CHAPTER 8: COMMITMENTS AND MITIGATION

**Substantive changes to Chapter 8 since the publication of the SDEIS**

- Section 8.1—Adds mitigation commitments for enhanced bus service, impacts to park and recreational resources, the bald eagles in the East End Corridor, and environmental justice.
- Section 8.2—Refers readers to Appendix B.3 to view the amended Biological Assessment and the Indiana Bat Conservation MOA.
- Section 8.3—Refers readers to Appendix D.9 to view the First Amended MOA for Section 106 mitigation.

Since approval of the 2003 FEIS, additional mitigation measures have been developed for the Modified Selected Alternative. The measures that have not changed since the 2003 FEIS are a standard font. Appendix C.12 contains the Commitments and Mitigation Database.

The newly added measures are identified with an arrow (➢) and are in italics.

8.1. Mitigation Commitments

These mitigation measures will be implemented during the design and construction phases of project development. The commitments in this chapter shall supersede all commitments from the 2003 FEIS/ROD. Further these commitments may be further refined or modified during project permitting after completion of the NEPA process.

Endangered Species

The following is a summary of the mitigation measures and commitments identified in the 2003 FEIS and the amended Biological Assessment (BA) prepared for this project. For additional information, please refer to the amended BA and the Indiana Bat Conservation MOA in 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 will provide 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 maintained within 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 and maintaining stream-crossing impacts. 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.


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 method 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 will 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.
- Due to the recent discovery of bald eagles in the East End Corridor, coordination with USFWS has begun and is ongoing. 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.

Terrestrial Wildlife and Habitat

The following mitigation measures for impacts to terrestrial wildlife and habitat are proposed to 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 alternatives would 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 and FEIS Selected Alternatives would be connected by a bridge that would 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.
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 would
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 on Table 5.10.1 in Section 5.10.2.3, Water Body Modifications, of the SFEIS will be bridged along with their associated 100-year floodplains. This table includes names and identification numbers of the streams.

Floodplain

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.
Wetlands

Minimization and mitigation of wetland and stream impacts would be required as part of the Clean Water Act Section 404 permitting process, administered by the USACE. Loss of wetlands would 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, would be included with the wetland mitigation plan.
- Prior to construction, the appropriate state and Federal permits would be obtained and right-of-way would be acquired for the development of mitigation sites. In this way, appropriate consideration could be given for further minimizing or avoiding project impacts to wetlands.

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.

- 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.
- Best Management Practices (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.
- 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 method 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.

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 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 also must be developed with attention to the WHPA. Some general recommendations can be provided at this time, however these should 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 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 Standard Specifications for Road and Bridge Construction (current edition) and INDOT Standard Specification (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 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 would be cleared of material by KYTC and any materials that reach the vault would 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 replacing (or 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.

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 be 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.

➢ As a part of either build alternative the project will include:

➢ Travel Demand Management in the form of non-motorized facility enhancements and employer-based trip reductions.

➢ Expanded Intelligent Transportation System applications.

➢ Enhanced bus service with future options coordinated with Transit Authority of River City (TARC).
The contractor will be expected to obtain the necessary permits from this agency 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.

Context Sensitive Solutions

The following measures will be implemented in the project design:

- Designs were developed for the Ohio River Bridges through State Context Sensitive development procedures that included an appropriate balance of cost, sensitivity to the landscape, and local/regional desires. Since the 2003 ROD, a bridge type selection process was conducted, the recommendations from which are included in Appendix B.7.
- The new Downtown Bridge will not block approaching mariners’ views of the Kennedy Bridge.
- The new Downtown Bridge will provide a 1,100 foot navigation span with piers set 200 feet outside of the Kennedy Bridge piers on either side of the channel. The computer model at the Center for Maritime Education (CME) of the Seaman’s Institute located in Paducah, Kentucky was used to determine pier placement.

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 U.S. 42 to Wolf Pen Road.
- 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.

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 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.

This SFEIS updates the noise barrier analysis for the FEIS Selected Alternative and provides an analysis for the Modified Selected Alternative. The mitigation commitments for the Modified Selected Alternative are as follows:

- For the neighborhoods listed below, it was determined that noise barriers 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)

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 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.

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.

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 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.

