phase III data recovery before any ground disturbing activities occur” in lieu of preservation in place.

The Kentucky SHPO concurred with these findings and recommendations in a letter dated May 10, 2012, conditioned upon the “review and acceptance of the final archaeological reports by July 1, 2013.” Phase III data recovery will be completed prior to any disturbance of the site.

Kentucky—Downtown Corridor

In a letter dated May 16, 2012, Kentucky SHPO provided comments on the report “*Section 106 Coordination for Archaeological Recommendations for the Downtown Louisville Phase of the (LSIORB)*.” The letter noted the following:

- Concurrence with the recommendation that no further archaeological work is needed at the Grocers Ice and Cold Storage Company or the American Machine Company/Vermont American Building.
- Concurrence with conducting archaeological investigation on 25.61 acres of the 195 acre project area, and concurrence for the investigation methods proposed for 16.03 acres of the 25.61 acres. For the remaining 9.58 acres, the report recommended no further archaeological work would be necessary should those soils contain hazardous materials. The SHPO did not concur with that recommendation and noted that, should hazardous materials be discovered, additional consultation with the SHPO will be needed.

Indiana—Downtown Corridor

- On May 3, 2012, the Phase 1a and 1c archaeology plan prepared for the project was submitted to the Indiana SHPO for review and comment. In its May 10, 2012, response (see Revised ROD Appendix B.2), the SHPO noted the plan is acceptable with seven conditions, which included the qualifications of investigators, the handling of human remains should any be discovered, revisions to the plan, and appropriate reporting of the results of any investigations. These conditions will be met.

Indiana—East End Corridor

In a letter dated May 25, 2012, Indiana SHPO provided comments on the SFEIS regarding the Utica Lime Industry (see Revised ROD Appendix B.1). The letter noted the following:

- SFEIS tables 4.3-7 and 5.3-23 implied that kiln 48004 and its associated quarry do not warrant preservation in place. These tables should state that only the quarry (not the kiln) does not warrant preservation in place.
- SFEIS Table 4.3-7 implied that kiln 48001 and its associated quarry would not warrant preservation in place; however, correspondence dated October 25, 2011, from the Indiana SHPO referenced only the quarries associated with kilns 48003 and 48004 as not warranting preservation in place.

Information in these tables related to these kilns/quarries has been revised in Table 2-3 to read as follows (with new text in **bold**):

**TABLE 2-3
REVISIONS TO SFEIS TABLES 4.3-7 AND 5.3-23**

SFEIS Table 4.3-7 (P. 4-141)				
Status of Archaeological Sites Associated with the FEIS Selected and the Modified Selected Alternatives				
Site	Description	SHPO Determination—2003 FEIS	SHPO Determination—Current	Build Alternative Corridor
12-CL-934	Historic Sites Associated with Lime Industry—kiln/quarry 48004	Potentially eligible; additional investigations required	In 2011 Indiana SHPO concurred that this resource is eligible under criteria A and D, but the quarry does not warrant preservation in place	East End
12-CL-551	Historic Sites Associated with Lime Industry—kiln/quarry 48001	Potentially eligible; additional investigations required	In 2011 Indiana SHPO concurred that this resource is eligible under criteria A and D. Outside the footprint; no direct effect.	East End
SFEIS Table 5.3-23 (p. 5-123)				
Status of Archaeological Sites Associated with the FEIS Selected and the Modified Selected Alternatives				
Site	Description	SHPO Determination—2003 FEIS	SHPO Determination—Current	Build Alternative Corridor
12-CL-934	Historic Sites Associated with Lime Industry—kiln/quarry 48004	Potentially eligible; additional investigations required	In 2011 Indiana SHPO concurred that these resources are eligible under criteria A and D, but the quarry does not warrant preservation in place	East End

Amendment 5 of the MTP Horizon 2030

On May 24, 2012, the Louisville MPO took action to incorporate the Kentucky construction phase of the LSIORB project into the 2011– 2015 years of the Transportation Improvement Program of the Metropolitan Transportation Plan (MTP). The air quality conformity documentation for Amendment #5 relied on the previous (Amendment #3) documentation, since there was no major change in project scope or funding (see Revised ROD Appendix C).

2.5 Environmental Justice

The 2003 FEIS included identification of minority and low-income communities in the LMPA and an evaluation of impacts to these identified communities. Detailed analysis was conducted

using 1990 U.S. Census data to determine the geographic locations of low-income and minority populations. Based on that analysis, FHWA determined in the 2003 FEIS that the FEIS Selected Alternative would not result in disproportionately high or adverse impacts to minority and low-income communities.

The SDEIS included an updated analysis of potential effects on minority and low-income communities. This updated analysis included more recent socio-economic data from the year 2000 Census, and also took into account the effects of tolling, which is proposed as part of the Modified Selected Alternative. The analysis of tolling in the SDEIS examined two types of effects: (1) the potential for tolling to alter traffic patterns, increasing or decreasing traffic through minority and low-income communities, and (2) the potential effects of tolling on vehicle user costs, which include the costs of tolls as well as other costs associated with operating a motor vehicle. The SDEIS concluded that neither the FEIS Selected Alternative nor the Modified Selected Alternative would result in any disproportionate or adverse impacts to environmental justice communities.

In response to comments on the SDEIS, FHWA conducted additional analysis of potential changes in traffic patterns and the effects of tolling on vehicle user costs for minority and low-income populations. This additional analysis included a more detailed breakdown of the average cost-per trip in 2030 for various population groups within the Louisville metropolitan area. The analysis in the SFEIS showed that tolling had the potential to cause minority and low-income users to experience a greater increase in average user costs than would be experienced by non-minority and non-low-income users (see SFEIS, Table 5.1-14). In addition, data from the year 2010 Census and the 2006-2010 American Community Survey became available after publication of the SDEIS and the SFEIS incorporated the newer data and re-evaluated the impacts using the newer data.

In both the SDEIS and the SFEIS, the effects of tolling were estimated based on a 'baseline toll scenario,' which included a toll rate of \$1.50 per trip for passenger vehicles; \$3.00 per trip for small trucks; and \$6.00 per trip for heavy trucks (see SFEIS, p. 3-18). As stated in the SFEIS, the baseline toll scenario was used for purposes of environmental impact assessment, and "does not represent a decision on the toll rates that will actually be charged" (see SFEIS, p. 3-18).

Changes in Traffic Patterns

Based on the analysis in the SFEIS, FHWA concluded that while changes in traffic patterns are expected due to the imposition of tolls with the Modified Selected Alternative, because the changes will be minimally perceptible and will not result in a noticeable increase in congestion, no adverse effects on nearby environmental justice communities are anticipated. No mitigation was committed to in the SFEIS to address the minimal changes in traffic that are expected. However, in response to a comment from USEPA recommending that mitigation be considered for possible disproportionate impacts, KYTC and INDOT have committed to monitor traffic in all of the environmental justice communities where changes in traffic patterns were predicted in the SFEIS. This monitoring will be conducted in conjunction with similar traffic monitoring that was committed to resolve potential adverse effects to historic resources (see First Amended MOA Stipulation II.Q). In addition, KYTC and INDOT will work with local authorities to

identify strategies that would be implemented to address the unanticipated disproportionately high and adverse effects, if any, of changes in traffic patterns that occur within the environmental justice communities. FHWA will require the strategies to be included in a tolling mitigation plan that must be completed before tolling is allowed to be initiated (see Section 4.1.17 of this Revised ROD). With these additional mitigation commitments, FHWA believes that the project will have no adverse effects on nearby environmental justice communities as a result of changes in traffic patterns.

Effects of Tolling on Vehicle User Costs

Based on the analysis in the SFEIS, FHWA concluded that the Modified Selected Alternative is likely to cause disproportionately high and adverse effect on minority and low-income populations, because the economic effects of tolling would be appreciably more severe or greater in magnitude for these populations. However, the extent of that potential effect will not be completely known until the tolling agreement and tolling policy is set. As a result, in accordance with FHWA Order 6640.23A, it is necessary to consider strategies for minimizing and mitigating the economic effects of tolling on minority and low-income populations. FHWA will require KYTC and INDOT to ensure that those strategies and any needed mitigation for disproportionately high and adverse effects must be established in a tolling mitigation plan before tolling is allowed to be initiated (see Section 4.1.17 of this Revised ROD).

To address the disproportionately high and adverse effects on minority and low-income populations, the SFEIS included two sets of commitments as part of the Modified Selected Alternative: (1) a commitment to provide funding to the Transit Authority of River City (TARC) for capital investments to enhance bus service, including, as a priority, measures that will benefit bus service to and from environmental justice communities on both sides of the Ohio River, and (2) a commitment to consider impacts on minority and low-income communities when establishing initial tolling policies for the project, through a process that provides an opportunity for input by minority and low-income communities. The methodology, assessment, and study to be completed will comply with FHWA policy, including FHWA “Guidance on Environmental Justice and NEPA” dated December 16, 2011, FHWA Order 6640.23A “FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” (June 14, 2012), and any update or other current FHWA policy available at the time of the assessment. The tolling study will identify mitigation and will implement practicable measures conforming to FHWA environmental justice guidance on disproportionate adverse impacts. The tolling study and mitigation plan will be completed before tolling is allowed to be initiated. (For a more detailed description of these commitments see Revised ROD, Section 4.1.17.) This Revised ROD requires implementation of these commitments, including execution of a MOA with TARC, as a condition of FHWA approval of the Modified Selected Alternative.

Conclusion

FHWA has determined that approval of the Modified Selected Alternative, subject to the conditions specified in this Revised ROD, is consistent with FHWA’s obligations under Executive Order 12898 and Title VI of the Civil Rights Act, as implemented by FHWA Order

6640.23A, “FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” (June 14, 2012). Specifically, FHWA finds that:

- The project will benefit both passenger vehicles and transit users by reducing congestion on major river crossings and on the Kennedy interchange in Louisville. These improvements in mobility would not be possible without tolling, because tolling is necessary for the project to be financially feasible. Therefore, while tolling does increase the average cost of some trips in passenger vehicles, tolling also enables the project to provide benefits that could not otherwise be provided. These benefits will be widely distributed across the region, including residents of minority and low-income communities.
- The project will have impacts across the entire region. Construction impacts will be experienced throughout downtown Louisville and in surrounding areas in both Indiana and Kentucky. An entirely new bridge and roadway will be constructed as part of the project in the eastern portion of the LMPA, and nearly all of the new construction will occur in non-environmental justice communities. The new roadway will reduce traffic in downtown Louisville, in comparison to the No-Action Alternative, while increasing traffic in suburban areas that have low concentrations of minority and low-income populations.
- The difference in projected average user costs between the No-Action Alternative and the Modified Selected Alternative is relatively small. According to the SFEIS, the average cost per trip for trips that begin or end in environmental justice communities in the metropolitan area would be \$3.68 in 2030 under the No-Action Alternative, and \$3.79 under the Modified Selected Alternative (see SFEIS, Table 5.1-14). Moreover, any such analysis is inherently uncertain. As stated in the SFEIS, “the data shown here provides only an approximate indication of the effects on the average cost per trip of low-income and minority populations, and does not necessarily reflect the actual experience of individual users” (SFEIS, p. 5-35).
- The Modified Selected Alternative incorporates measures to minimize and mitigate the effects of tolling on minority populations and low-income populations, because:
 - The commitment to monitor changes in traffic patterns and to identify strategies that would be implemented to address the unanticipated disproportionately high and adverse effects, if any, of changes in traffic patterns will ensure that there is no disproportionately high and adverse effect on minority and low-income populations due to changes in traffic patterns. Implementation of that commitment is a condition of FHWA’s approval of the Modified Selected Alternative.
 - The enhanced bus service commitments that are incorporated into the project represent a substantial investment that will improve transit service during construction and, by providing funds for capital investments, will contribute to improved transit service over the long term. Implementation of that commitment is a condition of FHWA’s approval of the Modified Selected Alternative.

- The SFEIS specifically requires KYTC and INDOT to engage the environmental justice communities when developing tolling policies, and to “incorporate practicable measures for minimizing impacts of tolling on low-income and minority communities” (SFEIS, p. 5-43). Implementation of that commitment is a condition of FHWA’s approval of the Modified Selected Alternative. It is not practicable for KYTC and INDOT to avoid the disproportionately high and adverse effects of tolling by eliminating tolling from the project altogether, because tolls are needed as a revenue source in order to implement the project.
- It is not practicable for KYTC and INDOT to provide ongoing operational funding for increasing transit service, because KYTC and INDOT do not have the legal authority to use their State highway funds for transit service.
- There is a substantial need for the project based the best overall public interest, for the reasons documented in the SFEIS and this Revised ROD. Moreover, alternatives that would have less adverse effects on minority and low-income populations would have other adverse social or economic effects that are severe or involve increased costs of extraordinary magnitude. Specifically, alternatives that would eliminate tolling would result in a No-Action decision, which would prevent the community from receiving the substantial mobility benefits associated with the project by meeting the needs identified in SFEIS Chapter 2, *Purpose and Need*. Measures that will minimize and mitigate the disproportionately high and adverse effects of tolling on low-income and minority communities will be incorporated into the project, as required by the commitments in this Revised ROD.

2.6 Identification of “Modified Selected Alternative” as the Selected Alternative and Environmentally Preferable Alternative

The SFEIS evaluated the No-Action, FEIS Selected, and Modified Selected alternatives based on their ability to meet the project’s purpose and need and the various performance measures presented in Chapter 2 of the SFEIS. This evaluation determined that the No-Action Alternative will not meet the project’s purpose and need. With regard to the FEIS Selected Alternative, although this alternative will meet the project’s purpose and need, it would not be financially feasible. In addition, this alternative would have greater overall environmental impacts compared to the Modified Selected Alternative (see Revised ROD Table 2-4). As a result, FHWA has identified the Modified Selected Alternative as the Selected Alternative and the Environmentally Preferred Alternative because it will: (1) meet the project’s purpose and need, (2) be financially feasible, and (3) result in fewer environmental impacts than the FEIS Selected Alternative.

TABLE 2-4
SUMMARY OF IMPACTS

Quantitative Impacts To	FEIS Selected Alternative	Modified Selected Alternative
Agricultural Resources Acres of prime farmland converted	57	57
Section 4(f) Properties used	8	8
Cultural Resources Number of historic districts impacted Number of historic sites impacted Number of archaeological sites impacted	10 24 7	10 23 7
Air Quality Impacts	No NAAQS Violations Project demonstrates Conformity	No NAAQS Violations Project demonstrates Conformity
Noise Number of impacted receptor sites Number of impacted Historic Properties	1,314 18	1,189 13
Natural Resources Acres of terrestrial wildlife/habitat impacted	237.3	194.4
Wetlands Acres of wetlands impacted	13.28	9.68
Water Resources Number of stream crossings (including Ohio River)	24	23
Floodplains Number of floodplains crossed Total acres of encroachment	6 178.35	5 80.03
Number of Owner/Tenant Residential Unit Relocations	65/15	55/15
Number of Business/Not-for-Profit Facility Relocations	79/1	23/1
Number of Agricultural Properties Impacted	18	18
Number of Community Resources Relocations	0	0

2.7 Agency Coordination

The following resource agencies and cooperating agencies were contacted on April 28, 2011, to confirm their willingness to continue involvement on the project during preparation of the SEIS. Agencies were invited to join the consultation process for the project as either a cooperating or participating agency. A draft of the project Coordination Plan was sent to the agencies. Early coordination was also initiated with various cities, county, and other local officials, agencies and organizations within the project area.

Cooperating Agencies		
U.S. Army Corps of Engineers, Louisville District	Eighth Coast Guard District	U.S. Fish and Wildlife Service, Kentucky Ecological Services Field Station and Bloomington Field Office
Participating Agencies		
USEPA Regions 4 and 5	National Park Service, Midwest Regional Office	U.S. Department of Agriculture, Natural Resources Conservation Service (Indiana and Kentucky offices)
Indiana Department of Homeland Security	U.S. Department of Homeland Security, Kentucky Division	Federal Aviation Administration, Great Lakes and Southern regions
U.S. Department of Housing and Urban Development, Kentucky and Midwest offices	Indiana Department of Natural Resources, Executive Office and Division of Historic Preservation and Archaeology	Indiana Department of Environmental Management
Kentucky Department of Fish and Wildlife Resources	Kentucky Department of Environmental Protection, divisions of Waste Management and Water	Kentucky State Nature Preserves Commission
Kentucky Heritage Council, State Historic Preservation Office	Jefferson County Public Works	Kentucky Heritage Council, State Historic Preservation Office
Jefferson County Public Works	Transit Authority of River City	City of Jeffersonville, Division of Planning and Zoning
Louisville and Jefferson County Metropolitan Sewer District	City of Prospect, Kentucky	Louisville Waterfront Development Corporation
Clark County, Indiana, Board of Commissioners		

On May 26, 2011, a Resource Agency Coordination meeting was held in Louisville, Kentucky. FHWA, KYTC, and INDOT updated the data on which the Purpose and Need Statement for the project was based; and reviewed the alternatives screening process to be used to determine whether the decisions documented in the 2003 FEIS for the project remained valid, and whether additional alternatives should be considered as a result of the proposed project modifications, including the potential use of tolling. The environmental analysis methodology detailed the process to be followed to evaluate impacts associated with changes in the project area. Drafts of

the Coordination Plan and of the Environmental Analysis Methodology were distributed for review and comment. Attendance at the meeting included representatives from the Kentucky State Nature Preserves Commission (KSNPC), the U.S. Army Corps of Engineers (USACE), the Indiana SHPO, and the Louisville Waterfront Development Corporation.

On December 14, 2011, a second Resource Agency Coordination meeting was also held in Louisville, Kentucky. FHWA, KYTC, and INDOT presented a project update including a review of the SDEIS, which had been provided to each agency prior to the meeting. Detailed presentations were made on each chapter or section of the SDEIS. The agencies were then provided the opportunity to ask questions and provide comments about the presentations and the document. All agency comments on the SDEIS were addressed in the SFEIS. In addition, agency comments on the SFEIS have been addressed in Section 6.0 of this Revised ROD.

For further information on agency coordination, refer to Section 7.2, *Resource Agency Coordination*, in the SFEIS.

3.0 SECTION 4(F) EVALUATION

Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 requires that, prior to the use of any of the resource types listed below, it must be determined either (1) that there is no prudent and feasible alternative that avoids such use and that the project includes all possible planning to minimize harm resulting from such use, or (2) that the use will result in a *de minimis* impact on the resource protected under Section 4(f). Resources protected under Section 4(f) include:

- A publicly owned and officially designated park
- A publicly owned and officially designated recreation area
- A publicly owned and officially designated wildlife or waterfowl refuge
- A historic property, either publicly or privately owned, that is listed in or eligible for inclusion in the National Register of Historic Places (NRHP), except for archeological resources that are important chiefly because of what can be learned by data recovery and have minimal value for preservation in place [CFR 774.13(b)(1)]

In its Section 4(f) regulations, FHWA has recognized three different situations in which a “use” of Section 4(f) property can occur. First, a use occurs when a project permanently incorporates land from a Section 4(f) property, even if the amount of land used is very small. Second, a use can result from a temporary use of land within a Section 4(f) property, unless the temporary use meets specific criteria that allow an exception to a use. Third, a use can result from proximity effects (such as noise, visual impacts, or vibration) if those effects “are so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired” (23 CFR Part 774.15(a) (a)). A use that results from proximity effects is known as a “constructive use.”

Chapter 3 of the 2003 ROD included a detailed evaluation of impacts to Section 4(f) protected resources. The introduction to the Section 4(f) Evaluation in Chapter 3 of the 2003 ROD presented information about the Section 4(f) Evaluation process. This section of the Revised ROD identifies changes to Section 4(f) policies since the publication of the 2003 ROD, and updates project-related information that was presented in the 2003 ROD, as follows:

- Summarizes changes to the Section 4(f) statute and also to FHWA’s Section 4(f) regulations since the publication of the 2003 ROD.
- Updates information regarding Section 4(f) uses of protected resources associated with the FEIS Selected Alternative and the Modified Selected Alternative.
- Updates information about previously identified historic resources, including the change in status of the Swartz Farm Rural Historic District (Indiana) due to a loss of historic integrity, the expansion of the boundaries of the four Utica lime kilns to include the

quarries associated with the kilns and the potential for constructive uses, and the identification of the Ohio River Camps Multiple Property Documentation Form (MPDF) Group Resources.

Since the approval of the 2003 FEIS, the FEIS Selected Alternative has been designed in greater detail and the Modified Selected Alternative has been developed. The Section 4(f) analysis that follows is based on an analysis of the current designs of the two build alternatives and the current status of the Section 4(f) properties associated with these two build alternatives. Since the 2003 ROD, additional Section 4(f) properties have been identified, and one property (the Swartz Farm Rural Historic District) has lost its Section 4(f) status.

Since the publication of the 2003 ROD, Section 4(f), itself, has been amended and new Section 4(f) regulations have been issued. In SAFETEA-LU (2005), Congress amended Section 4(f) to provide an alternative method of approving the use of protected properties where the impact is *de minimis*. The *de minimis* impact determination provides the basis for USDOT to approve the minor use of a Section 4(f) property without identifying and evaluating avoidance alternatives, thus streamlining the approval process.

In Chapter 3 of the 2003 ROD, descriptions of each of the Section 4(f) properties within the Downtown and East End corridors were provided. With the modification of the alternatives under consideration, only those specific portions of the 2003 ROD sections that have changed, either by potential use by a build alternative or by a change in Section 4(f) status, are addressed in this Revised ROD. Information about Section 4(f) resources in the 2003 ROD that is not updated herein remains valid.

3.1 Section 4(f)-Protected Historic Properties

Table 3-1, herein, lists the Section 4(f)-protected historic properties within the project's Area of Potential Effect (APE) that may be used by one or both of the build alternatives. The table also summarizes pertinent information about each resource. Consultation with the Indiana and Kentucky State Historic Preservation Officers (SHPOs) and with the Advisory Council on Historic Preservation (ACHP) has occurred, during the preparation of the 2003 FEIS and as part of the SFEIS process, regarding the identification and evaluation of historic properties that are listed in or eligible for the NRHP. That consultation resulted in determinations of eligibility for each resource not already listed in the NRHP. That information was used to identify Section 4(f)-protected historic properties included in Table 3-1.

**TABLE 3-1
SECTION 4(f) USE IMPACTS—HISTORIC PROPERTIES**

Alternative	Resource Name	Alpha-Numeric Code	Ownership	Function or Available Activities	Relationship with Similar Properties	Unusual Characteristics	Resource Size (acres)	2003 FEIS Amount of Use (acres)	SFEIS Amount of Use (acres)
FEIS Selected Alt.	Old Jeffersonville Historic District (IN)	ID-HC-5	Multiple	Mixed Land Use	None	None	192.2	3.0	3.0
Modified Selected Alt.									3.0
FEIS Selected Alt.	George Rogers Clark Memorial Bridge and Administration Building (IN)	KD-HC-55023	Public	Transportation	None	Pylons	0.73 site plus the bridge	0.1	0.1
Modified Selected Alt.									0.1
FEIS Selected Alt.	Utica Lime Kilns (IN)	48003	Private	Former Mining Use	None	Kilns and Quarries (the use is from associated quarries, only)	6.7*	N/A	.22
		48004							.84
Modified Selected Alt.		48003							.22
		48004							.84
FEIS Selected Alt.	Phoenix Hill Historic District (KY)	KD-HC-5	Multiple	Urban Setting	None	None	142	2.2	2.5**
Modified Selected Alt.									2.5
FEIS Selected Alt.	Butchertown Historic District (KY)	KD-HC-4	Multiple	Urban Setting	None	None	197.9	1.29	1.12**
Modified Selected Alt.									0.97
FEIS Selected Alt.	Swartz Farm Rural Historic District	IE-HC-45026,	Private	Agricultural	None	None	203	55.4	N/A***
Modified Selected Alt.		45026A & 45027							N/A

* The 6.7 acres represents all four lime kilns and quarries.

** The increase from 2.2 acres in 2003 to 2.5 acres in Phoenix Hill Historic District (HD), and the decrease from 1.29 acres to 1.12 acres in Butchertown HD, are due to a determination of the actual right-of-way acquisition that occurred after the 2003 ROD. The 2.2 and 1.29 acres were estimates in the 2003 FEIS. The actual numbers were based on more detailed information.

*** This site was a Section 4(f) resource in the 2003 FEIS but is no longer, as described in Section 3.2.3, herein.

3.1.1 Changes since the 2003 FEIS

In Table 3-1, the columns “2003 FEIS Amount of Use” and “SFEIS Amount of Use” contain data to illustrate the estimated acreage to be used by the preferred alternative documented in the 2003 FEIS, and by the two build alternatives evaluated in the SFEIS and described in Section 2.0 of this Revised ROD. With the exception of the lime kilns/quarries, the differences between the acres shown in the two columns are attributable to the FEIS Selected Alternative having undergone further design since 2003 (refer to SFEIS Section 3.1.1). In each case, the current acres of use by both of the build alternatives are the same or are less than the acres of use attributed to the FEIS Selected Alternative as described in the 2003 FEIS/ROD.

