# PRELIMINARY ALTERNATIVES ANALYSIS AND SCREENING

# For Tier 2, Section 2 (SR 64 to US 50)

# of the I-69 Evansville to Indianapolis Project

# April 25, 2006

This report describes the preliminary alternatives analysis and screening of alternatives for Section 2 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 begins (Section 1.0) with a summary of Section 2's stated Purpose and Need for the project, followed by an overview of key factors in the development of Tier 2 alternatives (Section 2.0). Because this is a tiered study, the development of alternatives differs significantly from what is typical in a non-tiered NEPA study. Then, the scoping and development of Tier 2 alternatives (Section 3.0) is discussed. Next, alternatives carried forward for detailed study are analyzed (Section 4.0).

## *1.0 Summary of Purpose and Need*

The Purpose and Need and Preliminary Alternatives package was submitted to resource agencies on August 26, 2005. The package contained the draft Purpose and Need Statement for Section 2 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 2 project team September 28, 2005. The meeting is summarized in Section 3.2.1, *Resource Agency Coordination.*

The purpose of the project in Section 2 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 ROD, while also addressing local needs identified in the Tier 2 process. The local needs identified in Tier 2 for Section 2 include:

- Complete Section 2 of I-69 between SR 64 west of Oakland City to US 50 east of Washington
- Increase personal accessibility for area residents
- 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 2 are summarized in Table 1. These goals, and how they are measured, were described in greater

detail in the Draft Purpose and Need Statement (August 18, 2005), which was the subject of a previous agency review process. Tier 1 core goals are shown in ***bold italics***.

**Table 1: Section 2 Goals and Performance Measures**

| Tier 1 | Tier 2 Section 2 | |
|---|---|---|
| | **Section 2 Goals** | **Section 2 Performance Measures** |
| ***GOAL1—Improve the transportation linkage between Evansville and Indianapolis (Core Goal)***<br>***GOAL 8—Facilitate interstate and international movement of freight (Core Goal)***<br>**GOAL 9**— Connect I-69 to major intermodal facilities in southwest Indiana | GOAL 1—Complete Section 2 of I-69 between SR 64 east of Oakland City to US 50 west of Washington | G1-A—Development of a freeway which meets current design standards |
| ***GOAL 2—Improve personal accessibility for southwest Indiana residents (Core Goal)*** | GOAL 2—Enhance the transportation network in the Section 2 Study Area to improve personal accessibility for residents of the area | G2-A—Increase in access of area communities to the interstate system<br>G2-B—Reduction in travel time to regional destinations (Evansville, Bloomington, and Indianapolis) |
| **GOAL 3**—Reduce existing and forecasted traffic congestion on the highway network in southwest Indiana | GOAL 3—Reduce existing and forecasted traffic congestion on the highway network in the Section 2 Study Area | G3-A—Reduction in congestion on rural roadways |
| **GOAL 4**—Improve safety levels in southwest Indiana | GOAL 4— Reduce crashes on local and state roads in the Section 2 Study Area | G4-A—Reduction in the number of crashes in the Section 2 Study Area<br>G4-B—Reduction in the percentage of trucks on local roads |
| **GOAL 5**—Increase accessibility for southwest Indiana businesses to labor, suppliers, and consumer markets<br>**GOAL 6**—Support sustainable, long-term economic growth.<br>**GOAL 7**—Support economic development to benefit a wide spectrum of area residents. | GOAL 5—Support local economic development initiatives | G5-A—Increase in access of area businesses to the interstate system<br>G5-B—Reduction in travel time to regional business destinations (Evansville, Bloomington, Indianapolis, and Terra Haute)<br>G5-C—Provision of interchange locations suitable for stimulating economic development |

## *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 3.1.1 describes how the range of alternatives is affected by the tiered nature of this study.

The selection of a corridor in Tier 1 also requires an innovative approach to traffic forecasting for Tier 2 alternatives. The range of alternatives is much more constrained than in the typical NEPA study. Accordingly, more detailed modeling tools are needed to evaluate alternatives. The traffic forecasts for this 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.[1] 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. Section 3.1.2 describes this hierarchy of modeling tools.

Quantm is an engineering alignment optimization tool. It was used to help generate alternatives within the selected I-69 corridor. Section 3.1.3 describes the use and application of Quantm to generate alternatives in the scoping phase of this study.

## 2.1 Scoping of Alternatives in a Tiered Study

The Tier 1 Record of Decision (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 Section 2); 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. As provided in the Tier 1 Record of Decision (p. 8), the flexibility exists to consider alternatives outside the selected corridor to avoid significant impacts within the selected corridor.

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 detail.

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

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

## 2.2 Traffic Modeling

As discussed above, a distinguishing feature of alternatives in this study is that they are much more similar than is typical in a non-tiered NEPA study. Accordingly, the tools used to compare the performance of these alternatives also must be more focused. The Indiana Statewide Travel

[1] In the urban areas of Bloomington, Martinsville, and Indianapolis (in Tier 2 Sections 5 and 6) a microsimulation model also is used. The use of this model will be described in the DEIS documents for these sections.

Demand Model (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 were needed to evaluate alternatives on a more minute scale.

In order to prepare for Tier 2 studies, the ISTDM was refined to provide a more detailed highway network throughout the state[2]. The results of this upgrade are illustrated in Figures 1 and 2. Figure 1[3] 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.

Figure 1: ISTDM Version 3 Network

Figure 2: ISTDM Version 4 Network

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

Figure 3: ISTDM Version 3 TAZs

Figure 4: ISTDM Version 4 TAZs

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[5] of minor collector (in rural areas)[6] and collector (in urban areas)[7]. In addition, those local roads are

---

2 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.

3 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.

4 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.

5 "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.

