PRELIMINARY ALTERNATIVES ANALYSIS AND SCREENING

For Tier 2, Section 5 (Bloomington to Martinsville)

of the I-69 Evansville to Indianapolis Project

May 2007

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 *Indiana's Streamlined EIS Procedures* (July 6, 2001).

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 frontage roads.

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. The package contained the draft Purpose and Need Statement for Section 5 and exhibits showing the preliminary alternatives developed for the section. The 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.*

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***.

Table 1: Section 5 Goals and Performance Measures

Tier 1	Tier 2 Section 5	
	Section 5 Goals	**Section 5 Performance Measures**
GOAL 1—*Improve the transportation linkage between Evansville and Indianapolis* **GOAL 8—*Facilitate interstate and international movement of freight*** **GOAL 9— *Connect I-69 to major intermodal facilities in Southwest Indiana***	**GOAL 1—**Complete Section 5 of I-69 between Victor Pike south of Bloomington and SR 39 in Martinsville	Development of a freeway which meets current design standards. (All alternatives would be equal in their ability to satisfy this criterion.)
GOAL 3 —Reduce existing and forecasted traffic congestion on the highway network in Southwest Indiana	**GOAL 2—**Reduce existing and forecasted traffic congestion on the highway network in the Section 5 Study Area	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.
GOAL 4 —Improve safety levels in Southwest Indiana	**GOAL 3—** Reduce crashes on local and state roads in the Section 5 Study Area (Morgan and Monroe Counties)	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.
Goal 6 — Support sustainable, long-term economic growth (diversity of employer types) **GOAL 7 —** Support economic development to benefit a wide spectrum of area residents	**GOAL 4—**Support local economic development initiatives	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.

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 are provided by a hierarchy of traffic models. Both Version 4 of the Indiana Statewide Travel Demand Model (ISTDM) and a more detailed corridor model are used. The corridor model is "fed" by the results of the ISTDM. The corridor model includes the counties through which the approved corridor for I-69 passes, as well as all or part of other nearby counties. Finally, in Sections 5 and 6, a simulation model is used in the urban areas of Bloomington, Martinsville, and Marion County. This simulation model is "fed" by the corridor model, and (as its name implies) "simulates" interaction between individual vehicles. Section 2.2 describes this hierarchy of modeling tools.

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. 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 studies will determine an exact alignment for I-69 within this corridor.

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.

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

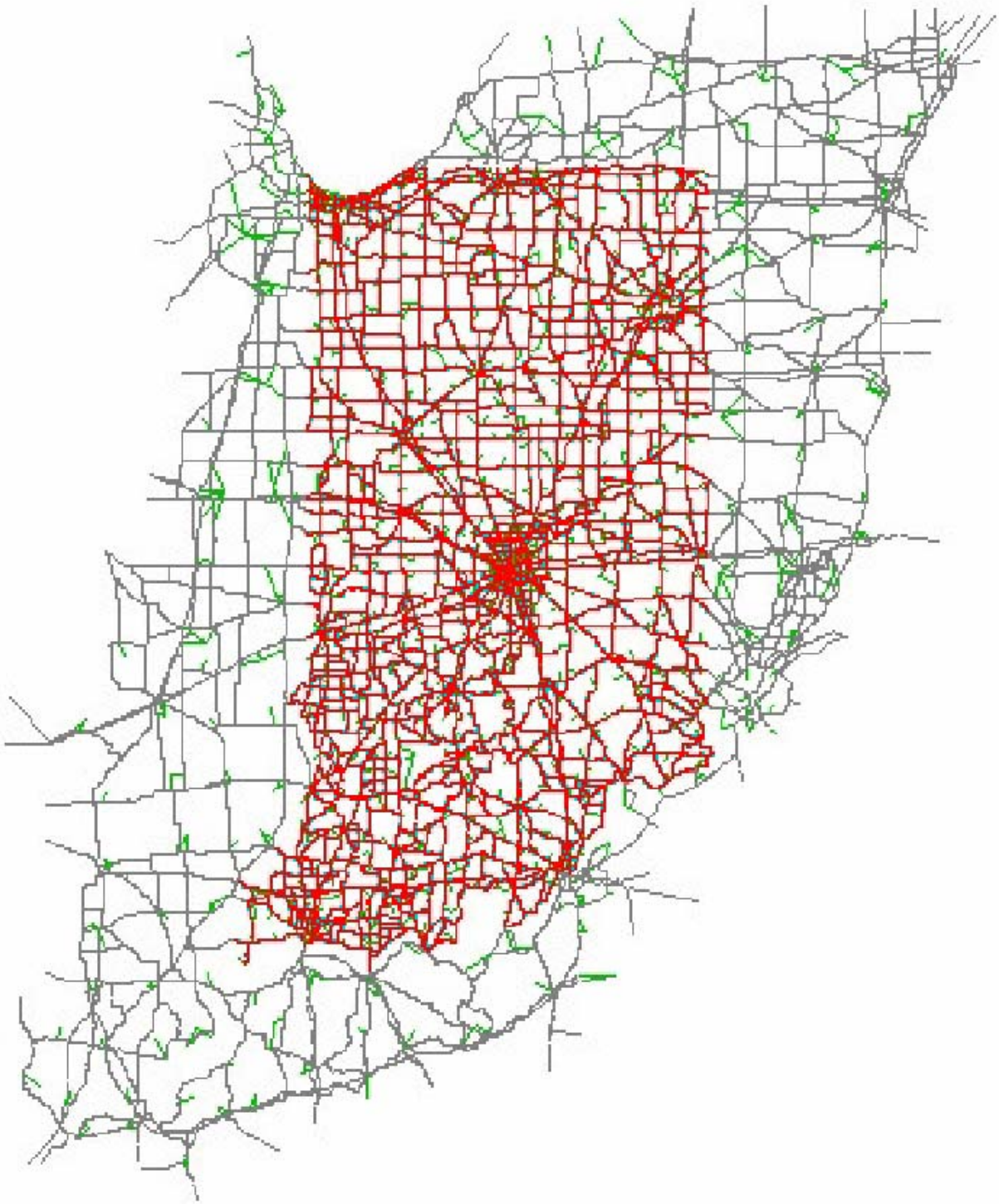
As discussed above, the possible alignments in this Tier 2 EIS are much more similar than is typical in a non-tiered highway NEPA study. Accordingly, the tools used to compare the performance of these alternatives also must be more focused. The ISTDM is a very robust tool for comparing the alternatives 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.

To prepare for Tier 2 studies, the ISTDM was refined to provide a more detailed highway network throughout the state[1]. The results of this upgrade are illustrated in Figures 1 and 2. Figure 1[2] shows the highway network for the previous version (Version 3) of the ISTDM. It had 18,000 links, with 23,000 miles of highway network. Figure 2 shows the highway network for Version 4 of the ISTDM. It has 35,000 links, with 29,000 miles of highway network.

---

[1] The Indiana Statewide Travel Demand Model (ISTDM) is regularly updated by INDOT to incorporate the most current data and transportation planning practices. ISTDM Version 3 was used for the Tier 1 Study; ongoing Tier 2 Studies are using ISTDM Version 4.

[2] Figures 1 – 5 are intended to communicate, in a schematic manner, the relative level of detail of the modeled highway network and Traffic Analysis Zones (TAZs). Other maps provided in the DEIS and FEIS will be much more detailed, consistent with the resource or impacts under discussion.



N

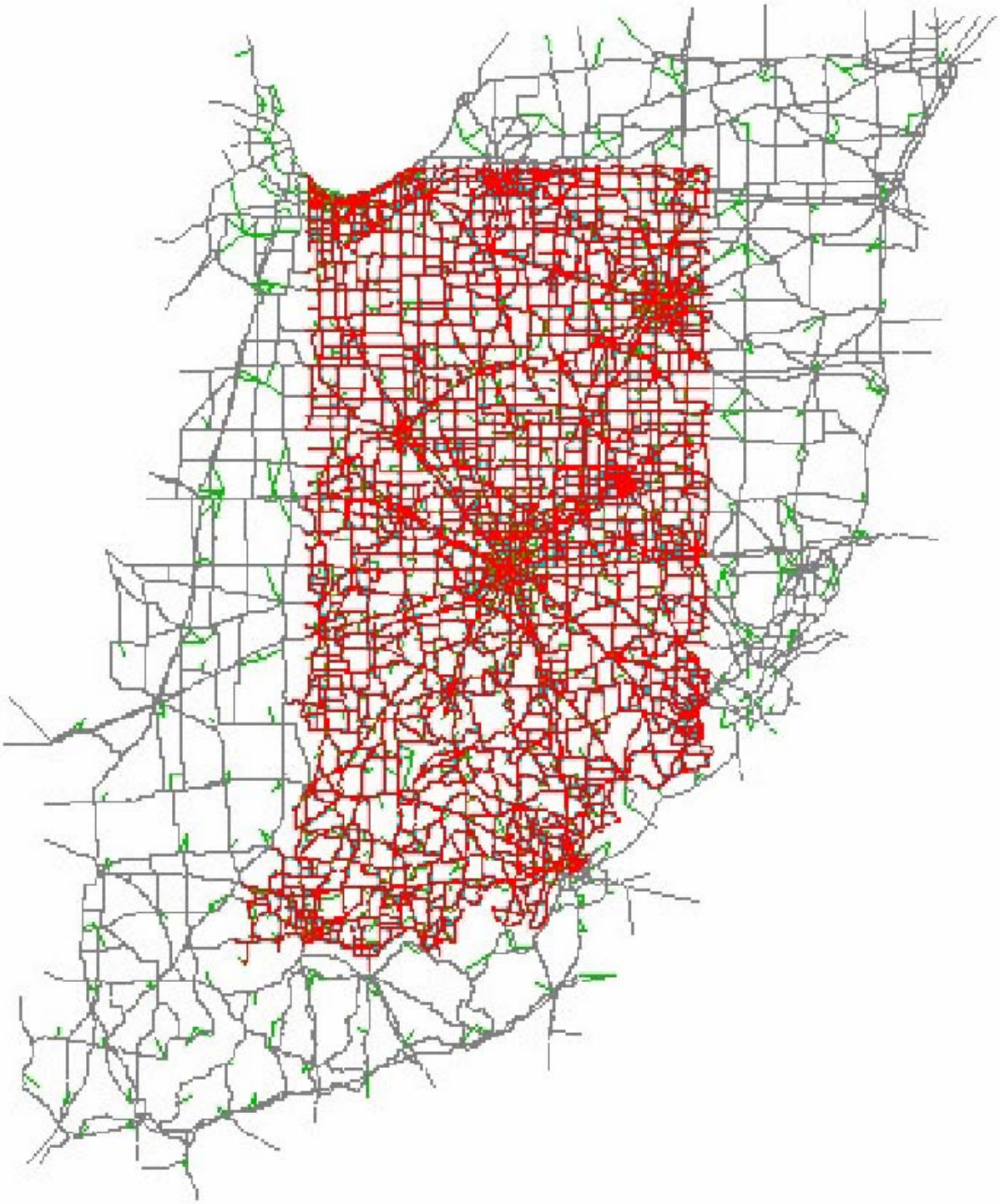
37227\GIS\Draft_EIS_Maps\ISTDM_Fig1

I-69, Evansville to Indianapolis
Section 6
Indiana Department of Transportation
20 0 20 40 60
Miles
September 2006

Figure 1

ISTDM Version 3 Network
Section 6 Preliminary Alternatives
Analysis and Screening Report

Map Layers: ISTDM Figure provided by BLA
Projected Coordinate System: NAD 83, UTM Zone 16 North, Feet



N

37227\GIS\Draft_EIS_Maps\ISTDM_Fig2

I-69, Evansville to Indianapolis
Section 6
Indiana Department of Transportation
20 0 20 40 60
Miles
September 2006

Figure 2

ISTDM Version 4 Network
Section 6 Preliminary Alternatives
Analysis and Screening Report

Map Layers: ISTDM Figure provided by BLA
Projected Coordinate System: NAD 83, UTM Zone 16 North, Feet

Figures 3 and 4 further illustrate the updates made to Version 4 of the ISTDM. Figure 3 shows the 844 Traffic Analysis Zones[3] (TAZs) used in Version 3. Figure 4 shows the 4,720 TAZs used in Version 4. In Version 4 of the ISTDM, its zonal structure is five times more detailed than the zonal structure for Version 3.

Once the ISTDM was updated to Version 4, an even more detailed model was created for the region proximate to the I-69 corridor. 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 5 shows the network associated with the Tier 2 corridor model. The greatest density of lines shows the location of the selected corridor for I-69, as well as nearby roads. In the vicinity of the I-69 corridor, the corridor model includes all roads down to the functional classification[4] of minor collector (in rural areas)[5] and collector (in urban areas)[6]. 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 also is designed to be suitable for considering alternative interchange locations.[7]

---

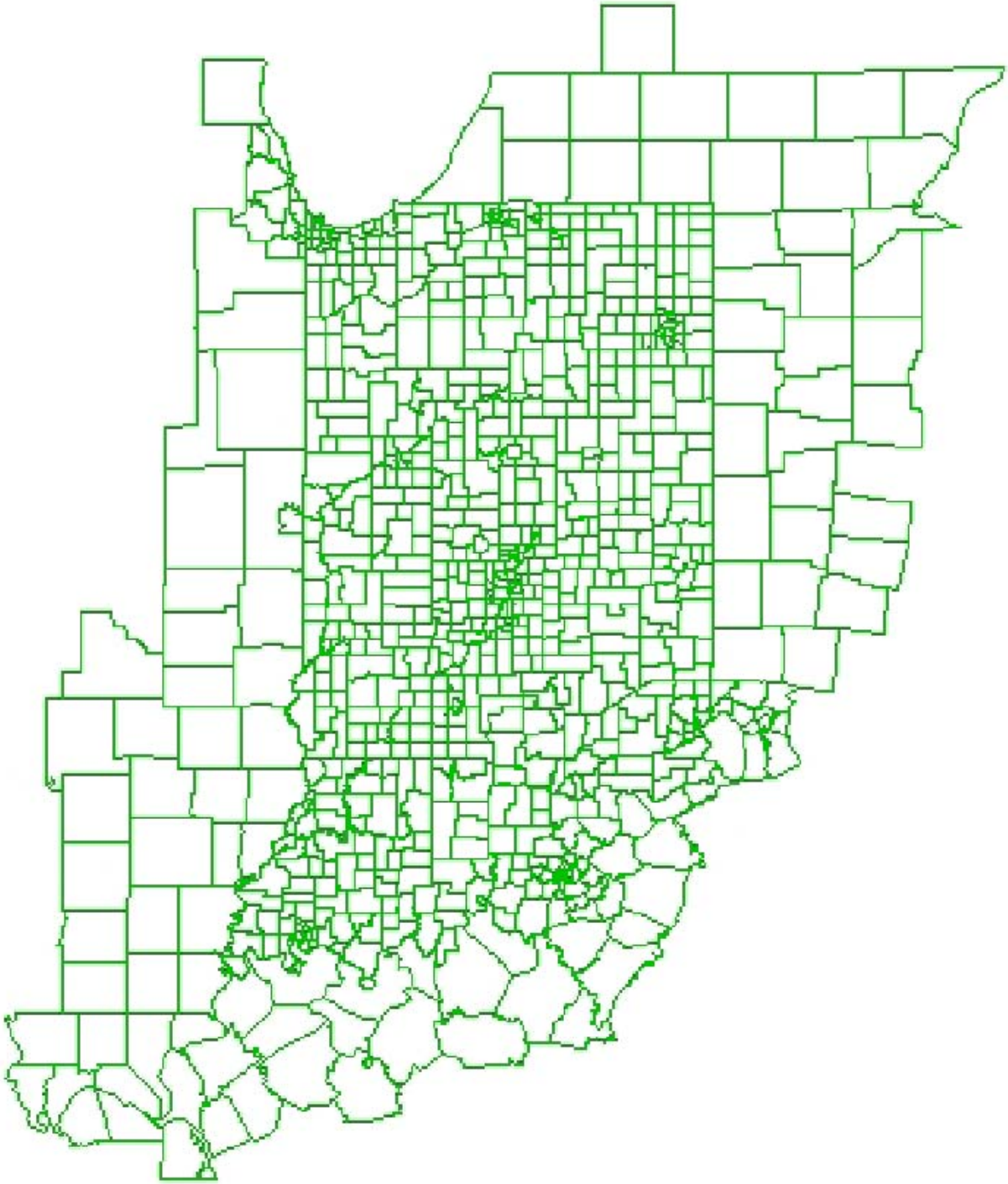
[3] A "traffic analysis zone" (TAZ) is a geographic area which conforms to US Census geography, is consistent with the highway network, and is relatively homogeneous with respect to population demographics and land use. The transportation model regards trips on the highway network as originating and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

[4] "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.

[5] 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).

[6] 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.

[7] 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.



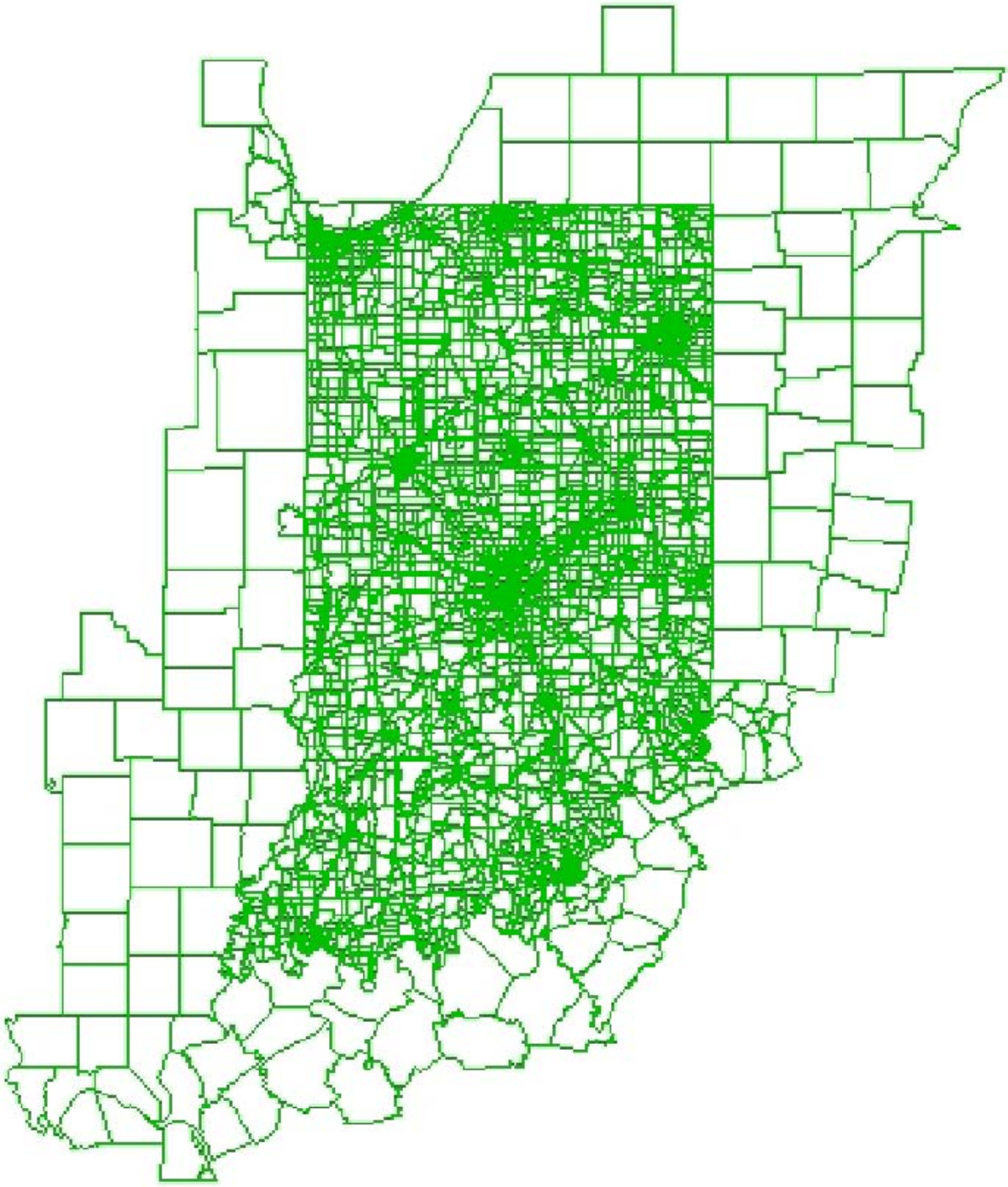
N

37227\GIS\Draft_EIS_Maps\ISTDM_Fig3

I-69, Evansville to Indianapolis
Section 6
Indiana Department of Transportation
20 0 20 40 60
Miles
September 2006

Figure 3
ISTDM Version 3 Traffic Analysis Zones
Section 6 Preliminary Alternatives
Analysis and Screening Report

Map Layers: ISTDM Figure provided by BLA
Projected Coordinate System: NAD 83, UTM Zone 16 North, Feet



