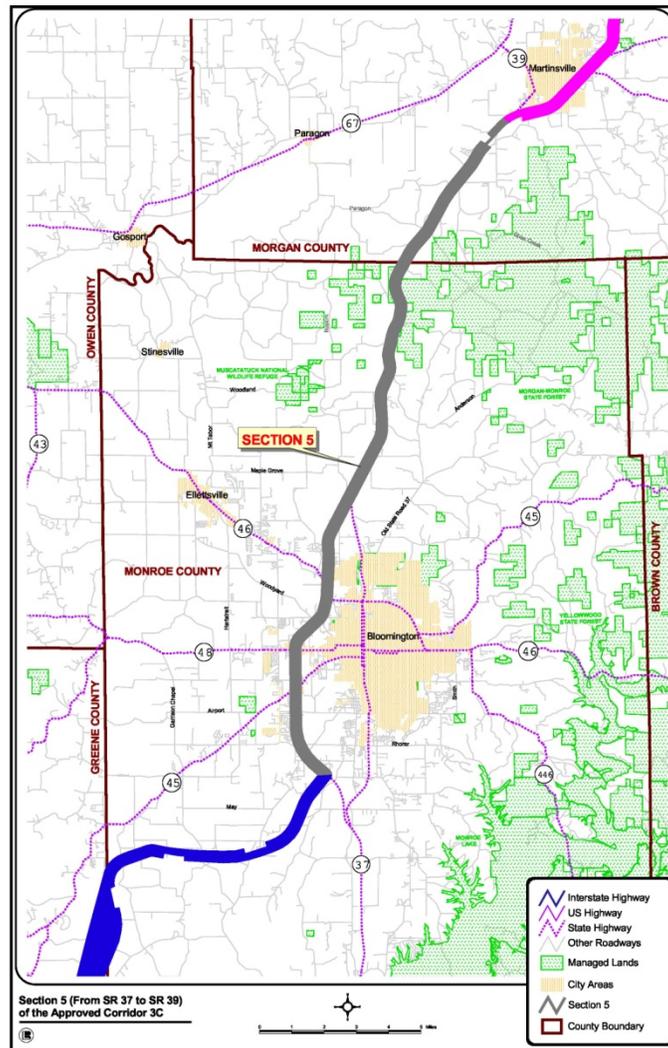


# I-69 EVANSVILLE TO INDIANAPOLIS

## Tier 2 Studies

*Revised Preliminary Alternatives Analysis and Screening*  
**Section 5, SR 37 South of Bloomington to SR 39**  
April 2012



*Prepared for*

Federal Highway Administration and  
Indiana Department of Transportation







## **EXECUTIVE SUMMARY**

The accompanying report describes the preliminary alternatives analysis and screening of alternatives for Section 5 of the Interstate 69 (I-69) Evansville to Indianapolis Tier 2 Studies. A previous version of this report was published in May 2007; this current report is an update of the previous version, and supersedes it.

As established in the I-69 Tier 1 Final Environmental Impact Statement (FEIS) and Record of Decision (ROD), Alternative 3C uses existing State Road 37 (SR 37) between Bloomington and Indianapolis. The mainline of Section 5 generally follows the SR 37 right-of-way from its southern terminus just south of Bloomington to its northern terminus just south of Martinsville.

**Summary of Purpose and Need:** The purpose of the project for Section 5 is to advance the overall goals of the I-69 Evansville-to-Indianapolis project in a manner consistent with the commitments in the Tier 1 Record of Decision (ROD), while also addressing local needs identified in the Tier 2 process.

**Alternative Development Overview:** The range of alternatives in Tier 2 is circumscribed by the decisions reached in Tier 1. In Tier 2, alternatives generally are confined to a 2,000-foot wide corridor.

**Development of Alternatives:** The corridor in Section 5 generally follows SR 37. The degree to which local purpose and need goals are satisfied is not affected by slight alignment variations. Alignments vary in two significant ways. First, they have different typical sections (width of shoulder, width and type of median, etc.). Second, they have differing access options (interchanges, grade separations, and local access roads). The screening of alternatives applies established highway design standards to avoid or minimize impacts. It also minimizes cost and determines whether alternatives satisfy the Section 5 Purpose and Need.

Preliminary Alternatives 1, 2, and 3 were presented at the July 20, 2005 Public Information Meeting. Traffic forecasts; preliminary engineering; potential resource impacts, and input from resource agencies, local officials, and the public were used to develop the May 2007 Preliminary Screening of Alternatives (Alternatives 4 and 5). Traffic forecasts, preliminary engineering and potential resource impacts were used to develop the “minimal impact alternatives” (Alternatives 6 and 7) first presented here. We are seeking agency, local official and public input at this time.

The need to serve non-motorized travelers, such as pedestrians and bicyclists, was considered at each cross road grade separation (and interchange). Multiple interchange types will be considered based on surrounding land uses, potential impacts, INDOT design guidance and traffic operations.



**Description of Alternatives Carried Forward:** During the 2007 Alternative Screening, the elements that remained under consideration after the initial screening process were grouped into two alternatives (Alternatives 4 and 5), which are being carried forward for detailed study. The 2007 alternatives included a mainline with grassy medians, setback separation from parallel local access roads (where needed), and generally followed existing SR 37. They included slight shifts from SR 37 east at Fullerton Pike, west between 2<sup>nd</sup> Street and Tapp Road, east north of Arlington Road, and west between Sample Road and Chambers Pike.

Since 2007, additional design features which lessen impacts have been evaluated. These would further avoid developed areas in Bloomington and natural resources throughout the corridor. They optimize use of existing pavement, grade, structures and right-of-way. INDOT and FHWA have agreed that the development of alternatives may include median barriers, retaining walls, guardrails, and (in specific locations) engineering design exceptions. Formal approval of design exceptions would occur after the Tier 2 studies are completed and final design is underway. These elements were applied to two “minimal impact alternatives” (Alternatives 6 and 7). Their interchanges and grade separations are similar to those in Alternatives 4 and 5.

The minimal impact alternatives have mainlines with either a median barrier (urban) or a grassy median (rural); either a barrier or setback separation from parallel local access roads; and generally are confined to the existing SR 37 right of way.

The minimal impact design features in Alternatives 6 and 7 significantly reduce resource impacts (by a quarter to one-half) as compared to Alternatives 4 and 5. See Table ES1, which contains the same information as Table 9 of the Screening of Alternatives report.

Alternatives 4 and 5 include grassy medians, setbacks for local access roads, non-motorized traffic access, context sensitive solutions (such as plantings or “gateway” structures) and are situated significantly outside the SR 37 right-of-way in several locations. These features have been cited as desirable features for the project. These features lead to increases in right-of-way required, relocations, and resource impacts. These tradeoffs will be evaluated in the ongoing environmental studies.

Interchange locations under consideration in Alternatives 4, 5, 6, and/or 7 include: Fullerton Pike, Tapp Road, 2nd Street/SR 45, 3rd Street/SR 48, SR45/46, Kinser Pike, Walnut Street, Sample Road, Paragon Road, and Liberty Church Road.

Potential grade separations (overpass or underpass) under consideration in Alternatives 4, 5, 6, and/or 7 include: Rockport Road, Tapp Road, railroads, Vernal Pike/17th Street, Arlington Road, Acuff Road, Kinser Pike, Walnut Street, Chambers Pike, Bryant Creek Road, Paragon Road, and Liberty Church Road.



<b>Evaluation Factors</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Alternative 7</b>
<b>Length (miles)</b>				
Interstate	21	21	21	21
Non-interstate (access /local service roads)	26	26	20	21
<b>Estimated Construction Cost (millions)<sup>1</sup></b>	\$318	\$316	\$250	\$267
<b>Required Right-of-Way</b>				
Use of existing INDOT ROW (acres)	770	770	640	660
Approximate acquisition ROW (acres)	660	640	200	210
Total required ROW (acres) <sup>2</sup>	1,430	1,410	840	870
<b>Relocations (based on acquisition ROW)</b>				
Residences - Multi Unit	14	14	2	4
Residences – Single	118	119	40	60
Commercial	43	45	17	12
Churches	4	4	2	2
<b>Floodplain Encroachment (100 year) (acres)</b>	95	115	90	60
<b>Wetlands (acres)</b>	18	24	16	5
<b>Jurisdictional Streams (linear ft)</b>				
Perennial	2,670	3,240	2,720	2,470
Intermittent	9,300	9,290	5,150	6,790
Ephemeral	68,990	64,870	35,470	36,360
<b>Access: Road Crossings/Closures<sup>3</sup></b>	14 / 34	14 / 34	12 / 36	12 / 36
<b>Farmland Impacts (acres)</b>				
Total for row crop, pasture, orchard, grove, specialty crops, agricultural operations	145	155	50	60
<b>Federal Threatened/ Endangered Species<sup>4</sup></b>	1	1	1	1
<b>Historic Resources/Section 106</b>				
(NRHP listed and Eligible sites) Architectural	1 - 2	1 - 2	1 - 2	0 - 1
Archaeological <sup>5</sup>	(to be determined for Preferred Alternative only)			
<b>Section 4(f) Resources</b>	1 - 2	2 - 3	1 - 2	0 - 1
<b>Hazardous Materials (Possible Sites)</b>	14	14	8	9
<b>Mineral Resources (Limestone) (acres)</b>	7	7	1	0
<b>Forest Impacts</b>				
Forested Areas - Total Land Cover (acres)	345	310	105	120
<b>Land Within Morgan- Monroe State Forest</b>				
includes both forest and upland habitat (acres)	30	30	15	20
<b>Karst Impacts</b>				
Springs	16	17	5	7
Sinkholes (acres)	90	85	50	45
Sinking Streams (acres)	240	240	155	160
<b>Wellhead Protection Areas (sites)</b>	1	1	1	1

<sup>1</sup> Cost estimates (in 2012 dollars) are preliminary and do not include costs for right-of-way, utility relocations, or impact mitigation

<sup>2</sup> Impacts calculated based on the total right-of-way amount, not necessarily the amount to be acquired.

<sup>3</sup> Includes driveways accessing existing SR 37

<sup>4</sup> One Indiana bat (*Myotis sodalis*) maternity colony was identified in Section 5, west of SR 37 near the West Fork of the White River and Bryant Creek. Both alternatives pass through the maternity colony foraging area, but will not impact known roost trees.

<sup>5</sup> No listed sites; eligible sites to be determined for Preferred Alternative only.





# **I-69 CORRIDOR, EVANSVILLE TO INDIANAPOLIS**

## **Section 5 Revised Preliminary Alternatives Analysis and Screening**

### **REVISED PRELIMINARY ALTERNATIVES ANALYSIS AND SCREENING**

#### **For Tier 2, Section 5 (Bloomington to Martinsville)**

#### **of the I-69 Evansville to Indianapolis Project**

**April 2012**

This report describes the preliminary alternatives analysis and screening of alternatives for Section 5 of the I-69 Evansville to Indianapolis Tier 2 Studies. It is provided as part of the second formal agency coordination milestone, as provided in the FHWA-Indiana Division's *Streamlined Environmental Impact Statement Procedures* (September 2007).

This report includes the following sections:

- Section 1.0 is a summary of the Purpose and Need for the I-69 project;
- Section 2.0 is an overview of key factors in the development of Tier 2 alternatives;
- Section 3.0 describes the scoping and development of the Tier 2 alternatives building on the Tier 1 alternatives. The tiered Environmental Impact Statement (EIS) process differs from a typical non-tiered NEPA study; and
- Section 4.0 describes the alternatives analysis and the alternatives carried forward for detailed study.

As established in the I-69 Tier 1 Final Environmental Impact Statement (FEIS) and Record of Decision (ROD), Alternative 3-C utilizes existing SR 37 between Bloomington and Indianapolis. Therefore, the mainline of Section 5 generally follows the SR 37 right-of-way from its southern terminus just south of Bloomington to its northern terminus just south of Martinsville. Unlike Sections 1-4 of the I-69 corridor, "alternatives" developed in the Section 5 EIS are primarily based on different combinations of interchange points, access options and local access roads.

A previous version of this report was published in May 2007. This current report is an update of the previous version, and supersedes it.

### **1.0 Summary of Purpose and Need**

The Purpose and Need and Preliminary Alternatives package for Section 5 was submitted to resource agencies on November 11, 2005. Since that time, the 2010 Census Data have been published, updates to the Indiana Statewide Transportation Forecast Model have been undertaken, and a decision has been made to extend the Design Year of Section 5 to 2035. The updated document that incorporates these changes is published as an accompanying document to this report.

The 2007 version of this report contained a summary of the draft Purpose and Need Statement for Section 5 and exhibits showing the preliminary alternatives developed for the section. The



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statement of Purpose and Need and preliminary alternatives were reviewed by resource agencies during a web cast meeting with the Section 5 project team December 14, 2005. The meeting is summarized in Section 3.4.3, *Resource Agency Coordination*. Another webcast meeting was conducted with resource agencies on July 7, 2007 to discuss the Preliminary Alternatives Analysis and Screening report published in May, 2007. A similar meeting will be conducted later in 2012 with resource agencies to review the updated Purpose and Need Statement and this Preliminary Alternatives Analysis and Screening.

The purpose of the project for Section 5 is to advance the overall goals of the I-69 Evansville-to-Indianapolis project in a manner consistent with the commitments in the Tier 1 Record of Decision (ROD), while also addressing local needs identified in the Tier 2 process. The local needs identified in Tier 2 for Section 5 include:

- Complete Section 5 of I-69 Between Victor Pike South of Bloomington and SR 39 in Martinsville
- Reduce Existing and Forecasted Traffic Congestion
- Improve Traffic Safety
- Support Local Economic Development Initiatives

The goals and performance measures associated with the Purpose and Need for Section 5 are summarized in Table 1. Tier 1 core goals are shown in *bold italics*.

<b>Tier 1</b>	<b>Tier 2 Section 5</b>	
	<b>Section 5 Goals</b>	<b>Section 5 Performance Measures</b>
<p><b><i>GOAL 1—Improve the transportation linkage between Evansville and Indianapolis</i></b></p> <p><b><i>GOAL 8—Facilitate interstate and international movement of freight</i></b></p> <p><b><i>GOAL 9— Connect I-69 to major intermodal facilities in Southwest Indiana</i></b></p>	<p><b>GOAL 1—Complete Section 5 of I-69 between Victor Pike south of Bloomington and SR 39 in Martinsville</b></p>	<p>Development of a freeway which addresses current design standards.</p>
<p><b>GOAL 3 —Reduce existing and forecasted traffic congestion on the highway network in Southwest Indiana</b></p>	<p><b>GOAL 2—Reduce existing and forecasted traffic congestion on the highway network in the Section 5 Study Area</b></p>	<p>Reduction of traffic congestion in the Section 5 Study Area. The level of service, as well as other measures of congestion relief, will be calculated and compared for each alternative.</p>



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<p><b>GOAL 4</b> —Improve safety levels in Southwest Indiana</p>	<p><b>GOAL 3</b>— Reduce crashes on local and state roads in the Section 5 Study Area (Morgan and Monroe Counties)</p>	<p>Reduction of crashes in the Section 5 Study Area. The reduction in the number of fatal, injury and property-damage accidents will be assessed for each alternative.</p>
<p><b>Goal 6</b> — Support sustainable, long-term economic growth (diversity of employer types)</p> <p><b>GOAL 7</b> — Support economic development to benefit a wide spectrum of area residents</p>	<p><b>GOAL 4</b>—Support local economic development initiatives</p>	<p>Alternatives will be evaluated and compared for the overall level of accessibility they provide to local businesses. Travel times and distances from three representative local origin points to specific local commercial, retail and employment areas will be compared for each alternative.</p>

### 2.0 Alternative Development Overview

The range of alternatives in the second tier of a tiered NEPA study is circumscribed by the decisions reached in Tier 1. In a typical NEPA study, these constraints do not exist. In non-tiered studies the project termini, along with a general routing (which may include alternative choices for communities to be served) are used in the scoping process to specify a range of alternatives. Even in a relatively small non-tiered NEPA study, the locations of alternatives may differ by many miles. Section 2.1 describes how the range of alternatives is affected by the tiered nature of this study.

Because the Tier 1 decision resulted in the selection of a corridor, a different approach to traffic forecasting is needed to develop the Tier 2 alternatives. In Tier 2, the range of alternatives is constrained by the Tier 1 decision. Accordingly, more detailed modeling tools are needed to evaluate alternatives. The traffic forecasts for this Tier 2 study used more detailed corridor-level models. These models have been further updated since the Tier 2 EISs for Sections 1 through 4. The following discussion compares the Tier 1 traffic forecasts with those provided by the corridor model which was recently updated for use in the Section 5 project.

### 2.1 Scoping of Alternatives in a Tiered Study

The Tier 1 ROD approved a corridor for I-69 between I-64 north of Evansville and I-465 south of Indianapolis. This corridor generally is 2,000 feet in width, and was divided into six sections for Tier 2 studies. It narrows in some places to as little as 420 feet near the Patoka National Wildlife Refuge. In other locations, it widens to as much as 6,400 feet in northern Daviess County. The Tier 2 FEISs and Records of Decision (RODs) have determined an exact alignment for I-69 within Sections 1 through 4. Tier 2 NEPA studies are ongoing in this section (Section 5) as well as Section 6.

Section 5 begins at just north of the intersection of SR 37 and Victor Pike, south of Bloomington, and continues northward to just south of the existing interchange of SR 37 and SR 39 in Martinsville. This section of the I-69 project is approximately 23 miles in length and extends through Monroe and Morgan Counties, Indiana, along the alignment of existing SR 37, a multi-



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lane divided principal arterial highway with partial access control. The majority of the corridor is in Monroe County.

The selection of a corridor in Tier 1 limits the range of Tier 2 alternatives. The Tier 1 decision determined which communities will be served, and the general route for the highway.

The Tier 1 ROD specified that the following would be key issues for distinguishing alternatives in Tier 2 studies. See Section 2.3.4, *Range of Alternatives*, in the ROD for additional details.

- Interchange location and design
- Access to abutting properties
- Location of grade separations and intersecting roads

Because the alignments themselves are constrained by a narrow corridor, variations in alignment are not as significant in distinguishing alternatives as are the three issues cited above. In general, variations in alignment will be considerations in minimizing costs and impacts.

### 2.2 Traffic Modeling

As discussed above, the possible alignments in this Tier 2 EIS are much more similar to each other than is typical in a non-tiered highway NEPA study. Accordingly, the tools used to compare the performance of these alternatives also must be more focused. The Indiana Statewide Travel Demand Model (ISTDM), which was used in the Tier 1 studies (Version 3) is a very robust tool for comparing the alternatives in a typical NEPA study. However, with the alignments confined to a corridor that generally is less than one-half mile in width, tools to evaluate alternatives on a more minute scale were needed. Figure 1 shows the highway network for ISTDM Version 3, and Figure 2 shows the Traffic Analysis Zones<sup>1</sup> (TAZs) used in ISTDM Version 3.

For Section 5 traffic forecasts a more detailed model was created for the region proximate to the I-69 corridor through Sections 5 and 6. This “corridor model” included the counties in which the selected I-69 corridor is located, as well as all or part of other nearby counties. Figure 3 shows the network associated with the Section 5 corridor model.

The corridor model is designed to be suitable for considering alternative interchange locations.<sup>2</sup> In the vicinity of the I-69 corridor, the corridor model includes all roads down to the functional

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<sup>1</sup> A “traffic analysis zone” (TAZ) is a geographic area which conforms to US Census geography, is consistent with the highway network, and is relatively homogeneous with respect to population demographics and land use. The transportation model regards trips on the highway network as originating and terminating within these TAZs.

<sup>2</sup> As noted in Section 2.1, grade separations, treatment of intersecting roads, and locations of interchanges are major issues that will define Tier 2 alternatives. The scale of the corridor model is such that it can be used to provide a meaningful comparison of such alternative treatments.



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classification<sup>3</sup> of minor collector (in rural areas)<sup>4</sup> and collector (in urban areas)<sup>5</sup>. In addition, those local roads that possibly could be affected by I-69 (e.g., be considered for closure or grade separations) are included.

The corridor model for Section 5 is validated to a 2010 base year. The base year model incorporates demographic data from the 2010 Census and 2005-2009 American Community Survey as well as employment estimates for 2010 developed from a combination of U.S. Bureau of Economic Analysis and proprietary data. Future year socioeconomic data was developed in consultation with the expert land use panel for Section 5. Long distance truck travel in the corridor model is taken from the latest version (Version 6) of the ISTDM which was recently updated using a very large sample of GPS truck positions from 2010 developed in conjunction with the American Transportation Research Institute. Passenger travel behavior (trip rates, lengths, etc.) will be updated using the 2009 National Household Travel Survey, but due to various delays in the processing of this data, this was not able to be incorporated in time for the production of the forecasts in this screening report. The corridor model was validated against over six hundred recent traffic counts in Monroe and Morgan counties.

The corridor model for Section 5 estimates daily trips within the corridor internally and takes estimates of longer-distance trips from the ISTDM (versions 5 and 6). TransCAD's<sup>6</sup> built-in procedure for extracting subarea origin-destination matrices is used to create auto and truck trip tables for the corridor area from the ISTDM's statewide trip tables and assignment. These trip tables are then disaggregated from the ISTDM's zone system to the corridor model's zone system based on each corridor model zone's share of its parent ISTDM zone's population and employment. Trips entirely within the corridor model area are developed internally within the corridor model using a hybrid tour-based methodology. This hybrid tour-based methodology accounts for trip-chaining behavior, as well a person stops to pick something up on the way

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<sup>3</sup> "Functional classification is the process by which streets and highways are grouped into classes, of systems, according to the character of the service they are intended to provide. Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads." Quoted from *Highway Functional Classification: Concepts, Criteria and Procedures*. FHWA, Revised March, 1989, p. II-1.

<sup>4</sup> In rural areas, collectors are defined as routes which "... generally serve travel of primarily intracounty rather than statewide importance and constitute those routes on which (regardless of traffic volume) predominant travel distances are shorter than on arterial routes. Consequently, more moderate speeds may be typical." Rural minor collectors are described as routes which should "... (1) Be spaced at intervals, consistent with population density, to collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road; (2) provide service to the remaining smaller communities (not served by major collectors); and (3) link the locally important traffic generators with their rural hinterlands." (*Ibid*, p. II-10).

<sup>5</sup> In urban areas, collectors are defined as routes which provide, "... both land access service and traffic circulation within residential neighborhoods, commercial and industrial areas. It (the collector street system) differs from the arterial system in that facilities on the collector system may penetrate residential neighborhoods, distributing trips from the arterials through the area to the ultimate destination." (*Ibid*, p. II-13). In urban areas, there is no distinction between major and minor collectors.

<sup>6</sup> TransCAD ® is the modeling platform produced by Caliper Corp. that is used by INDOT for the ISTDM.



home from work or a person groups several errands together into a single excursion. This ability to reflect trip chaining and consistency with tours (the fact that all travel begins and ends at home) is particularly important for accurately representing non-work travel and the resulting traffic in commercial/retail corridors such as SR 37/I-69 through Bloomington.

The traffic forecasts used in the engineering analysis of alternatives are provided by the corridor model. In addition, the performance measures which will be used in the alternatives analysis will be calculated using post-processors<sup>7</sup> that analyze the traffic assignments provided by the corridor model.

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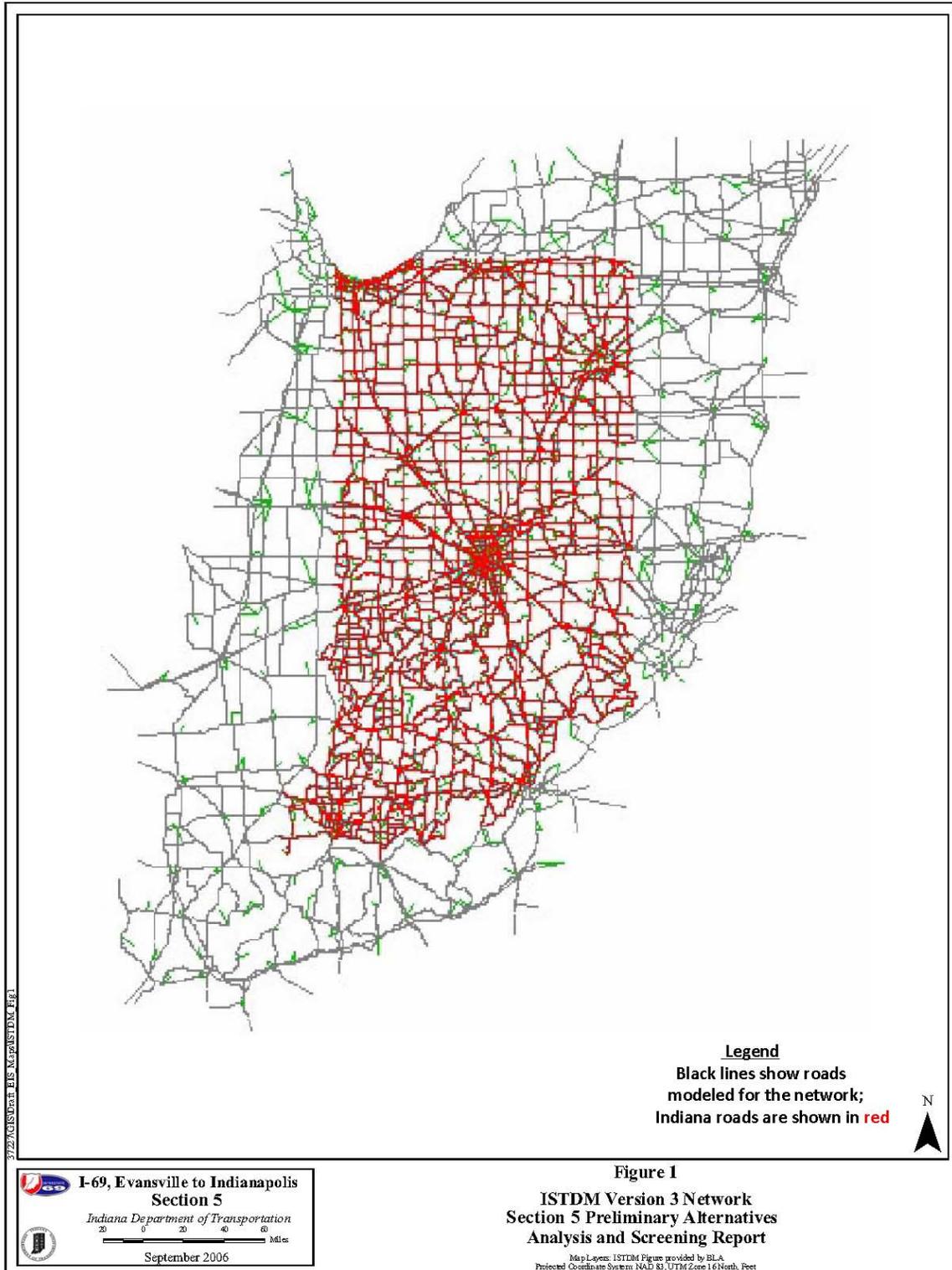
<sup>7</sup> A “post-processor” is a computer program that analyzes a traffic assignment to compute measures of transportation performance. For example, an accessibility postprocessor may compare the travel times between any number of location pairs in the “no-build” and “build” networks in order to assess the improvement in accessibility provided by a particular alternative.



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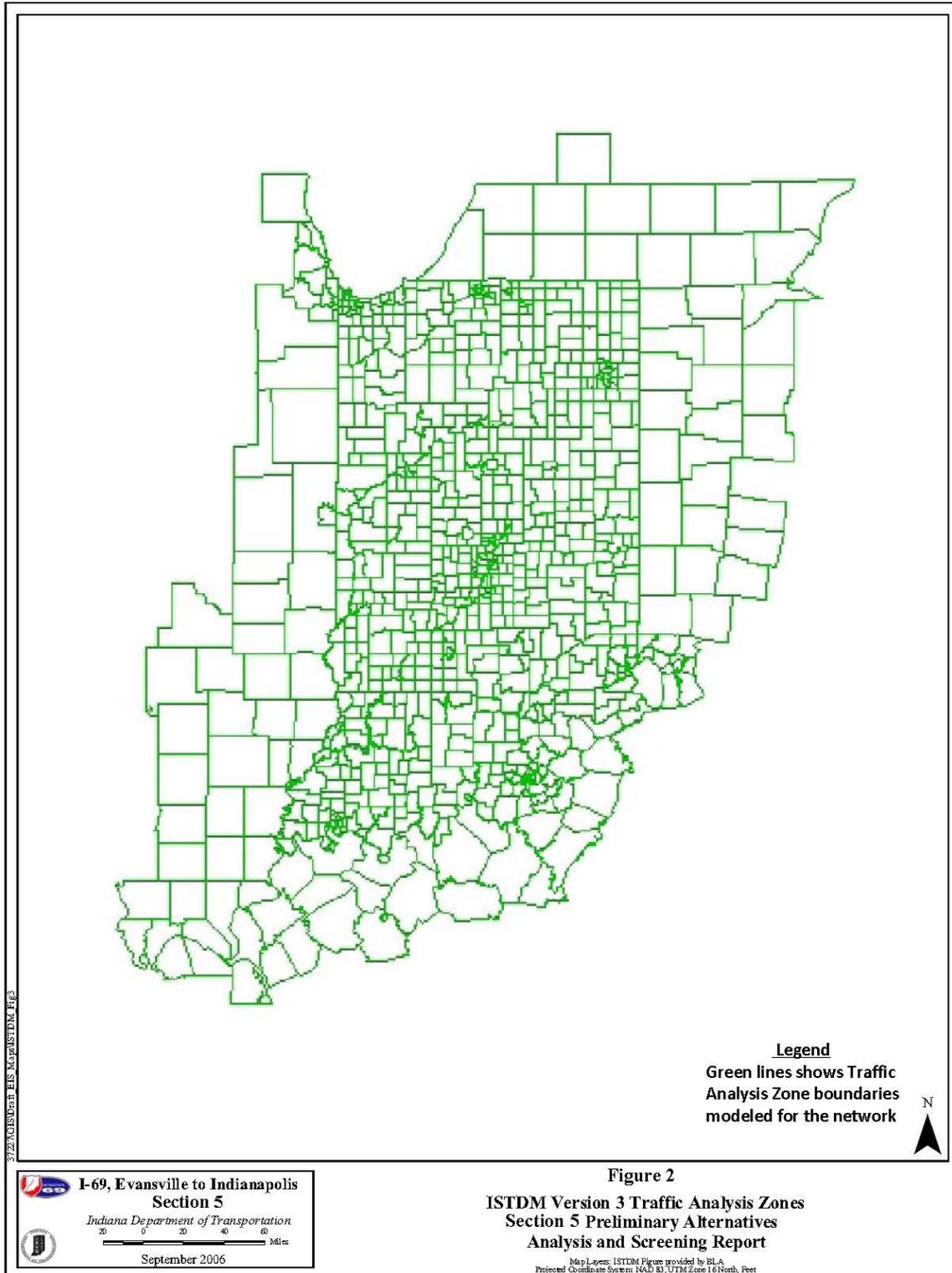
Figure 1: ISTDM Version 3 Network



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**Figure 2: ISTDM Version 3 Traffic Analysis Zones**

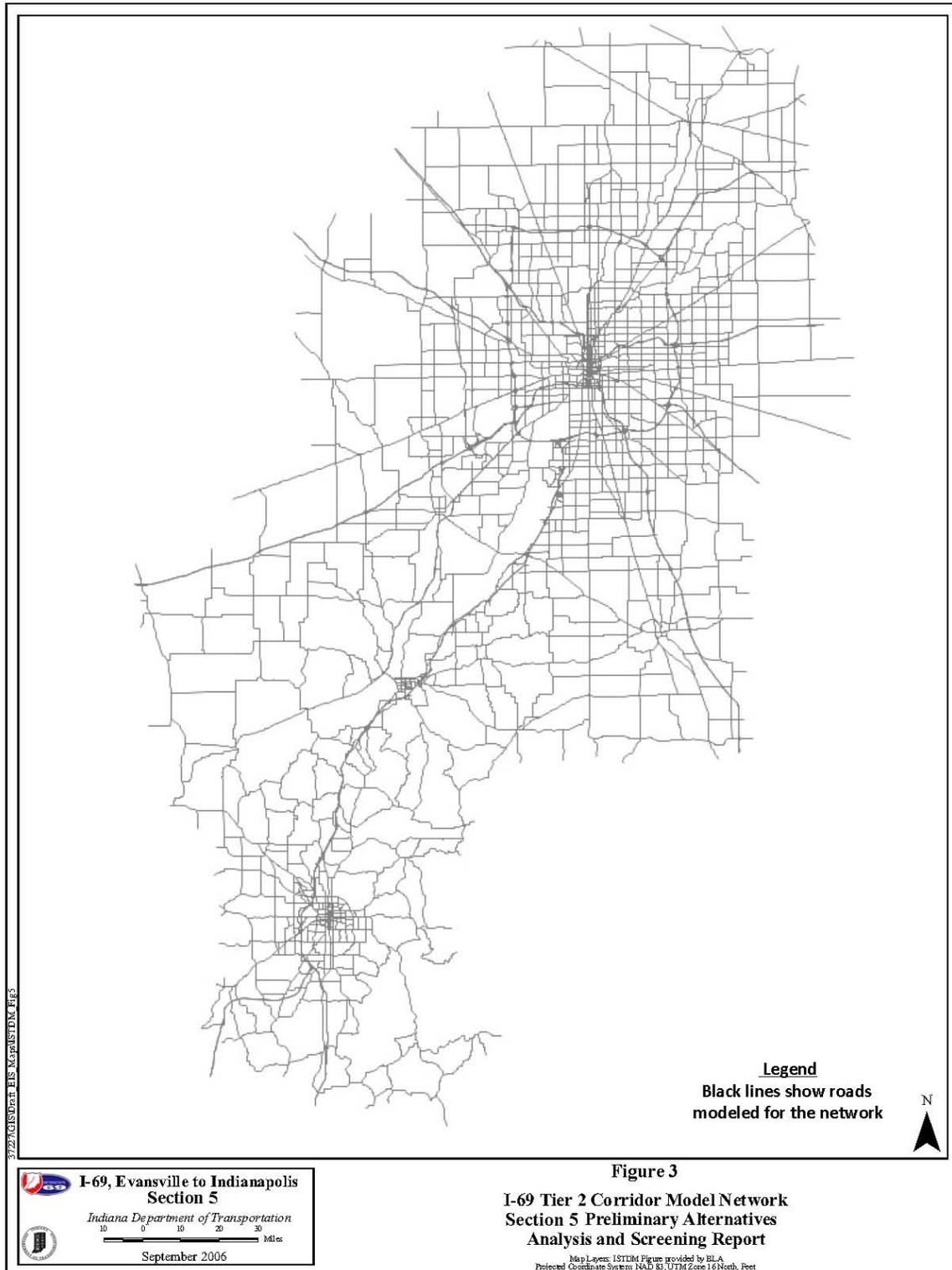




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Figure 3: I-69 Tier 2 Section 5 Corridor Model Network





### 3.0 Development of Alternatives

This section describes the scoping process and the development of alternative roadway alignments within the approved corridor for Section 5. This corridor, including the termini for Section 5, was approved in the Tier 1 ROD on March 24, 2004.

Because the alignment in Section 5 is generally required to follow the SR 37 alignment, the degree to which local purpose and need goals are satisfied will not be affected to any significant degree by slight alignment variations from SR 37. The most variable features of the alignments are the various access options, e.g., interchanges and local access roads. These access options will be analyzed as part of the alignment alternatives carried forward for detailed study and their ability to affect performance on local purpose and need goals will be assessed and shown in the DEIS. The screening of alternatives is based upon an analysis of impacts and costs, as well as satisfying the Section 5 Purpose and Need.

As part of the alternative development, generalized typical sections, potential interchange types and initial alternatives were explored. These are shown on Figure 4 - Typical Sections; Figure 5 - Section 5 Example Interchange Types; and Figure 6 - Alternatives 1, 2, and 3 Comparison Maps (a, b, c and d).

Larger scale maps are included at the end of Chapter 4.0 on the Alternatives 4 and 5 (Figure 7) and Alternatives 6 and 7 (Figure 8) Summary Maps.

