



## EXECUTIVE SUMMARY

### S.1 INTRODUCTION

The Indiana Department of Transportation (INDOT), the Kentucky Transportation Cabinet (KYTC), the regional Metropolitan Planning Organization (MPO) known as the Evansville Urban Transportation Study (EUTS), and the Federal Highway Administration (FHWA) are proposing a route for Interstate 69 (I-69) through the Evansville, Indiana and Henderson, Kentucky area. It is proposed to extend north from the Edward T. Breathitt Parkway (or simply the Breathitt Parkway, formerly known as the Pennyrile Parkway) in Kentucky to Interstate 64 (I-64) in Indiana. This Draft Environmental Impact Statement (DEIS) has been prepared to aid in the decision-making process by identifying potential impacts of constructing a new Interstate facility in the project study area. This Executive Summary provides a brief description of the alternatives and their associated design characteristics as well as their potential environmental, social, and economic impacts.

### S.2 INFORMATION SOURCES

Several sources of information were utilized in preparing the document. Sources for information contained within the document included but were not limited to literature searches, public involvement, modeling techniques, field surveys, professional expertise and GIS data.

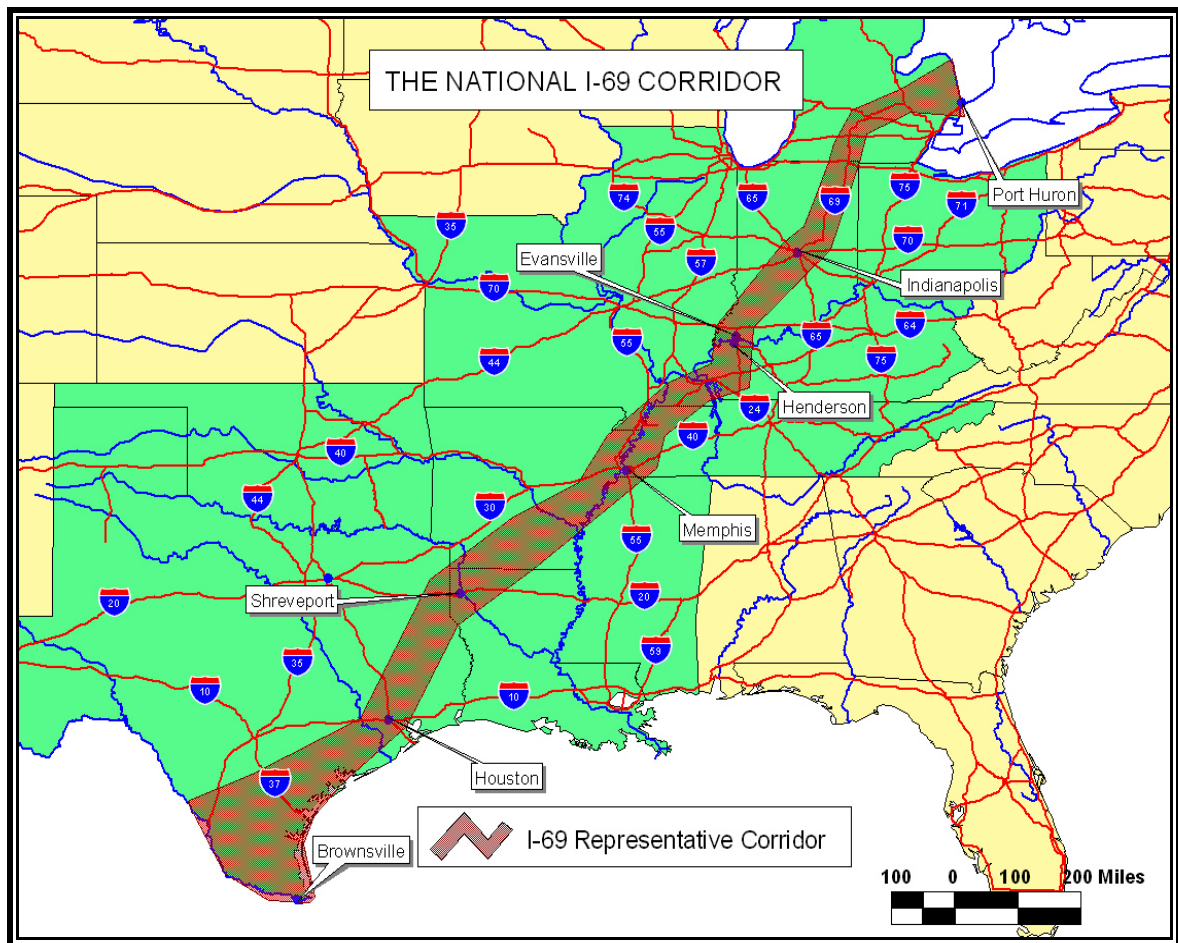
FHWA policies and sponsored studies are included within the document. Tables, graphs, and charts displaying potential design characteristics, estimated construction cost, and alternative-related impacts are included throughout the document.

Individuals from many areas of expertise contributed to the development of this project. Persons who contributed information to the document are recognized in **Chapter 9**.

Supporting documentation is provided in the attached Appendices. Information found in the Appendices includes worksheet analyses, state and federal agency correspondence, cultural documentation, and other related documents.

### S.3 PROJECT LOCATION

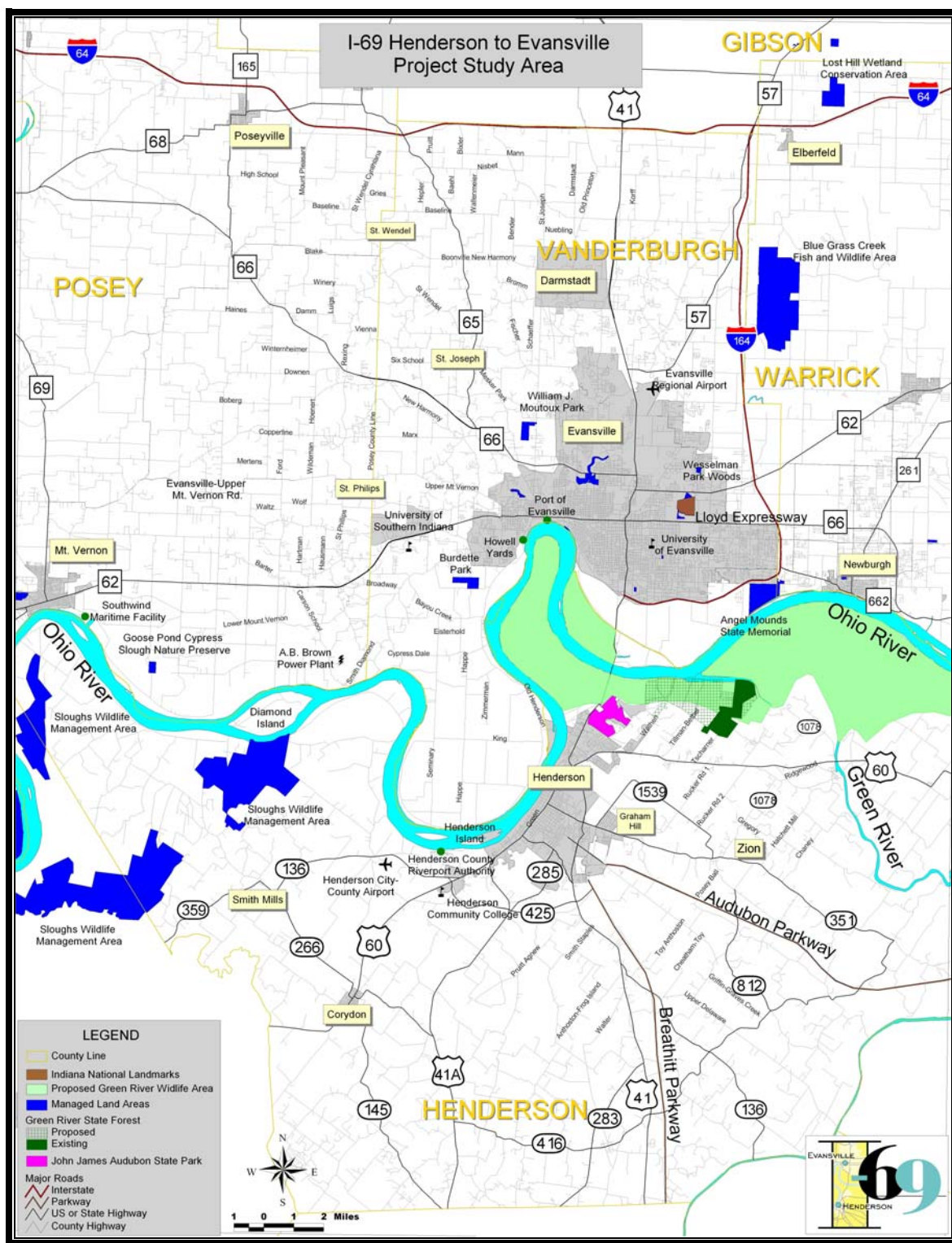
The proposed project is located in Southwestern Indiana and Northwestern Kentucky, beginning south of the City of Henderson, Kentucky, and extending north of the City of Evansville, Indiana. It involves completing one segment of the I-69 National Corridor, shown in **Figure S-1**, from the Breathitt Parkway in Kentucky to I-64 in Indiana. The project study area is bounded by I-64 in the north, Breathitt Parkway in the south, the Sloughs Wildlife Management Area in the west, and the Green River National Wildlife Refuge in the east. All the townships, parks, wetlands, roads, rivers, etc. in this region were considered part of the project study area. **Figure S-2** depicts the project study area.