Regarding the lime kilns/quarries, the “use” by both alternatives would occur to the quarry properties, which, in the 2003 FEIS/ROD, were not considered to be associated with the four kilns. The kilns-quarries association, which was the result of additional investigation since 2003, is described below (see “The Utica Lime Kilns (#48001-#48004)—Indiana”).

The changes listed below pertain to the Section 4(f)-protected historic properties in the East End Corridor since the 2003 ROD. These changes are because either (1) the status of the sites,

themselves, has changed or undergone review by the Keeper of the NRHP, (2) the build alternatives' alignment at the site has changed, or (3) additional analysis regarding the resource has produced new information. There are no changes to the historic properties in the Downtown Corridor. None of these changes affect the overall conclusion of the 2003 Section 4(f) Evaluation regarding the East End Corridor, which is that Alignment A-15 is consistent with the requirements of Section 4(f).

The Utica Lime Kilns (#48001-#48004)—Indiana

At the time of the 2003 FEIS, the Utica lime kiln resources, which were determined eligible for NRHP listing under criteria A and D, were only known to consist of four kilns, which were located outside the right-of-way limits of the preferred alternative. Therefore, there was no use of this resource. However, during the 2003 Section 106 process, an Adverse Effect to the property under Section 106 was found due to proximity impacts (vibration from traffic, construction, and blasting). As a result, the Original MOA in the 2003 ROD included mitigation for the lime kilns (*Stipulation III.H.1-8*). The Original MOA included commitments to prepare a Historic Preservation Plan (HPP) and Condition Report and also to seek NRHP nomination of the resource, among other actions. Since the 2003 ROD, the preparation of the HPP and the NRHP nomination has been underway. This work resulted in the identification of the quarries associated with the kilns and the subsequent expansion of the historic boundary of each kiln to include the associated quarries. In addition, each kiln, together with its associated quarry, is now considered a separate historic district. The boundaries of two of the kiln districts (48003 and 48004) have been extended into the footprint of Alignment A-15, which was part of the preferred alternative in the 2003 ROD and also is part of the FEIS Selected Alternative and the Modified Selected Alternative. Therefore, the 2003 mitigation was revisited during the current Section 106 process and as part of this Section 4(f) Evaluation. Furthermore, because Alignment A-15 will pass within the expanded boundaries associated with the two quarries, it is necessary to evaluate whether there is a "use" within the meaning of Section 4(f), as described herein.

Both the FEIS Selected Alternative and Modified Selected Alternative will require approximately 0.84 acre of the quarry that is associated with the Kiln 48004 historic district and approximately 0.22 acre of the quarry that is associated with the Kiln 48003 historic district, for a total of approximately 1.06 acres from these two historic districts. This right-of-way acquisition will not include use of any of the four kilns, themselves. Recent coordination correspondence from the Indiana SHPO dated October 25, 2011, stated:

The Indiana SHPO believes that the Utica Lime Kilns (#019-305-48001-004) are eligible for the National Register of Historic Places as a multiple property group (and as archaeological features, above and below ground) under criteria A and D. Preservation in place is not necessary for the quarry walls or the open spaces within and around the quarries, as long as additional documentation is performed on those quarry walls, floors, and other spaces to be impacted within lime kiln districts 48003 and 48004. (See correspondence in SFEIS Appendix I, Section 4(f) Documentation.)

FHWA has issued a Section 106 finding of Adverse Effect (Encroachment, Visual, Vibration, and Construction) for this resource. As mitigation, *Stipulation III.H.4* of the First Amended MOA, prepared as part of the Section 106 process, provides, in part, that the affected quarries “will be documented at a level agreed upon by INDOT and the Indiana SHPO” (see SFEIS Appendix D.9).

Because the quarries are archaeological resources that are important chiefly because of what can be learned by data recovery and have minimal value for preservation in place, they qualify for an exemption under FHWA’s Section 4(f) regulations as stated in 23 CFR 774.13(b)(1). Consideration of the quarries as distinct from the kilns themselves is appropriate because, in a historic district, determinations of use are made with respect to each contributing or non-contributing element of the district.

FHWA also has considered the potential for a constructive use of the lime kiln historic districts, based on the proximity of the construction project to the kilns themselves. While the project will have an Adverse Effect on the kilns due to encroachment (quarries), visual, construction and vibration effects, it will not substantially impair the historically significant features of the lime kiln historic districts—namely the kilns. This conclusion, and the analyses conducted to reach it, is based partly on an addendum to the 2003 FEIS titled *An Evaluation Of Proximity Impacts To The Nearby Lime Kilns Included In The Utica Limekiln Multiple Property Listing And Located Near The Preferred Alternative* (August 2003). This analysis was developed in response to public comments on the 2003 FEIS, and noted that Kiln 48004 had the highest potential to experience Adverse Effects and a constructive use from the project. The report noted that Kiln 48004 will be located approximately 50 feet from the right-of-way limit, and approximately 90 feet below the bridge. The report concluded that “blasting vibration impacts from Alignment A-15 will not cause a ‘constructive use’ of the lime kiln identified as Site IE-HC-48004.”

There is no use of the lime kiln historic districts because (1) the direct impact to the quarries is not a use because the quarries are archaeological resources that do not warrant preservation in place, and therefore are exempt from Section 4(f) under 23 CFR 774.13(b)(1), and (2) there is no constructive use of the lime kiln historic districts because the proximity of the project will not substantially impair the protected activities, features, or attributes of those districts.

While there will be no use of the Utica lime kilns historic districts, the build alternatives will have an Adverse Effect on Kiln 48003 and Kiln 48004 due to the impacts on the quarries within these districts. Mitigation measures to minimize harm for these adverse effects are outlined in the executed First Amended MOA *Stipulation III.H.1-8*. Two mitigation measures that are ongoing include the development of the HPP (Item 1), and the development of the NRHP nomination (Item 8). A summary of the other items follows:

- Item 2. Develop a Conditions Report of the individual lime kiln districts
- Item 3. Develop and implement a blasting/vibration plan
- Item 4. Develop a “no-work zone” beyond the kilns
- Item 5. Repair any damage to the kilns caused during project construction

- Item 6. Work with Clark County to place a preservation easement on Kiln 48004
- Item 7. Place interpretive markers along Utica Pike for the kilns and quarries

These measures are described in more detail in the First Amended MOA, which is set forth in SFEIS Appendix D.9.

Swartz Farm Rural Historic District—Indiana

Since the 2003 ROD, the Swartz Farm Rural Historic District in Indiana (IE-HC-45026/45026A/45027) is no longer eligible for listing in the NRHP and, therefore, is no longer considered a Section 4(f) property. In October 2007, the Swartz Farmhouse and other contributing buildings on the farmstead were razed by the property owner. As a result, in a letter dated June 9, 2009, the Indiana SHPO concurred that the Swartz Farm Rural Historic District had lost its historic integrity and was no longer eligible for listing in the NRHP. This determination was re-affirmed by the Indiana SHPO in a letter dated October 14, 2011. Therefore, there is no Section 4(f) use of this property.

Samuel M. and Emmie Venable Nuttall House (JF-2044)

The proposed alignment of Alignment A-15 requires the acquisition of the Nuttall House and all 10 acres of associated property. The Nuttall House was previously determined as not eligible for listing in the NRHP. However, as discussed below, the determination was questioned by consulting parties. (Correspondence referenced below is provided in SFEIS Appendix D.8.)

As part of the 2000 DEIS process, FHWA determined the property to be not eligible for listing in the NRHP. The Kentucky SHPO concurred with FHWA in this determination. In 2002, the Keeper of the National Register also determined the Nuttall House not to be eligible for listing. The 2010 *Survey Update of Butchertown, Phoenix Hill, Downtown Louisville and River Road* was performed as stipulated in the Original MOA, and also found the property to be not eligible for listing in the NRHP.

As part of the SEIS process, field visits were completed in 2011 and additional historical research was conducted. It was again concluded that the Nuttall House was not eligible for the NRHP. The Kentucky SHPO reviewed eligibility findings and concurred with the determinations in letters dated October 14, 2011, and February 7, 2012.

However, due to comments received from consulting parties during the Section 106 process, the updated information was submitted to the Keeper of the NRHP on February 13, 2012, for an official determination of eligibility. In correspondence dated April 18, 2012, the Keeper issued a final determination that the Nuttall House is not eligible. Therefore, the Nuttall House is not considered a Section 4(f) property and there is no Section 4(f) use.

North Field

Alignment A-15 requires the acquisition of 11.3 acres of the 22.2-acre property referred to as the North Field property, which is surrounded by a wood plank fence and used as pasture for livestock. The property is adjacent to and owned by the owner of the NRHP-listed Belleview property; and is also adjacent to the NRHP-listed Rosewell property. In the 1990s, parcels within the Rosewell property were developed as suburban lots that are adjacent to the North Field.

As part of the original Section 106 process (prior to 2003), FHWA determined and the Kentucky SHPO concurred that the North Field property was not eligible for listing in the NRHP. However, during the SEIS process, the determination was questioned by consulting parties.

Analysis was conducted to document a potential historic association of the North Field property with the Rosewell property. The east boundary of the North Field has acquired significant tree cover since the present boundary was established during A. H. Mason's 1920s subdivision of the property. Also, alterations to the grounds of the main house at Rosewell have compromised the integrity of the setting of the house and its visual connection to the North Field. The context of the North Field was further altered by the construction of a large suburban house (6801 Transylvania Avenue) immediately to the west between years 2006 and 2009.

The North Field retains minimal visual and physical connection to the remaining tract surrounding the Rosewell main house and smokehouse. The southeast corner of the main house tract is separated from the northwest corner of the North Field by the south extension of Transylvania Avenue (believed to have been built in the 1990s). The Transylvania Avenue extension right-of-way is approximately 50 feet wide and is lined by trees that provide a visual barrier between the main house and the North Field.

In response to requests from consulting parties as part of the SEIS Section 106 process, information about the property was submitted to the Keeper of the NRHP on February 7, 2012, for an official determination of eligibility. In coordination dated April 4, 2012, the Keeper determined the North Field was not eligible under Criterion A, B, or C, but had insufficient information to make a determination under Criterion D regarding an archaeological site (15Jf678) on the property.

Additional testing was conducted to determine the site's eligibility under Criterion D, and a management summary was submitted by KYTC to the Kentucky SHPO on April 2, 2012, with a determination that the site is not eligible for inclusion in the NRHP under Criterion D. In a letter dated April 2, 2012, the SHPO concurred with that determination, with the concurrence being conditional upon the SHPO's acceptance of a final Phase 2 archaeology report. On April 16, 2012, FHWA submitted the SHPO's letter of conditional concurrence with the ineligibility determination to the Keeper for a final eligibility determination. In a letter dated April 18, 2012, the Keeper concurred with the ineligibility determination. (See related correspondence in SFEIS Appendix D.8.) Therefore, the North Field is not considered a Section 4(f) property, and there is no Section 4(f) use.

Determan House (KY-HC-JF843) \ Schildknecht House (KE-HC-JF841) \ Ohio River Camps Multiple Property Group—Transylvania Beach

The Determan House and the Schildknecht House are located at 6100 and 6306 Transylvania Beach Road, respectively. In the 2003 ROD, these properties were determined eligible for listing in the NRHP. Since 2003, the Transylvania Beach Road area has been included in the Ohio River Camps Multiple Property Group. Of that group, the Determan House and a house at 6212 Transylvania Beach Road were identified as the two NRHP-eligible properties closest to the alignment of Alignment A-15. The Determan House will be south of the alignment; and the house at 6212 will be north of the alignment, but south of and closer to Alignment A-15 than the Schildknecht House. There will be no direct use of property from either site.

In the 2003 FEIS, the Section 4(f) Evaluation determined there would be no constructive uses with Alignment A-15. This determination was based on predicted impacts, such as noise and vibration, from a forecasted year 2025 average daily traffic volume of 70,000 vehicles per day (vpd) on the East End Bridge. For the SFEIS, the updated 2030 traffic forecast for the East End Bridge for the FEIS Selected Alternative is 60,000 vpd; that for the Modified Selected Alternative is 52,000 vpd. Further, even though the future traffic volumes are expected to be lower, the commitment in the 2003 FEIS to the minimization measures identified for the Determan House and other resources (Chapter 6, p. 6-26) remains valid. By virtue of the traffic forecast being lower, the general visual and construction aspects being the same, and the commitments remaining the same, the possibility of a constructive use by either of the current build alternatives (which both follow the A-15 alignment evaluated in the 2003 FEIS) to these historic sites is no greater, and is likely less, than it was in 2003. Therefore, for the FEIS Selected Alternative and the Modified Selected Alternative, the conclusion in the 2003 FEIS that there would be no constructive use remains valid for these historic sites. Because the Determan House and 6212 Transylvania Beach Road are the two properties within the Ohio River Camps Multiple Property Group that are closest to Alignment A-15, they represent the worst-case scenarios for impacts to properties within the group. Therefore, since there will be no constructive use to either of these sites, there will be no constructive use of the Ohio River Camps Multiple Property Group. Therefore, there is no Section 4(f) use of this property.

Drumanard Estate Historic District

The 2003 ROD and Memorandum of Agreement (Original MOA) *Stipulation III.N.1* contained a commitment to avoid Section 4(f) use and minimize impacts to the Drumanard Estate Historic District by tunneling under the property. That commitment remains valid for this Revised ROD. The Modified Selected Alternative differs from the 2003 FEIS Selected Alternative within the tunnel by reducing the number of travel lanes from six to four. This change is only in the number of lanes constructed initially. The tunnel will be constructed to accommodate six lanes, and will be the same length as the tunnel proposed as part of the FEIS Selected Alternative. FHWA has not proposed to change the Section 106 Adverse Effect determination for this Section 4(f) property based on this minor change. Since the 2003 ROD, an analysis of construction options for the tunnel under U.S. 42 and this property has been prepared and is documented in SFEIS

Appendix I, *Construction Options at U.S. 42 and Drumanard Estate*. The reevaluation found the replacement of the proposed bored tunnel with an open cut configuration (the “Open Cut” option) or by using a cut-and-cover construction approach (the “Cut and Cover” option) was not reasonable, based on a comparison of the potential cost savings of either of those options versus the anticipated increase in overall impacts (including environmental and community harm) associated with each. The Open Cut option would result in the loss of 11.5 acres of the Section 4(f) property in the form of an open trench through the property, the relocation of 885 feet of a tributary to Harrods Creek, and a Section 106 Adverse Effect and Section 4(f) use of the Drumanard Estate Historic District. This option would be contrary to the 2003 ROD and Original MOA and would be inconsistent with community and stakeholder expectations based on those prior commitments. The Cut and Cover option would result in the loss of 7.8 acres of property, the temporary relocation of 820 feet of the Harrods Creek tributary, and a Section 106 Adverse Effect.

KYTC purchased the Drumanard property on April 17, 2012. INDOT will be responsible for constructing the East End portion of the project, including the tunnel under the Drumanard Estate. INDOT will ensure that any construction activities on the Drumanard Estate do not result in a temporary use of that property, based on the criteria in 23 CFR 774.13(d).

3.1.2 Archaeological Sites Requiring Determinations of Eligibility for Inclusion in the National Register

In addition to archaeological Site 15Jf678, which is on the North Field property and is discussed above, the following sites had Phase 2 archaeological testing completed in March 2012: 15Jf679, 15Jf719, and 15Jf720. Based on these investigations, sites 15Jf679 and 15Jf719 are recommended as not eligible for inclusion in the NRHP, and management summaries containing these recommendations were submitted to the SHPO on May 2, 2012, by KYTC. Regarding Site 15Jf720, because it appears the site cannot be avoided by the project, the management summary recommends Phase III data recovery before any ground disturbing activities occur, in lieu of preservation in place. (See Revised ROD Section 2.4, subsection “Archaeological Investigations,” for addition information regarding recommendations related to these sites.)

The SHPO concurred with these determination in a letter dated May 10, 2012. Phase III data recovery will be completed prior to any disturbance of the site. (See Revised ROD Appendix B.2.)

3.1.3 Potential for Constructive Use

The conclusion in the 2003 ROD that there would be no constructive use of any Section 4(f)-protected historic resource remains valid for this Revised ROD. This updated evaluation of potential constructive uses includes an updated assessment of direct highway noise impacts, visual impacts, vibration impacts, and indirect impacts from differences in traffic patterns between the FEIS Selected Alternative and the Modified Selected Alternative, all of which are

presented in Chapter 5 of the SFEIS. While adverse effects from these and other impacts have been proposed for historic properties through the on-going Section 106 process, they will not substantially impair the protected activities, features, and attributes that qualify the properties for protection under Section 4(f); therefore, they will not result in a constructive use of any historic property or district.

3.2 Parks, Wildlife Refuges, and Recreational Section 4(f) Properties

In the Downtown Corridor, there are four significant publicly owned parks/recreational areas within the proposed project area. These Section 4(f) resources and the impacts that they will experience due to either the FEIS Selected Alternative or the Modified Selected Alternative are summarized in Table 3-2. The impacts to these properties as a result of the FEIS Selected Alternative are based on a more detailed level of design than existed at the time of the 2003 FEIS and Section 4(f) Evaluation and, therefore, the level of impact to some properties is different from the impact identified in those documents.

In the East End Corridor, there are no Section 4(f) parks, recreation areas, or wildlife/waterfowl refuges in either the Indiana or Kentucky portion of the project; therefore, there will be no Section 4(f) uses of these types of properties in this portion of the project. The only wildlife refuge in the project area is the Six Mile Island Nature Preserve (KE-PR-1), which was included in the 2003 ROD and Section 4(f) Evaluation. However, this property will not be impacted by the FEIS Selected Alternative or the Modified Selected Alternative, as it is located in the Ohio River approximately two miles downstream of either East End alternative. Therefore, it is not included in Table 3-2, nor is there is any further discussion of that Section 4(f) property in this chapter.

**TABLE 3-2
SECTION 4(f) RESOURCES—PARKS, REFUGES, AND RECREATIONAL AREAS**

Alternative	Resource Name	Alpha-Numeric Code	Resource Type	Ownership	Access*	Approximate Number of Users/Visitors	Relationship with Similarly Used Lands	Unusual Characteristics	Resource Size (acres)	2003 FEIS Amount of Use (acres)	SFEIS Amount of Use (acres)
FEIS Selected Alt.	Greenway Corridor (IN)	ID-PR-9	Park	City of Jeffersonville	P, V, B	No record of data	Contains Riverfront and Ashland Parks	None	170	0.4	0.4
Modified Selected Alt.											0.4
FEIS Selected Alt.	Waterfront Park (KY)	KD-PR-11/12	Park	City of Louisville	P, V, B	1,500,000+ (2010)	None	Located within Ohio River Floodplain	55.1 (2003) 85.0 (2010)	5.3	6.86**
Modified Selected Alt.											4.55
FEIS Selected Alt.	Extreme Sports Complex (KY)	KD-PR-13	Park	City of Louisville	P, V	Unavailable	None	Developed for extreme sports	2.36	1.8	1.06
Modified Selected Alt.											0.65
FEIS Selected Alt.	Butchertown Greenway Trail (KY)	N/A	Linear Trail	City of Louisville	P	Unavailable	None	Linear trail along Beargrass Creek	N/A	N/A	0.05
Modified Selected Alt.											0.05

* P = pedestrian, V = vehicle, B = boat

** The increase in acres of use is due to the expansion of the park. The footprint of the 2003 design of this portion of the project has not changed.

3.2.1 Changes since the 2003 FEIS

In Table 3-2, the columns “2003 FEIS Amount of Use” and “SFEIS Amount of Use” contain data to illustrate the estimated acreage to be used by the preferred alternative (Alignment C-1) documented in the 2003 ROD, and by the two build alternatives under consideration in the SFEIS/Revised ROD, respectively. Differences between the acres shown for the FEIS Selected Alternative in the two columns are attributable to it having undergone further design since 2003, as described in SFEIS Chapter 3. In each case, the current acres of use by both of the build alternatives are the same or less than the acres of use attributed to the 2003 Selected Alternative as described in the 2003 FEIS/ROD. Changes to the properties and/or to the proposed use of the sites since the 2003 ROD follow.

Ohio River Greenway (Includes Riverfront Park and Ashland Park), Jeffersonville, Indiana

The only major change since the 2003 ROD is that much of this corridor has been developed. The use of this property will result from the acquisition of right-of-way associated with the new bridge span over the park. The right-of-way will encompass 0.4 acre of the resource. Current plans indicate that bridge support piers and footings will physically occupy approximately 0.03 acre of park property. These uses are the same for both build alternatives because they require the same right-of-way at this location. No park facilities or functions will be directly impacted, and no restriction of access between the portion of the park located to the east of the existing Kennedy Bridge and the proposed new bridge and areas of the Ohio River Greenway corridor to the west will be necessary, except during construction when access under the bridge will be closed to pedestrians for a temporary period for purpose of public safety. After construction, the area under the new bridge will remain accessible, except for the 0.03 acre actually occupied by bridge support piers and footings. Avoidance of the park by minor shifts in the alignment is not possible because it is a linear park located parallel to the Ohio River, and extends east and west of the proposed perpendicular crossing of the new Downtown Bridge.

Waterfront Park, Louisville, Kentucky

The only major change to the resource since 2003 is that two separate phases of park development have been completed. As shown in Table 3-2, the Modified Selected Alternative will require less acreage from this resource: 4.55 acres versus 6.86 acres for the FEIS Selected Alternative. In the 2003 ROD, the amount of land to be acquired from the park was estimated to be 5.3 acres. The increase of the acres is due to the expansion of the park further into the proposed right-of-way of the project. The piers for each alternative will physically occupy approximately 0.5 acre of park property. The reduction in overall impact to this resource is associated with the elimination of the widening of I-64 over the Great Lawn, from River Road to the western edge of the park, which was proposed as part of the FEIS Selected Alternative, but has been omitted from the Modified Selected Alternative. After construction, the area of the park below the new bridge will remain accessible to the public, and there will not be any restrictions on pedestrian access between portions of the park to the east and west of the new bridge. To

ensure safety for park users during construction, temporary closures of the park within the construction limits will be necessary, but such closures will be of short duration (less than the overall construction of the project), will involve only a minor portion of the park, and will be coordinated with the Waterfront Development Corporation. Avoidance of the park by minor shifts in the alignment is not possible because the park is located under the current Kennedy Interchange Complex.

Extreme Sports Complex, Louisville, Kentucky

As is the case with Waterfront Park, the major change since the publication of the 2003 ROD is that two separate phases of park development have now been completed. Property acquisition from the Extreme Sports Complex for the FEIS Selected Alternative would total 1.06 acres of right-of-way, whereas the Modified Selected Alternative will require 0.65 acre. Both alternatives involve spanning over the complex, and result in the loss of approximately 0.12 acre due to the construction of bridge support piers within the footprint of the park. Based on the current design plans, the piers will be placed within the site, but outside its recreational elements. During construction, it is anticipated that temporary closure of the park will need to occur. After construction, given the limited loss of property, the piers and the Extreme Sports Complex could co-exist without any loss of the park's recreational use. If such a loss were unavoidable, a redesign of the complex beneath the highway structures, or somewhere nearby, will be undertaken. For purposes of the Section 4(f) Evaluation, the property use is based on the proposed right-of-way acquisition of parkland. Avoidance of the park by minor shifts in the alignment is not possible because the park is located adjacent to the current I-65 at the southern portion of the Kennedy Interchange Complex.

The current restroom facilities at the Extreme Sports Complex will be located under an elevated ramp to be constructed over the park as part of the project. Because restroom facilities are not permitted under an elevated highway structure, the restrooms will need to be relocated to another site within the Extreme Sports Complex. KYTC right-of-way procedures allow the agency to provide functional replacement for publicly owned property that provides an essential public service when approved by the Director of the Division of Right-of-Way and Utilities. KYTC is committed to the functional replacement of the restroom facilities at this park with a facility that provides equivalent utility. This facility replacement will not result in the loss of recreational use within the park. These measures to minimize harm, including the relocation of the restroom and the commitment to place the bridge piers outside the recreational area even if that involves redesigning the complex, are part of the overall planning to minimize potential harm to this site.