### 3.1 Methodology

The development of the Tier 2 alternatives requires the consideration of multiple criteria. These include meeting highway design standards, avoiding and/or minimizing environmental impacts, minimizing cost, and satisfying project purposes. These diverse and often conflicting criteria typically are not quantifiable in similar terms. Developing alternatives requires input from affected parties and resource agencies, environmental analyses, and highway engineering, all conducted in an open partnership environment to develop a range of solutions. The development of alternatives may be defined as having a five-step process:

1. The first step is to define the basic elements of the project including: the beginning and ending points of the project,<sup>8</sup> the geometric design criteria, the typical section(s) of the roadway, the right-of-way width, and access control limits. These items are essential for defining the area that would be impacted by any alternative.
2. The second step is to define and locate all the environmental resources that might affect the roadway location. These include but are not limited to: wetlands, historic properties,

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<sup>8</sup> The termini for each of the Tier 2 sections were established in Tier 1.



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### Section 5 Revised Preliminary Alternatives Analysis and Screening

archaeological resources, publicly owned parks and recreation areas, prime farmland, potential habitat for threatened or endangered species, floodplains, surface water, karst and groundwater, neighborhoods with concentrations of minority or low-income residents, employment centers, significant land uses, cemeteries and major utility rights-of-way. The study team was familiar with most of the important environmental constraints prior to the initial scoping meeting with state and federal agencies held on August 12, 2004 (See Section 3.4.3).

3. The third step is to develop and test alternative alignments. Initial horizontal alignments were developed that follow the existing SR 37 alignment. These initial alignments were refined using transportation design (Bentley InRoads)<sup>9</sup> software to further specify the attributes of the alignment and plot the roadway on aerial mapping. The basic objectives used in Section 5 were to avoid environmentally sensitive areas wherever possible, provide adequate access to properties, ensure continuity for the existing road system, and minimize residential and commercial relocations.
4. The fourth step is to determine points of access to the highway and the types of interchanges that will be required. For purposes of comparing alternatives in Tier 1, it generally was assumed that access would be limited to interchanges with other state jurisdictional highways; however, the Tier 1 studies acknowledged that interchanges with important county jurisdictional highways also may be warranted.
5. The fifth step is to present the preliminary alternatives to the resource agencies and the general public. These alternatives are then carried forward, modified, or eliminated in response to the input received.

### 3.2 Section 5 Termini and Basic Elements

Beginning and Ending Points: Section 5 begins at just north of the intersection of SR 37 and Victor Pike, south of Bloomington, and continues northward to just south of the existing interchange of SR 37 and SR 39 in Martinsville. This section of the I-69 project is approximately 23 miles in length and extends through Monroe and Morgan Counties, Indiana, along the alignment of existing SR 37, a multi-lane divided principal arterial highway with partial access control. The majority of the corridor is in Monroe County.

Geometric Design Criteria: Preliminary alternatives are to be consistent with both the Indiana Department of Transportation (INDOT) Design Manual and the American Association of Highway and Transportation Officials' (AASHTO) A Policy on Geometric Design of Highways and Streets. Specifically, the mainline highway utilizes "Geometric Design Criteria for

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<sup>9</sup> Bentley InRoads is civil engineering design software use for roads, drainage and bridge design. It is provided by Bentley Systems, Inc.



## **Section 5 Revised Preliminary Alternatives Analysis and Screening**

Freeways, New Construction or Complete Reconstruction." Design criteria for the various local access roads and local service roads are to be based on the individual road's functional classification.

Typical Section(s) of the Roadway: Tier 1 identified two different Typical Cross Sections to be used for impact and cost estimates in Section 5. The more rural portions of the project used a 6-Lane Divided Section with a grass median and local access roads separated from the mainline by grassed slopes and open ditches. In highly urbanized areas, the project used an elevated 8-Lane Section and paved median with opposing traffic separated by a concrete median barrier. New local service roads were to be constructed at existing grade, separated from the mainline by a mechanically stabilized earth wall and a paved buffer.

During earlier development of the Tier 2 preliminary alternatives, the rural areas were designed with the Tier 1 typical cross section including a 6-Lane Divided Section and a grass median. The urban section was modified to use or reconnect to the existing local road network rather than constructing the new local service roads. In addition, at the onset of the Tier 2 studies, it was decided to maintain the horizontal alignment within the existing SR 37 corridor and generally maintain the existing SR 37 elevations. With a slight modification to the Tier 1 rural section (Tier 1 FEIS, Appendix E), this essentially allows the use of an 8-Lane Divided Section and a grass median through the urbanized area while minimizing potential impacts to karst features, visual impacts and project cost. These assumptions are subject to modification for alternatives carried forward for detailed study. Such modifications would be considered in order to minimize impacts and/or cost.

Following further traffic modeling and level of service (LOS) evaluations conducted during the Tier 2 studies, it was determined that traffic levels permitted a reduction in the number of lanes for both the rural and urban areas from what was assumed in Tier 1. Illustrations of typical urban and rural sections with lane widths, shoulders, medians, clear zones, and features to be used where needed (such as truck climbing and auxiliary lanes, landscape berms, and local access roads) are shown on Figure 4. These typical sections were used for the two alternatives (Alternatives 4 and 5) identified in the May 2007 Preliminary Screening of Alternatives.

Since the May 2007 report was published, other typical cross-sections have been developed to further minimize impacts outside of existing right-of-way. These cross-sections make much greater use of the footprint (and where appropriate, the existing pavement) of SR 37. These cross-sections have been incorporated in Figure 4 as well. These cross-sections have been incorporated into Alternatives 6 and 7, which are regarded as "minimal impact alternatives," and are described later in this report.

These typical sections provide two 12-foot-wide lanes in each direction separated by either an 84 foot-wide depressed median (initial cross-section) or 60-foot-wide depressed median (low-impact cross-section) within the rural sections of I-69 north of Bloomington (north of Chambers Pike). The median includes two seven-foot wide usable inside shoulders, six feet of which are



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paved. Additional 12-foot-wide lanes are provided in select locations for warranted truck climbing lanes and ramp acceleration and deceleration lanes, and a 12-foot-wide outer shoulder.

In the urban area of Bloomington, a third 12-foot-wide lane is provided in each direction. Median treatment options include a depressed median 60 feet in width (initial cross-section) or paved shoulders separated by a concrete barrier wall (low-impact cross-section). Inside shoulder width varies depending upon the specific alternative, ranging from 12-13 feet. Figure 4 shows the typical sections for the I-69 mainline. Additional 12-foot-wide lanes are provided in locations warranting auxiliary lanes and ramp acceleration and deceleration lanes, and an 8 to 12-foot-wide paved outside shoulder.

The outside clear zone ranges from 30 to 35-feet-wide and extends beyond the travel lanes and includes 8 to 12-foot-wide paved outside shoulders (in both rural and urban areas of the project).

Local access roads are proposed for either side of the mainline at various points throughout the Section 5 corridor. These local access roads provide access to otherwise landlocked properties. Either a 100' wide median (initial cross-section) or barrier wall (low-impact cross-section) will be used between the interstate mainline and access roads. A median would provide for the necessary roadway clear zone and space for a landscaping berm with the initial cross-section. Barrier walls would allow local traffic to travel adjacent to the mainline with the low-impact cross-section. The typical cross sections of these access roads include two travel lanes (width varies between 11-12 feet). Paved shoulders, varying by specific alternative, will range from 5-8 feet. The minimum clear zone on each side without a barrier wall is 20 feet.

Typical sections also will be defined for other roads at freeway interchanges and grade separations. The typical sections for these roadways will vary based on traffic demands and roadway functional class from two to four lanes and with and without curb and gutter.

Right-of-Way: In addition to the footprint required for the roadway, median, and shoulders, sufficient land is needed to provide for right-of-way maintenance (maneuverability of equipment for mowing, shrub clearing, etc.) and right-of-way fencing. Safety is also a consideration. Sufficient distance must be provided from freeway travel lanes so that, should a tree or structure outside the right-of-way fall into the right-of-way toward the freeway, it would not endanger motorists on the freeway. As a result, the required right-of-way for I-69 in Section 5 will range from 220 feet to 790 feet wide, depending on the alignment and terrain features. The very widest sections will occur only in limited locations where the alignment is bifurcated.

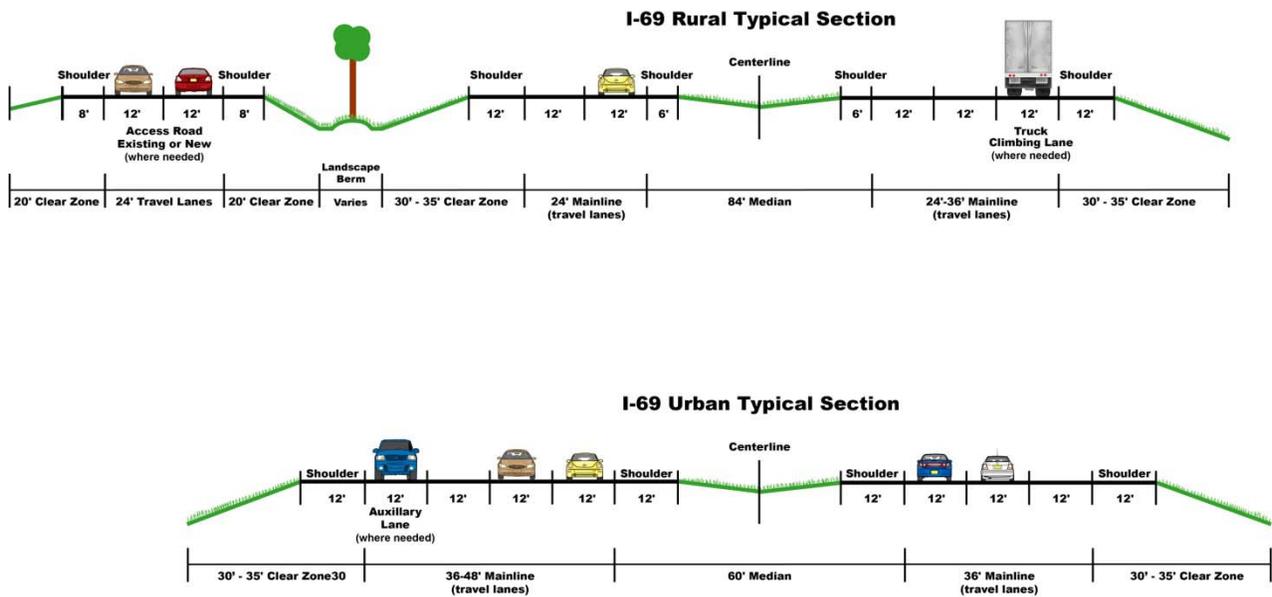
Access Control Limits: By virtue of the design criteria, "Geometric Design Criteria for Freeways, New Construction or Complete Reconstruction," full access control is required along the mainline highway and throughout the interchange ramps. Full access control will extend from the ramp terminals along the crossing road to ensure that the intersection has approximately the same operational characteristics as the mainline highway. This distance will vary depending upon the urban/rural nature of the area and will be evaluated on a case-by-case basis. In all cases, the access control criteria will be consistent with those found in the INDOT Design Manual.



**Figure 4: Tier 2 Typical Sections – Alternatives 4 and 5**



**I-69 Tier 2 Section 5 Conceptual Typical Sections for Alternatives 4 and 5**



Notes: These figures are not to scale and are for display purposes only.  
 These figures do not represent right-of-way requirements.



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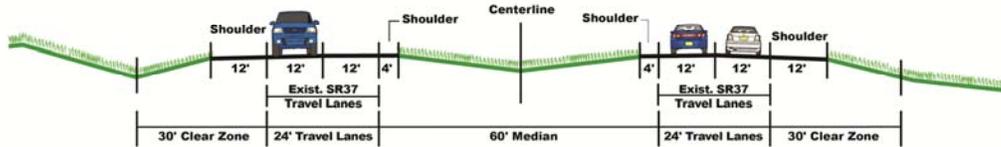
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Figure 4: Tier 2 Typical Sections – Alternatives 6 and 7

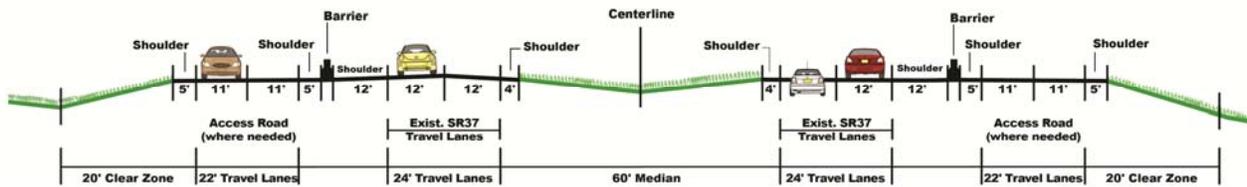


### I-69 Tier 2 Section 5 Conceptual Typical Sections for Alternatives 6 and 7

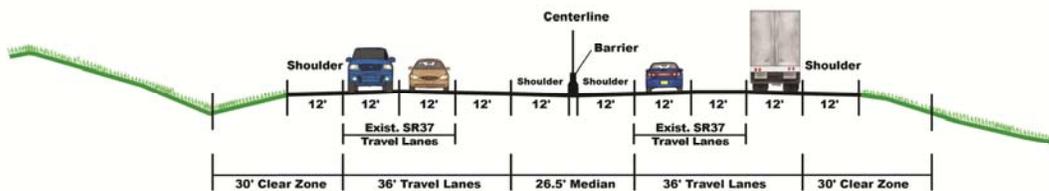
I-69 Rural Typical Section



I-69 Rural Typical Section with Adjacent Access Road



I-69 Urban Typical Section



Notes: These figures are not to scale and are for display purposes only.  
These figures do not represent right-of-way requirements.



### **3.3 Tier 2 Section 5 Access Locations**

Refining the Tier 1 highway access (including interchanges, grade-separations, local access roads, road closures, etc.) is a component of the Tier 2 studies. The following issues were considered in developing alternative access plans:

- (1) Consideration of access issues identified during Tier 1;
- (2) Criteria for determining type and location of access points during Tier 2; and
- (3) FHWA/INDOT coordination during Tier 2.

The Tier 1 EIS identified potential interchange locations and grade separations for each of the build alternatives considered in that study. These potential locations were identified in order to provide a basis for developing traffic forecasts and calculating environmental impacts. The Tier 1 ROD made clear that the actual number, type, and location of access points would not be determined until Tier 2. The Tier 1 ROD contained the following statement:

2.1.6 Interchange Locations and Grade Separations (Overpasses/Underpasses). The FEIS identifies potential interchange locations, as well as potential grade separations (overpasses and underpasses) for each alternative. These potential interchange locations and potential grade separations for Alternative 3C are shown in the FEIS, Vol. III, *Environmental Atlas*. This information is shown for all of the alternatives in the DEIS, Vol. III, *Environmental Atlas*. These features have been identified in Tier 1 solely for the purpose of estimating potential impacts, benefits, and costs. Decisions regarding the number and location of interchanges and grade separations will be made in Tier 2, and are not being made in this Record of Decision. Decisions made in Tier 2 regarding interchanges and grade separations will be further refined during final design.

This statement in the Tier 1 ROD gives FHWA and INDOT substantial flexibility to determine the number, type, and location of access points in Tier 2. The Tier 1 access assumptions are a “starting point” which is revisited and revised in Tier 2.

While the Tier 1 ROD allows substantial flexibility to alter access arrangements in Tier 2, this flexibility is not unlimited. In Tier 1, Alternative 3C was selected based, in part, on the ability of this alternative to provide increased accessibility<sup>10</sup> for Southwest Indiana residents to a wide range of destinations. Similarly, several other alternative corridors were rejected based on their

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<sup>10</sup> “Regional Accessibility” was measured in Tier 1 as the ability of residents in Southwest Indiana to reach Indianapolis, other major urban centers, and institutions of higher learning. The number and placements of interchanges along I-69 alternatives in Tier 1 was a key factor in determining the accessibility it provided. For further discussion, see Tier 1 FEIS, Section 3.4.3.2.



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inability to achieve this core goal. The importance of regional accessibility as a factor in the Tier 1 decision means that the interchanges provided in Tier 2 must be consistent with the accessibility findings contained in Tier 1.<sup>11</sup>

#### Criteria for Interchanges

Interchanges will provide direct connections between I-69 and the existing highway network. Interchanges play a vital role in enabling the project to achieve its transportation objectives, including the core goal of increasing accessibility for people, goods and services. However, interchanges are relatively expensive to construct, and interchange spacing strongly affects traffic flow and safety. Greater spacing between interchanges generally produces better traffic flow and enhances safety on the highway. In addition, interchanges increase the direct footprint impacts of the highway and can become nodes for induced development. All of these considerations must be taken into account in determining the locations of interchanges.

Specific factors considered in deciding where to provide interchanges included:

- Ability to Meet Purpose and Need: The overall number and location of interchanges should result in a level of accessibility in Southwest Indiana that is consistent with the accessibility assumed in the Tier 1 ROD.
- Spacing Guidelines: Minimum interchange spacing policy and design criteria have been established by AASHTO and adopted by INDOT [AASHTO Policy on Geometric Design of Highways and Streets (2001), AASHTO A Policy on Design Standards—Interstate System (2005), and Indiana Design Manual]. These minimum spacing standards are 1 mile in urban areas and 3 miles in rural areas.<sup>12</sup> Spacing above the minimums would be more desirable and should be considered for reasons of safety, operational characteristics and cost effectiveness.
- Functional Classification<sup>2</sup>: Functional classification of the intersecting roadways should be a factor in determining where to provide interchanges. Principal arterials will be

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<sup>11</sup> For a list of the nine project goals established in the Tier 1 EIS, refer to pages 9-10 of the ROD. For a discussion of the factors considered in developing the Tier 1 Purpose and Need, refer to the FEIS, Vol. I, Section 2.2, *Policy Framework*, Section 2.3, *Needs Assessment*, and Section 2.4, *Public and Agency Input*.

<sup>12</sup> In this context, an “urban area” is defined as a community having a population over 50,000. In addition to Bloomington and Indianapolis, which meet this population threshold, Martinsville should be treated as an urban area. The characteristics of SR 37 through Martinsville are such that this portion of I-69 will have traffic volumes and operations typical of an urban area.



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considered for interchanges ahead of minor arterials and collectors, and collectors ahead of locals. In general, arterials would be considered for interchanges, while collectors and locals would not be candidates for such direct access treatment.

- **Road Jurisdiction:** Road jurisdiction should be a factor. In general, state-jurisdictional routes (i.e., state roads, US highways, and, of course, other Interstates) would be considered for interchanges ahead of local-jurisdiction roads (city streets or county roads). However, it is neither a requirement that all state-jurisdictional cross roads have interchanges with mainline I-69, nor exclusion against interchanges for local jurisdictional cross roads.
- **Existing Interchanges:** There are existing interchanges at several locations along SR 37 (e.g., at SR 46). Generally, interchanges at these locations will be retained and incorporated into I-69 were feasible.
- **National Highway System Designation.** All National Highway System (NHS) routes should receive an interchange.
- **Travel Time:** The time to travel between two points on or across the Section 5 corridor is dependent on the location and spacing of grade separations and interchanges.
- **Traffic Volume.** Traffic volume is a factor. In general, cross roads having higher volumes would be considered for interchanges ahead of those with lower demand.
- **Impact Minimization.** Minimization of environmental impacts should be considered. In particular, consideration should be given to avoiding the construction of interchanges that will result in direct construction and right-of-way impacts and could lead to induced development in sensitive environmental areas (e.g., unglaciated karst terrain).
- **Site Topography.** Constraints with respect to terrain ground conditions could influence whether an interchange is viable.
- **Cost.** Cost should be a consideration in determining the number, location, and design of interchanges.
- **Trip Type.** The nature of the trips using the cross roads should be considered in identifying interchange locations. Routes with a higher percentage of regional traffic versus local traffic “short trips” should be given more consideration than vice-versa.

### Criteria for Grade Separations

Grade separations maintain the continuity of existing roadways that cross the path of the project. The following specific factors have been considered in deciding where to provide grade separations:



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- Arterials. In almost all circumstances, cross roads functionally classified as principal and minor arterials, and not receiving an interchange, have been grade-separated with I-69.
- Collectors and Local Roads. Many collectors are legitimate candidates for grade-separations. In general, collectors have been considered for grade separations ahead of local roads, though there have been circumstances where exceptions were made (e.g., in certain cases a collector may not warrant a grade-separation but an adjacent local road would).
- Route Continuity. Minimizing discontinuity of cross roads is essential. For roads functionally classified as locals or collectors, route (system) continuity and community cohesion were factors in determining if a crossroad should be grade-separated, versus re-directing by means of local service roads or other means. Cross roads that continue for a long distance on either side of I-69 and/or connect communities were considered for a grade separation ahead of those that extend only a short distance and/or do not link one community to another.
- Non-Motorized Trips. Consideration of the need to serve non-motorized travelers, such as pedestrians and bicyclists, was given for each cross road grade separation (and interchange).
- Traffic Volume. In general, cross roads having higher volumes (existing or resulting from regional access changes) were considered for grade separations ahead of those with lower demand.
- Site Topography. Constraints with respect to terrain ground conditions influenced whether a grade separation was viable.
- School Bus and Emergency Vehicle Routes. School bus and emergency vehicle routings were significant factors influencing connectivity of the cross street. Additional travel time resulting from no grade separation was addressed when identifying possible grade separation locations, particularly with regard to emergency services routes. Local school corporations and emergency management services providers continue to be consulted and their input considered in identifying possible grade separations.
- Growth Patterns. Localized growth patterns, whether residential, commercial, industrial or other development, were considered when identifying possible grade separations. Also, local planning and zoning information was gathered and planning officials consulted during this process.
- Travel Time: The time to travel between two points on the corridor or across the corridor is dependent on the location and spacing of grade separations and interchanges. Where



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necessary, travel time studies were undertaken to determine the additional travel time required based on the grade separations proposed.

- Local Agency and Public Input. Input received from meetings with local governmental officials, local organizations and groups and public at large was considered as grade separations were identified. These groups provided valuable information on local traffic patterns.

When a cross road is not continued through use of a grade separation, the feasibility of connecting it to other local roads was considered as an alternative to simply providing a cul-de-sac. However, in some cases installation of a cul-de-sac was the selected option.

### Criteria for Alternative Access

Alternative forms of access to local destinations and I-69 include:

- Local access roads with access to driveways and local streets, and
- Collector/distributor roads (C/D) that run parallel to the mainline facility and directly connect the interstate to the local roads with no intermediate intersections.

Both types of access for urban and rural areas have been considered on a case-by-case basis. It is possible that providing an alternative to an interchange or grade separation may actually reduce the need for access points along the interstate, but increase the access provided to the transportation system.

Where there is now, or in the future, the likelihood for considerable non-motorized travel (e.g., pedestrians, bicycles, horseback riding and/or wagons) across I-69 that is independent of vehicular cross roads, special-purpose grade separations for this non-motorized traffic may be considered. The potential for a separate facility for non-motorized transportation parallel as part of this project is not included as part of this study; see Section 2.3.1 of Chapter 2, *Purpose and Need*, for further discussion.

### Environmental Constraints

The following section provides a summary of the existing natural and human environment within, and in some instances beyond, the Section 5 Corridor. As part of the Tier 2 Study, the Project Management Consultant (PMC) provided each Tier 2 section with data layers that were part of the Southwestern Indiana GIS database, and all additional information collected in Tier 1. Since the Tier 1 ROD, Section 5 has collected additional project-specific environmental, social, and economic data that was outside the scope of the Tier 1 EIS.

The various features discussed in this section are depicted on the Alternatives 4 and 5 (Figure 7) and Alternatives 6 and 7 (Figure 8) Summary Maps at the end of Section 4.0, along with the alternatives carried forward to the DEIS. Section 5 is located within Monroe and Morgan counties in Indiana. Early in the design development of mainline, interchange, and access



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alternatives, the focus was on minimizing environmental, social, and economic impacts. Several specific natural and human environmental constraints within the Section 5 corridor were identified during the development of preliminary alternative mainline alignments, interchange locations, local access roads and grade separations. Certain environmental features in areas beyond the corridor also were determined to be relevant in terms of potential indirect impacts from I-69. These environmental constraints are described below:

Land Use: Tier 1 data supplemented by new and updated information obtained during the Tier 2 study was used to determine general land use within the Section 5 corridor. Table 2 indicates the major land use categories and associated acreages of the Section 5 study corridor; the actual alignment will be only a fraction of this area. Land use data were used in determining which areas would be best served by interchanges and local access roads, as well as avoiding or minimizing impacts to sensitive resources.

<b>Table 2 – Section 5 Corridor Existing Land Use</b>		
<b>Major Land Use</b>	<b>Acres</b>	<b>Percentage of Acres</b>
Developed Land <sup>1</sup>	2,017	40%
Agricultural Land	811	16%
Upland Habitat <sup>2</sup>	2,152	42%
Water Features	39	1%
Wetland Habitat <sup>3</sup>	52	1%
Mines/Quarries	15	<1%
<b>Total</b>	<b>5,086</b>	<b>100%</b>
<sup>1</sup> Developed Land includes SR 37; <sup>2</sup> Upland habitat includes forest, scrub/shrub, and herbaceous cover; <sup>3</sup> Includes open water. Source: Michael Baker, Jr., Inc., Graphical Information System project database		

Monroe and Morgan Counties are projected to gain a combined total of 32,000 households and 35,000 jobs between 2010 and 2035 (I-69 Corridor Model). To address how this projected growth would affect existing land use, the general locations of planned development were identified. The general locations of planned development and regional development trends were identified based on coordination with expert land use panels (see Section 3.4.2 for a discussion of the land use panels). These included local planners, real estate professionals, and developers. Several major planned developments within the Section 5 corridor<sup>13</sup> which include both commercial and residential development are:

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<sup>13</sup> The various locations described in this section “Environmental Constraints” are depicted in both Figures 7 and 8 (located at the conclusion of this document), unless confidentiality requirements preclude their disclosure. Examples of confidential information would include the specific location of a cave entrance or an archeological site.



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- **State Road 37/Tapp Road Tax Increment Financing (TIF)** - City of Bloomington - located on the north/south sides of Tapp Road and east of SR 37 to the eastern boundary of the Woolery Farm Planned Unit Development (216-acres plus 25 acre Woolery Farm PUD east of Weimer Road).
- **Westside TIF** – Monroe County - located between Third Street to the south and just shy of Woodyard Road to the north on the west side of SR 37 (625 acres).
- **Bloomington TIF (also referred to as North Park TIF)** – Monroe County - located west of SR 37 and roughly bisected by SR 46 (1,165 acres).

Residential areas: In addition to maintaining appropriate access to I-69 for local residential areas, avoiding impacts to neighborhoods was also an important objective in developing preliminary alternatives. There are many residential areas throughout the southern portion of the Section 5 corridor in Bloomington; in particular, several densely populated neighborhoods abut or are near existing SR 37 between Fullerton Pike and Tapp Road. Further north, scattered, less dense residential areas and single owner lots abut or are within a quarter-mile of SR 37 in the areas of 3<sup>rd</sup> Street/SR 48, and between SR 46 and Kinser Pike. Larger neighborhoods currently served by SR 37 are located just north of the current Walnut Street interchange and include the Windsor Estates and Showers Road subdivisions. Further north, there are residential areas near Sample Road, Simpson Chapel Road, Fox Hollow Road, Crossover Road, Chambers Pike and Bryant Creek Road in Monroe County, and Cooksey Lane, Turkey Track Road, Old SR 37, Legendary Hills Road and Liberty Church Road in Morgan County.

Commercial/Industrial areas: Providing appropriate access for businesses and industries along SR 37 and connecting roadways was an important factor in the development of preliminary access alternatives. Individual existing commercial and light industrial properties are scattered throughout much of the Section 5 study area; six major existing or planned commercial/industrial areas have been identified near SR 37 in Monroe County:

- **Fullerton Pike TIF** – Monroe County - located on the south side of Fullerton Pike, bounded by Rockport Road to the east and SR 37 to the west (80 acres).
- **State Road 37/Tapp Road TIF** - City of Bloomington - located on the north and south sides of Tapp Road and east of SR 37 to the eastern boundary of the Woolery Farm Planned Unit Development (216-acres plus 25 acre Woolery Farm PUD east of Weimer Road).
- **Whitehall/West Third TIF** - City of Bloomington - located between Third Street to the south and the CSX Railroad tracks to the north on both the east and west sides of SR 37 (113-acre plus 10 acres east of SR 37/south of 3<sup>rd</sup> Street).
- **Westside TIF** – Monroe County - located between Third Street to the south and just shy of Woodyard Road to the north on the west side of SR 37 (625 acres).



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- **Bloomington TIF (also referred to as North Park TIF)** – Monroe County - located west of SR 37 and roughly bisected by SR 46 (1,165 acres).
- **Kinser Pike/Prow Road TIF**- City of Bloomington - located east of SR 37 between Acuff Road and Kinser Pike (161 acres).

Two smaller commercial areas in Morgan County include the Idle Zone parcel at Godsey Road and a motel and assorted other small businesses along Old SR 37 south of the SR 39 interchange.

Environmental Justice: Areas of minority and low-income residents were identified through a review of 2010 Census data, subsidized school lunch data, and Housing and Urban Development data. Local planners and service providers (such as township trustees and Area 8 and 10 Agencies on Aging<sup>14</sup>) were consulted in order to identify appropriate ways to reach out to these residents. From a racial and ethnic perspective, residents of Monroe and Morgan Counties are predominantly white and non-Hispanic with minorities making up 13.9% of Monroe County, and 3.15% of Morgan County, as compared with 18.5% for the State. The greatest concentrations of black, Asian, and Hispanic persons reside in the City of Bloomington and Bloomington Township; however, no specific minority communities have been identified in the Section 5 corridor. Monroe County has a higher percentage (25.5%) of low-income populations compared to 13.5% for the State of Indiana, with the greatest concentration in the City of Bloomington. 10.1% of the population of Morgan County is classified as low income. Monroe County includes both Indiana University and Ivy Tech student populations whose individual incomes may fall within the low-income threshold; these student populations do not necessarily have the same needs or concerns as non-student low-income households. Low-income populations generally are dispersed throughout the project area; however, several apartment complexes within the Section 5 corridor along 2nd Street/SR 45 east of SR 37 have a concentration of low-income residents.

Cemeteries: Indiana statute requires that every attempt be made to avoid existing cemeteries, and that encroachment within 100 feet of a plotted cemetery requires a development plan. Information from the Tier 1 study supplemented by field surveys and discussions with local parties identified thirteen cemeteries in the Section 5 Area of Potential Effects (APE – as updated in 2011) study area with the potential for direct or secondary impacts based on their proximity either to the current SR 37 right-of-way, or to roadways that might be impacted by the upgrade of existing SR 37 to I-69.

- Fullerton Cemetery
- Parks/Bell/Wampler Cemetery
- Griffith Cemetery
- Stitt-Maxwell Cemetery
- Long Cemetery
- Mulky Cemetery

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<sup>14</sup> Area 10 and Area 8 Agencies on Aging provided information on the location, needs, and services provided to elderly residents who may also be low-income and/or transit-dependent.



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- Tourner/Ridge/Wylie Cemetery
- Carlton/Huff/Kendrick Cemetery
- Simpson Chapel Cemetery (New)
- Simpson Chapel Cemetery (Old)
- Campbell/Smith/Guy Cemetery
- Liberty Cemetery
- Johnson/Naylor Cemetery

**Karst:** The 1993 Memorandum of Understanding (MOU) entered into by the INDOT, Indiana Department of Natural Resources (IDNR), Indiana Department of Environmental Management (IDEM), and the United States Fish and Wildlife Service (USFWS) provides guidelines for construction of transportation projects in karst regions of the state. Based on Tier 1 mapping supplemented by local geological data and field observations, three distinct areas of karst features (e.g., sinkholes, springs, sinking streams and caves) were recognized in the Section 5 study area:

- *Bloomington Karst* extends from south of the Section 5 corridor north to approximately Arlington Road.
- *Bloomington North Karst* extends from about Arlington Road north to the southern slope of the Beanblossom Creek Valley.
- *Simpson Chapel Karst* extends from the northern slope of the Beanblossom Creek Valley and continues north to just south of Chambers Pike.

Since interconnecting karst features are sensitive to both highway construction activities and future stormwater runoff, the potential for impacts to these areas extends beyond the boundaries of the 2,000 foot corridor.

**Streams:** Initial information provided by Tier 1 mapping supplemented by field surveys identified eight major streams crossed by SR 37 between the southern and northern termini of the I-69 Tier 2 study corridor; all are tributaries to the White River (West Branch) basin.

- Griffey Creek
- Beanblossom Creek
- Northern Tributary Beanblossom Creek
- Unnamed Tributary Bryant Creek
- Bryant Creek
- Little Indian Creek
- Jordan Creek
- Indian Creek

In addition, Stout Creek was identified running parallel to the west side of SR 37 in the vicinity of the Maple Grove Road Rural Historic District. As with karst features, potential impacts to streams from highway construction and stormwater runoff can extend beyond the 2,000 foot corridor. The construction and preliminary right-of-way for interchanges, grade separations, and local access roads may extend beyond the 2,000 foot corridor; streams within these areas will be evaluated as part of the DEIS.

**Floodplains:** Avoiding impacts to floodplains from roadway and interchange construction was an important factor in developing preliminary alternatives. Initial information provided by Tier 1



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mapping supplemented by updated GIS data and field surveys identified four areas of floodplains in the Section 5 corridor. The largest area crosses SR 37 to the north and south of the existing Walnut Street interchange in the vicinity of Beanblossom Creek and the Beanblossom Creek overflow area. Smaller floodplains cross SR 37 in the vicinity of Bryant Creek, Jordan Creek and Little Indian Creek. Another larger floodplain crosses SR 37 between Indian Creek and the SR 39 interchange.

Wetlands: Information provided by the Tier 1 study and supplemented by Tier 2 field surveys identified seven general areas of potential wetlands in the Section 5 corridor: Wetlands are located within the floodplains of the Indian and Little Indian Creeks, Bryant Creek, Beanblossom Creek, Griffey Creek and Stout Creek. In addition to the wetlands identified in the Tier 1 mapping, field studies identified a wetland along an unnamed tributary of Bryant Creek located within the bifurcated portion of SR 37.

Threatened & Endangered Species: The federal threatened and endangered (T&E) species studied within Section 5 included the Indiana bat (*Myotis sodalis*). While the bald eagle (*Haliaeetus leucocephalus*) is no longer a T&E species following the 2007 delisting, it remains subject to the protections of the Bald and Golden Eagle Protection Act. No bald eagle nests were found within the Section 5 corridor. The closest observed nest is 0.3 miles from the corridor.

Mist net surveys were conducted in 2004 to investigate the presence of the Indiana bat within the Section 5 study area. Two secondary roost trees were identified in 2004. Additional mist net surveys were conducted in 2005. Four additional roost trees were identified - one primary and three secondary. However, none of the roost trees identified were located within the Section 5 corridor or expected to be directly impacted by the project. One Indiana bat maternity colony was identified within Section 5, in the vicinity of the White River and Bryant Creek.

As a result of these additional studies, a Revised Programmatic Biological Opinion (BO) was issued for this project by the US Fish and Wildlife service on August 24, 2006. It reaffirmed the non-jeopardy conclusion regarding the bald eagle as stated in its December 3, 2003 BO. It also found that I-69 is not likely to jeopardize the continued existence of the Indiana bat, and is not likely to destroy or adversely modify its designated Critical Habitat.

On April 11, 2011, the Federal Highway Administration again reinitiated Tier 1 consultation based on new maternity colony information in Section 4, as well as documentation of the newly discovered disease White Nose Syndrome (WNS) within the action area. On May 25, 2011, the USFWS issued an Amendment to the August 24, 2006 Tier 1 revised BO, including a revised Incidental Take Statement. The overall conclusions in the Amendment to the Tier 1 revised BO do not differ from those found in the Tier 1 revised BO.

Coordination with the USFWS determined that due to the age of the previous mist netting data (2004-2005) for Section 5, mist net surveys should be conducted again for this Section. Mist net surveys will be conducted in the summer of 2012 to update the data for the Indiana bat. The



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results of these surveys will be included in the Biological Assessment (BA) and submitted to the USFWS.