### Figure S-1: National I-69 Corridor

## S.4 THE I-69 NATIONAL CORRIDOR

The concept of constructing a north-south Interstate between Canada and Mexico has been considered for many years. In 1991, the United States Congress introduced the concept by passing the Intermodal Surface Transportation Efficiency Act (ISTEA). ISTEA was the federal transportation bill that provided funds to the 50 states for transportation improvements, including highway, bridge, rail, air and transit projects. In addition to providing transportation funding, ISTEA also contained language that designated specific highway corridors of *national significance* be included in the National Highway System (NHS). The NHS is comprised mainly of principal arterials, such as Interstates, national routes, and some multi-lane state roads. One of the high-priority corridors identified in ISTEA legislation was “Corridor 18,” which extended from Indianapolis, Indiana to Memphis, Tennessee via Evansville, Indiana. Corridor 18, later renamed as National I-69, is a part of a larger, national proposal to connect the three North American trading partners of Canada, the United States and Mexico, by means of an Interstate highway located in the states of Michigan, Indiana, Kentucky, Tennessee, Mississippi, Arkansas, Louisiana and Texas.





According to the current Federal legislation the National I-69 corridor will serve the following cities:

- Port Huron, MI
- Indianapolis, IN
- Evansville, IN
- Memphis, TN
- Shreveport/Bossier City, LA
- Houston, TX

Studies and analyses were conducted during the 1990s to determine the feasibility of the National I-69 Corridor and are discussed in **Chapter 1**.

#### **S.4.1 Sections of Independent Utility**

The entire National I-69 project consists of 32 Sections of Independent Utility (SIU), as shown in **Figure S-3**. A SIU is a designated constructible segment of the National Corridor that can function independently within its own termini while providing benefits to those it serves. The proposed I-69 between the cities of Henderson and Evansville is identified as SIU #4. SIU #3 is to the north and SIU #5 is to the south. However, it is important to recognize that SIU #4 can function effectively regardless of whether sections #3 or #5 are constructed.



