

CHAPTER 7 – MITIGATION AND COMMITMENTS

Substantive changes to Chapter 7 since the publication of the DEIS

- Edited mitigations and commitments specific to the design and implementation of Central Alternative 1B Modified (Selected) throughout the chapter, as needed
- Sections 7.1.6 and 7.1.7 – Added new transportation sections for mitigations and commitments for Ohio River navigation and the southbound US 41 bridge
- Sections 7.6.2 and 7.7.2 – Updated the mitigations and commitments for streams and wetlands
- Section 7.9 – Added the mitigations and commitments from the Biological Assessment and Biological Opinion
- Section 7.10 – Updated the mitigations and commitments from the executed Section 106 Memorandum of Agreement, including additional marketing efforts for the southbound US 41 bridge
- Sections 7.14 to 7.18 – Added new sections for mitigations and commitments for migratory birds, wildlife passage, air quality, the Green River National Wildlife Refuge, and final design

This chapter describes the mitigation and environmental commitments that will apply to Central Alternative 1B Modified (Selected). Throughout the National Environmental Policy Act (NEPA) process, efforts were made to avoid resources. Agency and public input further identified ways to avoid and minimize impacts and helped develop many of the measures discussed within this chapter. Stipulations contained in the executed Section 106 Memorandum of Agreement (MOA) (**Appendix L-3**) to resolve adverse effects to historic properties are summarized in this chapter as well. A list of anticipated permits, approvals, and authorizations for Central Alternative 1B Modified (Selected) are separately presented in **Chapter 4, Section 4.9**.

7.1 TRANSPORTATION

7.1.1 TRAFFIC DURING CONSTRUCTION

A Traffic Management Plan will be developed for the project in coordination with local government officials, emergency service providers, and schools.

7.1.2 EMERGENCY MANAGEMENT COORDINATION

The project team will continue to coordinate with emergency and law enforcement agencies as the project progresses to ensure their response needs are accommodated. Median emergency crossover locations will be confirmed in coordination with emergency and law enforcement agencies.

The project team will work with fire departments regarding the location, design, and construction of access doors within noise barrier walls for water hydrant access.

7.1.3 LOCAL SERVICE ROADS

Where reasonable and cost effective, local service roads will be used to maintain community accessibility. “Landlocked parcels,” whose access is altered or cut off by the alignment, will be provided local service roads or they will be acquired. Changes in roads used by school bus routes will be discussed with the school systems well in advance. Where roads are severed, provisions for turnarounds will be included and further refined during final design.

7.1.4 ROAD CLOSURES

Efforts will be made to minimize the disruption of local crossroads to minimize impacts to school bus and emergency provider routes. During and following construction, appropriate signing will be placed at the nearest intersections to warn that the road does not provide for through traffic.

7.1.5 PEDESTRIAN AND BICYCLE ACCESS

The proposed design will accommodate pedestrian and bicycle access by maintaining or reestablishing connectivity for non-motorized users. Specific measures include incorporating sidewalks in locations where existing sidewalks are present or where curb and gutters are planned; providing paved shoulders of sufficient width to accommodate bicycles at over/underpass locations; maintaining access to the Merrill Way Trail via Kimsey Lane and extending the trail along the relocated Kimsey Lane to Van Wyk Road; and not precluding future extensions of Pigeon Creek Greenway. Additionally, coordination with local government agencies will continue to determine if any are willing to assume ownership of the US 41 bridges, such as for future use as a dedicated pedestrian and bicycle facility.

7.1.6 OHIO RIVER NAVIGATION

Final concurrence from the United States Coast Guard to determine how river navigation can be least impacted with the construction of the new bridges over the Ohio River will occur following submittal of final design drawings and opportunities for public input.

7.1.7 SOUTHBOUND US 41 BRIDGE

The existing southbound US 41 bridge will remain operational (exclusive of maintenance and/or repair activities) until the new I-69 bridge is opened to traffic.

7.2 RELOCATIONS

Acquisitions and relocations required by the project will be completed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended, 49 CFR Part 24, and Title VI of the Civil Rights Act of 1964. This process is explained

for the public in Federal Highway Administration's (FHWA's) October 2014 booklet entitled *Relocation, Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program* (https://www.fhwa.dot.gov/real_estate/publications/your_rights/rights2014.pdf). The project team will take required actions to ensure fair and equitable treatment of persons displaced as a result of this project up to and including providing replacement housing of last resort as defined in 49 CFR §24.404. Relocation resources for this project will be available to residential and business displaced persons without discrimination. Advisory services will be made available to farms and businesses in advance of acquisition, with the aim of minimizing the economic harm to those businesses and farm establishments.