Additional evaluation and details will be included in the chapters of the subsequent DEIS, Chapter 5.17 - Threatened and Endangered Species, and Chapter 7 - Mitigation and Commitments.

Utilities: Tier 1 mapping supplemented by additional GIS data obtained during the Tier 2 study identified water service and electric power utilities in the vicinity of the Section 5 corridor. The City of Bloomington Utilities (CBU) is a municipally owned water, wastewater, and stormwater utility that serves customers in the Bloomington area and has water mains and sewer lines that cross SR 37. Washington Township Water is a not for profit cooperative that buys water from the CBU and operates water lines on the east and west sides of SR 37 in both Monroe and Morgan Counties. Duke Energy and Vectren provide electricity and natural gas at various locations along the corridor. Hoosier Energy provides electrical power throughout the Section 5 study area and has two locations that were considered important for both access and avoidance of impacts in the development of preliminary alternatives.

- Hoosier Energy business offices and operations facility located adjacent to the east side of SR 37, north of the Walnut Street interchange
- Substation located adjacent to the west side of SR 37, south of Crossover Road

I-Light is a high speed Internet system connecting Indiana colleges and universities, as well as smaller communities in the southwest part of the state. The high speed line is expected to cross the I-69 corridor near the existing SR 37/SR 48 interchange.

Superfund Sites: Based on Tier 1 mapping supplemented by field views and additional research, two USEPA Superfund Sites were identified in the vicinity of the 2,000 foot Section 5 corridor.

- Lemon Lane Landfill, located east of SR 37, south of Vernal Pike
- Bennett's Dump, located west of SR 37, north of SR 46

Through consultations with USEPA and IDEM representatives regarding these sites, it was determined that, in addition to avoidance of direct impacts, preliminary alternatives should avoid increases in roadway/stormwater runoff to either of the Superfund site recharge areas. This is to prevent potential increased mobilization of remaining contaminated materials at the Bennett's Dump site, and to prevent increased water treatment volumes at the Lemon Lane landfill/Illinois Central Spring treatment system.

Section 4(f) Resources: US Department of Transportation Act of 1966, Section 4(f), states that the FHWA will not approve any program or project which requires the use of any publicly owned public park, recreation area, or wildlife or waterfowl refuge, or any land from an historic site of national, state, or local significance unless there is no feasible and prudent alternative to the use, and all possible planning to minimize harm resulting from such use is included. Tier 1 data supplemented by Tier 2 research and field surveys identified one public park/recreation area



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- Wapehani Mountain Bike Park - and one historic district – the Maple Grove Road Rural Historic District (MGRRH) - within the Section 5 corridor. Three additional potential historic landscape districts have been identified during the course of the Tier 2 research to date – Hunter Valley Historic Landscape District, Reed Historic Landscape District, and North Clear Creek Historic Landscape District. The park is further discussed below under “Parks.” The MGRRH and additional sites deemed eligible for the National Register of Historic Places (NHRP) identified within, and in the vicinity of, the Section 5 corridor are discussed below under “Historic Properties.” No wildlife or waterfowl refuges are located in the Section 5 study area.

Parks: There is one publicly owned park, the Wapehani Mountain Bike Park (WMBP), within the Section 5 corridor. Wapehani Park is located adjacent to the east side of SR 37 between Tapp Road and 2<sup>nd</sup> Street/SR 45. The City of Bloomington received a donation of approximately 12 acres from the Public Investment Corp (PIC) along the south side of the WMBP. The addition includes two large sinkholes on the west side (immediately east of the SR37 ROW fence) and a narrow valley further to the east. This area is being used as part of the WMBP trail system with open access to the general public. Bloomington Utilities is evaluating whether to lower the water level with Wapehani Lake/Reservoir and/or breaching the existing earthen dam. Avoidance of this park, a Section 4(f) resource, was considered essential in the development of preliminary alternatives.

Historic Properties: Historic properties were identified and evaluated in accordance with Section 106, National Historic Preservation Act (NHPA) of 1966, as amended, and CFR Part 800 (Revised January 2001), Final Rule on Revision of Current Regulations dated December 12, 2000, and incorporating amendments effective August 5, 2004. As a result of the NHPA, federal agencies are required to take into account the impact of federal undertakings upon historic properties in the area of the undertaking. Historic resources include buildings, structures, sites, objects, and/or districts eligible for listing in the National Register of Historic Places (NRHP) or listed in the NRHP.

Historic properties can be divided into two categories: above-ground (historic) and below-ground (archaeological). In terms of historic properties, Tier 1 mapping supplemented by additional data obtained during the Tier 2 study identified the MGRRH, a NRHP-listed district located west of SR 37 between Maple Grove Road and approximately Kinser Pike. Portions of the MGRRH abut existing SR 37 western right-of-way to the north and south of Acuff Road. Avoiding any encroachment on this district, which is considered a Section 4(f) historic resource, was deemed essential in the development of preliminary alternatives. In addition, three Dimension Limestone Historic Landscape Districts (DLHLDs) and eight individual properties located within the Section 5 Area of Potential Effect (APE) for historic resources were previously listed or were identified during the Tier 2 study and determined eligible for listing in the NRHP:

- Hunter Valley Historic Landscape District
- Reed Historic Landscape District
- North Clear Creek Historic Landscape District
- Stipp-Bender House, located near the southeast corner of SR 37 and Victor Pike



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- Monroe County Bridge No. 83, carrying Dillman Road over Clear Creek west of SR 37
- Jonas-May House, located west of SR 37, south of Fullerton Pike, (demolished by owner post-2008)
- Maurice Head House, 4625 South East Lane, located west of SR 37
- Daniel Stout House (NRHP listed), 3655 North Maple Grove Road, located west of SR 37
- Monroe County Bridge 913, located east of SR 37 near the Walnut Street interchange, crossing Beanblossom Creek,
- Morgan County Bridge 161, located east of SR 37, south of Liberty Church Road, crossing Little Indian Creek, and
- Morgan County Bridge 224, located east of SR 37, south of SR 39, crossing Indian Creek (potential impacts on Bridge 224 are part of the Section 6 Tier 2 studies).

Avoidance of impacts to these historic properties also was deemed important in the development of preliminary alternatives, interchanges and local access roads.

Archaeological Resources: Tier 1 data supplemented by Tier 2 research identified no sites currently listed on the NHRP; however, additional field surveys will be conducted to determine if any eligible sites exist within the proposed right-of-way of the Section 5 preferred alternative.

Schools: Tier 1 mapping supplemented by a Tier 2 field survey, identified one school, Bloomington High School North (BHSN) within the Section 5 corridor. The school is located far enough away from existing SR 37 that direct impacts from any I-69 alternative were considered unlikely; however, maintaining appropriate levels of access was considered important in the development of preliminary alternatives.

Farmlands: Tier 1 mapping and field surveys supplemented by Tier 2 research identified farmland parcels in Monroe and Morgan Counties. Several small parcels of farmland are located the Monroe County portion of the Section 5 corridor east of SR 37, north of Acuff Road; and west of SR 37, south of Kinser Pike. Additional farmland parcels were identified in the areas surrounding the Walnut Street interchange in the vicinity of Beanblossom Creek. Further north, a smaller cluster of farmland parcels was identified in the vicinity of Bryant Creek. Extended areas of farmland parcels were identified in Morgan County, both east and west of SR 37, in the large river valley between approximately Paragon Road and the SR 39 interchange. Minimization of impacts to these parcels, as well as appropriate access for vehicles and farm equipment, was considered in the development of preliminary alternatives.

Forests: Tier 1 mapping supplemented by Tier 2 research identified the Morgan-Monroe State Forest located adjacent to the east and west of existing SR 37 right-of-way between approximately Chambers Pike in Monroe County and Paragon Road in Morgan County. Additional forested parcels were identified at various locations within the Section 5 corridor. The Morgan-Monroe Forest is managed for multiple uses per the Morgan-Monroe State Forest



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management Guides and none of the alternatives would directly affect specific areas within the forest that would qualify as 4(f) property (areas that function and are managed primarily as a park, recreation or refuges (e.g. a campground, picnic area, etc.)). Therefore, while the Morgan-Monroe Forest has been determined not to be a Section 4(f) resource, minimization of direct impacts, as well as appropriate access, was considered a factor in the development of preliminary alternatives.

### 3.4 Community Outreach, Agency Coordination, and Scoping Process

Input from state and federal resource agencies and local community groups and individuals was sought and collected during the development of preliminary alternative access plans and in the process of screening alternatives to carry forward for additional, detailed study in the DEIS.

#### 3.4.1 Project Office

The Section 5 Project Office opened in downtown Bloomington in May 2004. The office was relocated in October 2008 to facilities west of the SR 37/SR 45 interchange, sharing space with the Section 4 Project Office. It serves as a single, consistent source for project information, including maps, reports and explanations of studies, timelines and goals. The Project Office also encourages input from individuals and groups. As of February 2012 over 600 patrons have visited the office to view maps, discuss individual and general aspects of Section 5, offer information regarding locations of resources, and express opinions on mainline shifts, interchange points, local access roads and grade separations. In addition, the office has received over 800 emails and hundreds of phone calls from individuals to discuss a diverse array of topics. The breadth and variety of information obtained via the project office have proven invaluable in the development and screening of alternatives.

#### 3.4.2 Outreach Activities

In addition to information exchanged via the Project Office, Section 5 conducted numerous outreach activities, which included meetings with local community, governmental and special interest groups as well as one-on-one meetings with individuals and families. Table 3 lists Section 5's main outreach meetings and activities from July 2004 to February 2012.

Valuable information regarding the natural and human environment in the Section 5 corridor, as well as access needs and preferences for I-69, was gleaned from all of the outreach activities listed in Table 3. Other means also were used to present and collect specific types of information for developing alternative access plans.

<b>Table 3: I-69 Tier 2 Section 5 Outreach Activities (Through March 2012)</b>		
<i>Prior to Preliminary Alternatives</i>		
<b>DATE</b>	<b>MEETING/PARTICIPANTS</b>	<b>PURPOSE/TOPICS</b>
7/1/04	General Public Open House	Introduce Tier 2 Section 5 team and studies
7/1/04	Public Officials Open House	Introduce Tier 2 Section 5 team and studies
8/16/04	Section 5 Project Manager	Interview on Local Radio Station to describe Tier 2 studies process and timeline
9/12/04	Resource Agency "Kick-off" meeting (all	Introduce scope and status of environmental

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**Table 3: I-69 Tier 2 Section 5 Outreach Activities (Through March 2012)**

	Tier 2 Sections)	survey activities associated with Tier 2 studies
9/15/04	Monroe County Planning & Highway Staff	Discuss existing local development and roadway plans
9/22/04	Bloomington Chamber of Commerce	Introduce Tier 2 & discuss local business issues
10/8-04	Monroe County Historical Society/Cemetery Board	Discuss locations and ownership of local cemeteries
10/11/04	Indiana University	Introduce Tier 2 and discuss university-related issues
10/27/06	Bloomington Environmental Commission Meeting	Introduce Tier 2 and request input on local environmental issues
11/01/04	Windsor Estates Annual Neighborhood Association Meeting	Introduce Tier 2 and request input on neighborhood access issues
11/08/04	Local Township Trustees	Work session to discuss local EMS routes, poor relief and EJ issues
11/09/04	First Section 5 CAC meeting	Identification of map features and access/impact issues of importance to individual members
11/09/04	Area 10 Agency on Aging meeting	Presentation of Tier 2 goals and requests for input
11/10/04	First Martinsville/Monroe County CAC Meeting (jointly with Section 6)	Identification of map features and access/impact issues of importance to individual members
11/15/04	Downtown Bloomington Commission meeting	Observed preliminary downtown plans
11/30/04	Bloomington Auto Parts owners	Discuss potential routes, access and impacts
12/2/04	Crane Base Tour	Present preliminary I-69 Tier 2 Corridors and request input on access needs
12/6/04	Washington Township Water and Bloomington Fire Department	Discuss routes and collect input on access and roadway needs
12/17/04	Presentation at Bloomington High School South	Discuss Tier 2 process for alternative development and impact assessment
12/17/04	Monroe County EMS/Fire Department Meeting	Present Tier 2 corridor map and collect input on routes and access needs
1/26/05	Section 106 local Consulting Parties meeting - Morgan County	Present Tier 2 corridor map and collect information about potentially historic resources
2/1/05	Bloomington Chamber of Commerce luncheon	Present Tier 2 process and goals and collect input on local interests
2/3/05	Bloomington Board of Realtors	Present Tier 2 process and goals and collect input on local interests
2/9/05	Meeting with Maxwell family, farmland owners and operators in Morgan County	Present Tier 2 process and goals and collected input on land use, economic and transportation issues
2/9/05	Meeting with Bloomington Township Trustee	Discuss local EMS routes, poor relief and EJ issues
2/10/05	First Expert Land Use Panel meeting with Monroe County, Bloomington and Ellettsville Planners	Discuss TAZ maps for current and projected land use types in Section 5 Study Area
2/10/06	Meeting with Morgan-Monroe State Forest	Present Tier 2 process and goals and collect input on land use, economics and access interests
2/23-24/05	Agency Coordination meeting (All Tier 2 Sections)	Present I-69 Corridor and collect input on preliminary areas of interest



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2/23/05	Bloomington "Downtown Vision and Infill Strategy Plan" meeting	Request input on Section 5 Corridor access needs and areas of interest
2/24/05	IDNR meeting regarding FEMA floodplain map updates	Discuss potential floodplain impacts along Section 5 Corridor
3/22/05	2 <sup>nd</sup> Section 5 CAC meeting	Present and collect feedback on preliminary interchange and access options
3/24/05	Section 6 Land Use meeting (Morgan County)	Discuss current and projected land use types in Section 5 portion of Morgan County
3/24/05	Coordination meeting with Morgan County utility providers	Discuss current and future locations of utilities and other plans in relation to I-69
3/24/05	2 <sup>nd</sup> Martinsville/Monroe County CAC Meeting (jointly with Section 6)	Present and collect feedback on preliminary interchange and access options
3/11/05	Monroe County Drainage Board	Discussed amended ordinance concerning stormwater drainage in relation to I-69
3/14/05	Monroe County Historic Review Board	Discuss Section 106 Historic Resources
4/11/05	Ellettsville Chamber of Commerce	Discuss local business interests and access needs
4/13/05	2 <sup>nd</sup> Section 5 Expert Land Use Panel	Follow-up on data collection and discussion of employment numbers
5/20/05	Bloomington High School South	Presentation to public speaking class regarding I-69 Public Involvement
5/26/05	2 <sup>nd</sup> Morgan County Expert Land Use Panel (joint with Section 6)	Follow-up on data collection and discussion of employment numbers
6/16/05	Section 4 Public Information Meeting	Present Section 5 information
6/27/06	2 <sup>nd</sup> Section 5 Section 106 Consulting Parties Meeting	Discuss Draft Historic Properties Report
<b>Preliminary Alternative Access Plans Presented</b>		
6/29/05	Monroe County/Bloomington Plan Commissions	Presented updated Section 5 studies and collected feedback on access and impact areas of interest
7/19/05	Public Officials Open House	Display new alternative access plan maps, provide project update and collect feedback
7/19/05	Media Briefing	Provide new maps and information to press prior to CAC and Public Information Meeting
7/19/05	3 <sup>rd</sup> Section 5 CAC Meeting	Present new maps and information, and collect feedback prior to Public Information Meeting
7/20/05	Section 5 Public Information Meeting at Liberty Church in Martinsville:	Present new alternative access plan maps and information, and collect feedback
7/21/05	Town of Ellettsville Planning Department	Present new alternative access plan maps and information, and collect feedback
7/21/05	City of Bloomington Planning Department	Present new alternative access plan maps and information, and collect feedback
7/21/05	Monroe County Planning Department	Present new alternative access plan maps and information, and collect feedback
7/21/05	Indiana State Representative Ralph Foley	Present new alternative access plan maps and information, and collect feedback
7/22/05	Hoosier Energy Representatives	Present new alternative access plan maps and information, and collect feedback
8/2/05	Bloomington Bike Club representatives	Present new alternative access plan maps and information, and collect feedback
8/2/05	Retired Military Officers Association	Discuss Tier 2 Section 5 access alternatives and impact studies



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8/18/05	Indiana Geological Survey representatives	Discuss Section 5 alternatives and collect information regarding Bedrock and Karst
8/19/05	Vectren utilities representative	Discuss Hindustan Dome natural gas storage area in northern Monroe County
8/22/05	Indiana University representatives	Discuss IU traffic concerns and ideas
8/23/05	Joint Monroe County & Bloomington area fire Chiefs meeting	Present alternative access plans for review and comments regarding emergency service routes and access.
8/31/05	Hoosier Energy representatives	Present and discuss alternative access plans in relation to the company's headquarters and substations
9/2/05	Monroe County Highway Engineer	Discuss access for properties west of SR 37 and north of Acuff Road
9/28/05	Monroe County Tourism Board representative	Present access alternatives and discuss in relation to tourism interests
9/28/05	Monroe County Planning and Highway directors	Discuss potential affects on future land use based on possible toll funding option
10/1/05	3 <sup>rd</sup> Morgan/Monroe CAC (joint with Section 6)	Present alternative access plan maps and information, and collect feedback
10/18/05	Windsor Private Neighborhood Association meeting	Present alternative access plan maps and information, and collect feedback
12/6/05	Hoosier Energy representatives	Additional feedback on access alternatives related to company sites
12/14/05	Agency Coordination Purpose and Need Meeting	Present updates on alternative development and environmental studies and answered agency questions.
1/9/06	Cook Group (local business owners)	Present alternative access plan maps and information, and collect feedback
2/2/06	Bloomington Rotary Club	Present alternative access plan maps and information, and collect feedback
<b>Alternative Access Planned Carried Forward for the DEIS</b>		
4/28/06	City and County MPO staff representatives	Introduce new alternatives and discuss in relation to recently drafted Bloomington MPO Long Range Plan
5/3/06	Hoosier Energy representatives and engineering consultants	Introduce and discuss new alternative access plans
6/13/06	Developer Fred Prall	Present new alternatives and discuss in relation to proposed development north of Bloomington
6/13/06	Developer Amy Bernitz	Present new alternatives and discuss in relation to proposed Health Science Park development near Fullerton Pike
6/16/06	City and County MPO staff representatives	Continued discussion of new alternatives in relation to MPO Long Range Plan
7/12/06	Developers of proposed Health Science Park (at Fullerton Pike) & Section 4 Representative	Discuss System Interchange (Section 4) in relation to proposed development
7/13/06	Monroe County Planning Director (Bob Cowell) and Engineer (Bill Williams)	Further discussion of specific aspects of new alternatives in relation to county plans
7/26/06	Monroe County Plan Commissioner Richard Martin	Introduce and review new alternatives
7/28/06	Monroe County Plan Commissioner Bill Montgomery	Introduce and review new alternatives



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Date	Activity	Notes
8/1/06, 8/2/06	Agency Coordination meeting (All Tier 2 Sections) and Bus Tour	Updates on all Tier 2 section activities and bus tour of Sections 4 & 5
8/16/06	Monroe County Engineer (Bill Williams)	Further discussion of specific aspects of new alternatives in relation to county plans
8/16/06	Hoosier Energy representatives	Further discussion of specific aspects of new alternatives in relation to operations, headquarters, substation, and service routes
9/13/06	Town of Ellettsville Planner (Frank Nierzwicki)	Introduce and discuss new alternative access plans
10/26/06	I-69 Planning Grant session at Bloomington North High School	Attend session
11/15/06	IDNR/SHPO representatives	Introduce new alternatives and discuss in relation to eligible historic properties/structures and steps undertaken to avoid/reduce potential impacts
12/07/06	City and County MPO staff representatives and their consultants	Discussion of specific aspects of new alternatives in relation to Local Inter-Modal Plan development
3/1/07	Agency Coordination meeting (All Tier 2 Sections) and Bus Tour	Updates on all Tier 2 section activities and bus tour of Sections 4 & 5
3/07	Monroe County Plan Commission and Bloomington Planning Department via their agent (Schneider, Inc.)	Discussion of specific aspects of new alternatives in relation to Local Alternative Transportation Plan
5/14/07	Morgan County Commissioner (Norman Voyles)	Discussion of specific aspects of new alternatives in relation to Morgan County planning
5/14&15, 20&21/07	Various Farm Owners in the Liberty Church Area	Discussion of new alternatives for the Liberty Church and Paragon area and upcoming archeological field surveys
6/26/07	USEPA Karst Review Meeting	Field review/bus tour of Sections 4 and 5 Karst resource features
7/03/07	2 <sup>nd</sup> Environmental Resource Agency Review Meeting	Discuss Preliminary Screening of Alternatives (May 2007)
8/21/07	Public Meeting, Bloomington North High School	Community Planning Grant Study program
12/10/07	Bloomington Plan Commission	Discussion of Development Plans at 17 <sup>th</sup> St. and Crescent Dr.
8/07/08	Bloomington Board of Realtors	Project Update Presentation
10/01/08	Section 5 Project Office	Office Relocation Notice
2/25/09	BMCMPO Technical Advisory Committee	Discussion of Hardship Acquisition at Tapp Road
2/25/09	BMCMPO Citizens Advisory Committee	Discussion of Hardship Acquisition at Tapp Road
3/13/09	BMCMPO Policy Committee	Discussion of Hardship Acquisition at Tapp Road
4/30/09	Overall Agency Coordination Meeting	
7/17/09	Martinsville Chamber of Commerce	Project Update Presentation
7/29/09	Hoosier Voices	Project Update Presentation
8/05/09	Bloomington Planning Department	Discussion of alternatives under consideration
8/31/09	Whitehall Crossing Area	Discussion of access considerations being carried forward
9/11/09	BMCMPO Policy Committee	Discussion of Hardship Acquisition at Tapp Road
10/07/09	Liberty Church Commercial Owners	Discussion of alternatives under consideration
4/08/10	Stone Belt Shrine Club	Project Update Presentation
4/18/10	Bloomington Economic Development Corp. (Ron Walker)	Discussion of alternatives under consideration

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Date	Organization/Entity	Activity
6/16/10	Bloomington Economic Development Corporation	Project Update Presentation
6/22/10	Bloomington Chamber of Commerce	Project Update Presentation
8/25/10	BMCMPO Technical Advisory Committee	
8/25/10	Whitehall Crossing Area	Discuss access considerations being carried forward
8/25/10	BMCMPO Citizens Advisory Committee	
8/31/10	US Post Office – Bloomington Branch	Access considerations being carried forward
10/12/10	Victor-Oolitic Limestone	Discussion of alternatives under consideration
10/14/10	Independent Limestone	Discussion of alternatives under consideration
3/01/11	Mayor of Martinsville	Discussion of alternatives under consideration; local utility plans
3/04/11	Military Officers Association of Bloomington	Project Update Presentation
4/05/11	Monroe Hospital	Discussion of alternatives under consideration
4/05/11	Property Owner in Sparks Lane Area	Discussion of alternatives under consideration
4/06/11	Property Owner in Fullerton Area	Discussion of alternatives under consideration
5/23/11	Hoosier Energy	Review of alternatives being considered
5/25/11	Bloomington & Monroe County Staff	Coordination – I-69, Sections 4 & 5
9/07/11	Bloomington & Monroe County Staff	Coordination of schedule & upcoming meetings
10/04/11	Hoosier Energy	Review of alternatives being considered
10/04/11	Expert Land Use Panel Meeting #1	Re-engage; Discussion of household allocation
10/07/11	Bloomington Parks Department	Wapahani Park extension; Additional park properties
10/11/11	Monroe County Emergency Responders	I-69, Section 4 Concerns – Emergency Access along the corridor; Coordination during construction
10/25/11	Expert Land Use Panel Meeting #2	Discussion of employment allocation (Morgan & Monroe Counties)
11/09/11	Expert Land Use Panel Meeting #3	Discussion of employment allocation (focused on Monroe County)
1/05/12	Bloomington Board of Realtors	Project Update Presentation
1/13/12	Hoosier Energy	Review of alternatives being considered
1/31/12	Consulting Parties Meeting #1	Discuss Additional Information Report and Dimension Limestone Resources Report
2/15/12	Participating Agency Meeting #1	Kick-off Meeting
2/16/12	Indiana State Police, District #33	Access considerations being carried forward
2/16/12	Expert Land Use Panel #4	
2/27/12	Monroe County Engineer – Fullerton Pike	Coordination re: Design Criteria on local Fullerton Pike project
3/15/12	CAC Meeting	Re-initiation and identification of map features and access/impact issues of importance to individual members
3/20/12	Bloomington & Monroe County Staff	Coordination – I-69 Traffic Projections
3/21/12	Participating Agency Meeting #2	Discussion of alternatives being carried forward for further consideration
3/28/12	BMCMPO Technical Advisory Committee	Project Update Presentation
3/28/12	BMCMPO Citizen's Advisory Committee	Project Update Presentation



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Valuable information regarding the natural and human environment in the Section 5 corridor, as well as access needs and preferences for I-69, was gleaned from all of the outreach activities listed in Table 3. Other means also were used to present and collect specific types of information for developing alternative access plans.

#### **Community Advisory Committee (CAC)**

At the onset of the project, two separate CACs were developed to learn about local interests and to share project information regarding Section 5. One CAC was developed for groups representing Bloomington and Monroe County, and the other was developed jointly with Section 6 for groups representing Martinsville and Morgan County. Each CAC is composed of members representing various interests. Membership for each CAC was drawn from a cross-section of affected groups, agencies, neighborhoods and organizations. While the main goal of the CACs was to provide assistance and direction in terms of developing appropriate interstate access plans while avoiding and minimizing impacts, CAC members also were encouraged to collect and bring back current, accurate information regarding the project to their associated groups. CAC members represented diverse groups with a variety of objectives and opinions. When these groups were formed, it was agreed that all ideas shared at the meetings would be given equal consideration and no attempt would be made to form a group “consensus” regarding the I-69 alternatives.

Bloomington/Monroe County CAC: The Bloomington/Monroe County CAC held meetings on November 9, 2004; March 22, 2005; and July 19, 2005. Topics discussed during the first meeting included geographical and physical features of the Section 5 corridor (i.e., “quantitative” information) and perceived community values and sense of place (i.e., “qualitative” information). Members were provided with “take home” material to bring to their respective groups for additional input.

At the second meeting, members looked at aerial photo plots enhanced with GIS information showing basic current and future planned land use features in Section 5 and were asked to provide any corrections to what they saw on the maps, so that new maps would incorporate the changes. In addition, members were asked to consider mobility and access needs for 2030, and offer what they considered to be important issues based on their particular points of views (e.g., neighborhood access, commercial access, bicycle/pedestrian access, etc.) They were asked to evaluate all current access points either as interchanges, over/underpasses, or no direct access (i.e., access to I-69 via local access roads only).

At the third meeting, members were presented with the preliminary alternative access plans that had been developed with their assistance, and which would be presented to the public. CAC members viewed the newly developed alternative access plan maps, conceptual typical sections graphics and access comparison tables. In addition, they were given comment survey forms to use and distribute to their respective groups.



### Martinsville/Morgan County (M&M) CAC:

Because aspects of the human and natural environments in the town of Martinsville and areas of Morgan County in the I-69 corridor differ from those of other portions of both Sections 5 and 6, a separate CAC was developed (jointly with the Section 6 project team). As with the other CACs, the M&M CAC was drawn from a cross-section of affected groups, agencies, neighborhoods and organizations. The CAC held meetings on November 11, 2004 and March 24, 2005. At the first meeting, members were asked to list physical features and community activities they considered to be of priority in the development of preliminary alternative access plans. Major areas of interest included providing adequate access for emergency vehicles, farm-related activities, local merchants and residential areas. In addition, members also expressed a desire for maintaining local community aesthetics and “quality of life.”

At the second meeting, members performed an exercise to help forecast future land use that might significantly influence traffic generation in different areas of the community and would require access to the proposed I-69. Members were presented with maps of the study area and a set of three questions:

1. Looking at only undeveloped land or land currently used for agricultural purposes please indicate those areas and types of land use you predict will be developed over the next 25 year period.
2. Looking at currently developed land, indicate any areas that you believe would be redeveloped to another land use (from residential to commercial, for example) based on I-69.
3. Identify areas that you believe are critical to having nearby access to I-69.

Members then performed a second exercise in which they were asked to view aerial photo plots enhanced with GIS information showing basic corridor information (e.g., roads, access points, developments, natural features, etc.) and provide any corrections to what they saw on the maps, so that new maps would incorporate the changes. Members were then asked to consider mobility and access needs for 2030, and what they thought might be important issues based on their particular points of views (e.g., neighborhood access, commercial access, bicycle/pedestrian access, etc.) They were asked to evaluate all current access points either as interchanges, over/underpasses, or neither an interchange or over/underpass.

Since the last Section 5 CAC Meeting in 2005, INDOT intensified the department’s focus on I-69 Sections 1-4, resulting in Records of Decision for all four sections. As part of the updating of this Preliminary Screening of Alternatives, it is intended to reconvene a single CAC, a hybrid of the Bloomington/Monroe County CAC and the Martinsville/Morgan County CAC. The first meeting of this new group took place on March 15, 2012. Future meetings of this group are expected throughout the development of the Tier 2 study.

### **Public Information Meeting (PIM)**

Section 5 hosted a PIM on July 20, 2005 at the Liberty Church in Martinsville to present a project progress update and collect feedback from members of the public. A “workshop” format



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display area provided newly developed preliminary access alternative maps, graphics of typical sections, anticipated timelines and other project-related information. Members of the Section 5 team were on hand to discuss the alternatives with individuals and address specific comments and questions. Attendees were presented with a chart showing various “options” for potential interchange points, grade separations and local access roads and asked to rate each option.

Following the workshop portion of the meeting, a brief presentation was given to highlight major project points and milestones, after which members of the public were allowed to provide comments to the audience. In addition, attendees were provided official comment forms to fill out and submit, or to take with them to fill out and return at a later time. Table 4 presents a summary of ratings provided by the public to the options chart distributed at the PIM.

Section 5 will host another PIM after this document is published. Input from the community will be solicited and a summary of the results of the meeting will be included in ongoing project studies.



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<b>Interchange/Access Option</b>	<b>Total Prefer</b>	<b>Comments</b>
That Road Overpass	5	Preferred for bikes
That Road Close	4	
Rockport Road Overpass	8	Better east-west route; better quality existing roads
Rockport Road Close	1	
Fullerton Pike Interchange	5	
Fullerton Pike Overpass	3	Access to hospital; better spacing from 2 <sup>nd</sup> St.; Preferred for bikes
Tapp Road Interchange	5	Provides good spacing from SR 37 Interchange; preferred over Fullerton Pike for bikes
Tapp Road Overpass	4	Collector Distributor considered not as safe as other alts.
Collector Distributor System	1	Preferred as part of entire Alt. 2
Vernal Pike Overpass	1	
Vernal Pike Underpass	5	Best for terrain; preferred for bikes
Acuff Road Overpass	4	Preferred for bikes
Acuff Road Closed	4	Prevent impacts to MGRHD
Kinser Pike Interchange	3	Access to planned development; Provide bike access
Kinser Pike Overpass	7	Better access plan for BHSN; good for bikes
Walnut Street Interchange	7	Bloomington "Gateway" (2)
Walnut Street Overpass	1	
Sample Road Interchange	6	Level terrain (2), business access (2), avoids need to use Bottom Road to go south (Bottom floods frequently)
Sample Road Overpass	1	
Chambers Pike Interchange	2	
Chambers Pike Overpass	4	
Sample Road & Chambers Pike interchanges	7	Best access plan for businesses, residences & future development (4)
SR 37 bifurcation, six lanes to west of current alignment	3	Avoids impacts to west caused by access road at Cooksey;
SR 37 bifurcation, three lanes each direction	5	Maintains natural beauty
Paragon Road Interchange	3	Better for overall traffic than Liberty Church;
Paragon Road Overpass	4	
Liberty Church Road Interchange	6	Less impact to forest; better terrain; better for future development
Liberty Church Road Overpass	2	
<b>Other Comments/Preferences</b>		
	1	Close off Paragon Road
	1	Close off Fullerton Pike
	1	Interchange at Vernal (with CD)
	1	Close off Kinser Pike (use Walnut)
	2	Push local access road shown in Alt 3 (between Norm Anderson Road & Crossover Road) further west to prevent impacts to current and future development
	1	Provide multi-use paths along entire length of corridor
	1	Maintain bridges over abandoned railways for Bikes



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#### **Expert Land Use Panels**

Expert Land Use Panels were established in all six I-69 Tier 2 sections to assist in forecasting future land use to the year 2035 without and with I-69. This information was used in the development and refinement of alternatives that would provide optimum access to the areas served while minimizing impacts to future growth patterns. The Section 5 panel was comprised of local professionals intimately familiar with development activity in the communities served by I-69. Members were involved in the public development approval process or in the development of major residential or commercial areas and included representatives of city and county planning and zoning departments, public utilities, real estate professionals, appraisers and economic development groups. The panel held meetings on April 13, 2005 and May 25, 2005.

At the first meeting, the panel established future growth patterns without consideration of I-69 (i.e., no-build scenario) and identified geographic areas having potential for high, medium, low or no growth for housing and employment based on traditional determinates of development (e.g., current transportation access, availability of sanitary sewers, suitably zoned land without environmental constraints). At the second meeting, panel members were asked to predict shifts in households or employment from the 2030 no-build scenario that would result from the I-69 build alternatives (due to improved or reduced access based on interchange locations and/or local access roads). In addition, the panel was asked to allocate Monroe County's share of induced development (development resulting as a result of the build alternative). This countywide forecast of induced development was provided by the regional economic analysis performed in Tier 1 for the selected alternative (Alternative 3C).

With the passage of time, the decision was made to re-engage the Expert Land Use Panel to help in updating the Screening of Alternatives. The group considered the results of the 2010 Census information and updates to any local planning efforts, including potential changes to the local comprehensive plans since the most recent meeting in 2005. The panel held meetings on October 4, 2011, October 25, 2011, November 9, 2011, and February 16, 2012.

The meeting structure was similar to those at meetings held in 2005. During the first meeting, the panel reviewed future household and employment forecasts, without consideration of I-69 (i.e., no-build scenario) and reallocation of household growth based on current planning conditions. The second meeting focused on reallocation of employment growth, based on current planning conditions. Morgan County members completed this effort for their area, however discussion with the Monroe County members continued past the meeting conclusion and a third meeting was convened to complete this exercise. The final meeting focused on shifts of those growth areas (in both Morgan and Monroe counties) based upon the access points of each I-69 build alternative.

#### **Participating Agencies**

INDOT and FHWA have extended invitations to the Monroe and Morgan Counties, Cities of Bloomington and Martinsville, and the Town of Ellettsville to become Participating Agencies for the Section 5 environmental studies. All five organizations have accepted and will be afforded



an opportunity for early and timely input from local experts/local communities under this umbrella. Regular monthly meetings are anticipated during the ongoing environmental studies.

The first meeting was held on February 15, 2012 with potential members to explain Participating Agencies roles and responsibilities. Section 6002 of SAFETEA-LU (enacted in 2005) describes the process for Participating Agency engagement in NEPA projects. Its provisions are not applicable to the I-69 project (which predates SAFETEA-LU). However, its guidance is being informally used to respond to local agency interest and improve cooperation between INDOT, FHWA and the Participating Agencies. At this first meeting, participants were updated about ongoing activities, agreed upon a tentative meeting schedule for future meetings, and had the opportunity to pose questions.

The second meeting was convened on March 21, 2012. Representatives were provided with draft copies of the I-69 Section 5 Revised Purpose & Need and the Revised Preliminary Alternatives Analysis and Screening reports. Input on these two documents was requested. Minor edits to these documents have been incorporated as a result of this coordination, Participating Agencies were also asked to identify topics of interest which will be considered as part of the ongoing project studies. These include:

- Location of access roads adjacent to the interstate
- Potential for “gateway” treatment at northern and southern interchanges
- Continued coordination regarding Emergency Service Responses, schools, Bicycle/Pedestrian movements, improvements to the adjacent local road network, karst features, drainage features, noise concerns, air quality features, lighting design requirements, incorporation of wildlife-friendly features, environmental resource mitigation and issues related to construction activities.