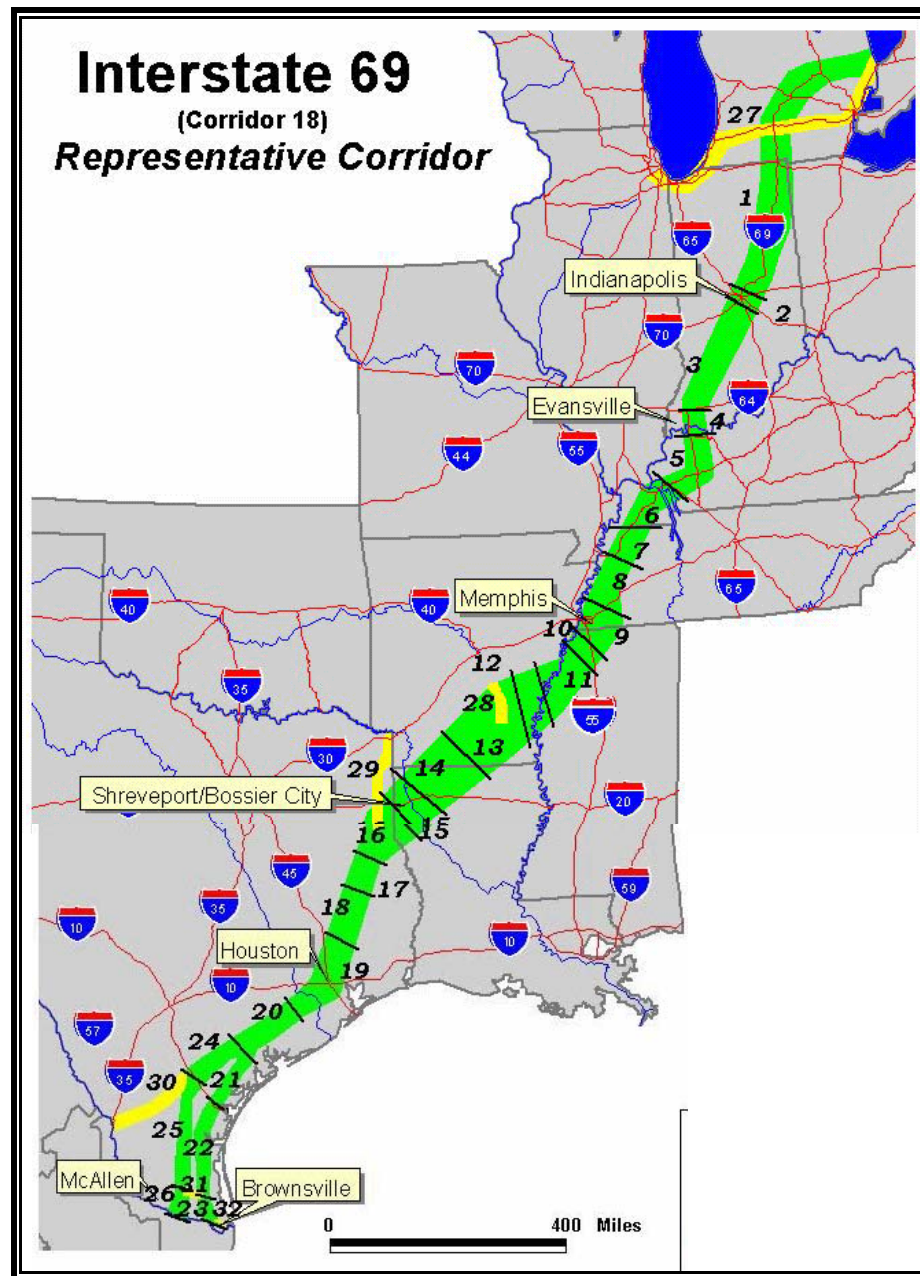


Figure S-3: Map of Sections of Independent Utility

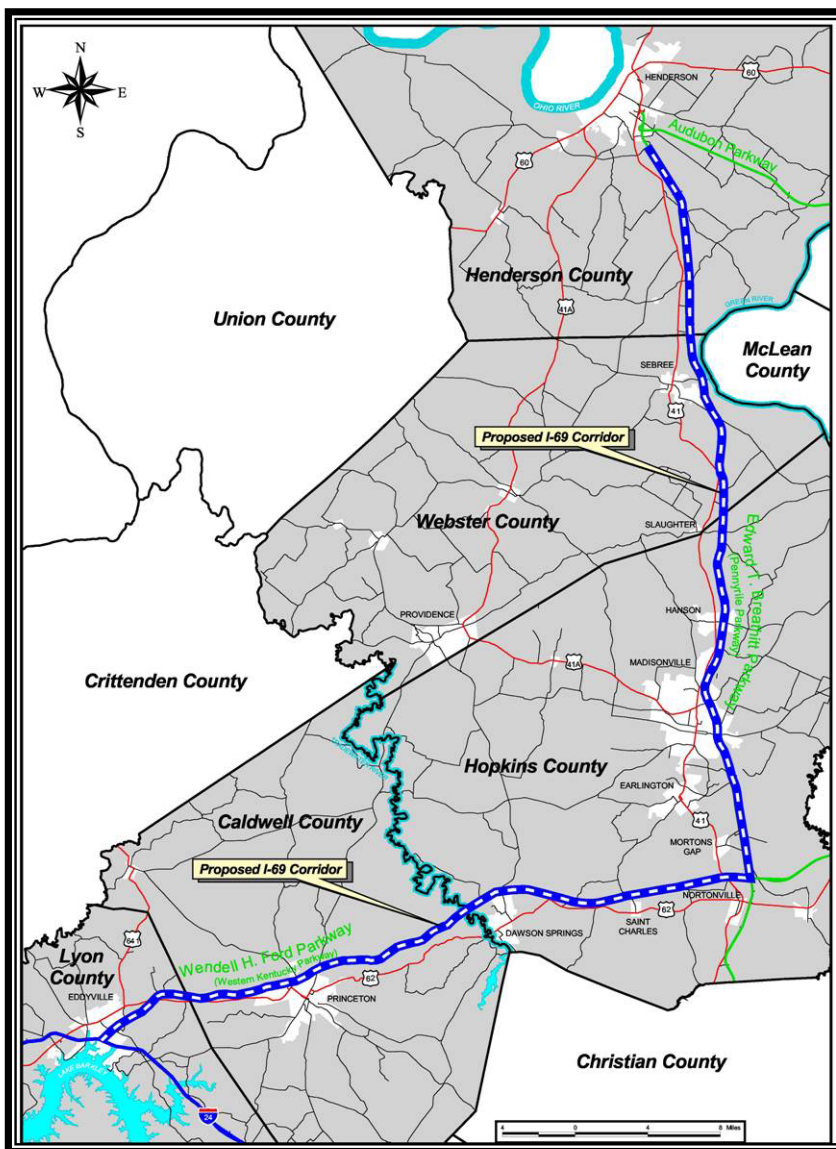


Figure S-4: Section of Independent Utility #5

#### Section of Independent Utility #5 – Eddyville, KY to Henderson, KY

It is anticipated that SIU #5, will connect Eddyville to Henderson. Specifically, this SIU provides southwest-to-northeast routing across western Kentucky connecting I-24 and the Henderson bypass (KY 425). Transportation officials are currently evaluating utilizing the existing Kentucky Parkway system for this SIU; **Figure S-4** depicts an SIU #5 alignment using the existing Breathitt Parkway and Wendell H. Ford Western Kentucky Parkway corridors.

#### Section of Independent Utility #4 – Henderson, KY to Evansville, IN

SIU #4, which is addressed in this document, consists of constructing I-69 between Henderson, KY and Evansville, IN. Specifically, the termini are I-64 to the north and the Breathitt Parkway to the south, which are depicted in **Figure S-5**. The *Purpose and Need Statement* for this SIU is based on both the local need for a new transportation corridor as well as the goals for the I-69 National Corridor. This *Draft Environmental Impact Statement (DEIS)* identifies the potential impacts to this section.

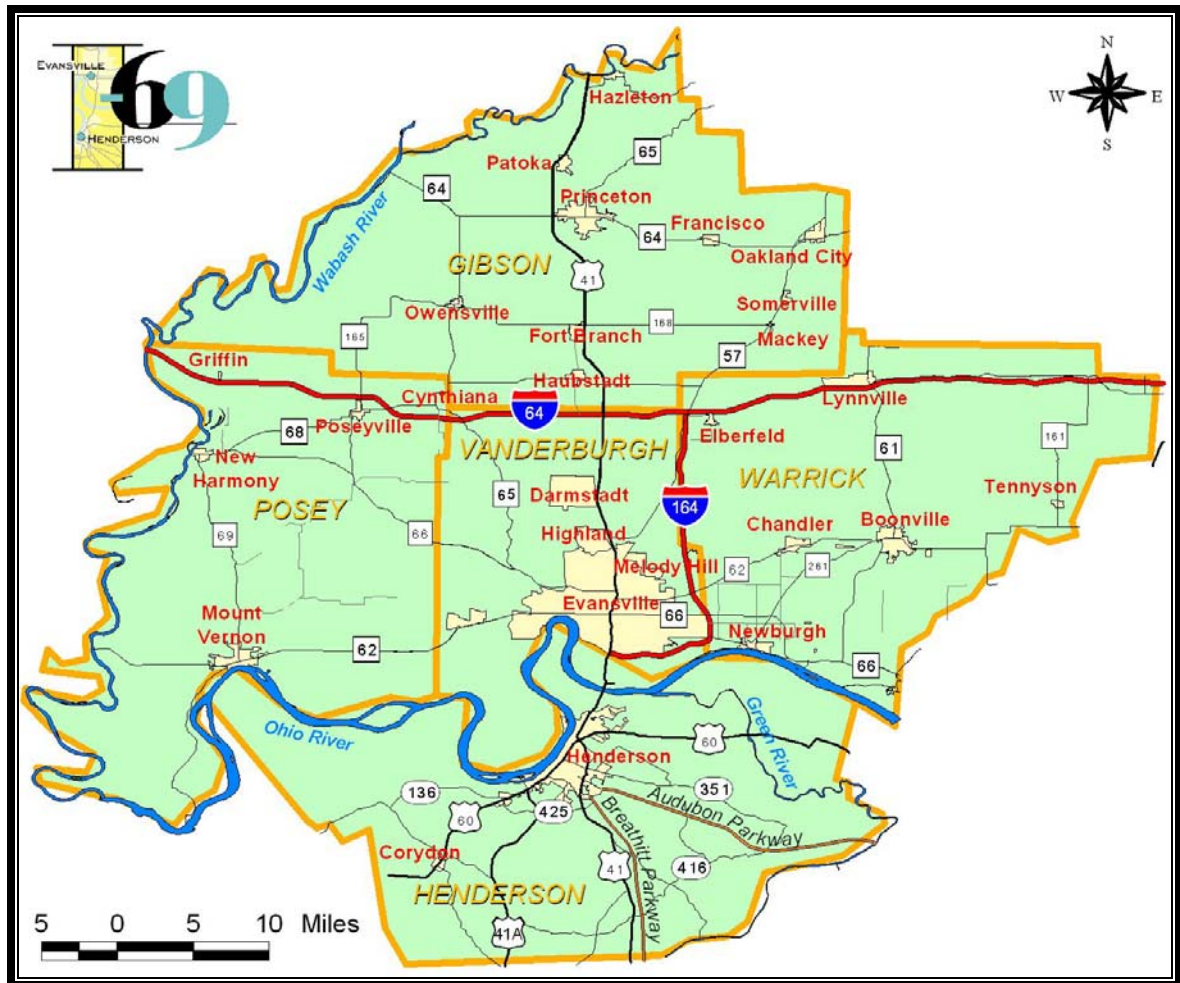


Figure S-5: Section of Independent Utility #4

#### Section of Independent Utility #3 – Evansville, IN to Indianapolis, IN

SIU #3 consists of constructing I-69 between the cities of Indianapolis and Evansville. On January 9, 2003, Indiana officials announced Alternative 3C as the preferred alternative for SIU #3. Alternative 3C, as shown in **Figure S-6**, approximately follows SR 57 from the I-64/SR 57 interchange in Vanderburgh County to Washington, IN. The alignment then proceeds through Daviess County on new alignment to the Monroe-Greene county line and then east to connect with SR 37 just south of Bloomington. The proposed freeway then travels north on existing SR 37 through the cities of Bloomington and Martinsville and terminates at I-465 on the south side of Indianapolis.

The environmental documentation for SIU #3 is being pursued as a two-staged “Tiered” approach. In the first tier, the broad corridor is established, while taking into account the full range of impacts. After the corridor issues are resolved during the selection of a corridor in Tier 1, the focus shifts in Tier 2 NEPA studies to the selection of an alignment and issues associated with a more exact measurement of impacts, and the avoidance and mitigation of adverse impacts. The Tier 1 FEIS has been approved. A Record of Decision (ROD) will be issued for the Tier 1 EIS and each Tier 2 EISs. The Tier 1 ROD is



**I-69 Evansville-To-Indianapolis Study**  
***Tier 1 Environmental Impact Statement***

**I-69 Preferred Corridor**  
 Bernardin - Lochmueller & Associates  
 UTM NAD 83 meters  
 DATE: September 17, 2003

**Legend**  
 Highways  
 Interstate Highway  
 US Highway  
 State Highway  
 Preferred I-69  
 City Areas  
 County Boundary

0 10 20 30 Miles  
 0 10 20 30 40 50 Kilometers

The development and study of SIU #4 is being performed independently of SIU #3 and SIU #5. Although the I-64/SR 57 interchange is the preferred southern terminus for SIU #3, this location will be taken into consideration for SIU #4, but will not be a determining factor for the northern terminus of SIU #4.