If a displaced person cannot be relocated due to the unavailability of comparable housing or because comparable housing is not available within the statutory limit of the Uniform Act, then housing of last resort will be made available to these persons. Last resort housing includes, but is not limited to, rental assistance, additions to existing replacement dwellings, construction of new dwellings, and dwelling relocation. Replacement dwellings must meet the requirements of decent, safe, and sanitary standards as established by FHWA.

Relocation resources will be available to all displaced persons without regard to race, creed, color, sex, national origin, or economic status, as required by the Uniform Act and Title VI of The Civil Rights Act of 1964. Financial assistance will be available to eligible persons displaced by the project.

7.3 ENVIRONMENTAL JUSTICE/TITLE VI

7.3.1 TOLLING

With the selection of Central Alternative 1B Modified (Selected), which would provide a toll-free US 41 crossing, there would be no disproportionate and adverse effect to low-income users and therefore, no mitigation for tolling is required. However, to ensure equitable access, INDOT and KYTC are committed to engaging with the environmental justice community in advance of implementation of the tolling program. INDOT and KYTC's engagement will include education for low-income populations about the tolling program and will ensure that transponders and accounts are accessible to all members of the community.

7.3.2 TRANSIT

There is currently no cross-river transit service in the Evansville region. The *Metropolitan Transportation Plan 2040* (Evansville Metropolitan Planning Organization 2014b) investigates a cross-river express service in conjunction with the Henderson Area Rapid Transit (HART). The Indiana Department of Transportation (INDOT) and the Kentucky Transportation Cabinet (KYTC) will continue to coordinate with these transit agencies to ensure that implementation of the project does not impede implementation of this service.

7.4 VISUAL

Techniques to mitigate visual impacts from the new interstate may include providing sound walls that limit noise and visibility of the interstate from adjacent land use areas, providing fences between the interstate and adjacent land use areas to increase physical and visual perceptions of

safety, creating public art at key locations along the project alternative, and providing a vegetation buffer with shade trees, ornamental trees, shrubs, and perennials between the interstate and adjacent land use areas.

For bridge alternatives, techniques may include lighting and structural elements, wayfinding, and functional treatments. Lighting and structural elements may include providing appropriately scaled lighting elements along the length of the bridge. Wayfinding elements may include providing gateway signage at the entrances of both the north and south ends of the bridge. Functional treatments may include the integration of visual pattern elements of functional treatments with those of adjacent land uses.

Additionally, at the KY 351 interchange for Central Alternative 1B Modified (Selected), streetscaping will be provided in support of the City of Henderson’s vision for this gateway corridor.

Throughout final design, these techniques will be evaluated using stakeholder and public input to minimize visual impacts and enhance the aesthetics of the project.

The executed Section 106 Memorandum of Agreement (MOA), which is included as part of **Appendix L-3**, includes additional stipulations to resolve adverse effects to historic properties, which include visual impacts; see Section 7.10.

7.5 NOISE

7.5.1 GEOMETRICS

During final design, shifting the roadway alignment vertically and/or horizontally will be considered, where feasible, to minimize noise impacts where other factors are not prohibitive.

7.5.2 ABATEMENT MEASURES

For Central Alternative 1B Modified (Selected), preliminary locations where noise barriers are identified as “likely” and “not likely” are presented in Chapter 4. A final determination on the locations of noise barriers will be made during the final design and permitting process. At such time, additional noise analyses will be performed to more accurately determine barrier performance, barrier characteristics (length and height), and the optimal barrier location for any potential noise barriers that may be recommended for noise abatement. Potentially benefited property owners and/or tenants in areas where noise barrier mitigation is recommended based on INDOT/KYTC feasible and reasonableness criteria will be surveyed during the final design process to determine the desires of benefited receptors in accordance with the reasonableness policies of the INDOT/KYTC. Once all feasibility and reasonableness criteria have been evaluated during final design, the noise barriers that meet all criteria will be incorporated into the project.