6 In rural areas, collectors are defined as routes that "… 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

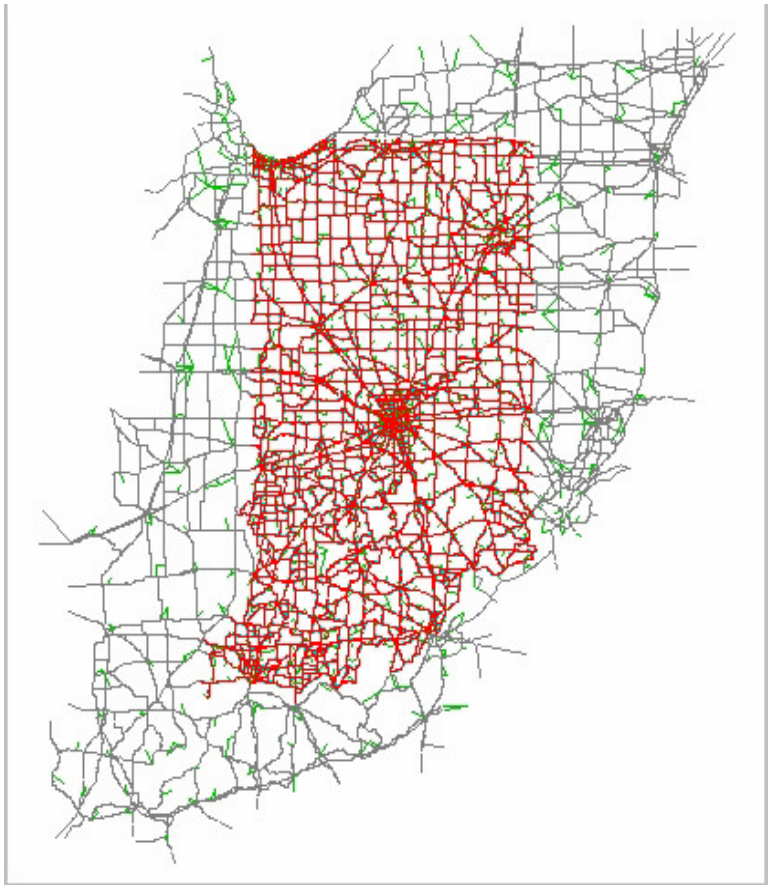


**Figure 1: ISTDM Version 3 Network**

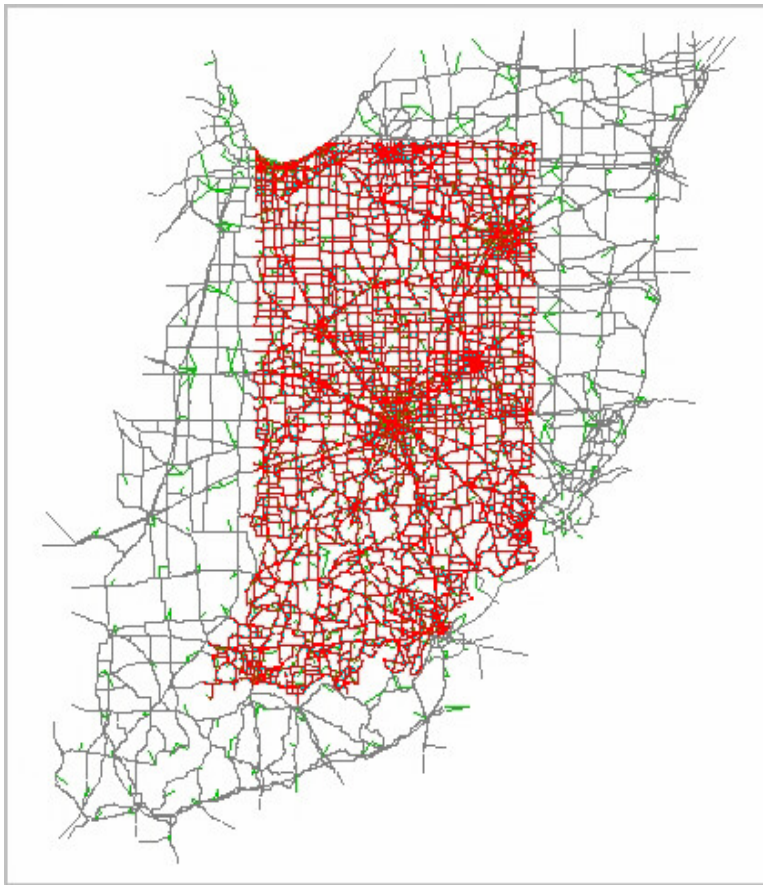


**Figure 2: ISTDM Version 4 Network**

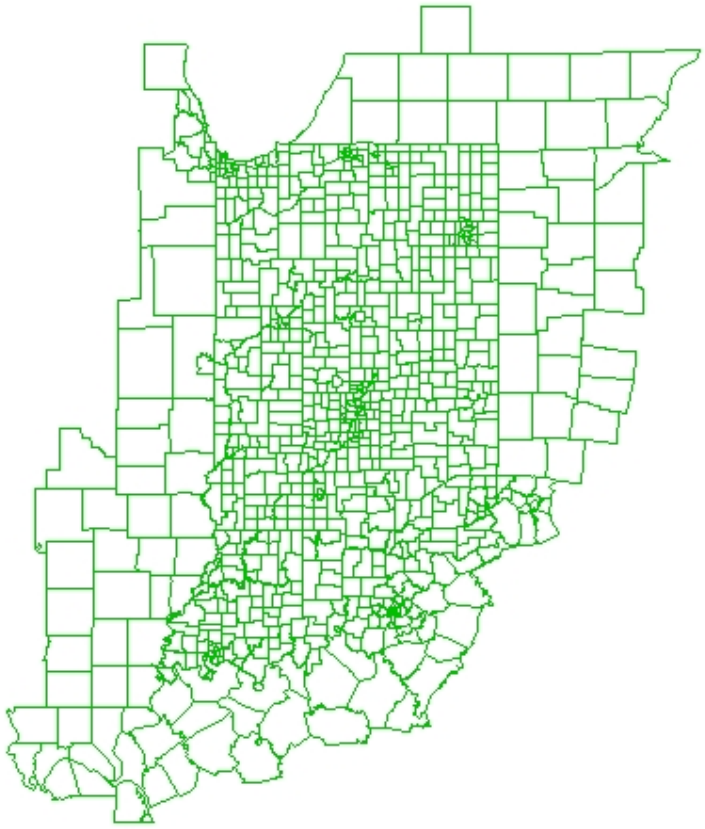


**Figure 3: ISTDM Version 3 Traffic Analysis Zones**

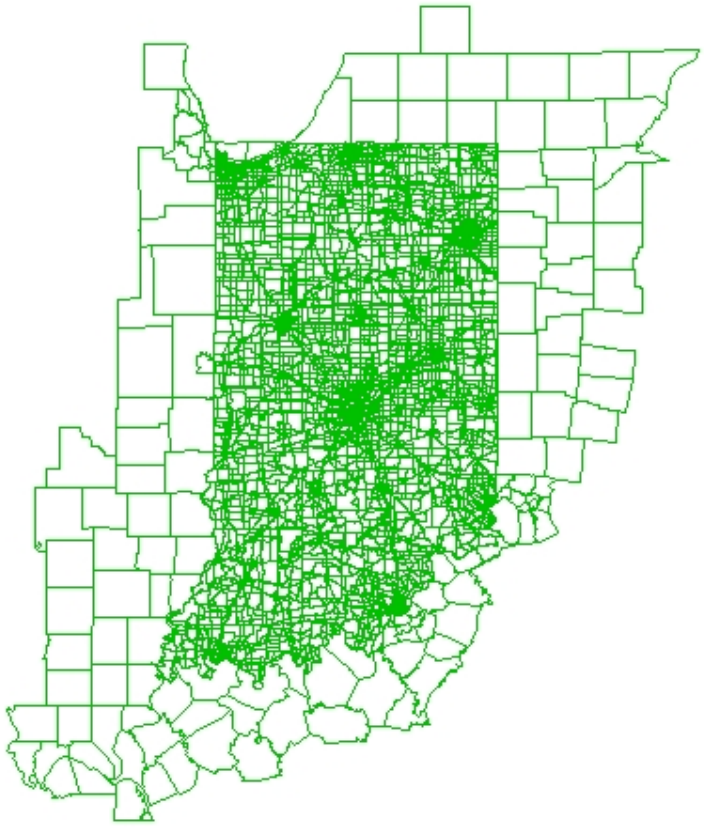


**Figure 4: ISTDM Version 4 TAZs**

included that could possibly be affected by I-69 (e.g., be considered for closure or grade separation). The corridor model is also designed to evaluate alternative interchange locations.[8]

Figure 5: I-69 Tier 2 Corridor Model Network

In addition, the TAZ structure in the corridor model is more detailed than in the ISTDM. The corridor model has more than 4,300 TAZs, and it covers only the corridor in southwestern Indiana as compared with more than 4,700 for the entire modeled area (which consists of Indiana and portions of Michigan, Ohio, Kentucky, and Illinois) in Version 4 of the ISTDM.

The results obtained from the ISTDM are "fed into" the corridor model to provide Tier 2 forecasts. The auto and truck trip tables[9] provided by the ISTDM traffic assignment[10] are disaggregated using TransCAD's[11] built-in proportionate disaggregation procedure to provide trip tables corresponding to the TAZ structure in the corridor model.[12] In this process, many of the trips assigned to a TAZ in the ISTDM are assigned to an external station[13] in the corridor model. 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[14] and other rural corridors in southwest Indiana, as appropriate.