N

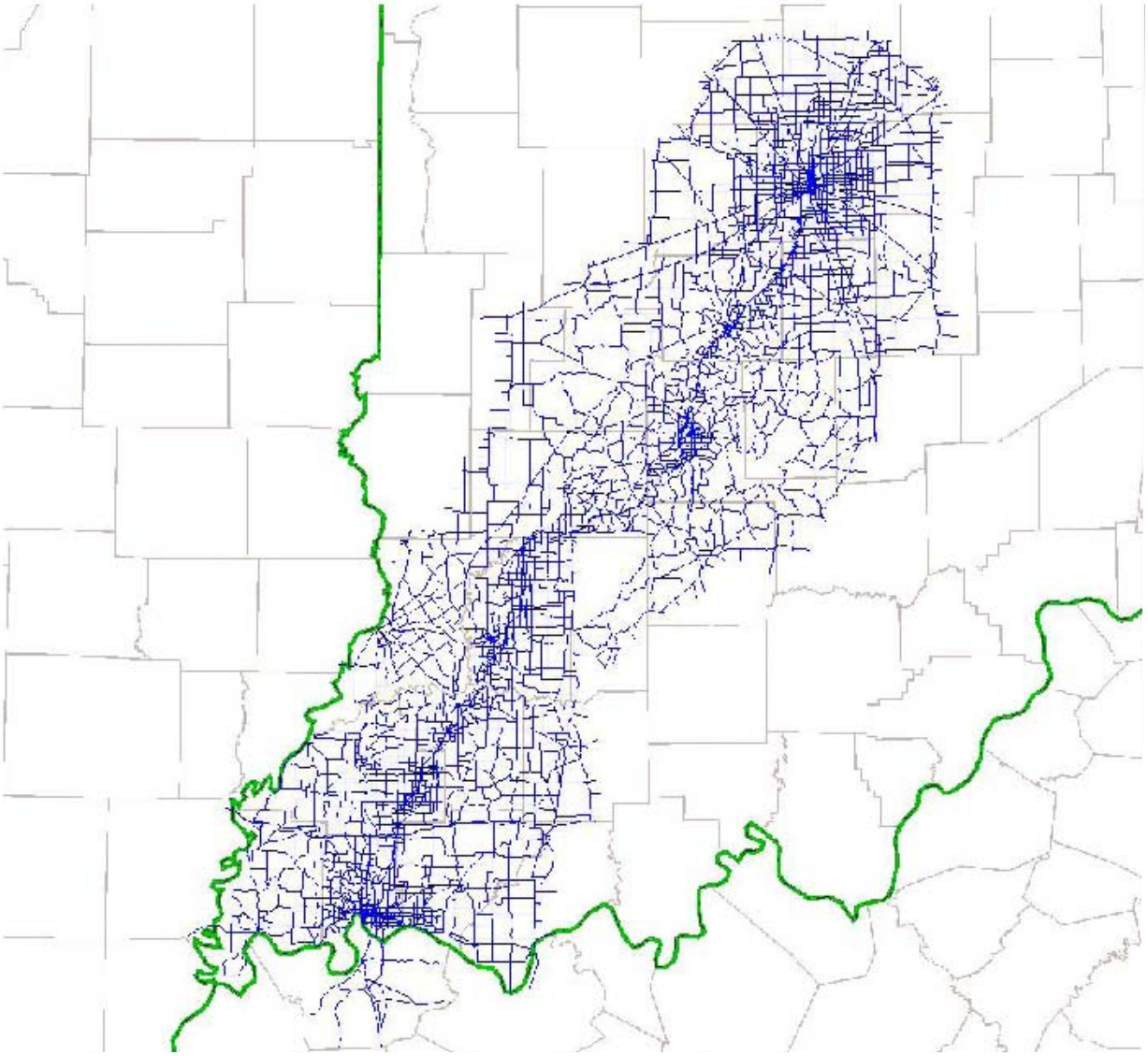
37227\GIS\Draft_EIS_Maps\ISTDM_Fig4

I-69, Evansville to Indianapolis
Section 6
Indiana Department of Transportation
20 0 20 40 60
Miles
September 2006

Figure 4

ISTDM Version 4 Traffic Analysis Zones
Section 6 Preliminary Alternatives
Analysis and Screening Report

Map Layers: ISTDM Figure provided by BLA
Projected Coordinate System: NAD 83, UTM Zone 16 North, Feet



N

37227\GIS\Draft_EIS_Maps\ISTDM_Fig5

I-69, Evansville to Indianapolis
Section 6
Indiana Department of Transportation
10 0 10 20 30
Miles
September 2006

Figure 5

I-69 Tier 2 Corridor Model Network
Section 6 Preliminary Alternatives
Analysis and Screening Report

Map Layers: ISTDM Figure provided by BLA
Projected Coordinate System: NAD 83, UTM Zone 16 North, Feet

The TAZ structure in the corridor model also is more detailed than in the ISTDM. There are over 4,300 TAZs in the corridor model that covers only the corridor in the southwestern Indiana, as compared with only 4,700 in Version 4 of the ISTDM that covers the whole state.

To provide Tier 2 forecasts, the results obtained from the ISTDM are "fed into" the corridor model. The auto and truck trip tables[8] that are provided by the ISTDM traffic assignment[9] are disaggregated using TransCAD's[10] built-in proportionate disaggregation procedure to provide trip tables corresponding to the TAZ structure in the corridor model.[11] In this process, many of the trips assigned to a TAZ in the ISTDM are assigned to an external station[12] in the corridor mode. The corridor model is then run using these trip tables to obtain a traffic assignment that is detailed enough to support decisions regarding Tier 2 alternatives. The corridor model produces assignments for the AM peak hour, the PM peak hour, and total weekdays (24 hour). The AM and PM peak percentages and directional splits in the corridor model traffic assignments were calibrated against actual traffic counts along SR 37[13] and rural corridors in Southwest Indiana, as appropriate.

Finally, within the urban areas of Section 5 (Bloomington) a simulation model (Paramics)[14] is used to simulate actual traffic flows. The traffic forecasts provided by the corridor model are fed into the simulation model. The simulation model uses probabilistic techniques to portray actual traffic flows and the interactions between individual vehicles. The simulation model allows detailed analysis of traffic engineering issues which must be considered in planning interchange

---

8 A "trip table" is a matrix listing the number of trips made between any two zones.

9 A traffic assignment is the simulation of traffic flows within the transportation network provided by a travel model (such as TransCAD). The traffic assignment provides forecasts of the number of vehicles on each road within the highway network, as well as turning movements at intersections and freeway interchanges.

10 TransCAD ® is the modeling platform produced by Caliper Corp. that is used by INDOT for the ISTDM.

11 For example, in the ISTDM, the trip table may show 420 trips between two zones *x* and *y*. The corridor model has a more refined zone structure. Zone *x* in the ISTDM may be subdivided into 5 zones ($x_1, x_2, x_3, x_4,$ and x_5) in the corridor model. Similarly, zone *y* in the ISTDM may be subdivided into 5 zones ($y_1, y_2, y_3, y_4,$ and y_5) in the corridor model. The TransCAD procedure referenced here breaks down the 420 trips between zone *x* and zone *y* into the 25 possible categories (e.g., trips from x_1 to y_1, trips from x_2 to y_1, etc.). The total number of trips between all combinations of zones x_n and y_n would total 420. This procedure takes into account the characteristics of each zone x_n and y_n (e.g., population and employment) in allocating trips to that zone.

12 An "external station" is a special kind of zone on the boundary of a modeled area. Trips that enter or leave the modeled area are shown as originating or ending at that zone. For example, if the boundary of the modeled area were at I-70 west of US 231, all trips entering or leaving the modeled area via I-70 would be shown with their origin or destination at that external station. Such trips may begin or end far beyond the external station. In this example, trips modeled as originating at an external station on I-70 west of US 231 may originate at St. Louis, Missouri Terre Haute, Indiana and various other points west.

13 SR 37 is the principal transportation facility whose existing traffic counts were used, because it is the most significant transportation facility which is included within the confines on the corridor model. Recent traffic counts (taken within the last several years) on this and other major facilities were used to ensure that the base year traffic assignment (for the year 2000) could adequately "predict the present."

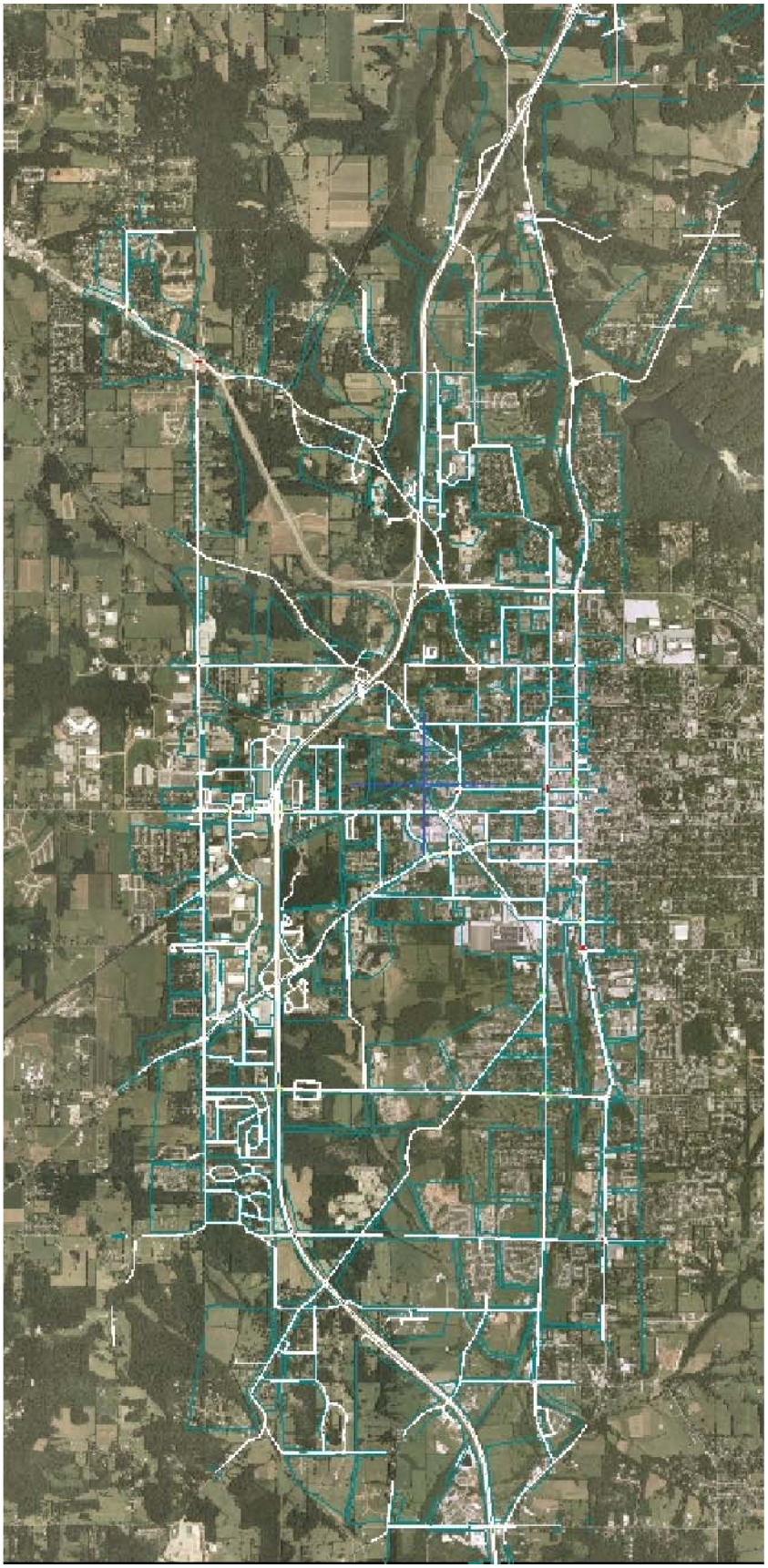
14 Paramics is commercially-available traffic microsimulation software. It is produced by Quadstone Limited.

design, grade separations, and access treatments in urban areas. These detailed traffic engineering issues include queuing at intersections, traffic signalization, and ramp location and design features.

Figure 6 shows a portion of the Paramics simulation network in Bloomington, Indiana. Figure 7 is an example of an actual Paramics analysis displaying the interaction between vehicles.

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[15] that analyze the traffic assignments provided by the corridor model.

[15] 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.



N

37227\GIS\Draft_EIS_Maps\Figure6

I-69, Evansville to Indianapolis
Section 6
Indiana Department of Transportation

1 0 1 Miles

September 2006

Figure 6

Paramics Simulation Networkk
Section 6 Preliminary Alternatives
Analysis and Screening Report

Map Layers: Figure provided by BLA
Projected Coordinate System: NAD 83, UTM Zone 16 North, Feet

37227\GIS\Draft_EIS_Maps\Figure7

I-69, Evansville to Indianapolis
Section 6
Indiana Department of Transportation

September 2006

Figure 7

Paramics Analysis
Section 6 Preliminary Alternatives
Analysis and Screening Report

Map Layers: Figure provided by BLA
Projected Coordinate System: NAD 83, UTM Zone 16 North, Feet

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, access roads and frontage 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 at that time. The screening of alternatives is based upon an analysis of impacts and costs. Avoiding impacts and minimizing cost are of primary concern. The degree to which local purpose and need goals are addressed is of secondary importance. Performance on purpose and need will provide guidance in cases where costs and impacts are similar.

As part of the alternative development, generalized typical sections, potential interchange types and initial alternatives were explored. These are shown on Figure 8 - Typical Sections; Figure 9 - Section 5 Example Interchange Types; and Figure 10 - 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 Summary Maps (Figures 11 and 12).

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,[16] 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.

[16] The termini for each of the Tier 2 sections were established in Tier 1.

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, 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 Geopak)[17] 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

[17] Bentley Geopak is civil engineering design software use for roads, drainage and bridge design. It is provided by Bentley Systems, Inc.

and Streets. Specifically, the mainline highway utilizes "Geometric Design Criteria for Freeways, New Construction or Complete Reconstruction." Design criteria for the various frontage 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 development of the 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, 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 frontage roads) are shown on Figure 8.

This typical section provides two 12-foot-wide lanes in each direction separated by an 84-foot-wide depressed median (except in any bifurcated section) within the rural sections of I-69 north of Bloomington (north of Kinser Pike). The median includes two seven-foot wide usable inside shoulders, six feet of which are paved. Additional pavement (usually 12 feet) is provided in locations warranting truck climbing lanes and ramp acceleration and deceleration lanes.

In the urban area of Bloomington, a third 12-foot-wide lane is provided in each direction, the depressed median is reduced to 60 feet in width, and the inside shoulder increased to 13 feet in width, 12 feet of which are paved. Figure 8 shows the typical sections for the I-69 mainline. Additional pavement (usually 12 feet) is provided in locations warranting auxiliary lanes and ramp acceleration and deceleration lanes.

A minimum 35-foot-wide outside clear zone extends beyond the travel lanes and contains 13-foot-wide usable shoulders, (12 feet of which are paved) in both rural and urban areas of the project.

Frontage roads are proposed for either side of the mainline at various points throughout the Section 5 corridor. These frontage roads provide access to otherwise landlocked properties. A minimum 100' wide median between the interstate mainline and frontage roads provides the necessary roadway clear zone and space for a landscaping berm. The frontage roads have two twelve-foot travel lanes and eight-foot paved shoulders. The minimum clear zone on each side is 20 feet.

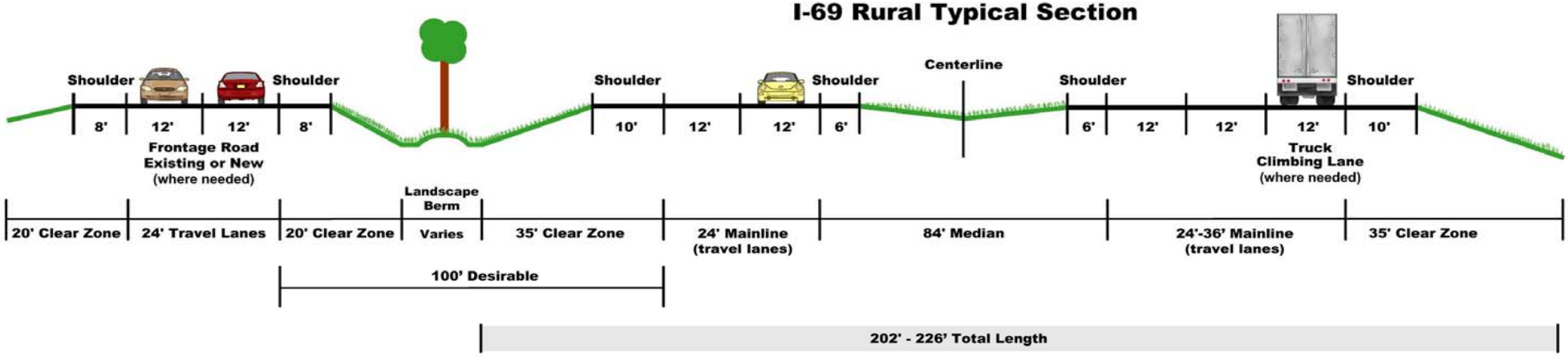
Typical sections also will be defined for other roads that affect freeway interchanges and grade separations. The typical sections for these roadways will vary based on traffic demands and roadway functional class from two to four lanes and with and without curb and gutter.

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.

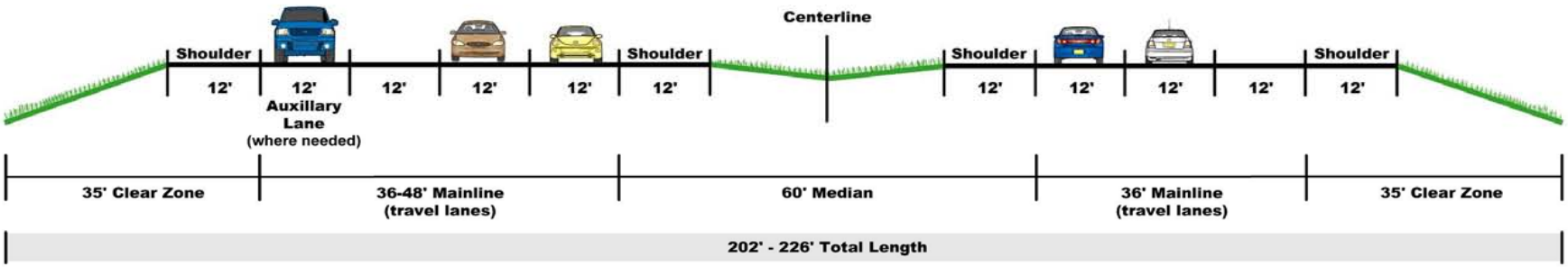
Access Control Limits: By virtue of the design criteria, "Geometric Design Criteria for Freeways, New Construction or Complete Reconstruction," full access control is required along the mainline highway and throughout the interchange ramps. Full access control will extend from the ramp terminals along 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 that found in the INDOT Design Manual.

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

I-69 Rural Typical Section



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, service 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 needs to be 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[18] for Southwest Indiana residents to a wide range of destinations. Similarly, several other alternative corridors were rejected based on their

[18] "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.

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. [19]

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. 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.[20] Spacing above the minimums would be more desirable and should be considered for reasons of safety, operational characteristics and cost effectiveness.

- Functional Classification[4]: Functional classification of the intersecting roadways should be a factor in determining where to provide interchanges. Principal arterials will be considered for interchanges ahead of minor arterials and collectors, and collectors ahead

---

[19] 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*.

[20] 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.

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.

- 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 dependant on the location and spacing of grade separations and interchanges. Where necessary, travel time studies were undertaken to determine the additional travel time required based on the grade separations proposed.

- 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:

- Arterials. In almost all circumstances, cross roads functionally classified as principal and minor arterials (those 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 locals, 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 for provision of non-motorized trips, 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 have been 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 dependant on the location and spacing of grade separations and interchanges. Where 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 through use of a local service road (LSR) was considered as an alternative to simply providing a cul-de-sac. However, in some cases installation of a cul-de-sac was the most sensible option.

Criteria for Alternative Access

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

- Local service (frontage) 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.

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 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 Summary Maps (Figures 11 and 12,) at the end of Chapter 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 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, 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. Land use data were used in determining which areas would be best served by interchanges and access roads, as well as avoiding or minimizing impacts to sensitive resources.

Table 2 – Section 5 Corridor Existing Land Use

Major Land Use	Acres	Percents
Developed Land[1]	2,748	51%
Agricultural Land	825	15%
Upland Habitat[2]	1,630	30%
Water Features	55	1%
Wetland Habitat	32	<1%
Mines/Quarries	88	2%
Total	**5,378**	**100%**

[1]Developed Land includes SR 37; [2] Upland habitat includes forest, scrub/shrub, and herbaceous cover; Source: Michael Baker, Jr., Inc., ArcView 9.0

Monroe and Morgan Counties are projected to gain a combined total of over 32,000 households and 30,000 jobs between 2000 and 2030 (Indiana State Travel Demand Model, Version 4 [INDOT]). 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. Locations of major planned developments within the Section 5 corridor[21] include:

- Intersection of SR 37 and Fullerton Pike (Monroe Hospital and Tax Increment Financing (TIF) district)
- Northeast intersection of SR 37 and Tapp Road (office development)
- Northeast intersection of SR 37 and 2nd Street (residential development)
- Intersection of SR 37 and SR 46 (North Park and other residential and commercial development)
- East of SR 37 between Kinser Pike and Acuff Roads (office park/TIF district)

[21] The various locations described in this section "Environmental Constraints" are depicted in both Figures 11 and 12 (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.

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 3rd 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; four major existing or planned commercial/industrial areas have been identified near SR 37 in Monroe County:

- West of SR 37 between 2nd Street/SR 45 and 3rd Street/SR 48
- West and east of SR 37 between 3rd Street/SR 48 and Vernal Pike (Whitehall Crossing)
- West of SR 37 between Vernal Pike and approximately Arlington Road (planned North Park development)
- West and east of SR 37 between Sample Road and approximately Fox Hollow Road

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 2000 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[22]) 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 homogenous and predominantly white and non-Hispanic. 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. Low-income populations also reside throughout the area; specifically, several apartment complexes within the Section 5 corridor along 2nd Street/SR 45 east of SR 37 have a concentration of low-income residents.

[22] 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.

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 eight cemeteries in the Section 5 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
- Tourner/Ridge/Wylie Cemetery
- Carlton/Huff/Kendrick Cemetery
- Simpson Chapel Cemetery (New)
- Simpson Chapel Cemetery (Old)
- Stitt-Maxwell 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.

Floodplains: Avoiding impacts to floodplains from roadway and interchange construction was an important factor in developing preliminary alternatives. Initial information provided by Tier 1 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*) and the bald eagle (*Haliaeetus leucocephalus*). No bald eagle nests were found in the vicinity of the Section 5 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. Alternatives were designed to avoid impacts to maternity colonies and roost trees.