7.5.3 CONSTRUCTION NOISE

Construction vehicles will be required to follow INDOT and KYTC standard specifications on controlling noise. Construction noise is unavoidable but temporary in nature and reasonable efforts will be made to reduce impacts to receptors to the extent practicable. For a majority of projects, construction will not persist in a given area for a long period of time. In the unusual instance where construction would persist for a period longer than 2 years and where impacts to

nearby receptors are determined to be likely, the project team shall have the flexibility to incorporate construction noise abatement measures into the project. This may involve shielding of equipment with acoustic barriers, restricting certain types of work to specific hours of the day, requiring source control on equipment (mufflers), and/or other measures to reduce noise impacts.

7.6 STREAMS AND OTHER SURFACE WATERS

7.6.1 STREAM AVOIDANCE AND MINIMIZATION

The realignment of surface streams or open water features will be avoided where possible. In instances where this is not possible, stream impacts will be minimized and mitigated. Continued efforts will be made during final design to identify design features that minimize impacts at stream crossings, including measures to keep channel and bank modifications to a minimum and, where feasible, avoid channel alterations below the ordinary high water mark (OHWM) elevation.

During final design, consideration will be given to using alternative armoring materials and may include portions of dry land under bridge openings that would not normally be armored with riprap. The use of bio-engineering techniques to provide natural armoring of stream banks will be considered and implemented where practicable. Installation of riprap would be limited to areas necessary to protect structure integrity. If riprap is required, it will be installed outside the stream bed and between the toe of slope and the OHWM where possible. In some instances, such as culvert inlets and outlets, riprap may need to be placed within the stream bed to prevent scour. Riprap will be installed at the same elevation as the stream bed to avoid interfering with fish passage. Riprap may also be needed above the OHWM to protect bridge piers and abutments from scour where bioengineering will not suffice.

Where reasonable, below-water work will be restricted to placement of piers, pilings and/or footings, shaping of spill slopes around the bridge abutments, and placement of riprap.

7.6.2 STREAM MITIGATION AND RELOCATIONS

Where direct impacts to streams are unavoidable, mitigation will be provided in coordination with regulatory agencies during the Clean Water Act (CWA) Section 404 permitting process. Stream mitigation ratios will be determined in consultation with the Indiana Department of Environmental Management (IDEM), Kentucky Division of Water (KDOW), and the U.S. Army Corps of Engineers (USACE), and mitigation and monitoring plans will be developed as appropriate. The potential to use mitigation banks or state in-lieu fee programs based on Adjusted Mitigation Units (AMU) in Kentucky and a 1.2:1 stream replacement ratio in Indiana will be explored. In Indiana, impacts to ephemeral streams are not mitigated. As shown in Attachment 6 of the *Waters of the U.S. Technical Report Addendum (Appendix J-3)*, Central Alternative 1B Modified (Selected) will require an estimated 24,013 AMUs in Kentucky at a cost of \$9,605,400. In Indiana, a total of 710 linear feet of streams will be replaced at a cost of \$340,800. The total stream mitigation cost for Central Alternative 1B Modified (Selected) will be \$9,946,200. This is an initial estimate based on preliminary design and is subject to change during the final design and permitting process.

Stream impacts have been avoided/minimized throughout the project's development and continued efforts will be made during final design to identify features that further avoid and minimize impacts. Where practicable, stream relocations will follow the natural stream channel design standards. Streams within the right-of-way that can accommodate tree or shrub plantings to minimize the impacts of thermal inputs will be identified during final design and, where feasible, the outside edge of these streams will be positioned adjacent to existing forested areas.

If needed, stream mitigation and monitoring plans will be developed for stream relocations, as appropriate. Site-specific plans for stream relocations will be developed during final design considering the needs of sensitive species and other environmental concerns. Plans will include the planting of woody and herbaceous vegetation to stabilize stream banks.

7.6.3 OUTSTANDING SURFACE WATER RESOURCE

Further coordination for Central Alternative 1B Modified (Selected) with the Kentucky Department for Environmental Protection (KDEP) will occur to ensure that the water quality and aquatic habitat in the portion of the Ohio River that is designated as an Outstanding Surface Water Resources will be maintained and protected unless it can be demonstrated that the proposed modification to the river would not have a harmful effect.