Butchertown Greenway, Louisville, Kentucky

This property has been identified as a protected Section 4(f) resource since the issuance of the SDEIS. The Butchertown Greenway is located along Beargrass Creek, which crosses under I-71 approximately 0.35 mile east of I-64. The greenway is a bicycle and pedestrian facility that connects River Road to the north with Brownsboro Road to the south. The greenway was formerly Litterle Road, but in 1999 was closed to vehicles and designated as a multi-use trail. The project will require the widening of I-71 as it approaches the Kennedy Interchange Complex

from four to six lanes, including the I-71 Bridge over the Butchertown Greenway and Beargrass Creek. The construction activity will require a short term closure of approximately 0.05 acre of the greenway for purposes of public safety while construction, including the erection of the steel beams for the bridge is completed. The closure will not be adverse and will not constitute a temporary use per 23 CFR 774.13(d). Louisville Metro Parks and Recreation has concurred with this determination in a letter dated June 14, 2012 (see Appendix B.2).

3.3 Coordination

This project has been coordinated with the agencies and officials having jurisdiction over the Section 4(f)-protected properties that will be impacted. Archaeological and historical reports were coordinated with the Indiana and Kentucky SHPOs for determinations of eligibility and assessment of impacts.

FHWA, with the assistance of KYTC and INDOT, engaged in Section 106 consultation with the SHPOs of Indiana and Kentucky, the Advisory Council on Historic Preservation, as well as other consulting parties in conjunction with the preparation of the SFEIS. Consulting parties have provided input on the area of potential effects, eligibility determinations, findings of effect, and the resolution of Adverse Effects (mitigation). This consultation resulted in the execution of the First Amended MOA on April 4, 2012, to mitigate adverse effects of the project on historic resources.

The update to the 2003 FEIS Section 4(f) Evaluation was included in the SDEIS and SFEIS and was distributed to the following agencies and officials having jurisdiction over Section 4(f) properties to provide them the opportunity to review and comment on the updated information regarding Section 4(f) involvement:

- Advisory Council on Historic Preservation (ACHP)
- U. S. Department of Interior, National Park Service
- Kentucky Energy and Environment Cabinet (formerly Natural Resources and Environmental Protection Cabinet)
- Kentucky State Historic Preservation Officer (Kentucky SHPO)
- Indiana Department of Environmental Management (IDEM)
- Indiana Department of Natural Resources (IDNR)
- Indiana State Historic Preservation Officer (Indiana SHPO)
- U.S. Army Corps of Engineers (USACE)
- Louisville Metro, Kentucky
- City of Jeffersonville, Indiana
- Louisville Waterfront Development Corporation
- Ohio River Greenway Commission

The Section 4(f) Evaluation was also provided, within the SDEIS, to the U.S. Department of the Interior (USDO I), Office of the Secretary, for comment. In correspondence dated January 5, 2012 (see SFEIS Appendix I), the agency submitted comments on the Section 4(f) Evaluation, noting that USDO I could not concur with the evaluation until a fully executed MOA could be provided. The Section 4(f) Evaluation and executed MOA was submitted to USDO I within the SFEIS. In response, the agency's Director of the Office of Environmental Policy and Compliance submitted a letter dated May 25, 2012 (see Revised ROD Appendix B.1) in which the following was stated:

The selection of the preferred alternatives [sic] would result in impacts to properties eligible to be considered under Section 4(f)..., including five historic properties and three park/recreational facilities. The Department did concur there were no feasible or prudent avoidance alternatives to the preferred alternatives presented which would result in impacts to section 4(f) properties. However, the Department could not concur at that time that all possible planning needed to minimize harm to the 4(f) resource had been employed until evidence that the impacts to historic properties had been properly addressed in a Memorandum of Agreement (MOA). We note the inclusion of the fully executed MOA contained in Appendix D of the Supplemental Final EIS, and therefore remove our objection.

3.4 Section 4(f) Conclusions

The potential for a Section 4(f) use has been considered separately with regard to the Downtown and the East End corridors because the alignment decisions within each corridor involved different issues. The findings with regard to each corridor are summarized below. Based on the analysis of each corridor, this Section 4(f) Evaluation concludes that the Modified Selected Alternative will result in the least overall harm to Section 4(f)-protected resources and is, therefore, approvable under Section 4(f).

Downtown Corridor

Based on the current assessment of Section 4(f) properties, there is no feasible and prudent avoidance alternative to the use of Section 4(f) properties in the Downtown Corridor. This conclusion was reached for the 2003 ROD and remains valid for this Revised ROD. Opportunities to avoid Section 4(f) properties, including minor shifts in alignments, were not found to be feasible or prudent.

As was found in the 2003 ROD, and again in this Revised ROD, which is based on the most recent Section 4(f) regulations, Alignment C-1 (which was the preferred alternative in the 2003 ROD and is part of both build alternatives in this Revised ROD) will cause the least harm to Section 4(f) resources and the least overall harm. In addition, this alternative will incorporate appropriate measures to minimize harm to Section 4(f) resources. The measures to minimize harm that were identified in the 2003 ROD remain part of, and will be implemented with, the Modified Selected Alternative.

East End Corridor

In the East End Corridor, Alignment A-15 was determined in the 2003 ROD to be the least harm option with respect to Section 4(f) resources. At that time, it was assumed that the A-15 alignment would require the use of one Section 4(f) resource: the Swartz Farm. Based on the re-assessment of Section 4(f) resources in the East End Corridor, the Swartz Farm is no longer eligible, and thus Alignment A-15 will not involve a Section 4(f) use of that property. The re-assessment also identified larger historic district boundaries associated with each of the Utica lime kilns, and found impacts to quarries within those boundaries for two kilns; the impacts do not result in a Section 4(f) use for the reasons discussed in Section 3.3.2, herein. Therefore, both build alternatives in the East End Corridor—the Modified Selected Alternative and the FEIS Selected Alternative—completely avoid the use of Section 4(f) resources and, therefore, do not require a Section 4(f) approval.

Overall Conclusion

As stated above, the Modified Selected Alternative will not require the use of any Section 4(f)-protected resources in the East End Corridor, but it will require the use of Section 4(f)-protected resources in the Downtown Corridor. Therefore, approval of the Modified Selected Alternative requires a Section 4(f) approval, pursuant to Section 774.3 of FHWA's Section 4(f) regulations.

Under Section 774.3, FHWA can approve the use of a Section 4(f) resource either by (1) determining the alternative causes a *de minimis* impact on the Section 4(f) resource, or (2) determining that there is no feasible and prudent avoidance alternative and that the alternative includes all possible planning to minimize harm to the property resulting from such use [23 CFR § 774.3(a)-(b)]. In this case, FHWA is not proposing a finding of *de minimis* impact for the Modified Selected Alternative.

Based on the analysis in the Section 4(f) Evaluation in the 2003 ROD, as supplemented by the additional information contained in this Section 4(f) Evaluation, which is based on the Section 4(f) regulations (23 CFR Part 774), FHWA concludes that:

1. There is no prudent and feasible alternative that completely avoids the use of all Section 4(f) properties. Alternatives such as No-Action and TSM would avoid the use of Section 4(f) resources, but they do not meet the purpose and need of the project and, therefore, are not prudent. There are no alternatives that meet the purpose and need on a project-wide basis, that completely avoid the use of all Section 4(f) resources. Therefore, it is necessary to select the feasible and prudent alternative that causes the least overall harm and to ensure that that alternative includes all possible planning to minimize harm pursuant to 23 CFR 774.3(c)(2).
2. The Modified Selected Alternative is the alternative that causes the least overall harm. The two build alternatives considered in this Revised ROD are the FEIS Selected Alternative and the Modified Selected Alternative. Despite its somewhat lower impacts to Section 4(f) properties, the Modified Selected Alternative will include the same measures

to minimize harm to Section 4(f) properties as the FEIS Selected Alternative. As shown in tables 3-1 and 3-2 in this section, these two alternatives have similar impacts and relative severity on Section 4(f) resources, but the impacts of the Modified Selected Alternative are less because the alternative incorporates cost-saving design changes that also reduce the direct impacts of the alternative on Section 4(f) properties. It also will perform similarly in its ability to meet purpose and need, it will have similar or lower impacts on non-Section 4(f) resources, and it will be substantially less costly, \$2.9 billion vs. \$4.1 billion. For all of these reasons, the Modified Selected Alternative meets the criteria for designation as the alternative that causes “least overall harm” and has been identified in Chapter 3 as the preferred alternative.

3. The Modified Selected Alternative includes all possible planning, as defined in 23 C.F.R. §774.17, to minimize harm to Section 4(f) property. The Modified Selected Alternative incorporates all of the avoidance, minimization, and mitigation commitments that were adopted in the 2003 ROD for the FEIS Selected Alternative. These commitments include the extensive set of mitigation measures that were adopted for historic properties and are included in the executed Section 106 First Amended MOA.
4. In conclusion, based on an updated analysis of the Section 4(f) resources and the most current designs of the proposed build alternatives, as described throughout this chapter, approval of the Modified Selected Alternative is consistent with Section 4(f), 49 U.S.C. § 303(c), and the implementing regulations in 23 CFR Part 774.

4.0 MEASURES TO MINIMIZE HARM

Mitigation measures were identified for the FEIS Selected Alternative in the 2003 FEIS. With the development of the Modified Selected Alternative, many of the impacts of the FEIS Selected Alternative and the associated mitigation measures remain unchanged. Where additional effects have been identified for the Modified Selected Alternative, further mitigation measures have been developed. A mitigation plan was developed for the project for unavoidable impacts, including conceptual measures that will be further considered during the development of construction plans. These mitigation measures are detailed in Chapter 8 of the SFEIS and are summarized below.

4.1 Mitigation Commitments

The mitigation commitments identified in Chapter 8 of the SFEIS will be implemented during the design and construction phases of project development.

Under the MOU signed by the Governors of Indiana and Kentucky on March 5, 2012, the LSIORB Project will be financed and developed through two separate procurements: Indiana will be responsible for the East End Corridor, which includes the East End Bridge and approach roads; and Kentucky will be responsible for the Downtown Corridor, which includes the existing and new I-65 bridges, the approach roadways, and the reconstruction of the Kennedy interchange. Accordingly, commitments assigned in the SFEIS and this Revised ROD to Kentucky may be performed by Indiana as part of its responsibility for the East End Corridor, and commitments assigned to Indiana may be performed by Kentucky as part of its responsibility for the Downtown Corridor.

The commitments in Chapter 8 of the SFEIS and this Revised ROD shall supersede all commitments from the 2003 FEIS/ROD.

4.1.1 Endangered Species

The following is a summary of the mitigation measures and commitments identified in the 2003 FEIS, and in the amended Biological Assessment (BA) and the Indiana Bat Conservation MOA prepared for this project. For additional information, please refer to the amended BA and the Indiana Bat Conservation MOA in SFEIS Appendix B.3.

- The USFWS has determined that the entire Indiana portion of the project and the downtown portion of the alignment within Kentucky are not reasonably likely to have adverse effects on the Indiana bat. They have determined that the project in the East End Corridor in Kentucky is likely to adversely affect the Indiana bat. The alignment is located wholly within the known Indiana bat maternity colony home range and is likely to have adverse effects on Indiana bats through the loss and/or alteration of occupied Indiana bat habitat. To address these adverse effects on Indiana bats within Kentucky, on February 18, 2012, KYTC and USFWS entered into an Indiana Bat Conservation MOA

to account for incidental take of Indiana bats and Indiana bat summer habitat. KYTC provided a contribution to the Indiana Bat Conservation Fund, to be used for recovery-focused conservation benefits to the Indiana bat through the implementation of minimization and mitigation measures that are described in the Indiana Bat Mitigation Guidance for the Commonwealth of Kentucky.

- No construction work will be permitted at night at stream crossings, with the lone exception of pouring concrete for bridge decks. This construction provision does not apply to the bridge(s) construction over the Ohio River.
- All culverts and pipes will be designed and constructed such that the bottom (invert) is at a lower elevation than the stream bottom/bed, and the design of the culvert/pipe is such that it will allow natural stream bed material to accumulate throughout the length of the culvert. This will allow for colonization and production of macroinvertebrates within the culvert/pipe; thus minimizing the impact upon and reduction of productivity of a food resource for gray bats.
- Seasonal restrictions (April 1–August 15) on the removal of trees to minimize disruption to Indiana bat maternity activities in accordance with consultation conducted with the USFWS.
- Trees greater than or equal to 5-inch diameter at breast height (dbh), living or dead, will be avoided except those in the direct construction limits.
- All construction equipment used in the Ohio River and tributaries will be free of zebra mussel adults and veligers. Any construction equipment that has been used in waters that could have been infested with zebra mussels will be appropriately disinfected and inspected for zebra mussel adults and veligers prior to use in the Ohio River and tributaries. A special note shall be included in the final plans providing information on the appearance and characteristics of zebra mussels, importance of steps required to minimize or eliminate potential infestation, and other special steps that may be appropriate for the particular phased approach to the final project.
- Hollow trees, trees with sloughing bark, and other large trees that occur within the project limits will be avoided to the maximum practical extent and delineated by special notes in the plans and measures such as special fencing during construction.
- To maintain a riparian buffer zone, tree cutting will be restricted to the construction limits and will be limited to that absolutely necessary to complete the project.
- Excess parcels that have been purchased as part of this project will be used for wetland mitigation or reforestation, as appropriate.
- In Kentucky, disturbed areas at stream crossings will be re-vegetated with tree species that produce sloughing bark and snags and follow the general guidelines of USFWS,

Interstate Mining Compact Commission, and Office of Surface Mining (2009). Species will include a minimum of six different tree species. Species selection should be determined by site-specific characteristics (soil moisture, sun exposure, etc.) and seedling availability. A stocking success rate of not less than 300 stems per acre will be required. A minimum of four species identified as “Exfoliating Bark Species” must be planted and equal at least 40% of the minimum stems per acre. Tree species will be planted at approximately equal rates. “Exfoliating Bark Species” (suitable for planting in the project area) are sugar maple (*Acer saccharum*), bitternut hickory (*Carya cordiformis*), pignut hickory (*Carya glabra*), shellbark hickory (*Carya laciniosa*), shagbark hickory (*Carya ovata*), mockernut hickory (*Carya tomentosa*), eastern cottonwood (*Populus deltoides*), white oak (*Quercus alba*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), post oak (*Quercus stellata*), black oak (*Quercus velutina*), sassafras (*Sassafras albidum*), and slippery elm (*Ulmus rubra*). An herbaceous ground cover of native species will be established.

- Frequent fording of live streams will not be permitted. Temporary bridges or other structures shall be used whenever necessary. Unless otherwise approved in writing by the project engineer and upon receipt of any required permit or other local, state or federal approval, mechanical equipment shall not be operated in live streams or in wetlands. Only coarse granular material will be permitted to be placed in live streams during construction. Any temporary river accesses built in conjunction with this project will be completely removed upon completion of construction activities. Details of the mitigation for stream impacts requiring local, state or federal permits, certifications or other approvals will be developed during final design.
- Preservation of surface water quality will be controlled by minimizing impacts and maintaining the stream crossings Channel work such as, vegetation clearing, channel widening, shaping of spill slopes and placement of riprap will be limited to the construction limits.
- Staging, refueling, and cleanup areas will not be allowed alongside streams. Equipment cleaning/staging areas will be located such that runoff from these areas will not directly enter the stream. Equipment cleaning/staging areas will be located such that effluent will be filtered through vegetated areas and proper sediment control structures located between the staging area and receiving water-bodies; thereby minimizing the potential for stream impacts such as sedimentation and pollution.
- All KYTC and INDOT Best Management Practices (BMPs) for stream protection will be in place during project construction. INDOT’s Standard Specifications and INDOT’s Special Provisions will govern construction activities in Indiana to control erosion and subsequent water pollution. KYTC’s Standard Specifications for Road and Bridge Construction will guide construction activities in Kentucky. BMPs will be utilized to prevent non-point source pollution, to control stormwater runoff and to minimize sediment damage to water quality and aquatic habitats. BMPs will include:

- Temporary and permanent erosion control features will be incorporated into the project at the earliest practicable time as construction progresses.
- When seeding or sodding must be delayed, temporary erosion protection with mulches, fiber mats, matting, dust palliatives, crust-forming chemicals, or plastic sheets will be provided.
- Erosion control measures such as berms, dikes, geotextile filter cloths, slope drains, sediment basins, mulched seeding, sodding, and riprap will be installed where appropriate. Use of sediment traps will be determined for specific streams as dictated by the construction permit process.
- During grade and drain operations (occurring after initial clearing and grubbing of the corridor), mulch will be spread across all areas where no work will be conducted for a 21-consecutive-day period. Equipment needed to properly spread mulch will be located on-site.
- The following provisions shall apply to the spillage or release of hazardous materials during construction or operation of the Indiana portion of the project. See INDOT's Standard Specifications, Spill Response Section of the Laws and Regulations Section for further information:
 - Construction—Hazardous material releases, oil spills, fish/animal kills and radiological incidents must be reported to Office of Emergency Response (OER), IDEM (888) 233-7745. Reporting should occur as soon as action has been taken to either contain/control the extent of the release, or protect persons, animals or fish from harm or further harm. Appropriate response actions for spills occurring on project sites should occur in the following order: identify the spilled material from a safe distance; contain the spilled material or block/restrict its flow using absorbent booms/pillows, dirt, sand or by other available means; cordon off the area of the spill; deny entry to the cordoned off area to all but response personnel; and contact OER/IDEM then Operations Support.
 - Operations—INDOT Hazardous Material Accidents/Incidents Policy, February 1992 (revised July 1998 or most recent version).
- The following provisions shall apply to the spillage or release of hazardous materials during construction or operation of the Kentucky portion of the LSIORB Project:
 - Construction—Contractor to prepare spill containment plan at the Pre Construction Conference for his proposed operations and receive approval prior to the initiation of work.
 - Operations—Chapter 10 of the KYTC Operations Guidance Manual—Cleanup and Restoration Work (71-10.0500)

- Pouring of concrete for piers and/or decking will be done such that spills into the stream do not occur. In the unforeseen event that spillage does occur, USFWS office will be notified and the resident engineer shall halt the activity immediately and not resume until appropriate remedial actions have been implemented.
- Borrow sites and excess material sites for disposal of construction spoil have not been determined at this time. Excess material and borrow sites will be investigated later when a determination is made on how construction phasing will progress. Further coordination with USFWS will be undertaken to address this issue at that time. Once these sites have been determined the following will help to reduce their potential impact. The contractor will be required to develop a plan detailing the source and methods of transportation of borrow/fill. When borrow material is obtained from other than commercially operated sources, erosion of the borrow site shall be controlled during and after completion of the work by minimizing the erosion in such a way that it will prevent sediment from entering streams or other bodies of water. Excess material areas will be located and constructed in a manner that will keep sediment from entering streams. BMPs such as diversion channels, dikes, and sediment traps will be used for this purpose. All excavated materials not utilized for roadway embankment or disposed of off-site will be hauled for storage to an upland site and secured in such a manner as to prevent runoff from entering streams.
- USFWS shall be contacted by KYTC at least one week prior to the start of construction for the proposed project.
- If bridge construction does not begin within five years of USFWS concurrence with the amended BA (February 18, 2012), KYTC will contact the Frankfort, Kentucky Field Office of USFWS to assess the need for reevaluation of the potential of the project to adversely affect federally listed mussel species. This will ensure that no adverse affects to the federally listed mussel species occur.
- KYTC commits to survey any suitable interior least tern nesting areas during subsequent nesting seasons prior to construction. This will ensure that suitable least tern habitat areas are not occupied and no adverse affects to the interior least tern will occur from the project. The results of such surveys will be coordinated with the Frankfort, Kentucky Field Office of USFWS to determine if further consultation is required.

4.1.2 Terrestrial Wildlife and Habitat

The following mitigation measures for impacts to terrestrial wildlife and habitat will be incorporated into the project:

- DO NOT DISTURB signs will be placed at the construction zone boundaries for those portions of the project within Indiana. These signs will be placed beyond the construction limits to protect re-vegetation areas and areas of existing vegetation. Trees that occur

within the right-of-way, but outside of the construction limits, will be identified during the design phase and delineated by fencing or other measures to minimize impacts.

- DO NOT MOW OR SPRAY signs will be posted along the right-of-way for selected areas (areas of woody re-vegetation, wetlands and preservation of existing woody vegetation) in Indiana in accordance with INDOT requirements and in selected areas in Kentucky where mitigation plantings may be required.
- INDOT will purchase existing woodland at a 1:1 ratio for preservation, or will re-vegetate upland woodland at a 1:1 ratio to mitigate forested habitat lost as a result of this project.
- Invasive-free mulches, topsoil and seed mixtures, and eradication strategies to eliminate known invasive species will be incorporated into the final project.
- Provisions will be included in the final plans emphasizing the selection of construction and landscaping techniques and equipment that will minimize the spread of invasive plant species, particularly in areas where steep slopes are involved. Attention shall also be given to minimizing soil disturbance during vegetation management activities.
- Disturbed areas will be re-vegetated to the maximum extent possible with tree species that produce sloughing bark and snags. Species to consider include sugar maple (*Acer saccharum*), bitternut hickory (*Carya cordiformis*), pignut hickory (*Carya glabra*), shellbark hickory (*Carya laciniosa*), shagbark hickory (*Carya ovata*), mockernut hickory (*Carya tomentosa*), eastern cottonwood (*Populus deltoides*), white oak (*Quercus alba*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), post oak (*Quercus stellata*), black oak (*Quercus velutina*), sassafras (*Sassafras albidum*), and slippery elm (*Ulmus rubra*).
- KYTC will provide for replacement of trees removed by construction in those areas where dense vegetation provided a buffer for abutting properties.
- KYTC will include trees or other types of vegetation in the re-vegetation plan developed for the project in association with any noise barrier walls recommended as part of the project.
- KYTC will consult with the Bridgepointe Neighborhood Association and consider their recommendations in developing a landscape component for any wall placed along the border of the neighborhood.
- The area between Utica—Sellersburg Road and Salem Road has at least three distinct passageways that wildlife could use. The project will bridge two of the three, thereby providing corridors for wildlife passage through the area.

- A tributary of Lentzier Creek flows along the side of the Utica—Charlestown Road. The forested area on either side of the Modified Selected Alternative will be connected by a bridge that will span both the road and the stream tributary. The selection of a bridge span or culvert size will be determined in the final design and will include consideration for wildlife passage.
- During final design, the stream crossing structures will be coordinated with the IDNR and USFWS Indiana Field Office to address design opportunities for wildlife crossings.
- The amended BA of January 16, 2012, provides for culverts with natural stream bottoms. In addition, bridge openings will allow for wildlife crossing.
- Due to the recent discovery of bald eagles nesting in the East End Corridor, coordination with USFWS is underway. The bald eagle is protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.
 - Due to these laws, construction will not commence within proximity of the nest until a permit is obtained from USFWS.
 - The *National Bald Eagle Management Guidelines* (NBEMG) will be used to draft guidance and recommendations for protection of the bald eagles in the vicinity of the project.
- Due to the recent discovery of white nose syndrome in some gray bats in Tennessee, FHWA has included the following additional requirements in this Revised ROD:
 - KYTC and INDOT shall seek technical assistance from USFWS regarding white nose syndrome as it relates to the effects of the LSIORB Project on the Indiana bat and gray bat.
 - If deemed necessary based on technical assistance from USFWS, FHWA will reinitiate consultation with the USFWS to consider new information regarding the white nose syndrome, and will modify the mitigation measures for the Indiana bat and gray bat to the extent necessary to ensure that a finding of “not likely to adversely affect” and/or “no jeopardy” is achieved for both species.

4.1.3 Waterways and Riparian Vegetation

Mitigation measures have been developed to minimize impacts to waterways and riparian areas within the project area. The following measures will be incorporated into the project to protect existing vegetation as well as areas to be re-vegetated after construction.

- Physical disturbance of waterways and riparian vegetation will be limited to only that which is necessary. Notes and details will be included in the plans to further minimize the removal of trees and understory vegetation that fall within the required right-of-way, but

outside the actual limits of construction. Hollow trees, trees with sloughing bark, and other large trees that occur within the project limits will be avoided to the maximum practical extent and delineated by special notes in the plans which will also include measures such as special fencing during construction.