---

collector road; (2) provide service to the remaining smaller communities (nor served by major collectors); and (3) link the locally important traffic generators with their rural hinterlands." (*Ibid*, p. II-10).

7 In urban areas, collectors are defined as routes that 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.

8 As noted in Section 3.1.1, 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.

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

10 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.

11 TransCAD ® is the modeling platform produced by Caliper Corp., which is used by INDOT for the ISTDM.

12 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 five 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 five 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.

13 An "external station" is a special kind of zone on the boundary of a modeled area. Unlike TAZs, these special external zones do not have demographic or land use data associated with them. 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, Terre Haute, and various other points west.

14 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 of the corridor model. Recent traffic

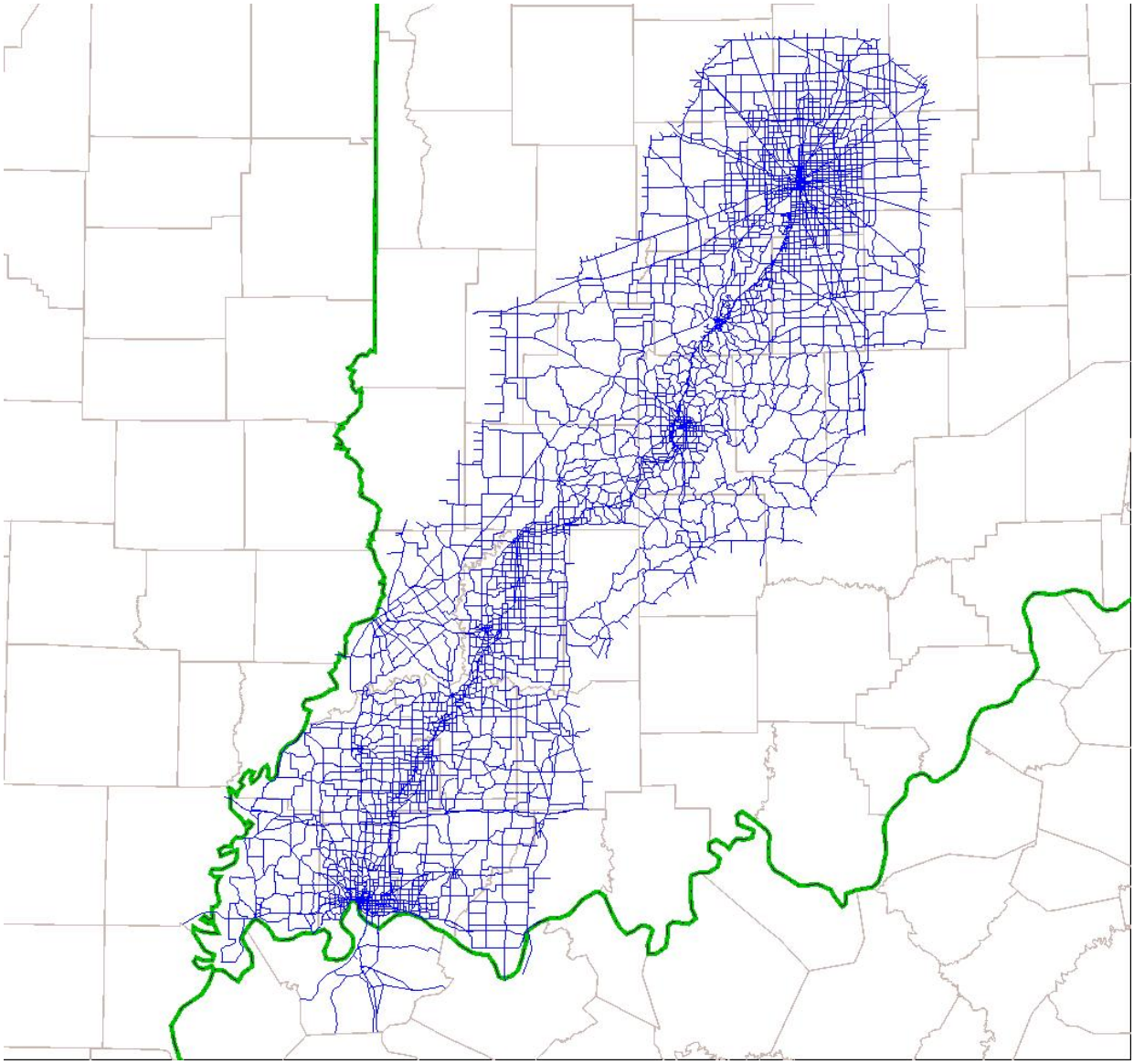


**Figure 5: I-69 Tier 2 Corridor Model Network**

The traffic forecasts used in the engineering analysis of alternatives are provided by the corridor model. In addition, the performance measures provided in Section 3.3 are calculated using post-processors[15] that analyze the traffic assignments provided by the corridor model.

