

# CHAPTER 7 – MITIGATION AND COMMITMENTS

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This chapter describes the mitigation and environmental commitments that will apply to the build alternative that is selected for the project. 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.

## 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 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 the design phase.

### 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 not precluding future extensions of Pigeon Creek Greenway.

## 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](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 Central Alternative 1A, which includes tolls on both the new I-69 bridge and the remaining US 41 bridge, mitigation for the disproportionate and adverse effects to EJ populations would be required. Mitigation strategies could include transponder purchase via cash, cash-loading of transponders, widespread availability of transponders, and a frequent-user/commuter card. Another potential mitigation strategy could be a reduced toll rate for the US 41 bridge for verifiable low-income users. With Central Alternative 1B, which would provide a toll-free US 41 crossing, there would be no disproportionate and adverse effect to low-income users and no mitigation for tolling is required.

### 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 2014) 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

Throughout the NEPA process and in final design process, these techniques will be evaluated using stakeholder and public input to minimize visual impacts and enhance the aesthetics of the project. These may include visual elements suggested by the public, and/or minimization measures from the Section 106 memorandum of agreement (MOA).

## 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 the alternative that is selected for the project, locations where noise barriers are identified as “likely” and “not likely” will be reevaluated prior to the publication of the Final Environmental Impact Statement (FEIS)/Record of Decision (ROD), which will include any design and/or traffic changes.

A final determination on the locations of noise barriers will be made during the design phase. 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 the final design process, 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 the design phase 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 the design phase, 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), KYTC, 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 will be explored. 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 the design phase 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**

If Central Alternatives 1A or 1B (Preferred) are selected, further coordination 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.

### **7.6.5 FLOODWAYS/FLOODPLAINS**

A hydraulic design study that addresses structure size and types will be conducted during the final design phase 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

Impacted wetlands will be replaced at the appropriate mitigation ratio. 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 NONWETLAND 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**

### **7.9.1 MUSSELS**

Quantitative and qualitative mussel surveys will be conducted after coordination with the U.S. Fish and Wildlife Service for Central Alternatives 1A or 1B (Preferred), whichever is selected, prior to the FEIS/ROD. Impacts to federally-listed mussels will be addressed in a Biological Opinion, which will dictate mitigation requirements for construction impacts.

### **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**). The abandoned coal mine shaft located within the Wolf Hills region will be assessed for suitability as potential hibernacula for endangered bats. 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.

## 7.10 CULTURAL RESOURCES

### 7.10.1 HISTORIC PROPERTIES

To mitigate adverse effects on historic properties listed in, or eligible for listing on, the National Register of Historic Places (NRHP), consultation with property owners and consulting parties will be undertaken to evaluate vegetative screening, preparation of an NRHP nomination form, signage, and/or other suitable mitigation. A draft MOA for Central Alternatives 1A and 1B (Preferred) was prepared for this Draft Environmental Impact Statement (DEIS) (**Appendix L-3**) and a final MOA will be prepared and approved for the selected alternative in the FEIS/ROD.

### 7.10.2 ARCHAEOLOGICAL RESOURCES

Phase I archaeological surveys and any additional archaeological investigations including subsurface investigation, evaluative testing (Phase II), and/or mitigation (Phase III) will be conducted, if necessary, for sites within the proposed right-of-way of Central Alternatives 1A and 1B (Preferred). The results of the Phase I archaeological survey and other completed surveys will be included in the FEIS/ROD. A draft MOA for Central Alternatives 1A and 1B (Preferred) was prepared for the DEIS (**Appendix L-3**). Commitments to mitigate adverse impacts to archaeological resources that are determined eligible for the NRHP as a result of the project will be developed for the MOA. Mitigation can include data recovery, curation, and reporting; preservation in-place; reinternment; or “creative” options like using resources to develop virtual or web-based educational media that otherwise would not be produced. The Indiana State Historic Preservation Office (SHPO) and Kentucky SHPO, INDOT, KYTC, and FHWA will be parties to the document.

To mitigate potential effects on archaeological resources, the MOA will stipulate identification and evaluation efforts and any additional testing that should occur. If an eligible archaeological site is located, the MOA will stipulate avoidance or mitigation procedures. The MOA will be developed and signed by all appropriate signatories. FHWA will invite other consulting parties to sign the executed document.

## 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**

An updated Phase I Environmental Site Assessment (ESA) will be completed for the alternative selected for the project. 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 project 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

If Central Alternatives 1A or 1B (Preferred) are selected, potential indirect impacts to sensitive resources in the vicinity of the proposed US 60/US 41 interchange 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 Alternatives 1A and 1B (Preferred) would 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 will be required.