As a result of these additional studies, a Revised Programmatic Biological Opinion 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 Biological Opinion. 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. For further

details, see Chapter 5.17 of this DEIS, *Threatened and Endangered Species*, and Chapter 7 of this DEIS, *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. 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

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 - Wapehani Mountain Bike Park - and one historic district – the Maple Grove Road Rural Historic District (MGRRHD) - within the Section 5 corridor. The park is further discussed below under "Parks." The MGRRHD 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 Resources." 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, within the Section 5 corridor. Wapehani Park is located adjacent to the east side of SR 37 between Tapp Road and

2nd Street/SR 45. Avoidance of this park, a Section 4(f) resource, was considered essential in the development of preliminary alternatives.

Historic Resources: Historic resources 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 resources 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 resources can be divided into two categories: above-ground (historic) and below-ground (archaeological). In terms of historic resources, Tier 1 mapping supplemented by additional data obtained during the Tier 2 study identified the MGRRHD, a NRHP district located west of SR 37 between Maple Grove Road and approximately Kinser Pike. Portions of the MGRRHD 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, five individual properties located within the Section 5 Area of Potential Effect (APE) for historic resources were determined eligible for listing in the NRHP:

- Stipp-Bender House, located near the southeast corner of SR 37 and Victor Pike
- Jonas-May House, located west of SR 37, south of Fullerton Pike,
- 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 Indiana Creek (potential impacts on Bridge 224 are part of the Section 6 Tier 2 studies).

Avoidance of impacts to these structures also was deemed important in the development of preliminary alternatives, interchanges and 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. 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. 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 May 2007 over 300 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, access roads and grade separations. In addition, the office has received over 400 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 May 2007.

Table 3: I-69 Tier 2 Section 5 Outreach Activities (Through May 2007)		
Prior to Preliminary Alternatives		
DATE	**MEETING/PARTICIPANTS**	**PURPOSE/TOPICS**
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 Tier 2 Sections)	Introduce scope and status of environmental 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	Discuss local EMS routes, poor relief and EJ

Table 3: I-69 Tier 2 Section 5 Outreach Activities (Through May 2007)		
	Trustee	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
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	2nd 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	2nd 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	2nd 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	2nd 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	2nd Section 5 Section 106 Consulting Parties Meeting	Discuss Draft Historic Properties Report
Preliminary Alternative Access Plans Presented		
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	3rd 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

Table 3: I-69 Tier 2 Section 5 Outreach Activities (Through May 2007)		
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
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	3rd 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
Alternative Access Planned Carried Forward for the DEIS		
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	Further discussion of specific aspects of new

Table 3: I-69 Tier 2 Section 5 Outreach Activities (Through May 2007)		
	Cowell) and Engineer (Bill Williams)	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
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
3/07	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

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)

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 frontage 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.

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 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 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.

Table 4: Summary of Interchange/Access Ratings from July 20, 2005 Section 5 PIM

Interchange/Access Option	Total Prefer	Comments
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 2nd 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 MGRRHD
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)

Table 4: Summary of Interchange/Access Ratings from July 20, 2005 Section 5 PIM		
Interchange/Access Option	**Total Prefer**	**Comments**
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	
Other Comments/Preferences		
	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 frontage 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

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 2030 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 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).

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.

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.

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 this package, as noted below.

  - 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 MGRRHD, 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 connections currently running underneath existing SR 37 near Wapehani Mountain Bike Park and the 2nd 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, forests, streams, and wetlands are the resources identified for cumulative impact analysis in Section.
- Karst features and studies.

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.

As part of the alternative development, generalized typical sections, potential interchange types and initial alternatives were explored. These are shown on Figure 8 - Typical Sections; Figure 9 - Section 5 Example Interchange Types; and Figure 10 - 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 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 frontage 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 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 (see Figure 8).

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 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 (currently under construction) 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 frontage 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 frontage road.

Access Locations for Preliminary Alternatives

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

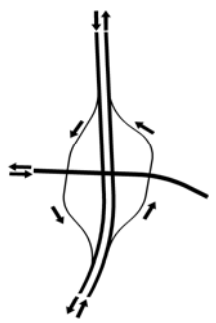
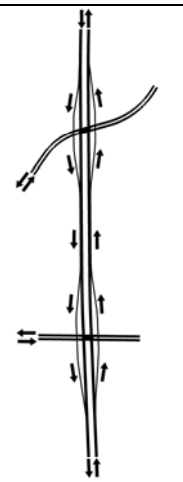
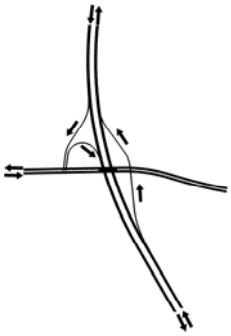
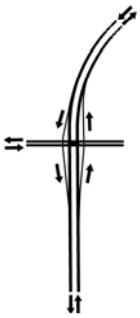
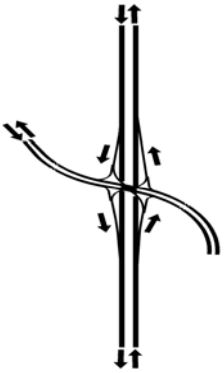
The criteria presented in Section 3.3 were used to identify potential locations of interchanges, grade separations, frontage roads, collector/distributor (CD) roads and local service roads. Traffic volumes from the I-69 Tier 2 Corridor Model; input from representatives of Monroe County, Morgan County, 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: 2nd Street/SR 45, 3rd 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.[23] 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 9 for examples of these interchange types.

[23] 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 9 – Section 5 Example Interchange Types

 WIDE DIAMOND	**Wide Diamond** 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.	 SPLIT DIAMOND	**Split Diamond** 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. Used in urban areas that are too close for a standard interchange but still have access needs at both locations.
 MEDIUM DIAMOND	**Medium Diamond** 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.	 FOLDED LOOP	**Folded Loop** 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 quadrant. 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.
 NARROW DIAMOND	**Narrow Diamond** 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.	 SINGLE POINT	**Single-Point** 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 for a diamond interchange. Generally used in urban areas.

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 problems than underpasses.

See Figure 10 - Alternatives 1, 2, and 3 Comparison Maps at the end of Chapter 3.0 and the larger scale maps (Figures 11 and 12) included at the end of Chapter 4.0 for the following Section 5 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 though 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.

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 17th 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 Frontage Road

An overpass or a frontage road to Kinser Pike was considered at this location to maintain neighborhood connectivity and maintain secondary access to the 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 Frontage 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 frontage 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 Frontage Road

A Bryant Creek Road overpass or frontage 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.

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 frontage roads and local service roads parallel to I-69 were developed for each alternative between the interchanges. The frontage 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 frontage/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 2nd 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 3rd Street/SR 48 interchange.

- Frontage 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 frontage 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 frontage 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.

Alternatives 1, 2 and 3, as presented at these meetings, are shown in Figure 10 (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 Road Name**	**Alternative 1**	**Alternative 2 (CD Facility)**	**Alternative 3**
		I = Interchange (Urban or Rural) O or U = Overpass or Underpass (Grade Separation) X = No Direct Access TBD = To Be Determined		
Urban	Section 4 Tie-in (SR 37 interchange)	I	I	I
	That Road	X	O	O
	Rockport Road	O	X	X
	Fullerton Pike	I	O	I
	Tapp Road	O	I	O
	SR 45/2nd Street	I	I	I
	SR 48/3rd Street	I	I	I
	Vernal Pike	U	O	U
	SR 46 Interchange	I	I	I
Rural/Urban transition area	Arlington Road	O	O	O
	Acuff Road	X	O	X
	Kinser Pike	O	I	I
Rural	N. Walnut Street	I	X	O
	Sample Road	I	I	O
	Mainline Shift @ Sample Rd/ NB SR 37 as access road	West	West	West
	Chambers Pike	O	I	I
	Mainline Shift at SR 37 split	All lanes on west-side	3 lanes each side	3 lanes each side
	Paragon/Pine	I	O	I
	Liberty Church	O	I	O
	Section 6 Tie-in (SR 39 interchange)	TBD	TBD	TBD

3.4.5 Decisions Made in 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 elements that remained under consideration after the screening process were grouped into two new alternatives (Alternatives 4 and 5), which are being carried forward for detailed study. Alternatives 4 and 5 are summarized in Table 6 and are shown on the Alternative 4 and 5 Summary Maps (Figures 11 and 12) included at the end of Chapter 4. As with the preliminary alternatives, the alternatives carried forward for detailed study (Alternatives 4 and 5) are being presented as illustrations of *possible combinations* of the various elements of each alternative.

Key Factors Considered in Screening Decisions

The alternative screening process focused on reducing construction costs, right-of-way needs, and environmental impacts, 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 frontage roads closer to the I-69 mainline to reduce new impacts;
- Reducing the length of local service 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 10 - Alternatives 1, 2, and 3 Comparison Maps at the end of Chapter 3.0 and the larger scale maps (Figures 11 and 12) 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 frontage 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.
- A Rockport Road overpass would provide better access to the new Monroe Hospital complex and associated access road (at Fullerton Pike).
- 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 a frontage road was provided to connect both roadways on the east side of I-69.

To summarize, both Alternatives 4 and 5 include an overpass at Rockport Road, with a frontage 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 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 frontage 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, and could be within the viewshed of the Jonas May House, which is considered eligible for inclusion on the NRHP. The realignment could, therefore, constitute an Adverse Effect to the Jonas May House under Section 106. An Adverse Effect, as defined by 36 CFR 800.5, is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.
- Traffic volumes (3,200 vpd) on Fullerton Pike, west of the hospital site, do not warrant widening Fullerton Pike and Leonard Springs Road to 2nd 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.

In addition, the mainline shift to the east of existing SR 37 in Alternatives 1 and 3 will be maintained in both Alternatives 4 and 5. This shift is necessary to coincide with the geometry of the SR 37/I-69 interchange in Section 4, minimize impacts to the newly constructed Monroe Hospital, reduce residential and karst impacts, and better accommodate a Fullerton Pike interchange. This shift would allow Fullerton Pike to return to existing grade before the cemetery, which would eliminate the need for realignment of Fullerton Pike to the south to avoid the cemetery.

Selection of the SR 37/I-69 interchange will in turn determine the type of interchange design recommended for Fullerton Pike; however, the interchange is expected to consist of a folded diamond interchange with a loop on the west side and a diamond interchange on the east side. This design reduces the impacts to the Monroe Hospital, since mainline traffic would be less likely to be affected by entering traffic than by exiting traffic.

The overpass and eastern frontage road option proposed in Alternative 2 were eliminated to satisfy the required minimum interstate interchange spacing between Tapp Road and SR 45 and to accommodate the construction of the new Monroe Hospital in the southwestern quadrant of the Fullerton/SR 37 intersection.

To summarize, both Alternatives 4 & 5 include an interchange at Fullerton Pike with no relocation of Fullerton Pike and no widening/extension to Leonard Springs Road or Gordon Pike. In addition, both Alternatives 4 and 5 include a mainline shift to the east of SR 37 in the vicinity of the Fullerton Pike interchange.

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 2nd Street/SR 45. The CD system would separate local traffic from the interstate facility, which would greatly reduce weaving on to the interstate and would improve the LOS 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.
- 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.
- 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 2030 show 5,700 vpd would travel via this new connection.

The alternative screening process also 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 frontage 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.
- 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, Alternative 4 proposes an overpass at Tapp Road as depicted in Alternatives 1 and 3, while Alternative 5 proposes a split-diamond interchange between Tapp Road and 2nd 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 2nd 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.

None of these interchange designs will be carried forward at this location. Instead, the alternative screening process recommends two different interchange designs: a tight diamond interchange at 2nd Street/SR 45 in Alternative 4, and a split diamond interchange between Tapp Road and 2nd Street/SR 45 (as discussed above) in Alternative 5, based on the following:

- Folded diamond interchanges have the potential to cause traffic backups on the mainline and have been removed from further consideration at this location.
- 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 2nd Street/SR 45 to reduce the skew[24] across I-69.
- The City of Bloomington has stated preference for the existing (Tier 1) folded diamond Interchange for 2nd Street/SR 45.
- Monroe County did not specify a preferred layout for this interchange.

To summarize, Alternative 4 includes a tight diamond interchange at 2nd Street/SR 45, and Alternative 5 includes a split diamond interchange between Tapp Road and 2nd 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 both interchange types with a tight diamond in Alternative 4 and a single-point interchange in Alternative 5.

- 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.
- Monroe County did not specify a preferred layout for this interchange.

To summarize, Alternative 4 includes a tight diamond interchange and Alternative 5 includes a single-point interchange.

Vernal Pike/17th Street Overpass

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

- Due to the terrain in this area, an underpass would return to grade much sooner than an overpass (approximately 400’ on the east side);
- 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 be better for bicyclists and pedestrians (underpass maximum grade of 3.5% versus an overpass maximum grade of 5%).

---

[24] “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.

- The City of Bloomington stated a preference for an underpass.
- Monroe County stated support for the use of 17th Street as an alternative to Vernal Pike. The County has also stated a preference for interchange access at Vernal Pike. However, a Vernal Pike interchange would exceed 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.
- With the proposed underpass, businesses located along Industrial Drive would continue to have interstate access via Vernal Pike connections to Curry Pike and SR 46.

To summarize, both Alternatives 4 & 5 propose elimination of access at Vernal Pike, providing a grade separation underpass at 17th Street. In addition, both alternatives propose straightening and extending Hensenburg Road south to Industrial Drive and north to form an intersection with Packing House Road and the planned North Park development.

Acuff Road Overpass and Frontage Road Connection to Kinser Pike

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

- 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.)
- Although the frontage road to connect Acuff Road with Kinser Pike would connect with the County’s proposed frontage road to tie Arlington Road to Acuff Road, due to the steep slopes along Stout Creek and the spacing required for construction of a western frontage road, the mainline in Alternative 3 would need to be shifted approximately 100’ to the east of existing SR 37. This mainline shift to the east would encroach upon the Kinser Pike/Prow Road TIF district.
- The City of Bloomington does not recommend an overpass at this location. The city has stated it believes that a Kinser Pike interchange would mitigate for any “lost” access from Acuff Road.
- Monroe County has stated a preference for an overpass at Acuff Road.

To summarize, both Alternatives 4 and 5 recommend elimination of access at Acuff Road, with no connecting frontage 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 a frontage 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 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 based on:

- Reduction in construction costs, and right-of-way, karst, and farmland impacts along the ridge.
- Response to SHPO comments regarding potentially increased noise and visual impacts to the MGRRHD.

Alternative 5 includes an overpass at Kinser Pike, using existing Kinser Pike west as a frontage road to connect with a Walnut Street interchange.

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, Monroe County has not provided a preference to date.

To summarize, Alternative 4 includes an interchange at Kinser Pike, an extension of Kinser Pike to the east connecting to Walnut Street at Bayles Road, a "T" intersection at the Kinser Pike/Bottom Road frontage road to the west, and an overpass at Walnut Street. Alternative 5 includes an overpass at Kinser Pike and an interchange at Walnut Street.

Walnut Street Interchange/Overpass

Alternative 1 included an interchange at Walnut Street with a frontage road along the west side of I-69. While Alternative 2 included no access at Walnut Street, it did provide a frontage 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 frontage roads running parallel to I-69 on both the east and west sides.

The 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 Monroe County Bridge 913 as part the frontage 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 expressed an *informal* preference for a Walnut Street interchange as a "Gateway to Bloomington," a second access to Ellettsville and better utility of existing infrastructure; however, the City of Bloomington has expressed a preference for a Kinser Pike interchange.

Both a diamond and single-point interchange design are under consideration for the Walnut interchange.

To summarize, Alternative 4 includes an interchange at Kinser Pike and an overpass at Walnut Street. Alternative 5 includes an interchange at Walnut Street with redesigned structures and approaches to reduce the skew and avoid impacts to a significant hill, historic Bridge 913, and wetlands on the east side; and an overpass at Kinser Pike.

Western Frontage road across Beanblossom Valley

Alternative 1 and 3 included a western frontage road connecting Bottom Road to Sample Road. Alternative 2 included a western frontage road that would not cross Beanblossom Creek. The alternative screening recommended that the western frontage road across the Beanblossom floodway be eliminated, with the Alternative 2 plan carried forward into both Alternatives 4 and 5. This recommendation was based on:

- Traffic volumes on the western frontage road would be extremely low (< 200 vpd) and construction of the road would require acquisition of many of the same properties for which it would be providing access.
- A western frontage road could be designed that would extend from Griffith Cemetery to the Sample Road interchange to provide access to the cemetery.
- Stream, floodway, farmland, wetland and residential impacts would be reduced.

To summarize, both Alternatives 4 and 5 recommend elimination of the western frontage road across the Beanblossom floodway.

Eastern Frontage road across Beanblossom Valley to Showers Road

Alternative 1 included an eastern frontage 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 frontage road from Walnut Street curving around the east side of Hoosier Energy to connect with Showers Road and then Sample Road.

The alternative screening recommended that the proposed eastern frontage road running north from Walnut Street curve around the east side of Hoosier Energy (as depicted in Alternatives 2 and 3), but then continue to curve sharply westward back toward I-69 (avoiding Showers Road), then continue north, parallel to I-69, to Sample Road for both Alternatives 4 and 5. This recommendation was based on:

- The need for a secondary interchange access point for Hoosier Energy during emergencies (Walnut or Kinser).
- Reduction of 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 frontage 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 frontage 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.

To summarize, both Alternatives 4 and 5 include an eastern frontage road curving east around Hoosier Energy, then west back toward I-69, then north, running parallel to I-69 to Sample Road.

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 alternative screening recommended elimination of a Chambers Pike interchange. An interchange at Sample Road and an overpass at Chambers Pike will be advanced for both Alternatives 4 and 5. It also recommended that the Sample Road interchange structure be shifted north to align with existing Sample Road and a proposed county road west of 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 stated support for both interchange locations; however, the County stated a preference for the Sample Road interchange if only one were to be built.

To summarize, both Alternatives 4 and 5 include elimination of a Chambers Pike interchange in favor of an interchange at Sample Road and a Chambers Pike overpass. Both of the alternatives shift the western Sample Road interchange ramps to the west to avoid numerous small springs in

the southwest quadrant and shift the southeast quadrant frontage road to the northwest to reduce forest impacts and right-of-way acquisitions.

Morgan-Monroe State Forest Frontage Road

Alternative 1 shifted the entire I-69 mainline to the west beginning at the existing southbound lanes of SR 37 and utilized the northbound SR 37 lanes as an eastern frontage 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 alternative screening recommended maintaining the existing bifurcation and eliminating the proposed eastern frontage 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 frontage road.
- There are no major access connections provided along the frontage road (except a minor access at Bryant Creek Road).
- 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 frontage 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 frontage road through the Morgan-Monroe State Forest was eliminated in both Alternatives 4 and 5 in favor of maintaining the existing bifurcation.

Bryant Creek Road Overpass/Frontage Road

Alternative 1 included no overpass at Bryant Creek Road, but proposed an eastern frontage 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.

The alternative screening recommended elimination of the proposed Bryant Creek Road overpass and the eastern frontage road for all alternatives carried forward 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 a frontage 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.

To summarize, Alternatives 4 and 5 do not include an overpass or eastern frontage 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 frontage road through the Morgan-Monroe State Forest. Another east side frontage road connected portions of Old SR 37 north to a Liberty Church Road overpass. Alternative 2 included an overpass at Paragon Road with no frontage roads to the south, and the east side frontage 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 frontage roads and the east side frontage road connecting portions of Old SR 37 north to a Liberty Church Road overpass.

Alternatives 1, 2 and 3 all included a western frontage road using Turkey Track Road north from Paragon Road, then running parallel to I-69 to Liberty Church Road.

The alternative screening recommended carrying forward an interchange at Paragon Road and an overpass at Liberty Church Road in Alternative 4 and an interchange at Liberty Church Road and an overpass at Paragon Road in Alternative 5. In addition, both Alternatives 4 and 5 include the east side frontage road (using Old SR 37) and the western frontage road system (using Turkey Track Road) between Paragon Road and Liberty Church Road. These recommendations were based on the following:

- The extension of the southern portion of the frontage road was eliminated in both alternatives with the previously described elimination of the Morgan-Monroe State Forest frontage road.

- Parallel frontage roads that reconnect the portions of Turkey Track and Old SR 37 (separated during the construction of existing SR 37) were included in both alternatives to reduce construction costs, residential impacts, and maintain local access patterns.

To summarize, Alternative 4 includes an interchange at Paragon Road with an overpass at Liberty Church Road; and Alternative 5 includes an overpass at Paragon Road with an interchange at Liberty Church Road. Both alternatives include eastern and western frontage roads.

Frontage Roads between Liberty Church Road and SR 39

Alternatives 1 and 3 included parallel frontage 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.