## 2.3 Use of Quantm

Quantm is a relatively new computer aided tool that facilitates the development and analysis of alternative horizontal and vertical roadway alignments. It imitates the otherwise manual functions of developing and assessing route alignments for transportation projects. Quantm has the capability to generate a set of alignments that minimize construction costs and negative impacts on important environmental resources. Based on the parameters provided, Quantm will generate a set of alignments; illustrate those alignments within a digital terrain model; superimpose them on aerial photographic images; track key statistics (e.g., wetland acreage impacted) for each alternative; and allow alternatives to be compared according to a variety of attributes, including construction cost.[16]

Quantm develops a graphic representation of alternative horizontal and vertical roadway alignments and computes the cost of each based on the input of geographic, topographic, and geologic information; geometric design criteria; unit cost data; and environmental constraint information. The program processes a large volume of data and generates a large number of alignment possibilities in a relatively short period of time. However, results are constrained by the quality and quantity of data provided. The actual development of alternative horizontal and vertical alignments requires consideration of more detailed information and judgment factors than can be cost-effectively and reasonably input into the program. Within the constraints of a 2,000-foot corridor, Quantm is valuable for obtaining first cut alignment definitions and conducting "what if" scenario analyses. This process provides a reasonable number of alignments to develop with conventional geometric design programs.

Quantm was used to define alignment alternatives in Section 2 as described below:

- Initial Evaluation—Define alignments between the project beginning point and the project ending point with no environmental constraints or corridor boundaries. This scenario developed multiple alignment alternatives that minimized earthwork and structural quantities to generate cost-minimizing alternatives.

---

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."

[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 to assess the improvement in accessibility provided by a particular alternative.

[16] Costs identified by Quantm are appropriate for comparing mainline construction cost components, but do not include all costs. Costs that Quantm does not estimate include: interchanges, some drainage structures, local road improvements, right-of-way, design engineering, construction engineering, utility relocation, and environmental mitigation. The costs presented in Table 7 are based on a more detailed engineering analysis which do account for these cost components.

- Refined Analysis—Define alignments within the corridor area determined in Tier 1 that avoided all of the identified wetland areas, electric transmission towers, cemeteries and clusters of homes.

- Further Refinement—Compile the best segments of the developed alignments from the Quantm output and identify the two best case scenarios for further evaluation. At this stage, our Quantm analysis consistently provided two families of alignments within the corridor which tended to best minimize costs and impacts.

- Detailed design—Further refine alignments with standard transportation design software (Bentley InRoads).

The cost-minimizing alternatives generated by Quantm were used as a beginning point and were refined to get the desired horizontal geometry to meet social, economic, and other non-construction cost-related criteria. In general, the Quantm-generated alignments were more curvilinear than desirable and required adjustments to provide straight stretches of roadway (tangents) that were parallel to property lines. Such tangent alignments help avoid unnecessarily dividing properties and creating triangular parcels that are difficult to farm. In addition, tangent alignments improve safety and reduce design and construction costs.

## *3.0 Development of Alternatives*

This section describes the scoping process and the development of alternative roadway alignments within the approved corridor for Section 2. This corridor, including the termini for Section 2, was approved in the Tier 1 ROD on March 24, 2004. The development of each alternative and its interchanges is described below. Table 2 provides a timeline for the development of the alternatives and interchanges.

### 3.1 Methodology

The development of alternative roadway alignments under the NEPA process requires the consideration of multiple criteria. These include satisfying highway design standards, avoiding and/or minimizing environmental impacts, maximizing values, and satisfying project purposes. These diverse and often conflicting criteria typically are not quantifiable in similar terms. Developing alignments 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 alternative alignments 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, the geometric design criteria, the typical section(s) of the

roadway, the right-of-way width, and access control limits[17]. These items are essential for defining the area that would be impacted by any alignment.

2. The second step is to determine points of access to the highway and the types of interchanges that will be required. The "big-picture" Tier 1 studies generally assumed that access would be limited to interchanges with other state jurisdictional highways[18]; however, the Tier 1 studies acknowledged that interchanges with important county jurisdictional highways also may be warranted. These highways are identified on a case-by-case basis through coordination with local and county officials and members of the public.

[17] Within the context of this project, an "access control limit" is a specific length along roads with an interchange within which no at grade access is permitted. Access control limits are specified to avoid conflicts with traffic entering and leaving interchanges. This traffic may be traveling at relatively high rates of speed.

[18] It is not required that state-jurisdictional highways have interchanges with freeways, such as I-69. This statement is meant to indicate that interchanges with non-state-jurisdictional highways are not provided unless special circumstances exist.