7.6.4 EROSION CONTROL AND STORMWATER POLLUTION PREVENTION

A Stormwater Pollution Prevention Plan (SWPPP) will be developed and approved by INDOT, KYTC, IDEM, and KDEP prior to construction. Best management practices (BMPs) will be used in the construction of the project to minimize impacts of erosion and sedimentation. Erosion and sediment control measures will be installed prior to construction and will be maintained throughout construction.

Erosion and sediment controls will additionally include the use of measures that will avoid and minimize impacts to aquatic resources specifically. These measures will be inspected weekly and after rain events and will be repaired or replaced as required. Measures will be adjusted to the phase of construction. Temporary measures will not be removed until the location is stabilized. Permanent measures will remain in place post construction.

7.6.5 FLOODWAYS/FLOODPLAINS

A hydraulic design study that addresses structure size and types will be conducted during final design to ensure that flood elevations are not affected. Longitudinal and transverse floodplain encroachments will be minimized, where reasonable, through design practices such as longer bridges and perpendicular river/stream crossings. Flood easements may be acquired at these and/or other locations if required.

7.7 WETLANDS

7.7.1 WETLANDS AVOIDANCE AND MINIMIZATION

Wetlands and wetland complexes will be avoided when possible. If unable to be avoided completely, wetland impacts will be minimized with shifts in the alignment wherever practicable and feasible in final design. Water resources within the right-of-way will be identified on design

plans, and these areas will have approved erosion control measures as part of the overall erosion control plan to prevent any filling or contamination of these areas during construction. Compaction of wetland soils and rutting within wetlands will be minimized by using low ground-pressure equipment and installing temporary equipment mats. Soil characteristics can be changed during construction due to inadvertent mixing of topsoil and subsoil. To prevent such mixing in unsaturated wetlands, topsoil will be removed from within the highway construction limits and stockpiled for restoration as close as feasible to its original horizon.

To minimize impacts in areas where construction might divert drainage or block the normal flow of water through a wetland, cross-drainage will be provided to maintain the hydrologic characteristics of the wetland. Restoration of each wetland will involve returning contours to pre-construction levels and removing temporary control measures.

Some wetland vegetation will be cut, removed, or crushed during construction. After the completion of construction, wetland areas within the project area will be allowed to revegetate naturally or, if needed, reseeded with native wetland species.

7.7.2 WETLAND MITIGATION AND MONITORING PLANS

Permanent impacts will be mitigated through compensatory mitigation alternatives, to include mitigation banks, in-lieu fee programs, and permittee responsible improvements to existing water resources and natural habitat. The acreage needed for wetland mitigation is determined based on the expected impact acreage, type of wetland, and jurisdiction using mitigation ratios. USACE typically requires the following mitigation ratios:

- Farmed wetland – 1:1
- Scrub/shrub and palustrine/lacustrine emergent wetland – 2:1 to 3:1, depending on wetland quality
- Bottomland hardwood forest – 3:1 to 4:1, depending on wetland quality
- Exceptional, unique, critical wetland (e.g., cypress swamp) – 4:1 or greater, depending on wetland quality

As shown in Attachment 6 of the *Waters of the U.S. Technical Report Addendum (Appendix J-3)*, the aforementioned information, along with the temporal loss of wetland functions, was used to calculate the AMUs that will be needed to mitigate wetland impacts in Kentucky. For Indiana, it was based on a 2:1 replacement ratio for emergent wetlands and a 3:1 replacement ratio for forested wetlands. In accordance with Senate Enrolled Act 389, the isolated forested wetlands that will be impacted in Indiana will be exempt from mitigation because they are Class II wetlands and less than 0.375 acre. Central Alternative 1B Modified (Selected) will require an estimated 28.87 AMUs in Kentucky at a cost of \$1,775,751. In Indiana, a total of 8.56 acres of wetlands will be replaced at a cost of \$2,039,200. The total wetland mitigation cost for Central Alternative 1B Modified (Selected) will be \$3,814,951. This is an initial estimate based on preliminary design and is subject to change during the final design and permitting process. If needed, a Wetland Mitigation and Monitoring Plan will be prepared as required under CWA Section 404.

Additional measures to avoid or minimize impacts to specific wetlands will be considered, including narrowing the right-of-way, installing drainage features such as swales to ensure that roadway runoff does not enter wetland areas, and designing culverts to maintain the flow of water to a wetland area otherwise cut off from its existing water source.