The general purpose and need of this project is to provide a critical link in the I-69 National Corridor that would provide sufficient capacity for design year traffic flow within the region. This traffic flow is inclusive of both Interstate and international traffic that will ultimately be using the facility.





The proposed action was identified in the *Transportation Equity Act for the 21<sup>st</sup> Century of 1998 (TEA-21)* as a component of the I-69 Corridor. As such, the purpose of this project is to provide a critical link in the Interstate system, and to provide an important regional facility that will serve traffic.

The purpose of this project primarily involves the need to complete the National I-69 Corridor, but also involves regional elements including providing sufficient cross-river mobility and strengthening the regional transportation network. The purposes and needs of this project are as follows:

- Support the completion of the National I-69. There is a need to provide an Interstate link connecting Henderson, KY to Evansville, IN as a part of this National Corridor (SIU #4).
- Provide sufficient cross-river mobility in the Evansville/Henderson area. There is a need to provide a new or enhanced river crossing because the only existing Ohio River crossing in the area – US 41 – is inadequate to meet existing local traffic and future National I-69 traffic demands under normal working conditions. In the event of an accident or other event involving the existing US 41 bridge, the bridge may be partially closed, affecting both local and National I-69 traffic.
- Strengthen the transportation network in the Evansville/Henderson area. There is a need to strengthen the local transportation network because the existing network will not be able to meet the local forecasted travel demand as well as the additional demand resulting from the completion of the National I-69.

## **S.6 RANGE OF ALTERNATIVES CONSIDERED**

The project study area limits were determined by the FHWA as part of the overall National I-69 corridor planning efforts. Geographic Information System (GIS) mapping, aerial photographs, and other means were used to develop reasonable corridors based on known/existing transportation and environmental conditions in the project study area. Environmental data were collected from the United States Geological Survey (USGS), Kentucky and Indiana Geological Surveys (KGS and IGS), Environmental Systems Research Institute (ESRI), and other state and federal agencies, and supplemented through field reconnaissance. Roadway design criteria used in Indiana and Kentucky, existing utilities, potential bridge crossing conditions, Intelligent Transportation Systems (ITS), and Transportation Systems Management (TSM) measures were also considered. This information was used to develop feasible corridors that avoided or minimized impacts to the natural and man-made environment.

Developing corridors located east of I-164 was considered. However, the Newburgh Lock and Dam is located to the east on the Ohio River. Any new Interstate facility situated east of I-164 would require a location well east of the Town of Newburgh and, therefore, even farther east of I-164 and the Evansville-Henderson area. Consequently, any new facility constructed east of I-164 would fail to address transportation needs within the Evansville-Henderson area, which are identified in the *Purpose and Need Statement*. By contrast, the existing I-164 roadway provides a freeway connection with sufficient potential capacity to accommodate both local and through traffic for the proposed I-69 in the 2030 Future Year. Considering these factors, corridors located far east of I-164 would not be reasonable, and, therefore, were not developed. Corridors located far west of the Evansville/Henderson would not adequately satisfy the *Purpose and Need Statement* for SIU #4. These corridors would not provide an efficient connection between the termini for SIU #4, would not provide sufficient cross-river mobility in the Evansville-Henderson area, and would not strengthen the area's transportation network.

## **S.7 REASONABLE ALTERNATIVES**

Alternatives were developed to satisfy the project needs (outlined in the *Purpose and Need Statement*) while avoiding potential environmental impacts. Where such avoidance was not possible, efforts have been made to minimize the potentially negative impacts of constructing a new Interstate facility.

### S.7.1 Design Characteristics

The proposed facility is anticipated to provide a highway designed to freeway standards and would be signed I-69. Typical roadway sections were prepared for the purpose of evaluating the potential environmental impacts of each of the build alternatives and are shown in **Figure S-7**. More refined typical sections will be developed during subsequent phases of the project. These conceptual design characteristics include 12-foot-wide travel (driving) lanes, and 12-foot-wide inner and outer shoulders. In rural areas, the proposed I-69 would be constructed as a four-lane divided freeway, with an 80-foot-wide depressed median. An Ohio River bridge crossing would be designed to accommodate a future six-lane section (*i.e.*, three lanes each direction), and 14-foot-wide inside and outside shoulders. Four Build Alternatives and a No-Build Alternative are being considered. The proposed project length ranges from approximately 30 to 32 miles.

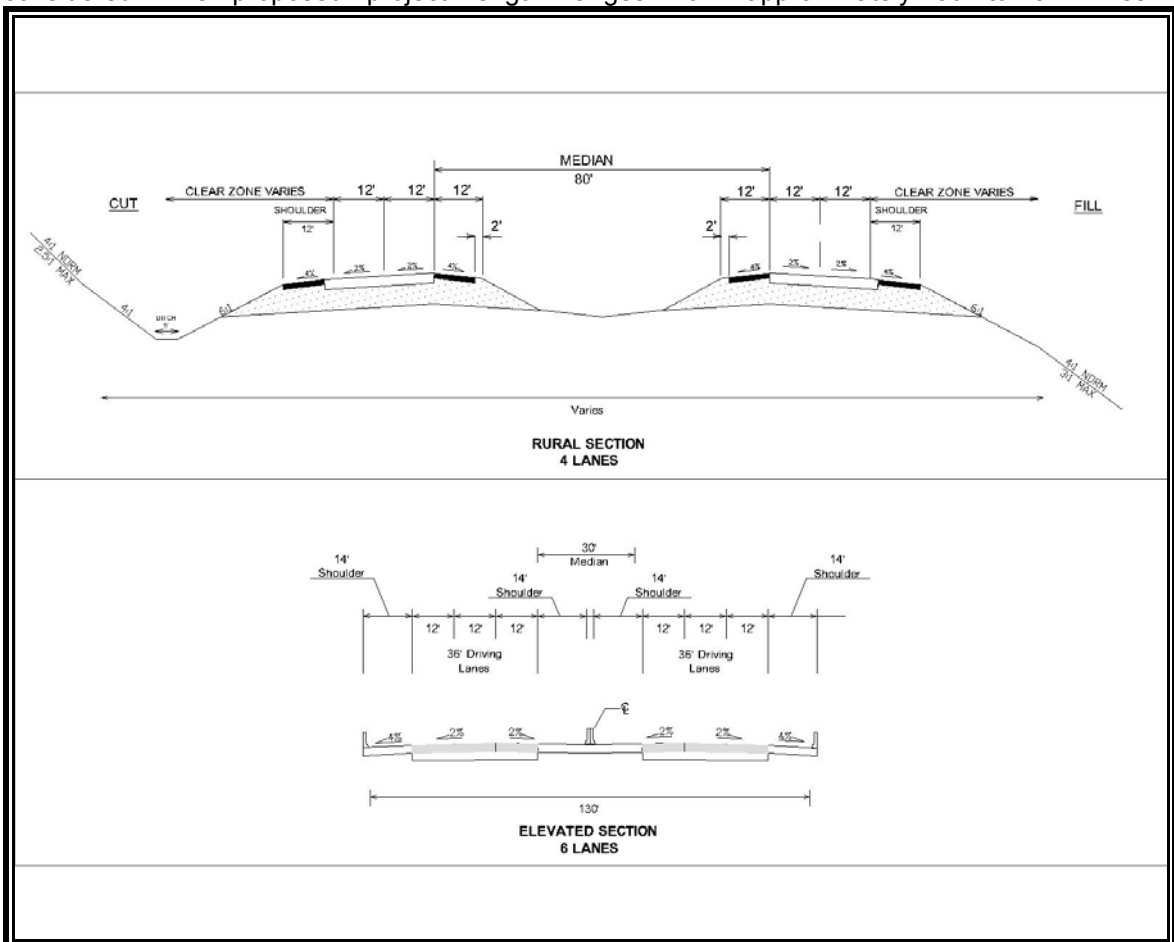


Figure S-7: Typical Sections

### S.7.2 Alternative Description

The study process initially identified ten alternatives, including six alternatives west of the Evansville/Henderson area; one alternative following existing US 41; one alternative using the Breathitt Parkway north to US 41 and continuing north on US 41 to I-164; and two alternatives east of the Evansville/Henderson area. Both eastern alternatives assumed a northern terminus at the existing I-164 interchange with I-64. The western alternatives had various northern termini at I-64 in Indiana. In Kentucky, each alternative tied into the Breathitt Parkway near its northern terminus, just south of Henderson. The ten alternatives, as shown in **Figure S-8**, were designated from west to east as Alternatives A through J. The *Level 1 Alternatives Analysis Report* recommended that Alternatives H, I, and J be pursued for more detailed study. These alternatives best satisfied the goals and performance measures outlined in the *Draft Purpose and Need Statement* and would result in the fewest impacts to environmentally sensitive resources. An additional alternative, named J1, was added to determine if the traffic performance of Alternative J, the best western alternative, could be improved by providing an I-64 connection closer to US 41. The Alternatives carried forward for further study were refined and renamed as follows and are shown in **Figure S-9**:

No-Build (not shown)  
Alternative J – Alternative 1  
Alternative J1 – Alternative 1A  
Alternative H – Alternative 2  
Alternative I – Alternative 3

#### Alternative 1

Alternative 1 connects to I-64 in Posey County, approximately four miles east of Poseyville and proceeds south to Evansville-Upper Mt. Vernon Road, paralleling the Vanderburgh-Posey County line. From there, the route turns and travels southeast, crossing SR 62 and proceeds through the “oxbow” area of the Ohio River. The corridor crosses the Ohio River near the eastern edge of Henderson Island. The corridor then proceeds southeast to its southern terminus at the Breathitt Parkway located at the existing KY 425 (Henderson Bypass) interchange, approximately 4.5 miles south of the US 60/US 41 interchange in Henderson. Potential interchange locations included I-64, SR 66, Evansville-Upper Mt. Vernon Road, and SR 62 in Indiana, and US 60, KY 285, and the Breathitt Parkway in Kentucky. The alternative is 31.8 miles in length.

#### Alternative 1A

Alternative 1A connects to I-64 west of its interchange with US 41 and proceeds southwest to SR 66 just north of Wadesville, and then follows the same alignment as Alternative 1. Alternative 1A is approximately 35.2 miles in length.

#### Alternative 2

Alternative 2 utilizes the existing I-164 alignment from its northern terminus at I-64 in Warrick County, to just east of the Green River Road interchange and west of Angel Mounds State Memorial Site. From that location, the alternative leaves the existing I-164 alignment and heads south to cross the Ohio River immediately west of the mouth of the Green River. The route continues south to KY 351, then proceeds southwest to the Breathitt Parkway. Existing interchanges are located at I-64, County Road 950 (New Harmony Road), Lynch Road, Morgan Avenue (SR 62), Lloyd Expressway (SR 66), Covert Avenue (SR 662), and Green River Road in Indiana. Potential interchanges include a relocated Green River Road interchange (to avoid the cemetery located in the southwest quadrant of the existing interchange) in Indiana, and US 60, KY 351, Audubon Parkway, and the Breathitt Parkway in Kentucky. The alternative is 30.2 miles in length and utilizes 18.6 miles of existing I-164.





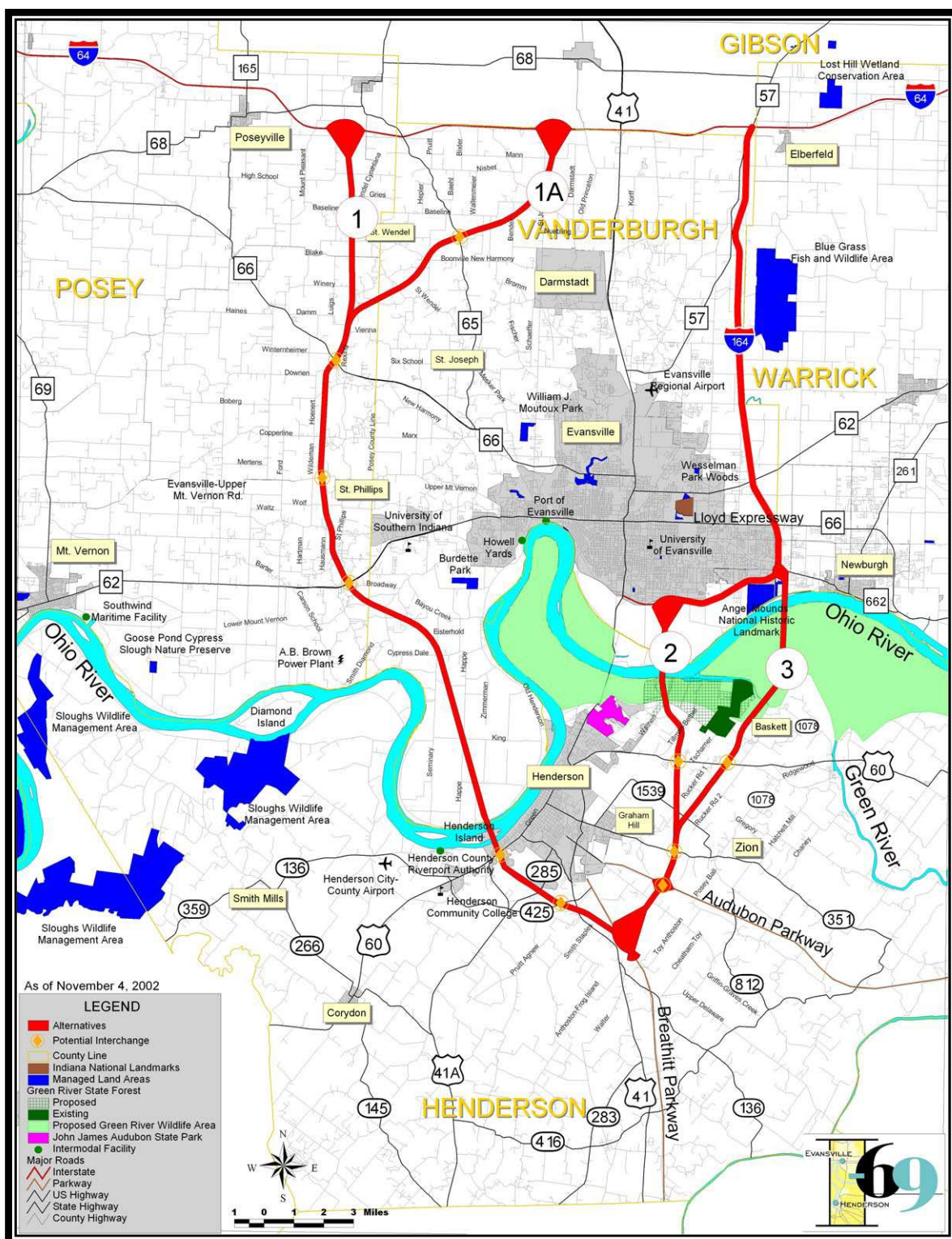


Figure S-9: Alternatives

### Alternative 3

Alternative 3 utilizes the existing I-164 alignment from its northern terminus at I-64 in Warrick County, to just north of the Covert Avenue interchange north of Angel Mounds State Memorial. From that location, the alternative turns and travels southeast to cross the Ohio River east of Angel Mounds. The alternative continues south crossing the Green River, then heads southwest to its connection to the Breathitt Parkway. Existing interchanges are located at I-64, County Road 950 (New Harmony Road), Lynch Road, Morgan Avenue (SR 62), Lloyd Expressway (SR 66), and Covert Avenue (SR 662) in Indiana. Potential interchanges include a new interchange immediately north of Covert Avenue in Indiana, and US 60, KY 351, Audubon Parkway, and the Breathitt Parkway in Kentucky. The alternative is 31.9 miles in length and utilizes 17.2 miles of existing I-164.

### No-Build Alternative

The No-Build alternative assumes no new Interstate link is constructed between Henderson, KY and Evansville, IN. It also assumes that National I-69 has NOT been completed. Thus, this alternative does not include traffic resulting from the construction of the National I-69. The No-Build alternative includes committed transportation projects in the Henderson-Evansville area.

Following publication of the *Level 1 Alternatives Analysis Report*, more detailed analyses of the alternatives began. Alternatives 1, 1A, 2, and 3 were then narrowed to 1,000' wide through investigation of data gathered during field inspections and site visits, coupled with more in-depth engineering analyses.

## S.8 PUBLIC AND AGENCY INVOLVEMENT

### S.8.1 Public Meetings

Public information meetings were conducted in November 2001, June 2002, and September 2002. The purpose of these meetings was to inform the public of the project's status, provide information on the corridors, and to gather public input. The November 2001 meetings focused on the Project Study Area and *Draft Purpose and Need Statement*, whereas the June meetings focused on the screening process. The September 2002 meetings focused on modifications that were made to Alternatives 1, 1A, 2 and 3 after the June meetings.