| Table 2: Development of Mainline and Interchange Alternatives | | |
|---|---|---|
| ***Preliminary Mainline Alternatives: Alternatives 1 & 2*** (Figure 8) | **Aug 12** 2004 | "Kick-Off" Meeting with federal and state **Review Agencies** |
| | **Dec 14** 2004 | Field check of initial Alternatives 1 and 2 |
| | **Jan 4** 2005 | Engineering Assessment Meeting with **INDOT, FHWA**, PMC and EEAC to review preliminary alternatives |
| | **Jan 19** 2005 | Citizen's Advisory Committee (**CAC**) Meeting to review preliminary alternatives |
| | **Feb 2** 2005 | **Public** Information Meeting to review preliminary alternatives |
| | **Feb 23-24** 2005 | Environmental **Resource Agency** meeting |
| | **Mar 3** 2005 | Utility Coordination Meeting |
| ***Preliminary Interchange Alternatives (13)*** (Figure 12 & 13) | **May 3** 2005 | Citizen's Advisory Committee (**CAC**) Meeting to review preliminary interchanges |
| | **Jun 22** 2005 | Alternatives Screening Review Meeting with **INDOT, FHWA**, PMC and EEAC to review revised alternatives and preliminary interchanges |
| ***Scoping Alternatives: Alternatives A & B plus Interchanges*** (Figure 11* & 15) | **Jul 21** 2005 | Corridor Alignment Review Meeting with PMC and EEAC to confirm revised alternatives and interchanges |
| | **Aug 4** 2005 | Citizen's Advisory Committee (**CAC**) Meeting to review revised alternatives and interchanges |
| ***DEIS Mainline and Interchange Alternatives*** (Figure 11 & 16) | **Aug 9** 2005 | **Public** Information Meeting to present alternatives and interchanges |
| | **Sep 9** 2005 | Revised North Pike County and South Daviess County interchanges |
| | **Sep 28** 2005 | Purpose & Need Preliminary Alternatives Package **Agency Review** Meeting |

* Include South Daviess and North Pike County interchanges as modified based on August 9 meeting comments on Sheet 10 of 13 and Sheet 7 of 13, Figure 11.

3. The third 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, neighborhoods with concentrations of minority or low-income residents, employment centers, significant land uses, 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 3.2.1). The members of the study team obtained this familiarity through field reviews, which were ongoing for several months prior to this meeting. This familiarity also was provided by documentation from the Tier 1 study.

4. The fourth step is to develop and test alternative alignments. Initial studies used Quantm to generate first-cut alignments, which satisfied certain criteria (See Section 2.3). These initial studies were refined using transportation design (Bentley InRoads) software to further specify the attributes of the alignment and plot the roadway on aerial mapping. The basic objectives used in Section 2 were to avoid environmentally sensitive areas wherever possible, minimize dividing existing farms, avoid major utility conflicts, provide adequate access to properties, ensure continuity for the existing road system, and minimize residential and commercial relocations.

5. The fifth step is to present the preliminary alternatives to the resource agencies and the general public. These alternatives then are modified in response to the input received.

## 3.2 Scoping Process

### 3.2.1 Resource Agency Coordination

The scoping process included a definition of the range of alternatives to be considered and a process to be used to address potential environmental impacts. The Tier 1 ROD limited the range of alternatives to freeways within the defined corridor with termini at SR 64 and US 50 for Section 2. Many of the issues are mandated by various laws, regulations, and agency guidelines. To ensure that the scope of study for these issues would be adequate, three sessions 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, and are listed in Table 2.

- An August 12, 2004, "kick-off" meeting was held with federal and state review agencies 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; to acquaint agency representatives with the Tier 2 project corridor, overall project Purpose and Need, public involvement efforts, and project schedules; and to 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 session 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, which 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. The following three breakout sessions were held in the afternoon: (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 devoted to a bus tour providing agency representatives with an overview of notable features in Sections 1, 2, and 3.

- In addition, a resource agency coordination meeting/web cast was conducted on September 28, 2005, to review and receive resource agency comments on Section 2's Purpose and Need and Preliminary Alternatives package. The Section 2 consultant began the meeting with a PowerPoint presentation of the material, which had been submitted to the agencies on August 26, 2005. The U.S. Environmental Protection Agency (USEPA) District 5 and the Indiana Department of Environmental Management (IDEM) participated, in addition to FHWA and INDOT. The discussion focused on the local goals that comprise Section 2's Purpose and Need Statement. The point was made during the meeting that the Section 2 needs were identified with extensive public involvement activities, and that they support the Tier 1 goals while providing the local focus required for the Tier 2 studies. Regarding the analysis of alternatives within the narrow 2,000-foot-wide corridor, the discussion referenced the fact that all alternatives likely would satisfy Purpose and Need in a similar fashion; therefore the potential environmental impacts and costs of each alignment would be key determinants in evaluating and comparing alternatives.

  The Indiana Department of Natural Resources (DNR) provided written comments dated September 7, 2005. The Eighth Coast Guard District and U.S. Forest Service provided written comments, both dated September 8, 2005, on the Purpose and Need Statement and the preliminary alternatives. The letters will be included in Appendix B, *Agency Correspondence* of the DEIS. The Indiana DNR stated "We do not have any concerns with the draft purpose and need statement or the preliminary alternatives analysis and screening report." The Coast Guard stated "Pursuant to the Coast Guard Authorization Act of 1982, it has been determined this is not a waterway over which the Coast Guard exercises jurisdiction for bridge administration purposes. A Coast Guard bridge permit is not required." The Forest Service letter noted: "The Purpose and Need for Section 2…is consistent with the Tier 1 FEIS and seems to reflect local needs. The range of alternatives seems adequate."

### 3.2.2 Preliminary Alternatives

Preliminary alternatives were developed using both the *Indiana Department of Transportation Design Manual* and the American Association of State Highway and Transportation Officials' (AASHTO) *A Policy on Geometric Design of Highways and Streets*.

The typical section for I-69 in Section 2 ranges from 220 feet to 835 feet wide, depending on the alignment and terrain features. The very widest sections occur only in limited locations where the alignment is bifurcated. The typical section provides for two 12-foot-wide lanes in each

direction separated by an 84-foot-wide depressed median (except in the bifurcated section). The median includes two seven-foot wide usable inside shoulders, six feet of which are paved. Figure 6 shows the typical section for the I-69 mainline. A minimum 35-foot-wide outside clear zone[19] extends beyond the travel lanes and contains 13-foot-wide usable shoulders, (12 feet of which are paved. In addition to this 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 also is 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.

Typical sections also are defined for other roads that affect freeway interchanges and grade separations. The typical sections for multi-lane, divided rural arterial roadways, for rural arterial/major collector roadways, and for typical local roadways are shown on Figures 6 and 7.