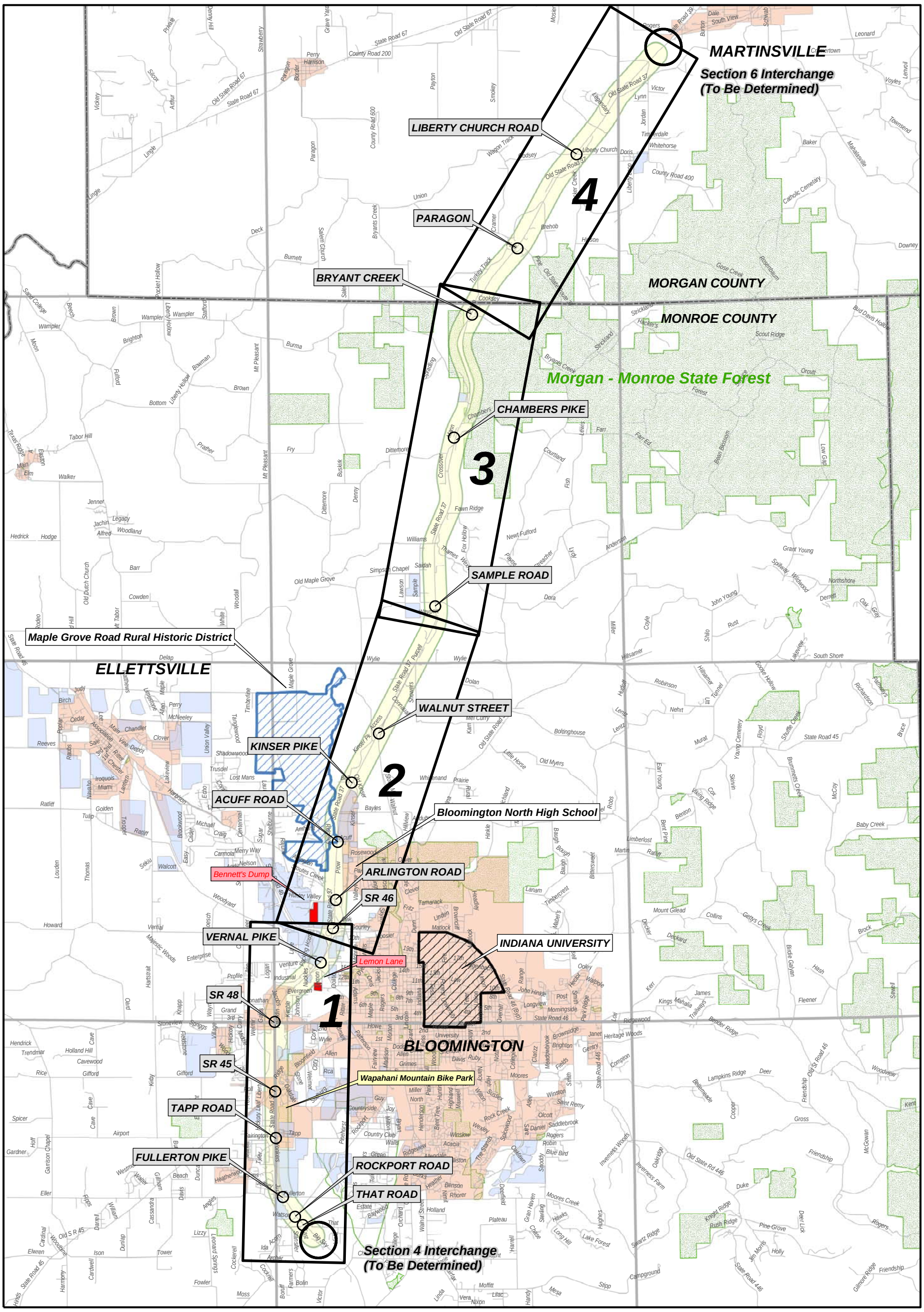
The alternative screening recommended shifting the mainline to the west and reducing the western frontage road for both Alternatives 4 and 5. These recommendations were based on the following:

- The cost of the western frontage 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 frontage road.
- Access to the Legendary Hills community would still be maintained; traffic that would have used the western frontage road to access Martinsville could use Jordan Road/Burton Lane east of I-69.

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

I-69 SECTION 5 (FROM SR 37 TO SR 39)
TIER 2 STUDIES



Legend

- City Limits
- Local, State Parks or Forests
- Superfund Sites
- Planned Development
- Maple Grove Road Rural Historic District

N

PRELIMINARY - Proposed Roadway and Resource Information is Preliminary and Subject to Modification, Addition, or Deletion Based on Further Analysis and Public Comment.

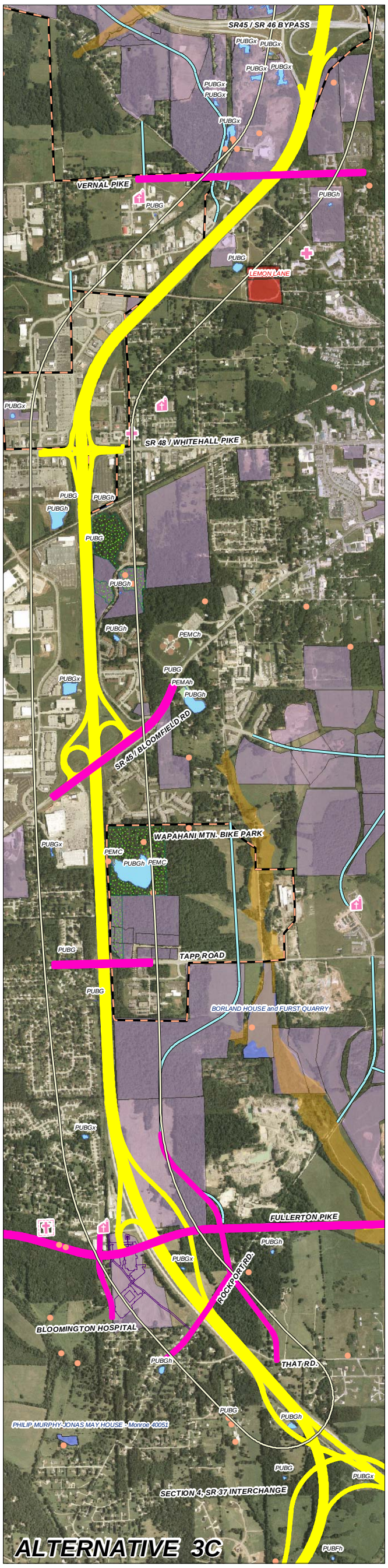
0 0.8 1.6 2.4 Miles

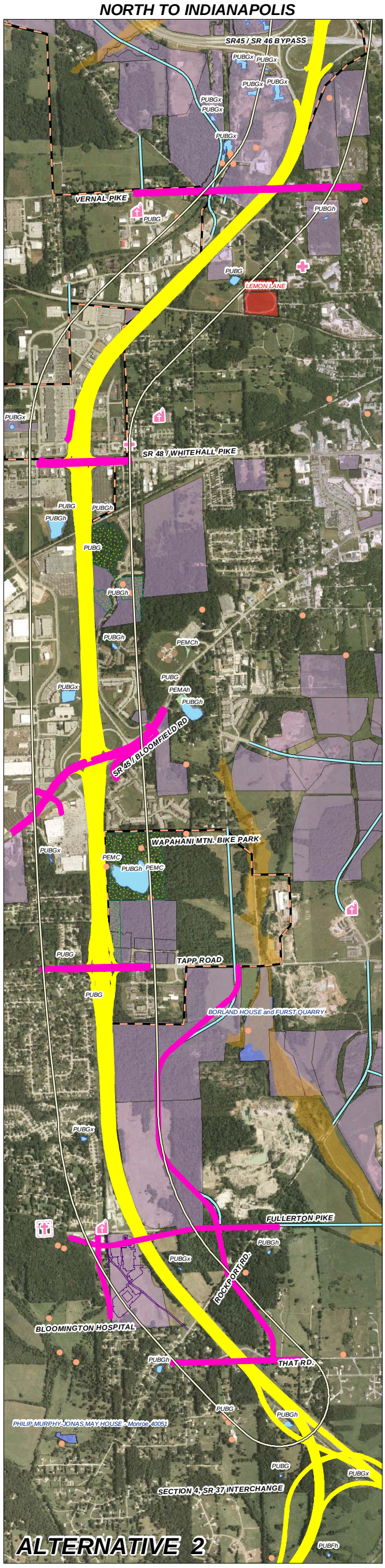
I-69 EVANSVILLE-TO-INDIANAPOLIS, TIER 2 STUDIES
SECTION 5 (FROM SR 37 TO SR 39)

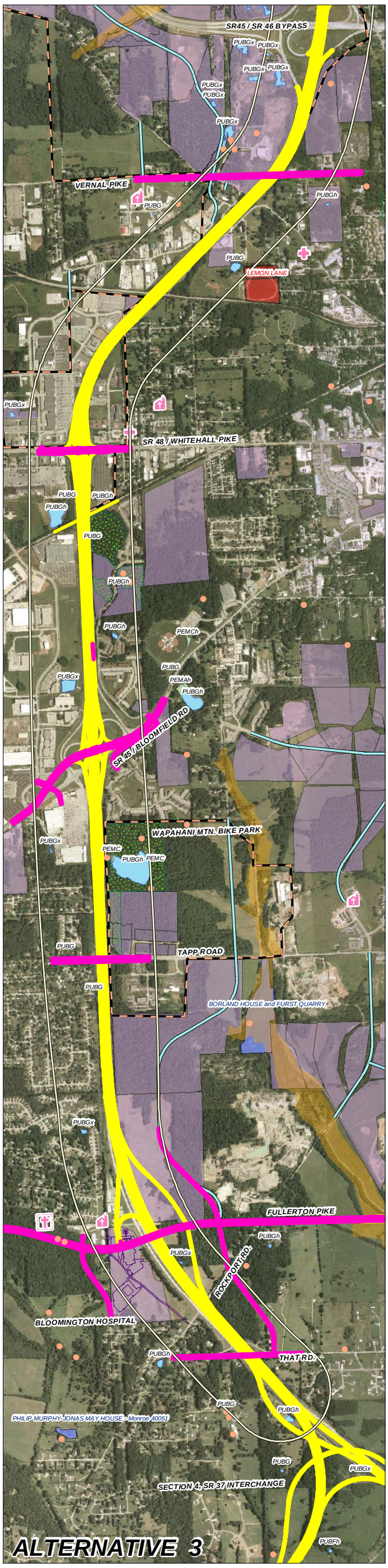
ALTERNATIVE INDEX
December, 2005

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY
SECTION 5 (FROM SR37 TO SR39)

NORTH TO INDIANAPOLIS







SOUTH TO EVANSVILLE

Legend

- 2000' CORRIDOR
- ALTERNATIVES
- CONNECTOR
- TRANS. IMPR. PROJECTS
- NRHP ELIGIBLE
- NHRP LISTED
- MGRRHD
- TIF DISTRICTS
- SPRINGS
- FLOODPLAINS
- SUPERFUND SITES
- MANAGED LANDS
- PLANNED DEVELOPMENT
- CEMETERIES
- CHURCHES
- SCHOOLS
- EMERGENCY

Wetlands

PEM, PFO, PSS *PONDS (PUB)*

PRELIMINARY - Proposed Roadway and Resource Information is Preliminary and Subject to Modification, Addition, or Deletion Based on Further Analysis and Public Comment.

N

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES
SECTION 5

Indiana Department of Transportation

1,000 0 1,000 2,000 3,000 Feet

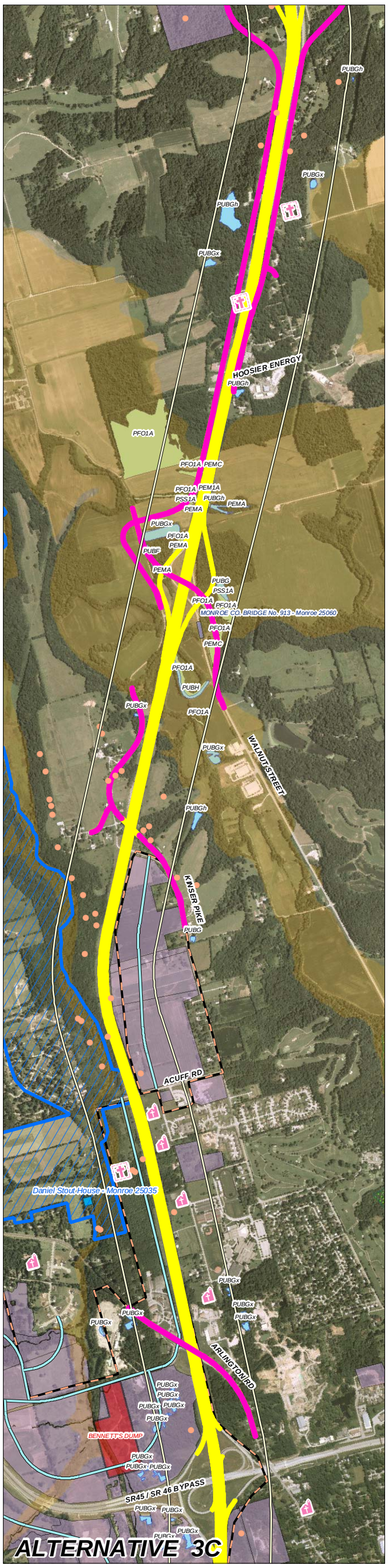
December, 2005

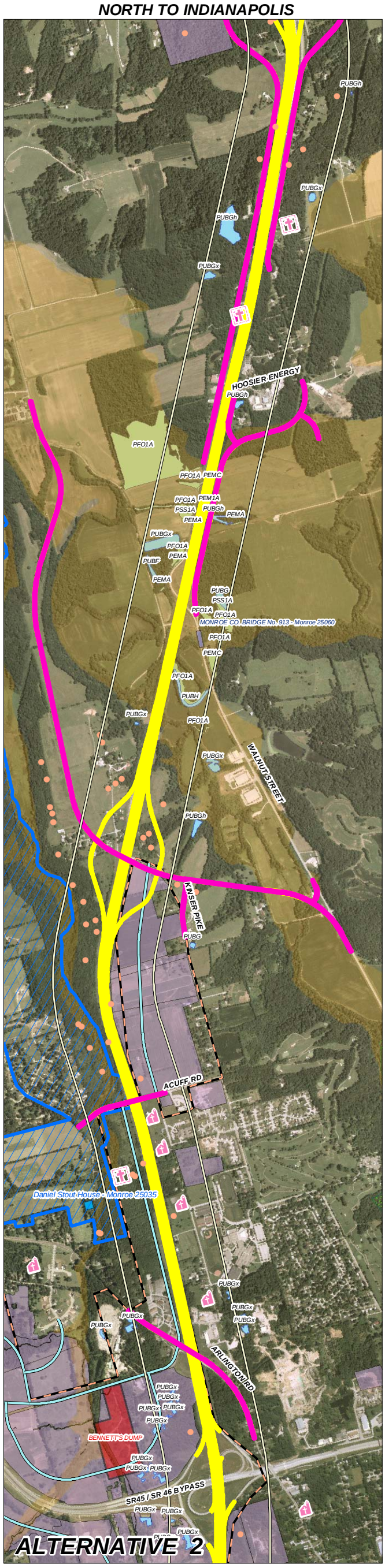
SHEET 1 OF 4

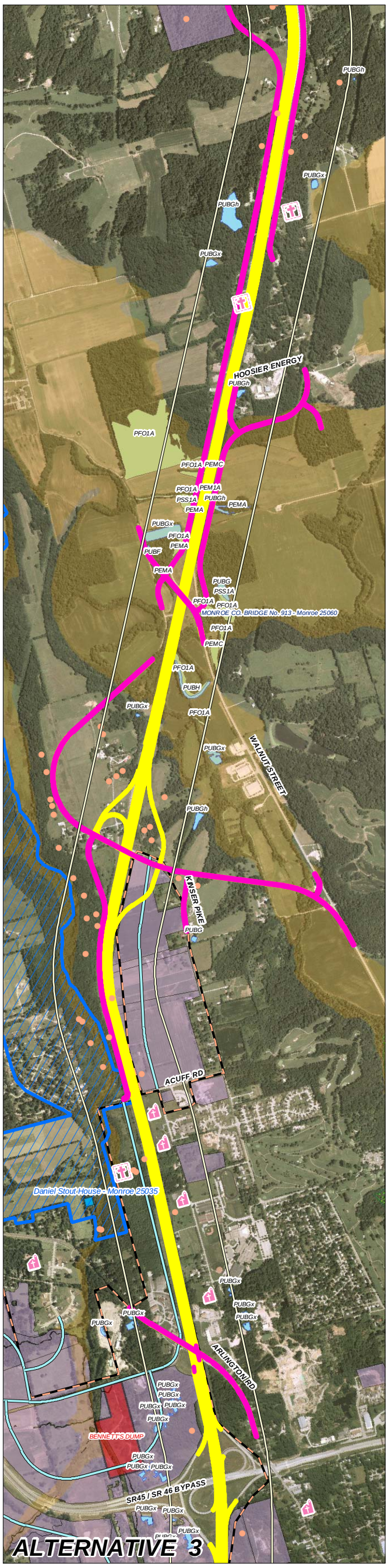
Baker Engineering & Energy

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY
SECTION 5 (FROM SR37 TO SR39)

NORTH TO INDIANAPOLIS







SOUTH TO EVANSVILLE

Legend

- 2000' CORRIDOR
- ALTERNATIVES
- CONNECTOR
- TRANS. IMPR. PROJECTS
- NRHP ELIGIBLE
- NHRP LISTED
- MGRRHD
- TIF DISTRICTS
- SPRINGS
- FLOODPLAINS
- SUPERFUND SITES
- MANAGED LANDS
- PLANNED DEVELOPMENT
- CEMETERIES
- CHURCHES
- SCHOOLS
- EMERGENCY

Wetlands

PEM, PFO, PSS *PONDS (PUB)*

PRELIMINARY - Proposed Roadway and Resource Information is Preliminary and Subject to Modification, Addition, or Deletion Based on Further Analysis and Public Comment.

N

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES
SECTION 5

Indiana Department of Transportation

1,000 0 1,000 2,000 3,000 Feet

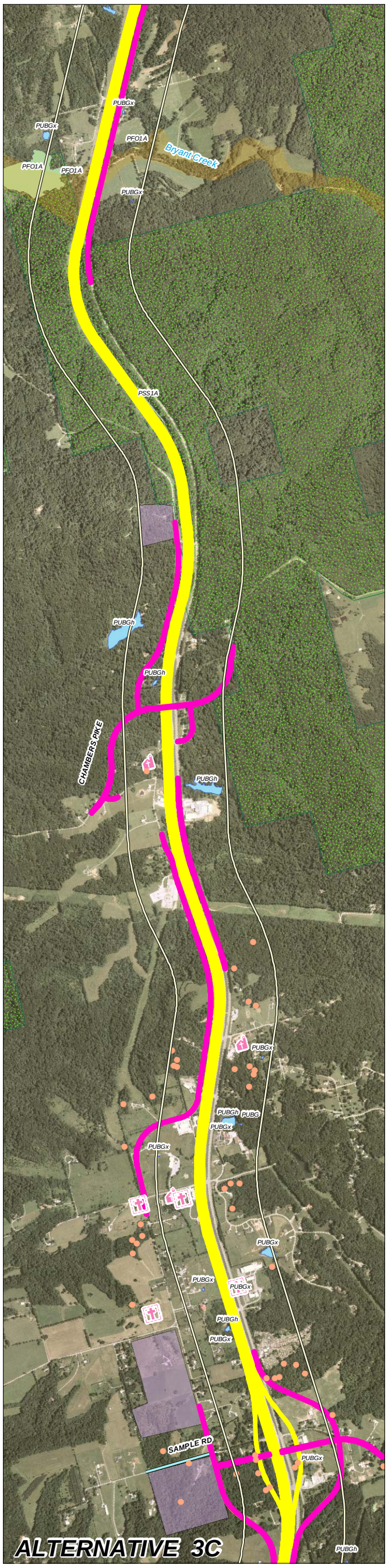
December, 2005

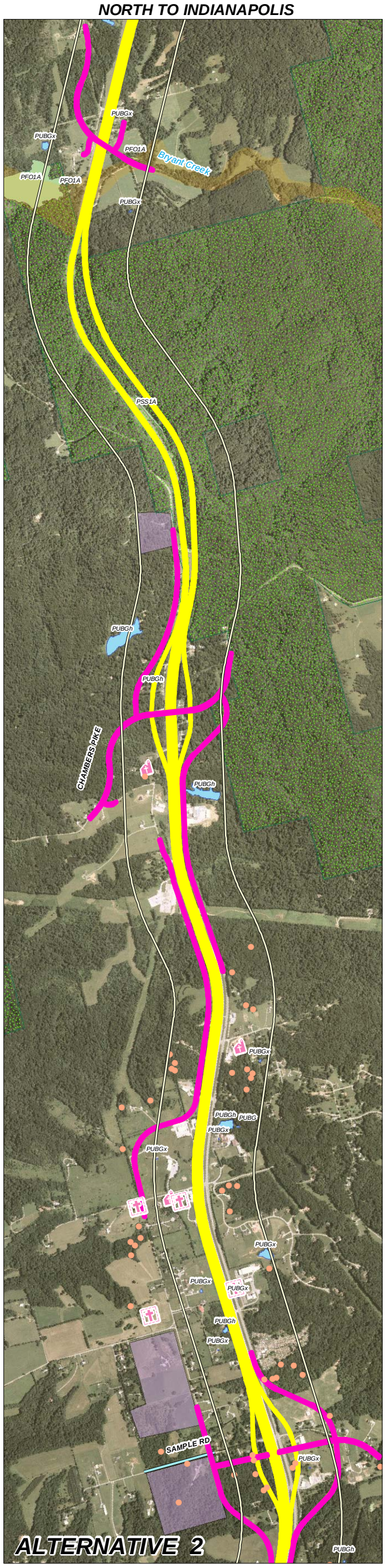
SHEET 2 OF 4

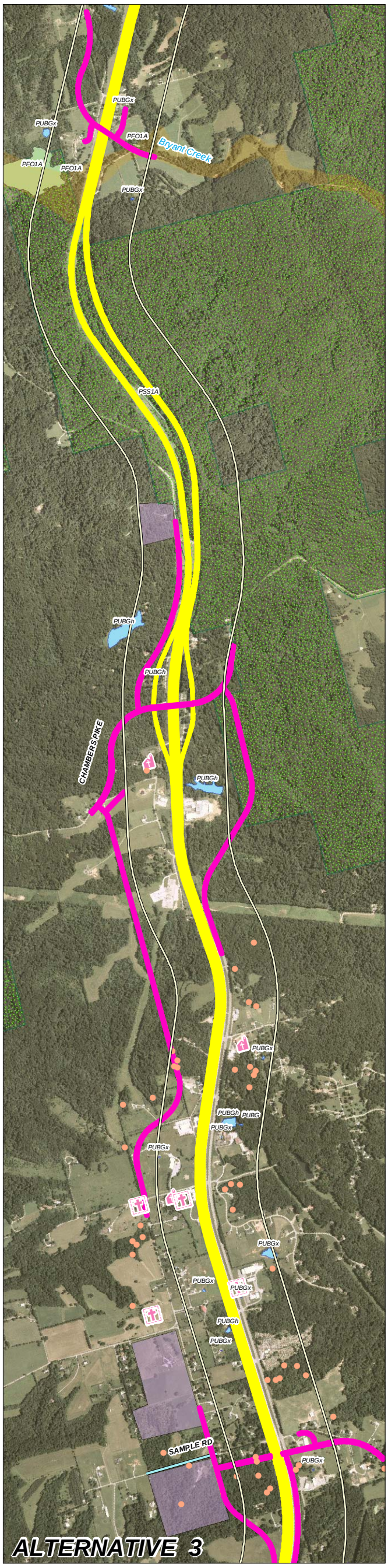
Baker Engineering & Energy

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY
SECTION 5 (FROM SR37 TO SR39)

NORTH TO INDIANAPOLIS







SOUTH TO EVANSVILLE

Legend

- 2000' CORRIDOR
- ALTERNATIVES
- CONNECTOR
- TRANS. IMPR. PROJECTS
- NRHP ELIGIBLE
- NHRP LISTED
- MGRRHD
- TIF DISTRICTS
- SPRINGS
- FLOODPLAINS
- SUPERFUND SITES
- MANAGED LANDS
- PLANNED DEVELOPMENT
- CEMETERIES
- CHURCHES
- SCHOOLS
- EMERGENCY

Wetlands

- *PEM, PFO, PSS*
- *PONDS (PUB)*

PRELIMINARY - Proposed Roadway and Resource Information is Preliminary and Subject to Modification, Addition, or Deletion Based on Further Analysis and Public Comment.