These topics will be discussed at future meetings of the Participating Agencies. Subsequent meetings will be documented in the DEIS.

### **Church Surveys**

Because churches often are focal points for community activities as well as worship services, surveys were provided to churches in the vicinity of Section 5 to collect a variety of information. The surveys requested church administrators to list weekly activities held at their facility, including days and times; describe any school or childcare activities, including schedules and attendance numbers; and describe current access routes and how they felt such routes might be affected by the I-69 project. Surveys were mailed to 50 churches throughout the Section 5 study area. Responses were received from 17 churches, the majority of which were located in close proximity to existing SR 37 and whose members use the current roadway system to access their facilities. Church administrators will continue to be consulted and their input considered during the alternative development process.



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#### **Emergency Medical Service (EMS) Surveys**

Efficient transport for emergency fire, police, ambulance and hazardous materials response services is considered critical to local communities in the Section 5 study area. Such services are provided by a variety of sources including local fire and police departments, townships and other institutions. In order to gauge the needs of these providers, surveys were developed and distributed to 25 emergency service providers in the Section 5 study area that could potentially be affected by the I-69 project. The surveys requested information on geographic service areas, types of service (e.g., fire, ambulance, etc.), staffing, current use of SR 37 and connecting routes, average call numbers and response times, current congestion problems, and any other available statistics. Respondents also were asked to identify what they considered to be critical routes and access points, how they believed these might be affected by the I-69 project, and what actions could be taken to maintain or enhance existing efficiency and response times. Detailed responses were received from 10 providers, and follow-up calls and meetings were held to obtain more specific information, ideas and concerns. Based on the responses and follow-up calls, it was determined that several of the 15 providers that did not provide detailed information either do not currently use SR 37, or do not foresee using I-69 in the future for service calls. Others confirmed that information regarding their services had been included in one or more of the 10 providers that had submitted detailed information. EMS representatives continue to be consulted and their input considered during the alternative development process.

#### **3.4.3 Resource Agency Coordination**

The scoping process included the definition of the range of alternatives to be considered and the process to be used to address potential environmental impacts. The Tier 1 ROD limited the range of alternatives to freeways within the defined corridor along SR 37, with termini just north of Victor Pike, south of Bloomington, and SR 39 south of Martinsville. Many of the issues to be addressed are mandated by various laws, regulations, and agency guidelines. To ensure the scope of study for these issues would be adequate, two general meetings have been held to date between environmental resource agencies, FHWA, INDOT, the PMC, and all consultants working on specific Tier 2 sections. They are described below.

- On August 12, 2004, a “kick-off” meeting was held with federal and state review agencies. The purpose of the meeting was to familiarize the environmental review agencies with the scope and status of environmental survey activities associated with the Tier 2 studies; to introduce the Project Management Team, agency representatives, and consultants responsible for each of the six sections; acquaint agency representatives with the Tier 2 project corridor, overall project Purpose and Need, public involvement efforts, and project schedules; and identify major issues to be addressed in the study.
- A second two-day environmental resource agency meeting was held February 23-24, 2005. The first day’s agenda included a general meeting involving all participants followed by breakout sessions to discuss specific topics. The general session focused on explaining the steps in the formal agency coordination process each Tier 2 study will follow; identifying project schedules and timeframes; explaining how local needs and



goals will be identified and incorporated into the Purpose and Need Statements of each section; and discussing how preliminary alternatives will be developed and evaluated. Each section's consultant project manager gave a brief presentation summarizing activities to date and future planned activities. These presentations were followed by questions and comments from the agencies. In the afternoon the following three breakout sessions were held: (1) the Interagency Water Resources Coordination Team discussed issues related to wetlands, water quality, floodplains, floodways and stream crossings; (2) the Interagency Karst Geology Team discussed issues related to sink holes; and (3) a demonstration and training session was provided for the Quantm program. The second day of the agency coordination activities was primarily devoted to a bus tour to provide agency representatives with an overview of notable features in Sections 1, 2, and 3.

A resource agency coordination meeting/web cast was conducted on December 14, 2005, to review and receive resource agencies' comments on Section 5's Purpose and Need and Preliminary Alternatives package that had been submitted to the agencies on November 11, 2005. Agencies represented, in addition to FHWA and INDOT, were the USEPA Region 5 and the IDNR. The discussion focused primarily on the local goals that comprise Section 5's Purpose and Need Statement. It was noted that the needs identified for Section 5 were identified by extensive public involvement activities, and that they support the Tier 1 goals while providing the local focus required of the Tier 2 studies. Regarding the analysis of alternatives within the selected corridor, it was noted that all alternatives would likely satisfy Purpose and Need equally; therefore the potential environmental impacts and cost of each alignment would be key determinants in evaluating and comparing alternatives. The U.S. Department of Agriculture (USDA) Forest Service, DNR Division of Water, and DNR Division of Historic Preservation and Archaeology provided written comments on the 2007 version of this package, as noted below. They will be afforded the same opportunity with this revised version.

- The Forest Service letter, received January 10, 2006, stated "The Purpose and Need for Section 5...is consistent with the Tier 1 FEIS and seems to reflect local needs. The range of alternatives seems adequate."
- The DNR Division of Historic Preservation and Archaeology letter, received December 21, 2005, offered no comments on the Section 5 draft purpose and need; however, it offered several comments regarding preliminary alternatives. The letter stated concerns for impacts to the MGRHD, Monroe County Bridge Number 913 (near the current North Walnut Street interchange), and Morgan County Bridges Numbers 161 and 224.
- The DNR Division of Water letter, received on February 20, 2006, stated concerns for impacts to several resources, summarized as follows:
  - Karst: concerns for general highway runoff, construction and drainage impacts to springs near Fullerton Pike and May Cave, and disruption of hydrological



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connections currently running underneath existing SR 37 near Wapehani Mountain Bike Park and the 2<sup>nd</sup> Street/SR 45 interchange

- Forested Habitat: concerns for habitat loss at interchanges near the Morgan-Monroe State Forest where new roadway is not at the same level as existing SR 37 and intersecting roadways, and where new or improved roadways make deep incursions into currently undisturbed habitat
  - Light and Noise: concerns for car traffic noise effects on birds, and light impacts to behaviors of nocturnal wildlife
  - Streams, Wetlands and Riparian Areas: concerns for impacts based on widening of current roadway footprints, use of lengthy culverts, and stream realignments
  - Habitat Connectivity: concern for maintaining connectivity (provides recommendations for bridges and culverts)
- A third two-day environmental resource agency meeting was held August 1-2, 2006. The first day's agenda included overall discussions of the entire project followed by section updates and specific topics. The overall session focused on project schedules, Tier 1 EIS re-evaluation and comments, Tier 2 agency review packages, and the potential use of public/private partnerships. Each section consultant project manager presented a brief summary of activities to date and future planned activities. These presentations were followed by questions and comments from the agencies. The afternoon session presented three specific topics: 1) Cumulative Impact Analyses discussed methodology, agency guidance, Tier 1 resources, and resources to be evaluated by each section; 2) Interagency Water Resources discussed coordination, technical reports by section, and watershed permitting process; 3) Section 4 & 5 Karst break-out sessions provided summaries of July 2006 Draft Karst Feature and Groundwater Flow Investigation reports. The second day was primarily devoted to a bus tour of notable features in Sections 4, 5, and 6.
  - The fourth environmental resource agency meeting for all six sections of the Tier 2 studies was held March 1, 2007, in Indianapolis. Agencies represented, in addition to FHWA and INDOT, included USEPA Region 5; USFWS-Bloomington Field Office; IDNR (Divisions of Water, Fish and Wildlife, Forestry, and Historic Preservation and Archaeology); IDEM Offices of Land Quality and Ground Water; and USDA Forest Service/Hoosier National Forest. The agenda included reviewing the project schedule; a progress update for each Tier 2 section; and a review of the Section 1 DEIS and the comments received. Regarding comments received about the Section 1 DEIS, discussions focused on these three areas:
    - Water resources, including status of coordination with agencies, updates on wetland and stream technical reports in each section, permitting, and mitigation. Forest mitigation and compensatory mitigation was also discussed.
    - Indirect and cumulative impact analyses, including the methodology for the Tier 2 evaluations and updates of each section's analyses. It was noted that farmland,



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forests, streams, and wetlands are the resources identified for cumulative impact analysis in Section.

- Karst features and studies.

A follow-up Sections 4 and 5 karst resource review was conducted on June 26, 2007 with USEPA Region 5 and included a bus tour of select karst features in response to an agency request from the March 1, 2007 fourth environmental resource agency meeting.

With the decision to consider Minimal Impact Alternatives, it was necessary to prepare an Additional Information Report to the 2008 Historic Properties Report. The DNR Division of Historic Preservation and Archaeology was consulted and two field meetings were convened. The first took place on November 10, 2011 and reviewed a variety of above-ground resources for consideration of eligibility. The second meeting took place on December 20, 2011 as a field review of those dimension limestone districts under consideration for inclusion in potential landscape districts.

Second Agency web cast was convened to discuss the original publishing (May 2007) of the Preliminary Screening of Alternatives report. This meeting took place via webcast on July 7, 2007. Representatives from INDOT, FHWA, USFWS, USEPA, IDNR, IDEM, and the BMCMPPO were in attendance.

### 3.4.4 Preliminary Alternatives

Preliminary alternatives were developed that are consistent with both the *Indiana Department of Transportation Design Manual* and the American Association of Highway and Transportation Officials' (AASHTO) *A Policy on Geometric Design of Highways and Streets*. The alternatives also incorporated information obtained via preliminary studies and public outreach and agency coordination activities. The access locations presented in Tier 1 (Alternative 3C) were utilized for the development of preliminary Alternative 1.

As part of the alternative development, generalized typical sections, potential interchange types and initial alternatives were explored. These are shown on Figure 4 - Typical Sections; Figure 5 - Section 5 Example Interchange Types; and Figure 6 - Alternatives 1, 2, and 3 Comparison Maps (a, b, c, and d).

The typical right-of-way section for preliminary alternatives in Section 5 ranges from about 220 feet to 790 feet wide, depending on the alignment and terrain features. The widest sections occur in limited locations where the existing SR 37 alignment is bifurcated. In addition, there are proposed local access roads at various points throughout the corridor.

As discussed in Section 3.2, during development of the preliminary alternatives, the rural areas were designed with the Tier 1 typical cross section with a 6-Lane Divided Section with grass median. The Tier 1 urban section was replaced with a slight modification to the Tier 1 rural section based on decisions to use or reconnect to the existing local road network rather than constructing the new local service roads assumed in Tier 1. In addition, it was decided to



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maintain the horizontal alignment within the existing SR 37 corridor and generally maintain the existing SR 37 elevations. This essentially allows the use of an 8-Lane Divided Section with grass median through the urbanized area while minimizing potential impacts to karst features, visual impacts and project cost. These assumptions were used in development of Alternatives 1, 2 and 3 (see Figure 4). As described in Section 3.2, Alternatives 4, 5, 6 and 7 (being carried forward for detailed study in the Section 5 DEIS) have typical sections which are modified from these assumptions.

#### Mainline Alignments for Preliminary Alternatives

Development of mainline alignments began using the existing SR 37 centerline and the 2,000-foot approved Section 5 corridor. Even though the Section 5 corridor follows SR 37, I-69 must be constructed to meet interstate design standards. Horizontal and vertical alignments with a 70 mile per hour design speed were developed. Guidance from INDOT and FHWA provided that median barriers, retaining walls, and guardrails not be used in the development of preliminary alternatives. These features could later be added, if necessary to avoid or minimize impacts.

GIS data of base mapping, existing right-of-way, contours, environmental resources, and parcel boundaries were used to identify constraints when developing alternatives. Several key constraints (to be avoided by all alignments) included all cemeteries, the MGRRHD, Wapehani Mountain Bike Park, Bennett's Dump and Lemon Lane Landfill Superfund Sites, and the Hoosier Energy Operations Headquarters/distribution center and transformer station. Avoidance of these environmental and physical resources narrowed the possible alignments to small variances on either side of the existing centerline, with the exception of the portion through the Morgan-Monroe State Forest. The I-69 mainline alignment was shifted off the existing SR 37 centerline in certain locations:

- **Shift to Avoid Monroe Hospital.** The mainline alignment was shifted to the east at Fullerton Pike to avoid impacting the Monroe Hospital and to minimize impacts to karst features.
- **Shift to Avoid Wapehani Park.** The mainline alignment was shifted to the west to avoid Wapehani Mountain Bike Park.
- **Shift to Avoid Historic District.** The mainline alignment was shifted to the east at Acuff Road to avoid impacting the MGRRHD boundary.
- **Shift to Avoid Cemetery.** The mainline alignment was shifted to the west between Sample Road and Chambers Pike to avoid the Carlton/Huff Cemetery; here the existing northbound SR 37 lanes were used as a local access road.
- **Shift within State Forest.** The bifurcation of SR 37 through the Morgan-Monroe State Forest was maintained in most of the I-69 alignments, while one alignment shifted I-69 to the west and used existing northbound SR 37 lanes as a local access road.



### Access Locations for Preliminary Alternatives

Currently there are approximately 50 streets, ramps, roads, or driveways with access to existing SR 37 in Section 5. When constructing I-69, direct access to I-69 will be via traffic interchanges only, and most of these direct access points will be eliminated. Any crossings of I-69 will be provided via grade separations. All other access points with existing SR 37 will be closed and local access roads or local service roads will serve existing traffic.

The criteria presented in Section 3.3 were used to identify potential locations of interchanges, grade separations, local access roads, collector/distributor (CD) roads and local service roads. Traffic volumes from the I-69 Tier 2 Corridor Model; input from representatives of Monroe County, Morgan County, and the City of Bloomington and the I-69 Community Advisory Committees; and planned and programmed improvements to the local roadway network were all considered in choosing access locations. There are four existing interchanges on SR 37 in Section 5: 2<sup>nd</sup> Street/SR 45, 3<sup>rd</sup> Street/SR 48, SR 46 and Walnut Street. Interchanges were maintained at these locations, although alternatives were considered which moved the Walnut Street interchange out of the Beanblossom Creek floodplain.

For certain potential interchange locations (e.g., Fullerton Pike, Tapp Road, 2nd Street, 3rd Street, Kinser Pike and Walnut Street), multiple interchange types were considered. Types were chosen based on surrounding land uses, INDOT design guidance and traffic operations. In rural areas, a wide diamond was developed for each interchange providing 1,320 feet or more distance between ramp termini where possible.<sup>15</sup> In urban areas, tight diamonds and single-point interchanges were used with much tighter ramp termini spacing (400 feet or less). Because of safety concerns, loop ramps were not permitted unless absolutely necessary to avoid railroads or rivers, or to improve traffic operations at system interchanges. See Figure 5 for examples of these interchange types. While a preliminary interchange types are identified, various interchange layout options will be considered at I-69 access locations as the environmental impact studies progress.

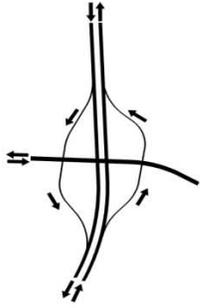
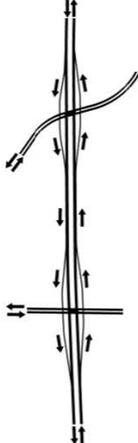
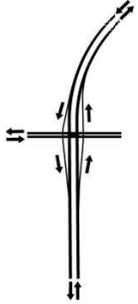
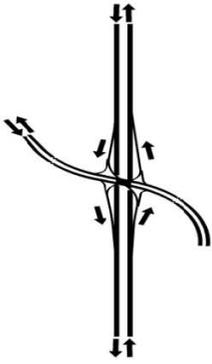
At each grade separation location, an overpass and an underpass with I-69 were considered. Because of the existing SR 37 grade and the presence of karst features within the corridor, overpasses with I-69 would typically be cheaper and create less drainage concerns than underpasses.

See Figure 6 - Alternatives 1, 2, and 3 Comparison Maps at the end of Chapter 3.0 and the larger scale maps (Figures 7 and 8) included at the end of Chapter 4.0 for the following Section 5 locations.

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<sup>15</sup> A “wide diamond” allows for sufficient space to add loop ramps within the existing interchange right-of-way, should traffic volumes warrant it in the future.

**Figure 5: Section 5 Example Interchange Types**

 <p align="center"><b>WIDE DIAMOND</b></p>	<p align="center"><b>Wide Diamond</b></p> <p>Consists of an overpass with two intersections on either side for the ramp connections. Flow can be controlled via stop signs or signals depending on the traffic volumes. Generally used in rural areas. For Section 5, the ramps are generally spaced at about 1,200 from the mainline so that the opportunity for future loop ramps can be afforded.</p>	 <p align="center"><b>SPLIT DIAMOND</b></p>	<p align="center"><b>Split Diamond</b></p> <p>Consists of overpasses at two crossroads with frontage roads connecting the two halves. The ramp lanes are continuous between the two overpasses, with no access to the mainline until the motorist passes the second crossing. Flow is controlled via traffic signals at each crossroad intersection for roads in urban areas that are too close for a standard interchange but still have access needs at both locations.</p>
 <p align="center"><b>MEDIUM DIAMOND</b></p>	<p align="center"><b>Medium Diamond</b></p> <p>Consists of an overpass with two intersections on either side for the ramp connections. Flow can be controlled via stop signs or signals depending on the traffic volumes. Generally used in rural or suburban areas. For Section 5, the ramps are generally spaced at about 800 feet from the mainline.</p>	<p align="center"><b>Folded Loop</b></p> <p>This is a variation of a diamond interchange in which there is a loop ramp in one or more quadrants. It is sometimes called a "Partial Cloverleaf". A loop ramp is introduced when there is a physical constraint in one or more quadrants. Access to the mainline can be controlled by stop signs or signals depending on traffic volumes. Ramp spacing is similar to those for a wide or medium diamond.</p>	
 <p align="center"><b>NARROW DIAMOND</b></p>	<p align="center"><b>Narrow Diamond</b></p> <p>Consists of an overpass with two intersections on either side for the ramp connections. Flow is usually controlled via traffic signals. Generally used in urban areas. For Section 5, the ramps are generally spaced at 400 feet from the mainline, due mainly to restrictions of adjacent land use.</p>	 <p align="center"><b>SINGLE - POINT</b></p>	<p align="center"><b>Single-Point</b></p> <p>This is a variation of a narrow diamond interchange in which the ramps and crossroad traffic converge at the mainline in one intersection. It is generally used when left-turning ramp movements dominate the traffic movements. Flow is controlled via one signal rather than the two signals used for a diamond interchange.</p>



While preliminary interchange types are identified above, various interchange layout options (as appropriate at each location) will be considered at I-69 access locations.

### **That Road Overpass or Rockport Road Overpass**

A That Road overpass was considered to maintain connectivity between neighborhoods on the east and west sides of I-69. As an alternative to the That Road overpass, an overpass also was considered at Rockport Road. A Rockport Road overpass also would maintain connectivity between neighborhoods on the east and west sides of I-69.

### **Fullerton Pike Interchange**

The Monroe County Thoroughfare Plan shows a Southeastern Bypass around Bloomington. Currently, right-of-way is being preserved in both the That Road and Fullerton Pike corridors for the Southeastern Bypass. Providing access to I-69 from the northeast for the Southeastern Bypass was considered at the SR 37 interchange with I-69 (which is part of Section 4) and at That Road. It was determined that the SR 37 interchange would become too complex to add a fourth (northeasterly) leg, and an interchange at That Road would be too close to the SR 37 interchange. Therefore, an interchange was proposed at Fullerton Pike to provide access to the southern areas of Bloomington, and provide a connection for this future Southeastern Bypass. An interchange would also provide access to the Monroe Hospital. A medium-sized diamond, a folded diamond, and a partial folded diamond were considered for the Fullerton Pike interchange.

### **Tapp Road Overpass or Interchange**

The City of Bloomington requested that an interchange be studied for Tapp Road to serve a large portion of undeveloped land within the City. Providing a full interchange would require collector distributor roads on I-69 through the urban section of Bloomington due to the close spacing of interchanges. The interchange type considered was a tight diamond. An overpass was also considered at this location to connect the neighborhoods west of I-69 with downtown Bloomington.

### **2nd Street/SR 45 Interchange**

Currently, there is an interchange at this location. Since SR 45 is a state highway with significant traffic volumes, an interchange was maintained at this location in all preliminary alternatives. Interchange types considered included the existing folded diamond, a single-point interchange and a tight diamond.

### **Railroad Overpass**

Currently there is a grade separation over SR 37 for the Indiana Railroad. This section of track is to remain in service for the foreseeable future, and thus a railroad overpass must be maintained for I-69 at this location.



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#### **3rd Street/SR 48 Interchange**

Currently, there is an interchange at this location. Since SR 48 is a state highway with significant traffic volumes, an interchange was maintained at this location in all preliminary alternatives. Interchange types considered included the existing tight diamond and a single-point interchange.

#### **Railroad Underpass**

Currently there is a railroad grade separation under SR 37 for the Indiana Railroad and the CXS Railroad. This section of track is to remain in service for the foreseeable future, and thus a railroad underpass is required for I-69 at this location.

#### **Vernal Pike/17th Street Underpass or Overpass**

Both the City of Bloomington and Monroe County recommended that a grade separation with I-69 be considered at this location. The existing access at Vernal Pike would be eliminated and 17<sup>th</sup> Street would be extended across I-69 (either over or under) and connect with Vernal Pike. A grade separation would maintain community connectivity and maintain access to the industrial areas west of I-69.

#### **SR 46 Interchange**

Currently, there is an interchange at this location. Since SR 46 is a state highway with significant traffic volumes, an interchange was maintained at this location in all preliminary alternatives. The existing interchange can remain with minor improvements to ramp termini.

#### **Arlington Road Overpass**

Currently there is an Arlington Road grade separation over SR 37. An overpass was placed at this location in preliminary alternatives to maintain connectivity between the neighborhoods west of I-69 and Bloomington High School North.

#### **Acuff Road Overpass or Access Road**

An overpass or a local access road to Kinser Pike was considered at this location to maintain neighborhood connectivity and maintain secondary access to the Maple Grove Rural Road Historic District (MGRRHD).

#### **Kinser Pike Overpass or Interchange**

An interchange was considered at this location as an alternative to an interchange at Walnut Street. An interchange would provide access to the City of Bloomington Kinser Pike/Prow Road TIF district that is considered a prime area for development. The interchange type considered was a diamond interchange. A grade separation was also considered for this location to maintain community connectivity for a neighborhood west of I-69.



### **Walnut Street Overpass, Interchange or Access Road**

Currently there is an interchange with SR 37 at this location. The existing interchange does not provide for full traffic movements. Maintaining an interchange at this location was considered since the current interchange serves as the unofficial “Gateway to Bloomington” and Indiana University, while serving high traffic volumes. By connecting Walnut Street to Bottom Road, an interchange would provide secondary access from I-69 to the Town of Ellettsville. The interchange types considered at this location included a diamond interchange and a single-point interchange. An overpass or local access road connecting to Sample Road were also considered for this location.

### **Sample Road Overpass or Interchange / Chambers Pike Overpass or Interchange**

An interchange was considered at Sample Road to provide access to the neighborhoods and commercial businesses just north of Bloomington. An interchange would also provide access for Hoosier Energy maintenance trucks to use I-69. The interchange type considered was a diamond interchange. A grade separation was also considered to maintain connectivity between the business and neighborhoods on each side of I-69.

An interchange was considered at Chambers Pike to provide access to the neighborhoods and commercial businesses just north of Bloomington. An interchange would also provide access to the Morgan-Monroe State Forest. The interchange type considered was a diamond interchange. A grade separation was also considered to maintain connectivity between the business and neighborhoods on each side of I-69.

The access points at Sample Road and Chambers Pike are located approximately 2.9 miles apart. These alternatives considered in the screening process included having an overpass or interchange at Sample Road but not Chambers Pike; at Chambers Pike but not Sample Road; and at both locations.

### **Bryant Creek Road Overpass or Access Road**

A Bryant Creek Road overpass or local access road to Paragon Road were considered to provide access to I-69 for land locked parcels east of I-69 via Turkey Tract Road and a Paragon Road interchange.

### **Paragon Road Overpass or Interchange**

An interchange was considered at Paragon Road to provide access to the neighborhoods north of the Morgan-Monroe State Forest and to the Town of Paragon. The interchange type considered was a diamond interchange. A grade separation was also considered to maintain roadway connectivity in the area.



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#### **Liberty Church Overpass or Interchange**

Liberty Church has become a major regional focal point for community activities. In addition, the surrounding land is likely to be developed. The City of Martinsville plans to extend utilities (water and sewer) to the area, regardless of whether I-69 is built. Therefore, an overpass or interchange was considered to connect Liberty Church Road and Godsey Road. An interchange at Liberty Church also would reduce the traffic loads at Section 6 interchanges at SR 39 and Burton Road. The interchange type considered was a diamond interchange.

#### **Preliminary Alternatives Considered**

As part of the alternatives screening process, three initial alternatives – Alternatives 1, 2, and 3 – were developed by combining the mainline alignments with various combinations of interchanges and grade separations as describe above. A series of local access roads and local service roads parallel to I-69 were developed for each alternative between the interchanges. The local access roads and local service roads connect individual parcels and roads that would otherwise be disconnected from I-69. Table 5 summarizes the interchanges and grade separations included with each of these preliminary alternatives.

Other than the interchanges and local access/service roads associated with each preliminary alternative, two notable differences between the alternatives are:

- Access at Tapp Road. Alternatives 1 and 3 include an overpass at Tapp Road, while Alternative 2 includes a single-point interchange with a Collector Distributor (CD) system (since the spacing between an interchange at Tapp Road and 2<sup>nd</sup> Street/SR 45 is less than a mile). The CD system would separate local traffic from the interstate facility, which would greatly reduce weaving movements on I-69 and would improve the Level of Service (LOS) for traffic along the mainline. The CD system would run on both sides of I-69 from just north of the SR 37 interchange in Section 4 to just north of the 3<sup>rd</sup> Street/SR 48 interchange.
- Access Roads in the Vicinity of Morgan-Monroe State Forest. Alternative 1 shifts the entire I-69 mainline to the west starting at the current southbound lanes of SR 37 and utilizes the current northbound SR 37 lanes as an eastern local access road between Chambers Pike and Paragon Road through the Morgan-Monroe State Forest area (the current bifurcation area). Alternatives 2 and 3 both maintain the existing mainline bifurcation with no local access road between Chambers Pike and Paragon Road.

Alternatives 1, 2, and 3 were presented to INDOT and FHWA for review at a meeting held on June 30, 2005. Based on comments from INDOT and FHWA minor changes were made to the alternatives. The three alternatives were then presented at a CAC meeting held on July 19, 2005, and subsequently at a PIM held on July 20, 2005. Participants commented on proposed road closures, overpass recommendations, locations of interchanges, and connector roads.



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Alternatives 1, 2 and 3, as presented at these meetings, are shown in Figure 6 (sheets a, b, c and d) at the end of Chapter 3 and are summarized in Table 5.

Table 5: Section 5 Alternatives 1, 2 and 3 Summary				
Area Type	Major Feature Name	2005 Preliminary Alternatives		
		Alternative 1	Alternative 2	Alternative 3
Urban	I69 and SR37	Sect. 4 Interchange		
	That Road	No I-69 Access; E Access Rd	Overpass	
	Rockport Road	Overpass	No I-69 Access; East Access Rd	
	Mainline (That to Fullerton)	Shift to East; Grass Median	CD System; Median & Access Rd Barriers	Shift to East; Grass Median
	Fullerton Pike	Folded Diamond Interchange	Overpass	Folded Diamond Interchange
	Mainline (Fullerton to Sample)	SR37 Centered; Grass Median	CD System; SR37 Centered to 3rd St	SR37 Centered; Grass Median
	Tapp Road	Overpass	CD System (barriers between through and local lanes); Single Point Interchanges at Tapp, 2 <sup>nd</sup> and 3 <sup>rd</sup> Sts	Overpass
	SR 45/2 <sup>nd</sup> Street	Folded Diamond Interchange		Single Point Interchange
	SR 48/3 <sup>rd</sup> Street	Urban Diamond Interchange		Single Point Interchange
	Vernal Pike	Underpass	Overpass	Underpass
	SR 46 Interchange	Use Existing Interchange		
Transition from Urban to Rural	Arlington Rd	Overpass		
	Acuff Road	No I-69 Access	Overpass	No I-69 Access; W Access Rd
	Kinser Pike	Overpass	Rural Diamond Interchange	Folded Diamond Interchange
	SB Mainline Bean Blossom Valley	4% Cut/Fill and Climbing Lane		
Rural	N. Walnut Street	Rural Diamond Interchange	No I-69 Access; E Access Rd	Overpass
	NB Mainline Bean Blossom Valley	4% Cut/Fill and Climbing Lane		
	Sample Road	Rural Diamond Interchange		Overpass
	Mainline Shift (Sample to Chambers)	Shift to West; Grass Median; NB SR37 as Access Rd		
	Chambers Pike	Overpass	Rural Diamond Interchange	
	Mainline Shift (Chambers to Bryants)	All lanes on west-side; 4% Cut/Fill	3 lanes each side; 4% Cut/Fill	
	Mainline (Bifurcation)	Wide Shoulders and Clear Zone		
	Bryants Creek Rd	No I-69 Access; E/W Access Rds	Overpass	
	Mainline (Bryant Crk to Termini)	SR37 Centered; Wide Grass Median		
	Paragon/Pine	Rural Diamond Interchange	Overpass	Rural Diamond Interchange
	Liberty Church	Overpass	Rural Diamond Interchange	Overpass
	SR37 N of Legendary Rd.	No I-69 Access; E/W Access Rds		
I69 and SR 39	Sect. 6 Interchange			
Notes – Local access roads generally parallel I-69 on either E – east side, W- west side, or E/W - both sides of I-69 Mainline; Descriptive terms such as “wide, medium, and narrow” are provided for relative comparatives only and are not indicative of specific dimensions.				



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#### 3.4.5 Results of Initial Alternatives Screening Process

##### Approach to Screening

The preliminary alternatives (Alternatives 1, 2, and 3) were used in the screening process simply to illustrate *possible combinations* of the various elements of the alternatives. They were not intended to limit the range of possible combinations of the individual elements. Therefore, the alternative screening process involved an individual evaluation of each element of each preliminary alternative. As discussed below, some elements of the preliminary alternatives were retained, while others were eliminated, modified or replaced. The 2030 traffic forecasts for preliminary alternatives (Alternatives 1, 2, and 3) were provided early in the alternative development process and were utilized during early screening and were not revised with the subsequent 2035 traffic forecast used for Alternatives 4, 5, 6, and 7.

Previously listed key constraints to be avoided (cemeteries, the MGRRH, Wapehani Mountain Bike Park, Bennett's Dump and Lemon Lane Landfill Superfund Sites, and the Hoosier Energy Operations Headquarters and transformer station), the three Dimension Limestone Historic Landscape Districts (DLHLDs) (Hunter Valley, Reed, and North Clear Creek) and five individually eligible properties were avoided or minimized in alternatives carried forward for further study.

##### 2007 Alternatives Carried Forward

During the 2007 Alternative Screening, the elements that remained under consideration after the screening process were grouped into two alternatives (Alternatives 4 and 5), which are being carried forward for detailed study. The 2007 Alternatives included a mainline with grass medians, setback separation from parallel local access roads, inclusion of additional ROW for growth beyond the 2030 design year, and generally followed existing SR 37 with the previously listed shifts:

- Shift east at Fullerton Pike to avoid Monroe Hospital, karst features, and developed parcels,
- Shift to west between 2<sup>nd</sup> and Tapp Streets to avoid WMB Park,
- Shift east north of Arlington Road to avoid MGRRH,
- Shift west between Sample Road and Chambers Pike to avoid Carlton/Huff Cemetery,

Similar to the preliminary alternatives (Alternatives 1, 2, and 3), the access, grade separation, and no access options in 2007 Alternatives 4 and 5 illustrate *possible combinations* of the various elements of the alternatives (i.e. decision pairs were generally interchangeable).



Minimal Impact Alternatives Carried Forward

Since the 2007 alternatives development, INDOT has reviewed these alternatives to consider design features which could lessen impacts to the natural and human environment. This reconsideration recognized the significant existing development along SR 37 and the sought opportunities to optimize use of existing pavement, grade, structures and right-of-way where possible. Toward this end, INDOT and FHWA have agreed that the development of alternatives may include median barriers, retaining walls, guardrails, and (in specific locations) engineering design exceptions. The potential use of design exceptions is being considered for alternative development and is conceptual at this time. These design exceptions would allow the continuing use of portions of existing SR 37; these would be confined to a very minor portion of existing SR 37. Formal approval of design exceptions would not occur until after the Tier 2 studies are completed and final design is underway. These elements were applied to two minimal impact alternatives (Alternatives 6 and 7), which are being carried forward for detailed study. The access characteristics of these alternatives (interchanges and grade separations) generally incorporate elements of Alternatives 4 and 5.

The minimal impact alternatives include a mainline with either a median barrier (urban) or a grass median (rural), either a barrier or setback separation from parallel local access roads, and generally within the existing SR 37 ROW with the exception of the following shift:

- Shift to west between 2<sup>nd</sup> and Tapp Streets to avoid WMBP,

Unlike the preliminary alternatives (Alternatives 1, 2, and 3), the access, grade separation, and no access options for the minimal impact Alternatives 6 and 7 are not as interchangeable since a decision in one portion of Section 5 could affect other decision options.

Alternatives 4, 5, 6, and 7 are summarized in Table 6 and are shown on the Alternatives 4/5 and Alternatives 6/7 Summary Maps (Figures 7 and 8 included at the end of Section 4).

For certain potential interchange locations (e.g., Fullerton Pike, Tapp Road, 2nd Street, 3rd Street, Kinser Pike and Walnut Street), multiple interchange types were considered. Types were chosen based on surrounding land uses, INDOT design guidance and traffic operations.

Key Factors Considered in Screening Decisions

The alternative screening process focused on reducing environmental impacts, right-of-way needs, and construction costs as well as community and traffic impacts by:

- Reducing interchange size/type and location (based on traffic needs and impacts);
- Reducing the number of mainline lanes based upon refined traffic modeling and LOS evaluations;
- Using existing roadways/access points;
- Locating local access roads closer to the I-69 mainline to reduce new impacts;



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- Reducing the length of local access roads;
- Relocating access roads to reduce farm and parcel splits;
- Evaluating property acquisition costs versus access road/overpass costs and impacts;
- Incorporating input from local governments, emergency service providers, CACs, and utility representatives, and public comments; and
- Identifying potential conservation and mitigation areas.

#### Decisions Made in Screening Process

This section summarizes the decisions that resulted in the alternatives carried forward for evaluation in the DEIS. See Figure 6 - Alternatives 1, 2, and 3 Comparison Maps at the end of Chapter 3.0 and the larger scale maps (Figures 7 and 8) included at the end of Chapter 4.0 for the following Section 5 locations.

#### **That Road Overpass/Rockport Road Overpass**

Alternative 1 included an overpass for Rockport Road. Alternatives 2 and 3 included an overpass at That Road. An overpass at That Road was analyzed as an alternative to the overpass at Rockport Road (which was shown in the Tier 1 FEIS). The alternative screening recommended carrying forward the Rockport Road overpass, and eliminating the That Road overpass. The recommendation is based on the following factors:

- Either overpass can serve the traffic within the immediate study area with an eastern access road connecting the two.
- Rockport Road has a higher roadway classification than That Road (Major Collector versus Minor Collector).
- Rockport Road is a more continuous route for the region than That Road and provides access to areas southwest of Bloomington.
- Traffic models show that an overpass at Rockport Road would carry almost twice the traffic than a That Road overpass (4,200 vpd vs. 2,200 vpd). Additionally, a majority of the traffic on a That Road overpass would be diverted from Rockport Road.
- The City of Bloomington stated support for a Rockport Road overpass instead of a That Road overpass in their comments on Alternatives 1, 2 and 3.
- Monroe County stated support for either overpass option as long as an access road was provided to connect both roadways on the east side of I-69. Subsequently, Monroe County has offered concurrence of a Rockport Road overpass, subject to the same east side access road desire.