Figure 6: Typical Sections

Figure 7: Typical Sections

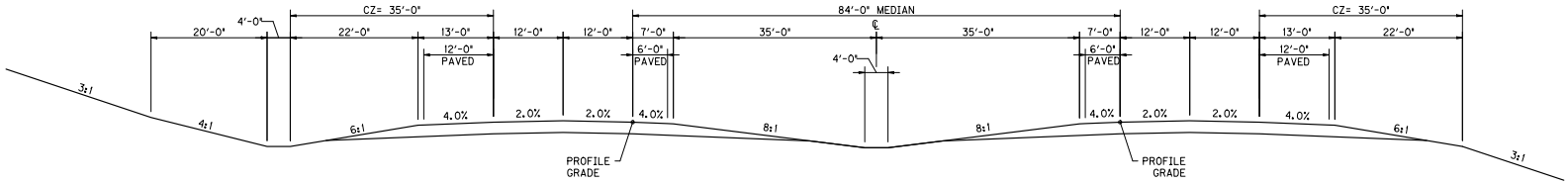
Existing corridor data was collected before identifying potential alignment alternatives. These data included: aerial photography, digital terrain model, approved corridor limits, wetlands, floodplains, historic properties, cemeteries, archaeological data, land use, reclaimed mine land, roads, streams, gas and electric transmission lines, and other utilities.

Selection of mainline alignment alternatives began using the route optimization software Quantm. GIS data representing existing conditions, the approved corridor, and the digital terrain model were sent to Quantm to be able to create Section 2 alternatives. Study team members then defined: the roadway design criteria, based on INDOT-provided criteria; crossing features, including streams, railroads, and roads; and special zones, including the Patoka National Wildlife Refuge. Minimum elevations and/or clearances were input to ensure that the alignments generated would meet the minimum clearance requirements.

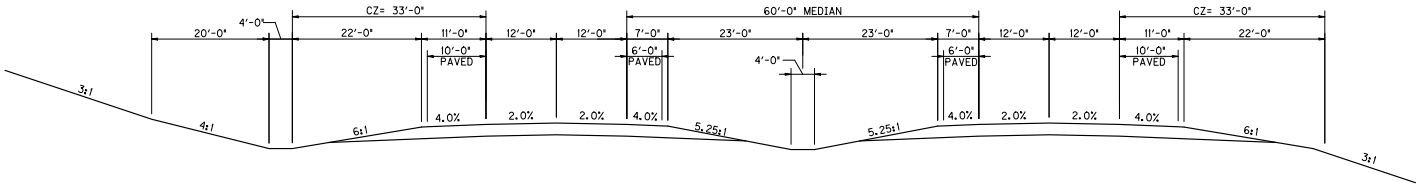
The initial refinements with Quantm were made using the Tier 1 alignment located at the center of the 2,000-foot approved corridor as the starting point (seed alignment). During each run, Quantm looked at millions of alignment variations and returned the 20 most cost-effective alignments for review. The team members reviewed these results, and adjustments were made to provide further restrictions to obtain alignments that met the project requirements. These adjustments included creating special zones for clusters of homes in unincorporated areas so the software would avoid them and increasing a stiffness ratio to create alignments with longer tangent sections and larger curve radii, which are desirable for high-speed interstate highways.

The study team submitted several iterations for Quantm analysis and looked for trends in the alignments produced. If several alignments were grouped close together, that was considered to be an area for further investigation. At the end of this process, no full-corridor-length alignments

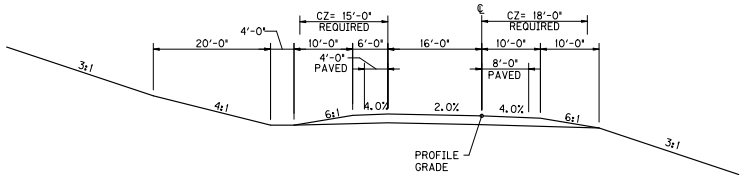
[19] A clear zone is the unobstructed, relatively flat area provided beyond the edge of the traveled way. The clear zone is intended to allow errant vehicles to stop or maneuver without striking any fixed objects. The clear zone includes any shoulders and auxiliary lanes.



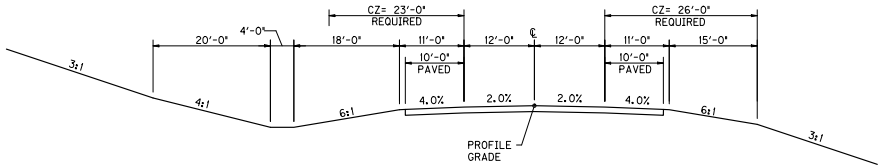

I-69 TYPICAL - DIVIDED 4 LANE SECTION




U.S. 50 TYPICAL - DIVIDED 4 LANE SECTION




INTERCHANGE RAMPS




RURAL ARTERIALS (MAJOR COLLECTORS)
S.R. 61
S.R. 257
S.R. 356

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE

DESIGNED: LA DRAWN: KM

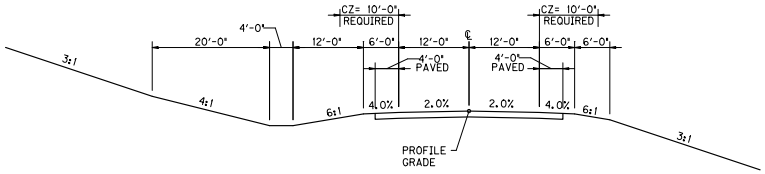
CHECKED: BR CHECKED: LA

INDIANA
DEPARTMENT OF TRANSPORTATION

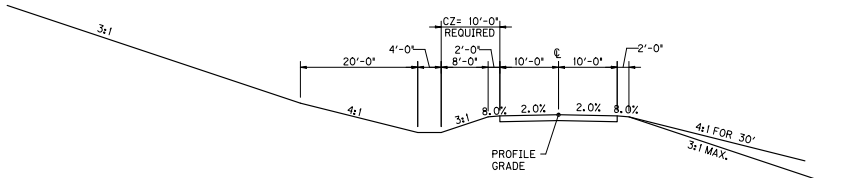
TYPICAL SECTIONS

| HORIZONTAL SCALE | BRIDGE FILE |
|---|---|
| 1" = 10' | |
| VERTICAL SCALE | DESIGNATION |
| NA | -- |
| SURVEY BOOK | SHEETS |
| | 1 of 22 |
| CONTRACT | PROJECT |
| | -- |

S:\3004-169-B,I69,3R001\Design\Cadd\Alignment 1\typSec.dgn
12/1/2005
8:04:24 AM
LDD