N

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES
SECTION 5

Indiana Department of Transportation

1,100 0 1,100 2,200 3,300 Feet

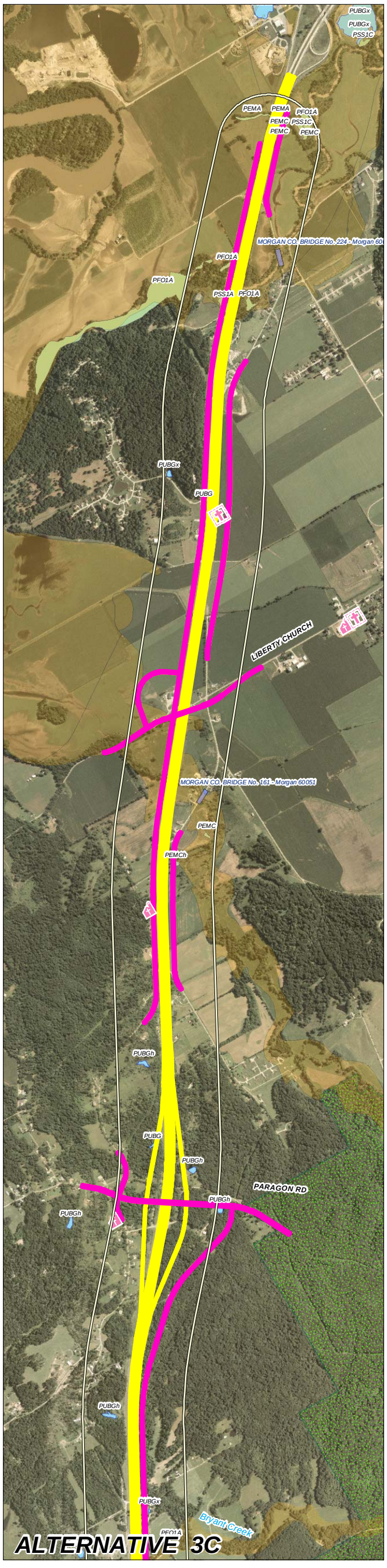
December, 2005

SHEET 3 OF 4

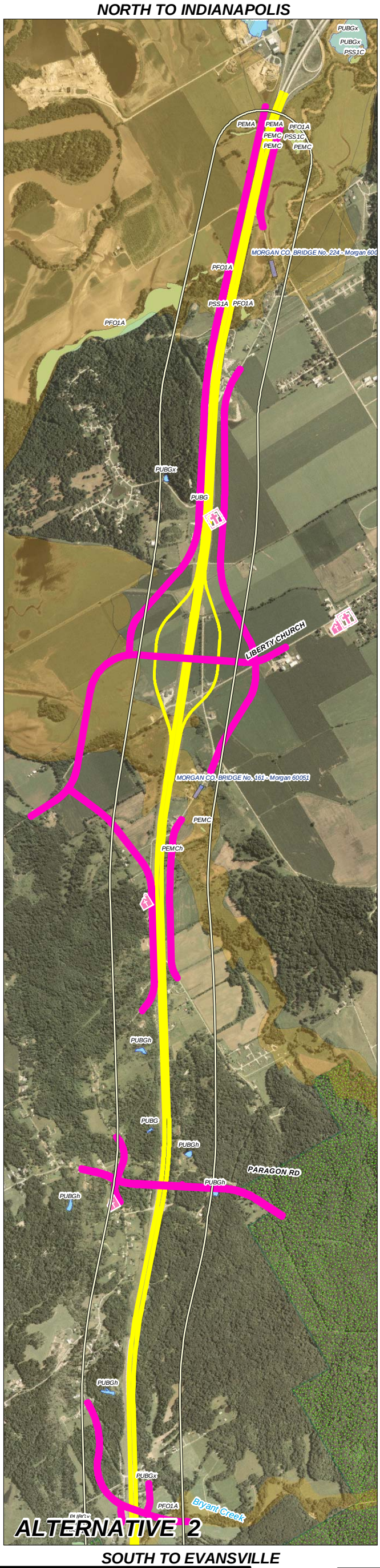
Baker Engineering & Energy

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY
SECTION 5 (FROM SR37 TO SR39)

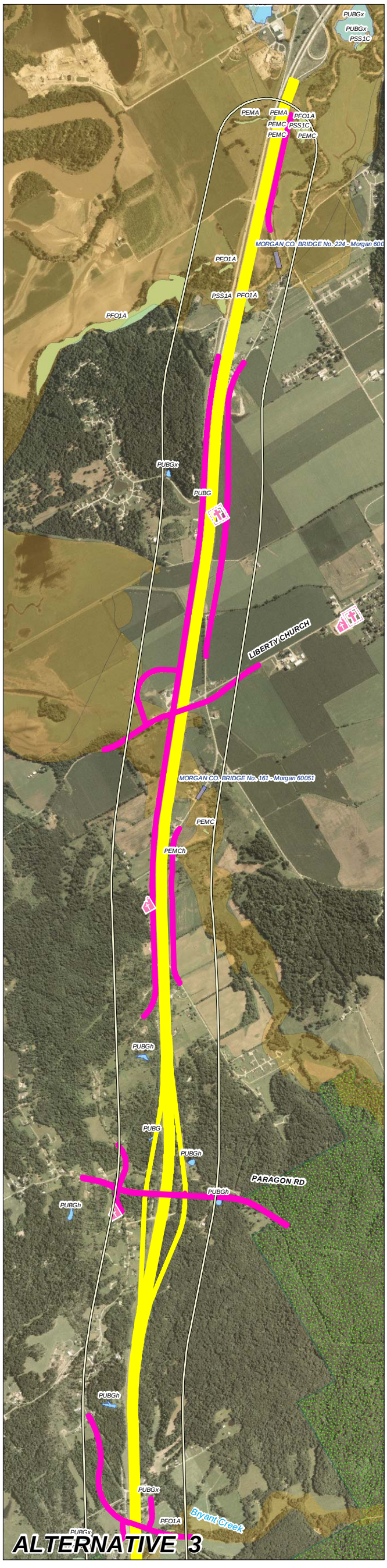
NORTH TO INDIANAPOLIS



ALTERNATIVE 3C



ALTERNATIVE 2



ALTERNATIVE 3

SOUTH TO EVANSVILLE

Legend

2000' CORRIDOR	NRHP ELIGIBLE	FLOODPLAINS	CEMETERIES
ALTERNATIVES	NHRP LISTED	SUPERFUND SITES	CHURCHES
CONNECTOR	MGRRHD	MANAGED LANDS	SCHOOLS
TRANS. IMPR. PROJECTS	TIF DISTRICTS	PLANNED DEVELOPMENT	EMERGENCY
	SPRINGS		

Wetlands

PEM, PFO, PSS *PONDS (PUB)*

PRELIMINARY - Proposed Roadway and Resource Information is Preliminary and Subject to Modification, Addition, or Deletion Based on Further Analysis and Public Comment.

N

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES
SECTION 5

Indiana Department of Transportation

1,000 0 1,000 2,000 3,000 Feet

December, 2005

SHEET 4 OF 4

Baker Engineering & Energy

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. The alternatives carried forward for detailed study consist of *different combinations of the elements* retained in the screening process. Since they are not identical to any of the alternatives considered in screening, the alternatives carried forward are called **Alternatives 4 and 5**.

Alternatives 4 and 5 are summarized in Table 6 and are shown at the end of Chapter 4.0 on the Summary Maps (Figures 11 and 12).

4.1 Typical Sections and Frontage 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 grass median and a modified Tier 1 cross section in the urban areas with an 8-Lane Divided Section with a grass 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. The typical sections for Alternatives 4 and 5 consist of a 4-Lane Divided Section in rural areas and a 6-Lane Divided Section in urban areas. To provide flexibility to serve potential future traffic increases, there is grass median of 60 feet in urban areas and 84 feet in rural areas (see Figure 8).

Frontage Roads – except for locations where interchange/overpass decisions are under consideration, frontage roads are similar between both alternatives.

4.2 Common Elements

<u>Alternatives 4 and 5 share many common elements. The common elements include:</u>

- **South of That Road** – Section 4 is addressing the studies and engineering south of That Road.

- **That Road** – no interchange or overpass at this location; east-west access is provided via frontage roads to Rockport Road overpass; access to I-69 is provided via frontage roads to Fullerton Pike interchange.

- **Rockport Road** – overpass is provided for east/west access; I-69 access is provided via frontage roads to Fullerton Pike interchange.

- **Mainline Shift** – the mainline shifts east from just south of That Road to north of Fullerton Pike to reduce impacts to the hospital, cemetery, karst features, and residences, and accommodate flexibility in the Section 4 interchange design.

- **Fullerton Pike** – interchange is provided for east/west access and I-69 access; interchange design is a partial diamond with a loop to the northwest.

- **Vernal Pike** – underpass is provided for east/west access; I-69 access is provided via existing roads to SR 46 interchange.

- **SR 46** – interchange is provided for east/west access and I-69 access.

- **Arlington Road** – overpass is provided for east/west access; I-69 access is provided via existing roads to SR 46 interchange.

- **Acuff Road** – no interchange or overpass at this location; access is provided via existing roads to the SR 46 interchange or to Kinser Pike.

- **Mainline Shift** – mainline shifts east from just north of Acuff Road to approximately Kinser Pike to avoid impacts to the MGRRHD.

- **Mainline Shift** – 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.

- **Sample Road –** interchange is provided for east/west access and I-69 access; interchange design is a medium rural diamond interchange.

- **Mainline Shift** – mainline shifts east just south of the Hoosier Energy substation to existing SR 37 alignment to reduce impacts to forest, businesses, and the substation.

- **Chambers Pike** – overpass is provided for east/west access; I-69 access is provided via east side frontage road to Sample Road interchange.

- **Morgan-Monroe State Forest** – mainline follows existing SR 37 bifurcation with wide median to reduce impacts to forest, streams and wetlands.

- **Bryant Creek Road** – no access; east side properties are to be acquired and possibly used for potential forest, wetland and stream mitigation areas.

- **North of Indian Creek** – Section 6 is addressing the studies and engineering north of Indian Creek

4.3 Decision Elements

The alternatives carried forward differ in the following seven key areas:

- **Tapp Road** – Alt 4 overpass vs. Alt 5 interchange:
  The decision is whether the increased interchange complexity, cost, and land use impacts 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).

- **2nd Street/SR 45** – Alt 4 tight diamond vs. Alt 5 split interchange:
  The decision is whether the increased interchange complexity, cost, and land use impacts are offset by the benefits of reduced cross traffic at 2nd Street/SR 45 with the access road to Tapp Road.

- **3rd Street/SR 48** – Alt 4 tight diamond vs. Alt 5 single-point interchange:
  The decision is whether the increased interchange cost is offset by the potential for better traffic flow with a single-point interchange design.

- **Kinser Pike** – Alt 4 interchange vs. Alt 5 overpass:
  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.

- **Walnut Street** – Alt 4 overpass vs. Alt 5 interchange:
  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 property.

- **Paragon Road –** Alt 4 interchange vs. Alt 5 overpass:
  The decision is whether the increased forest impacts and construction costs are offset by better access to the Morgan-Monroe State Forest; an interchange at this location was proposed in Tier 1.

- **Liberty Church Road –** Alt 4 overpass vs. Alt 5 interchange:
  The decision is whether the increased farmland impacts and land acquisition area are offset by increased development potential for the area southeast of Martinsville.

It is important to note that Alternatives 4 and 5 were developed to illustrate *possible combinations of the various potential access points and mainline segments.* The preferred alternative could involve any combination of decisions at these seven locations.

4.3 Alternative Summaries

Table 6 summarizes the similarities and differences between Alternatives 4 and 5:

Table 6: Section 5 Alternatives 4 and 5 Summary

Interchange or Mainline Shift	Alternative 4	Orig. Alt (1,2,3)	Alternative 5	Orig. Alt (1,2,3)
SR 37 Interchange	Section 4 design south of That Road			1,2,3
That Road	East/west access via frontage roads to Rockport; access to I-69 via frontage roads to Fullerton interchange			1 & 3
Rockport Road	Overpass for east/west access; I-69 access via frontage roads to Fullerton interchange			1 & 3
Mainline Shift	Mainline shifts to the east to reduce impacts to the hospital, cemetery, karst features, and residences			1 & 3
Fullerton Pike	Interchange with east/west and I-69 access; partial diamond interchange with loop to the northwest; shift east to reduce impacts to the hospital, cemetery, karst features, and residences, and aid in the Section 4 interchange design.			1 & 3
Tapp Road	Overpass for east/west access; access to I-69 via existing roads to Fullerton Pike and 2nd St/SR 45 interchanges	1 & 3	Interchange with east/west and I-69 access; split interchange with 2nd St/SR 45 with connecting frontage roads on east/west sides	New
2nd Street / SR 45	Interchange with east/west and I-69 access	1, 2, 3	Interchange with east/west and I-69 access; split interchange with Tapp Road. with connecting frontage roads on east/west sides	New
3rd Street / SR 48	Interchange with east/west and I-69 access; tight diamond interchange type	1	Interchange with east/west and I-69 access; single-point interchange	2 & 3
Vernal Pike	Underpass for east/west access; I-69 access via existing roads to SR 46			1 & 3
SR 46	Interchange with east/west and I-69 access			1,2,3
Arlington Road	Overpass for east/west access; I-69 access via existing roads to SR 46			1,2,3
Acuff Road	No east/west or I-69 access; access via existing roads to SR 46 or Kinser Pike			1
Mainline Shift	Mainline shifts to the east to avoid impacts to the MGRRHD			3
Kinser Pike	Interchange with east/west and I-69 access; medium diamond interchange type	2	Overpass for east/west access; I-69 access via west side frontage road to Walnut Street interchange	1
Walnut Street	Overpass for east/west access; I-69 access via east side frontage road to Sample Road interchange or west side frontage road to Kinser Pike; Bridge 913 as part of access road to Bottom Road/ Kinser Pike	3	Interchange with east/west and I-69 access; either a single-point or tight diamond interchange; Bridge 913 as part of east side frontage to Sample Road	1 (with two inter-change types)

Table 6: Section 5 Alternatives 4 and 5 Summary				
Interchange or Mainline Shift	**Alternative 4**	**Orig. Alt (1,2,3)**	**Alternative 5**	**Orig. Alt (1,2,3)**
Mainline Shift	Mainline shifts to the east just north of Beanblossom Creek valley then west just south of Sample Road north to just south of Chambers Pike to reduce impacts to the Hoosier Energy Operations facility, cemeteries, businesses, and a potential hazardous waste site			1,2,3
Sample Road	Interchange with east/west and I-69 access; medium rural diamond interchange			1 & 2
Mainline Shift	Mainline shifts to the east just before Chambers Pike and returns to existing SR 37 to reduce impacts to forest, businesses, and substation			2 &,3
Chambers Pike	Overpass for east/west access; I-69 access via east side frontage to Sample Road interchange			1
Mainline/SR 37 Split Lanes	Mainline follows existing SR 37 split lanes/wide median to reduce impacts to forest, stream and wetland			2 & 3
Bryant Creek Road	No east/west or I-69 access; east side properties to be acquired			New
Paragon Road	Interchange with east/west and I-69 access; medium rural interchange	1 & 3	Overpass for east/west access; I-69 access via west side frontage road to Liberty Church Road interchange	2
Liberty Church Road	Overpass for east/west access; I-69 access via west side frontage road to Paragon Road interchange	1 & 3	Interchange with east/west and I-69 access; medium rural interchange	2
SR 39	Section 6 design north of Indian Creek			1,2,3

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

Table 7: Section 5 Alternatives 4 and 5 Potential Impacts		
Evaluation Factors	**Alternative 4**	**Alternative 5**
Length (miles)		
Interstate	21.1	21.1
Non-interstate (frontage, access, local service roads)	26.2	26.1
Estimated Construction Cost (millions)[1]	$258	$257
Required Right-of-Way		
Use of Existing INDOT right-of-way (acres)	996	996
Approximate right-of-way to be acquired (acres)	567	574
Total right-of-way required (acres)[2]	1,563	1,570
Relocations (based on physical ROW)		
Residences - Multi Unit	4	5
Residences – Single	135	132
Commercial	65	63
Churches	5	5
Floodplains Encroachment (100 year - in acres)	68	69

Table 7: Section 5 Alternatives 4 and 5 Potential Impacts		
Evaluation Factors	**Alternative 4**	**Alternative 5**
Wetlands (acres)	11	15
Jurisdictional Streams (linear feet)		
Perennial	46,751	46,126
Intermittent	7,944	6,680
Ephemeral	5,275	5,272
Access: Road Crossings/Closures[3]	14 / 34	14 / 34
Farmland Impacts		
Row crop, pasture, orchard, grove, specialty crops, agricultural operations (acres)	122	142
Federal Threatened/Endangered Species[4]	1	1
Historic Resources (Section 106)		
Architectural (NRHP listed and Eligible sites)	0-6	0-6
Archaeological (NRHP listed and Eligible sites)[5]	(To be determined)	(To be determined)
Section 4(f) Resources	0	0
Hazardous Materials (Possible Sites)	2 - 6	2 - 6
Mineral Resources (Possible Sites)	2 - 6	2 - 6
Forest Impacts		
Forested Areas- Total Land Cover (acres)	317	284
Morgan-Monroe State Forest (acres)	111	117
Karst Impacts		
Springs	21	22
Sinkholes (acres)	93	90
Sinking Streams (acres)	258	261
Wellhead Protection Areas (sites)	1	1

[1] Cost estimates (in 2010 dollars) are preliminary and do not include costs for right-of-way, utility relocations, or impact mitigation

[2] All impacts were calculated based on the total right-of-way amount, not necessarily the amount to be acquired.

[3] Includes driveways accessing existing SR 37

[4] 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.

[5] 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 finalized. Right-of-way costs can vary greatly depending on the selected alignment footprint. Depending on the final alignment, right-of-way costs for specific commercial properties could range from a few thousand dollars (based on minor impacts to a small portion of a parcel) to the total acquisition of a business. Total construction costs, including right-of-way costs, will be included in the DEIS. Alternative 4 and 5 traffic and interchange spacing data are presented in Table 8.

Table 8: Section 5 Alternatives 4 and 5 Traffic Volumes and Interchange Spacing

Cross Street	Crossroad Traffic Volumes		Interchange Spacing	
	Alternative 4	Alternative 5	Alternative 4	Alternative 5
SR 37 (Section 4)	Interchange	Interchange	Interchange	Interchange
			1.1 miles	*1.0 miles*
Fullerton Pike	Interchange	Interchange	Interchange	Interchange
Cross Traffic ADT	13,500 / 4,900	11,400 / 7,100	*1.8 miles*	*1.0 miles*
Ramp ADT	18,100	15,200		
Tapp Road	Overpass	Split Interchange w/SR45		Split Interchange w/SR45
Cross Traffic ADT E/W of I-69	12,300	17,000 / 11,200		*0.78 miles*
Total Ramp ADT	Not applicable	10,600		
2nd Street/SR 45	Interchange	Split Interchange w/Tapp	Interchange	Split Interchange w/Tapp
Cross Traffic ADT E/W of I-69	27,600 / 33,000	24,000 / 29,500	*1.1 miles*	*1.1 miles*
Total Ramp ADT	31,300	22,200		
SR 48/3rd. Street	Interchange	Interchange	Interchange	Interchange
Cross Traffic ADT E/W of I-69	33,100 / 48,500	34,700 / 50,800	*1.9 miles*	*1.9 miles*
Total Ramp ADT	36,100	40,900		
SR 46	Interchange	Interchange	Interchange	Interchange
Cross Traffic ADT E/W of I-69	51,500 / 36,500	52,200 / 36,100	*2.4 miles*	*3.4 miles*
Total Ramp ADT	42,300	42,900		
Kinser Pike	Interchange	Overpass	Interchange	
Cross Traffic ADT	15,200 / 400	750	*3.4 miles*	
Total Ramp ADT	15,700	Not applicable		
Walnut Street	Overpass	Interchange		Interchange
Cross Traffic ADT	1,700	15,000 / 4,700		*2.4 miles*
Total Ramp	Not applicable	16,500		
Sample Road	Interchange	Interchange	Interchange	Interchange
Cross Traffic ADT	4,900 / 2,200	3,800 / 1,400	*6.42 miles*	*8.4 miles*
Total Ramp ADT	6,900	5,200		
Chambers Pike	Overpass	Overpass		
ADT	100	100		
Paragon Road	Interchange	Overpass	Interchange	
Cross Traffic ADT	2,300 / 3,700	850	*4.5 miles*	
Total Ramp ADT	5,800	Not applicable		
Liberty Church Road	Overpass	Interchange		Interchange
Cross Traffic ADT	900	9,500 / 2,500		*2.5 miles*
Total Ramp ADT	Not applicable	11,300		
SR 39 (Section 6)	Interchange	Interchange	Interchange	Interchange

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

Table 9 presents a comparison of key access factors for Alternatives 4 and 5.