- The IDNR guidelines will be followed for the specific stream crossing structures and bank stabilization measures that will be included in the approved Construction-in-a-Floodway permits to be filed for the project.
- The IDNR guidelines for impacts to forested floodplain typically require a mitigation ratio of 10:1 for preservation, a 1:1 ratio for restoration of impacts less than one acre, and a 2:1 ratio for restoration of impacts greater than one acre. The final mitigation ratio will be determined during the IDNR permitting process for the project.
- The size, shape and stability of natural stream channels unavoidably impacted by construction will be used as the basis for designing replacement channels. Work in the low-water channel of existing streams will be minimized to the maximum practicable extent by limiting construction to the placement of required drainage structures or structure components such as piers, pilings, footings, cofferdams, shaping of spill slopes around bridge abutments and placement of riprap.
- A non-toxic flocculent agent will be added to the bottom water in cofferdams to prevent downstream siltation during cofferdam dewatering. Pollutants such as fuels, lubricants, bitumen, raw sewage and other harmful materials will not be discharged into or near rivers, streams and impoundments or into natural or manmade channels leading thereto. Wash water or waste from concrete mixing operations will not be allowed to enter live streams. The use of artificial bank stabilization such as riprap will be limited to bank stabilization areas in Indiana unless otherwise required by final design details. A minimum average 6-inch graded stone, extended below normal low water level to provide habitat for aquatic organisms in the voids, will be used for those areas in Indiana.
- The bottom/invert of all culverts and pipes will be partially buried to allow stream bed material to accumulate and provide a natural stream bed for aquatic organisms.
- Below low water, channel work outside of cofferdams will be avoided during the fish-spawning season between April 1 and June 30, and performed from stream banks in shallow waters or barges in deeper waters.
- Construction Inspectors will be on-site during construction to ensure that contractors comply with plans, regulations, and guidance documents, including construction standard specifications and special provisions. INDOT and KYTC contracts will include provisions for monetary fines should a contractor fail to implement appropriate construction BMPs to protect surface and ground water.

- All KYTC and INDOT Best Management Practices (BMPs) for stream protection will be in place during project construction. The INDOT *Standard Specifications and Special Provisions* will govern construction activities in Indiana to control erosion and subsequent water pollution. The KYTC *Standard Specifications for Road and Bridge Construction* will guide construction activities in Kentucky. BMPs will be utilized to prevent non-point source pollution, to control storm water runoff and to minimize sediment damage to water quality and aquatic habitats. BMPs to be utilized are located in the *Erosion Control* section of this chapter.
- Re-vegetate all bare and disturbed areas with a mixture of native grasses, sedges, wildflowers, and native shrub and hardwood tree species as soon as possible upon completion. Do not use any varieties of Tall Fescue or other non-native plants (e.g., crown-vetch).
- Do not cut any trees suitable for Indiana bat roosting (greater than 5 inches dbh, living or dead, with loose hanging bark) from April 1 through August 15.
- Do not construct any temporary runarounds or causeways unless approved by regulatory permitting agencies.
- Seed and protect all disturbed slopes that are 3:1 or steeper with biodegradable heavy-duty erosion control blankets (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.
- The streams listed in SFEIS Section 5.10.2.3, *Water Body Modifications*, will be bridged along with their associated 100-year floodplains. This section includes names and identification numbers of the streams.

4.1.4 Floodplains

The predicted floodplain impacts are limited to storage and conveyance. Where applicable, compensatory storage will be provided. The following mitigation measures will be incorporated into the project as appropriate.

- Piers will be placed within the floodplain as required by structural design requirements and with consideration for minimizing impacts to drainage within the floodplain and the Louisville Water Company (LWC) hard rock tunnel along Transylvania Beach Road.
- Where filling in a floodplain is required, a Floodplain/ Floodway Permit will be obtained. Mitigation of impacts to floodplain will be coordinated with the IDNR, KDOW, Louisville/Jefferson County MSD, and USACE throughout the design phase of the project.

- The LWC will be consulted about the possible enhancement of a wooded area within their floodplain property adjacent to Transylvania Beach Road. The maintenance of the property also will be discussed with LWC to encourage their protection of the property.

4.1.5 Wetlands

Minimization and mitigation of wetland and stream impacts are required as part of the Clean Water Act Section 404 permitting process, administered by the USACE. Loss of wetlands will be mitigated as determined appropriate in accordance with USACE, Louisville District; Indiana Department of Environmental Management (IDEM); KDOW; and the USFWS, Frankfort and Bloomington Field Offices. The following mitigation measures and permit coordination will be incorporated into the project.

- Design modifications including narrowing medians, shoulder widths and spanning wetlands can be considered during the design phase of the project.
- Coordination with the USACE, Louisville District, will result in preparation of a wetland mitigation plan during the development of detailed plans. A monitoring plan, approved by the permitting agencies, will be included with the wetland mitigation plan.
- Prior to construction, the appropriate state and Federal permits will be obtained and right-of-way will be acquired for the development of mitigation sites. In this way, appropriate consideration will be given for further minimizing or avoiding project impacts to wetlands.

4.1.6 Erosion Control

Measures to control and minimize erosion and water quality impacts from construction activities will be incorporated into the project. Best Management Practices (BMPs), standard erosion control measures and other measures included in the INDOT *Standard Specifications* and *Special Provisions* and the KYTC *Standard Specifications for Road and Bridge Construction* will provide the basis of the erosion control plan. The following text incorporates both the mitigation that is still applicable from the 2003 FEIS and that which has been developed or updated through agency coordination since that time.

- Best Management Practices (BMPs), standard erosion control measures and other measures included in the INDOT *Standard Specifications* and *Special Provisions* and the KYTC *Standard Specifications for Road and Bridge Construction* will provide the basis of the erosion control plan. The BMPs will be utilized to prevent non-source point pollution, to control storm water runoff, and to minimize sediment damage to water quality and aquatic habitats.

- Construction limits will be minimized and appropriate measures will be taken to minimize loss of Indiana bat habitat, particularly on parcels purchased as uneconomic remnants that lie beyond the construction limits.
- Erosion control measures such as berms, dikes, geotextile filter cloths, slope drains, sediment basins, mulched seeding, sodding, and riprap will be installed where appropriate.
- Use of sediment traps will be determined for specific streams as dictated by the construction permit process.
- The contractor will be required to develop a plan detailing the source and methods of transportation of borrow/fill. When borrow material is obtained from other than commercially operated sources, erosion of the borrow site shall be controlled during and after completion of the work by minimizing the erosion in such a way that it will prevent sediment from entering streams or other bodies of water.
- Implementing an approved soil erosion and sedimentation control plan will control erosion within the construction limits. All construction activities must comply with federal and state soil erosion and sedimentation regulations. This plan will be developed in conjunction with final construction plans.

4.1.7 Groundwater Protection

Groundwater protection measures will be addressed during design and implemented during construction for the portion of the project within the proposed Louisville Water Company (LWC) Wellhead Protection Area (WHPA) in Kentucky. In Kentucky, FHWA guidelines, and KYTC guidelines including Best Management Practices, *Standard Specifications* for construction, and a Generic Groundwater Protection Plan will be followed.

The KYTC *Standards for Road and Bridge Construction* and the INDOT *Standard Specifications* provide standard temporary and permanent erosion measures required in the construction of highway facilities. In addition to these standard measures, other protection measures are recommended for that portion of the project within the proposed Louisville Water Company Wellhead Protection Area (WHPA). These measures include:

- Work within the WHPA shall be limited to that included in the plans, unless otherwise approved by the contracted engineer in writing, and approved by the Bi-State Management Team (BSMT) and permitted by the LWC.
- Cement plants shall not be placed within the WHPA. Only that equipment and materials required for the immediate construction within the limits of the WHPA will be permitted.

- Equipment required for construction of the bridge piers may be located within the WHPA, provided a berm is constructed around the equipment and a liner placed within the bermed area to protect against any accidental release.
- Equipment required for construction of the bridge piers shall be moved from the WHPA at the earliest opportunity, berms and liners removed and any materials contained within the bermed area transported to an approved disposal site, outside the WHPA.
- In accordance with the technical study conducted by LWC to prevent the release of materials that may contaminate the aquifer, the contractor will be restricted from using bentonite within 500 feet of the collector wells and restricted from using any polymer fluids within 1,000 feet. This requirement will be explained in the Special Notes of the project specifications for pier shaft construction; and alternate drilling methods and/or materials will need to be identified prior to construction and enforced during construction inspection.

Design and construction of bridge piers within the WHPA must be developed with attention to the WHPA. Some general recommendations can be provided at this time, however these will be reviewed and modified as appropriate after the final structure type is selected and the specific construction requirements of the footers and piers have been developed.

- The contractor shall minimize to the extent possible the area that must be disturbed to construct bridge piers and other elements of the bridge substructure located below the surface.
- The bridge piers will be located at least 40 feet away from the LWC River Bank Filtration (RBF) tunnel in the horizontal direction.
- Any voids left between the pier and surrounding ground shall be sealed by using bentonite clay or other approved materials, as soon as possible after completion of work on the pier; however, bentonite is prohibited for use during construction of any pier shaft that is within 500 feet of a collector well.
- Polymer fluids are prohibited within 1,000 feet of a collector well to ensure the integrity of collector wells from invasion of drilling fluids.
- Design and construction of bridge piers within the Ohio River shall include the use of cofferdams that minimize the amount of streambed disturbance or other construction techniques that would further limit re-suspension of streambed sediments. In addition to the provisions of Section 212 and 213 of the KYTC *Standards for Road and Bridge Construction* (current edition) and INDOT *Standard Specifications* (current edition), material removed from the cofferdams shall be disposed of at approved sites outside the Ohio River and its floodplain.

- Pier construction methods and the drainage system will be coordinated with the LWC and the Groundwater Protection Branch of KDOW to assure appropriate construction methods are employed to prevent contamination of the aquifer.
- Efforts to prevent roadway pollutants from entering the WHPA include a drainage system designed to contain all runoff into a storm system leading to vaults prior to releasing the runoff into Harrods Creek. A meeting was held with LWC and KDOW on March 5, 2009, to discuss the proposed design of the storm water drainage system in the Wellhead Protection Area. The concept was considered reasonable and acceptable. The final design of the drainage system will be submitted to LWC and KDOW for concurrence. The ditches associated with the roadway fills within the WHPA will be constructed with a berm to contain not only storm drainage but also materials from a spill. The ditches will drain into the storm system and to the vaults. After a spill, ditches and pipes will be cleared of material by KYTC and any materials that reach the vault will be contained, drained, and disposed of as required under applicable laws and regulations. There will be no direct runoff from the roadway to the WHPA.
- Bridge deck drains and storm sewers will be used to collect bridge deck runoff into a storage area at the Kentucky end of the bridge. The runoff will then either be released to a surface drainage system or pumped into trucks and transported to an approved receiving facility. KYTC will continue to work with KDOW in developing and implementing Groundwater Protection Plans prior to construction through the WHPA in accordance with 401 KAR 5:037.
- Regarding LWC sludge Lagoon #4, in June 2011 LWC and KYTC entered into an agreement to conduct a study to determine options for reconfiguring a portion of the lagoon without impacting LWC operations. In addition to constructing outside the proposed right-of-way, options for replacing the lost storage capacity include expanding the remaining area of the lagoon, dredging the floor of the lagoon, or other solutions to be identified by the study. Any material removed from the sludge lagoon will be disposed of in accordance with the KDOW requirements and local agency permits and regulations.

4.1.8 Air Pollution

The following measures will be utilized to reduce and minimize air pollution during construction activities:

- Construction activities will be performed in a manner that controls emissions from burning (where allowed), drilling, blasting, production of materials, hauling, or any other necessary construction operations of any kind.
- Air pollution associated with dust will be effectively controlled through the use of watering, the application of calcium chloride, or other techniques in accordance with the

KYTC and the INDOT specifications. Watering work areas to increase moisture and reduce dust will control air pollutants generated by construction.

- Contract specifications will dictate that all drilling, grinding, and sawing of rock, shale, concrete, and other similar dust-producing materials are performed with equipment provided with water sprays, fabric-filtered collection systems, or other suitable devices to prevent excessive dust from becoming airborne.
- Emissions from construction equipment will be controlled in accordance with emission standards prescribed under state and federal regulations. Equipment must be maintained in proper mechanical condition.
- All construction equipment will be required to comply with OSHA (Occupational Safety and Health Administration) regulations.
- No burning of construction wastes will be permitted without proper variance from the Indiana Department of Environmental Management (IDEM) and/or the Kentucky Energy and Environment Cabinet (EEC) as well as any local air agencies regulating these types of activities. All burning will be conducted in accordance with applicable laws, ordinances, rules and regulations.
- The project will include:
 - Travel Demand Management in the form of non-motorized facility enhancements and employer-based trip reductions.
 - Expanded Intelligent Transportation System (ITS) applications.
 - Enhanced bus service with future options coordinated with Transit Authority of River City (TARC) (see Section 4.3.2 for details).
- The contractor will be expected to obtain the necessary permits from IDNR and Kentucky EEC and to follow the regulations that are cited.
- Special notes will be established in the project that will encourage the contractor: (1) to maintain his equipment to assure the best possible operation; (2) to limit idling times and start-ups such that emissions are reduced; and (3) to encourage the use of clean diesel fuel mixtures.

4.1.9 Context Sensitive Solutions

The following measures will be implemented in the project design:

- The First Amended MOA (Stipulation II.C) includes a Context Sensitive Solutions commitment to design and construct roadways, bridges, and other applicable project elements:

...with sensitivity to aesthetic values, historic cultural landscapes, and the historic context, utilizing the services of professionals with experience in areas related to historic preservation. Design shall include aesthetic treatments to surfaces, structures, portals, appurtenances, and land contours and landscaping that complement the historical contexts of historic properties and in keeping with the HPPs for those areas. The Contractor shall also prepare an Aesthetics and Enhancement Implementation Plan that shall be reviewed in consultation with the BSHCT.

CSS commitments associated with specific historic properties are described in the First Amended MOA Stipulation III.

- The new Downtown Bridge will not block approaching mariners' views of the Kennedy Bridge.
- The new Downtown Bridge will provide a navigation span with horizontal and vertical clearances that will not impede current and future water transportation. Navigation-related bridge design elements, including the length of the navigation span and placement of piers, will be determined through coordination with USCG, Eighth District during the permitting process.⁴

4.1.10 Right-of-Way

The following measures will be implemented in the project design:

- Limited access right-of-way will be purchased along U.S. 42 near the ramps to help control induced development. Access control was established in the vicinity of the ramps and extending along US 42 to Wolf Pen Branch Road.

⁴ The SFEIS Chapter 8 subsection titled "Context Sensitive Design" stated that the Downtown Bridge would provide "a 1,100 foot navigation span with piers set 200 feet outside of the Kennedy Bridge piers on either side of the channel." This ROD amends the text to eliminate the specific references to length and distance, which are elements that will be determined through consultation with USCG during the permitting process.

- During final design, landlocked parcels will be identified. During right-of-way acquisition, agents will work with the affected property owners on a case-by-case basis to determine the best solution for each occurrence.

4.1.11 Noise

Louisville Metro Government has a local noise ordinance with specific provisions that regulate construction noise. Those provisions will be incorporated into the project specifications. In August 2006, FHWA published *Construction Noise Handbook* (FHWA-HEP-06-02), which provides many techniques a contractor could use to minimize construction noise. The handbook can be found at: http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/.

The First Amended MOA (Stipulation II.E) includes a noise abatement commitment to minimize adverse noise effects on historic properties, such as innovative pavement designs, bridge decks and joints, berms, noise barriers, and landscaping. Pavements shall be designed to incorporate measures and materials that contribute to quieter pavements, such as those identified through the Purdue University Quiet Pavement Research or other innovative measures and technologies, while providing durability and safe driving conditions.

The mitigation commitments for the Modified Selected Alternative are as follows:

- For the neighborhoods listed below, it was determined that noise barriers were warranted for further consideration. During the final design process, detailed barrier analyses and design will be performed. Potentially reasonable and feasible noise barriers will be coordinated with the affected communities to obtain their input and determine whether there is local support for proposed barriers.
 - Green Spring / Wolfcreek Subdivision
 - Wolf Pen Woods Subdivision
 - Harrods Creek Condominiums
 - Old Tay Bridge, Cottage Rake and Boulder Creek Subdivision
 - Residences and others including the Salvation Army and Clifton Park on the east side of I-64 from Mellwood Avenue to south of Payne Street
 - Residences and the Serenity House east of I-65, north of West 14th Street (Stansifer Avenue)
 - Residences west of I-65 from Holiday Inn Lakeview on Marriott Drive to north of West 14th Street (Stansifer Avenue)

4.1.12 Construction Blasting

During construction vibrational impacts to each sensitive site (historic buildings, the hospitals, and possibly other sites)) will need to be taken into consideration on a case-by-case basis in accordance with the *FTA Manual* and the *Ohio River Bridges Vibration Study Technical Report*. The following measures will be implemented in the project design:

- The First Amended MOA (Stipulation II.L) includes blasting and vibration commitments to avoid damage to historic properties. The BSMT will ensure that construction blasting/vibration plans and bridge pier construction plans will be developed by their contractor(s) prior to beginning any construction activities that would require blasting or result in vibration. These construction blasting/vibration plans will be implemented during appropriate construction activities to minimize adverse noise effects on historic properties.
- The blasting program will be designed and performed by certified contractors.
- Prior to the initiation of any blasting, a minimum of one small test charge will be set for each new drill-and-blast site to establish local ground-borne vibration propagation characteristics. This test charge will be set below the threshold level for that location.
- Seismometers or other devices will be placed by the blasting contractor around a drill-and-blast site to monitor vibration levels to use in refining the blasting program and to document compliance with the specification limits.
- Adjustments in the charge per delay will be considered for any change in condition encountered during construction and as a result of monitored vibration levels.
- Blasting programs will be utilized that prevent ground vibration in excess of 2.0 in/sec PPV at any structure; in excess of 0.5 in/sec PPV at any residential structure; in excess of 0.2 in/sec PPV at any fragile buildings; and in excess of 0.12 in/sec PPV at any very fragile historical buildings.
- Condition surveys will be conducted, as allowed by property owners, for structures within 500 feet of a drill-and-blast site, prior to initiation of blasting and after completion of work.

4.1.13 Traffic Control

The following measures will be implemented in the project design:

- Minimize disruption to access for properties during construction, including access to Wolf Pen Branch Road at Bridgepointe's back gate during construction of the permanent bridge over KY 841 and any temporary bridge required to complete that work.
- Provide the public with advance information on traffic control measures through appropriate media prior to implementation of those measures.
- Consult with school and bus administrators prior to implementing construction on project elements.
- Consult with local officials in developing maintenance of traffic plans for construction projects to minimize use of subdivision streets by through traffic.
- The Bi-State Management Team (BSMT) shall consult with local authorities and the Bi-State Historical Consultation Team (BSHCT), throughout the life of construction, to identify maintenance of traffic strategies to mitigate traffic changes caused by construction. These traffic strategies could include such operational changes as restricting access, official detours, limiting truck traffic, traffic controls, and traffic calming measures during the construction phase of the project.

4.1.14 Tunnel Design, Construction, and Operation

The following measures will be implemented in the project design:

- Design and construct the rock cuts at either end of the tunnel to provide a durable and aesthetic transition into the tunnel portals, including consideration for tiering and landscaping to complement the tunnel portal design.
- Incorporate state-of-the art materials and concepts into the design of the cut section and tunnel that can provide additional, cost-effective benefit in minimizing noise impacts for this section of roadway.
- Consult with the City of Prospect, Bridgepointe Neighborhood Association, and representatives of properties along the section of the Modified Selected Alternative between the Wolf Pen Branch Road Bridge and U.S. 42 about the placement of a safety wall in lieu of an access control fence to provide a more positive separation between the roadway and adjacent properties. The height, shape and facing of any safety wall placed within this section of the project will be developed through consultation with representatives of the adjacent properties and in a manner that complements other noise mitigation measures incorporated into the project.

- Design the tunnel portals, Wolf Pen Branch Road Bridge over the Modified Selected Alternative, and the westbound exit ramp bridge to U.S. 42 to include an aesthetic treatment such as creek stone, stonework similar to that used at the entrance to Bridgepointe or other similar treatment that enhances the appearance of these structures.
- Incorporate appropriate crash protection devices at the tunnel portals.
- Develop an Emergency Response Plan as a part of tunnel design that includes emergency response routes for access to both ends of the tunnel during an incident.
- Develop a Training Program for local safety officials on emergency response provisions of the Emergency Response Plan and implement prior to opening of tunnel to traffic.
- Expand the ITS system to include equipment for monitoring traffic on the approaches to the tunnel and complement emergency response plan developed for the project.
- Include sufficient video cameras within the tunnels as part of the ITS system expansion with monitors located within local police and fire protection facilities for 24-hour response.
- Include sufficient electronic warning signs east of I-71 and in Indiana as part of the ITS system expansion for effective re-routing of traffic during incidents.

4.1.15 Historic and Archaeological Resources

Commitments to mitigate impacts to historic and archaeological properties are identified in the First Amended MOA (SFEIS Appendix D.9). The following is a summary of the commitments included for the project.

Stipulation I, Project Coordination—Process and procedures provided for establishing Historic Preservation Advisory Teams for the Indiana (IHPAT) and Kentucky (KHPAT) portions of the project.

Stipulation II, Project Development—Stipulations provided that are applicable to the overall construction of the project unless otherwise identified, including:

- A. Project Goals
- B. Public Involvement
- C. Context Sensitive Solutions
- D. Roadway Lighting
- E. Noise Abatement
- F. Historic Preservation Plans

- G. Survey Updates
- H. Historic Preservation Easements
- I. National Register Documentation and Nomination
- J. Streetscape Improvements
- K. Interpretative Signage
- L. Blasting and Vibration
- M. Timing of Construction Activities
- N. No-Work Zones
- O. Smart Growth Conference (Completed)
- P. Education and Interpretation
- Q. Traffic Monitoring Plan
- R. Construction Traffic

Stipulation III, Site Specific Mitigation—In addition to the measures included in *Stipulation II*, site specific mitigation measures are included for:

- A. Train Depot – Indiana
- B. Colgate-Palmolive Historic District – Indiana
- C. Ohio Falls Car and Locomotive Company Historic District – Indiana
- D. George Rogers Clark Memorial Bridge – Indiana/Kentucky
- E. Old Jeffersonville Historic District – Indiana
- F. INAAP Igloo Storage Historic District – Indiana
- G. Lentz Cemetery – Indiana
- H. Lime Kilns within the Utica Lime Industry Multiple Property Listing – Indiana
- I. Swartz Farm Rural Historic District – Indiana
- J. Trolley Barn – Kentucky
- K. Butchertown Historic District – Kentucky
- L. Phoenix Hill Historic District – Kentucky
- M. Country Estates Historic District/River Road Corridor – Kentucky
- N. Drumanard – Kentucky
- O. Allison-Barrickman House – Kentucky
- P. Rosewell – Kentucky

Q. Belleview – Kentucky

R. Ohio River Camps Multiple Property Group – Kentucky

Stipulation IV, Archaeological Resources—The final identification, evaluation, and determination of project effects on archaeological resources has been phased and will be completed in accordance with the steps outlined in this stipulation, including:

- A. Implementation Standards
- B. Identification
- C. Evaluation
- D. Assessment of Effects
- E. Treatment
- F. Qualifications and Reporting
- G. Distribution of Final Reports

Since the publication of the SFEIS and execution of the First Amended MOA, Site 15Jf720 has been determined to be eligible for listing in the NRHP. KYTC has committed to conducting Phase III data recovery, in lieu of preservation in place, on the site before any ground disturbing activities occur (see Revised ROD Section 2.4, subsection Archaeological Investigations).

Stipulation V, Unanticipated Discoveries—Steps provided for addressing discovery of previously unidentified property or previously identified historic property that is affected in an unanticipated manner.

Stipulation VI, Additional Historic Properties and Effects—Steps provided for determining if historic properties in addition to those identified in the Section 106 First Amended MOA may be affected by sites for staging, wetland mitigation, borrow or waste, dredge disposal, or other construction activities associated with the project.

Stipulation VII, Excess Right-of-Way—Steps provided for disposal of any excess right-of-way.

Stipulation VIII, Performance Standards—Requirements identified for providing services to be carried out pursuant to the Section 106 First Amended MOA.

Stipulation IX, Progress Reports—Provisions identified for progress reports.

Stipulation X, Project Modification—Steps provided for the Section 106 First Amended MOA signatories to consult if the project is significantly modified such that additional effects to historic properties not previously considered may result in adverse effects, or if actions are taken by a property's owners in the interim unrelated to the project which change the NRHP status of previously identified historic properties affected by the project.

Stipulation XI, Amendment—Provisions identified for amending the Section 106 First Amended MOA.

Stipulation XII, Failure to Comply/Termination—Steps provided for addressing situation where the Section 106 First Amended MOA terms cannot be or are not being carried out.

Stipulation XIII, Dispute Resolution—Steps provided for signatory or concurring party to object in writing for disputes about the implementation of actions provided for in the Section 106 First Amended MOA.

Stipulation XIV, Duration—Provision for additional consultation if terms of the Section 106 First Amended MOA are not completed within 15 years following its execution.