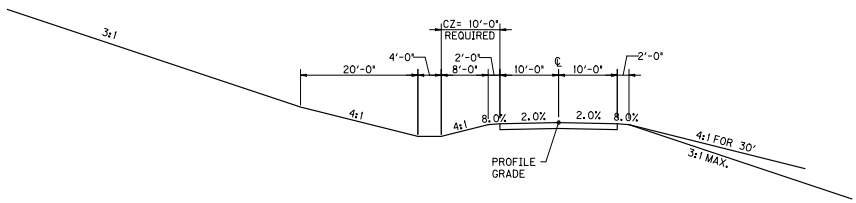



LOCAL AGENCY RURAL COLLECTOR (MINOR COLLECTOR)
PIKE COUNTY RD. 125 S. (OATSVILLE RD.)
PIKE COUNTY RD. 650 N
DAVIESS COUNTY RD. 450 S
TROY / HORRALL ROAD




RURAL LOCAL ROAD, (DESIGN SPEED<40)

| GIBSON CO. | PIKE CO. | DAVIESS CO. |
|---|---|---|
| CR 950 E | CR 200 S | CR 700 S |
| CR 000 | CR 300 W | CR 550 S |
| | CR 300 N | CR 125 S |
| | MERIDIAN | |
| | CR 400 N | |
| | CR 475 N | |
| | CR 350 E | |
| | CR 750 N | |




RURAL LOCAL ROAD, (DESIGN SPEED>40, OR NOT POSTED)

| GIBSON CO. | PIKE CO. | DAVIESS CO. |
|---|---|---|
| CR 125 S | DIVISION | CR 50 W |
| CR 1050 E | CR 50 W | THOMAS BLUFF |
| CR 50 N | | CR 125 E |
| | | CR 150 S |

S:\2004-169-B, I69_INDOT\Design\Cadd\Alignment 1\typSec.dgn
12/1/2005
8:04:31 AM
LDD

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE | INDIANA DEPARTMENT OF TRANSPORTATION | HORIZONTAL SCALE: 1" = 10' / BRIDGE FILE: -- / VERTICAL SCALE: NA / DESIGNATION: -- |
| | | | | | | DESIGNED: LA / DRAWN: KM / CHECKED: BR / CHECKED: LA | TYPICAL SECTIONS | SURVEY BOOK: -- / SHEETS: 2 of 22 / CONTRACT: -- / PROJECT: -- |

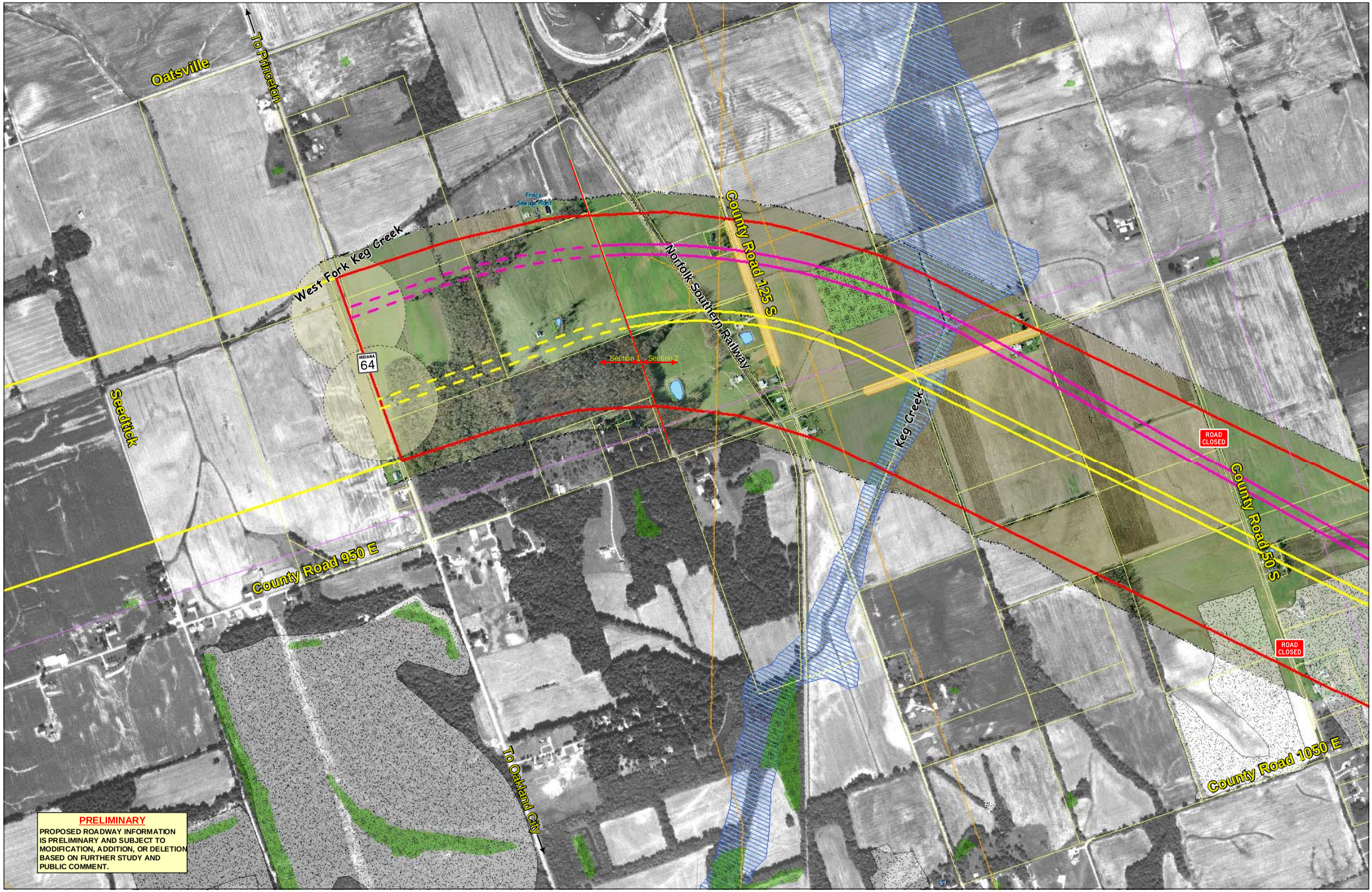
appeared satisfactory in all respects to the project expectations. However, by combining segments where multiple alignments trended together, the study team produced two preliminary alternatives for further investigation.

## Mainline Alternatives

Two initial alternatives were identified for review as Alternative 1 and Alternative 2 after reviewing and adjusting multiple Quantm model runs and after conducting a field check on December 14, 2004. The study team used the results of the Quantm runs in combination with sound engineering judgment. Specific considerations that required refinement of the Quantm runs were the large electric power transmission lines and towers that run through the corridor, cemeteries, avoiding clusters of homes (including the residential community of Alford), large water-filled abandoned surface coal mine pits and other sizable bodies of water, avoiding where possible splitting parcels, and minimizing environmental impacts.