Table 9: Section 5 Alternatives 4 and 5 Key Access Plan Comparison		
Tapp Road		
	Alternative 4	**Alternative 5**
General Description	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 2nd Street/SR 45 with connecting frontage roads on both east and west sides
Screening Criteria	Advantages	Advantages
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.
Right-of-way	Reduced right-of-way impacts vs. split interchange and frontage roads	
Environmental	Similar residential impacts due to widening of Leonard Springs Road	Similar residential impacts due to west side frontage road
Maintenance of Traffic (MOT)	Similar impacts	Similar impacts
Public Input		Preferred access at Tapp Road but not with the extensive CD system design
2nd. Street/SR 45		
	Alternative 4	**Alternative 5**
General Description	Urban diamond or single-point interchange with east/west and I-69 access	Split interchange with Tapp Road with connecting frontage roads on both east and west sides
Screening Criteria	Advantages	Advantages
Access and Operations		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 frontage roads	
Environmental	Similar impacts	Similar impacts
MOT	Similar impacts	Similar impacts
Public Input	Public support for existing interchange	Initial responses have been positive

3rd Street/SR 48		
	Alternative 4	**Alternative 5**
General Description	Interchange with east/west and I-69 access; tight diamond interchange type	Interchange with east/west and I-69 access; single-point interchange
Screening Criteria	Advantages	Advantages
Access and Operations	Reduced construction costs	Better traffic flow
Right-of-way	Similar impacts	Similar impacts
Environmental	Similar impacts	Similar impacts
MOT	Similar impacts	Similar impacts
Public Input		City prefers single-point interchange

Table 9: Section 5 Alternatives 4 and 5 Key Access Plan Comparison		
Kinser Pike		
	Alternative 4	**Alternative 5**
General Description	Interchange with east/west and I-69 access; medium diamond interchange	Overpass for east/west access; I-69 access via west side frontage road to Walnut Street interchange
Screening Criteria	Advantages	Advantages
Access and Operations	Accommodates TIF district; allows access to high school	
Right-of-way		
Environmental	Reduce wetland impacts; floodway impacts are offset by Kinser Pike access road crossing Griffey Creek	
MOT	Similar impacts	Similar impacts
Public Input	Recommendation by the City of Bloomington to support the TIF district	
Walnut Street		
	Alternative 4	**Alternative 5**
General Description	Overpass for east/west traffic flow; I-69 access via east side frontage road to Sample Road interchange or west side frontage 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 frontage road to Sample Road
Screening Criteria	Advantages	Advantages
Access and Operations		Unofficial “Gateway to Bloomington,” maintains existing interchange access; provides a second access to Ellettsville, and secondary emergency access for Hoosier Energy
Right-of-way		Reduced right-of-way cost
Environmental		Reduced karst and stream impacts and noise/visual impacts for MGRRHD
MOT		Similar impacts
Public Input		Popular support as "Gateway to Bloomington;" preferred by Hoosier Energy

Table 9: Section 5 Alternatives 4 and 5 Key Access Plan Comparison		
Paragon Road		
	Alternative 4	**Alternative 5**
General Description	Interchange with east/west and I-69 access; medium rural interchange	Overpass for east/west access; I-69 access via west side frontage road to Liberty Church Road interchange
Screening Criteria	Advantages	Advantages
Access and Operations	Direct access to Morgan-Monroe State Forest; fewer roads required for parcel access than with a Liberty Church Road interchange	
Right-of-way	Similar impacts	Similar impacts
Environmental	Reduced farmland, limited commercial and floodway impacts	
MOT	Similar impacts	Similar impacts
Public Input	Little public support except by those potentially impacted by a Liberty Church Road interchange	
Liberty Church Road		
	Alternative 4	**Alternative 5**
General Description	Overpass for east/west access; I-69 access via west side frontage road to Paragon Road interchange	Interchange with east/west and I-69 access; medium rural interchange type
Screening Criteria	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
Environmental		Reduced forest, residential, and stream impacts
MOT	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 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
FROM SR 37 TO SR 39 - MAP INDEX

8
7
6
5
4
3
2
1

Martinsville
Section 6 Interchange
Paragon Road
Liberty Church Road
Chambers Pike
Sample Road
Walnut Street
Kinser Pike
Arlington Road
Vernal Pike
SR 46
SR 48
SR 45
Tapp Road
Fullerton Pike
Rockport Road
That Road
Section 4 Interchange
Ellettsville
Bloomington
Indiana University
MORGAN-MONROE STATE FOREST
Lake Lemon
White River
OWEN
MORGAN
MONROE
BROWN
67
39
37
46
45
48

Differences between alternatives

Cross Street	Alternative 4	Alternative 5
Tapp Rd.	Overpass	Split Interchange w/SR 45
Kinser Pike	Interchange	Overpass
Walnut St.	Overpass	Interchange
Paragon Rd.	Interchange	Overpass
Liberty Church Rd.	Overpass	Interchange

State highways
Local roads
Section 5 corridor
City limits
Lakes & reservoirs
Rivers & streams
Managed lands
Maple Grove Road Rural Historic District
4 Map sheet number & coverage area

N W E S

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

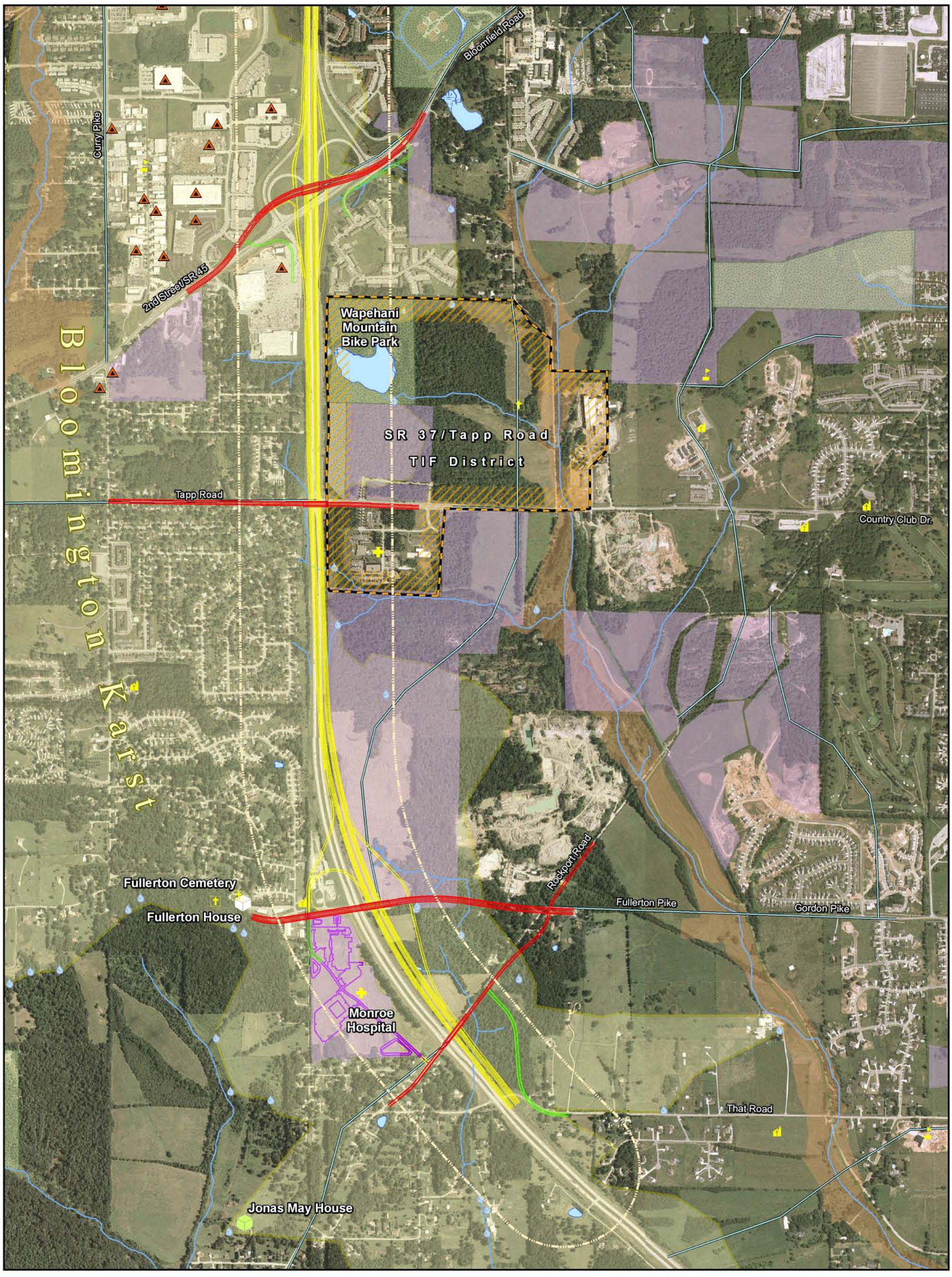
I-69 EVANSVILLE-to-INDIANAPOLIS TIER 2 STUDIES / SECTION 5

Indiana Department of Transportation

0 0.5 1 1.5 2 mi

April 2007

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 4 - SHEET 1 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N W E S

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

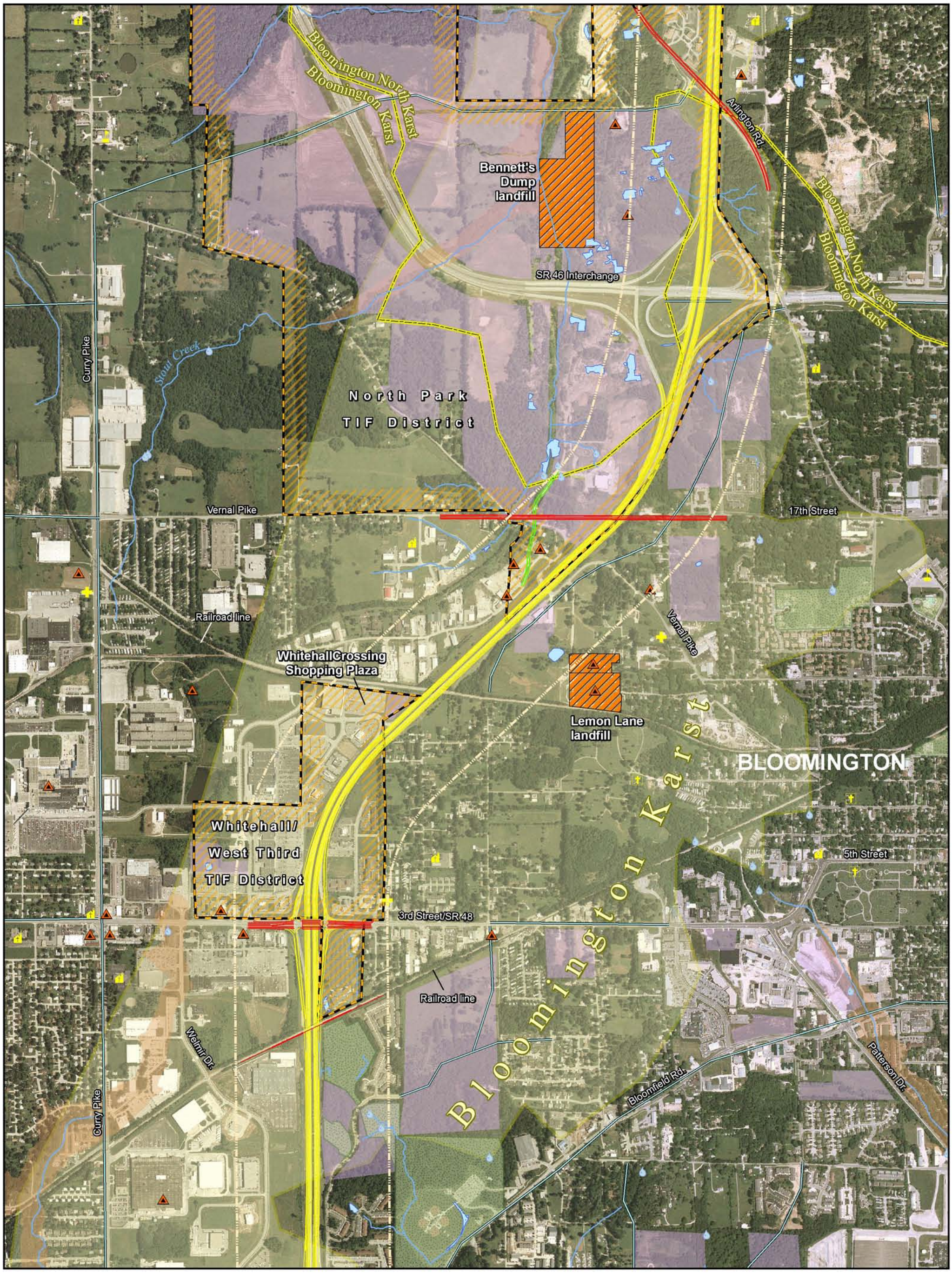
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 1 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 4 - SHEET 2 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N W E S

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS TIER 2 STUDIES / SECTION 5

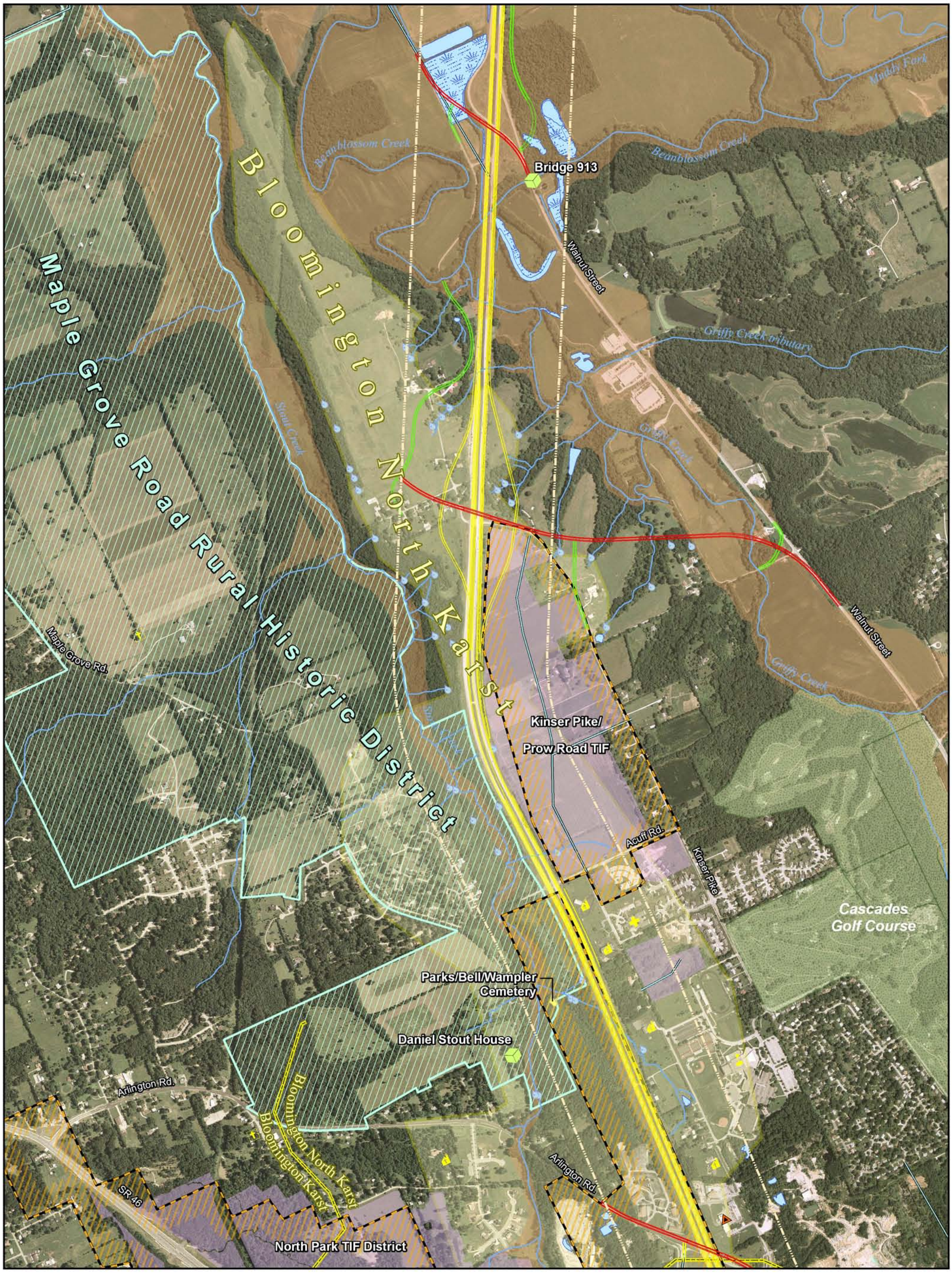
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 2 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 4 - SHEET 3 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N E S W

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

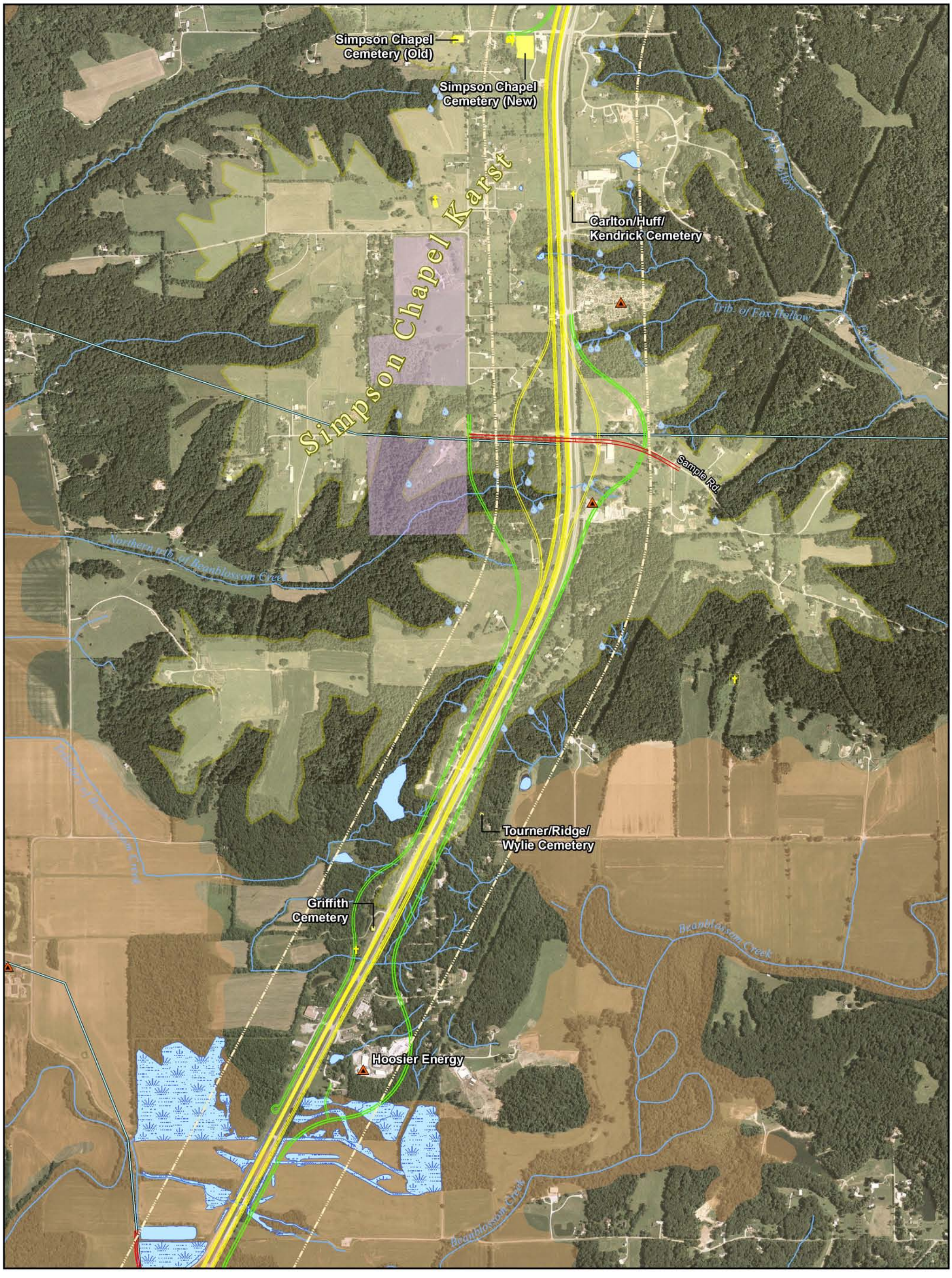
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 3 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 4 - SHEET 4 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemeteries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N W E S