To summarize, Alternatives 4, 5, 6, and 7 include an overpass at Rockport Road, with an access road between That Road and Rockport Road on the east side of I-69.

#### **Fullerton Pike Interchange/Realignment and Fullerton Pike Extensions**

Alternatives 1 and 3 proposed interchanges at Fullerton Pike, and that Fullerton Pike (west of the proposed I-69) be relocated to the south of the existing Fullerton Pike alignment, widened to four



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lanes, and extended west to Leonard Springs Road and east to Gordon Pike. Alternative 2 included an overpass, but not an interchange or relocation of Fullerton Pike and an eastern access road that connected That Road, Fullerton Pike and Tapp Road. In addition, Alternatives 1 and 3 proposed a mainline shift to the east of existing SR 37 in the vicinity of the proposed interchanges. Alternative 2 did not propose a mainline shift.

The purpose of the Fullerton Pike relocation under Alternatives 1 and 3, in association with an interchange, was to move the roadway further away from the Fullerton Cemetery and upgrade the east/west connection from Gordon Pike to Leonard Springs Road. The alternative screening process recommended that the realignment and extensions of Fullerton Pike no longer be considered as part of any alternative due to the large cost and minimal benefit associated with it:

- The proposed extension to Leonard Springs Road crosses steep terrain and would require either embankment fills in excess of 80' or a bridge approximately 1000' in length.
- The realignment and extension to Leonard Springs Road could adversely impact additional homes and several large springs.
- Traffic volumes (3,200 vpd) on Fullerton Pike, west of the hospital site, do not warrant widening Fullerton Pike and Leonard Springs Road to 2<sup>nd</sup> Street/SR 45.
- Since the development of Alternatives 1, 2, and 3, Monroe County has created a TIF district to fund a County project to extend Fullerton Pike east to connect with Gordon Pike (regardless of the I-69 undertaking) and as such, this extension was removed from all of the I-69 alternatives.

The mainline shift to the east of existing SR 37 in Alternatives 1 and 3 will be maintained in both Alternatives 4 and 5 to minimize impacts to the Monroe Hospital, reduce residential and karst impacts, and allow Fullerton Pike to return to existing grade before the cemetery.

The overpass and eastern access road option proposed in Alternative 2 were eliminated based upon the Monroe County plans for upgrading/extending Fullerton from Leonard Springs Road west of SR 37 to Gordon Pike east of SR 37 and further east along the south side of Bloomington.

To summarize, Alternatives 4, 5, 6, and 7 include an interchange at Fullerton Pike and no widening/extension to Leonard Springs Road or Gordon Pike. While Alternatives 4 and 5 include a mainline shift to the east of SR 37, the minimal impact Alternatives 6 and 7 generally stay within the existing SR 37 ROW, in the vicinity of the Fullerton Pike interchange. Alternative 7 includes a southern shift of Fullerton Pike to the east of SR 37.

### **Tapp Road Interchange and the Collector Distributor (CD) System**

Alternatives 1 and 3 included an overpass at Tapp Road. Instead of an overpass, Alternative 2 included a single-point interchange at Tapp Road with a CD system from approximately Fullerton Pike to SR 46. The CD system was proposed to provide interchange access at Tapp Road and 2<sup>nd</sup> Street/SR 45. The CD system would separate access traffic from the interstate facility, which would greatly reduce weaving on to the interstate and would improve the LOS



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along the mainline. The alternative screening recommended that the CD system be eliminated for all alternatives. This recommendation is based on the following factors:

- The CD system would not allow for an interchange at Fullerton Pike due to the close proximity to the SR 37 Interchange. (The Fullerton Pike area along I-69 is where the CD system roads would merge with the mainline, providing the separated traffic a merge zone onto and off of the CD system.)
- Providing a Fullerton Pike interchange would necessitate carrying the CD road through the SR 37/I-69 interchange, which would result in a more complex and costly interchange with more right-of-way impacts.
- The CD system would make the mainline about 80' wider than the alternatives that do not include a CD system (Alternatives 1 and 3). This would result in more right-of-way impacts than for Alternatives 1 and 3.
- For Alternatives 1 and 3 (which do not include the CD system), the volume on the mainline would be approximately 68,000 vpd. Alternative 2 also carries 68,000 vpd, but the volume is evenly split between the mainline and CD roads, each carrying 34,000 vpd.
- As part of their comments during review of Alternatives 1, 2 and 3, the City of Bloomington recommended elimination of the CD system. The city stated it would not want to “trade-off” the additional community impacts associated with the proposed CD system for the interchange at Tapp Road. The city further stated it believes that the proposed Fullerton Pike interchange would better serve its needs. The City has since re-evaluated its position and is supportive of alternatives which maintain access from I-69 to Tapp Road, however it has cited some concerns for free flow movements and the potential for confusion on the part of motorists.
- Monroe County stated a preference for an interchange at Fullerton Pike rather than at Tapp Road if Fullerton Pike is extended across Clear Creek and connected with Gordon Pike to provide direct access into downtown Bloomington. Traffic forecasts for 2035 show 5,700 vpd would travel via this new connection. Monroe County has since indicated support of a split diamond interchange at Tapp Road and 2<sup>nd</sup> Street, subject to City of Bloomington concurrence.

The initial alternative screening process had recommended dropping the single-point interchange at Tapp Road, and instead considering a split-diamond interchange at this location, based on the following:

- A split diamond interchange between Tapp Road and 2nd Street/SR 45 could be designed to maintain access to I-69 while not increasing the weave access points. There would be limited access directional access roads carrying traffic between Tapp Road and 2nd Street/SR 45.
- The split diamond interchange should also reduce traffic volumes on Leonard Springs Road and Tapp Road west of I-69. Under Alternatives 1 and 3, Tapp Road (west of I-69) would have 13,000 vpd, while with a split diamond interchange, Tapp Road would have 8,500 vpd - a reduction of 4,500 vehicles. Traffic on Leonard Springs Road would also be reduced from 11,600 vpd to 7,800 vpd with the split diamond alternative.



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- The split diamond interchange would also increase traffic volumes on Tapp Road east of I-69 by 2,000 vpd, but would reduce the 2nd Street/SR 45 volumes by 1,000 vpd and the Fullerton Pike volumes by 1,000 vpd.

To summarize, Alternatives 4 and 6 propose an overpass at Tapp Road as depicted in Alternatives 1 and 3, while Alternatives 5 and 7 propose a split-diamond interchange between Tapp Road and 2<sup>nd</sup> Street/SR 45, which replaces the CD system originally proposed in Alternative 2.

### 2nd Street/SR 45 Interchange Designs

The preliminary alternatives included three different interchange designs at 2<sup>nd</sup> Street and SR 45. Alternative 1 depicted a folded diamond interchange layout, Alternative 2 included a single-point interchange with a CD system, and Alternative 3 included a single-point interchange without a CD system.

The alternative screening process recommends three different interchange designs: a tight diamond interchange at 2<sup>nd</sup> Street/SR 45 in Alternative 4, use of the existing interchange in Alternative 6, and a split diamond interchange between Tapp Road and 2<sup>nd</sup> Street/SR 45 (as discussed above) in Alternatives 5 and 7, based on the following:

- Folded diamond interchanges have the potential to cause traffic backups on the mainline.
- Significant ROW impacts and cost could be reduced with reuse of the existing interchange.
- The Alternative 2 single-point interchange was developed due to the inclusion of a CD road, since the wider CD typical section would require enough space to preclude development of the loop ramps required for a folded diamond interchange.
- There is a significant amount of INDOT-owned right-of-way available to accommodate various urban interchange configurations; this approach could further reduce right-of-way costs and impacts to businesses.
- A tight diamond interchange would likely lower bridge costs compared to the single-point interchange.
- A single-point interchange would require realigning 2<sup>nd</sup> Street/SR 45 to reduce the skew<sup>16</sup> across I-69.
- As part of their comments during review of Alternatives 1, 2 and 3, the City of Bloomington has stated preference for the existing (Tier 1) folded diamond Interchange for 2<sup>nd</sup> Street/SR 45. The City has since re-evaluated its position and is supportive of alternatives which maintain access from I-69 to 2<sup>nd</sup> Street and Tapp Road, however it has

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<sup>16</sup> “Skew” refers to a grade separation of two facilities at an angle significantly less than 90 degrees. Crossings with a great deal of skew are associated with significantly higher right-of-way impacts and higher structure costs due to relatively lengthy bridges.



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cited some concerns for free flow movements and the potential for confusion on the part of motorists.

- Monroe County did not specify a preferred layout for this interchange. Monroe County has since indicated support of a split diamond interchange at 2<sup>nd</sup> Street and Tapp Road, subject to City of Bloomington concurrence.

To summarize, Alternative 4 includes a tight diamond interchange at 2<sup>nd</sup> Street/SR 45, Alternative 6 uses the existing interchange, and Alternatives 5 and 7 includes a split diamond interchange between Tapp Road and 2<sup>nd</sup> Street/SR 45.

#### **3rd Street/SR 48 Interchange Designs**

Alternative 1 included a tight diamond interchange, Alternative 2 included a single-point interchange with a CD system, and Alternative 3 included a single-point interchange design (without a CD system). Alternative screening recommends carrying forward a tight diamond in Alternative 4, a single-point interchange in Alternative 5, and use of the existing interchange in Alternatives 6 and 7 (with potential additional turning ramps depending on traffic forecasts).

- A tight diamond interchange likely would lower bridge costs, compared to the single-point interchange.
- The City of Bloomington has stated a preference for the single-point interchange design for SR 48, with the assumption that it would minimize impacts. The City has also suggested consideration of additional interchange types which meet the operational needs at this interchange.
- Monroe County did not specify a preferred layout for this interchange.

To summarize, Alternative 4 includes a tight diamond interchange, Alternative 5 includes a single-point interchange, and Alternatives 6 and 7 include reuse of the existing interchange with potential additional turning ramps, depending on traffic projections.

#### **Vernal Pike/17th Street Overpass**

All preliminary alternatives included a grade separation at 17<sup>th</sup> Street with elimination of access at Vernal Pike. Alternatives 1 and 3 included an underpass at 17<sup>th</sup> Street, and Alternative 2 included an overpass. The alternative screening recommended that the alternatives carried forward include either an underpass or overpass at 17<sup>th</sup> Street based on the following:

- Due to the terrain in this area, an underpass would return to grade much sooner than an overpass;
- An overpass would require that some areas west of I-69 have embankment fills of up to 60', while an underpass would require excavation cuts of 50' in some areas east of I-69.
- An underpass would have less steep grades than an overpass and would better serve bicyclists and pedestrians.



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- The City of Bloomington stated no preference regarding overpass or underpass immediately prior to publishing of this revised report, however during their review of Alternatives 1, 2, and 3, preference was given for an underpass.
- Monroe County stated support for the use of 17th Street as an alternative to Vernal Pike. The County had also stated a preference for interchange access at Vernal Pike during the review of Alternatives 1, 2 and 3. However, a Vernal Pike interchange would violate the required minimum interstate interchange spacing relative to the SR 46 interchange. In order to address this spacing, a CD system and reconstruction of the SR 46 interchange (to accommodate the CD roads) would be required to meet the Monroe County recommendation for an interchange at Vernal Pike. The County is supportive of a grade separation at this location.
- With a shift to the east, the overpass grade separation would have reduced maintenance of traffic (MOT) costs and impacts than the underpass.
- IDEM and USEPA desires to minimize drainage impacts to the Lemon Lane Superfund Site recharge area and will be consulted during detailed studies,

To summarize, Alternatives 4, 5, and 6 propose elimination of access at Vernal Pike and providing a grade separation underpass at 17th Street or an overpass in Alternative 7. In addition, the alternatives propose straightening and extending Hensonburg Road south to Industrial Drive and north to form an off-set intersection with Packing House Road.

### **Acuff Road Overpass and Access Road Connection to Kinser Pike**

Alternative 1 eliminated access to Acuff Road, Alternative 2 included an overpass at Acuff Road, and Alternative 3 included an access road west of SR 37 connecting Acuff Road with a Kinser Pike interchange. The alternative screening recommended eliminating the overpass and access roads for Acuff Road and carrying the Alternative 1 design into both Alternatives 4 and 5 based on:

- Recent traffic counts (from 2008) show 1,000 vpd at Maple Grove Rd.
- Alternative 2 and 3 overpass and/or access road development and construction would directly impact the MGRRHD. These impacts could result in a Section 4(f) use and/or an adverse effect determination under Section 106.
- The overpass alternative would require construction of a bridge over the interstate and another bridge over Stout Creek, which would add significant cost to the project, with limited benefit. (The Stout Creek Bridge would be approximately 75' high.)
- The access road to connect Acuff Road with Kinser Pike would connect with the County's proposed access road to tie Arlington Road to Acuff Road. However, due to the steep slopes along Stout Creek, the spacing required for construction of a western access road, and potential additional eligible additions to the MGRRHD, the mainline in Alternative 3 would need to be shifted to the east and encroach upon the Kinser Pike/Prow Road TIF district.
- The City of Bloomington is supportive of removal of access or a grade separation at Acuff Road.



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- Monroe County had stated a preference for an overpass at Acuff Road during review of Alternatives 1, 2, and 3, but has since indicated support for the closure of Acuff Road.

To summarize, Alternatives 4, 5, 6, and 7 recommend elimination of access at Acuff Road, with no connecting access roads.

#### **Kinser Pike Interchange/Overpass and Western Extension**

Alternative 1 recommended an overpass at Kinser Pike, with existing Kinser Pike west of I-69 used as an access road to connect with an interchange at Walnut Street. Alternatives 2 and 3 both recommended an interchange at Kinser Pike and an extension of Kinser Pike to the east connecting with Walnut Street at Bayles Road, and an overpass at Walnut Street. Alternative 2 included an extension of Kinser Pike to the west/northwest along the existing natural ridge (between two watersheds in karst terrain) to tie in with Bottom Road. Alternative 3 included a tie in with Bottom Road closer to I-69.

The 2007 alternative screening recommended carrying forward Alternative 4 with an interchange at Kinser Pike and an overpass at Walnut Street and Alternative 5 with an overpass at Kinser Pike and an interchange at Walnut Street.

Alternative 4 includes eliminating the Kinser Pike western extension and replacing it with a “T” intersection and closer tie-in with existing Kinser Pike west to reduce costs, ROW, karst, and farmland impacts along the ridge and to address SHPO comments regarding potentially increased noise and visual impacts to the MGRHD.

Alternatives 5 and 7 include an overpass at Kinser Pike and use existing Kinser Pike west as an access road to connect with either a Walnut Street interchange or overpass.

Alternative 6 provides neither access nor an overpass at Kinser Pike. It provides access for the properties west of SR 37 via upgrades to the existing Kinser Pike/Bottom Road access roads to either a Walnut Street interchange or overpass.

While the City of Bloomington has expressed a preference for a Kinser Pike interchange to provide direct access from I-69 to the Kinser Pike/Prow Road TIF district in 2007, both of the City of Bloomington and Monroe County have since expressed support of a grade separation at Kinser Pike with a corresponding Walnut Street interchange.

To summarize, Alternative 4 includes an interchange at Kinser Pike, Alternatives 5 and 7 include an overpass at Kinser Pike, and Alternative 6 has neither an interchange nor an overpass at Kinser Pike.

#### **Walnut Street Interchange/Overpass**

Alternative 1 included an interchange at Walnut Street with an access road along the west side of I-69. While Alternative 2 included no access at Walnut Street, it did provide an access road running parallel to I-69 on the east side to Sample Road. Alternative 3 included an overpass at



Walnut Street connecting to Bottom Road on the west side and access roads running parallel to I-69 on both the east and west sides.

The 2007 alternative screening process recommended carrying forward Alternative 4 with an overpass at Walnut Street (in conjunction with a Kinser Pike interchange) and Alternative 5 with an interchange at Walnut Street (in conjunction with a Kinser Pike overpass). These recommendations were based on:

- Reduction in construction costs, creek crossings, and construction within the floodway; and the use of existing INDOT right-of-way property at the existing Walnut partial interchange.
- The need to maintain the use of the NRHP eligible Monroe County Bridge 913 as part the access road system (in response to concern expressed by the SHPO over potential “demolition through neglect” should the bridge cease to be an integral component of county infrastructure).
- Monroe County has indicated a preference for a Walnut Street interchange and has expressed a desire for treatments which highlight this location as a “Gateway to Bloomington.” It also notes that this would serve as a second access to Ellettsville and provide for better use of existing infrastructure.
- The City of Bloomington has indicated a preference for a Walnut Street interchange which provides for all access movements. The City also joins Monroe County in its support of a unique gateway feature at this location.

Diamond, single-point, and reuse of the existing partial interchange design are under consideration for a potential Walnut Street interchange.

To summarize, Alternatives 4 and 6 include an overpass at Walnut Street, Alternative 5 includes an new interchange at Walnut Street with redesigned structures/approaches to reduce the skew and avoid impacts to historic Bridge 913, and Alternative 7 uses the existing partial interchange.

### **Western Access Road across Beanblossom Valley**

Alternative 1 and 3 included a western access road connecting Bottom Road to Sample Road were retained in Alternatives 6 and 7. Alternative 2 included a western access road that would not cross Beanblossom Creek and was retained in Alternative Alternatives 4 and 5 based upon:

- While the traffic volumes on the western access road would be quite low (< 200 vpd) and construction of the road could impact many of the properties for which it would be providing access, the potential elimination of access or overpass at Kinser Pike (Alternative 6) or partial interchange at Walnut (Alternative 7) would include a western access road to provide access to an interchange at Sample Road.
- For Alternatives 4 and 5, a partial western access road could be designed that would extend from Sample Road interchange to provide access the Griffith Cemetery, but would



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not cross Beanblossom Valley, thereby reducing impacts to streams, floodway, farmland, wetland, and residential parcels.

To summarize, Alternatives 4 and 5 include a partial western access road to the Griffith Cemetery while Alternatives 6 and 7 retain a western access road across the valley. In addition, Alternative 6 would utilize existing southbound SR 37 lanes to further reduce potential cost and impacts but would require a design exception for maintaining the existing 5% grade.

#### **Eastern Access Road across Beanblossom Valley**

Alternative 1 included an eastern access road running parallel to I-69 from Sample Road to Hoosier Energy and did not cross Beanblossom valley. Alternatives 2 and 3 included an eastern access road from Walnut Street curving around the east side of Hoosier Energy to connect with Showers Road and then Sample Road.

The 2007 alternative screening recommended that the proposed eastern access road run parallel to I-69 from Walnut Street to Sample Road but avoid Showers Road by either shifting east around Hoosier Energy before returning to alongside I-69 just north of Ellis Road (Alternatives 4 and 5). Alternatives 6 and 7 provide a reduced median area to generally stay within the SR 37 ROW with a barrier wall to separate the I-69 and access road lanes and provide access to existing driveways. These recommendations were based on:

- The need for a secondary interchange access point for Hoosier Energy during emergencies (Walnut or Kinser).
- Reduce the need for Hoosier Energy heavy truck traffic to travel through the Showers Road neighborhood to the Sample Road interchange.
- The need to maintain the use of the Monroe County Bridge 913 as part the access road system (in response to concern expressed by the SHPO over potential “demolition through neglect” should the historic bridge cease to be an integral component of county infrastructure).
- Positive response to the access road alterations by Hoosier Energy.

Alternatives 4 and 5 also include a local service road spur to provide access to an otherwise landlocked residential parcel just south of Hoosier Energy; Alternatives 6 and 7 would not require this spur.

To summarize, both Alternatives 4 and 5 include an eastern access road curving east around Hoosier Energy while Alternatives 6 and 7 include an eastern access continuously adjacent to I-69 to Sample Road. In addition, Alternative 6 would use existing northbound SR 37 lanes to further reduce potential cost and impacts but require a design exception for maintaining the existing 5% grade.



### **Sample Road/Chambers Pike Interchange/Overpass**

Alternative 1 included a Sample Road interchange and Chambers Pike overpass, Alternative 2 included interchanges at both Sample Road and Chambers Pike, and Alternative 3 included a Sample Road overpass and Chamber Pike interchange.

The 2007 alternative screening recommended elimination of a Chambers Pike interchange. An interchange at Sample Road and an overpass at Chambers Pike will be advanced for Alternatives 4, 5, and 6. Alternative 7 eliminates both the Chambers Pike interchange and overpass with access roads on both the eastern and western sides on I-69. These recommendations were based on the following:

- Year 2030 traffic forecasts showed that interchanges at both Sample Road and Chambers Pike are not warranted (the combined total is less than 10,000 vpd).
- Traffic forecasts indicate that an interchange at Sample Road would serve twice the traffic of an interchange at Chambers Pike.
- Having both interchanges would not comply with the three-mile minimum interstate interchange spacing for rural areas.
- Monroe County originally stated support for both interchange locations; however, the County stated a preference for the Sample Road interchange if only one were to be built. It remains supportive of the Sample Road interchange with an overpass at Chambers Pike.

To summarize, Alternatives 4, 5, and 6 include elimination of a Chambers Pike interchange in favor of an interchange at Sample Road and a Chambers Pike overpass while Alternative 7 provides neither an interchange nor an overpass. It also recommended that the Sample Road interchange structure be shifted north to align with existing Sample Road, a proposed county road west of I-69, and that interchange layout options include folded diamond or narrow/urban diamond to reduce significant fill and impacts in the southwest quadrant.

### **Morgan-Monroe State Forest Access Road**

Alternative 1 shifted the entire I-69 mainline to the west beginning at the existing southbound lanes of SR 37 and used the northbound SR 37 lanes as an eastern access road from Chambers Pike to Paragon Road through the Morgan-Monroe State Forest. Alternatives 2 and 3 maintained the existing bifurcation (separation of the north/southbound mainline lanes).

The 2007 alternative screening recommended maintaining the existing bifurcation and eliminating the proposed eastern access road through the State Forest for all alternatives carried forward. This recommendation is based on the following:

- Traffic forecasts for 2030 predict only 100 vpd on the access road.
- There are no major access connections provided along the access road (except a minor access at Bryant Creek Road).



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- There would be substantial roadway excavation, natural gas storage and monitoring well relocations, and State Forest encroachment required to place six lanes along the western side of the bifurcation (southbound SR 37).
- Properties along I-69 will have adequate access without a continuous access road through the State Forest; travel north and south through the State Forest would be provided by Old State Route 37.

To summarize, the eastern access road through the Morgan-Monroe State Forest was eliminated in Alternatives 4, 5, 6, and 7 in favor of maintaining the existing bifurcation. In addition, Alternative 6 would utilize existing SR 37 lanes to further reduce potential cost and impacts but would require a design exception for maintaining the existing 5% grade.

#### **Bryant Creek Road Overpass/Access Road**

INDOT and FHWA have noted that the approximate 8.3 miles between the Sample Road or Liberty Church interchanges is too long of a distance without east/west connectivity. Therefore, a east/west grade separation is warranted at either Chambers Pike, Bryant Creek, or Paragon Road.

Alternative 1 included no overpass at Bryant Creek Road, but proposed an eastern access road connecting to an interchange at Paragon Road. Alternatives 2 and 3 included an overpass connecting Bryant Creek Road to Turkey Track Road, west of I-69.

Alternative 7 retained the Bryant Creek Road overpass (Alternatives 2 and 3) in lieu of a Chambers Pike overpass since it would serve an area (Bryant Creek to Paragon/Pine) topographically removed from either the Sample Road or Liberty Church interchanges and it would avoid property acquisitions required due to loss of access.

Alternatives 4, 5, and 6 eliminate both the proposed Bryant Creek Road overpass (Alternatives 2 and 3) and the eastern access road (Alternative 1) based on the following:

- The landlocked properties near Cooksey Lane could be purchased at half the cost of providing access to these properties; therefore, neither an overpass nor an access road would be cost effective.
- While purchasing the landlocked properties near Cooksey Lane would increase residential impacts, it would significantly reduce forest and stream impacts.
- Monroe County has indicated concurrence with removal of access at Bryant Creek Road if connectivity across I-69 is provided at either Paragon Road or Liberty Church Road.
- The City of Martinsville has requested consideration of a grade separation at Bryant Creek Road as long as it does not preclude a similar grade separation at Paragon Road.
- Morgan County shared concerns about access and emergency service providers for those residents served by both Bryant Creek Road and Cooksey Lane.

To summarize, while Alternative 7 includes a Bryant Creek Road overpass, Alternatives 4, 5 and 6 do not include either an overpass or an eastern access road at Bryant Creek Road.



### **Paragon Road/Liberty Church Road Interchange/Overpass**

Alternative 1 included an interchange at Paragon Road connected to the south to a Sample Road interchange by an east side access road through the Morgan-Monroe State Forest. Another east side access road connected portions of Old SR 37 north to a Liberty Church Road overpass. Alternative 2 included an overpass at Paragon Road with no access roads to the south, and the east side access road connecting portions of Old SR 37 north to a Liberty Church Road interchange. Alternative 3 included an interchange at Paragon Road with no southern access roads and the east side access road connecting portions of Old SR 37 north to a Liberty Church Road overpass. Alternatives 1, 2 and 3 all included a western access road using Turkey Track Road north from Paragon Road, then running parallel to I-69 to Liberty Church Road.

The 2007 alternative screening recommended carrying forward both the Paragon Road interchange / Liberty Church overpass (Alternative 4) or Paragon Road overpass / Liberty Church interchange overpass (Alternative 5) from Alternatives 2 and 3. The extension of the southern portion of the access road was eliminated with the previously described elimination of the Morgan-Monroe State Forest access road.

Minimal impact Alternatives 6 and 7 include a Liberty Church interchange with either a folded diamond or narrow diamond layout and elimination of a Paragon Road interchange or overpass. Paragon/Pine access would be provided by a western access road using reconnected portions of Turkey Track and for the Morgan-Monroe Forest by an eastern access road using reconnected portions of Old SR 37 (separated during the construction of existing SR 37) to reduce construction costs, residential impacts, and maintain local access patterns.

These recommendations were based on:

- The City of Martinsville and Morgan County expressed a preference for a grade separation at Paragon Road, if paired with an interchange at Liberty Church Road.

To summarize, Alternative 4 includes an interchange at Paragon Road / Liberty Church overpass, Alternative 5 includes a Liberty Church interchange and Paragon Road overpass, and Alternatives 6 and 7 include only a Liberty Church interchange and eliminate both a Paragon Road interchange and overpass; all four alternatives include eastern and western access roads.

### **Access Roads between Liberty Church Road and SR 39**

Alternatives 1 and 3 included parallel access roads from Liberty Church Road to SR 39. Alternative 2 included this same system extended to the east and west around a Liberty Church Road interchange.

The 2007 alternative screening recommended shifting the mainline to the west and reducing the western access road for Alternatives 4, 5, 6, and 7. These recommendations were based on the following:



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- The cost of the western access road was determined to be significantly higher than the cost of acquiring landlocked parcels.
- Reduction in business, floodway, and forest impacts.
- Traffic forecasts for 2030 indicate only 700 vpd traveling to Martinsville on a western access road.
- Access to the Legendary Hills community would still be maintained; traffic that would have used the western access road to access Martinsville could use Jordan Road/Burton Lane east of I-69.
- The City of Martinsville and Morgan County expressed a preference for an interchange at Liberty Church Road.

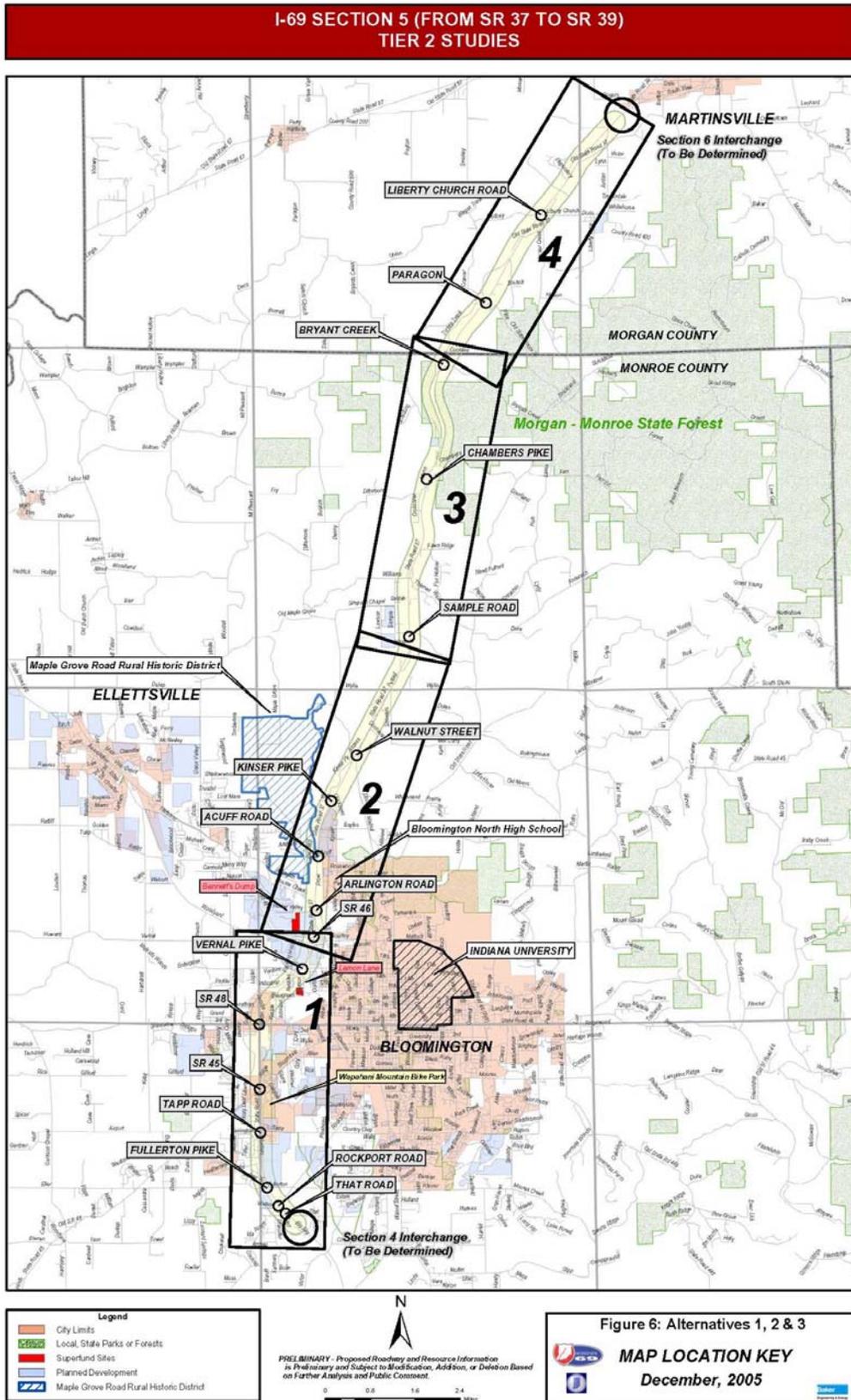
To summarize, Alternatives 4, 5, 6, and 7 include shifting the mainline to the west and reducing the western access road to end at the Legendary Hills access point.