Numerous comments were received as a result of the six public information meetings. All comments submitted were compiled in a public information meeting transcript and reviewed for consideration. Meeting participants provided both supporting and opposing views of the project. At both the June and September, 2002 Public Information Meetings held in Henderson, a number of citizens raised the question of why an alternative east of Alternative 3 in Kentucky was not under consideration. The perceived impact to currently flood-prone areas east and southeast of Henderson by Build Alternatives 2 and 3 was one issue brought up by local citizens supporting the considerations of a further east alternative. Developing an alternative east of I-164 was considered. However, in order to avoid impacts to the Newburgh Historic District, an alternative east of I-164 would require the location to be east of the town of Newburgh. This location would result in the inability of the alternative to meet the *I-69 Henderson to Evansville Purpose and Need*. (See Section 1.2) Further discussion concerning the public meetings is addressed in **Chapter 10**.

### S.8.2 Resource Agency Comments

Resource agencies were encouraged to provide comments at the December 13, 2001 and July 30, 2002 meetings, and were given a 30-day period following each of the meetings to provide additional written or oral comments. Letters were received from the following tribes/agencies:

- Cherokee Nation
- Indiana Department of Natural Resources (IDNR)
- United States Coast Guard
- United States Fish and Wildlife Service (USFWS)

The U.S. Coast Guard provided some clarification of information included in the *Level 1 Alternatives Analysis* relative to Ohio River bridge clearances. IDNR noted that final agency approval must be received before construction can begin within any floodway. IDNR comments noted that the initial western corridors (Corridors A-E) would result in the highest level of impacts to fish, wildlife, and botanical resources, mimicking the results of the *Level 1 Alternatives Analysis*. Additionally, it was noted that of the Build Alternatives under consideration, Alternative 1 (and consequently Alternative 1A) would have the most severe impacts to fish and wildlife habitat.

The USFWS noted that the selection of Corridors J, H, and I (now known as Alternatives 1, 2, and 3, respectively) eliminated those alternatives with the greatest impacts on wildlife resources from further consideration.

The Cherokee Nation stated it was not presently aware of or able to identify any cultural resources affiliated with the Cherokee Nation within the project study area.

### **S.8.3 Community Organization Comments**

Various civic and community organizations have been represented in a number of ways throughout the study process. This representation has varied from membership on the SAC Committee to verbal and written comments. The following local or regional agencies have provided written feedback for consideration in the development of this document:

- Henderson County Conservation District
- Henderson Economic Development Council
- Henderson – Henderson County Chamber of Commerce
- Indiana Port Commission
- Mt. Vernon Area Chamber of Commerce
- Posey County Commission
- The Chamber of Commerce and Industry, Inc. (Owensboro-Daviess County)
- The Voices for I-69
- University of Southern Indiana

Many community leaders have expressed support for the project. There are some differences of opinion with respect to preferred location for an eventual I-69 corridor (i.e. west of Evansville-Henderson versus east).

### **S.8.4 Public Official Comments**

Elected and public officials were encouraged to submit comments at the public information meetings. Comments were received from:

- City of Evansville, Mayor's Office
- City of Mt. Vernon, Mayor's Office
- City of Owensboro, Mayor's Office
- Daviess County Fiscal Court



Much like the comments received from community organizations, the public officials' comments demonstrated strong support for the construction of I-69 between Evansville and Henderson. The City of Evansville and Mt. Vernon representatives stated a preference for a western corridor, while the City of Owensboro and Daviess County Fiscal Court favored Corridor 2.

## **S.9 EVALUATION OF ALTERNATIVES**

The four Build Alternatives analyzed in this document would each impact the natural and manmade environments in a number of ways. The most direct manner these impacts would occur is through the conversion of existing land uses into a transportation corridor. Throughout the development of the alternatives, efforts have been made to avoid and/or minimize impacts to known environmental resources. Thus, the Build Alternatives were modified to further avoid and/or minimize impacts. The September 2002 public information meetings were utilized to gather public input relative to these alternative modifications. These coordination efforts are discussed below and are followed by a discussion of the impacts.

### **S.9.1 Engineering and Traffic**

The following engineering topics were considered in evaluating alternatives:

- Traffic Impacts
- Pedestrian/ Bicycle Impacts
- Construction Impacts
- Seismic Considerations
- Permits
- Access and Interchange Locations
- Right-of-way Constraints
- Hydraulics and Floodplain Impacts

Alternatives 2 and 3 require significantly less new construction than the western alternatives, primarily due to the use of existing I-164. As such, these corridors also cost significantly less. The proposed Pigeon Creek Greenway Passage southeast of Evansville may be impacted by the eastern alternatives; however, at the present time, there will be no impact upon the future Pigeon Creek Greenway Passage that would impede its development.

Each Build Alternative will not only influence the local transportation system, but the regional system as well. The development of SIU #3 (Evansville to Indianapolis) and SIU #5 (Eddyville to Henderson) in conjunction with the I-69 Evansville to Henderson project will provide significant benefits in terms of regional traffic performance and freight movement.

The design of structures associated with I-69 will require careful consideration of the potential for seismic activity in the region. Southwest Indiana and Northwest Kentucky are known for seismic activity. Additionally, the potential for liquefaction through floodplains and areas characterized by alluvial deposits must be considered during subsequent design phases, if any.

The impacts of the proposed Build Alternatives include providing a safe and efficient Interstate facility for the cities of Henderson and Evansville to accommodate existing and future traffic volumes. The proposed Build Alternatives would improve the system linkage in Southern Indiana and Western Kentucky, and provide improved access to other major transportation routes, including enhanced access to multi-modal facilities. A Build Alternative would reduce travel time and improve the economy of travel by lowering operating costs.

Locally, the eastern corridors tend to provide the most significant improvements to the Evansville-Henderson transportation system. A new bridge over the Ohio River on Alternative 2 would carry



the most traffic of any of the build alternatives and provide the greatest amount of traffic relief from reassignment of trips from the existing US 41 bridges. Alternatives 1 and 1A would not provide significant reductions to future traffic volumes on the US 41 bridges.

Transit alternatives, including Transportation Demand Management resources, were considered during as alternatives. However, after consideration, it was determined that transit alternatives would not meet the Purpose and Need of the project, including federal legislation.

In ISTEA, Congress designed Corridor 18 as a “high-priority corridor” on the NHS. Because the NHS is, by definition, a highway system, the designation of Corridor 18 as part of the NHS reflected a clear intention the Corridor 18 be developed as a highway. However, the original ISTEA legislation did not specify any design standards or requirements for Corridor 18; not only did it not designate Corridor 18 as an Interstate, it did not even specifically require the corridor to be completed as a multi-land highway.

In TEA-21, following the completion of a series of feasibility studies for Corridor 18, Congress specifically designated Corridor 18 as an Interstate highway; the law stated that Corridor 18 (and Corridor 20) “shall be designed as Interstate 69 (I-69). TEA-21, 1211 (i)(3)(c) (“The routes referred to in subsection (c)(2) of ISTEA shall be designated as Interstate Route I-69”). The legislation means that future planning for Corridor 18 should proceed on the assumption that it will be developed as a continuous Interstate highway (I-69) linking Canada to Mexico.

In light of federal legislation designating the National I-69 corridor and national FHWA policies, FHWA, INDOT and KYTC have concluded that this study should focus on the proposal to complete I-69 as an Interstate highway between Henderson and Evansville.

The No-Build Alternative would not impact the existing transportation system, and would require no consideration for engineering impacts.

### **S.9.2 Environmental**

The following environmental topics were considered in evaluating the four Build Alternatives:

- Land Use Impacts
- Social Impacts
- Relocation Impacts
- Residential and Neighborhood Impacts
- Environmental Justice
- Economic Considerations
- Air Quality Impacts
- Highway Noise Impacts
- Wild and Scenic Rivers Impacts
- Historic Impacts
- Archaeology Impacts
- Visual Impacts
- Hazardous Waste Site Impacts
- Threatened and Endangered Species Impacts
- Wetlands Impacts
- Agricultural Impacts
- Forest Impacts
- Water Body Modifications
- Water Quality Impacts
- Ecosystem Impacts
- Energy Impacts
- Irretrievable and Irreversible Commitment of Resources
- Short Term Use vs. Long Term Productivity
- Mineral Resource Impacts
- Use of 4(f) Resources

The areas east of Henderson are primarily characterized as agricultural with dispersed residential development. The same can be said for the Indiana portions of the western alternatives, with more industrial and commercial development in Kentucky as the western corridors approach

southwest Henderson. Given these characterizations, each Build Alternative is anticipated to impact substantial amounts of farmland, wetlands, and forested areas.