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

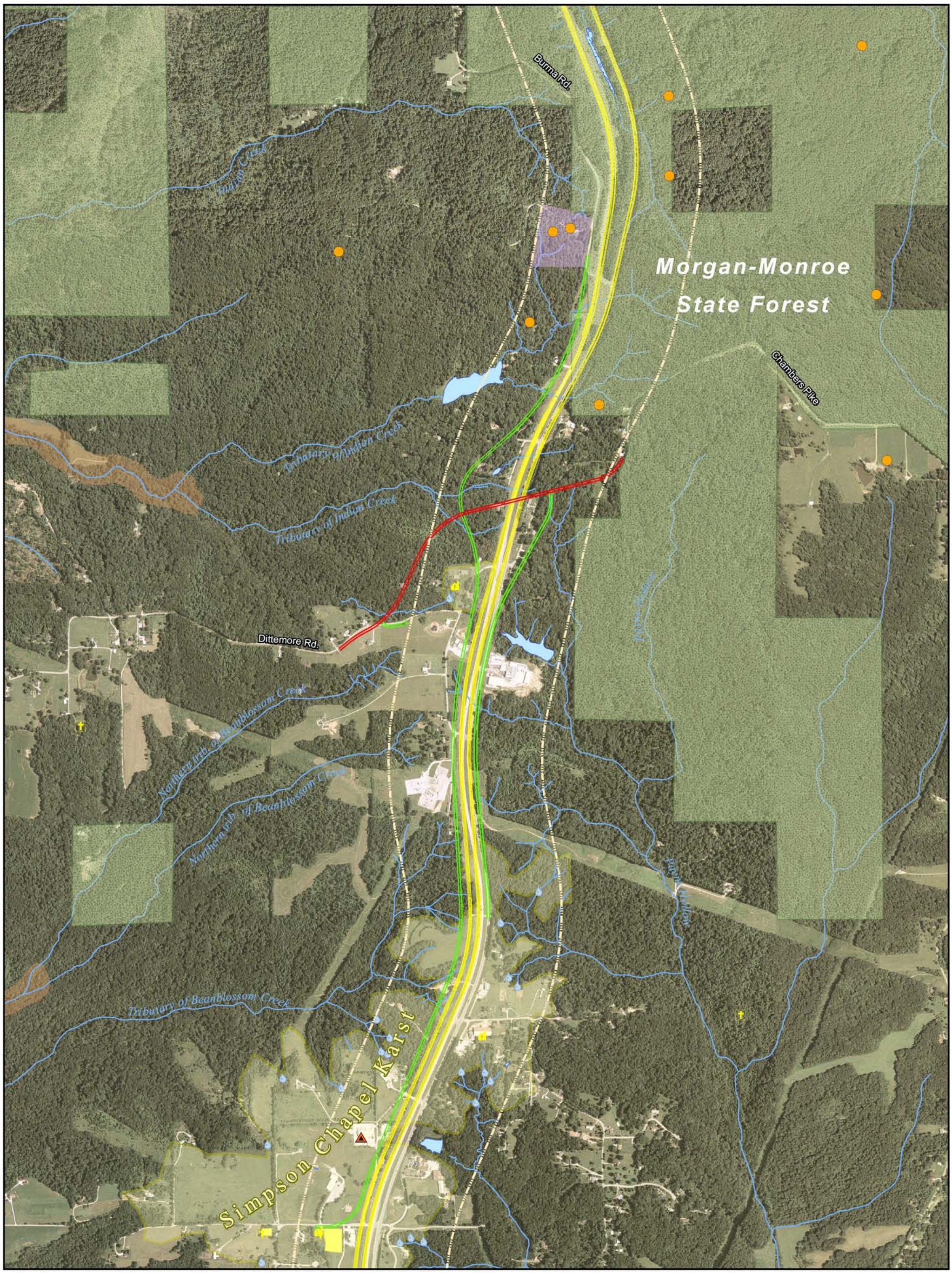
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 4 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 4 - SHEET 5 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N W E S

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

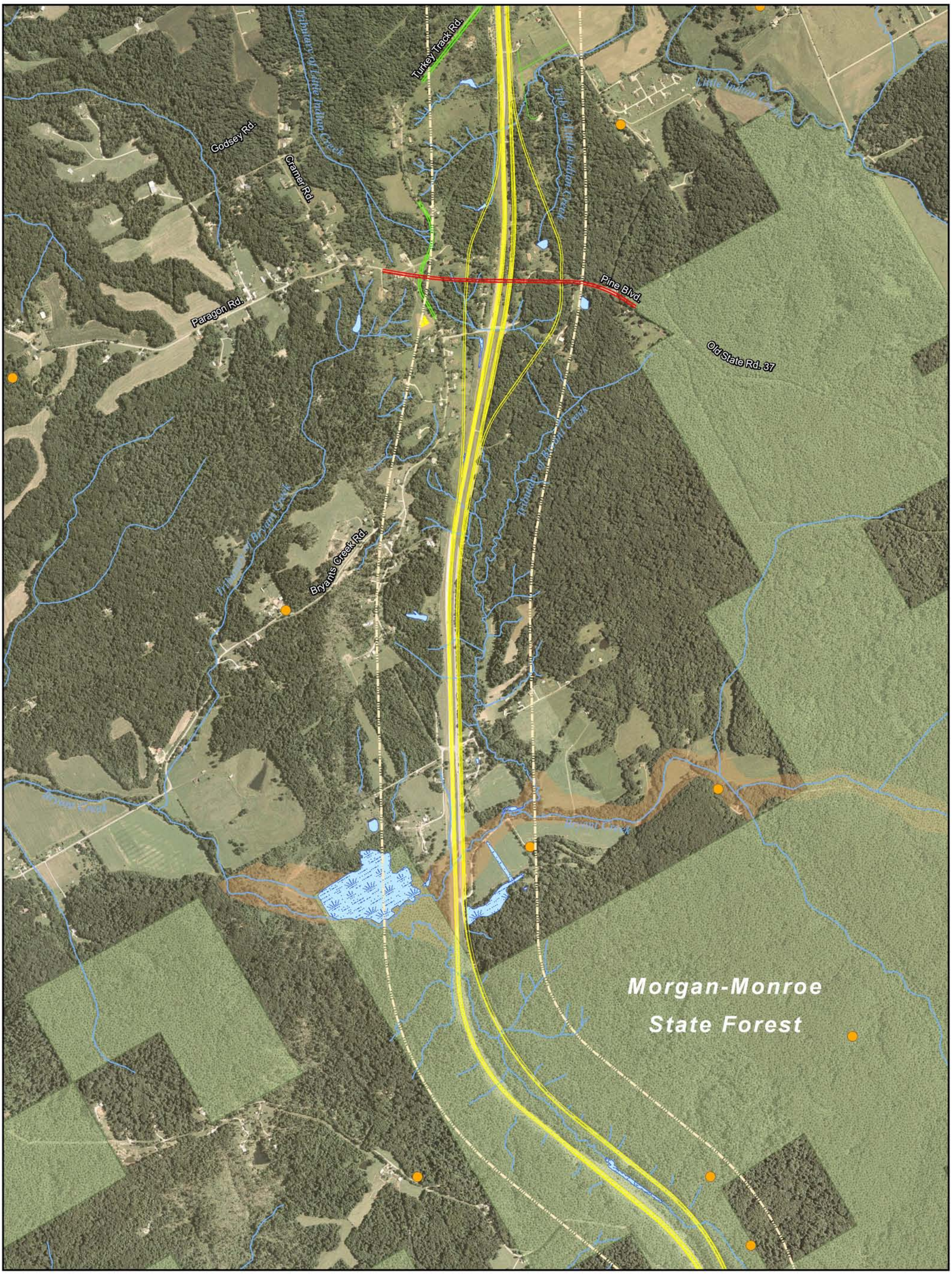
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 5 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 4 - SHEET 6 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N E S W

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

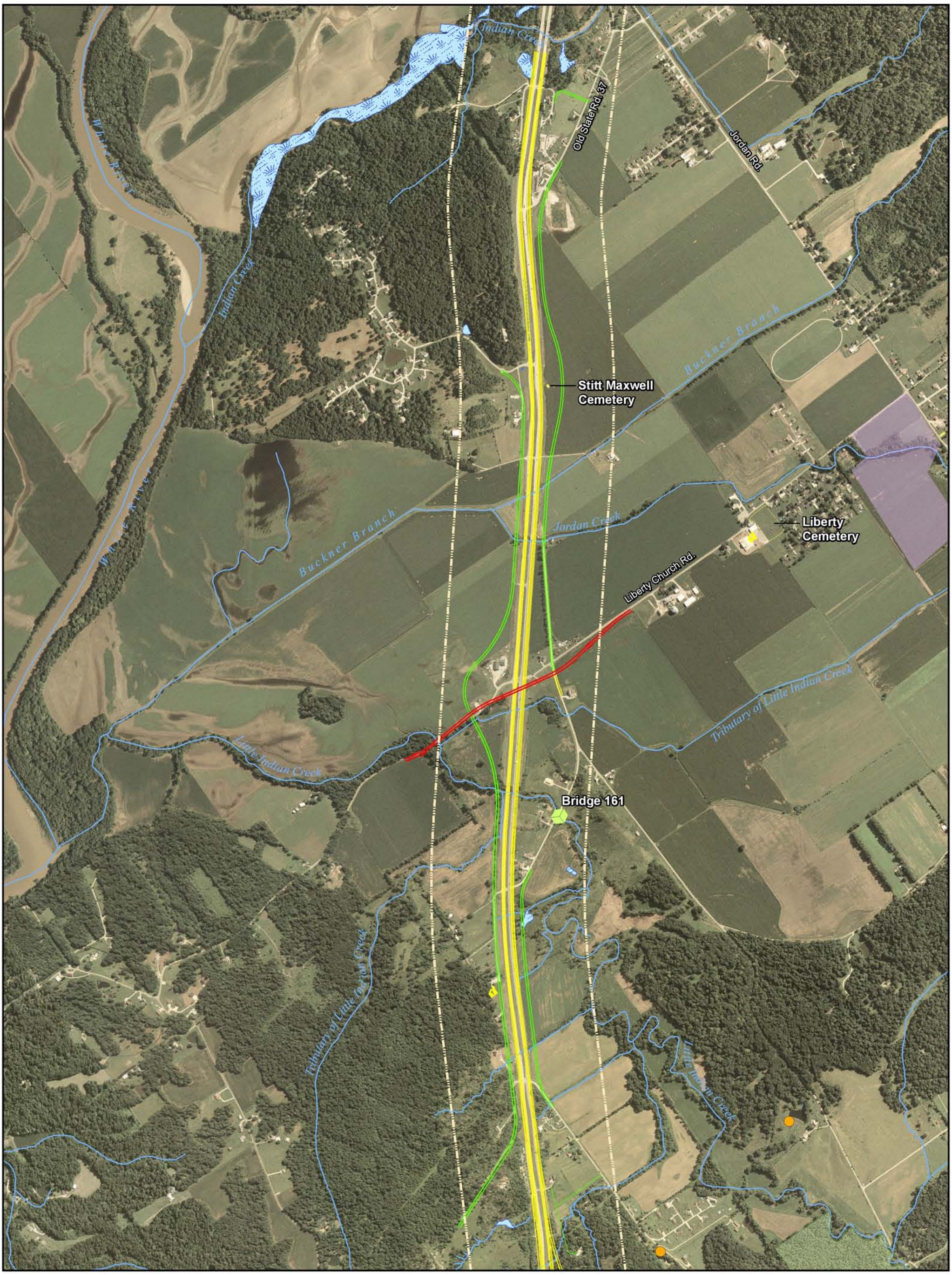
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 6 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 4 - SHEET 7 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

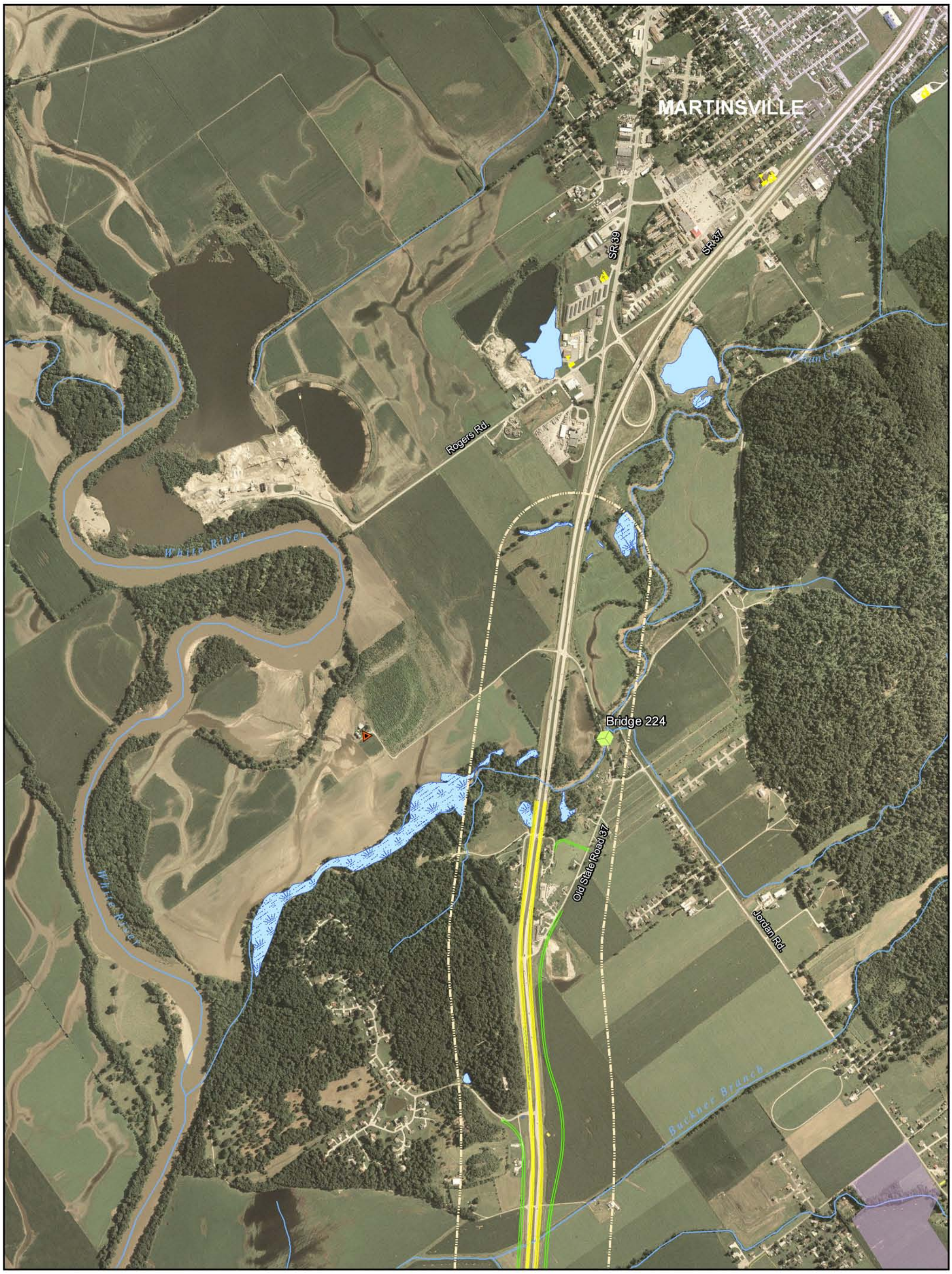
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 7 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 4 - SHEET 8 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N E S W

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

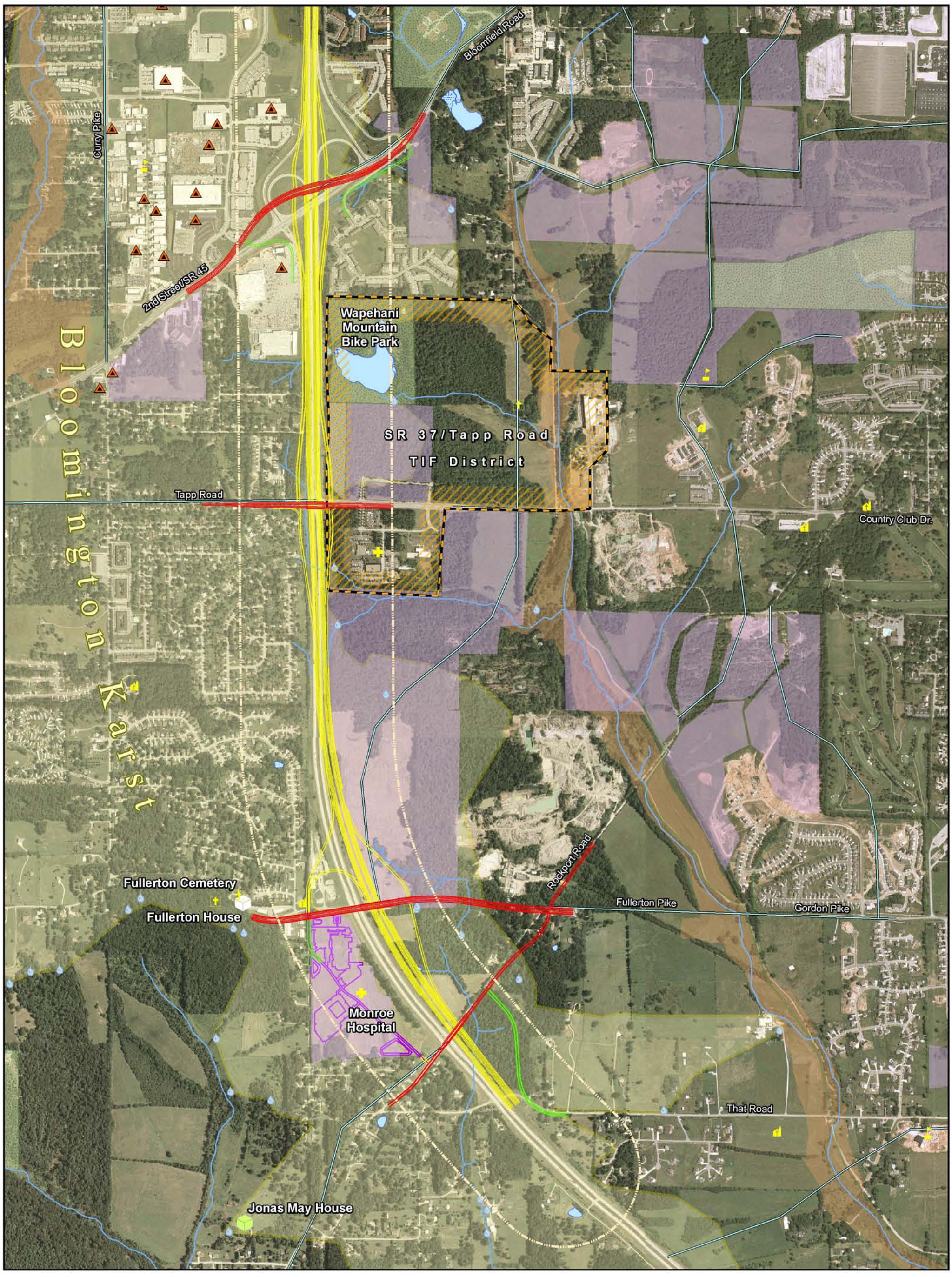
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 8 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 5 - SHEET 1 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N W E S

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 1 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 5 - SHEET 2 OF 8

Bloomington North Karst
Bloomington Karst
Bennett's Dump landfill
Arlington Rd.
SR 46 Interchange
Bloomington North Karst
Bloomington Karst
Curry Pike
Stout Creek
North Park TIF District
Vernal Pike
17th Street
Railroad line
Vernal Pike
WhitehallCrossing Shopping Plaza
Lemon Lane landfill
BLOOMINGTON
Bloomington Karst
Whitehall/ West Third TIF District
5th Street
3rd Street/SR 48
Railroad line
Walnir Dr.
Bloomington
Bloomfield Rd.
Patterson Dr.
Curry Pike

Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N W E S

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

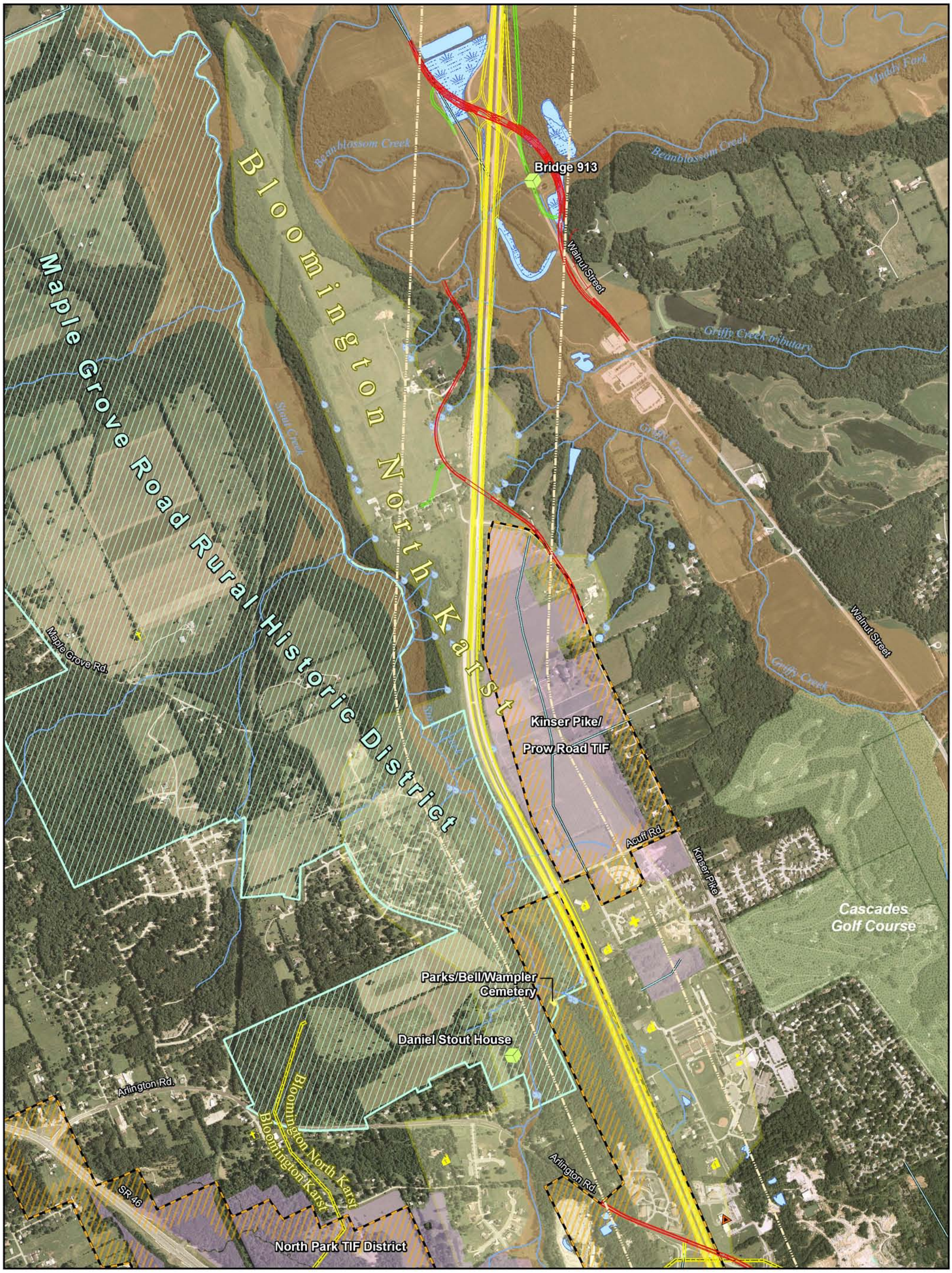
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 2 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 5 - SHEET 3 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N E S W