7.8 NON-WETLAND FORESTED FLOODPLAINS

In Indiana, trees removed within a non-wetland forested floodway/floodplain will be replaced in accordance with INDR's Construction in a Floodway Permit guidelines.

7.9 THREATENED AND ENDANGERED SPECIES

Identification of conservation measures for threatened and endangered species were coordinated with the United States Fish and Wildlife Service (USFWS), as documented in the *Biological Assessment (BA) for Multiple Species at the I-69 Ohio River Crossing Project* (INDOT and KYTC 2020) and subsequent *Biological Opinion (BO) on the Fat Pocketbook (Potamilus capax) and Sheepsnose (Plethobasus cyphus) and Conference Opinion on the Longsolid (Fusconaia subrotunda)* (USFWS 2020) for the project (**Appendices K-4 and K-5**).

Construction, operations, and maintenance activities will follow the conditions of the federal and state permits and abide by FHWA, INDOT, and KYTC standards and agreements. Erosion and sediment control BMPs will be installed prior to the start of earth disturbing activities to include tree removal, will be phased and modified during construction, and post construction BMPs will be maintained. All research and monitoring will be done in cooperation with Indiana Department of Natural Resources (IDNR), Kentucky Department of Fish and Wildlife Resources (KDFWR), and USFWS. Actions and research/monitoring results will be effectively communicated to the parties involved in protection and conservation of endangered species. Open communication and partnerships will be sought at every reasonable opportunity to further coordination of conservation efforts.

7.9.1 MUSSELS

FHWA has committed to implement the following eleven conservation measures specific to mussels. Full details of these conservation measures are documented in the above-referenced Biological Opinion for the project in Section 6.2 (**Appendix K-5**).

- Erosion and sediment controls, including a SWPPP to be developed and approved by INDOT, KYTC, IDEM, and KDEP prior to construction, and implementation of BMPs prior to, and throughout, construction, such as temporary seeding and mulch to stabilize disturbed areas.
- Equipment Maintenance, Cleaning, Fueling, and Monitoring Plan (EMCFM Plan), developed to prevent equipment-related impacts from reaching waterways, including: locations of staging, refueling, and clean-up areas; fuel storage areas; implementation of BMPs to minimize the potential for fuel spills and contamination; and requirement of a spill response plan.
- Catch barges for US 41 roadway removal, designed to minimize and avoid impacts to waterways and mussel habitat to the greatest extent practicable.
- Demolition and recovery of the US 41 bridge, designed to minimize impacts to the surrounding aquatic environment.

- US 41 pier removal, including use of barge work platforms to limit material falling into the Ohio River or use of a floating turbidity curtain to limit downstream sedimentation.
- Upland storage of bridge materials, to be located away from the normal water line.
- Barge spud locations, limiting barges and other boat traffic to isolate Ohio River substrate impacts to a smaller footprint.
- Concrete pouring, to properly install piers while avoiding spills into the Ohio River by using incased drilled shafts, precast waterline footing platforms, or in the dry with caissons or cofferdams.
- Environmentally sensitive area minimization procedures, to avoid and/or minimize construction in areas of high environmental quality, including the mussel habitat, to the greatest extent possible.
- Revegetation of riparian areas and limited use of riprap, as described in Section 7.6.1, as well as designing plans to include the planting of native woody and herbaceous vegetation to stabilize stream banks except for areas under bridges.
- Contribution to mussel propagation, to support recovery efforts for the Fat Pocketbook, Sheepnose, and/or Longsolid at a permitted mussel propagation facility, for a total contribution of \$32,601.00 for the project.

In order to monitor the impacts of incidental take, FHWA must report the progress of the project and its impact on the species to USFWS as specified in the ITS (50 CFR §402.14(i)(3)). FHWA will inform USFWS as soon as possible if the amount of take is exceeded or if any Fat Pocketbook, Sheepnose, and Longsolid are observed, injured, or crushed within the project area. FHWA will report any results of monitoring to USFWS, as soon as possible. FHWA will re-initiate consultation with USFWS if the amount or extent of the project area changes, or the project is modified in manner not considered in the Biological Opinion; if new information reveals that the project may affect a listed species or designated critical habitat in a manner or extent not considered in the Biological Opinion; or a new species is listed or critical habitat designated that the project may affect.