Many of the environmental concerns discussed in the document are minimized by the eastern alternatives, primarily due to the use of existing I-164 with those corridors. Residential and business relocations are minimized in Alternative 2. Alternatives 1 and 1A span greater lengths than Alternatives 2 and 3, thereby causing more impacts to floodplain acreages and requiring longer structures to traverse the Ohio River. Ambient standards are not substantial for any of the Build Alternatives, as the project is in the Statewide Transportation Improvement Plans (STIPs) of both Indiana and Kentucky. The alternatives meets the emissions budget of EUTS and will not result in appreciable air quality impacts. The preferred alternative has successfully undergone conformity analysis in the EUTS Long Range Plan. Through coordination with numerous local, state, and federal resource agencies, uses of 4(f) resources have been avoided. Coordination with the KY Division of Forestry and the U.S. Fish and Wildlife Service has avoided negative impacts to the proposed expansion areas of the Green River State Forest and the Proposed Green River National Wildlife Refuge. In addition, corridor modifications have been made in order to minimize significant direct and indirect impacts to historic properties both listed in and deemed eligible for listing in the National Register of Historic Places. Further analysis will assist in the avoidance of unknown archaeological resources.

Where practical, impacts to important resources have been avoided or minimized through the corridor development process and subsequent modifications. Where such measures are not possible, mitigation efforts will be pursued to diminish the negative effects that may result from the construction of I-69. Mitigation efforts at this point focus on general themes more than specific measures focusing on particular site impacts. More detailed mitigation measures will be developed in the FEIS.

The principal adverse socio-economic impacts associated with any of the proposed Build Alternatives would be a result of: (1) right-of-way acquisition requirements – the potential acquisition of 423 to 1,521 acres of land; (2) the potential relocation 6 to 74 residences and the acquisition of up to 7 commercial establishments; and (3) changes to existing communities in the project corridor.

The positive impacts of the proposed Build Alternatives include providing a safe and efficient Interstate facility for the cities of Henderson and Evansville to accommodate existing and future traffic volumes. The proposed Build Alternatives would improve the system linkage in Southern Indiana and Western Kentucky, and provide improved access to other major transportation routes, including enhanced access to multi-modal facilities. A Build Alternative would reduce travel time and improve the economy of travel by lowering operating costs. **(see Chapter 3)**

Cumulative impacts are defined by the Council on Environmental Quality (CEQ) Regulations as *“the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”* Cumulative impacts include the direct and indirect impacts of a project together with the reasonably foreseeable future actions of others. The assessment of cumulative impacts is required to ensure that the proposed I-69 project and other federal, state, and private actions will be evaluated with regard to cumulative impacts.

The methodology for determining cumulative impacts of the proposed I-69 project follows an eleven step process for conducting the cumulative impacts analysis. The methodology focuses on identifying the existing, baseline conditions within the project study area and then forecasting potential impact scenarios that are likely to result both in conjunction with and exclusive of the development of the I-69 project.

### **S.9.3 Summary of Impacts**

The following sections discuss the findings with respect to the engineering, traffic, and environmental considerations.

- Each Build Alternative represents an alignment where an Interstate is currently deemed reasonable for construction. Additional data collection (i.e. survey information, geotechnical explorations, etc.) and further analyses are necessary to carry any alternative through preliminary design phases.
- Each Build Alternative has some impact on historic properties. Historic properties along each of the three Build Alternatives have been identified and evaluated whether the proposed project will have an effect on these properties. It is estimated that Alternative 1A contains the most adverse impacts whereas Alternative 2 creates the least number of adverse impacts to historical properties.
- Alternative 3 will have adverse visual and noise impacts on Angel Mounds.
- Residential and business relocations are minimized with Alternative 2, with six residences and no businesses displaced. The remaining alternatives impact from 61 to 74 homes and six to seven businesses.
- The eastern Build Alternatives provide the greatest improvement to traffic performance, compared to the No-Build scenario. Alternative 2 is forecasted to carry the highest traffic volume across the Ohio River (32,000 vehicles per day in 2025 assuming I-69 SIU #3 is constructed in the SR 57 Corridor) and provide the greatest reduction in traffic on the existing US 41 bridges (reduction of 52% in 2025, LOS C). The western build alternatives would attract less traffic, and so are less effective at relieving demand and congestion on the existing highway and street network.
- Air quality impacts are not substantial for any of the four Build Alternatives under consideration.
- All of the alternatives experience some noise impacts. Alternatives 1 and 1A adversely effect 3 and 5 historic properties, respectively. Project noise levels along Alternative 3 will result in an Adverse Effect on a National Landmark (Angel Mounds). Finally, approximately three receiver locations are expected to experience a slight increase in noise along Alternative 2 (less than 3db).
- Impacts to known archaeological resources range from five and six sites for Alternative 3 and 2 respectively, to twelve sites for Alternative 1 and 1A. Additional field work will be conducted on the preferred corridor, and the results will be included in the Final Environmental Impact Statement.
- Potential hazardous material (HazMat) sites consist of abandoned gasoline stations, one salvage yard, and railroad lines. Additional field work will be necessary prior to construction to determine the nature of these and currently unknown sites, as both above ground and underground storage tanks (AST's and UST's) may be in existence.
- Gas and mineral resources underlie significant lengths of each of the Build Alternatives. Coal is found under 52% of Alternative 3's length, 63% of Alternative 2, 72% of Alternative 1, and 75% of Alternative 1A. Oil and gas well occurrences range from three for both Alternatives 2 and 3 to nine for both Alternatives 1 and 1A.

- There are no known environmental justice issues with the four Build Alternatives under consideration.
- Anticipated right-of-way requirements range from 723 to 1,737 acres. Total farmland within the estimated right-of-way includes 1,077 acres for Alternative 1, 1,292 acres for Alternative 1A, 592 acres for Alternative 2 and 538 acres for Alternative 3.
- Impacts to endangered or threatened wildlife habitat are minimal for any Build Alternative. The alternatives were developed and have been modified to minimize the potential for impacts to important habitats. Where construction-related intrusion is unavoidable in areas where important habitats may exist, efforts will be made to minimize losses of the resource. Information consultation with the USFWS concluded that the project has the potential to impact Indiana bat summer maternity roost habitat, and possible federally listed mussel species (namely the fat pocketbook mussel). As part of the Section 7 Endangered Species Act coordination process, the USFWS indicated on March 12, 2003 that formal consultation was not required for the I-69 project at this time, but suggested mitigation measures be implemented.
- Each Build Alternative will require significant lengths of structure or series of structures to traverse the Ohio River and adjacent floodplains. These lengths vary from 3.4 miles on Alternative 2 to 9.0 miles on Alternative 1 and Alternative 1A. Construction of these sections will require analyses with respect to geotechnical and hydraulic data collection and seismic considerations.
- The lengths of floodplain traversed by each alternative ranges from 7.0 miles for Alternative 2 to 14.6 miles for Alternative 1A. Floodplain acreage impacts range from 352 acres for Alternative 3 to 521 acres for Alternative 1A.
- Wetland impacts have been largely avoided through the development and modification of the alternatives. Jurisdictional wetland impacts are estimated to be between 22 and 27 acres for Alternative 1, 20 to 24 acres for Alternative 1A, 29 to 35 acres for Alternative 2, and 35 to 39 acres for Alternative 3. These impacts are estimated in ranges since actual delineations have not yet been performed. Field inspections will be conducted to delineate wetlands for the alternatives and the results will be available in the FEIS.
- The most significant change in land use will result from the conversion of agricultural lands to transportation right-of-way. Alternative 1A will impact the most prime and unique farmland (1,235 acres), with Alternative 2 impacting the least (623 acres). Alternative 3 also impacts the most statewide and locally important farmland (41.0 acres) with Alternative 1A impacting the least (0 acres).
- Alternative 1A will result in the largest loss of existing total forest habitat (258 acres) whereas Alternative 2 and 3 impact 55 and 44 acres of forested lands, respectively. Alternative 1A impacts the greatest acres of core forest (20.1 acres) while Alternative 3 does not impact any existing core forests.
- Alternative 2 encroaches upon the fewest streams (41). Alternative 1A impacts the largest number of streams (66).