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

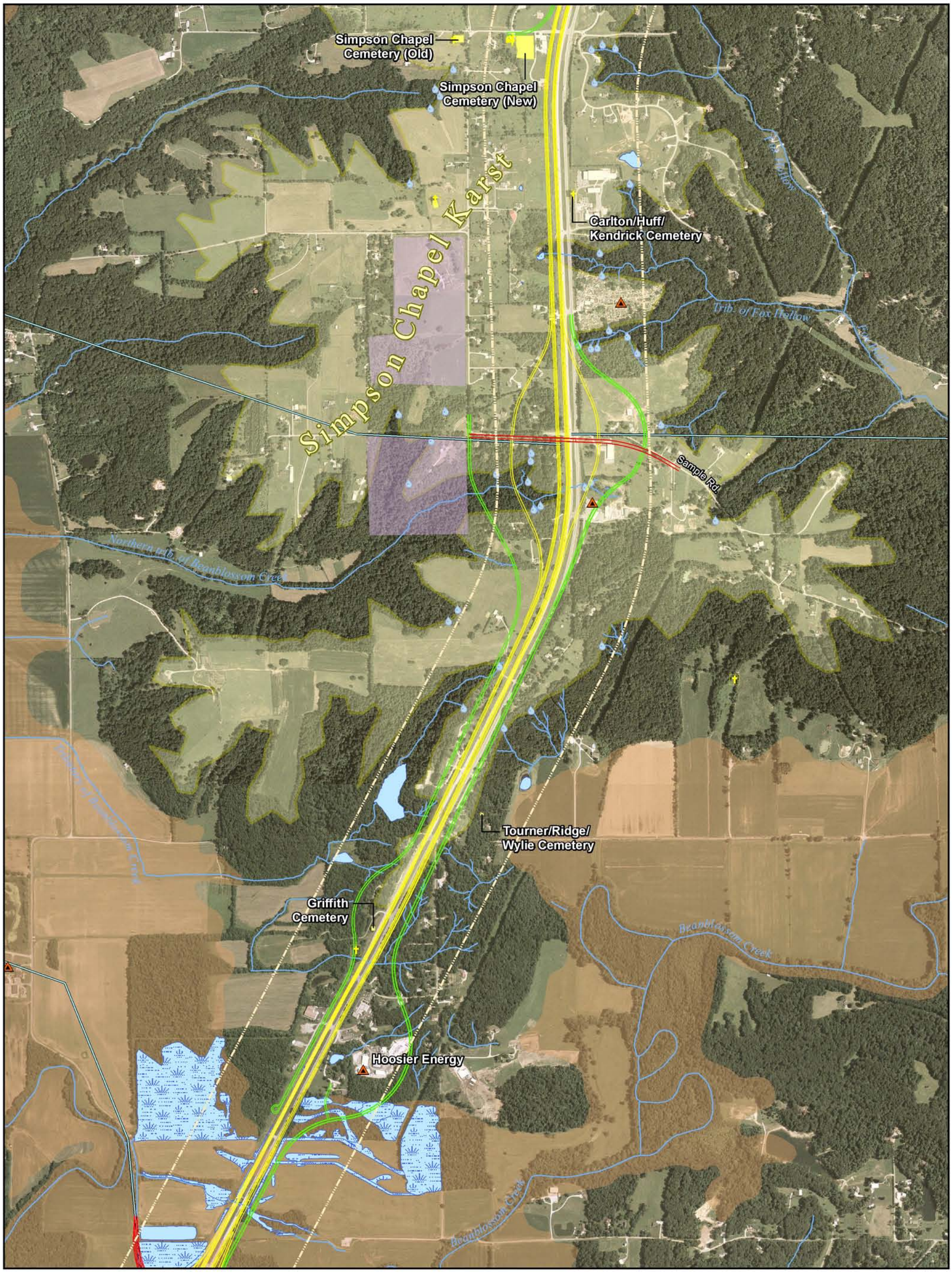
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 3 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 5 - SHEET 4 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemeteries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N W E S

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

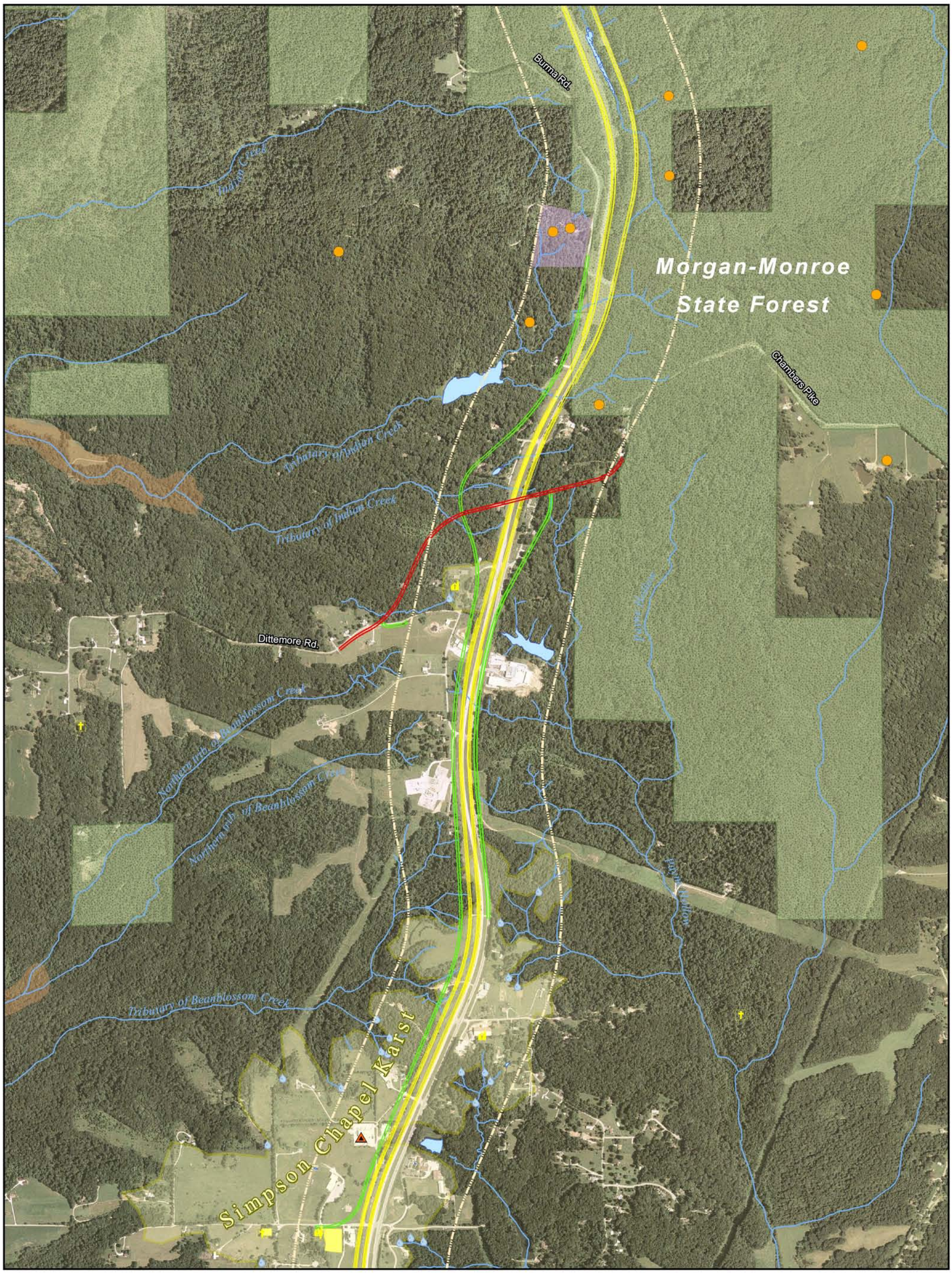
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 4 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 5 - SHEET 5 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N W E S

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

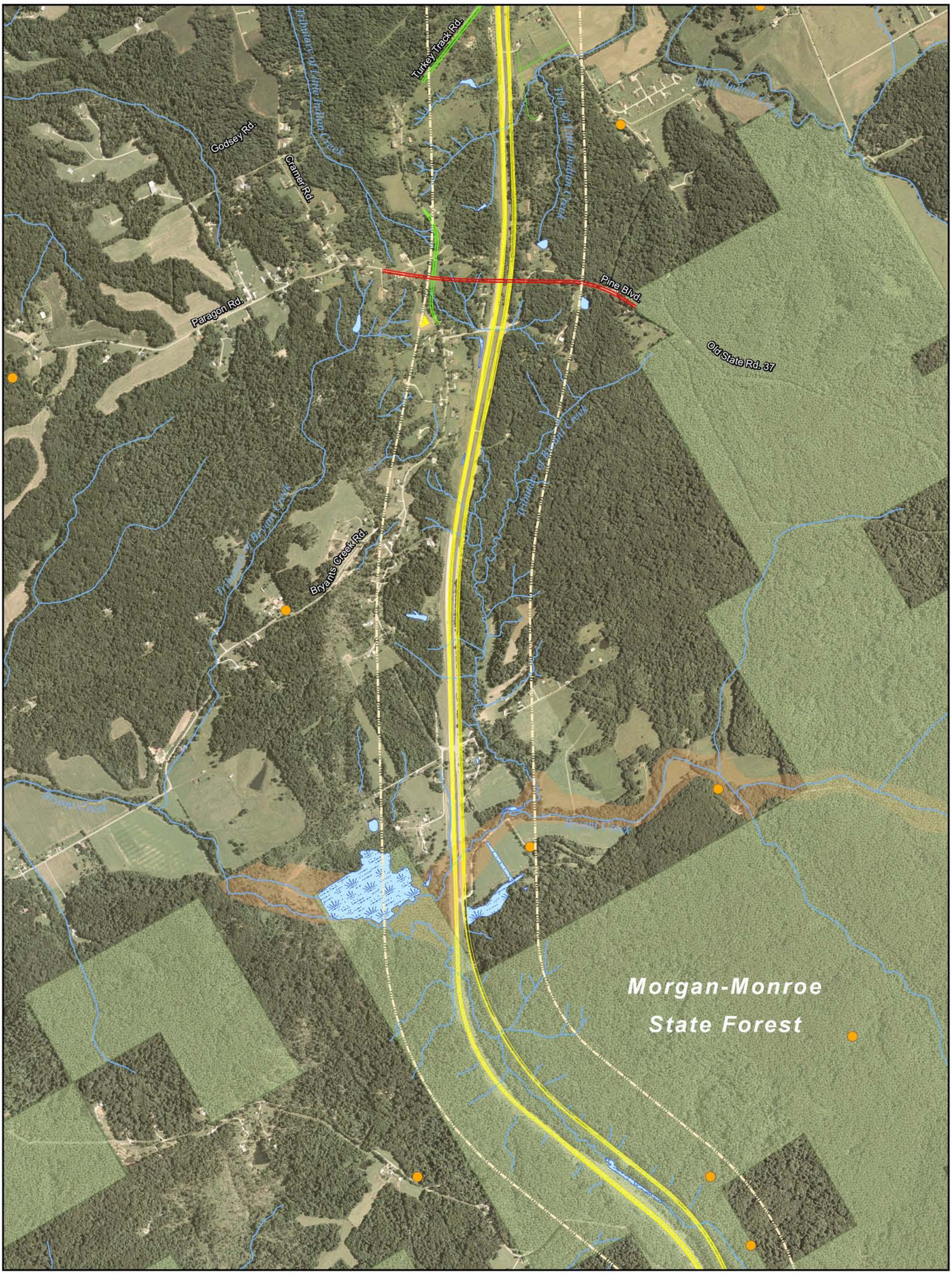
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 5 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 5 - SHEET 6 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N E S W

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

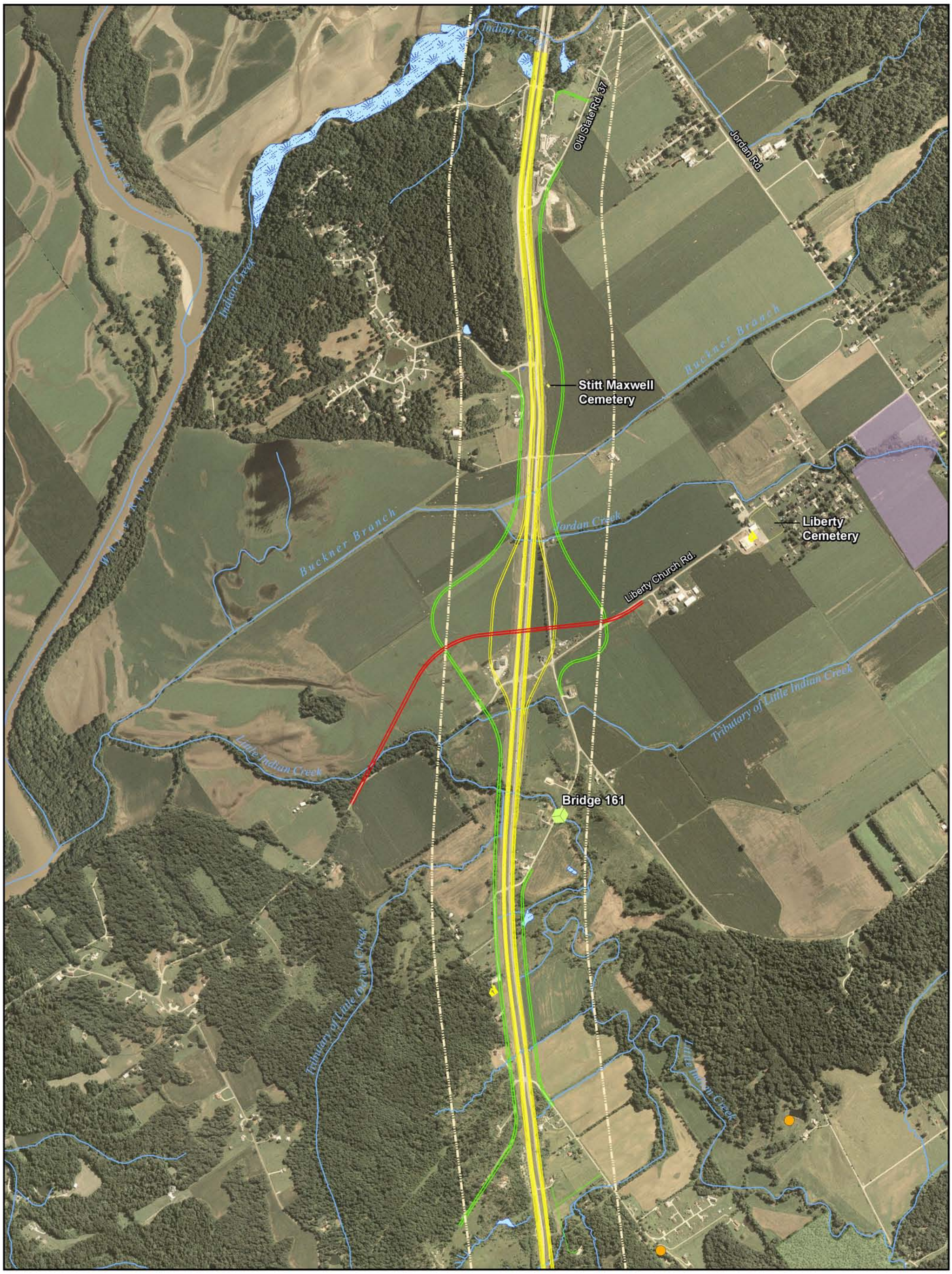
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 6 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 5 - SHEET 7 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

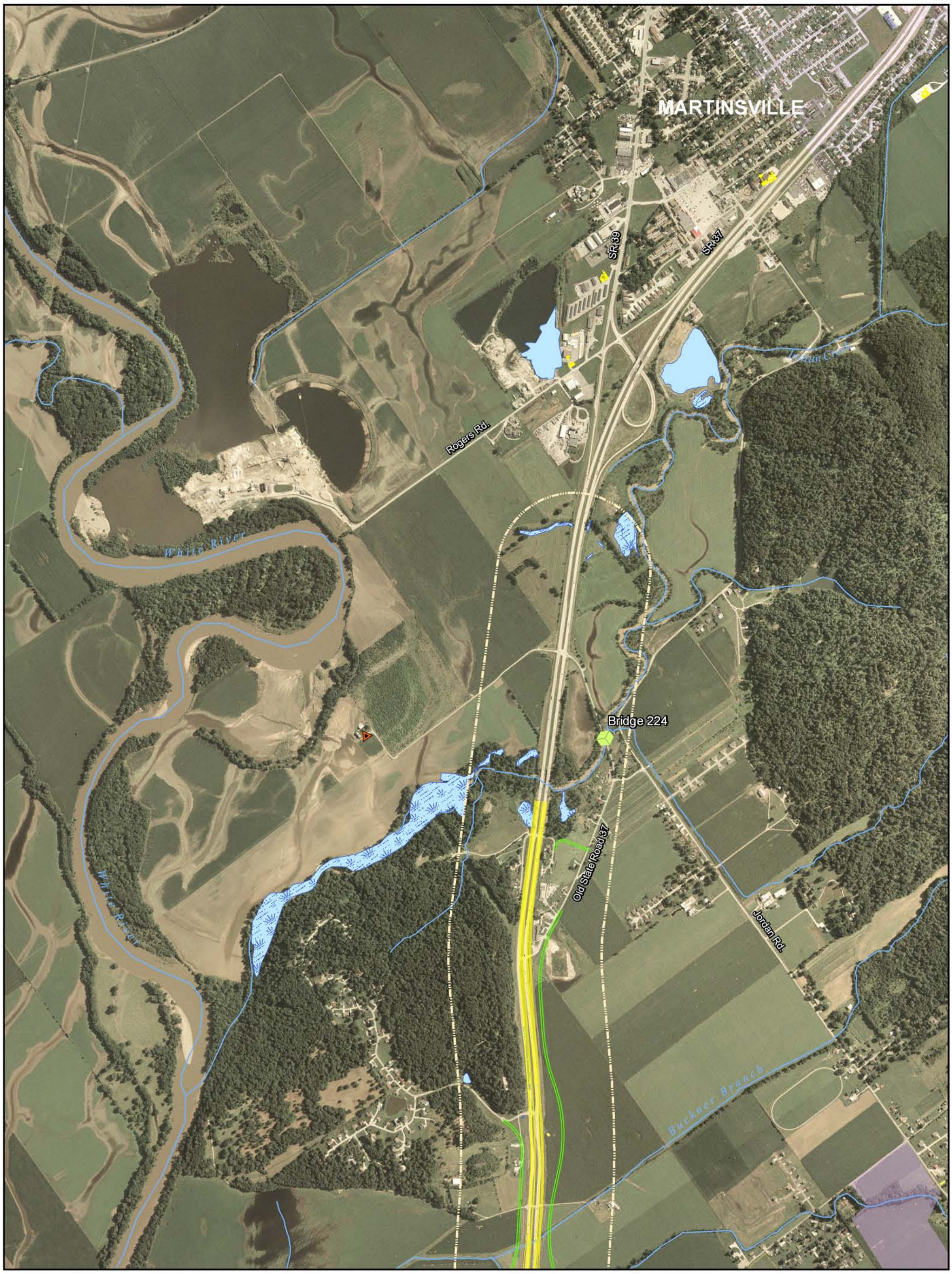
Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 7 OF 8

I-69 EVANSVILLE-TO-INDIANAPOLIS STUDY - SECTION 5
ALTERNATIVE 5 - SHEET 8 OF 8



Interchange, Overpass, or Underpass
Frontage road
Mainline & ramps
Trans. impr. projects
Karst boundary
TIF District
2000 ft corridor
Springs
Floodplains
Superfund sites
Wetlands (PEM, PFO, PSS)
Ponds (PUB)
Streams & rivers
Managed lands
Planned development
Cemetaries
Churches
Schools
Emergency
NRHP listed or eligible
Potential hazardous waste sites
Gas wells

N E S W

Baker

Note: GIS data used to create this map are from the best known sources existing at the time of map creation. Datasets shown on the map may have been created at different scales and are not necessarily all-inclusive. Use of this map should be limited to planning purposes, and should not replace field review or background checks with other sources.

I-69 EVANSVILLE-to-INDIANAPOLIS
TIER 2 STUDIES / SECTION 5

Indiana Department of Transportation

0 0.1 0.2 0.3 0.4 0.5 mi

April 2007

SHEET 8 OF 8