4.1.16 Park and Recreational Resources

Commitments to mitigate impacts to park and recreational resources, which have been augmented since the 2003 FEIS, are as follows:

- Extreme Sports Complex
 - During construction, it is anticipated that temporary closure of the Extreme Sports Complex would need to occur. After construction, given the limited loss of property, piers and the complex could co-exist without any loss of the complex’s recreational use.
 - The current restroom facilities at the Extreme Sports Complex will be located under an elevated ramp to be constructed over the park as part of the project. Because restroom facilities are not permitted under an elevated highway structure, the restrooms will need to be relocated to another site within the complex. KYTC right-of-way procedures allow the agency to provide functional replacement for publicly owned property that provides an essential public service when approved by the Director of the Division of Right-of-Way and Utilities. KYTC is committed to the functional replacement of the restroom facilities at this complex with a facility that provides equivalent utility. This facility replacement will not result in the loss of recreational use within the complex.
- Waterfront Park
 - After construction the area of the park below the new bridge will remain accessible to the public, and there will not be any restrictions on pedestrian access between portions of the park to the east and west of the new bridge.
 - To ensure safety for park users, during construction, temporary closures of the park within the construction area will be necessary, but such closures will be of short duration (less than the overall construction of the project), will involve only a minor portion of the park, and will be coordinated with the Waterfront Development Corporation.

- Greenway Corridor
 - No park facilities or functions will be directly impacted, and no restriction of access between the portion of the park located to the east of the existing Kennedy Bridge and the proposed new bridge and areas of the Greenway Corridor to the west will be necessary, except during construction when access under the bridge will be closed to pedestrians for a temporary period. After construction, the area under the new bridge will remain accessible.
- Butchertown Greenway
 - The greenway is located along Beargrass Creek, which crosses under I-71 approximately 0.35 mile east of I-64. The project will require the widening of I-71 over Beargrass Creek and the Butchertown Greenway. The construction activity will require closure of approximately 0.05 acre of the greenway for purposes of public safety while the steel beams for the bridge are installed. The closure will be a very short duration, have no adverse effect, and will not be a temporary use per 23 CFR 774.13(d).

4.1.17 Environmental Justice

Based on the analyses presented in Section 5.1.7 of the SFEIS, FHWA has determined that neither the cost of tolls, nor other direct or indirect impacts, would be “predominantly borne” by environmental justice populations. FHWA has also concluded that, based on the vehicle user cost data as presented in Section 5.1.7, the Modified Selected Alternative is likely to cause disproportionately high and adverse effects on minority and low-income populations. Although the impacts would not be “predominantly borne” by environmental justice populations, the impact would be appreciably more severe or greater in magnitude for these populations.

In accordance with FHWA Order 6640.23, it is necessary to consider strategies for minimizing and mitigating the economic effect of tolling on minority and low-income populations. Therefore, INDOT and KYTC, in cooperation with FHWA, have identified the following measures that will be implemented to mitigate that effect:

- INDOT and KYTC have committed to include enhanced bus service as part of the Modified Selected Alternative (see commitments listed in Section 4.3.2, below).
- Prior to the implementation of tolling, the states of Indiana and Kentucky will adopt a policy that is sensitive and responsive to low-income and minority (environmental justice) populations (“Tolling Policy”). The development of this policy will include additional outreach and public involvement with the environmental justice populations. During the development of the Tolling Policy, KYTC and INDOT will:

- Conduct a detailed assessment of the potential economic effects of tolls on low-income and minority populations, using the latest publicly available population data, traffic forecasts, and community input.
- Make the results of that study publicly available.
- Identify and evaluate a range of measures for mitigating the effects of tolling on low-income and minority populations.
- Provide an opportunity for additional public input on those potential measures.
- As part of the Tolling Policy, KYTC and INDOT will adopt a plan for mitigating the effects of tolling on low-income and minority populations (“Tolling Mitigation Plan”). The Tolling Mitigation Plan will:
 - Include practicable measures for minimizing impacts of tolling on low-income and minority communities.
 - Comply with FHWA policy, including FHWA “Guidance on Environmental Justice and NEPA” dated December 16, 2011; FHWA Order 6640.23A “FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” (June 14, 2012); and any update or other current FHWA policy available at the time of the assessment.
- The Tolling Policy will be completed before tolling is allowed to be initiated on the LSIORB Project.
- In determining practicability of measures to mitigate effects on low-income and minority communities, KYTC and INDOT may take into account the financial requirements of the project, the technical and logistical issues associated with toll collection methods, and other needs.
- In developing the Tolling Policy, consideration shall be given to the information contained in the FHWA report, “Environmental Justice Emerging Trends and Best Practices Guidebook” (November 2011), the “Department of Transportation Environmental Justice Strategy” (March 2, 2012), and other applicable publications available at the time the toll policy is developed.

4.2 Avoidance Commitments

The following avoidance measures will be incorporated into the project as the project is advanced.

Downtown Corridor

- The Modified Selected Alternative will avoid direct impacts to the recreational facilities and functions of the Greenway Corridor. The support piers and footings will occupy approximately 0.03 acre of Riverfront Park property; however, the placement of these piers will avoid direct impacts to the recreational facilities and functions.
- The Modified Selected Alternative will avoid direct impacts to the recreational elements of the Extreme Sports Complex. Complete avoidance of the complex by minor shifts in the alignment of the Modified Selected Alternative will not be possible due to its location under the current I-65. This alternative will result in the loss of approximately 0.12 acre due to the construction of bridge support piers within the footprint of the complex; however, the piers will avoid use of the recreational elements of the sports complex.

East End Corridor

- In the 2003 FEIS, the preferred alternative was shifted to avoid any use of the Allison-Barrickman property. The commitment to avoid this property remains valid for the Modified Selected Alternative.
- The 2003 FEIS and Memorandum of Agreement (Original MOA) *Stipulation III.N.1*, contained a commitment to avoid Section 4(f) use and minimize impacts to the Drumanard Estate Historic District by tunneling under the property. The commitment to avoid this property remains valid for the Modified Selected Alternative. INDOT will ensure that construction activities on the Drumanard Estate do not result in a temporary use of that property, based on the criteria in 23 CFR 774.13(d).
- The LWC Riverbank Filtration (RBF) program includes a hard rock tunnel approximately 10 feet in diameter and 150 feet below grade with collector wells placed at select locations. To avoid direct impacts, all bridge piers will be constructed at least 40 feet away from the tunnel in the horizontal direction, per the engineering recommendations in the May 26, 2009, technical memorandum, which is included in SFEIS Appendix B.4.

4.3 Project Enhancements

Funding for the following planning and design enhancements will be included in the project to support integration of project elements into the community.

4.3.1 Minority Historic Rehabilitation Craftsman Training Program

The Craftsman Training Program will be developed and implemented in the reconstructed Trolley Barn that houses the Kentucky Center for African-American Heritage (KCAAH). The following commitments should be included in a Memorandum of Understanding (MOU) with SHPO for the development and operation of the Craftsman Training Program:

- Funding in the amount of \$1,500,000 will be made available to KY SHPO to implement and operate the Craftsman Training Program with the requirement that the program operate for a minimum of three years.
- A Craftsman Training Board consisting of volunteers familiar with craftsman training and/or DBE initiatives shall be appointed to oversee and make recommendations to the SHPO and/or a Bridges Project DBE Committee. The Board will be responsible for the operation of the program, which will include hiring of staff, the purchase of equipment and tools for the training, and the development of a curriculum.
- The Craftsman Training Board will also be responsible for determination of the proper expenditure of the \$1,500,000. The Board will develop a plan for these expenditures and will make recommendations for how the program could be sustained beyond this initial investment from KYTC. The recommendation will identify availability of future funding from other sources beyond the \$1,500,000 maximum provided by KYTC.
- All materials, tools and equipment purchased with mitigation funds to support the Craftsman Training Program may be purchased at salvage value by the Kentucky Heritage Council at the conclusion of the three-year mitigation commitment or returned to the Federal Highway Administration.
- The Craftsman Training Board will recommend a person to serve as an Executive Director, which will be a paid permanent position. The Executive Director must be familiar with the trades taught in the curriculum and will serve as one of the instructors.
- The Kentucky SHPO will provide the general oversight of the operation of the program.

4.3.2 Mass Transit—Enhanced Bus Service

The Modified Selected Alternative includes the following elements for enhanced bus service.

- KYTC and INDOT will provide \$20 million for capital investments and public awareness programs related to enhanced bus service during the life of project construction. The funds will be used for:
 - Constructing and/or expanding park and ride facilities.
 - Purchasing buses and vans for express and shuttle bus service during construction.
 - Purchasing and rehabilitating additional facilities to accommodate the increased fleet.
 - Improving and consolidating existing bus stops and constructing new bus stops.
 - Developing a public awareness and communications program, including advertising, using emerging technology to communicate with the public to encourage ridership, and informing low-income populations of the enhanced bus service options.

- Funds will not be provided to cover operational expenses, which will remain the responsibility of TARC.
- KYTC and INDOT will include as part of the project design the construction of turning radii and lane widths that meet design criteria for bus usage.
- KYTC and INDOT will coordinate with TARC at the end of the project construction to determine how the investment in transit equipment can continue to promote cross-river mobility.
- KYTC and INDOT will not provide for traffic signal priority beyond the current scope of the plans. The project does not impact the local street system directly. TARC should coordinate this local issue with Louisville Metro Government.
- KYTC and INDOT will enter into a Memorandum of Agreement (MOA) with TARC prior to the start of construction on the Downtown Crossing portion of the project. The MOA will detail the final agreed upon funding amounts and years of expenditure to comply with the SFEIS for the project. (See TARC coordination letter dated March 9, 2012, and KYTC and INDOT response dated April 2, 2012, in SFEIS Appendix E.)

4.3.3 Monitoring and Enforcement of Commitments

As part of the commitment to continue efforts to minimize impacts from the project, this Revised ROD requires KYTC and INDOT to implement a system for monitoring and enforcing implementation of all commitments that have been incorporated into the project, including commitments in Chapter 8 of the SFEIS as well as additional commitments that may be required as conditions of permits or other approvals. The commitments monitoring and enforcement process shall be implemented follows:

- FHWA will continue to oversee all activities associated with this project. INDOT and KYTC will oversee the design and construction activities associated with the project through their contractors.
- INDOT and KYTC will prepare the contract documents to ensure environmental commitments are implemented, as appropriate, in both the design and construction of the project.
- The selected contractors will be required in contract documents to maintain an open line of communication between the FHWA, INDOT, KYTC, the public, and Federal, state, and local resource agencies.
- Mitigation measures will be implemented concurrent with the portion of the project resulting in the impact.

- KYTC and INDOT will use a commitments database to track project commitments from inception through design, construction, and completion. The database will facilitate incorporating commitments into contracts during the development of the project. The database will comply with the following requirements:
 - The database will capture the entire suite of project commitments and mitigation projects, ensure compliance by the responsible party(s), and document completion.
 - The database will provide compliance recording and reporting features that are consistent with existing program policy and permit requirements.
 - Updating and tracking commitment status from project design to construction and close-out will be coordinated via team meetings.
 - The database will be updated regularly to generate current commitment status reports, which will be reviewed during meetings by project and program management.
- If a mitigation measure is found to be ineffective, KYTC and INDOT will develop other appropriate mitigation, in consultation with applicable resource agencies.

5.0 PERMITS

To ensure compliance with all appropriate Federal and state regulations, necessary permits shall be obtained prior to construction. The following is a list of permits required for the project:

Agency	Permit
Federal:	
USACE	Section 404 Permit for Discharge of Dredged or Fill Material into waters of the United States
USACE	Construction, Dumping and Dredging Permit (Section 10)
U. S. Coast Guard	Bridge Permit (Section 9)
USFWS	A permit regarding the bald eagles will be obtained prior to construction within the vicinity of the nest.
Indiana:	
IDEM	Section 401 Water Quality Certification
IDEM	National Pollution Discharge Elimination System, Rule 5
IDNR	Construction in a Floodway Permit
Kentucky:	
EEC, Division of Water/ MSD	Floodplain Construction Permit
EEC, Division of Water	Section 401 Water Quality Certification
EEC, Division of Water	Kentucky Pollution Discharge Elimination System (KPDES)
Other:	
U.S. Federal Aviation Administration	FAA Form 7460-1 Notice of Proposed Administration Construction or Alteration
Kentucky Airport Zoning Commission	Permit to Construct or Alter a Structure (Bridge)
Kentucky Airport Zoning Commission	Permit to Construct or Alter a Structure (Crane)
Kentucky Division of Waste Management	Risk Management Plan

All permit conditions shall be included in the commitments tracking database as required by Section 4.3.3 of this Revised ROD. For further discussion of applicable permits, refer to Section 5.15, *Permits*, in the SFEIS.

6.0 COMMENTS ON THE SFEIS

Comments from the agencies and the public on the SFEIS were invited with a deadline of June 4, 2012. Comments received on the SFEIS that are both substantive and have not been previously addressed in the SFEIS or the 2003 FEIS, are included below together with FHWA responses. The following federal and state agencies submitted comments on the SFEIS:

- U.S. Department of the Interior (USDOI)
- U.S. Environmental Protection Agency (USEPA)
- Kentucky State Environmental Review Officer, Energy and Environment Cabinet; for Division of Waste Management (KDWM), Division of Water (KDOW), and Division of Air Quality (KDAQ)
- Indiana Department of Natural Resources, Deputy State Historic Preservation Officer (IN-SHPO)

There were also 69 submittals of comments on the SFEIS from organizations and private individuals. In addition, the quantitative analysis for MSATs (Revised ROD Appendix A), was made available for public comment on the project website. Two comments on the MSAT analysis were received, one from USEPA and one from an individual commenter (see USEPA-12 through 14, and Hixson-13 through 22, below).

FHWA, KYTC, and INDOT, have carefully reviewed all comments received on the SFEIS and it is have been determined that the new and substantive environmental issues raised in comments have been addressed. All comments have become of the project's Administrative Record. Comments received since the publication of the SFEIS are included herein, Appendix B.

Revised ROD Appendix B and the comments below are organized by comments from agencies, then organizations, then the general public, and then similar comments received from multiple people.

AGENCY COMMENTS

Willie R. Taylor **Director, Office of Environmental Policy and Compliance, U.S. Department of the Interior (USDO)**
May 2, 2012

USDO-1 *The selection of the preferred alternatives would result in impacts to properties eligible to be considered under Section 4(f) of the Department of Transportation Act of 1966 (codified at 49 U.S.C. 303§771.135), including five historic properties and three park/recreational facilities. The Department did concur there were no feasible or prudent avoidance alternatives to the preferred alternatives presented which would result in impacts to section 4(f) properties. However, the Department could not concur at that time that all possible planning needed to minimize harm to the 4(f) resource had been employed until evidence that the impacts to historic properties had been properly addressed in a Memorandum of Agreement (MOA). We note the inclusion of the fully executed MOA contained in Appendix D of the Supplemental Final EIS, and therefore remove our objection.*

Response Comment noted

Heinz J. Mueller **Chief, NEPA Program Office, Office of Policy and Management, United States Environmental Protection Agency (USEPA), Region 4**
June 4, 2012

USEPA-1 *Modified Preferred Alternative—The SFEIS identifies the Modified Selected Alternative as the SFEIS Preferred Alternative.*

The SFEIS Modified Preferred Alternative appears to have the least amount of direct impacts to resources of concern among alternatives analyzed in this SEIS.

Response Comment noted.

USEPA-2 *Mobile Source Air Toxics—The SFEIS did not respond to all our comments, but does state in the response to comment F.1 (pages 7-80 through 7-82), that an emissions inventory for the project area travel network will be prepared.*

As part of that quantitative MSAT analysis, we encourage the project team to identify the locations of the sources in the emissions inventory and to prepare a screening level risk assessment for areas in the vicinity of the roads. The quantitative MSAT analysis should recognize that MSATs are local in nature, and the analysis should therefore model the impacts along the entire project area travel network, with special consideration for the locations of populations, particularly sensitive populations such as hospitals, schools, etc. EPA recommends that prior to the ROD, the FHWA, INDOT and KYTC give the public and agencies an opportunity to review and comment on the MSATs analysis.

Evaluating the entire network with a screening level risk assessment, including those segments that are heavily traveled as well as those with lower annual average daily traffic (AADT) values, will help the public understand the potential impacts of the different alternatives along the roadway network, and possibly allay the concerns of many people near the lesser traveled roads.

Response

A technical report on the MSAT analysis is included as Appendix A to the Revised ROD, and a summary of the analysis is included in Revised ROD Section 2. On June 7, 2012, the report was posted to the project website (www.kyinbridges.com) and a news release was issued noting the technical report was open for review until June 15, 2012.

Regarding the identification of specific location of MSAT sources, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent reliable estimates of MSAT emissions at specific locations. Rather, the model is capable of providing only a project area analysis. This is due to the fact that MOBILE6.2 was used to generate emission factors used in the MSAT analysis. MOBILE6.2 is designed as a regional-scale, trip-based model. It is not designed to produce good estimates of emissions at any particular speed in any particular place. Because MOBILE6.2 is based on average trip speeds, it is better suited to regional-scale or study-area analysis. The results are not designed to be reliable at the segment level. Therefore, MOBILE6.2 is not designed to give the information needed for localized assessments.

USEPA-3

Although Section 1.3 of Appendix B.1.2 lists several mitigation options, the SFEIS commits to only a few. For example, Section 5.4.5 states that the construction contractor will be encouraged to maintain equipment, limit idling, and use clean diesel fuel. The ROD should be more explicit concerning mitigation approaches, not only for the construction period, but also for the operational period.

The SFEIS (pages 5-137, 5-138 and 7-81) outlines post-construction mitigation strategies for MSAT emissions. As a part of either build alternative (see SFEIS sections 3.2.2 and 3.2.3), the project includes:

- Travel Demand Management, in the form of non-motorized facility enhancements and employer-based trip reductions, to reduce overall vehicle-mile of travel.*
- Expanded Intelligent Transportation System applications, such as traffic management centers or incident management systems.*
- Enhanced bus service.*

EPA recommends that prior to the ROD, the FHWA, INDOT and KYTC give the public and agencies an opportunity to review and comment on any additional MSAT mitigation measures identified. Any additional MSAT mitigation measures should be committed to in the ROD.

Response

Both the qualitative and quantitative MSAT analyses identified reductions in MSAT emissions of over 47% (47.2% to 47.3% for the build alternatives and 47.4% to 49.1% for the No-Action Alternative); therefore, additional mitigation measures are not warranted.

Upon receipt of this comment letter, and prior to the publication of the Revised ROD, the MSAT analysis was provided to USEPA for comment and posted on the project website for public reviews. The technical report containing the MSAT analysis was posted to the project website (www.kyinbridges.com) and a news release was issued noting the technical report was open for review until June 15, 2012. Comments received on the MSAT technical report are addressed in this Revised ROD.

USEPA-4 *EPA recommends that the signed Memorandum of Agreement (MOA) with the Transit Authority of River City (TARC) to implement the enhanced bus service identified as part of the selected alternative be included in the ROD.*

Response The MOA with TARC will be developed as the project progresses to ensure the details of the transit infrastructure and the project design elements are coordinated.

USEPA-5 *We recommend that the ROD identify any updated commitments by FHWA, INDOT and KYTC to implement diesel emission reduction strategies during project construction. EPA also continues to recommend that the project team implement overall diesel emission reduction activities through various measures such as: switching to cleaner fuels, retrofitting current equipment and emission reduction technologies, repowering older engines with newer clean engines, replacing older vehicles, and reducing idling through operator training and/or contracting policies. EPA can assist in the future development or implementation of these options.*

Response No additional commitments to reduce diesel emissions (other than those included in SFEIS Section 5.4, including obtaining local air quality permits) have been identified since the publication of the SFEIS.

USEPA-6 *Climate Change Adaptations—Designs based on historical 100-year storms may not be sufficient in the future. EPA suggests this may be particularly applicable for designing adequate handling of stormwater runoff and drainage of the proposed roadway and tunnel in order to protect the health and safety of the public who use the tunnel and roadway, or live/work near it during an intense storm event.*

EPA recommends that INDOT and KYTC account for increased storm frequency and intensity in the design of this project in order to help insure the health and safety of the public. The ROD should commit to accounting for increased storm frequency and intensity in the design of this project.

Response All hydraulic design is performed in accordance with FHWA guidance and local state practices and historical data. While it is recognized that some recent events have been at higher rainfall intensities than have been on average in past years, this has also been compensated by periods of drought. To compensate for the extremes, all major structures are designed to accommodate a 100 year storm, but are checked for a 500 year design. The storm water system that conveys water through the tunnel was also designed for a 100-year storm. The tunnel, itself, is designed with a minimum 18-inch freeboard above the 500-year flood to prevent water from entering the tunnel directly.

USEPA-7 *The SFEIS (pages 7-57 and 8-20) mentions that KYTC and INDOT will conduct a more detailed assessment of the potential economic effects of tolls on low-income and minority communities, and make the results of the study publicly available. Ideally, this assessment should have already been performed and the results and specific mitigation measures committed to in the SFEIS and ROD. It appears that this assessment will be performed after the ROD. Please explain in the ROD what methods will be used, and what mitigation measures will be studied.... EPA recommends that additional details regarding the proposed assessment of the potential economic effects of tolls on low-*

income and minority communities be identified, and the specific roles and responsibilities of INDOT, KYTC and FHWA be identified in the ROD.

Response

The SFEIS included an extensive analysis of the potential effects of tolling on minority and low-income populations. This analysis included a survey to assess travel patterns of minority and low-income users in the project area; an assessment of the effects of tolling on traffic volumes on roads through minority and low-income areas; and an assessment of the effects of tolling on average costs of passenger vehicle trips for minority and low-income populations as well as others within the project area (see SFEIS, Section 5.1.7, *Environmental Justice*). The impacts analysis in the SFEIS was based on assumed toll rates, because the actual toll rates are not determined until after the NEPA process is complete (see SFEIS, p. S-15). Therefore, FHWA has required additional analysis of tolling-related impacts to be performed after the NEPA process is completed, concurrent with the development of tolling policies for the project. This commitment includes public input on those potential measures to mitigate impacts to low-income populations. Following consideration of public input, and prior to the implementation of tolling, KYTC and INDOT will incorporate practicable measures for minimizing impacts of tolling on low-income and minority communities. The timing of these commitments will be in concert with the development of the tolling policies. The additional outreach and public involvement will continue after the publication of this Revised ROD.

USEPA-8

In the response to EPA's SDEIS EJ comment regarding traffic diversions, (D.3 and D.18 responses on pages 7-57, 7-58, and 7-67), the SFEIS states that traffic will be diverted into EJ areas of concern from 100 to 922 vehicles per hour. While this increase in vehicles may not be estimated to cause congestion, it may cause disproportionate noise and local mobile source air impacts in these areas.

EPA recommends INDOT and KYTC look at mitigation measures, such as vegetation planting to reduce noise and diesel pollution in new higher traffic areas. We recommend the ROD include INDOT and KYTC commitments to reduce noise and diesel pollution in new higher traffic areas, whether or not these areas are covered under the historic properties First Amendment MOA.

Response

As noted in the SFEIS, changes in traffic patterns due to tolling could result in visual, noise, vibration, or air quality impacts. The SFEIS included an analysis of potential impacts to environmental justice communities from changes in traffic patterns as a result of tolling (see SFEIS, pp. 5-38 to 5-41). This analysis included a figure depicting the expected changes in traffic patterns in relation to the locations of environmental justice communities (see SFEIS, Figure 5.1-14, p. 5-41). This analysis did not indicate that there would be disproportionate effects on environmental justice communities as a result of traffic diversion. Nonetheless, environmental justice communities, as well as others, could be impacted by increased or decreased traffic as a result of traffic diversion. The First Amended MOA includes provisions to monitor traffic before and after construction and to work with local authorities and the Bi-State Historic Consultation Team to identify strategies that could be implemented to address any effects of changes in traffic patterns within the Extensions to the Original APE (see First Amended MOA Stipulation II.Q). The Extensions to the Original APE were identified

to include all major areas where traffic is anticipated to be diverted to/from, whether or not there are historic resources within those areas. Therefore, the process established in the First Amended MOA will address traffic diversion within minority and low-income areas, even if those areas do not include historic resources.

USEPA-9 *Water Quality—We commend INDOT and KYTC for committing to include provisions in the INDOT and KYTC contracts for monetary fines should a contractor fail to implement appropriate construction best management practices (BMPs) to protect surface and ground water (SFEIS, pages 5-196,5-198,5-216,5-217,5-220,7-92 and 8-8).*

Response Comment noted.

USEPA-10 *The proposed wetland mitigation plan identified in the SDEIS and mentioned in the SFEIS is not included in the SFEIS, as we requested.*

EPA reserves its right to provide further review comments during the U.S. Army Corps of Engineers (USACE) Clean Water Act (CWA) Section 404 permitting process for this project.

Response The wetland mitigation plan will be identified during the permitting process once the jurisdictional determinations have been made by U.S. Army Corps of Engineers.