7.9.2 BATS

The potential construction impacts to the Indiana bat and northern long-eared bat summer habitat will be addressed through the KYTC *Programmatic Conservation Memorandum of Agreement for the Indiana Bat*, which will dictate mitigation requirements for construction impacts (KYTC 2012). USFWS confirmed through coordination that the programmatic agreement would be applied in both states, with the exception that Indiana tree clearing restrictions would be followed within Indiana (**Appendix H-7**), described below. Potential impacts to Indiana, Gray, and Northern Long-Eared Bats can be mitigated through the below list of conservation measures, as documented in the *Biological Assessment for Multiple Species at the I-69 Ohio River Crossing Project* (INDOT and KYTC 2020) (**Appendix K-4**).

- Potential take of 45.8 acres of summer roosting, foraging, and commuting habitat of the Indiana Bat will be mitigated following the guidance provided in the above-referenced KYTC Programmatic Agreement, which allows for use of the Imperiled Bat Conservation

Fund (IBCF) for forest habitat removal for the entire I-69 ORX project corridor. If the project's final design and construction impacts are less than 45.8 acres of Indiana Bat habitat, then less mitigation will be required.

- Adhering to seasonal tree clearing in both Indiana and Kentucky reduces the potential for adverse effects to Northern Long-Eared Bats and Indiana Bats while they are in tree roosts. In Indiana, tree clearing for trees having a 3 inch or greater DBH will not be allowed between April 1 and September 30. In Kentucky, KYTC has indicated they would prefer to use the most recent programmatic agreement and adhere to feasible tree cutting restrictions determined by project needs.
- To reduce potential for future take of roosting Indiana, Northern Long-Eared, and Gray Bats using highway structures (bridges and overpasses), all of the structures within the project corridor will be checked again, since construction will occur more than two years from when the initial survey was completed (August 12, 2018).
- Erosion and sediment control measures proposed for the project, such as numerous water quality protective measures to avoid and minimize impacts to aquatic resources, will help prevent negative impacts to the Gray Bat and Indiana Bat that forage on aquatic insects.

Additionally, prior to construction, all existing bridges that would be removed between 15 May and 15 August will be surveyed for the presence of endangered or threatened bats.

7.9.3 LEAST TERN

In accordance with the *Biological Assessment for Multiple Species at the I-69 Ohio River Crossing Project* (INDOT and KYTC 2020) (**Appendix K-4**), future surveys will be completed for nesting Least Terns if low water allows for suitable habitat to become available within the project corridor. Changes in the river caused by drought, etc., could occur before or during the project's construction. Therefore, if suitable habitat (such as a sandbar or a shoal) becomes present during the project development process and/or construction, surveys will be completed to ensure this habitat is not being used for nesting.

7.10 CULTURAL RESOURCES

7.10.1 HISTORIC PROPERTIES

FHWA determined that the I-69 ORX project undertaking will adversely affect historic properties; therefore, a Section 106 Memorandum of Agreement (MOA) has been executed (**Appendix L-3**). Consultation with the property owners and consulting parties has been undertaken to identify appropriate mitigation measures for adverse effects on historic properties listed in, or eligible for listing on, the National Register of Historic Places (NRHP) in the project area of potential effect: the Audubon Memorial Northbound US 41 Bridge, Southbound US 41 Bridge, the Ellis Neville/Lee Baskett House, and Jackson McClain Property. The MOA was developed in consultation with the Indiana and Kentucky State Historic Preservation Officers (SHPOs). The stipulations set forth in the Section 106 MOA are commitments to resolve adverse effects to historic properties from Central Alternative 1B Modified (Selected), and include the following:

- Documentation of two historic contexts: Agriculture in Henderson County from 1798 to 1870, and Slavery, Segregation and the Ascent of the African American Community in Henderson County 1798 to 1965
- Preservation of historic district(s) in Downtown Henderson: \$50,000 of funding provided by FHWA and KYTC to benefit one or more of the districts
- Statewide Truss Bridge Survey and Management Plan, to be completed within 24 months of the execution of the MOA

INDOT and KYTC shall carry out additional marketing efforts to identify a reuse opportunity for the existing southbound US 41 bridge. Not more than 2 years prior to the letting of a contract to construct the new I-69 Ohio River bridge or to demolish the existing southbound US 41 bridge, INDOT and KYTC shall:

- Perform outreach to local city and county jurisdictions in both Indiana and Kentucky to determine their interest in taking ownership responsibility for the bridge.
- Post the availability of the structure on INDOT's Bridge Marketing website for a minimum of 6 months.
- Broadly publicize the availability of the structure through media releases and outreach to local historic preservation, bicycle, pedestrian, and disabled persons mobility advocacy organizations.
- Adhere to any INDOT and KYTC bridge marketing policies in place at the time the marketing effort is initiated.