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Figure 6 Alternatives 1, 2, and 3 Comparison Maps – Map Location Key

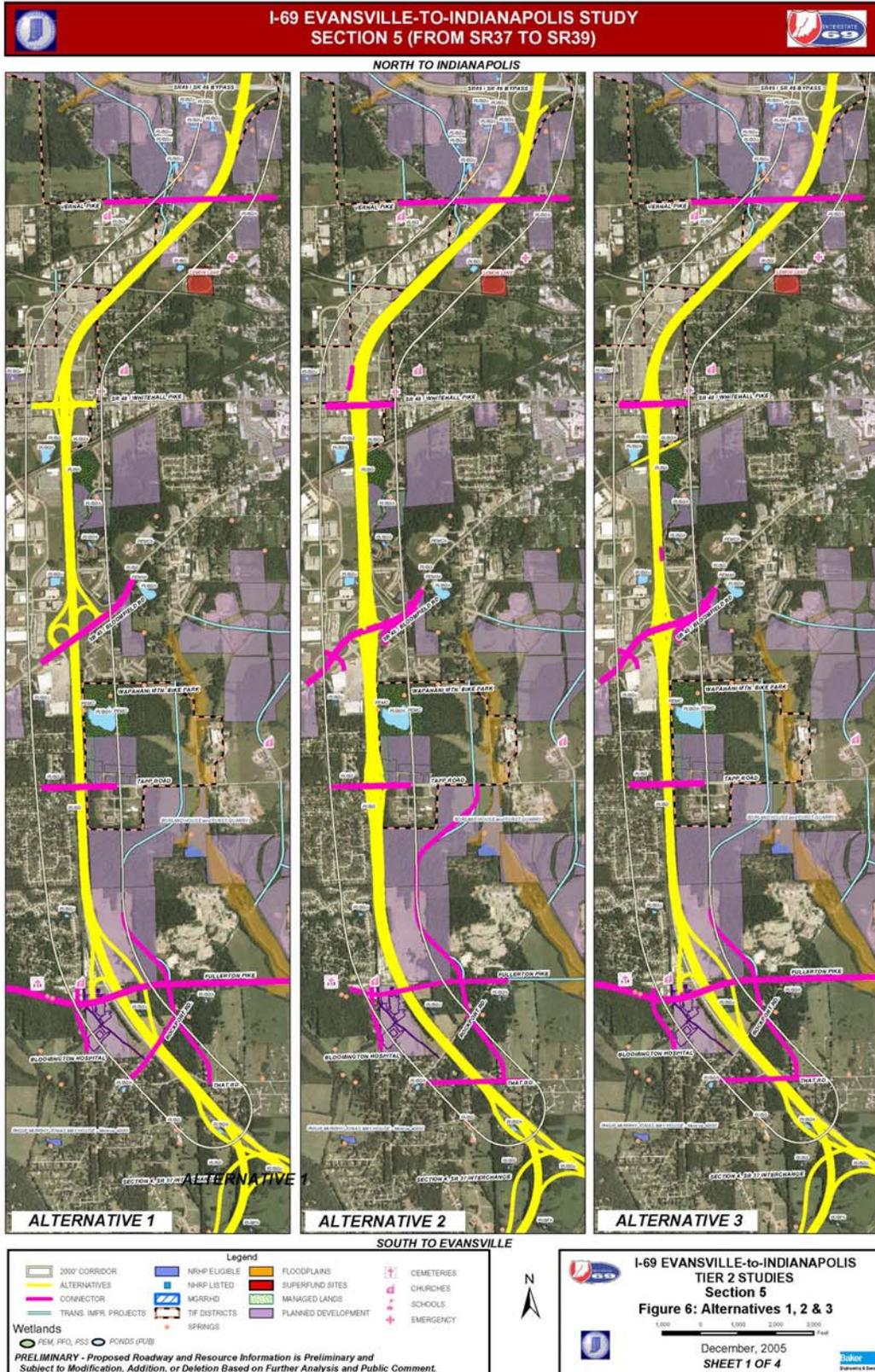




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Figure 6 Alternatives 1, 2, and 3 Comparison Maps – Sheet 1 of 4



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Figure 6 Alternatives 1, 2, and 3 Comparison Maps – Sheet 2 of 4

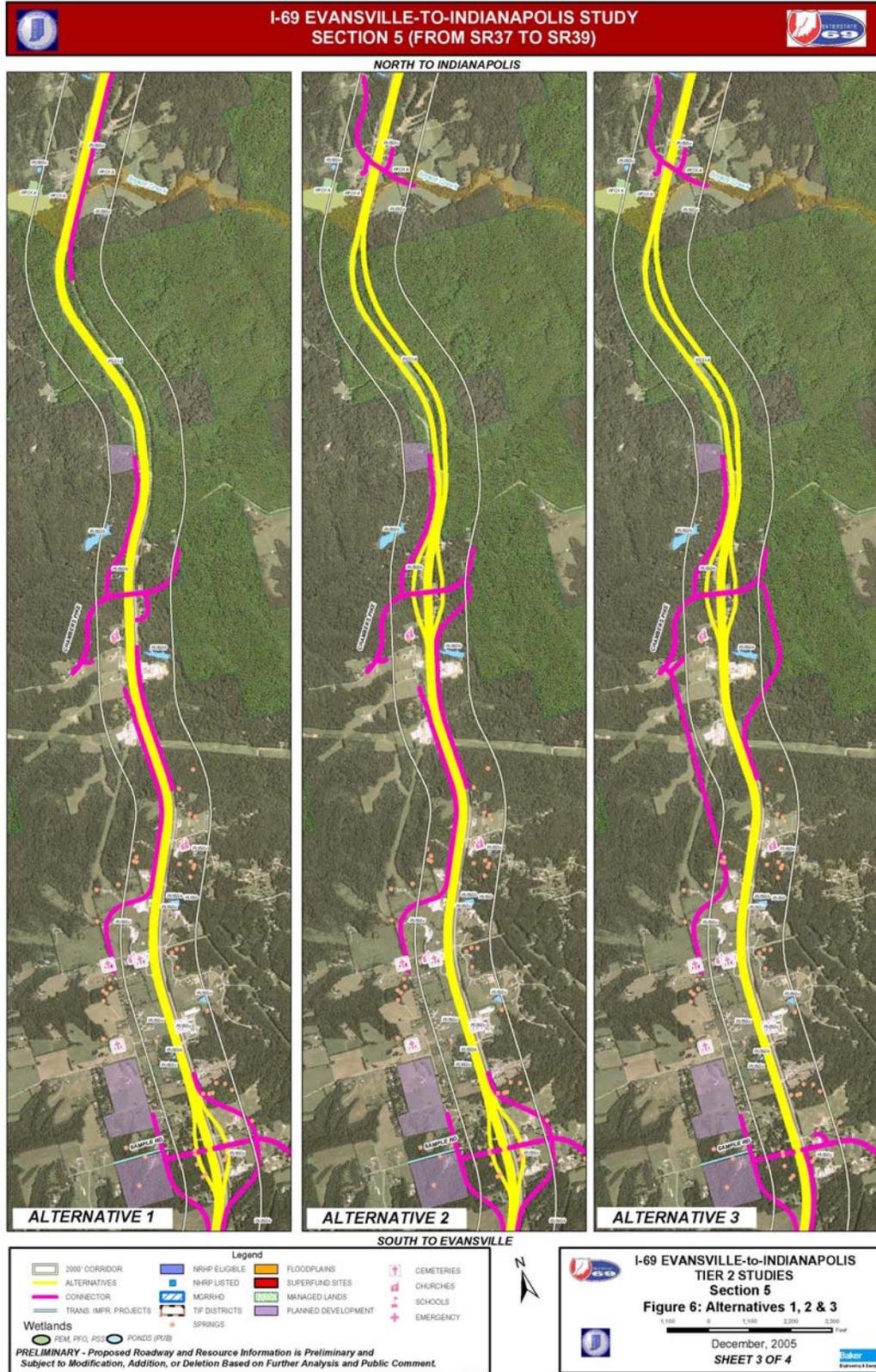




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Figure 6 Alternatives 1, 2, and 3 Comparison Maps – Sheet 3 of 4

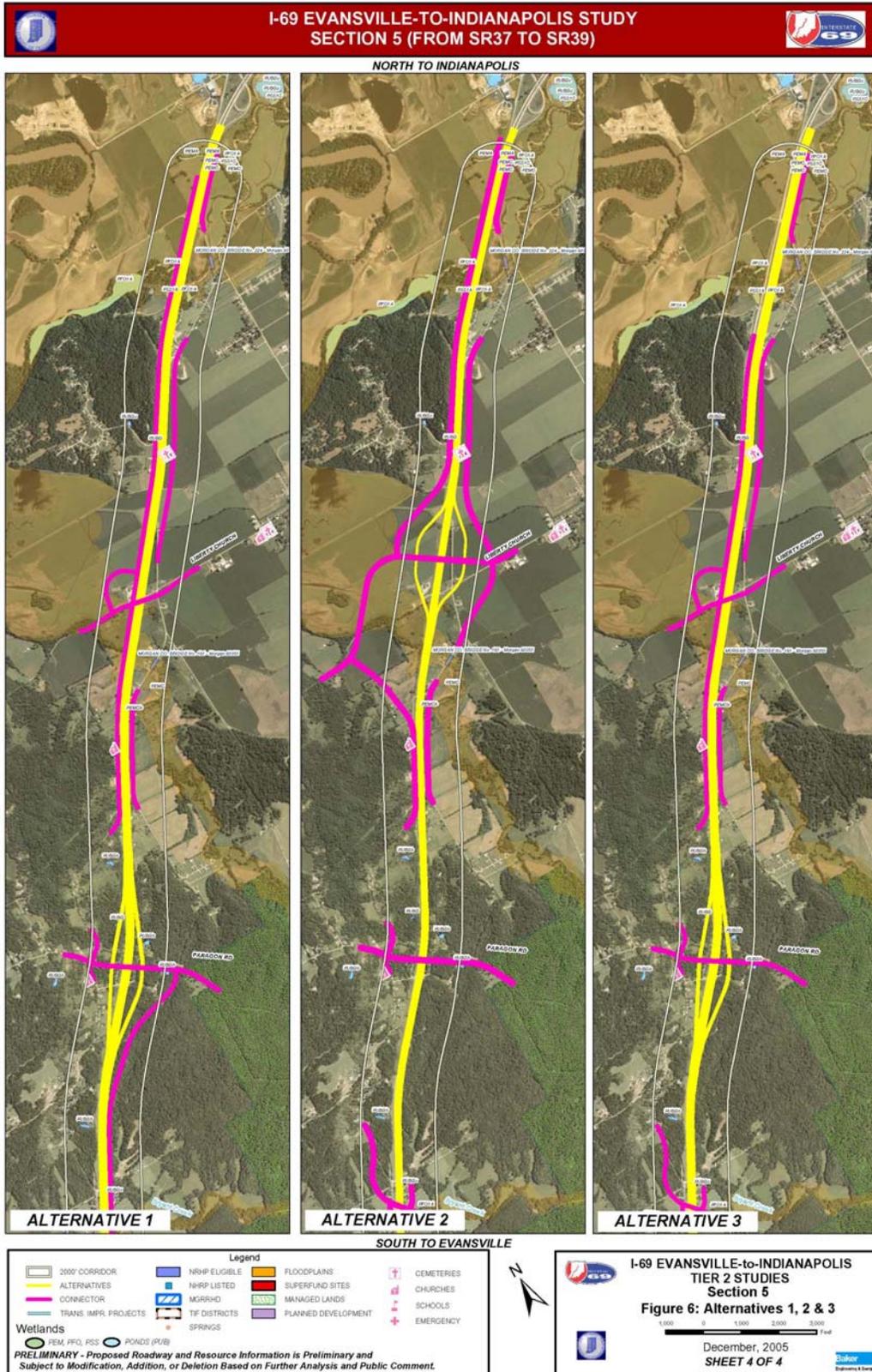


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Figure 6 Alternatives 1, 2, and 3 Comparison Maps – Sheet 4 of 4





## **4.0 Description of Alternatives Carried Forward**

Through the alternatives screening process, some elements of the preliminary alternatives were eliminated from consideration, and some new elements were introduced, as described above. While the 2007 Alternatives 4 and 5 carried forward for detailed study may consist of *different combinations of the elements* retained in the screening process, portions of minimal impact Alternatives 6 and 7 carried forward for detailed study are not always interchangeable since a decision in one portion of Section 5 could affect other decision options.

Alternatives 4, 5, 6, and 7 are summarized in Table 6 and are shown at the end of the chapter on the Summary Maps (Figures 7 and 8).

### **4.1 Typical Sections and Access Roads**

**Typical Sections** – as previously discussed, during the development of the Tier 2 preliminary alternatives (Alternatives 1, 2, and 3), the rural areas were designed with the Tier 1 typical cross section with a 6-Lane Divided Section with a grassy median and a modified Tier 1 cross section in the urban areas with an 8-Lane Divided Section with a grassy median.

Following further traffic modeling and LOS evaluations conducted during the Tier 2 studies, it was determined that forecasted traffic levels allowed for fewer lanes in both the rural and urban areas than were assumed in Tier 1. While the median type and setbacks differ, the typical sections for the 2007 Alternatives 4 and 5 and Minimal Impact Alternatives 6 and 7 (see Figure 8) all consist of a 4-Lane Divided Section in rural areas and a 6-Lane Divided Section in urban areas.

**Access Roads** – except for locations where interchange/overpass decisions are under consideration, access roads are similar between each pair of Alternatives (Alternatives 4 and 5 or Alternatives 6 and 7).

### **4.2 Common Elements**

The 2007 Alternatives 4 and 5 and Minimal Impact Alternatives 6 and 7 share many common elements. Common elements for either all alternatives or sets of alternatives are shown below on Table 6:



<b>Table 6: Section 5 - Alternatives Carried Forward - Common Elements</b>	
<b>South of That Road</b>	
– Section 4 is addressing the studies and engineering south of That Road.	
<b>That Road</b>	
– no interchange or overpass at this location; east-west access provided via access roads to Rockport Road overpass; access to I-69 provided via access roads to Fullerton Pike interchange.	
<b>Rockport Road</b>	
– overpass provided for east/west access; I-69 access provided via access roads to Fullerton Pike.	
<b>Fullerton Pike</b>	
– interchange provided for east/west access and I-69 access; various interchange layout options.	
<b>Third Street</b>	
– interchange provided for east/west access and I-69 access; various interchange layout options.	
<b>Vernal Pike</b>	<b>Vernal Pike (Alt 7)</b>
– underpass provided for east/west access; - I-69 access provided via existing roads to SR 46 interchange.	- overpass option; construction maintenance of traffic.
<b>SR 46</b>	
– use of existing interchange provided for east/west access and I-69 access.	
<b>Arlington Road</b>	
– overpass provided for east/west access; I-69 access provided via existing roads to SR 46 interchange.	
<b>Acuff Road</b>	
– no interchange or overpass; access provided via existing roads to SR 46 interchange or Kinser Pike.	
<b>Access Road West of Griffith Cemetery</b>	
– access road provided for to reach cemetery.	
<b>Sample Road</b>	
– interchange provided for east/west access and I-69 access; various interchange layout options.	
<b>Chambers Pike</b>	<b>Chambers Pike (Alt 7)</b>
– overpass provided for east/west access; I-69 access provided via east side access road to Sample Road interchange.	– no I-69 access; E/W side access roads
<b>Morgan-Monroe State Forest</b>	
– mainline follows existing SR 37 bifurcation to reduce impacts to forest, streams and wetlands. (But with different grade correction options)	
<b>Bryant Creek Road</b>	<b>Bryant Creek Road (Alt 7)</b>
– no access; east side properties are to be acquired and possibly used for potential forest, wetland and stream mitigation areas.	– overpass provided for east/west access.
<b>Liberty Church Road (Alt 4)</b>	<b>Liberty Church Road</b>
– overpass provided for east/west access	– interchange provided for east/west access and I-69 access; various interchange layout options.
<b>North of Indian Creek</b>	
– Section 6 is addressing the studies and engineering north of Indian Creek	



**4.3 Decision Elements**

The alternatives carried forward differ in the following ten key areas as shown below on Table 7:

<b>Table 7: Section 5 - Alternatives Carried Forward - Decision Elements</b>	
<b>I-69 Mainline throughout Section 5</b>	
<p>The decision is whether to reuse SR 37 pavement, structures, and ROW increase cost and land use impacts with a wider right-of-way and no lane barriers offset by the benefits of less urban feel and easier addition of travel lanes in the future.</p>	
<u>Alternatives 4/5</u>	<u>Alternatives 6/7</u>
<ul style="list-style-type: none"> <li>• while generally centered on SR 37, there are several east / west shifts to the to avoid resources.</li> <li>• travel lanes added to the outside to maintain a grassy median and setback of parallel access roads from the mainline.</li> <li>• grassy median could be used for potential future placement of additional travel lanes.</li> </ul>	<ul style="list-style-type: none"> <li>• uses SR 37 lane layout, structures and generally within state ROW to reduce cost, property acquisition, and resource impacts.</li> <li>• placement of added lanes and median barrier within the existing grassy median and either barriers or setback of parallel access roads from the mainline.</li> </ul>
<b>Fullerton Area Mainline Shift or Stay on SR 37 ROW</b>	
<p>The decision is whether to reuse SR 37 pavement, structures, and ROW. Alternatively, is the increased complexity and cost of a shift east offset by reduced impacts.</p>	
<u>Alternatives 4/5</u>	<u>Alternatives 6/7</u>
<ul style="list-style-type: none"> <li>• the mainline shifts east from just south of That Road to north of Fullerton Pike to reduce impacts to the hospital, karst features, and residences, and accommodate flexibility in the Section 4 interchange design.</li> </ul>	<ul style="list-style-type: none"> <li>• the mainline stays within the existing SR 37 ROW to increase use of SR 37 pavement layout and state ROW; similar karst impacts due to smaller profile but with increased residential impacts, Section 4 interchange design was accounted for as part of layout.</li> </ul>
<b>Tapp Road and 2<sup>nd</sup> Street/SR 45</b>	
<p>The decision is whether the increased interchange complexity, cost, and land use impacts of a split interchange are offset by the benefits of access to I-69 at Tapp Road (instead of requiring travel to Fullerton Pike or 2nd Street/SR 45).</p>	
<u>Alternatives 4 and 6</u>	<u>Alternatives 5 and 7</u>
<ul style="list-style-type: none"> <li>• Tapp Road overpass; either new interchange layout or reuse of existing folded interchange at 2nd Street/SR 45.</li> </ul>	<ul style="list-style-type: none"> <li>• split interchange with both Tapp Road and 2nd Street/SR 4; controlled parallel access roads with lane barriers from the mainline.</li> </ul>



<b>Table 7: Section 5 - Alternatives Carried Forward - Decision Elements (continued)</b>		
<b>Maple Grove Area Mainline Shift or Stay on SR 37 ROW</b>		
<p>The decision is whether to reuse SR 37 pavement, structures, and ROW. Do the increased cost and land use impacts of a wider right-of-way and no lane barriers offset the benefits of less urban feel and easier addition of travel lanes in the future?</p>		
<u>Alternatives 4/5</u>	<u>Alternatives 6/7</u>	
<ul style="list-style-type: none"> <li>mainline shifts east from just north of Acuff Road to approximately Kinser Pike to avoid impacts to the MGRRHD.</li> </ul>	<ul style="list-style-type: none"> <li>generally within existing SR 37 ROW while still avoiding impacts to the MGRRHD.</li> </ul>	
<b>Griffith Cemetery Area Mainline Shift or Stay on SR 37 ROW</b>		
<p>The decision is whether to reuse SR 37 pavement, structures, and ROW. Do the increased cost and land use impacts of a wider right-of-way and no lane barriers offset the benefits of less urban feel and easier addition of travel lanes in the future?</p>		
<u>Alternatives 4/5</u>	<u>Alternatives 6/7</u>	
<ul style="list-style-type: none"> <li>mainline shifts to the east just north of Beanblossom Creek Valley then west just south of Sample road through just south of Chambers Pike to reduce impacts to the Hoosier Energy Operations facility, cemeteries, businesses, and a potential hazardous waste site.</li> </ul>	<ul style="list-style-type: none"> <li>generally within existing SR 37 ROW while still avoiding impacts to the Hoosier facility, cemeteries, businesses, and a potential hazardous waste site.</li> </ul>	
<b>Kinser Pike</b>		
<p>The decision is whether the loss of established traffic patterns at Walnut, increased karst impacts, secondary impacts west of I-69, new stream crossing, and land acquisition are offset by the commercial growth opportunities provided by direct access to the TIF district.</p>		
<u>Alternative 4</u>	<u>Alternative 5 and 7</u>	<u>Alternative 6</u>
<ul style="list-style-type: none"> <li>diamond interchange with connection to Kinser Pike and Walnut Road east of I-69 (with Walnut overpass).</li> </ul>	<ul style="list-style-type: none"> <li>overpass to west side of Kinser and (with Walnut interchange).</li> </ul>	<ul style="list-style-type: none"> <li>no I-69 access; access via parallel access road across Beanblossom valley to Walnut Street and Sample Road.</li> </ul>
<b>Walnut Street</b>		
<p>The decision is whether the potential loss of commercial growth and development opportunities and increased wetland impacts are offset by maintaining/enhancing the “Gateway to Bloomington,” providing a second access to Ellettsville, and using existing SR 37 right-of-way features.</p>		
<u>Alternatives 4 and 6</u>	<u>Alternative 5</u>	<u>Alternative 7</u>
<ul style="list-style-type: none"> <li>overpass to west side Bottom Road area; re-use of historic Monroe Bridge 193.</li> </ul>	<ul style="list-style-type: none"> <li>interchange with various layouts; re-use of historic Monroe Bridge 193. (with Kinser Pike overpass).</li> </ul>	<ul style="list-style-type: none"> <li>use existing partial interchange and historic Monroe Bridge 193.</li> </ul>



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<b>Table 7: Section 5 - Alternatives Carried Forward - Decision Elements (continued)</b>		
<b>Electrical Substation Area Mainline Shift or Stay on SR 37 ROW</b>		
<p>The decision is whether to reuse SR 37 pavement, structures, and ROW or do the increased cost and land use impacts of a wider right-of-way and no lane barriers offset by the benefits of less urban feel and easier addition of travel lanes in the future.</p>		
<u>Alternatives 4/5</u>		<u>Alternatives 6/7</u>
<ul style="list-style-type: none"> <li>mainline shifts east just south of the Hoosier Energy substation to existing SR 37 alignment to reduce impacts to forest, businesses, and the substation.</li> </ul>		<ul style="list-style-type: none"> <li>generally within existing SR 37 ROW while still avoiding impacts to electrical substation.</li> </ul>
<b>East/West Connection Between Sample and Liberty Church Roads</b>		
<p>The approximate 8.3 miles between the Sample and Liberty Church Roads has been commented as too long of a distance without east/west connectivity by INDOT and FHWA, therefore, a east/west grade separation is warranted at either Chambers Pike, Bryant Creek, or Paragon Road.</p>		
<u>Alternatives 4/5</u>	<u>Alternative 6</u>	<u>Alternative 7</u>
<ul style="list-style-type: none"> <li>overpass at Chambers Pike and either an overpass/interchange at Paragon Rd (no overpass at Bryant Creek Road).</li> </ul>	<ul style="list-style-type: none"> <li>overpass at Chambers Pike (no I-69 access or overpass at either Bryant Creek or Paragon Roads).</li> </ul>	<ul style="list-style-type: none"> <li>overpass at Bryant Creek Road. (no I-69 access or overpass at either Chambers Pike or Paragon Road).</li> </ul>
<b>Paragon/Pine and Liberty Church Road</b>		
<p>The decision is whether the increased forest impacts and construction costs are offset by better access to the Morgan-Monroe State Forest at Paragon/Pine or whether the increased farmland impacts and land acquisition area are offset by increased development potential for the area southeast of Martinsville.</p>		
<u>Alternative 4</u>	<u>Alternative 5</u>	<u>Alternatives 6 and 7</u>
<ul style="list-style-type: none"> <li>interchange at Paragon/Pine (Liberty Church overpass).</li> </ul>	<ul style="list-style-type: none"> <li>interchange at Liberty Church (Paragon/Pine overpass).</li> </ul>	<ul style="list-style-type: none"> <li>interchange at Liberty Church (no I-69 access or overpass at Paragon/Pine).</li> </ul>

It is important to note that while Alternatives 4 and 5 were developed to illustrate *possible combinations of the various potential access points and mainline segments* and the preferred alternative could involve any combination of decisions at these seven locations, the access, grade separation, and no access options for the minimal impact Alternatives 6 and 7 are not as interchangeable since a decision in one portion of Section 5 could affect other decision options.

#### **4.4 Alternative Summaries**

Table 8 summarizes the similarities and differences between the Preliminary Alternatives that will not be carried forward (Alternative 1, 2, and 3) and the subsequent Alternatives to be carried forward (Alternatives 4, 5, 6, and 7):



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**Table 8: Section 5 - Alternatives Carried Forward Summary (Alternatives 4 to 7)**

Area Type	Major Feature Name	2005 Preliminary Alternatives (not carried forward)			2007 Alternative Screening (carried forward)		Minimal Impact Alternatives (carried forward)	
		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7
Urban	I69 and SR37	Sect. 4 Interchange			Sect. 4 Interchange		Sect. 4 Interchange	
	That Road	No I-69 Access; E Access Rd	Overpass		No I-69 Access; East access Rd		No I-69 Access; East Access Rd	
	Rockport Road	Overpass	No I-69 Access; East Access Rd		Overpass		Overpass	
	Mainline (That to Fullerton)	Shift to East; Grass Median	CD System; Median & Access Rd Barriers	Shift to East; Grass Median	Shift to East; Grass Median		Use SR37 Pavement and ROW; Median Barrier	
	Fullerton Pike	Folded Diamond Interchange	Overpass	Folded Diamond Interchange	Folded Diamond Interchange		Double Folded Interchange	Double Folded Interchange; E. Fullerton Pk. Shift to South
	Mainline (Fullerton to Sample)	SR37 Centered; Grass Median	CD System; SR37 Centered; to 3rd St	SR37 Centered; Grass Median	SR37 Centered; Grass Median		Use SR37 Pavement/ ROW; Median Barrier	
	Tapp Road	Overpass	CD System (barriers between through and local lanes); Single Point Interchanges at Tapp, 2 <sup>nd</sup> and 3 <sup>rd</sup> Sts	Overpass	Overpass; West turn lane	Split-Diamond Interchange (Controlled Access Rds)	Overpass	Split-Diamond Interchange (Controlled Access Rds and Barriers)
	SR 45/2 <sup>nd</sup> Street	Folded Diamond Interchange		Single Point Interchange	Urban Diamond Interchange		Use Existing Interchange	
	SR 48/3 <sup>rd</sup> Street	Urban Diamond Interchange		Single Point Interchange	Urban Diamond Interchange		Single Point Interchange	
	Vernal Pike	Underpass	Overpass	Underpass	Underpass		Underpass	Overpass
	SR 46 Interchange	Use Existing Interchange			Use Existing Interchange		Use Existing Interchange	
Transition from Urban to Rural	Arlington Rd	Overpass			Overpass		Overpass	
	Acuff Road	No I-69 Access	Overpass	No I-69 Access; W Access Rd	No I-69 Access		No I-69 Access	
	Kinser Pike	Overpass	Rural Diamond Interchange	Folded Diamond Interchange	Rural Diamond Interchange	Overpass	No I-69 Access; W Access Rd	Overpass
	SB Mainline Bean Blossom Valley	4% Cut/Fill and Climbing Lane			4% Cut/Fill and Climbing Lane		Use Existing 5% and Truck Climbing Lane	4% Cut/Fill and Climbing Lane

Notes - Access roads generally parallel I-69 on either the E – east side, W- west side, or E/W - both sides of I-69 Mainline; Descriptive terms such as “wide, medium, and narrow” provide relative comparatives only and are not indicative of specific dimensions.



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**Table 8: Section 5 - Alternatives Carried Forward Summary (Alternatives 4 to 7; continued)**

Area Type	Major Feature Name	2005 Preliminary Alternatives (not carried forward)			2007 Alternative Screening (carried forward)		2012 Minimal Impact Alternatives (carried forward)	
		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7
Rural	N. Walnut Street	Rural Diamond Interchange	No I-69 Access; E Access Rd	Overpass	Overpass	Single Point or Rural Diamond Interchange	Overpass	Existing Partial Interchange
	NB Mainline Bean Blossom Valley	4% Cut/Fill and Climbing Lane			4% Cut/Fill and Climbing Lane		Use Existing 5% with Truck Climbing Lane	4% Cut/Fill and Climbing Lane
	Sample Road	Rural Diamond Interchange	Overpass		Rural Diamond Interchange		Folded Urban Interchange	Urban Diamond Interchange
	Mainline Shift (Sample to Chambers)	Shift to West; Grass Median; NB SR37 as Access Rd			Shift to West; Grass Median; NB SR37 as Access Rd		Use SR37 Pavement, ROW, Grass Median; New ROW for E Access Rd w/ Barrier	Use SR37 ROW; Median Barrier; Use SR37 ROW for E Access Rd w/ Barrier
	Chambers Pike	Overpass	Rural Diamond Interchange		Overpass		Overpass	No I-69 Access; E/W access Rds
	Mainline Shift (Chambers to Bryants)	All lanes on west-side; 4% Cut/Fill	3 lanes each side; 4% Cut/Fill		3 lanes each side; 4% Cut/Fill		2 lanes; Use Existing 5% Grade; (SB Truck Ln)	2 lanes; 4% Cut/Fill; (SB Truck Lane)
	Mainline (Bifurcation)	Wide Shoulders and Clear Zone			Medium width Shoulder/ Clear Zone (NB Guard-rail)		Use SR37 Shoulder/ Clear Zone (NB Grd-rail)	Medium width Shoulder/ Clear Zone (NB Grd-rail)
	Bryants Creek Rd	No I-69 Access; E/W Access Rds	Overpass		No I-69 Access; Eastside Property Acquisition; W Access Rd		No I-69 Access; E Acquisition; W access Rd	Overpass
	Mainline (Bryant Crk to Sect. 6)	SR37 Centered; Wide Grass Median			SR37 Centered; Wide Grass Median		Use Existing SR37 Pavement & ROW; Grass Median	
	Paragon/ Pine	Rural Diamond Interchange	Overpass	Rural Diamond Interchange	Rural Diamond Interchange	Overpass	No I-69 Access; W Access Rd; Use existing E Access Rd	
	Liberty Church	Overpass	Rural Diamond Interchange	Overpass	Overpass	Rural Diamond Interchange	Urban Diamond Interchange	Folded Diamond Interchange
	SR37 N of Legendary Hills	No I-69 Access; E/W access Rds			No I-69 Access; East Access Rd		No I-69 Access; East Access Rd	
	I69 and SR 39	Sect. 6 Interchange			Sect. 6 Interchange		Sect. 6 Interchange	

Notes - Access roads generally parallel I-69 on either the E – east side, W- west side, or E/W - both sides of I-69 Mainline; Descriptive terms such as “wide, medium, and narrow” provide relative comparatives only and are not indicative of specific dimensions.



## Section 5 Revised Preliminary Alternatives Analysis and Screening

Table 9 provides initial estimates of potential project features and select resource impacts for Alternatives 4, 5, 6 and 7:

<b>Table 9: Section 5 - Alternatives Carried Forward - Potential Impacts</b>					
<b>Evaluation Factors</b>		<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Alternative 7</b>
<b>Length (miles)</b>	Interstate	21	21	21	21
	Non-interstate (access /local service roads)	26	26	20	21
<b>Estimated Construction Cost</b>	(millions) <sup>1</sup>	\$318	\$316	\$250	\$267
<b>Required Right-of-Way</b>					
	Use of existing INDOT ROW (acres)	770	770	640	660
	Approximate acquisition ROW (acres)	660	640	200	210
	Total required ROW (acres) <sup>2</sup>	1,430	1,410	840	870
<b>Relocations</b> (based on acquisition ROW)					
	Residences - Multi Unit	14	14	2	4
	Residences – Single	118	119	40	60
	Commercial	43	45	17	12
	Churches	4	4	2	2
<b>Floodplain Encroachment</b>	(100 year / acres)	95	115	90	60
<b>Wetlands</b>	(acres)	18	24	16	5
<b>Jurisdictional Streams</b> (linear ft)	Perennial	2,670	3,240	2,720	2,470
	Intermittent	9,300	9,290	5,150	6,790
	Ephemeral	68,990	64,870	35,470	36,360
<b>Access: Road Crossings/Closures</b> <sup>3</sup>		14 / 34	14 / 34	12 / 36	12 / 36
<b>Farmland Impacts</b>	(acres)				
	Total for row crop, pasture, orchard, grove, specialty crops, agricultural operations	145	155	50	60
<b>Federal Threatened/ Endangered Species</b> <sup>4</sup>		1	1	1	1
<b>Historic Resources/Section 106</b>					
(NRHP listed and Eligible sites)	Architectural	1 - 2	1 - 2	1 - 2	0 - 1
	Archaeological <sup>5</sup>	(to be determined for Preferred Alternative only)			
<b>Section 4(f) Resources</b>		1 - 2	2 - 3	1 - 2	0 - 1
<b>Hazardous Materials</b>	(Possible Sites)	14	14	8	9
<b>Mineral Resources (Limestone)</b>	(acres)	7	7	1	0
<b>Forest Impacts</b>					
	Forested Areas - Total Land Cover (acres)	345	310	105	120
<b>Land Within Morgan- Monroe State Forest</b>	includes both forest and upland habitat (acres)	30	30	15	20
<b>Karst Impacts</b>	Springs	16	17	5	7
	Sinkholes (acres)	90	85	50	45
	Sinking Streams (acres)	240	240	155	160
<b>Wellhead Protection Areas</b>	(sites)	1	1	1	1

<sup>1</sup> Cost estimates (in 2012 dollars) are preliminary and do not include costs for right-of-way, utility relocations, or impact mitigation

<sup>2</sup> All impacts were calculated based on the total right-of-way amount, not necessarily the amount to be acquired.



## **I-69 CORRIDOR, EVANSVILLE TO INDIANAPOLIS**

### **Section 5 Revised Preliminary Alternatives Analysis and Screening**

<sup>3</sup> Includes driveways accessing existing SR 37

<sup>4</sup> One Indiana bat (*Myotis sodalis*) maternity colony was identified in Section 5, west of SR 37 near the West Fork of the White River and Bryant Creek. Both alternatives pass through the maternity colony foraging area, but will not impact known roost trees.

<sup>5</sup> No listed sites; eligible sites to be determined for Preferred Alternative only

Total construction costs for each alternative are not included since right-of-way costs, especially for impacts to commercial properties, are yet to be estimated. Right-of-way costs can vary greatly depending on the selected alignment footprint and their effects on existing properties, especially commercial properties. Construction costs and right-of-way cost estimates, will be included in the DEIS. Alternative 4, 5, 6, and 7 traffic are presented in Table 10 and interchange spacing data are presented in Table 11.



**Table 10: Section 5 Alternatives Carried Forward - Traffic Volumes**

Cross Street	Alternative 4	Alternative 5	Alternative 6	Alternative 7
<b>SR 37 (Section 4)</b>	Interchange	Interchange	Interchange	Interchange
<b>Fullerton Pike</b>	Interchange	Interchange	Interchange	Interchange
Cross Traffic ADT	19,200 / 8,600	19,300 / 8,800	13,200/ 11,100	13,600 / 10,700
Ramp ADT	20,500	19,000	18,800	16,400
<b>Tapp Road</b>	Overpass	Split Interchange w/SR45	Overpass	Split Interchange w/SR45
Cross Traffic ADT E/W of I-69	15,000	14,700 / 13,200	14,000	14,200 / 13,700
Total Ramp ADT	Not applicable	23,000	Not applicable	21,800
<b>2<sup>nd</sup> Street/SR 45</b>	Interchange	Split Interchange w/Tapp	Interchange	Split Interchange w/Tapp
Cross Traffic ADT E/W of I-69	34,200 / 30,600	29,600 / 28,300	36,100 / 32,500	32,400 / 30,100
Total Ramp ADT	28,900	28,400	30,500	27,900
<b>SR 48/3rd. Street</b>	Interchange	Interchange	Interchange	Interchange
Cross Traffic ADT E/W of I-69	35,900 / 43,800	44,000 / 51,500	36,400 /45,100	37,500 / 45,500
Total Ramp ADT	31,600	45,700	37,600	38,900
<b>SR 46</b>	Interchange	Interchange	Interchange	Interchange
Cross Traffic ADT E/W of I-69	49,400 / 43,000	47,200 / 43,100	52,000 / 36,500	50,300 / 37,700
Total Ramp ADT	47,000	45,400	52,500	50,600
<b>Kinser Pike</b>	Interchange	Overpass	No Overpass	Overpass
Cross Traffic ADT	11,000 / 1,200	700	Not applicable	1,300
Total Ramp ADT	11,100	Not applicable		Not applicable
<b>Walnut Street</b>	Overpass	Interchange	Overpass	Interchange
Cross Traffic ADT	2,000	17,600 / 5,100	4,900	7,300
Total Ramp	Not applicable	19,000	Not applicable	7,300
<b>Sample Road</b>	Interchange	Interchange	Interchange	Interchange
Cross Traffic ADT	7,400 / 3,100	6,600 / 2,000	7,480 / 3,000	8,200 / 5,300
Total Ramp ADT	9,600	8,000	13,700	11,500
<b>Chambers Pike</b>	Overpass	Overpass	Overpass	No Overpass
ADT	600	500	500	Not applicable
<b>Paragon Road</b>	Interchange	Overpass	No Overpass	No Overpass
Cross Traffic ADT	1,500 / 4,600	300		
Total Ramp ADT	5,700	Not applicable	Not applicable	Not applicable
<b>Liberty Church Road</b>	Overpass	Interchange	Overpass	Interchange
Cross Traffic ADT	1,200	3,300 / 3,100	3,200 / 2,700	3,600 / 2,600
Total Ramp ADT	Not applicable	6,100	5,500	5,700
<b>SR 39 (Section 6)</b>	Interchange	Interchange	Interchange	Interchange

Note: Spacing between Chambers Pike and Liberty Church Interchange is 5.5 miles.



**I-69 CORRIDOR, EVANSVILLE TO INDIANAPOLIS**  
**Section 5 Revised Preliminary Alternatives Analysis and Screening**

<b>Table 11: Section 5 Alternatives Carried Forward - Interchange Spacing</b>				
<b>Cross Street</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Alternative 7</b>
Section 4	Interchange	Interchange	Interchange	Interchange
	1.1 miles	1.1 miles	1.0 miles	1.0 miles
Fullerton Pike	Interchange	Interchange	Interchange	Interchange
		1.0 miles		1.0 miles
Tapp Road	1.8 miles	Split Interchange w/SR45	1.8 miles	Split Interchange w/SR45
		0.7 miles		0.7 miles
2 <sup>nd</sup> Street/SR 45	Interchange	Split Interchange w/Tapp	Interchange	Split Interchange w/Tapp
	1.2 miles	1.2 miles	1.2 miles	1.2 miles
3 <sup>rd</sup> Street/SR 48	Interchange	Interchange	Interchange	Interchange
	1.9 miles	1.9 miles	1.9 miles	1.9 miles
SR 46		Interchange	Interchange	Interchange
	2.4 miles			
Kinser Pike	Interchange	3.4 miles		3.4 miles
			5.8 miles	
Walnut Street	3.4 miles	Interchange		Interchange
		2.4 miles		2.4 miles
Sample Road	Interchange	Interchange	Interchange	Interchange
	6.4 miles			
		8.3 miles	8.2 miles	8.2 miles
Paragon Road	Interchange			
Liberty Church Rd	4.5 miles	Interchange	Interchange	Interchange
		2.4 miles	2.5 miles	2.5 miles
Section 6	Interchange	Interchange	Interchange	Interchange

Note: Spacing between Chambers Pike and Liberty Church Interchange is 5.5 miles

Table 12 on the following pages presents a comparison of key access factors for interchange locations for the Alternatives carried forward (Alternatives 4, 5, 6, and 7).