USEPA-11 *Since the Big Four Bridge pedestrian/bike path is being substituted for a pedestrian/bike path being incorporated into the design of the proposed new downtown bridge, the ROD should provide an update regarding the status of the construction on the Indiana side of the Big Four Bridge pedestrian/bikeway and provide a projected completion date.*

Response Construction of the Big Four Bridge on the Indiana side began in May 2012 and is anticipated to be completed in March 2013. The Kentucky side of the crossing is expected to be open by the end of 2012, once the re-decking of the bridge has been completed.

USEPA-12 *The first paragraph [of the draft Quantitative Analysis of Mobile Source Air Toxics in Revised ROD Appendix A] references the 1999 National Air toxics Assessment (NATA). The most recent NATA was for the year 2005.*

Response The referenced document has been updated in this Revised ROD to read “2005.”

USEPA-13 *The first paragraph also notes that the MSAT analysis was conducted using EPA’s older MOBILE 6.2 model. We would suggest the analysis be conducted with EPA’s current model, MOVES.*

...

...We recommend the analysis be redone using MOVES. If this is not possible, we recommend including a discussion of how using MOVES might impact the outcome of the analysis.

Response

USEPA released the MOVES model in December 2010. The MOVES model is intended to replace MOBILE 6.2 as the model for estimating motor vehicle emissions for transportation plans and projects. As part of the release USEPA established a two-year grace period to allow for a gradual transition to the use of the MOVES model. For project-level air quality conformity analyses, the grace period expires on December 20, 2012.

USEPA's Office of Federal Activities issued a memorandum on February 8, 2011⁵, providing guidance on the applicability of the MOVES model in the NEPA process. This memo indicated that MOVES should be used for NEPA analysis once it is required for use in carbon monoxide and particulate matter hotspot analysis for conformity. Any conformity or NEPA analysis initiated after December 20, 2012, must use MOVES; any analyses begun prior to that date may be based on either MOBILE6.2 or MOVES. In addition, the guidance addresses cases where a DEIS based on MOBILE6.2 is issued prior to December 20, 2012; in these cases, the FEIS may also rely on MOBILE6.2, as long as the FEIS is released no more than three years after the DEIS. Thus, pursuant to USEPA guidance, use of MOBILE6.2 is appropriate for this project.

At the time the air quality analysis for the SDEIS was prepared in early 2011, FHWA considered whether to use MOBILE6.2 or MOVES for modeling air emissions in the NEPA process for the LSIORB project. The MOBILE6.2 model was used because KYTC and INDOT staff were still being trained in the use of the MOVES model. Later in 2011, the MOVES model began to be used for regional conformity analyses in the Louisville MPO area. FHWA continued to use the MOBILE6.2 model in the SFEIS for consistency with the analyses presented in the SDEIS. This approach is consistent with USEPA's February 8, 2011 guidance memorandum, which recognizes that FHWA has discretion to use the MOBILE6.2 model or the MOVES model in NEPA analyses.

Under the final transportation conformity rule (40 CFR 93), regional emissions analyses for transportation conformity determinations have had the grace period extended to March 2, 2013 for the requirement to use the MOVES model. This final rule:

...provides additional time for nonattainment and maintenance areas to learn and apply MOVES for regional conformity.... EPA was contacted by several state and local transportation and air quality agencies and associations that requested additional transition time for using MOVES in the regional conformity analyses, due to the significant software, operational and technical differences between MOVES and MOBILE.⁶

USEPA's April 2012 *Policy Guidance on the Use of MOVES2010 and Subsequent Minor Revisions for State Implementation Plan Development, Transportation Conformity, and Other Purposes* states:

⁵ <http://www.epa.gov/compliance/resources/policies/nepa/using-the-MOVES-and-EMFAC-emissions-models-in-NEPA-evaluations-pg.pdf>

⁶ *Federal Register* Vol. 77, No. 38, February 27, 2012 (11394).

EPA notes that there are no SIP [state implementation plans] and transportation conformity requirements for air toxics (MSAT). Regarding the analysis of MSAT emissions in the [NEPA] process, [USDOT] has responsibility for implementing NEPA for federally-funded or approved transportation projects.

To address stakeholders concerns and requests for MSAT analysis during project development and alternative analysis, FHWA developed the *Interim Guidance on Air Toxic Analysis in NEPA Documents*. The guidance provides a tiered approach for analyzing MSAT in NEPA documents. Depending on the specific project circumstances, FHWA has identified three levels of analysis: (1) no analysis for projects with no potential for meaningful MSAT effects; (2) qualitative analysis for projects with low potential MSAT effects; or (3) quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects. The guidance outlines provisions for projects where quantitative analyses are to be performed. Per the guidance requirements, prior to the development of the quantitative analysis, the LSIORB Project team consulted with FHWA Headquarters and the FHWA Resource Center to develop the methodologies to be used to compare the MSAT emissions for this project and to demonstrate changes from the existing condition.

The use of MOVES for air toxics analyses on the regional or project level has not been fully implemented by USDOT as per the regulations outlined in 40 CFR 93.111 and consequently FHWA developed project level analysis methodologies using USEPA promulgated MOBILE6.2 for the project level emissions inventory.

Regarding the comment to include “a discussion of how using MOVES might impact the outcome of the analysis,” a comparison between MOVES and MOBILE would be speculative given the operational differences these two models. The FHWA Resource Center has investigated the implications of MOVES on MSAT emissions estimates and found that there is variability between emission factors between the two models under different conditions, e.g. MOVES is lower than MOBILE6.2 for benzene in the future for all speeds and higher for diesel PM, particularly at lower speeds. While the difference in magnitude for pollutants might seem easily resolved, comparisons of models becomes more difficult when the models’ operational differences are considered. For example, congestion mitigation (which is a component of the LSIORB Project) has a greater effect in lowering total MSAT emissions in MOVES. The multiple variables of these models would make a prediction of project level differences in the emissions inventories of the two models speculative in nature. However, the trend of the meaningful lowering of MSAT emissions in the future and the small differences between the alternatives, as demonstrated by the project level analysis, would be expected to be the same for both models.

USEPA-14

... We suggest that the roadway network link emissions information be used to develop a local-scale screening level analysis of potential health impacts of emissions for the different alternatives. This analysis could be done for the no-action 2030 emissions, and the build alternative 2030 emissions.

It is important to conduct [a] local-scale analysis because MSATs concentrations can vary locally, leading to local impacts that might be overlooked if the alternatives are compared based only on their respective emissions from the entire roadway network as a whole.

...

It is fortunate that emissions will decrease over the next several years. It is important to keep in mind that while there may be significant decreases in emissions network-wide, the project could result in local areas where MSAT concentrations increase. A local scale screening level analysis to identify these locations and the potential health impacts associated with MSATs would improve the Quantitative Analysis of Mobile Source Air Toxics in this document. This kind of analysis is especially important when the near-road exposures might involve heavily populated areas or vulnerable populations such as schools, nursing homes, hospitals, and environmental justice communities. This analysis should be conducted for the construction as well as the operational phase of the project.

Response

As stated in the Quantitative Analysis of Mobile Source Air Toxics, Appendix A of this Revised ROD, reductions in MSAT emissions of over 47% are predicted (47.2% to 47.3% for the build alternatives and 47.4% to 49.1% for the No-Action Alternative).

Regarding the identification of specific location of MSAT sources, the methodologies for forecasting localized health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts. Each step in the process builds on the model predictions obtained in the previous step are therefore encumbered by technical shortcomings or uncertain science that prevents a more accurate determination of the MSAT health impacts attributable to a highway project.

Rather, the model is capable of providing only a project area analysis. This is due to the fact that MOBILE6.2 was used to generate emission factors used in the MSAT analysis. MOBILE6.2 is designed as a regional-scale, trip-based model. It is not designed to produce good estimates of emissions at any particular speed in any particular place. Because MOBILE6.2 is based on average trip speeds, it is better suited to regional-scale or study-area analysis. The results are not designed to be reliable at the segment level. Therefore, MOBILE6.2 is not designed to give the information needed for localized assessments.

Section 1500.1(b) of the CEQ NEPA regulations stipulates that “NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail.” The emissions analysis conducted for this project demonstrates that MSAT emissions in the project area will decline regardless of which alternative is selected. Recognizing that emissions and their resulting health impacts will decrease regardless of the alternative, it is not clear how further analysis of MSATs using tools with increasing levels of uncertainty will help decision makers in selection of an alternative.

The *Quantitative Analysis of Mobile Source Air Toxics* in Revised ROD Appendix A has been augmented to provide more detailed information in response the comments received on the draft version of the document.

Ronald T. Price State Environmental Review Officer, Energy and Environment Cabinet;
June 1, 2012 for Division of Waste Management (KDWM), Division of Water (KDOW), and Division of Air Quality (KDAQ)

KDWM-1 *All solid waste generated by this project must be disposed at a permitted facility. If underground storage tanks are encountered they must be properly addressed. If asbestos, lead paint, and/or other contaminants are encountered during this project, they must be properly addressed.*

Response Please see Comment M.1 for a detailed response to this comment in SFEIS Section 7.3, page 7-101.

KDOW-1 *Best management practices shall be utilized to reduce runoff from the project into adjacent surface waters. In-stream disturbances shall be minimized. Reconstruction of interchange areas in Kentucky should be done without impacts to Beargrass Creek and Goose Creek, where Orconectes jeffersoni lives.*

Any water or monitoring wells discovered in the construction area will need to be properly abandoned by a certified Water or Monitoring well driller. The construction contractors may need a Groundwater Protection Plan depending on the onsite construction activities.

The Division of Water, Floodplain Section, is coordinating with the KYTC on this project.

Response Please see Comment I.8, in SFEIS Section 7.3, page 7-95, for a detailed response to the comment regarding reducing runoff. The state-listed *Orconectes jeffersoni* (Louisville crayfish) is listed SFEIS Table 4.7-2 as being present in Beargrass Creek basin and in Harrods Creek basin and found in Goose Creek during field surveys.

Regarding groundwater protection, please see Comment I.9 in SFEIS Section 7.3, page 7-95.

KDAQ-1 *The Division for Air Quality has reviewed SERO 2012-20. In Section 4.4 (page 4-145), the first bulleted item indicates the attainment status for different pollutants. The fourth sentence reads,*

"The project area is still in attainment for carbon monoxide, but is now in a maintenance status for ozone (under the 8-hour standard), non-attainment status for PM2.5 under the annual standard, and non-attainment status for sulfur dioxide."

Please amend this sentence to read,

"The project area is still in attainment for carbon monoxide, but is now in a maintenance status for ozone (under the 1997 8-hour standard), nonattainment

status for PM_{2.5} under the annual standard (however, a redesignation request has been submitted to EPA), and anticipated to be designated nonattainment for sulfur dioxide in 2012."

Response The sentence has been amended in Section 2 of the Revised ROD per this comment.

James A. Glass, PhD
May 25, 2012
Deputy State Historic Preservation Officer (SHPO)
Indiana Department of Natural Resources

IN SHPO-1 *In regard to archaeology, we do have some comments. Since the Utica Lime Kilns are archaeological, as well as structural resources, we suggest that, for their protection, figures depicting the locations of these resources, such as 4.3-7 and 5.3-2a, should not remain in the document.*

Response The figures cannot be removed from the already-published and distributed document; however, they will not be repeated in this Revised ROD.

IN SHPO-2 *...regarding the Utica Lime kilns, the October 25, 2011 statement from Dr. James A. Glass was that "Preservation in place is not necessary for the quarry walls or the open spaces within and around the quarries, as long as additional documentation is performed on those quarry walls, floors, and other spaces to be impacted within lime kiln districts 48003 and 48004." This should be clarified in the SFEIS, in tables 4.3-7 and 5.3-23: In table 4.3-7 for 12-CL-551 (or 48001) to which the aforementioned statement does not refer, it appears in the table that the kiln and quarry do not merit preservation in place; and in both tables for 12-Cl-934 (or 48004) where it appears that the kiln does not warrant preservation in place.*

Response The referenced information in SFEIS tables 4.3-7 and 5.3-23 has been clarified in Revised ROD Section 2.4, subsection Archaeological Investigations, "Indiana—East End Corridor."

IN SHPO-3 *If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.*

Response Please see Comment E.12, in SFEIS Section 7.3, page 7-78, for a detailed response to this comment.

IN SHPO-4 *The addition of Table 3.3-2b (reflecting the time of day model, which was introduced into this project since the 2003 FEIS) and the revisions to tables 3.3-3 and 3.3-4 help to clarify the changes that the Modified Selected Alternative is projected to have on vehicular traffic on the bridges. We are hopeful that new Stipulation II.Q regarding traffic monitoring in the "First Amended Memorandum of Agreement ..." will identify any traffic congestion impacts in New Albany, Clarksville, or Jeffersonville that at the present time are not foreseen by the federal and state transportation agencies.*

Response Comment noted.

IN SHPO-5 *Other than the issues on which we have commented above, we do not have any concerns about the conclusions about impacts on significant historical or archaeological resources in Indiana.*

Response Comment noted.

COMMENTS FROM ORGANIZATIONS

Betsy Bennett Cumberland (Kentucky) Chapter of Sierra Club

Sierra Club-1 *P. 4-161 mentions the presence of Gray and Indiana Bats in the affected area of the proposed East End Bridge. Although the SEIS simply states that the MOU signed with USFWS covers this issue, Sierra Club would urge the consultant to conduct a new biological assessment of the cumulative impacts of the proposal because of the White Nose Syndrome affecting the bat population in Kentucky. All direct and indirect impacts on possible cave and foraging bat habitat need to be carefully evaluated, as does the potential for the fungus that causes white nose syndrome.*

Response The January 2012 amended Biological Assessment (“amended BA”) completed for the LSIORB Project addressed potential direct, indirect, and cumulative impacts to all federally listed species. The amended BA identified the Indiana bat (*Myotis sodalis*), and the gray bat (*Myotis grisescens*) as federally listed endangered species that may be present in the project area. The amended BA was completed in accordance with the Indiana bat survey guidance for Kentucky (2011). The amended BA included a detailed description of the project’s potential impacts on both the Indiana bat and the gray bat, as well as mitigation measures for each species. See amended BA, SFEIS Appendix B.3.2 pp. 63-76 (gray bat); pp. 76-80 (Indiana bat). In addition, a Conservation Memorandum of Agreement (CMOA) for the Indiana bat was signed and completed in accordance with the 2011 Indiana bat Mitigation Guidance (see SFEIS Appendix B.3.3). The United States Fish and Wildlife Service provided concurrence for the biological assessment (in a letter dated February, 17, 2012), which is valid for five years. The USFWS’s concurrence in the amended BA’s findings, together with its execution of the CMOA for the Indiana bat, concluded the Section 7 consultation process for the project.

After the SFEIS was released, USFWS issued a press release announcing that the white nose syndrome (“WNS”) has been identified in federally listed endangered gray bats in Hawkins and Montgomery counties in Tennessee. (See USFWS, Press Release, “White-nose Syndrome Confirmed in Federally Endangered Gray Bats”, May 29, 2012.⁷) The press release states that “This is the first confirmation of WNS in federally listed gray bats. White-nose syndrome had previously been documented in six hibernating bat species, including the federally listed endangered Indiana bat...” Since the date of that announcement, USFWS has not provided any further comments on the LSIORB Project, nor did the U.S. Department of Interior’s comment letter on the SFEIS

⁷ http://www.whitenosesyndrome.org/sites/default/files/files/gray_bats_2012_nr_final_0.pdf

(which includes USFWS comments) request further study or consideration of the project’s potential impacts on the gray bat or Indiana bat. In addition, it is unclear whether the new information regarding gray bats in Tennessee will have any significance with regard to the impacts of the LSIORB Project on Indiana bats or gray bats. Nonetheless, to ensure that any new information regarding white nose syndrome is sufficiently considered, FHWA is requiring as a condition of this Revised ROD that KYTC and INDOT seek technical assistance from USFWS regarding white nose syndrome as it relates to the effects of the LSIORB Project on the Indiana bat and gray bat. If necessary, FHWA will reinstate consultation with USFWS to consider new information regarding the white nose syndrome and will modify the mitigation measures for the Indiana bat and gray bat to the extent necessary to ensure that a finding of “not likely to adversely affect” and/or “no jeopardy” is achieved for both species.

Paul Fetter Organization for a Better Southern Indiana, Inc.

Fetter-1 *The negative impacts [of the project] are so severe in the case of Clarksville and Jeffersonville that they will force companies to go out of business, result in layoffs on a significant scale in southern Indiana and saddle Indiana residents with the costs of a highway project, the re-build of Spaghetti Junction, situated in Louisville, Kentucky. The financial burden now brought to light by the financial impact study sponsored by the Indiana Finance Authority, (completed by Economic Development Research Group) combined with the Ogle [Foundation] study paints a picture so fiscally egregious as to have misrepresented information of this nature borders on criminality.*

Response Neither of the referenced studies was conducted as part of the SEIS process. For the SEIS process, an economic analysis of the construction activity was forecast in Section 5.1.6. Regarding long-term economic forecasts conducted for this project, the SFEIS analysis of population and employment impacts predicted the re-allocation (i.e., shifting) of that growth as a result of the project. That does not mean that additional growth will not occur as a result of the proposed action; on the contrary, it would be likely that improvement of cross-river mobility in the area would result in additional growth rather than a “layoffs on a significant scale.”

David Coyte President, Coalition for the Advancement of Regional Transportation (CART)

CART-1 *[FHWA] ha(s) chosen to address only the changes in the project plan, created by the financial difficulties of funding the original two bridge alternative, as required by CEQ 1502.9, C, (1)(i). But FHWA is ignoring the more significant changes to our economy and resource realities that triggered those financial difficulties. These changes, and new information about Climate Change, are profound and penetrate deep within the fabric of our economy and environment. They are required to be studied in 1502.9, C(1)(ii).*

The decision not to address the real issues forcing the Supplemental EIS process has left in place the original Purpose and Need. Embodied in this are the original assumptions about the benefits of this project, mobility needs of our regional population and the resources to meet those needs. The P&N also includes assumptions about annual VMT’s, growth, predicted demographic changes, and national security issues involving oil resources. Yet, these have all changed and new information about oil and climate suggest dramatic changes in our infrastructure investments are in order....

...*CART requests a new Supplemental EIS process with a Purpose and Need that is focused on the sustainability of our whole community.*

Response

Citation 1502.9 C(1)(ii) states that “new circumstances and information relevant to environmental concerns and bearing on the proposed action or its impacts.” The purpose of the Supplemental EIS process was to consider such impacts relative to the proposed project. The scope and approach was coordinated with resources agencies per Section 6002 of the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA–LU) in May 2011, and subsequently carried out. The SFEIS included updated socioeconomic and traffic forecasts, which reflected changes in the economy that have occurred since the 2003 FEIS was prepared (see, e.g., SFEIS, Chapter 2, *Purpose and Need*, pp. 2-2 to 2-5; Chapter 3, *Alternatives*, pp. 3-1 to 3-2; as well as introductions to individual sections within Chapters 4, 5, and 6). The SFEIS also included a discussion of climate change, but did not include a quantitative analysis of greenhouse gas emissions from the project because FHWA has concluded that “we cannot usefully evaluate GHG emissions in this EIS in the same way that we address other vehicle emissions” (see SFEIS, Section 5.4.6, *Greenhouse Gases and Climate Change*). In its June 4, 2012 comments on the SFEIS the USEPA noted some environmental concerns while also expressing appreciation for “your methodical effort to identify the many complex issues and environmental impacts associated with this project and your efforts to avoid and mitigate impacts.”

CART-2

...*CART’s comments on the P&N, are not included in the discussion of that issue in the SFEIS. They were instead relegated to another section of the document. This misrepresentation and manipulation of the public process is deeply troubling.*

Response

As the commenter notes, public input on the purpose and need was summarized and responded to in SFEIS Section 7.3, B.2. FHWA considered those public comments as part of the review of the purpose and need. While some commenters recommended a change in the purpose and need, FHWA determined that the original purpose and need as stated in the 2003 FEIS remains valid. Therefore, the purpose and need in the SFEIS remained the same as the purpose and need in the 2003 FEIS.

CART-3

The consultants capriciously claim that they have addressed all the relevant changes in personal income, aging demographics, sprawl, loss of farmland, state, local, and national economic concerns, oil price rises and climate science with a new Time of Day (TOD) traffic forecasting model. These are big claims for a model which has not undergone peer review to judge its validity.

CART contends that it is absurd to suggest that the SFEIS can address the changing needs, conditions, and cumulative impacts that CART has enumerated with a traffic model. This model has only recently been created for this project and there is no evidence offered of peer review of its validity, at any level. CART does not have faith in the consultant’s integrity in this matter given their track record of having developed transit alternatives that were engineered to fail.

...

There are less than 2% of trips on transit because of the low quality of regional transit – not the low interest, or low potential. In spite of EIS predictions and declining service,

local transit ridership is still showing increases - demonstrating real need and real potential for growth.

Response

The SFEIS includes a discussion of the travel demand model that was used for developing traffic forecasts (see SFEIS Chapter 2, *Purpose and Need*, pp. 2-4 to 2-5). The appendices to the SFEIS include technical reports that document that methodologies used for all travel forecasts (see SFEIS Appendix H, *Traffic Reports*). As explained in Chapter 2 of the SFEIS, the travel demand model used for the SFEIS was not an entirely new model. Rather, it involved modifications to the existing travel model that is used by the Louisville Metropolitan Planning Organization (MPO). The modifications were made based on extensive data collection efforts as described on p. 2-2 of the SFEIS. The model used for this study included many new features that allowed the model to produce more detailed traffic forecasts. One of the most important new features was the ability to develop “time of day” forecasts—that is, to predict the different volumes that will occur during various time periods each day, rather than predicting only the total daily volumes (see SFEIS, p. 2-3).

As stated in SFEIS Section 7.3, B.2, the methodology and data, including the percent of trips on transit, used in the development of the LSIORB TOD model were reviewed by FHWA’s traffic modeling experts and represent local conditions; and standard, acceptable, and state-of-the practice methods for transportation planning.

CART-4

CART cannot believe that the consultants were sincere in their search for indirect and cumulative impacts. It is impossible not to see that moving jobs from the urban core, where most EJ populations reside, to suburban developments reachable only by auto, will have not impacts. Neither is there a serious consideration of the impacts of urban disinvestment on these populations as jobs shift cross-river to suburban Indiana as predicted, or the increased urban congestion generated by additional traffic on the Clark Bridge (US31) or Sherman Minton (I-64) by those seeking to avoid tolls. Another impact is the decrease in the transit provider’s budget. TARC will lose revenue from the payroll tax as jobs move to Indiana, further impacting their ability to provide service to the non-driving populations. Finally, the issue of Sprawl, which is known to have negative economic impacts on infrastructure economics, is completely ignored.

Response

Regarding sprawl, the 2030 forecast for the Build Alternative reflects greater population and employment growth within a 10-mile radius of the downtown area than would the No-Action Alternative. In addition, the Build Alternative is also forecast in 2030 to result in less population and employment growth in the portion of the region beyond the 10-mile radius of downtown Louisville in comparison to the No-Action Alternative. The forecasted population and employment figures show that more of the region’s overall growth would shift slightly beyond downtown Louisville as a result of the construction of the proposed project and the anticipated residential and commercial growth associated with the project. As indicated in SFEIS tables 5.1-4 through 5.1-5, the percentage change is minor (i.e., up to 4% difference).

The analysis of employment impacts assumed no net growth in employment within the LMPA as a result of the project. The methodology used in the 2003 FEIS, and again in this SFEIS, was intended only to predict the re-allocation of growth; it was not designed to predict any new growth caused by the proposed action. Conversely, that does not

mean that additional growth will not occur as a result of the proposed action; this SFEIS simply was not designed to predict or quantify such growth. Thus, the data in this SFEIS should be construed to neither predict future growth as a result of the project nor conclude that such growth will not occur. Therefore, the claim that payroll tax revenue would be lost is unsubstantiated.

Furthermore, plans such as the Louisville Metropolitan Planning Organization's (MPO) *Horizon 2030 Metropolitan Transportation Plan* (MTP) and Louisville Metro's *Cornerstone 2020 Comprehensive Plan* promote redevelopment in the downtown areas. The Build Alternative would support the transportation plans for the LMPA, including the *Horizon 2030 MTP* and the Louisville Metro's *Cornerstone 2020 Comprehensive Plan*, and is generally consistent with those plans.

CART-5

Reading responses C.2 and C.5, and the correspondence between TARC and the consultants in Appendix E, it is apparent that there is no intention of guaranteeing cross-river transit access beyond the construction period for this project.

The bottom line is that the "transit plan" is only for the duration of construction. And there are no guarantees that there will be adequate funds even for that.