If the I-69 ORX project is modified in a manner that necessitates modifications to the area of potential effects (APE) or the conclusions of the Finding of Effect, FHWA, INDOT, and KYTC will follow the stipulations for such modifications set forth in the MOA.

7.10.2 ARCHAEOLOGICAL RESOURCES

Based on the Phase I (in Kentucky) and Phase 1a (in Indiana) archaeological surveys and additional investigations conducted to date, no archaeological resources that are determined eligible for the NRHP were identified and therefore, no mitigations are required. The executed Section 106 Memorandum of Agreement (MOA) ([Appendix L-3](#)) stipulates the identification and evaluation efforts as well as any additional testing that should occur, should resolution of adverse effects to archaeological resources be required. If a NRHP-eligible archaeological site is located, and direct effects to the property cannot be avoided, the MOA stipulates mitigation procedures.

7.11 GROUNDWATER AND HAZARDOUS MATERIALS

7.11.1 GROUNDWATER PROTECTION PLAN

Prior to construction, a Groundwater Protection Plan complying with 401 KAR 5:037 *Groundwater Protection Plans* will be developed (Indiana lacks a similar rule). The plan will establish a series of practices to protect groundwater during demolition and construction. Activities such as well and

septic system plugging, equipment storage, spill response, precautions for work within wellhead protection areas, and BMPs will be addressed in the plan.

7.11.2 CONTAMINATED SOIL, GROUNDWATER, AND/OR UNDERGROUND STORAGE TANKS

During final design, an updated Phase I Environmental Site Assessment (ESA) will be completed based on final design of Central Alternative 1B Modified (Selected). Limited Phase II Subsurface Investigations will be conducted as required. Registered Underground Storage Tank (UST) sites will be assessed and closed in accordance with state UST closure guidelines and sampling requirements.

7.11.3 DEMOLITION

Residential, commercial, and bridge structures impacted by the project will be evaluated for the presence of potential demolition/disposal issues such as regulated asbestos containing materials, mercury, lead, and polychlorinated biphenyls. These issues will be addressed prior to demolition.

7.11.4 LANDFILLS

Written approval from IDEM and and/or KDEP, as appropriate, will be secured for any construction activity/post-closure use at disposal sites. Existing buried waste will remain properly covered/capped or be disposed off-site. If wastes encountered during construction are too close to wetlands, streams, or other sensitive areas, they will be removed and properly disposed.

7.11.5 SPILL PLAN

A spill response plan that is acceptable to INDOT, KYTC, IDEM, and KDEP will be required for the project. This response plan will include, at minimum, protocols for contact with emergency response personnel, Safety Data Sheets, and copies of agreements with agencies that would be part of a spill-response effort. The plans will include communication protocols to ensure proper and timely notification of nearby public drinking water supplies in the event of a spill. This will include the wellhead protection areas at Ellis Park and Trocadero Plaza, as well as the Ohio River public water supply intakes for Evansville Water and Sewer Utility and Henderson Municipal Water and Sewer.

7.11.6 WATER WELLS

Water wells, monitoring wells, and injection wells within the project area will be labeled on design plans and properly abandoned/plugged to prevent the migration of surface water or contaminants to the subsurface and to prevent migration of potential contaminants among and between water bearing zones. Well closures will be conducted by state-licensed water well drillers in accordance with state regulations 329 IAC 12-13 and 401 KAR 6:310-350.

7.11.7 GEOTECHNICAL BOREHOLES

During geotechnical investigations, INDOT's *Aquifer Protection Guidelines* and KYTC's *Sealing Geotechnical Boreholes* will be followed to ensure boreholes are properly closed in a manner that is protective of groundwater. Existing landfills will be marked on project plans and unique special

provisions will be developed in coordination with IDEM or KDEP for any work to be conducted near those areas.