Permits

The following permits will be required:

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit</th>
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<tbody>
<tr>
<td>Federal:</td>
<td></td>
</tr>
<tr>
<td>USACE</td>
<td>Section 404 Permit for Discharge of Dredged or Fill Material into waters of the United States</td>
</tr>
<tr>
<td>USACE</td>
<td>Construction, Dumping and Dredging Permit (Section 10)</td>
</tr>
<tr>
<td>U. S. Coast Guard</td>
<td>Bridge Permit (Section 9)</td>
</tr>
<tr>
<td>USFWS</td>
<td>A permit regarding the bald eagles will be obtained prior to construction within the vicinity of the nest.</td>
</tr>
<tr>
<td>Indiana:</td>
<td></td>
</tr>
<tr>
<td>IDEM</td>
<td>Section 401 Water Quality Certification</td>
</tr>
<tr>
<td>IDEM</td>
<td>National Pollution Discharge Elimination System, Rule 5</td>
</tr>
<tr>
<td>IDNR</td>
<td>Construction in a Floodway Permit</td>
</tr>
<tr>
<td>Kentucky:</td>
<td></td>
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<tr>
<td>EEC, Division of Water/ MSD</td>
<td>Floodplain Construction Permit</td>
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<tr>
<td>EEC, Division of Water</td>
<td>Section 401 Water Quality Certification</td>
</tr>
<tr>
<td>EEC, Division of Water</td>
<td>Kentucky Pollution Discharge Elimination System (KPDES)</td>
</tr>
</tbody>
</table>
Historic and Archaeological Resources

Commitments to mitigate impacts to historic and archaeological properties are identified in First Amended MOA (SFEIS Appendix D.9), except for funding for the following initiative that will be included in the project. This initiative was included in the 2003 FEIS and has been updated to add more specific information.

- **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 the 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 would 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 would 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 KY SHPO will provide the general oversight of the operation of the program.

Park and Recreational Resources

Commitments to mitigate impacts to park resources, which have been augmented since the 2003 FEIS, are discussed in SFEIS Chapter 6 and are summarized below.

- **Extreme Sports Park**—

  During construction, it is anticipated that temporary closure of the park would need to occur. After construction given the limited loss of property, piers and the Extreme Sports Complex could co-exist without any loss of the park’s recreational use.

  The current restroom facilities at the Extreme Sports Complex would be located under an elevated ramp to be constructed over the park as part of the Project. Because restroom facilities would not be 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 would not result in the loss of recreational use within the park.

- **Waterfront Park**—

  After construction the area of the park below the new bridge would remain accessible to the public, and there would 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 would 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 would be necessary, except during construction when access under the bridge would be closed to pedestrians for a temporary period. After construction, the area under the new bridge would remain accessible.
Butchertown Greenway—

The greenway is located along Beargrass Creek, which crosses under I-71 approximately 0.35 mile east of I-64 (see Figure 6-10c). The project will require the widening of I-71 over Beargrass Creek and the Butchertown Greenway. The construction activity will require closure for a 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).

Mass Transit—Enhanced Bus Service

Both build alternatives include the following elements for enhanced bus service.

- KYTC and INDOT will provide funding not to exceed $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 this 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.)
Environmental Justice

- The states of Indiana and Kentucky will develop a process for adopting an overall tolling policy that will be sensitive and responsive to the low-income and minority (environmental justice) populations. The development of this process will include additional outreach and public involvement with the environmental justice populations. During the development of the toll 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.

- 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. In determining practicability, 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.

- 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.
8.2. Amended Biological Assessment (BA) and Indiana Bat Conservation MOA

A revised amended BA was developed to address USFWS comments from July 2010, March 2011, and November 2011 and was resubmitted to USFWS for review. To address adverse effects on Indiana bats within Kentucky, KYTC and USFWS entered into an Indiana Bat Conservation MOA (MOA) to account for incidental take of Indiana bats. KYTC will provide 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. USFWS concurred with the determinations in the amended BA in a letter dated February 17, 2012; and consultation with USFWS concluded on February 18, 2012, with the signing of the Indiana Bat Conservation MOA. These documents and associated USFWS correspondence are included in Appendix B.3, Endangered Species.

8.3 Section 106 Memorandum of Agreement (MOA)

The Section 106 process for the 2003 FEIS resulted in a Memorandum of Agreement (Original MOA) to mitigate adverse effects to historic properties. The Original MOA was executed on April 1, 2003. The First Amended MOA was prepared through the Section 106 consulting party consultation process for this LSJORB Project. The executed First Amended MOA, which contains stipulations for mitigating impacts to cultural historic and archaeological resources, is in provided in SFEIS Appendix D.9.
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