There are a number of problems with the SFEIS transit proposal beyond the obvious failures to guarantee future service:

- A) Operational costs are a significant issue for TARC – more so at this time than usual with TARC cutting service and raising fees.*
- B) Indiana has recently changed the regulations and no longer provides a dedicated fund for transit.*
- C) The LSIORBP itself is consuming many of the regional funds that would normally go to support transit.*

Response

Chapter 8 of the SFEIS includes a commitment to fund the following capital investments that will improve cross-river transit and remain in place beyond construction of the project:

- Constructing and/or expanding park and ride facilities.
- Purchasing buses and vans for express and shuttle bus service during construction.
- Purchasing and rehabilitating additional facilities to accommodate the increased fleet.
- Improving and consolidating existing bus stops and constructing new bus stops.

The commitment in Chapter 8 of the SFEIS stated that the funding for enhanced bus service was "not to exceed \$20 million." Because the MOA with TARC has not yet been finalized, this Revised ROD modifies that commitment to confirm that \$20 million in funding will be provided to TARC for enhanced bus service. (See Section 4.3.2 of this Revised ROD.)

CART-6 *“The Financial Plan” is an optimistic exercise in denial over the likelihood of cost over-runs, future toll revenues, future travel projections, and the Federal Highway Trust Fund’s ability to meet future state allotments.*

Since 2006 the Federal Highway Trust Fund has needed to borrow to meet programmed obligations. It is now apparent that fuel prices do indeed impact VMT’s contrary to the Consultant’s claims in the FEIS. Given that fuel prices are unlikely to drop significantly (EIA 2012,) and may indeed continue rising whenever our economy attempts to do so, we should not assume that there will be future increases in either the FHTF or VMTs.

...

- B) Toll prices are guesses, using the most optimistic of assumptions and ignoring a range of problems with the proposed toll collection methods.*
- C) Toll collection is poorly considered in this study and will result in significant decreases in projected income and increased costs for the community.*

Response Federal law requires recipients of federal financial assistance for a Major Project to develop an initial financial plan prior to construction and to prepare annual updates until the Major Project is complete. The LSIORB Project is a Major Project and is subject to these federal requirements. Additional information about Major Projects is available at: http://www.fhwa.dot.gov/ipd/project_delivery/defined/major_project.htm

The *Financial Demonstration* document in SFEIS Appendix G.2, the *2010 Updated Financial Plan* in SFEIS Appendix G.3, the *Revenue Estimates and Indicative Financial Capacity Memo* in SFEIS Appendix G.5, and *KRS 175B Financial Plan* in SFEIS Appendix G.7 demonstrate how the project is reasonably expected to be financially feasible.

Because no tolling policy has been established for the project, the results in the SFEIS are strictly based on the traffic forecast results converted to auto and truck transactions and multiplied by the baseline toll rates (see Toll Sensitive Test, Section 8 of SFEIS Appendix H.1; and *Toll Sensitivity Texting Memorandum*, Appendix H.4). As the project develops and a tolling policy is defined, more detailed analysis will be conducted to help establish tolling policies, including the details of the collection of tolls.

CART-7 *SFEIS admits that the Modified Selected Alternative puts a disproportionate burden on EJ and Title VI populations, but fails to address the issue.*

First CART asks why must this MOA with TARC wait? This agreement needs to be up front and part of the ROD. Otherwise, fiscal realities will inevitably leave TARC without the resources to provide these necessary services. Secondly, why aren’t the long term service needs created by this project addressed rather than just for the construction phase.... Transit is considered in the SFEIS only during project construction. Further, that consideration carries no guarantees of viable funding.

Response The mitigation for the likely disproportionate and adverse effects to environmental justice populations is included in Section 4.1.17 of this Revised ROD.

The MOA with TARC will be developed as the project progresses to ensure the details of the transit infrastructure and the project design elements are coordinated. In addition, because the MOA with TARC has not yet been finalized, this Revised ROD modifies that commitment to confirm that \$20 million in funding will be provided to TARC for enhanced bus service. (See Section 4.3.2 of this Revised ROD.)

CART-8

Another problematic issue is the “plan” for dealing with the disproportionate impact of tolling on EJ populations. The SDEIS at first talked about a special rate for low income, EJ and Title VI populations. (response D.16). In the SFEIS it has changed this to a “frequent user” rate instead, that ducks the issue of “disproportionate impacts”. The SFEIS discusses at length rates and models, but ultimately as noted in footnote 6, S-16, that “these assumptions and estimates are draft and used for preliminary analyses. The final tolling decisions will be made as the project progresses.”

The consultants use of the lowest possible toll figures in this document is hardly the “rigorous and objective analysis” that is required.

Response

SFEIS Section 7.3, comment/response D.16 does not discuss toll rates. Rather, comment/response D.20 states “the KYTC and INDOT will evaluate the various tolling scenarios including the final toll rates, billing options, privacy policies, and the duration of tolls as part of the design and financing process. Specific information on offsetting toll impacts on businesses and individuals and on the type of toll collection system that will be implemented has not yet been determined.” The toll scenario involving “frequent user rates” was included in the SFEIS to correspond with the toll rate assumptions used in a financial plan that was developed pursuant to Kentucky law (KRS 175B); that financial plan is included in SFEIS Appendix G.7 (see SFEIS, p. S-15). No final decisions on tolling rates or policies have been made at this time. Frequent-user discounts may be included in an updated tolling policy, and if so, they may help to mitigate impacts on low-income individuals. However, frequent-user rates have not been assumed as the basis for any of the findings contained in the environmental justice analysis in the SFEIS.

CART-9

Climate Change could have long term impacts on the financial health of this project and the nation. ... Transit investment, however, can make a significant impact in GHG emissions—just as it does with oil consumption and AQ effects. The FHWA is attempting to ignore real effects in an effort to support their chosen alternative and avoid an honest review of this project. This does not meet the standard of “rigorous and objective analysis” set forth in NEPA. Cumulatively, these issues result in a significant disenfranchisement of EJ, Title VI, and other non-driving populations, all of which are growing segments of our society. They also move our nation in the wrong direction relative to GHG emissions and oil dependence, and urban sprawl.

Response

During the 2001-2003 EIS process and during this SEIS process, transit options were evaluated and found not to meet the project purpose and need and were therefore not advanced as standalone project. Enhanced bus service, as described throughout the SFEIS, is part of the Modified Selected Alternative as an element to meet the purpose and need and mitigate likely impacts to low-income (environmental justice) populations.

CART-10 *FHWA is inherently biased against transit alternatives that compete for funding and reduce VMT's, and therefore fuel taxes – FHWA's principle revenue source. Their bias against transit is blatant in this project in their repeated failures to rigorously and objectively consider alternatives, and resistance to support even the most minimal transit investments.*

Response As stated above, there is a commitment to invest \$20 million in transit services that will last both during the construction and beyond. A transit alternative, however, would not meet any of the elements of the project purpose and need.

COMMENTS FROM THE GENERAL PUBLIC

Bud Hixson

Hixson-1 *Since 1997, the planning process leading ultimately to the preferred alternative of the 2012 FSEIS, eliminated fair consideration of transportation projects addressing the connectivity needs of the impoverished Title VI area. This occurred despite repeated and serious demand that the agencies and contractors recognize that sprawl and economic redistribution will occur, causing disproportionately high and adverse impacts to the minority or low-income populations.*

...

The FSEIS Title VI discussion should have accurately portrayed the scope and extent of the social and economic crisis in the Title VI area, providing numbers of households in poverty, education levels, the history of discrimination, segregation and unemployment. That accurate history and characterization of past discrimination and present economic distress would have led to a detailed discussion of appropriate regional planning.

Response Title VI of the Civil Rights Act of 1964, prohibits discrimination based upon race, color, and national origin. Specifically, 42 USC 2000d states that “No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” This project has not been found to be in conflict with Title VI as it does not discriminate against any population or persons, but is intended to enhance overall regional mobility. Issues relating to environmental justice and Title VI are further addressed in Section 2.5 of this Revised ROD.

Regarding the connectivity needs, enhancements to improve public transit and mobility are addressed in comment and responses D.12 and D.14 in SFEIS Section 7.3, p. 7-64.

Hixson-2 *[The project] should be replaced by a program of economic investment in the west end coupled with regional transportation connection projects such as a fixed rail rapid transit line that could get poor people out of the Title VI area in a daily commute to the far east end or south end to factory jobs. A one bridge project coupled with a light rail project was the better prescription for the MPA but was rejected.*

[SFEIS maps 5.1-2 and 5.1-3] show that the direct economic benefits of the project will be enjoyed principally by the upper income white population of the sprawling Floyds

Fork and Prospect areas located some 10 miles away from the Title VI populations located in West Louisville.

It is not merely the burden of paying tolls but also the impossibility of low income minorities using high cost automobile transportation or failing TARC transportation to commute to the jobs that are forecast for the economic growth caused by the East End bridge. The length of the daily commute, the cost of bridge tolls, and the drive time, constitute a very high burden for Title VI populations to enjoy the benefits of any jobs created in the east.

Response Please see SFEIS Section 7.3, comments and responses Section B, regarding information on the purpose and need of the project, and Comment and Response C.36, which notes that light rail and other mass transit project would not meet the purpose and need.

SFEIS Figure 5.1-2 shows the redistribution of households and employment, respectively, for the build vs. the No-Action alternatives. The results show decreases in Oldham County, the Prospect area and eastern Jefferson County (not an “economic benefit,” as the commenter suggests) and that the increase in jobs and household would be expected to occur in eastern Clark County, Indiana.

One purpose of this proposed action is to improve cross-river mobility between Jefferson County, Kentucky, and Clark County, Indiana. One of the specific factors demonstrating the need includes “inefficient mobility for existing and planned growth in population and employment in the downtown area and in eastern Jefferson and southeastern Clark Counties.”

The analysis of employment impacts assumed no net growth in employment within the LMPA as a result of the project. The methodology used in the 2003 FEIS, and again in this SFEIS, was intended only to predict the re-allocation of growth; it was not designed to predict any new growth caused by the proposed action. Conversely, that does not mean that additional growth will not occur as a result of the proposed action; this SFEIS simply was not designed to predict or quantify such growth. Thus, the data in this SFEIS should be construed to neither predict future growth as a result of the project nor conclude that such growth will not occur.

Hixson-3 *The SFEIS lacks a detailed discussion of how enhanced transit service will reasonably connect the Title VI area to these benefits of the project. The long commute distances, unaffordable tolls, high gasoline prices, high cost of automobile ownership, licenses and insurance seem to preclude Title VI area people making less than \$30 per day from participating in these distant markets.*

Response Enhanced bus service is being provided as one means to meet the project’s need to improve cross-river mobility. Enhanced bus service would facilitate access to jobs throughout the LMPA. INDOT and KYTC will continue working with TARC to develop the MOA on the details of the services. As stated in SFEIS Comment and Response C.2, the funds will be used for “[d]eveloping a public awareness and communications program, including advertising, using emerging technology to

communicate with the public to encourage ridership, and informing low-income populations of the enhanced bus service options.” In addition, this Revised ROD confirms that \$20 million in funding will be provided to TARC for enhanced bus service. (See Section 4.3.2 of this Revised ROD.)

Hixson-4 *LSIORBP Title VI analysis by highway engineers is superficial, inaccurate and deliberately avoids a discussion of the actual disproportionately high and adverse impacts of the mega-project on low-income and minority groups by economic redistribution.*

Response SFEIS Section 5.1.7 provides an extensive analysis of the existing conditions and potential impacts to low-income and minority groups. The section concludes there will be a likely disproportionate and adverse impact to such populations, and includes strategies for mitigation, which are also included in Section 4 of this Revised ROD. Issues relating to environmental justice and Title VI are further addressed in Section 2.5 of this Revised ROD.

Hixson-5 *The planners adopted a too narrow Purpose and Need Statement deliberately constructed to exclude Title VI issues from guiding alternatives selection. By elevating “relieving cross river automobile traffic congestion” for the elite, above alleviating human suffering for the poor, planners have struck a deep scar in the community --with costly consequences.*

Response The Purpose and Need Statement was developed the initial process in 2001–2003, and was reevaluated during this current SEIS process. Throughout the development of the project, the Purpose and Need Statement was developed with agency and public input. While some commenters recommended a change in the purpose and need, FHWA determined that the original purpose and need as stated in the 2003 FEIS remains valid. Therefore, the purpose and need in the SFEIS remained the same as the purpose and need in the 2003 FEIS. Information about the process is included throughout SFEIS Chapter 7.

Hixson-6 *The Chapter 8 Mitigations are surreal and out of proportion to the scope of the Title VI crisis that needs to be addressed. ... Mitigation in the form of a proposed training program of unknown duration and enrollment is not sufficient to mitigate the scope of the economic redistribution caused by the modified alternative.*

Response The Craftsman Training Program is intended to address the adverse effects to historic resources and is therefore included in the Section 106 MOA, while providing an opportunity to provide training to minorities.

Hixson-7 *The SFEIS fails to integrate new scientific understanding in air pollution health risks into the NEPA analysis of project effects. ... Since 2001, the peer reviewed literature has shown that the most toxic and cancer causing particulate comes from those smaller than 2.5 microns—the nano-particulates.*

These ultrafine particles were not included in any SFEIS “hard look” at air pollution which continues to rely on out-dated gravimetric analysis. The modeling of particulate concentrations and human health effects and deaths, hot spots and conformity are erroneous and understate the risks.

Response	The SFEIS evaluates the criteria air pollutants in accordance with the Clean Air Act and in relation to the pollutants and associated limits set by USEPA in the NAAQS. The project analysis met all conformity requirements associated with PM _{2.5} (particulate matter less than 2.5 microns in diameter, e.g., ultrafine particulates), including regional conformity analyses and project level hot-spot analyses for PM _{2.5} .
Hixson-8	<i>Road salt contamination from the modified alternative is not discussed and is serious and will have very significant effect to aquatic wildlife and may contaminate the well head area of the Louisville Water Company artesian well collection system feeding the Payne Water Treatment plant.</i>
Response	As stated in SFEIS Section 7.3, Response to Comment I.12, it is the policy of Indiana and Kentucky to apply Best Management Practices regarding roadway runoff. Within the vicinity of Harrods Creek and the Louisville Water Company's Wellhead Protection Area, collection systems will be installed along the entire approach to the East End Bridge in Kentucky and along the East End Bridge, itself. These issues will be addressed in the design of the Modified Selected Alternative. Coordination with the Louisville Water Company and KDOW occurred during the preliminary design regarding the collection and dispensing of runoff, and coordination will continue through final design.
Hixson-9	<i>The LSIORBP adopts and incorporates in the Purpose and Need from ORMIS. The discriminatory regional plans of the MPO constructed without NEPA oversight, gave little weight to the connectivity problems of the Title VI area and the failing TARC system. The regional politicians on the TPC were too attentive to east end and southern Indiana business interests when they formulated the Purpose and Need, and gave little heed to the discriminatory effect of the two bridges plan. The FSEIS perpetuates the discrimination. This is an adoption of right wing trickle down theory – that by giving all the support to economic growth in outer rings of the suburban region, poor people trapped in the ghetto will eventually benefit. The past ten years have shown this to be a sham.</i>
Response	<p>The metropolitan planning process is a federally prescribed, consensus-based local transportation planning process, which involves representatives of local jurisdictions to ensure that local land use plans and knowledge of local economic conditions are taken into account. (See 23 CFR Part 450.) The metropolitan planning process includes public involvement, as well as a process for compliance with Title VI. The input serves as the basis for the transportation planning decisions embodied in the MPO's long-range transportation plan. FHWA reviews the MPO's planning process on a regular basis to ensure that the planning process satisfies all applicable federal requirements. FHWA has reviewed the Louisville MPO's planning process and certified that the MPO is in compliance with federal requirements, as specified in 23 CFR Part 450, including Title VI of the Civil Rights Act.</p> <p>In developing the purpose and need for the LSIORB Project, it is appropriate to rely on the transportation goals identified by the MPO in its transportation plan. In fact, FHWA's guidance encourages consideration of metropolitan transportation plans when developing the purpose and need for a transportation project. (See Appendix A of 23 CFR Part 450.)</p>

The Louisville MPO's current Horizon 2030 long-range plan includes a wide range of investments in the region's transportation system, including investments to support transit service. The plan includes the LSIORB Project as one component of a long-term strategy for strengthening the region's transportation system. In accordance with FHWA's guidance, the purpose and need for the LSIORB Project is grounded in the regional goals established in the MPO's long-range transportation plan, while also reflecting input received from agencies and the public as part of the NEPA process.

Hixson-10 *The lack of accurate characterization of the poverty of the Title VI area and its isolation throws into doubt, the effectiveness of proposed mitigation in the form of enhanced bus service that is only vaguely referred to in the mitigations section.*

Response The SFEIS included an updated assessment of the geographic distribution of environmental justice communities in the project area. The results of this assessment are presented in Section 5.1.7.1 of the SFEIS, *Identification of Updated Environmental Justice Populations in the LMPA* (SFEIS, p. 5-26). This assessment identifies each of the Census block groups with minority or low-income populations that meet the thresholds identified in FHWA's environmental justice guidance for defining environmental justice populations (SFEIS, p. 5-26). FHWA is satisfied that this assessment accurately characterized the presence of environmental justice populations in the project area.

Hixson-11 *There is no thorough analysis showing mitigation in the form of enhanced bus service or whether Title VI populations could reasonably access bus routes that would dependably and timely convey them to River Ridge jobs. These 12 mile away jobs will be out of reach by bus transit on congested morning commute roadways. These same objections were raised in 2002 in the Bather Wayne Title VI complaint and have not been sufficiently addressed.*

Response The Title VI complaint from Kentucky House of Representatives Paul Bather and Jim Wayne was attached to a letter to FHWA dated February 25, 2002. FHWA provided a response to each representative in a letter dated July 17, 2002. In the July 17 letter it was stated that the Office of Civil Rights declined to review the matter as a formal Civil Rights complaint, noting it was premature since the NEPA process was on-going. The letter stated "following release of the ROD, if your constituents believe their rights under the Civil Rights Act will be violated by the project, [the Office of Civil Rights] will be in a better position to consider their options for seeking redress of [constituents'] grievances." There is no record of any further Title VI complaint being filed after the publication of the 2003 ROD. In addition, it should be noted that the project will provide mobility benefits for the region as a whole, by reducing congestion and improving travel times for a wide range of trips. The project will make it easier, not more difficult, to access the employment opportunities in the River Ridge area and elsewhere in Southern Indiana. Moreover, to the extent that the project affects transit service, it will have a positive impact by improving transit travel times (through reduction in congestion on existing routes and providing new river crossings) and by providing funds for enhanced bus service. Issues relating to environmental justice and Title VI are further addressed in Section 2.5 of this Revised ROD.

Hixson-12 *The system requires a fixed rail rapid transit line to solve the problems of the Title VI area, but at the finish of the LSIORBP all the federal money will be gone and the chronic poverty and joblessness will remain concentrated in the Title VI areas.*

Response The MPO is responsible for determining transportation funding priorities for the region, based on a multimodal transportation planning process that must comply with federal requirements in 23 CFR Part 450. As part of that process, the Louisville MPO has identified the LSIORBP Project as a regional priority, with support from KYTC and INDOT. The MPO has also included transit investments in its long-range plan. The balance between highway, transit, and other investments is appropriately made by the MPO as part of the metropolitan planning process and by the States as part of their statewide transportation planning processes.

Hixson-13 *In the Quantitative Analysis of Mobile Source Air Toxics FHWA adopts discredited and invalidated MSAT emissions modeling methods that under-estimate the impacts of the project on residents' health. Cancer rates caused by MSAT will increase --not decrease --for residents in the area of the project.*

The conclusion:

"The quantitative MSAT analysis demonstrates that the project will not have a meaningful impact on levels for any of the seven primary MSAT pollutants and that MSAT levels will be reduced in the design year, in comparison to the existing condition, due to USEPA's vehicle and fuel regulations, coupled with fleet turnover." --is erroneous and misleading and masks a serious impact to human health as a result of the project.

Total annual emissions rates are given in tons per year.

The emissions factors are computed from a gravimetric analysis using micro grams/ cubic centimeter or cubic meter.

This analysis method has been invalidated by subsequent scientific developments showing that gravimetric measurements do not accurately quantify human health risk caused by inhalation of ultra-fine particulates of nano-meter scale that penetrate more deeply into the lungs but have very low mass.

Response The project team analyzed the USEPA regulated air pollutants using USEPA promulgated models, and methodologies developed by FHWA air quality specialists. The analysis methodology for MSAT emissions for the LSIORBP Project was developed from the following sources:

- *Technical Guidance on the Use of MOBILE6.2 for Emission Inventory Preparation, U.S. EPA Office of Transportation and Air Quality (2004).*
- *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives, Michael Claggett, Ph.D., Terry L. Miller, Ph.D., P.E., FHWA (2011).*
- *Communications and methodology coordination with FHWA air quality specialist, Dr. Michael Claggett.*

The project team used the current promulgated regulations and methodologies to assess the Mobile Source Air Toxics emissions from the existing project impact area and for the build alternatives. The project team analyzed the components of MSATs that are recognized by the USEPA as the primary MSAT pollutants, including particulate matter. USEPA regulates PM₁₀ and PM_{2.5} but does not regulate “ultra-fine particulate matter” or particulate matter less than 0.1 micrometer in diameter. FHWA has assessed the project’s potential impacts for those air quality pollutants that are regulated by USEPA and has provided a comparison of effects, by alternative.

Hixson-14

FHWA has previously been made aware in prior comment to the SEIS of the need to model UFP [ultra-fine particles]. EPA has failed to require standards protective of human health and the environment by not requiring FHWA to model ultra-fine particulate counts with increasing vehicle miles. Increasing vehicle miles will increase UFP counts and the MSAT health risk will increase.

FHWA ignores current accepted scientific advancement by not modeling particulate counts in a build and no build scenario.

Response

FHWA continually evaluates new material regarding mobile source air quality impacts, including research funded and conducted by the agency⁸. FHWA acknowledges the emerging research and literature regarding ultra-fine particle prediction and health effects. The project team evaluated the current methodologies, consulted FHWA air quality specialists and developed an analysis based on current guidance for USEPA regulated air pollutants.

FHWA, USEPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. FHWA will continue to monitor the developing research in this emerging field.

Hixson-15

The commenter agrees with the introductory statement so much as says:

“USEPA has assessed the list of 188 air toxics in their latest rule—FR Vol. 72, No. 37, page 8430, February 26, 2007 (2007 EPA rule)—and (1) identified 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System and (2) identified seven compounds with large contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment. These seven are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter (POM).”

The Commenter objects to and denies:

*“The 2007 EPA rule requires controls on vehicles that will **dramatically decrease MSAT emissions** through cleaner fuels and cleaner engines. According to an*

⁸ http://www.fhwa.dot.gov/environment/air_quality/air_toxics/research_and_analysis/

FHWA analysis using USEPA's MOBILE 6.2 model, even if vehicle activity (expressed as vehicle-miles traveled, VMT) increases by 145%, as projected for the LSIORB Project, a combined reduction of 72% in the total annual emission rate for the seven priority MSAT compounds is projected from 1999 to 2050 due to the 2007 EPA rule that will enforce the reduction of MSATs from vehicles."
[Emphasis added by Dr. Hixson.]

By using an outdated and self-serving analytical and modeling method, FHWA masks human health risk directly resulting from the build scenario.

Response The data presented is based on analyses performed using USEPA promulgated models for the prediction of air quality emissions. The emissions reductions shown are the result of that analysis.

Hixson-16

TABLE A.3-1

MSAT Emissions by Pollutant for the Project (in tons per year)

*"The analysis indicates that a **significant decrease** in MSAT emissions can be expected in the LSIORB project area from existing (2010) levels through future (2030) design year levels. The quantitative analysis also validated that that there would be no appreciable difference in overall MSAT emissions among the build alternatives, in comparison to the No-Action Alternative. The major mitigating factor in reducing MSAT emissions is the implementation of the USEPA's control standards of motor vehicle emissions and fuels. These include the reformulated gasoline program, the national low-emission vehicle standards, the Tier 2 motor vehicle emission standards and gasoline sulfur control requirements, and the heavy-duty engine and vehicle standards plus on-highway diesel fuel sulfur control requirements."*

The analysis takes no account that the actual particle counts of toxic and hazardous particulates in the nano-particulate range will increase with increases in vehicle miles during the same period—immersing Louisville in an ever denser sea of low mass ultra-fine particulates that are more toxic to human health.

Mass based reductions are irrelevant in comparison to particulate count numbers of UFP. The commenter objects to and denies that the following conclusions are based on sound science or are even reasonable interpretations of available data:

"Overall, reductions in MSAT emissions of over 47% are predicted (47.2% to 47.3% for the build alternatives and 47.4% to 49.1% for the No-Action Alternative)."

Of the MSAT compounds analyzed, diesel PM contributes most to existing emission levels, but by the design year, a substantial decline is predicted.