7.11.8 PETROLEUM WELLS

If evidence of unplugged or improperly abandoned petroleum wells is encountered during construction, the IDNR Division of Oil and Gas, and/or Kentucky Energy and Environment Cabinet (KEEC) Division of Oil and Gas, as applicable, will be contacted. The wells will be abandoned/plugged in a manner that is protective of groundwater.

7.11.9 DEWATERING

If dewatering activities are needed for construction (e.g., for foundations), a hydrological modeling assessment may be required to identify if any drinking water supply wells, wetlands, surface water resources, or hazardous materials sites (e.g., landfills) have the potential to be impacted. If impacts cannot be avoided, coordination with applicable agencies and stakeholders will be conducted to identify appropriate minimization and avoidance measures.

7.12 INDIRECT AND CUMULATIVE IMPACTS

Potential indirect impacts from Central Alternative 1B Modified (Selected) to sensitive resources in the vicinity of the proposed US 60 and US 41 interchanges could be minimized by local, state, and federal regulations that are intended to manage growth and protect resources. The City of Henderson and Henderson County land use plans and zoning regulations can be used to control development in these interchange areas to avoid and/or minimize impacts to wetlands, streams, farmlands, and forests.

Although there are no specific local regulations to protect historic resources in Henderson from private development, the *Henderson City-County Comprehensive Plan* (Henderson City-County Area Plan Commission 2015a) stresses the importance of preserving historic resources, and states that the preservation of historic resources is important to the community's potential as a tourist destination and regional economic development efforts.

USACE and the Kentucky Division of Water protect and regulate wetlands and water bodies through Sections 404 and 401 of the CWA. Any development within these interchange areas that would impact regulated wetlands or streams would require a permit. As part of the permit process, measures to avoid, minimize, and mitigate impacts would be required.

The same measures previously described to avoid, minimize, and mitigate indirect impacts can also be applied to cumulative impacts with regard to other reasonably foreseeable future projects.

7.13 FARMLAND

Because Central Alternative 1B Modified (Selected) would not result in a score greater than 160 points on the National Resource Conservation Service (NRCS) Farmland Conversion Impact Rating for Corridor-Type Projects form (NRCS-CPA-106) for impacts to farmland in Henderson County, Kentucky, additional coordination with NRCS is not required.

7.14 MIGRATORY BIRDS

Bridges will be surveyed between May 7 and September 7 for the presence of migratory birds or nests prior to construction activities, including demolition of the southbound US 41 bridge. If nests are found with eggs, chicks, or parents actively tending to the nest, the local USFWS office will be contacted prior to disturbance.

7.15 WILDLIFE PASSAGE

Vehicle-wildlife collisions are an identified safety concern. During final design, the states will evaluate the potential and value of including one or more wildlife crossings, particularly cost-effective opportunities to provide animal crossings above flood elevations. In Kentucky, a wildlife passage will be evaluated near the southern limits of the Ohio River floodplain.

Perennial streams in the project area will be spanned by bridges. Embedded box culverts or 3-sided box culverts will be utilized for other stream crossings where practical. During final design, the states will evaluate the potential and value of including an embedded box culvert as a wildlife crossing. Articulated concrete block mats, fabric-formed concrete mats, or other similar smooth-surfaced materials that will not impair wildlife movement will be considered for stream crossings with defined banks during final design.

7.16 AIR QUALITY

During construction, the states will incorporate the following air quality control strategies, and other identified BMPs, to the maximum extent practicable and comply with local air quality regulations:

- Utilize alternatively fueled equipment.
- Utilize other emission controls that are applicable to equipment.
- Reduce idling time on equipment.

7.17 GREEN RIVER NATIONAL WILDLIFE REFUGE

As the design of the project is further developed, cost-effective opportunities to provide safe, grade-separated pedestrian access to the refuge across I-69 will be evaluated.

INDOT and KYTC will continue to coordinate with USFWS regarding establishment of and access to refuge facilities. All existing public roads in the area of the refuge will be maintained.

INDOT and KYTC will work with USFWS during final design to determine appropriate signage identifying and indicating access points for the refuge.

7.18 FINAL DESIGN

Efforts to further minimize potential impacts, improve traffic performance, and reduce costs will occur during final design. FHWA, INDOT, and KYTC will review any design modifications during final design to determine the need for a re-evaluation or a supplemental NEPA document in accordance with 23 CFR 771.129 and 771.130.