**Table 12: Section 5 Alternatives Carried Forward - Key Access Plan Comparison for Interchange Locations**

Tapp Road				
	Alternative 4	Alternative 5	Alternative 6	Alternative 7
<b>General Description</b>	Overpass for east/west traffic flow; access to I-69 via existing roads to Fullerton Pike and 2nd Street/SR 45 interchanges	Split interchange with 2 <sup>nd</sup> Street/SR 45 with connecting access roads on both east and west sides	Overpass for east/west traffic flow; access to I-69 via existing roads to Fullerton Pike and 2nd Street/SR 45 interchanges	Split interchange with 2 <sup>nd</sup> Street/SR 45 with connecting access roads on both east and west sides
<b>Screening Criteria</b>	<i>Advantages</i>	<i>Advantages</i>	<i>Advantages</i>	<i>Advantages</i>
Access and Operations	Maintains east/west connectivity	Increased development potential on eastern Tapp Road with more direct access to I-69. The split diamond spreads traffic loads more evenly for traffic headed east into Bloomington and reduces travel through western neighborhoods.	Maintains east/west connectivity	Increased development potential on eastern Tapp Road with more direct access to I-69. The split diamond spreads traffic loads more evenly for traffic headed east into Bloomington and reduces travel through western neighborhoods.
Right-of-way	Reduced right-of-way impacts vs. split interchange and access roads		Reduced right-of-way impacts vs. split interchange and access roads	
Environmental	Similar residential impacts due to widening to Leonard Springs Road	Increased residential impacts due to west side access road shift due to expansion of Wapahani MB Park	Reduced residential impacts with elimination of Tapp Road widening.	Similar residential impacts due to west side access road
Maintenance of Traffic (MOT)	Similar impacts	Similar impacts	Similar impacts	Similar impacts
Public Input		Preferred access at Tapp Road but not with the extensive CD system design		Preferred access at Tapp Road but not with the extensive CD system design



# I-69 CORRIDOR, EVANSVILLE TO INDIANAPOLIS

## Section 5 Revised Preliminary Alternatives Analysis and Screening

**Table 12: Section 5 Alternatives Carried Forward - Key Access Plan Comparison for Interchange Locations**

2nd. Street/SR 45				
	Alternative 4	Alternative 5	Alternative 6	Alternative 7
<b>General Description</b>	Urban diamond or single-point interchange with east/west and I-69 access	Split interchange with Tapp Road with connecting access roads on both east and west sides	Use of existing folded interchange with east/west and I-69 access	Split interchange with Tapp Road with connecting access roads on both east and west sides
<b>Screening Criteria</b>	<i>Advantages</i>	<i>Advantages</i>	<i>Advantages</i>	<i>Advantages</i>
Access and Operations		The split diamond spreads the traffic loads more evenly for traffic headed east into Bloomington		The split diamond spreads the traffic loads more evenly for traffic headed east into Bloomington
Right-of-way	Reduced right-of-way impacts vs. split interchange and access roads		Significant reduction with use of existing layout and ROW	
Environmental	Similar impacts	Similar impacts	Significant reduction	Similar impacts
MOT	Similar impacts	Similar impacts	Significant reduction	Similar impacts
Public Input	Public support for existing interchange	Initial responses have been positive	Public support for existing interchange	Initial responses have been positive

3rd Street/SR 48				
	Alternative 4	Alternative 5	Alternative 6	Alternative 7
<b>General Description</b>	Interchange with east/west and I-69 access; tight diamond interchange type	Interchange with east/west and I-69 access; single-point interchange	Use of existing Interchange with east/west and I-69 access	
<b>Screening Criteria</b>	<i>Advantages</i>	<i>Advantages</i>	<i>Advantages</i>	
Access and Operations	Reduced construction costs	Better traffic flow	Significant reduction with use of existing layout and ROW	
Right-of-way	Similar impacts	Similar impacts	Significant reduction	
Environmental	Similar impacts	Similar impacts	Significant reduction	
MOT	Similar impacts	Similar impacts	Similar impacts	
Public Input		City prefers single-point interchange		



<b>Table 12: Section 5 Alternatives 4 to 7 - Key Access Plan Comparison for Interchange Locations</b>				
<b>Kinser Pike</b>				
	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Alternative 7</b>
<b>General Description</b>	Interchange with east/west and I-69 access; medium diamond interchange	Overpass for east/west access; I-69 access via west side access road to Walnut Street interchange	No I-69 Access; improvement of Kinser Pike to Bottom Rd west of I-69	Overpass for east/west access; I-69 access via west side access road to Walnut Street interchange
<b>Screening Criteria</b>	<i>Advantages</i>	<i>Advantages</i>	<i>Advantages</i>	<i>Advantages</i>
Access and Operations	Accommodates TIF district; allows access to high school		Reduced east/west connectivity	
Right-of-way			Significant reduction	
Environmental	Reduce wetland impacts; floodway impacts are offset by Kinser Pike access road crossing Griffey Creek		Significant reduction	
MOT	Similar impacts	Similar impacts	Reduced	Similar impacts
Public Input	Recommendation by the City of Bloomington to support the TIF district			
<b>Walnut Street</b>				
	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Alternative 7</b>
<b>General Description</b>	Overpass for east/west traffic flow; I-69 access via east side access road to Sample Road interchange or west side access road to Kinser Pike; Bridge 913 used as part of access road to Bottom Road/ Kinser Pike	Interchange with east/west and I-69 access; either a single-point or tight diamond interchange; Bridge 913 used as part of east side access road to Sample Road	Overpass for east/west traffic flow; I-69 access via east side access road to Sample Road interchange; Bridge 913 used as part of access road to Bottom Road/ Kinser Pike	Use existing partial interchange for I-69 access only with continued use of Bridge 913
<b>Screening Criteria</b>	<i>Advantages</i>	<i>Advantages</i>	<i>Advantages</i>	<i>Advantages</i>



**I-69 CORRIDOR, EVANSVILLE TO INDIANAPOLIS**  
**Section 5 Revised Preliminary Alternatives Analysis and Screening**

**Table 12: Section 5 Alternatives 4 to 7 - Key Access Plan Comparison for Interchange Locations**

Access and Operations		Unofficial "Gateway to Bloomington," maintains existing interchange access; provides a second access to Ellettsville, and secondary emergency access for Hoosier Energy		Unofficial "Gateway to Bloomington," maintains existing interchange access;
Right-of-way		Reduced right-of-way cost		Significant reduction
Environmental		Reduced karst and stream impacts and noise/visual impacts for MGRHD		Significant reduction
MOT		Similar impacts		Significant reduction
Public Input		Popular support as "Gateway to Bloomington;" preferred by Hoosier Energy		Popular support as "Gateway to Bloomington;"
<b>Paragon Road</b>				
	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Alternative 7</b>
<b>General Description</b>	Interchange with east/west and I-69 access; medium rural interchange	Overpass for east/west access; I-69 access via west side access road to Liberty Church Road interchange	No I-69 Access; access via Turkey Track and Old SR 37 to Morgan-Monroe State Forest and Liberty Church interchange	
<b>Screening Criteria</b>	<i>Advantages</i>	<i>Advantages</i>	<i>Advantages</i>	
Access and Operations	Direct access to Morgan-Monroe State Forest; fewer roads required for parcel access than with a Liberty Church Road interchange		Reduced east/west connectivity	
Right-of-way	Similar impacts	Similar impacts	Significant reduction	
Environmental	Reduced farmland, limited commercial and floodway impacts		Significant reduction	
MOT	Similar impacts	Similar impacts	Significant reduction	
Public Input	Little public support except by those potentially impacted by a Liberty Church Road interchange			



**Table 12: Section 5 Alternatives Carried Forward - Key Access Plan Comparison for Interchange Locations**

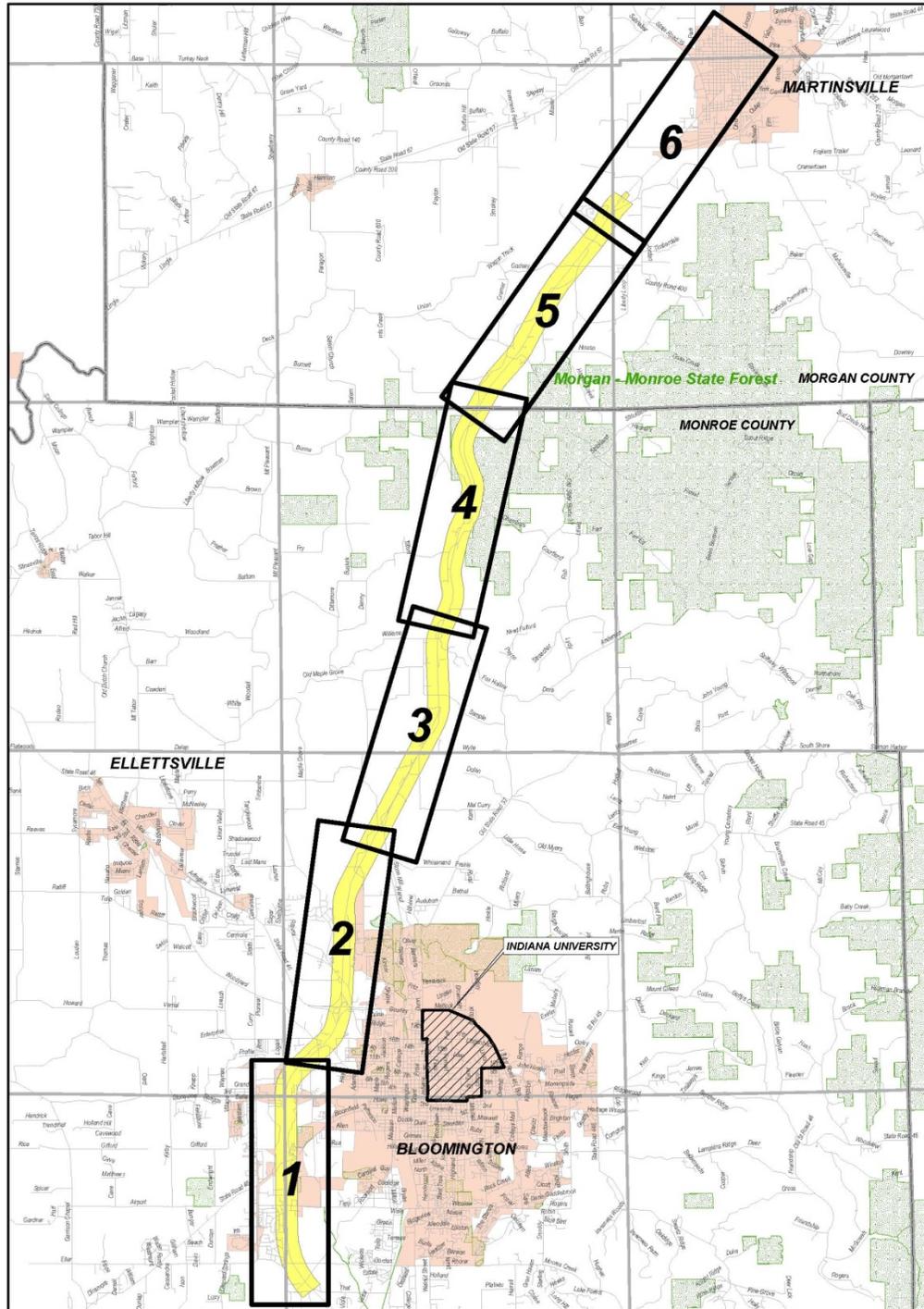
<b>Liberty Church Road</b>				
	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Alternative 7</b>
<b>General Description</b>	Overpass for east/west access; I-69 access via west side access road to Paragon Road interchange	Interchange with east/west and I-69 access; medium rural interchange type	Tight/ urban diamond interchange with east/west and I-69 access	Folded interchange with east/west and I-69 access
<b>Screening Criteria</b>	Advantages	Advantages	Advantages	Advantages
Access and Operations		Easy terrain; better access to farms and developing areas; maintains existing mobility patterns to west; supports development projected for area; eases Burton Lane overloads.		
Right-of-way	Similar impacts	Similar impacts	Reduced impacts	
Environmental		Reduced forest, residential, and stream impacts	Reduced forest, residential, and stream impacts	
MOT	Similar impacts	Similar impacts	Similar impacts	
Public Input		Preferred over Paragon Road; Morgan/Martinsville strongly recommends due to projected development, water service project, and to support access for farms		



# I-69 CORRIDOR, EVANSVILLE TO INDIANAPOLIS

## Section 5 Revised Preliminary Alternatives Analysis and Screening

### I-69 SECTION 5 (FROM SR 37 TO SR 39)



**Legend**

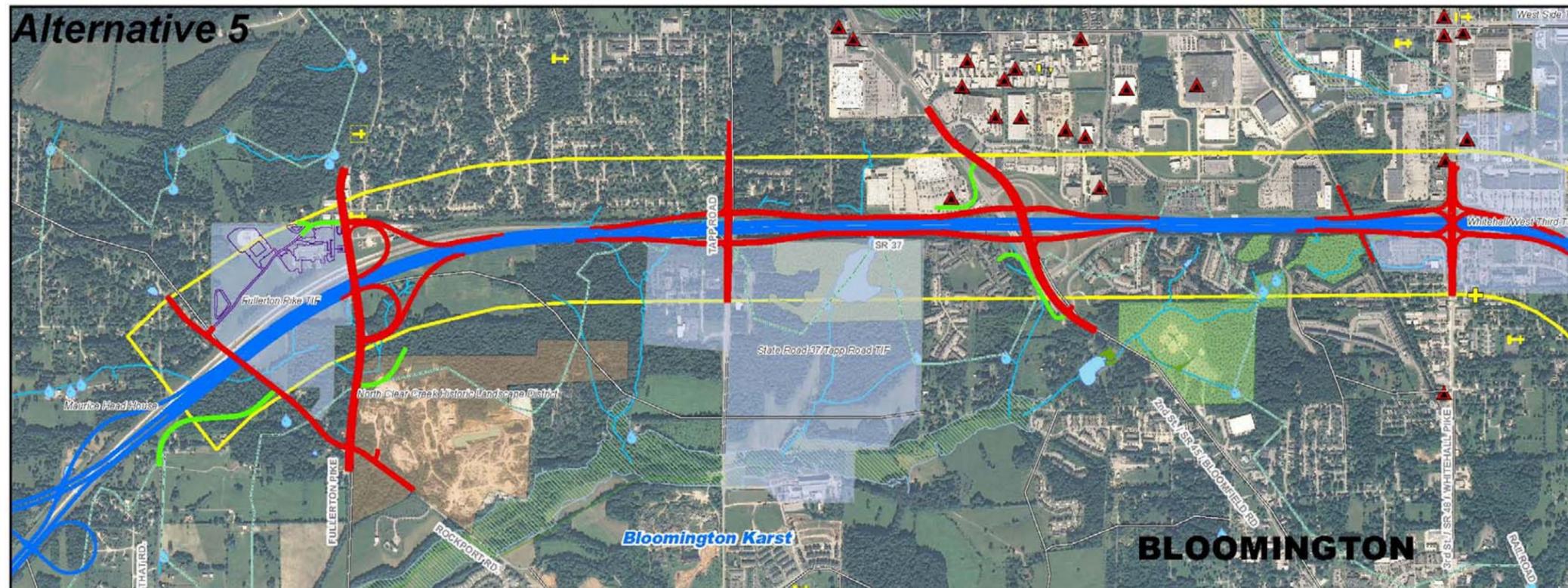
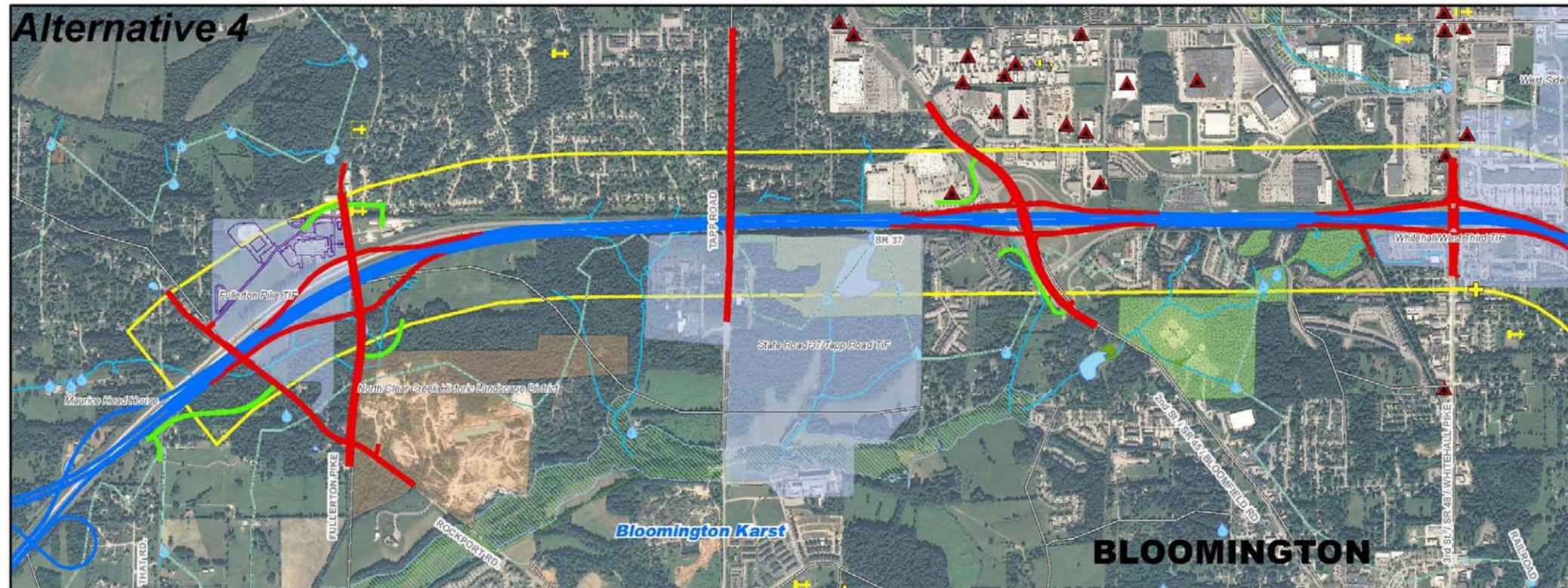
- City Limits
- Local, State Parks or Forests



**I-69 EVANSVILLE-TO-INDIANAPOLIS SECTION 5**  
**MAP LOCATION KEY**  
 MARCH 2012

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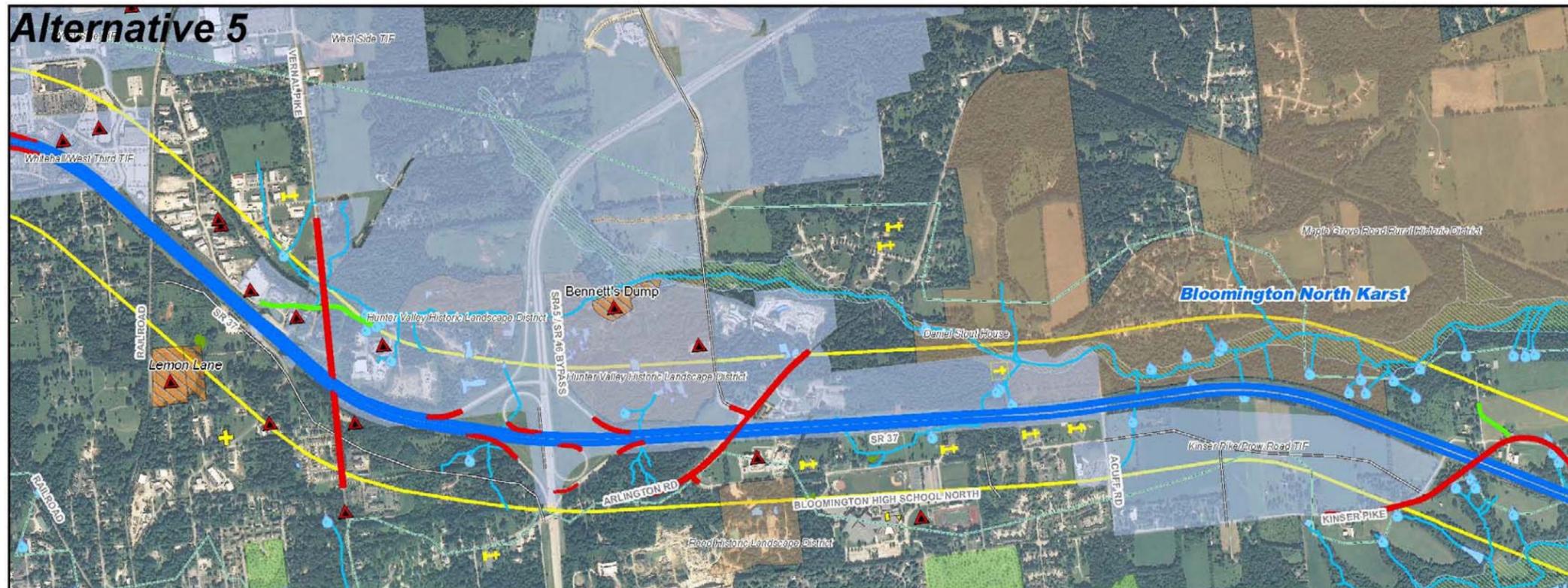
**INTERSTATE 69  
 EVANSVILLE-TO-INDIANAPOLIS  
 SECTION 5 (SR37 TO SR39)**

**Legend**

- Mainline
- Interchange, Overpass, Underpass
- Local Access Roads
- Transportation Improvement Projects
- Cemeteries
- Churches
- School
- Emergency
- Gas Wells
- Potential Hazardous Waste Sites
- Springs
- Wetlands
- Open water
- Streams
- Floodplain
- TIF Districts
- NRHP Listed or Eligible
- Managed Lands
- Superfund Sites
- 2000' Corridor

I-69 EVANSVILLE-to-INDIANAPOLIS  
 SECTION 5  
**Figure 7**  
**Alternatives 4 and 5**  
 Sheet 1 of 6  
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**Baker** April, 2012

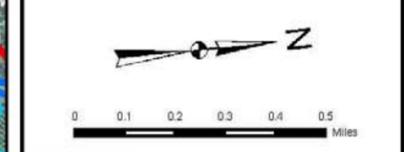


**INTERSTATE 69  
 EVANSVILLE-TO-INDIANAPOLIS  
 SECTION 5 (SR37 TO SR39)**

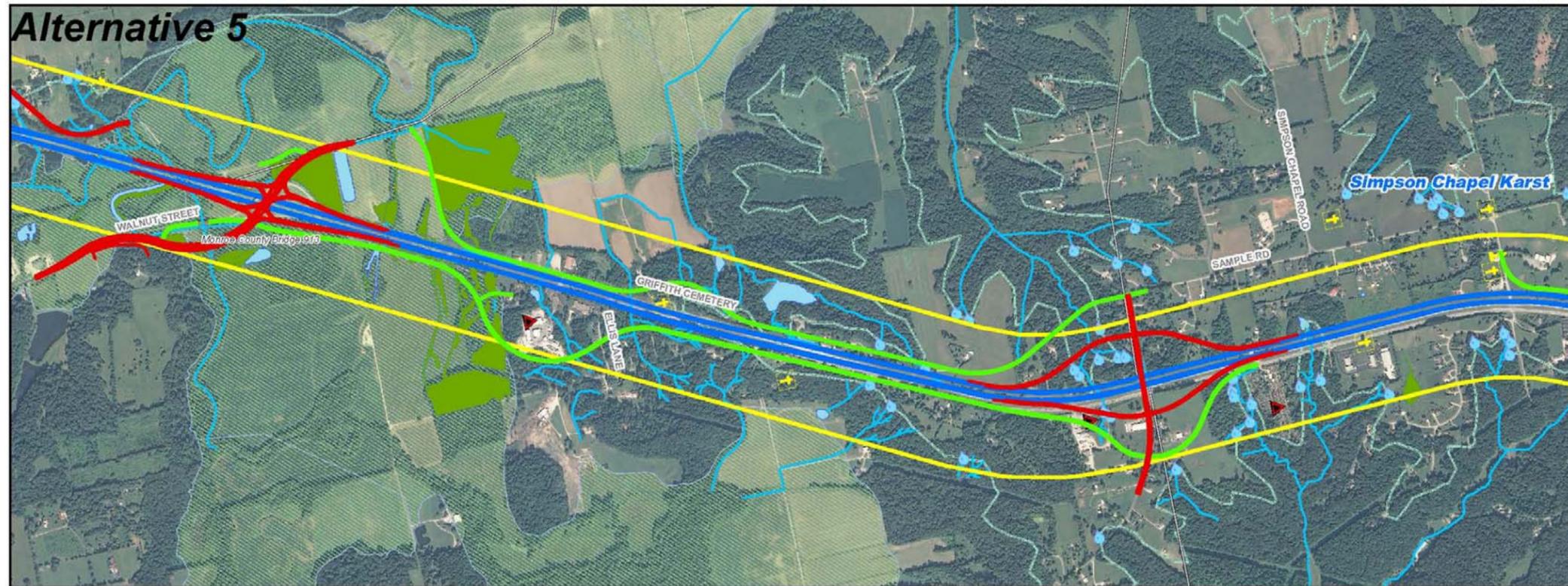
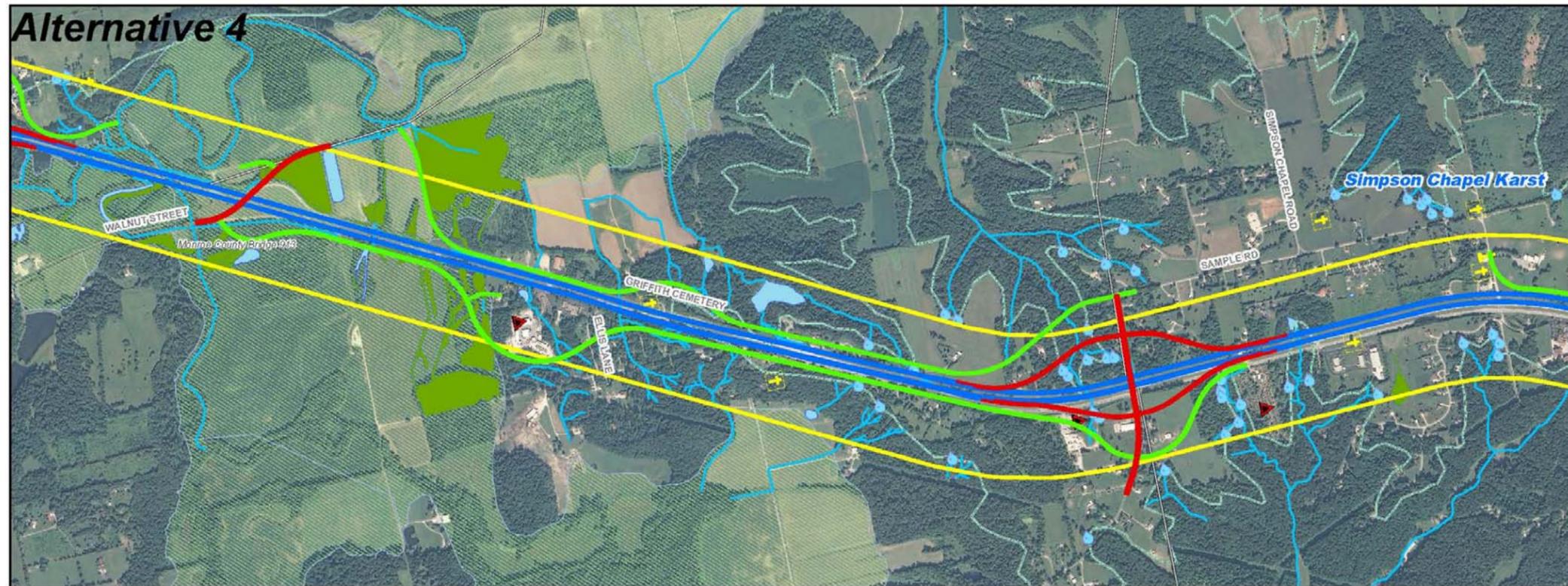
- Legend**
- Mainline
  - Interchange, Overpass, Underpass
  - Local Access Roads
  - Transportation Improvement Projects
  - Cemeteries
  - Churches
  - School
  - Emergency
  - Gas Wells
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  - Floodplain
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I-69 EVANSVILLE-to-INDIANAPOLIS  
 SECTION 5  
**Figure 7**  
**Alternatives 4 and 5**  
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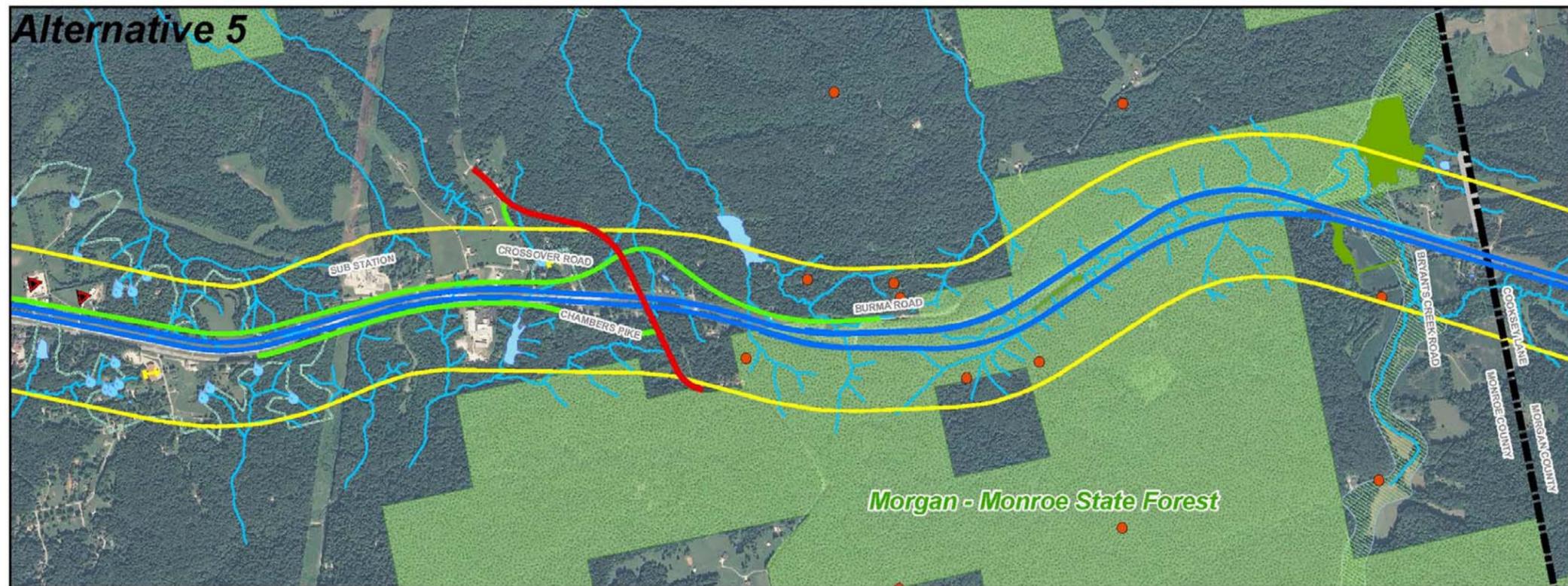
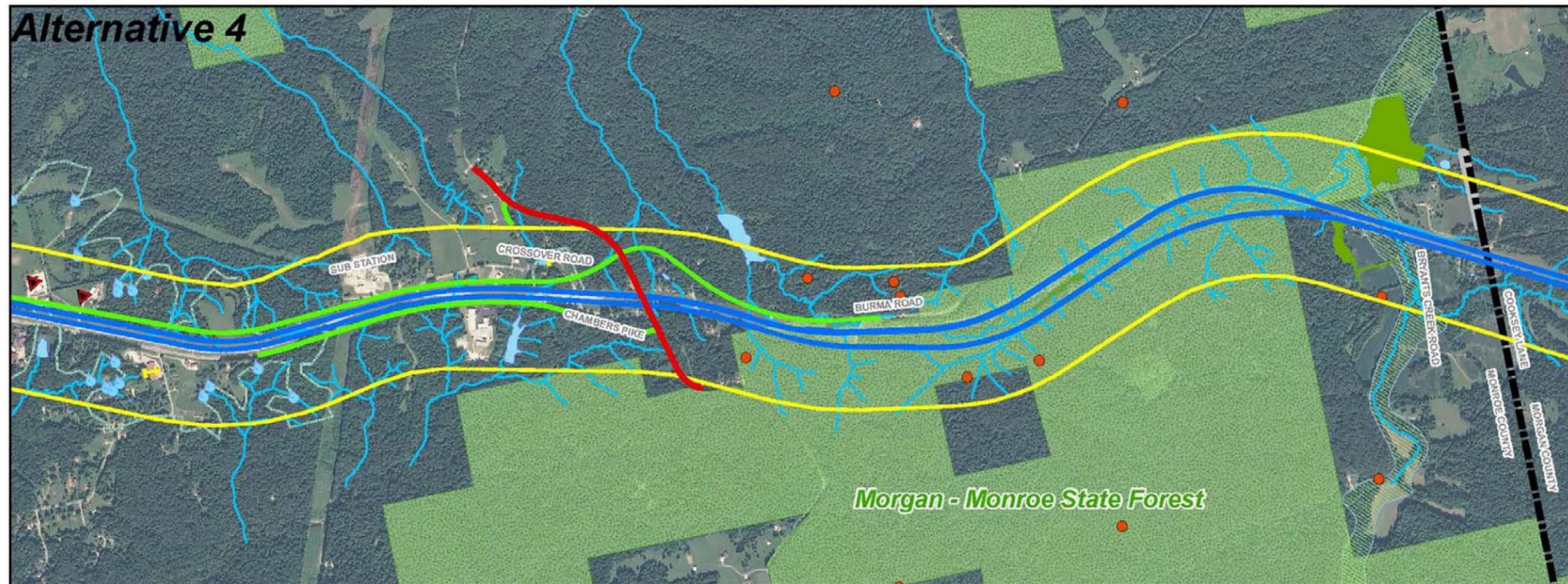
**INTERSTATE 69  
 EVANSVILLE-TO-INDIANAPOLIS  
 SECTION 5 (SR37 TO SR39)**

**Legend**

- Mainline
- Interchange, Overpass, Underpass
- Local Access Roads
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- Churches
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 SECTION 5  
**Figure 7**  
**Alternatives 4 and 5**  
 Sheet 3 of 6  
 Indiana Department of Transportation

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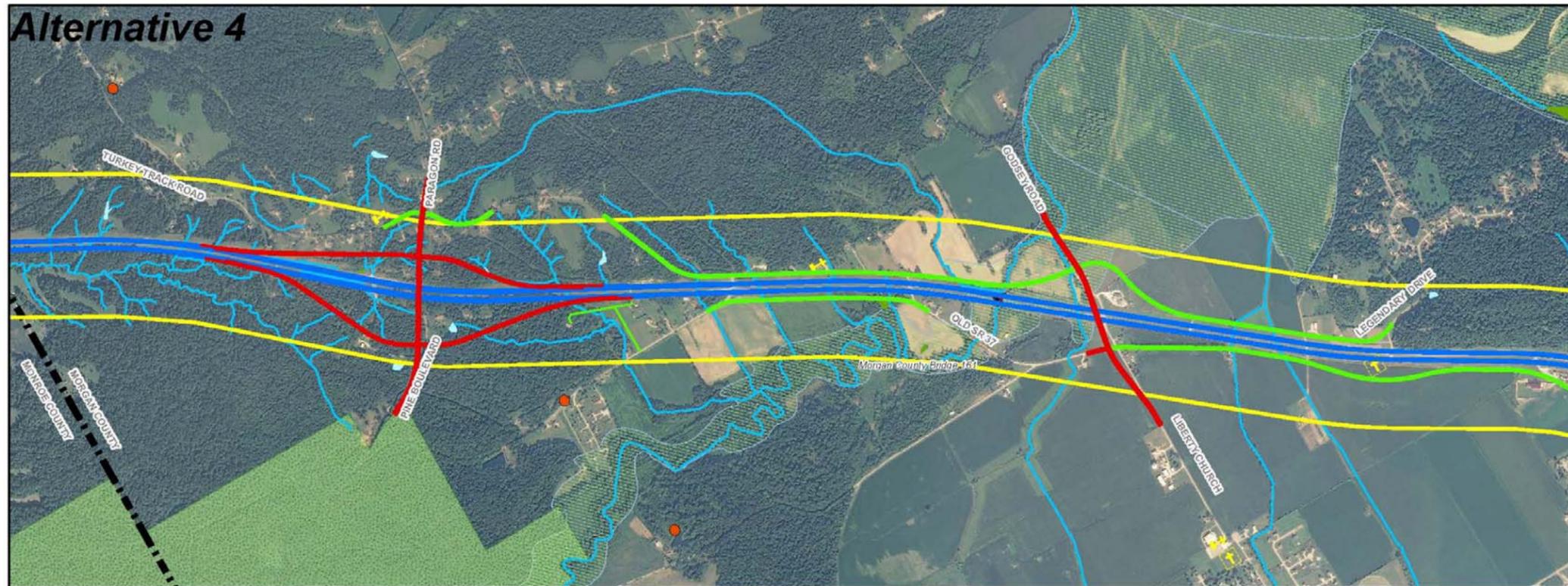
**INTERSTATE 69  
 EVANSVILLE-TO-INDIANAPOLIS  
 SECTION 5 (SR37 TO SR39)**