Benzene and formaldehyde account for the majority of estimated MSAT emissions in the design year, although at reduced levels compared to the existing conditions. There are slight variations in emissions among the alternatives due to changes in vehicle activity patterns (i.e., speeds and vehicle-miles traveled) between build and No-Action alternatives.

The quantitative MSAT analysis demonstrates that the project will not have a meaningful impact on levels for any of the seven primary MSAT pollutants and that MSAT levels will be reduced in the design year, in comparison to the existing condition, due to USEPA's vehicle and fuel regulations, coupled with fleet turnover.

Reporting reduced MSAT emissions based on gravimetric derived emissions factors to produce tons per year reductions, endangers human health and misrepresents the MSAT health risk of the project.

Response The project team analyzed the USEPA regulated air pollutants using USEPA promulgated models, and methodologies developed by FHWA air quality specialists.

Hixson-17 *An increasing number of published, peer reviewed studies demonstrate ultrafine particles are more toxic and particulate numbers must be controlled by standards. ...*

Aggarwal, Jain, Marshal, Real-time prediction of size-resolved ultrafine PM on freeways, Environmental Science & Technology, just accepted manuscript, January 31, 2012.

While there are no US regulations for PM 0.1 ("ultrafine particles", UFP; diameter less than 0.1 μm), recent research raises the concern that these particles may be especially toxic (1,2).

1. Oberdörster, G. Pulmonary effects of inhaled ultrafine particles. Int. Arch. Occup. Environ. Health 2000, 74, 1-8.

2. Ibalid-Mulli, A.; Wichmann, H.E.; Kreyling, W.; Peters, A. Epidemiological evidence on health effects of ultrafine particles. J. Aerosol Med. 2002, 15, 189-201.

Response FHWA continually evaluates new material regarding mobile source air quality impacts, including research funded and conducted by the agency⁹. FHWA acknowledges the emerging research and literature regarding ultra-fine particle prediction and health effects.

As the cited Aggarwal, *et al.* (January 2012) publication stated, there are no U.S. regulations for ultra-fine particles in place. The method for resolving the size of particles emitted from the combustion of diesel fuel and gasoline is an emerging science, as is evidenced by the contemporaneous publication of the Aggarwal, *et al.*, article and this Revised ROD.

The Ibalid-Mulli, *et al.* (2002) article cited in the Aggarwal, *et al.*, article and referenced by the comment author stated:

Evidence from epidemiologic studies linking ambient concentrations of particulate matter to morbidity and mortality influenced the guidelines for air quality standards worldwide. With the improvement of measurement techniques,

⁹ http://www.fhwa.dot.gov/environment/air_quality/research

*clearer effects were observed with smaller particle sizes. Based on these effects and results from animal studies on the potential toxicity of ultrafine particles, recent epidemiologic studies focus on the health effects of particles which are less than 100nm in diameter. However, most of the studies are ongoing and only few results have been available so far. Six panel studies with patients suffering from chronic pulmonary diseases have been performed in Germany, Finland and the United Kingdom. Overall, a decrease of peak expiratory flow (PEF) and an increase of daily symptoms and medication use was found for elevated daily particle concentrations. Effects were seen with both fine and ultrafine particles. One large study on daily mortality from Germany showed comparable effects of fine and ultrafine particles in all size classes considered. However, fine particles showed more immediate effects while ultrafine particles showed more delayed effects on mortality. **The limited number of epidemiological studies suggest that there are health effects of fine and ultrafine particles which might be independent of each other.** [Emphasis is FHWA's.] If these effects are confirmed by ongoing research, monitoring and regulation of particulate air pollution may need to be revised.¹⁰*

This statement recognizes the emerging nature of the research on ultra-fine particles and their health effects in terms of separating the effects of ultra-fine particles (not regulated by USEPA) from fine particles (regulated by USEPA as PM_{2.5}). While there is emerging research on the resolution in the prediction of ultra-fine particles in particulate modeling, there is no established guidance pertaining to project level alternatives analysis for ultra-fine particles or alternatives level assessments of health effects associated with air toxics.

The Oberdörster (2000) article, also cited by Aggarwal, *et al.*, studied the effects of ultra-fine particles administered to lungs and the inflammatory response in comparison to larger particles. The study found that inflammatory response was greater for ultra-fine particles than for larger particles, and that aged test specimens and those with compromised respiratory tracts were more susceptible than young specimens.

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA.

USEPA recognizes the potential health effects of particulate matter. USEPA regulates air pollutants such as PM_{2.5}, which includes all particulate matter 2.5 microns in diameter and less. USEPA regulations, models, and guidance do not break down fine vs. ultra-fine particulate sizes beyond the PM_{2.5} classification.

¹⁰ Ibald-Mulli, A.; Wichmann, H.E.; Kreyling, W.; Peters, A. "Epidemiological evidence on health effects of ultrafine particles." *Journal of Aerosol Medicine*. 2002, 15, 189-201.

FHWA evaluated the current methodologies, consulted its air quality specialists, and developed an analysis based on current USEPA guidance and models in the preparation of the analysis of particulate matter for the LSIORB Project. In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. FHWA, USEPA, the Health Effects Institute, and others have funded and conducted research studies (including the Aggarwal, *et al.*, article cited by the comment author) to try to more clearly define potential risks from MSAT emissions associated with highway projects. FHWA will continue to monitor the developing research in this emerging field.

Hixson-18

UFP can penetrate deeply into the lung and can cross the lung lining (3, 4), which is ~ 0.1-20 μm thick (5).

3. Geiser, M.; Rothen-Rutishauser, B.; Kapp, N.; Schurch, S.; Kreyling, W.; Schulz, H.; Semmler, M.; Im Hof, V.; Heyder, J.; Gehr, P. Ultrafine particles cross cellular membranes by nonphagocytic mechanisms in lungs and in cultured cells. *Environ. Health Perspect.* 2005, 113, 1555-60.
4. Choi, H.S.; Ashitate, Y.; Lee, J.H.; Kim, S.H.; Matsui, A.; Insin, N.; Bawendi, M.G.; Semmler- Behnke, M.; Frangioni, J.V.; Tsuda, A. Rapid translocation of nanoparticles from the lung airspaces to the body. *Nat. Biotechnol.* 2010, doi:10.1038/nbt.1696.
5. Crapo, J.D.; Barry, B.E.; Gehr, P.; Bachofen, M.; Weibel, E.R. Cell number and cell characteristics of the normal human lung. *Am. Rev. Respir. Dis.* 1982, 126, 332-337.

Response

These three articles were cited in the 2012 article by Aggarwal, *et al.*, and referenced in comment Hixson-17. The Geiser, *et al.* (2005) publication combined different experimental approaches to study the distribution of UFPs in lungs and their uptake by cells, and to investigate the mechanisms of particle uptake into cells. The Choi, *et al.* (2010) article investigated the biodistribution of nanoparticles after introduction in the lungs. The Crapo, *et al.* (1982) publication characterized the cell number and cell type for the normal human lung. While these three articles contribute to the knowledge of the human respiratory system and the mechanisms of movement of particulates within the human body, and provide information for the recent evaluations of the toxicity of particulate matter, they are not germane to the NEPA alternative analysis of air toxics for the proposed project.

As noted in response to Hixson-17, while USEPA recognizes the potential health effects of particulate matter and regulates air pollutants including PM_{2.5}, its regulations, models, and guidance do not break down fine vs. ultra-fine particulate sizes beyond the PM_{2.5} classification. FHWA used the current USEPA guidance and models in the preparation of the analysis of particulate matter for this project. In addition, the air quality emission

models used for this project do not allow for localized emissions predictions that would be necessary for a health risk assessment.

Hixson-19

The European Union has proposed to regulate tailpipe number concentrations as part of Euro 5 and Euro 6 standards for light passenger and commercial vehicles. In typical ambient and on-roadway conditions, UFPs have high number concentrations but low mass concentrations, relative to other particles (6).

6. Tuch, T.; Brand, P.; Wichmann, H.E.; Heyder, J. Variation of particle number and mass concentration in various size ranges of ambient aerosols in Eastern Germany. *Atmos. Environ.* 1997, 31, 4193-4197.

Response

While this article (cited in the 2012 article by Aggarwal, *et al.*, referenced in Hixson-17) investigated the size fraction of particles in ambient air in Erfurt, Germany, it made no assessment of effects from those size classes. A subsequent publication—*Daily mortality and fine and ultrafine particles in Erfurt, Germany part I: role of particle number and particle mass.* H. E. Wichmann, C. Spix, T. Tuch, G. Wölke, A. Peters, J. Heinrich, W. G. Kreyling, J. Heyder, GSF Institute of Epidemiology, Neuherberg, Germany (2000)—reported on a study on mortality as it related to particulates and particle size distributions. As previously stated, the study showed comparable effects of fine and ultra-fine particles in all size classes considered. However, fine particles showed more immediate effects on mortality while ultra-fine particles showed more delayed effects. While there is emerging research on the resolution in the prediction of ultra-fine particles in particulate modeling, there is no established guidance pertaining to project level alternatives analysis for ultra-fine particles or alternatives level assessments of health effects associated with air toxics.

The European Union has proposed regulations to ensure that emissions are reduced to improve the health of its citizens. This is in direct relation to the USEPA Tier 2 Vehicle & Gasoline Sulfur Program Final Rule that is improving the air quality for citizens of the United States. The substantial reductions in emissions in future years as a result of this and other USEPA regulations have been previously outlined in this Revised ROD (see Section 2.4 subsection, “Quantitative Assessment of MSATS”; and Appendix A, *Quantitative Analysis of Mobile Source Air Toxics*, June 2012).

Hixson-20

Vehicles and other combustion sources are important contributors to urban UFP. UFP concentrations (particle number per volume of air) can be an order of magnitude higher on freeways than in background urban air (7-9).

7. Hu, S.; Fruin, S.; Kozawa, K.; Mara, S.; Paulson, S.E.; Winer, A.M. A wide area of air pollutant impact downwind of a freeway during pre-sunrise hours. *Atmos. Environ.* 2009, 43, 2541-2549.

8. Westerdahl, D.; Fruin, S.; Sax, T.; Fine, P.M.; Sioutas, C. Mobile platform measurements of ultrafine particles and associated pollutant concentrations on freeways and residential streets in Los Angeles. *Atmos. Environ.* 2005, 39, 3597-3610.

9. Zhu, Y.; Hinds, W.C.; Kim, S.; Shen, S.; Sioutas, C. *Study of ultrafine particles near a major highway with heavy-duty diesel traffic*. *Atmos. Environ.* 2002, 36, 4323-4335.

Response

A review of the abstracts of the above three articles (cited in the 2012 article by Aggarwal, *et al.*, referenced in Hixson-17) validates the commentor's statement that "vehicles and other combustion sources are important contributors to the *urban* [ultra-fine particles]." Specifically, Hu, *et al.*, observed that vehicle-related UFP concentrations extended farther downwind of major roads prior to sunrise than during the day, thereby impacting residential areas farther from the roads than previously thought and at a time when most residents are at home. The article by Westerdahl, *et al.*, noted that some health issues generally associated with particulate matter may be attributed to ultra-fine particles, reported there is a possible relationship between UFP concentrations and truck traffic volumes, and described monitoring technologies that could be applied in the study of UFP concentrations and size distribution in Los Angeles. Zhu, *et al.*, reported that measurements conducted near a road with a high volume of diesel trucks showed that UFP concentrations upwind and downwind of the road were indistinguishable; and that this information could be used to identify potential UFP exposure near major roads.

As noted in the response to Hixson-17, FHWA acknowledges that mobile sources contribute to increases in particulate matter concentrations for near roadway conditions, and has used the current USEPA guidance and models in the preparation of the analysis of MSATs, including particulate matter, for the project. USEPA regulations, models, and guidance do not break down fine vs. ultra-fine particulate sizes beyond the PM_{2.5} classification. FHWA will continue to monitor the developing research in this emerging field. (Please see the response to Hixson-17 for additional discussion.)-

Hixson-21

Variations in vehicle speed and density, type and age of vehicles, roadway topography, meteorology, and particle dynamics create spatially and temporally heterogeneous distributions of UFPs. Real-time estimation of UFP concentration on freeways is important for understanding UFP exposures and for identifying UFP hotspots.

Response

FHWA acknowledges the emerging research and literature regarding ultra-fine particle prediction and health effects. The method for resolving the size of particles emitted from the combustion of diesel fuel and gasoline is an emerging science, as is evidenced by the contemporaneous publication of the Aggarwal, *et al.* (January 2012) article and this Revised ROD.

USEPA recognizes the potential health effects of particulate matter. USEPA regulates air pollutants, such as PM_{2.5}, which includes all particulate matter 2.5 microns in diameter and less. USEPA regulations, models, and guidance do not break down fine vs. ultra-fine particulate sizes beyond the PM_{2.5} classification. FHWA used the current USEPA guidance and models in the preparation of the analysis of particulate matter for this project.

Hixson-22

Particulate Matter Air Pollution and Cardiovascular Disease : An Update to the Scientific Statement From the American Heart Association

Free full text at: <http://circ.ahajournals.org/content/121/21/2331>. Several new studies have also demonstrated that residing in locations with higher long-term average PM levels elevates the risk for cardiovascular morbidity and mortality. Some recent evidence also implicates other size fractions, such as ultrafine particles (UFPs) <0.1 μm, gaseous co-pollutants (eg, ozone and nitrogen oxides [NOx]), and specific sources of pollution (eg, traffic). In addition, there have been many insights into the mechanisms whereby PM could prove capable of promoting CVDs (cardiovascular diseases).

Response

The publication evaluated PM_{2.5} exposure in relation to cardiovascular disease-related mortality and nonfatal events. The evaluation found that the overall evidence is consistent with a causal relationship between PM_{2.5} exposure and cardiovascular morbidity and mortality.

Please see responses to comments Hixson-17 and Hixson-18, regarding particulate matter and related health impacts.

Brent and Diana Nemec**Nemec-1**

Construction Noise Impacts not Adequately Evaluated—The FEIS and SFEIS do not adequately evaluate construction noise impacts, particularly the impacts from Alignment A-15 on Bridgepointe. ... the constant drilling and blasting noise that will be extremely acute for Bridgepointe residents as up to 3.4 million cubic yards of rock and other material is blasted/excavated along and adjacent to the Bridgepointe interstate border, and within existing residential lots in Bridgepointe. The FEIS does commit to adhering to the Louisville construction noise ordinance, which permits potentially unlimited construction noise between 7:00 AM and 9:00 PM. Bridgepointe previously requested more restrictive construction time limits. We believe a more reasonable time limit would be 7:00 PM, and believe the FEIS and SFEIS are deficient for not clearly communicating the proposed construction time limits, or lack thereof. We believe this evaluation is inadequate and accordingly does not provide a basis for fairly comparing Alternative A-15 with other alternatives and it does not serve as an adequate basis for determining appropriate mitigation.

Response

Construction noise is addressed in Section 5.5.4 of the SFEIS. With regard to the comparison of alternatives, there would no appreciable difference between the two build alternatives in this regard.

Nemec-2

Lot re-grading / Mitigation Not Adequately Addressed—Section 5.11.5 of the FEIS included the provisions below, requiring consultation with homeowners to re-grade lots disturbed by construction (shaping the land). We believe this is a critical mitigation that needs to be reflected in the revised FEIS/MOA/ROD.

The following measures to mitigate visual impacts will be considered during final design.

- 1. New landscaping and revegetation to restore slopes and woodland edges to soften roadway appearance and frame views from the road.*
- 2. Shaping of the land at edges of the grading to smooth the transition to existing grades and to screen views of the roadways from adjacent land uses.*

Response SFEIS Section 5.11.5 states “Mitigation to visual impacts was discussed in Section 5.11.5 of the 2003 FEIS. There are generally no changes to this section of the FEIS, as the information continues to be applicable for the project.” Additionally, the following commitment is included in SFEIS Chapter 8: KYTC will consult with the Bridgepointe Neighborhood Association and consider their recommendations in developing a landscape component for any wall placed along the border of the neighborhood.

Nemec-3 *...it is noted that the original ROD contains the following commitment language which appears to be excluded from the SFEIS. Accordingly, we ask that you confirm this language will be included in the revised or supplemental ROD as you committed.*

4.1.5 Noise

Barriers for the neighborhoods below are likely, however, as part of the final design process, more detailed barrier analyses and design will be performed utilizing the more detailed design information that will be available at that time. Potentially reasonable and feasible noise barriers will be coordinated with the affected communities for their input to determine if there is local support for proposed barriers. Those communities whose input will be sought include the following, but not necessarily limited to:

- Bridgepointe Neighborhood (receptors 28, 29 and 30) ...*

Response For the SFEIS, a new noise analysis was completed, including updated design, traffic forecasts, the latest noise forecasting computer model, and FHWA methodology and guidance. The analysis for the Bridgepointe area is provided on pages 5-169 through 5-177. The conclusion is as follows:

The Bridgepointe Subdivision was assessed for barrier abatement via a barrier for both the FEIS Selected Alternative and the Modified Selected Alternative. The TNM2.5 results indicate that it is not possible to obtain the noise attenuation to be considered acoustically feasible in accordance with KYTC noise policy. The roadway is in a deep cut at this point in relation to the receptors; as a result, any barriers were determined to provide very little additional attenuation beyond what was already being provided by the cut, itself. Therefore, for this noise sensitive area, structural noise barriers are not warranted for further consideration.

David Eugene Blank, PhD

Blank-1 *...a designated small percentage of all annual toll revenue [perhaps 0.25% to 0.50%] ...be designated – on a permanent basis - for use of TARC... (and)...all TARC buses, van pools and carpools mentioned in the march 9, 2012 TARC letter ...be exempt from tolls.*

In addition, all future prospective private sector ventures, or faith-based innovative jitneys or shared taxi services that might be developed in cooperation with TARC – with the intent of offering a regular cross-Ohio River travel service should also be exempt from tolls.

Response	The tolling policy has not yet been established by the states of Indiana and Kentucky. During that process, these suggestions will be taken into consideration. However, this Revised ROD does not require the States to dedicate a share of toll revenues to transit or any other purpose. Under federal law (23 U.S.C.129), the States will be required to dedicate all toll revenues to expenses associates with the facilities on which the tolls are collected, unless there are excess revenues (over and above what is needed for construction, operation, maintenance, and other eligible expenses for these facilities). If there are excess revenues, they may be used for any activity eligible for funding under Title 23 of the United States Code. Transit operating expenses are not an eligible expense under Title 23.
Blank-2	<i>True support of TARC requires support of operating expenses.</i>
Response	Kentucky Constitution, Section 230 and Indiana Code IC 8-23-9-55 limit use of highway funds to highway purposes. As a result, the commitment for enhanced bus services described in the SFEIS, and related correspondence with TARC, note that funds will not be provided for operational expenses by the respective departments of transportation.
Blank-3	<i>The Need for a Designated TARC share of All LSIORB Toll Revenue—the ROD should explicitly stipulate that all toll scenarios devise by the Bi-State Bridges Authority accepts that a designed percentage – no less than a 0.25% of all annual revenues be given to TARC.</i>
Response	Please see response to comment Blank-1.
Blank-4	<p><i>The planned MOU/MOA...</i></p> <ol style="list-style-type: none"> <i>1) Fails to avoid, minimize or mitigate disproportionately high and adverse health and environmental effects on low-income and minority population.</i> <i>2) Fails to ensure full and fair participation in decision-making,</i> <i>3) Fails to prevent the denial of, or reduction in, or significant delay in the receipt of benefits by the low-income and minority populations. [See also USDOT FHWA Directive 6640.3]</i>
Response	The commitment is to continue to work with TARC officials to develop an MOA to detail the final agreed-upon funding amounts and years of expenditure to comply with the commitments identified in the SFEIS for an enhanced bus service. The MOA is one element of the strategy to minimize and mitigation likely disproportionate high and adverse impacts to low-income populations. In addition, this Revised ROD confirms that \$20 million in funding will be provided to TARC for enhanced bus service. See Section 4.3.2 of this Revised ROD.

Pat Welsh

Welsh-1 *Use American made materials... Hiring minorities and women.... Apprenticeship program—this is a perfect opportunity to develop a skilled workforce for future infrastructure projects... Traffic lanes—keep traffic lanes 14 feet wide to allow for 'wiggle room'.*

Response Buy American is a project requirement. Equal Employment Opportunity (EEO) and Disadvantage Business Enterprise (DEB) programs and policies will be adhered to, and more information can be found in SFEIS Section 7.3, D.3, Item 1 (page 7-56). Training will be part of the project. Traffic lanes are 12' throughout the US for all interstate and major roadway facilities.

Comments Similar in Nature, Received from Multiple [M.#] Sources

M.1 *...the Kentucky Transportation Cabinet sponsored a traffic study that showed only a 1% improvement in traffic improvement with both bridges compared to only an East End Bridge with Kennedy Interchange improvements.... \$1 billion dollars for a Downtown Bridge for a 1% traffic improvement....*

Representing 39 responders

Build the East End Bridge. No tolls. No Downtown project.

Response SFEIS Appendix A.5, *LSIORB Technical Memorandum One Bridge/Highway Alternative: Downtown Only & East End Only*, states the following:

“the Downtown Bridge Only Alternative would offer only a minimal decrease in VHD of less than 1% over the No-Action Alternative while the FEIS Selected, East End Only, and Modified Selected alternatives all offer much greater improvements in delay (13.8%, 11.9%, and 10.6%, respectively). The Downtown Bridge Only Alternative would also result in a slight increase (less than 1%) in VMT and daily trips compared to the No-Action Alternative.”

The above comment notes the 1% improvement for the Downtown Bridge Only alternative. The above comment does not, however, include the additional information in the technical report, which states:

...With the East End Bridge Only Alternative, the period percent capacity for the Kennedy Bridge shows traffic congestion on the Kennedy Bridge during the critical morning and afternoon peak periods. (This is primarily because it does not include a new downtown bridge, which would increase capacity). The analysis shows that the Kennedy Bridge would experience a percent capacity of 133% in the southbound direction during the AM peak-period and 121% in the northbound direction during the PM peak-period. This indicates that the I-65 demand would be well over capacity during peak-periods of the day, resulting in severe congestion on this critical downtown river crossing. Under this alternative, the Kennedy Bridge is projected to operate at an unacceptable peak-hour LOS F. Because the East End Bridge Only Alternative would not improve the level of service to LOS D or better on the Kennedy Bridge and

would result in peak period percent capacities of 133% (AM southbound) and 121% (PM northbound) on the Kennedy Bridge, this alternative would not meet the project’s purpose and need with regard to reducing traffic congestion on the Kennedy Bridge. The East End Bridge Only Alternative also only partially addresses traffic congestion associated with the Kennedy Interchange because this alternative would not provide a new I-65 bridge (i.e. additional travel lanes) across the Ohio River adjacent to the Kennedy Interchange. The Kennedy Bridge effectively serves as a leg of the Kennedy Interchange, with the two facilities operating interdependently. Deficiencies in the Kennedy Bridge (i.e. inadequate number of travel lanes, resulting in severe traffic congestion) can adversely affect the performance of the adjacent Kennedy Interchange, particularly during heavy congestion or as a result of incidents (crashes) on the bridge.

The East End Bridge Only Alternative also would not satisfy the need to improve safety within the Kennedy Interchange and on the Kennedy Bridge and its approach roadways, which have experienced historically high crash rates. Although this alternative would improve the geometrics of the Kennedy Interchange, it would not remedy the geometric deficiencies of the Kennedy Bridge in order to bring that facility into conformance with current roadway design standards. Thus, although this alternative would provide some improvement to the Kennedy Interchange, it would not meet the identified need for improved safety on the Kennedy Bridge.

M.2

Consider other funding mechanisms as an alternative to tolling:

Representing 3 responders

...the community pay a onetime \$2 fee on their next license plate renewal

...everyone has to financially contribute to the new bridges...like we all participate in supporting public schools....

...the public would support a tax on motor vehicle license tags...believe this would allow for more general participation by all who would use the bridges...

Response

SFEIS Appendix G includes various financial documents for funding the project. Tolling has been shown to be the only reliable opportunity for generating funds to supports the funding gap of the project. During the Metropolitan Transportation Planning process, tolling was determined to be a necessary source of revenue for this project.

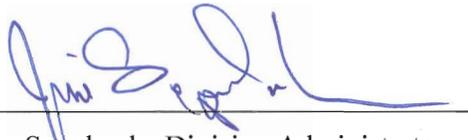
7.0 RECORD OF DECISION

For the foregoing reasons and based upon consideration of all of the social, economic, and environmental evaluations contained in the SFEIS with the input received from other agencies, organizations, and the public, the FHWA has determined that the Modified Selected Alternative is the environmentally preferable alternative. Therefore, it is my decision to adopt the Modified Selected Alternative as the proposed action for this project.

Record of Decision Approval

June 20th 2012

Date



Jose Sepulveda, Division Administrator
Federal Highway Administration, Kentucky Division