**Table S-1** presents a summary of the considerations discussed in this document.



Table S-1: Alternative Performance

	ALTERNATIVE				
	No-Build	1	1A	2	3
<b>PURPOSE AND NEED CONSIDERATIONS</b>					
Meet current freeway design standards	NO	YES	YES	YES	YES
Provide sufficient capacity for new bridge and new bridge approaches	NO	YES	YES	YES	YES
Provide additional Ohio River crossing	NO	YES	YES	YES	YES
Decrease congestion on existing US 41 river crossing (LOS on existing bridges)	F	F	F	C	D
Improve safety by providing cross-river transportation that meets freeway design standards	NO	YES	YES	YES	YES
Traffic Performance					
Reduction of VHT on arterials (rank) <sup>1</sup>	--	+9.4% (4)	+5.2% (1)	+6.2% (2)	+6.3% (3)
Reduction of VHT on US 41 (rank) <sup>1</sup>	--	-8.7% (4)	-12.3% (3)	-29.3% (1)	-28.9% (2)
Reduction of truck VHT (rank) <sup>1</sup>	--	+5.5% (4)	+1.7% (3)	+1.1% (2)	+0.3% (1)
<b>ENVIRONMENTAL CONSIDERATIONS</b>					
Total Right-of-Way (acres)	0	1524.9	1737.4	747.2	723.4
Potential Hazardous Material Sites (HazMat)	N/A	4	5	1	4
Total Forest (net loss in acres)	N/A	243	258	55	44
Core Forest (net loss in acres)	N/A	14.7	20.1	13.4	0
Total Wetlands (acres)	N/A	25.85-30.40	24.55-28.85	30.15-36.40	36.45-40.35
USACE Jurisdictional Wetlands (acres)	N/A	22.74-27.29	20.40-24.70	29.35-35.60	35.16-39.06
USACE Non-jurisdictional Wetlands (acres)	N/A	3.11	4.15	0.8	1.29
Total Floodplains Crossed (mi)	N/A	12.9	14.6	7.0	7.9
4(f) Property Uses	N/A	0	0	0	0
Total Farmland <sup>2</sup> (acres)	N/A	1,077.90	1,292.70	592.8	538.1
Prime & Unique <sup>3</sup> (acres)	N/A	977.4	1,235.40	623.9	645.2
Total Homes/Apartment Units Relocations	N/A	61	71	6	74
Business Relocations	N/A	6	6	0	7
Potential Archaeological Impacts (sites)	N/A	12	12	6	5
Environmental Justice Issues	N/A	NO	NO	NO	NO
Number of Streams Encroached	N/A	58	66	41	42
Number of Noise Impacted Receivers	41	51	51	39	19
Adversely Effected Historic Properties	0	9	9	4	7
Adversely Effected National Historic Landmarks	0	0	0	0	1
Exceed Ambient Air Quality Standards	NO	NO	NO	NO	NO
<b>ENGINEERING CONSIDERATIONS</b>					
Total length (miles)	N/A	31.8	35.2	31.5	29.7
New construction (miles)	N/A	31.8	35.2	13.2	14.7
Structure length (miles)	N/A	9.0	9.0	4.0	7.0
Estimated Total Cost (In 2003 Millions)	\$0	\$1,058	\$1,088	\$652	\$799
Constructability (High, Moderate, or Low)	N/A	L	L	H	M

The information included in this chart is based upon the most recent available data. As such, it is subject to change during the development of the FEIS.

1. VHT=Vehicle Hours of Travel. Compares the 2025 Build Network including I-69 SIU #3 in the SR 57 corridor to the No-Build Scenario. This information pertains to the Henderson-Evansville regional transportation network.
2. Farmland includes currently used agricultural land, including row crop production.
3. Prime & Unique farmland includes some woodlands based on soil types.

## **S.10 REGULATORY ACTIONS ASSOCIATED WITH THIS PROJECT**

Coordination with several state and federal resource agencies has been initiated. Inventories and coordination with consulting parties pursuant to Section 106 of the National Historic Preservation Act are ongoing for both historic and archaeological evaluations. Preliminary discussions regarding permitting under Section 404 of the Clean Water Act have been undertaken with the U.S. Army Corps of Engineers and consultation under Section 7 of the Endangered Species Act has been initiated with the U.S. Fish and Wildlife Service. Both the Indiana Department of Environmental Management (IDEM) and the Kentucky Department of Fish and Wildlife Resources (KDFWR) have been contacted for a 401 Water Quality Certification on wetlands and water quality.

The Indiana Department of Natural Resources (IDNR) and the Kentucky State Nature Preserve Commission (KSNPC) have provided information on significant, ecological, and protected lands in the vicinity of the corridors, as well as information related to the existence of state-listed threatened and endangered species within the project study area. IDNR and the Kentucky Division of Water (KYDOW) have provided information on water quality and publicly managed lands. Finally, the U.S. Environmental Protection Agency (USEPA) provided valuable input on the original ten corridors. Coordination with these agencies will continue throughout the documentation process in the study.

## **S.11 PREFERRED ALTERNATIVE**

Based on the information contained within this DEIS and information gathered to date, Alternative 2 is the preferred alternative. This initial identification of the preferred alternative is based on the project's purpose and need, potential impacts, construction costs, utilization of existing highways, and data provided by public input.

The comparison of eastern (Alternatives 1 and 1A) versus western (Alternatives 2 and 3) alternatives identified different types of impacts. The western alternatives generally perform poorer in meeting the project's purpose and need than the eastern alternatives. Moreover, the western alternatives do not utilize existing roadways and therefore require more new right-of-way. This new right-of-way will likely change the existing landscape and setting of many of the rural and historic areas on the west side of Evansville, in contrast to the eastern alternatives, which utilize existing I-164 and thus have fewer modifications to the existing landscape within the area north of the Ohio River. As a result, the western alternatives tend to have relatively more impacts to environmental resources. The western alternatives also travel through a large portion of floodplain through the oxbow area just north of the Ohio River. When comparing the miles of floodplain traversed, Alternatives 1, 1A, 2, and 3 travel through 12.9, 14.6, 7, and 7.9 miles of floodplain, respectively. Although the design phase will determine the exact miles of bridge structure, this study assumed a bridge would be required over floodplain, particularly the Ohio River's floodway. Finally, cost was considered when evaluating the western and eastern alternatives. It is estimated the western alternatives are expected to cost at least \$200 million more than the eastern alternatives. Alternatives 1 and 1A are considered non-preferred relative to Alternatives 2 and 3 because of their generally lower performance, higher right-of-way impacts, higher environmental impacts, and higher cost.

Alternatives 2 and 3 are more similar in performance and cost and share some similar environmental impacts. Both alternatives require approximately 700 acres of right of way, including approximately 600 acres of farmland. Both alternatives utilize portions of existing I-164, and both alternatives may impact a similar number of archaeological sites. However, Alternatives

2 and 3 differ in their impact to Angel Mounds State Historic Site. Angel Mounds is a significant archaeological resource that is designated as a National Landmark and is on the National Register of Historic Places. The nearest construction limits of Alternative 2 are over four miles southwest of Angel Mounds while Alternative 3 comes within 1,000 feet from Mound G within Angel Mounds. Given the proximity of Alternative 3 to Angel Mounds, consultation between the Indiana State Historic Preservation Officer, Angel Mounds staff, local historians, and archaeologists determined that an adverse effect on Angel Mounds will occur with the construction of Alternative 3. Alternative 2 was shown to have no adverse effect on Angel Mounds.

Other issues associated with Alternative 3 relative to Alternative 2 include its relocation impacts, its cost, and constructability. In addition to the impact on Angel Mounds, Alternative 3 is expected to have over 70 residential/apartment relocations and approximately seven business relocations while Alternative 2 is estimated to have approximately six residential/apartment relocations and no business relocations. Also, the cost for Alternative 3 is approximately \$140 million greater than for Alternative 2. This increased cost is a result of the greater length of Alternative 3 (including a longer structure traversing the Ohio River and its floodway) and its required relocation of a greater number of residential housing and businesses units. Alternative 3 would also require a complicated urban interchange for the proposed I-164/I-69/SR 662 interchange. Although Alternative 3 has fewer high quality wetland impacts than Alternative 2, it is non-preferred relative to Alternative 2 for its impacts to Angel Mounds (a National Historic Landmark), its relocation impacts, and its cost.

In summary, Alternatives 1, 1A, 2, and 3 each have their own unique impacts. However, Alternative 2 performs strongly in meeting the project purpose and need, requires fewer acres of right-of-way and farmland than the western alternatives, utilizes 18 miles of existing Interstate highway, requires the fewest residential and business relocations, has the fewest number of adverse historical impacts, and is the least costly alternative. Given this comprehensive evaluation of impacts, Alternative 2 is identified as the preferred alternative.