**Legend**

- Mainline
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 SECTION 5  
**Figure 7**  
**Alternatives 4 and 5**  
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 Indiana Department of Transportation

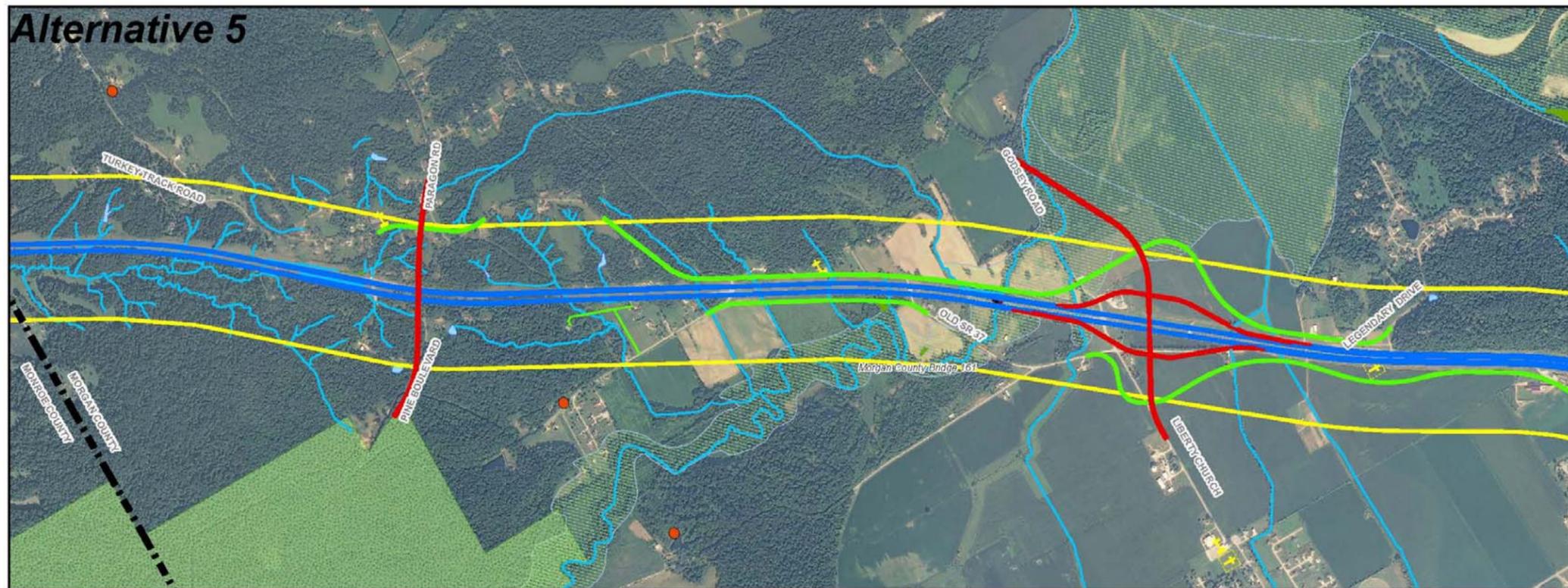
**Baker** April, 2012



**INTERSTATE 69  
 EVANSVILLE-TO-INDIANAPOLIS  
 SECTION 5 (SR37 TO SR39)**

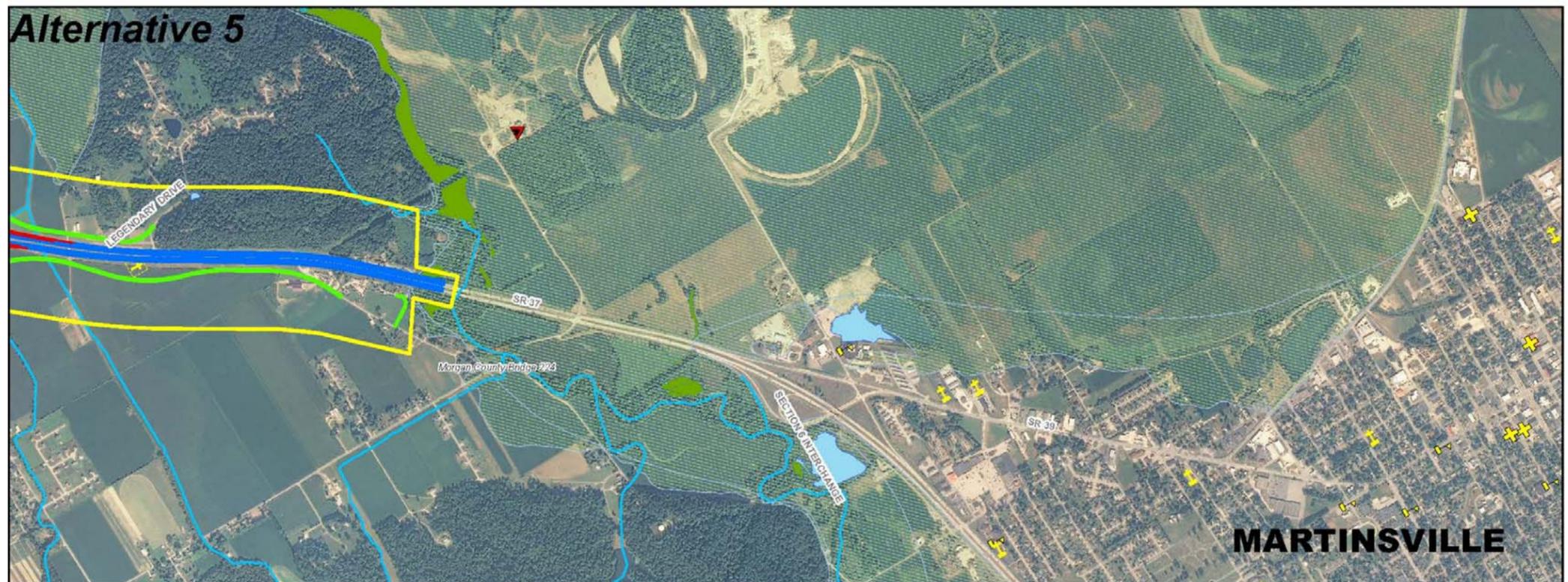
**Legend**

- Mainline
- Interchange, Overpass, Underpass
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I-69 EVANSVILLE-to-INDIANAPOLIS  
 SECTION 5  
**Figure 7**  
**Alternatives 4 and 5**  
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**Baker** April, 2012



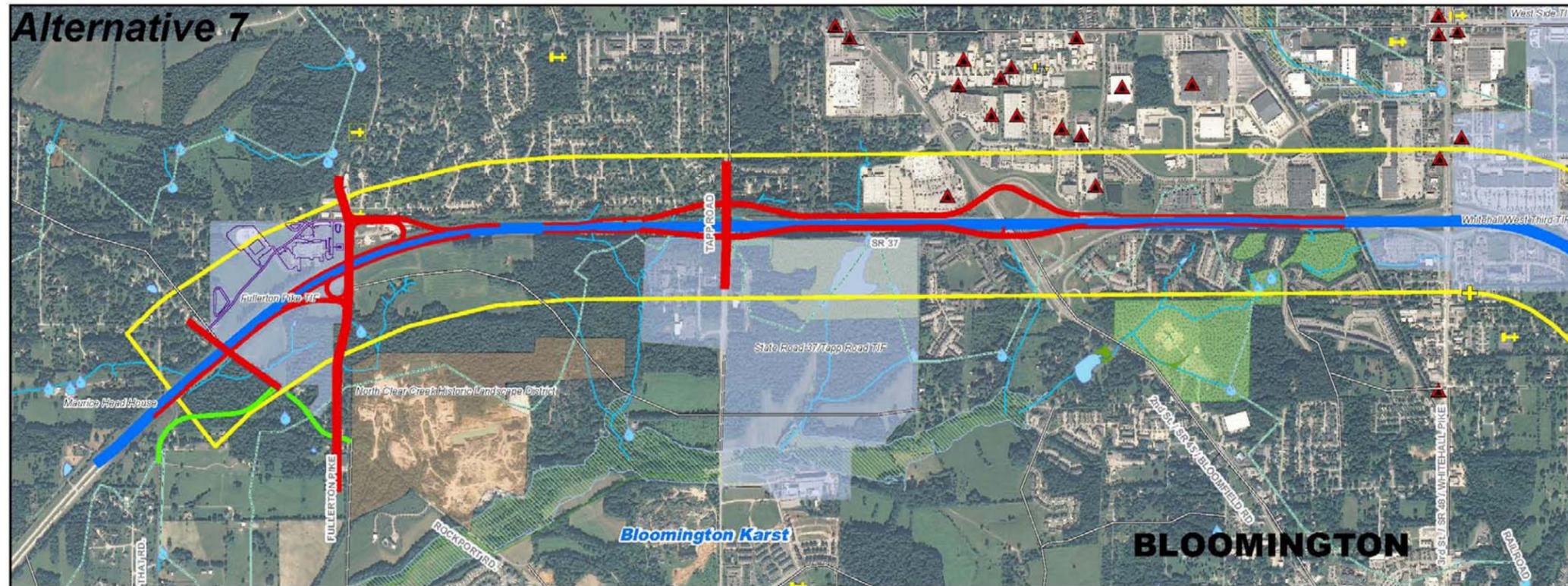
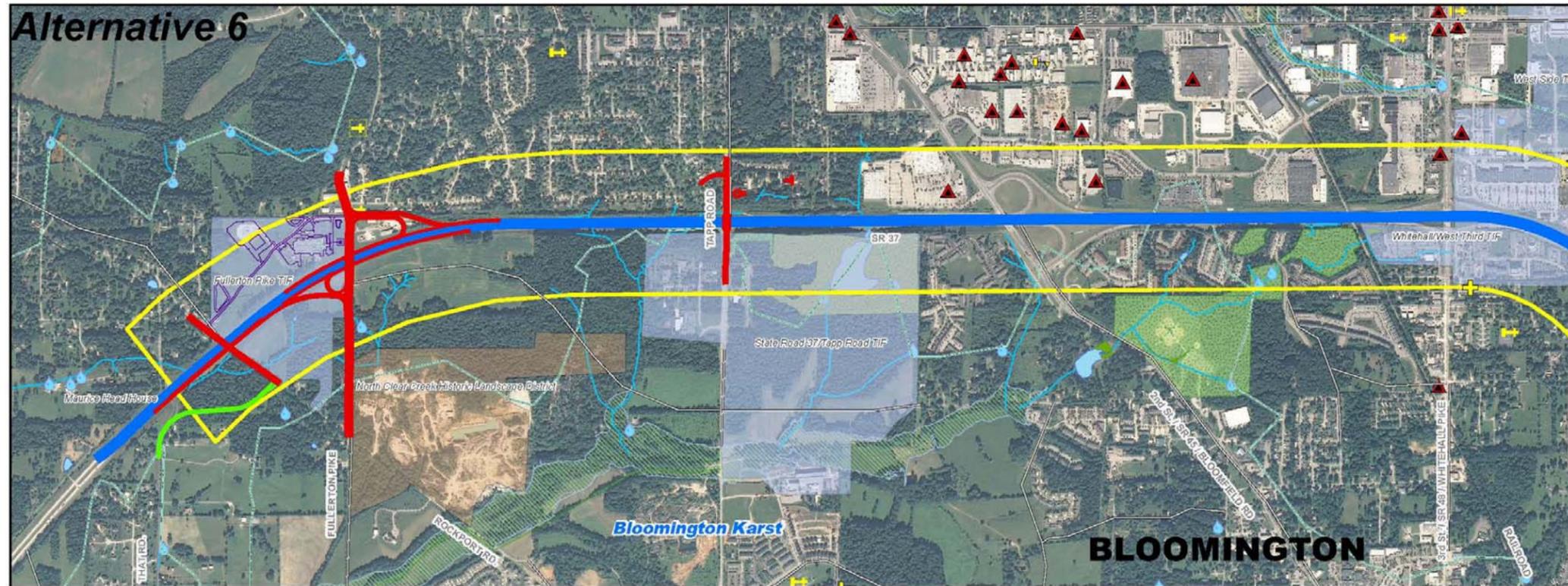
**INTERSTATE 69  
 EVANSVILLE-TO-INDIANAPOLIS  
 SECTION 5 (SR37 TO SR39)**

**Legend**

- Mainline
- Interchange, Overpass, Underpass
- Local Access Roads
- Transportation Improvement Projects
- Cemeteries
- Churches
- School
- Emergency
- Gas Wells
- Potential Hazardous Waste Sites
- Springs
- Wetlands
- Open water
- Streams
- Floodplain
- TIF Districts
- NRHP Listed or Eligible
- Managed Lands
- Superfund Sites
- 2000' Corridor

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**Baker** April, 2012



**INTERSTATE 69  
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 SECTION 5 (SR37 TO SR39)**

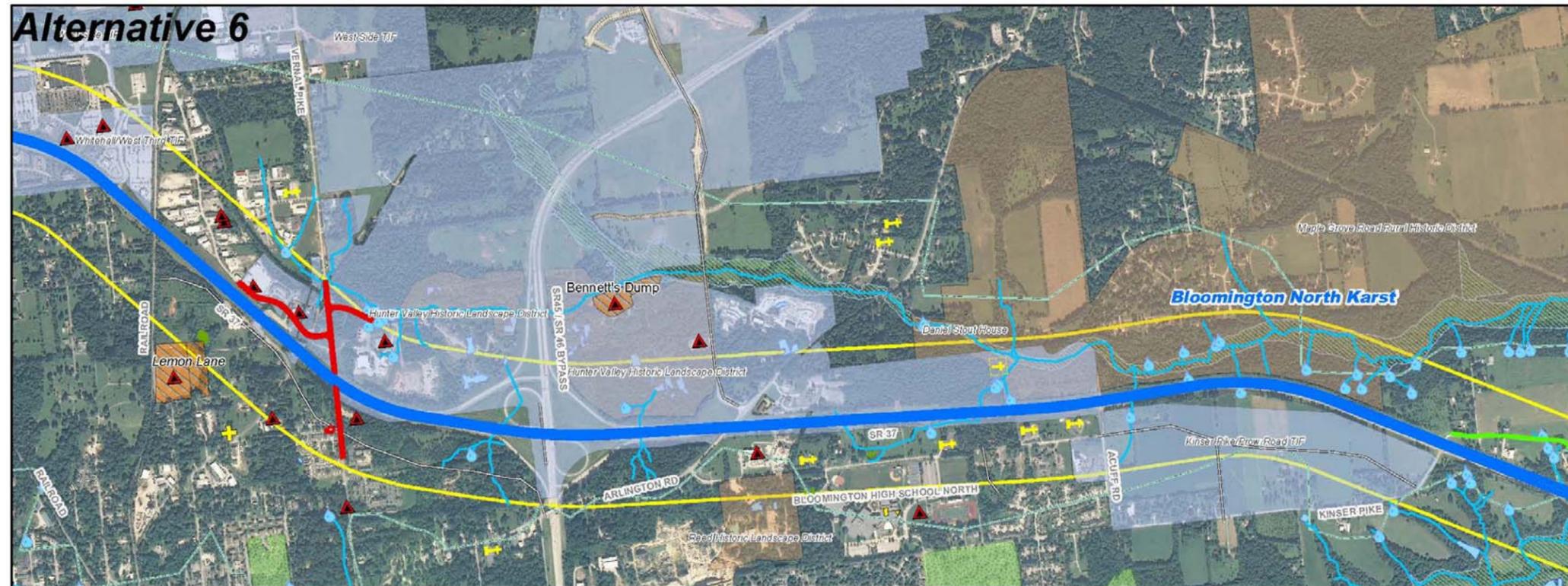
**Legend**

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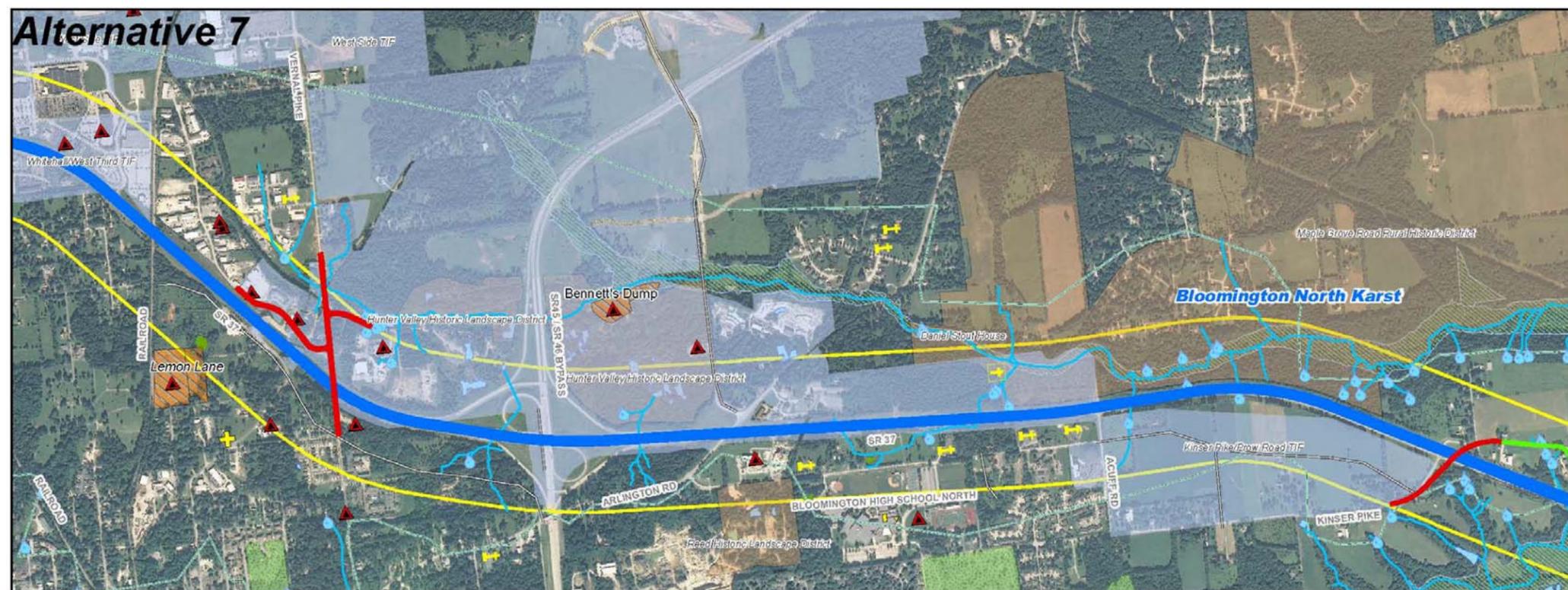
**Baker** April, 2012



**INTERSTATE 69  
 EVANSVILLE-TO-INDIANAPOLIS  
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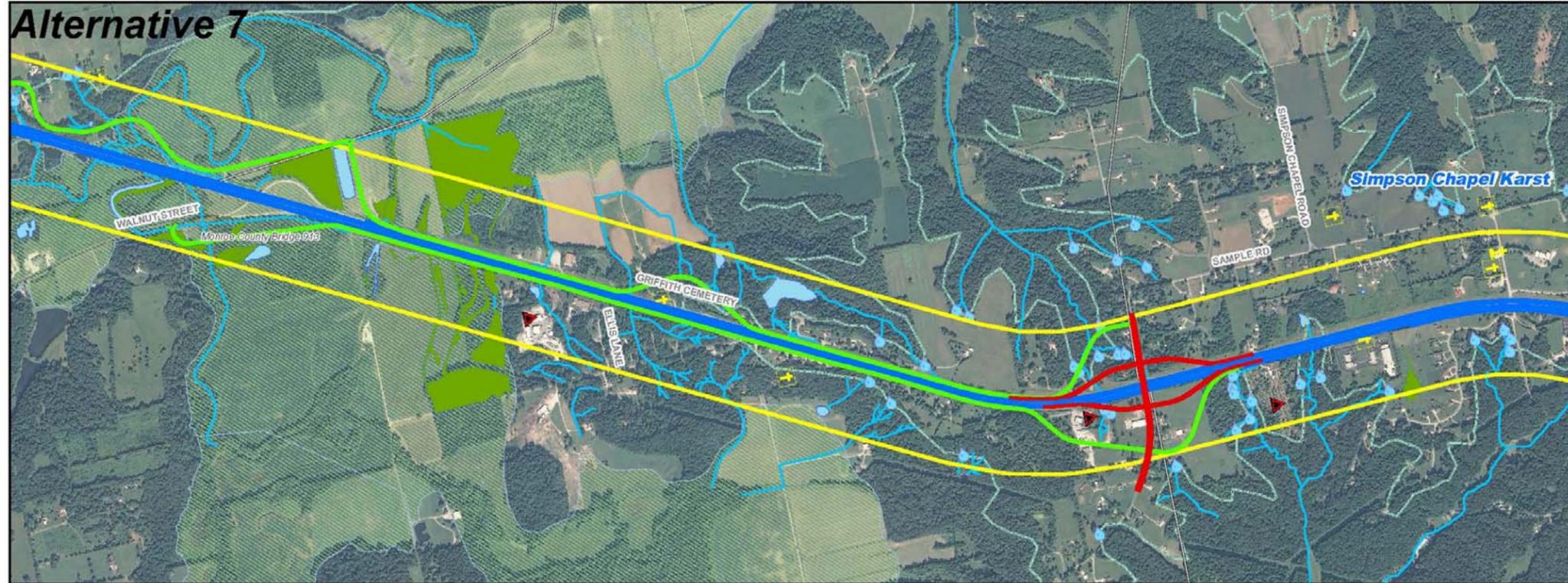
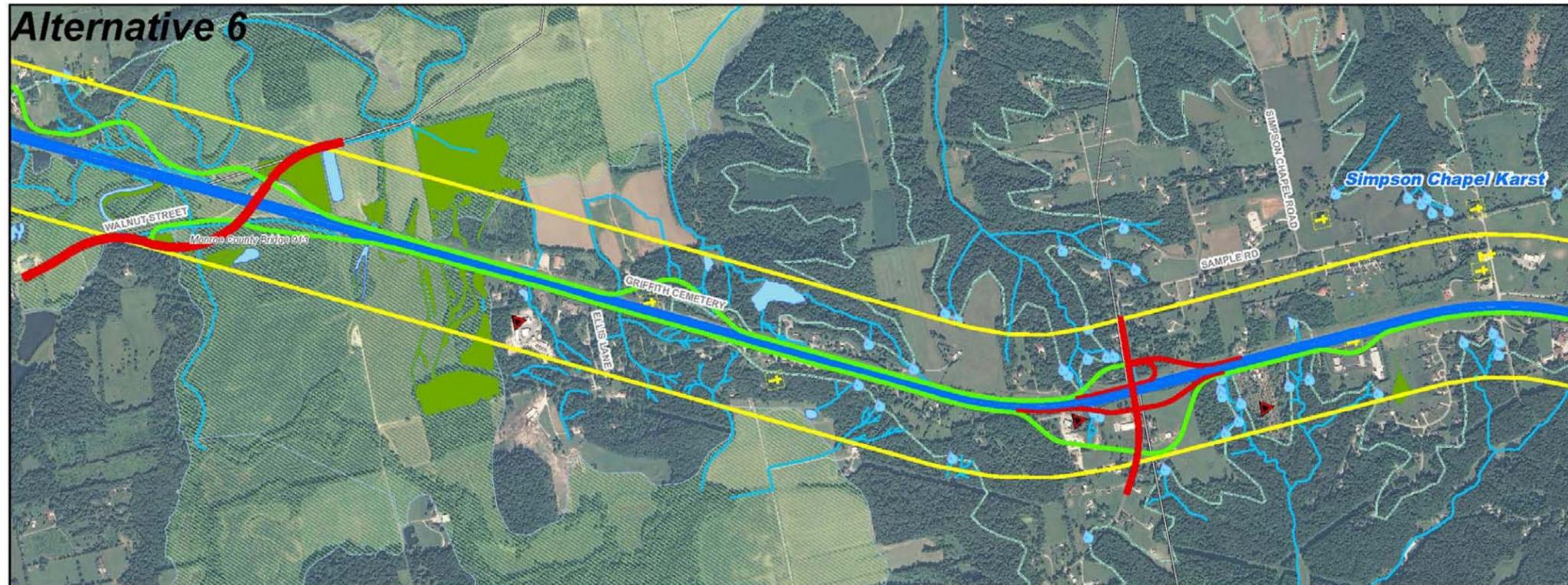
**Legend**

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**Baker** April, 2012



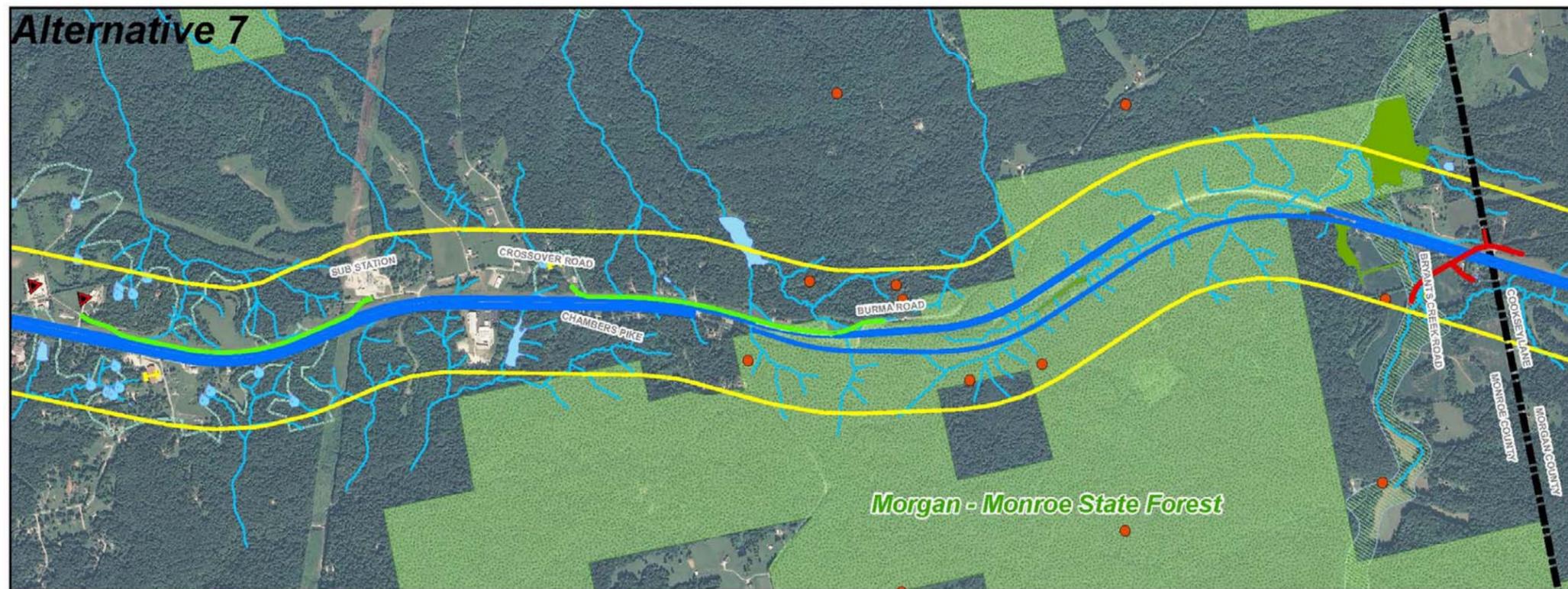
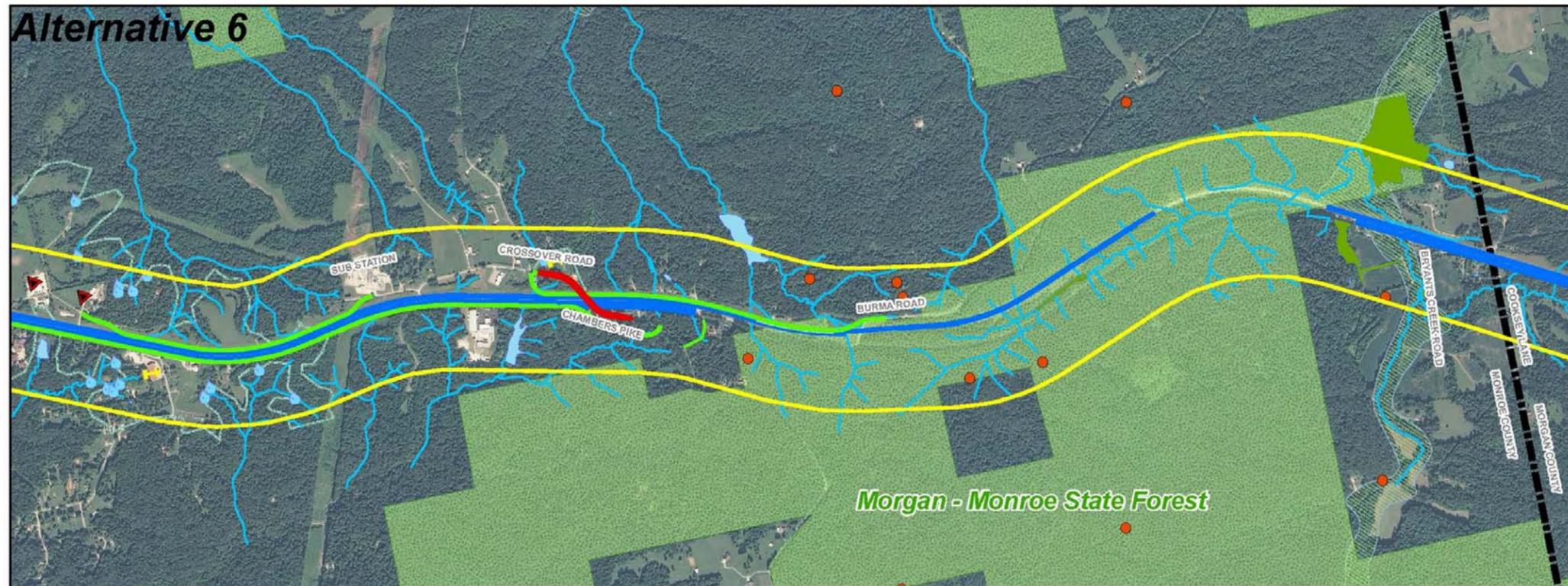
**INTERSTATE 69  
 EVANSVILLE-TO-INDIANAPOLIS  
 SECTION 5 (SR37 TO SR39)**

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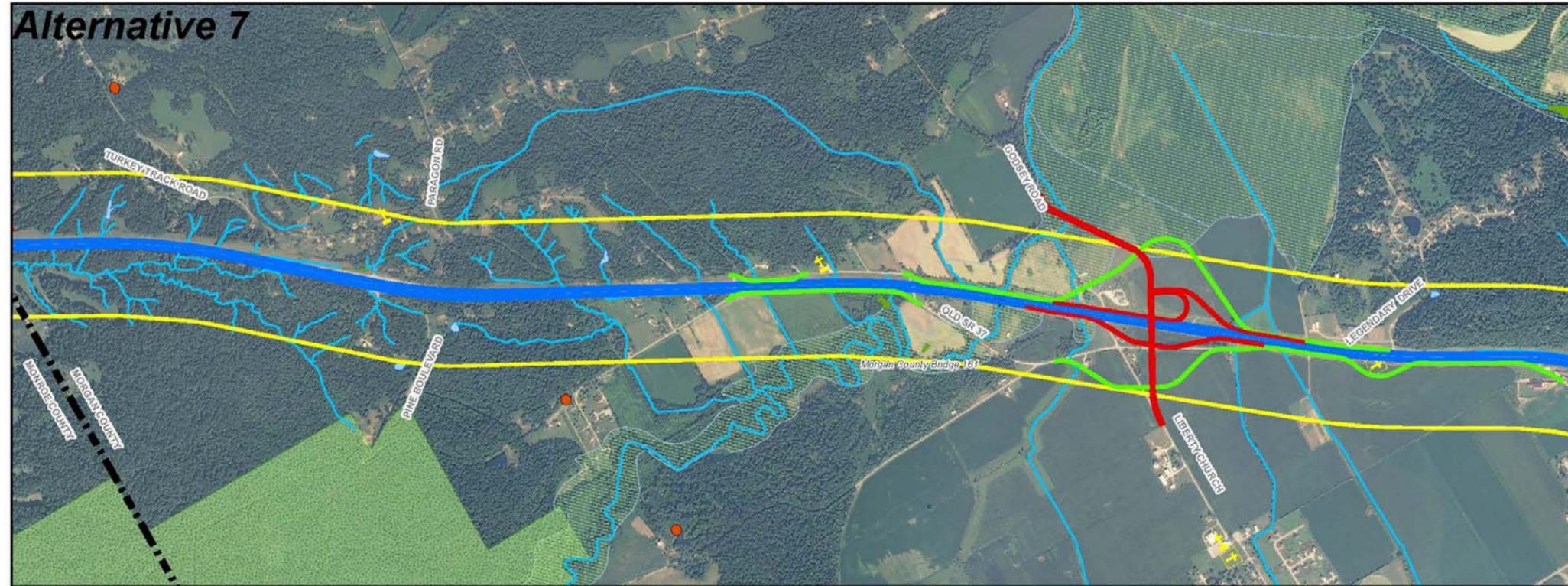
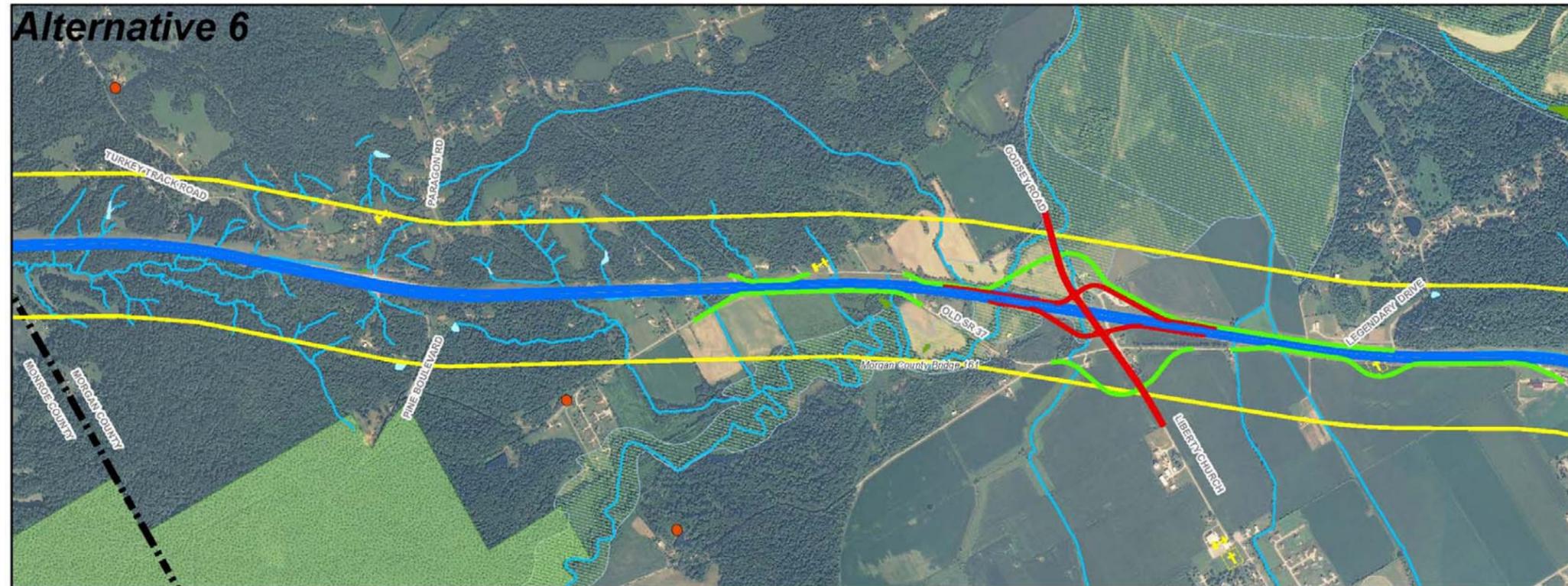
**INTERSTATE 69  
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