Alternatives 1 and 2 were presented to INDOT for review at a meeting held on January 4, 2005. One significant outcome of the meeting was the suggestion to include a bifurcated roadway section through reclaimed mining areas south of Petersburg. INDOT stressed the importance of farmland impacts in the consideration of alignment decisions.

Preliminary Alternatives 1 and 2 were presented at a Community Advisory Committee (CAC) meeting held on January 19, 2005, and subsequently at a Public Information Meeting (PIM) held on February 2, 2005. Participants commented on proposed road closures, overpass recommendations, locations of interchanges, and connector roads. These Alternatives 1 and 2 side by side as presented at these meetings are shown in Figure 8, sheets 1 through 12.




**Legend**

- Section 2 Approved Corridor
- Section 1 Approved Corridor
- Section 3 Approved Corridor
- Parcels
- Lakes/Ponds
- Floodplain
- Patoka Rv. NWR
- Wetlands (adjusted)
- Wetlands (NWI)
- Coal Mines (surface)
- Coal Mines (underground)
- Cemetery Boundaries
- Cross Road to Remain Open
- Potential Interchange Location
- Pipelines
- Powerlines
- Rivers
- Canals
- Schools
- Churches
- Historic Structure
- Alternative 1 in Section 2
- Alternative 1 in Section 1
- Alternative 1 in Section 3
- Alternative 2 in Section 2
- Alternative 2 in Section 1
- Alternative 2 in Section 3

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

Indiana Department of Transportation

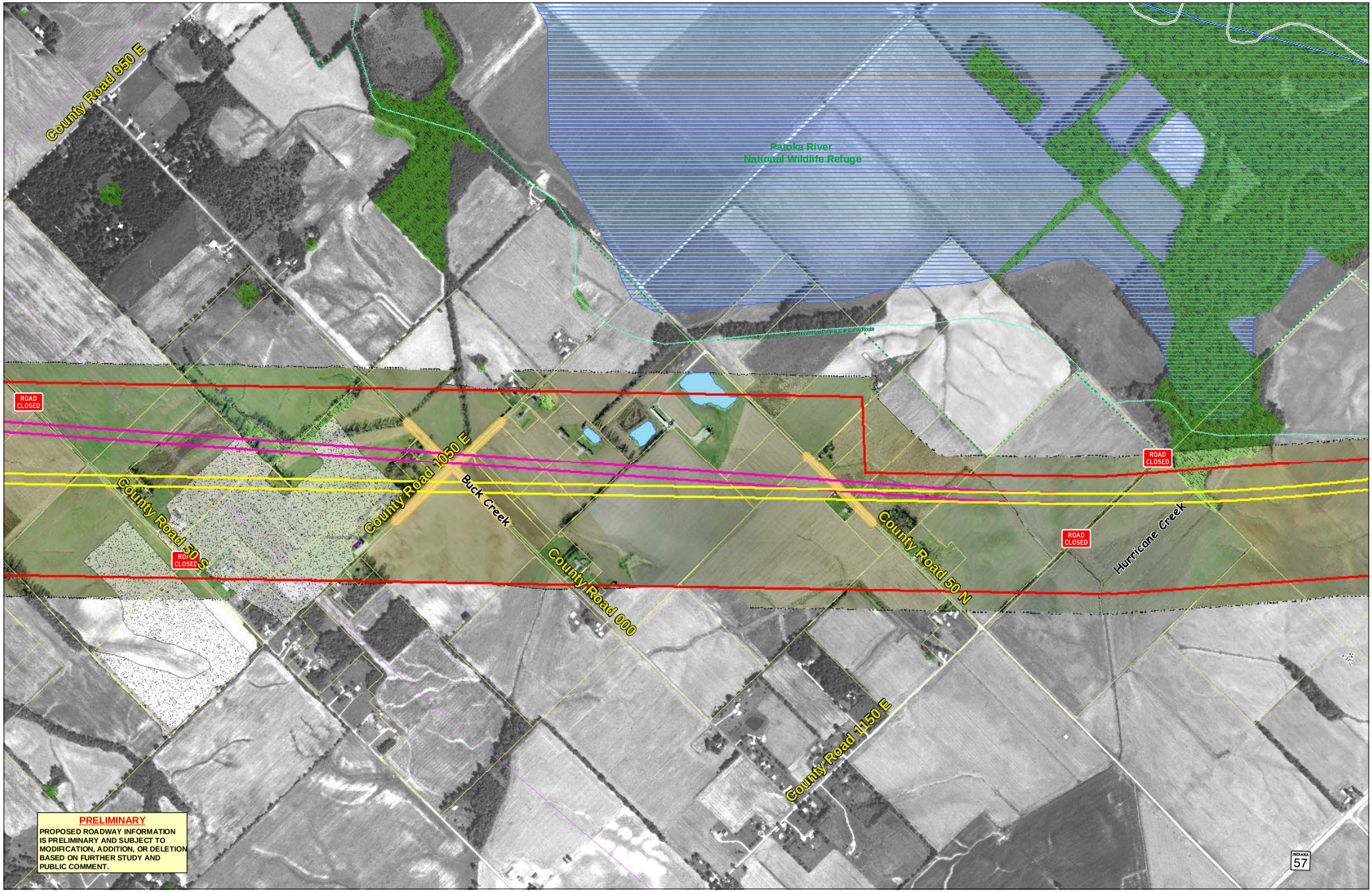
Public Meeting - February 2, 2005

Proposed Alternatives

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 8**
**Sheet 1 of 12**




**Legend**

- Section 2 Approved Corridor
- Section 1 Approved Corridor
- Section 3 Approved Corridor
- Parcels
- Lakes/Ponds
- Floodplain
- Patoka Rv. NWR
- Wetlands (adjusted)
- Wetlands (NWI)
- Coal Mines (surface)
- Coal Mines (underground)
- Cemetery Boundaries
- Cross Road to Remain Open
- Potential Interchange Location
- Pipelines
- Powerlines
- Rivers
- Canals
- Schools
- Churches
- Historic Structure
- Alternative 1 in Section 2
- Alternative 1 in Section 1
- Alternative 1 in Section 3
- Alternative 2 in Section 2
- Alternative 2 in Section 1
- Alternative 2 in Section 3

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

Indiana Department of Transportation

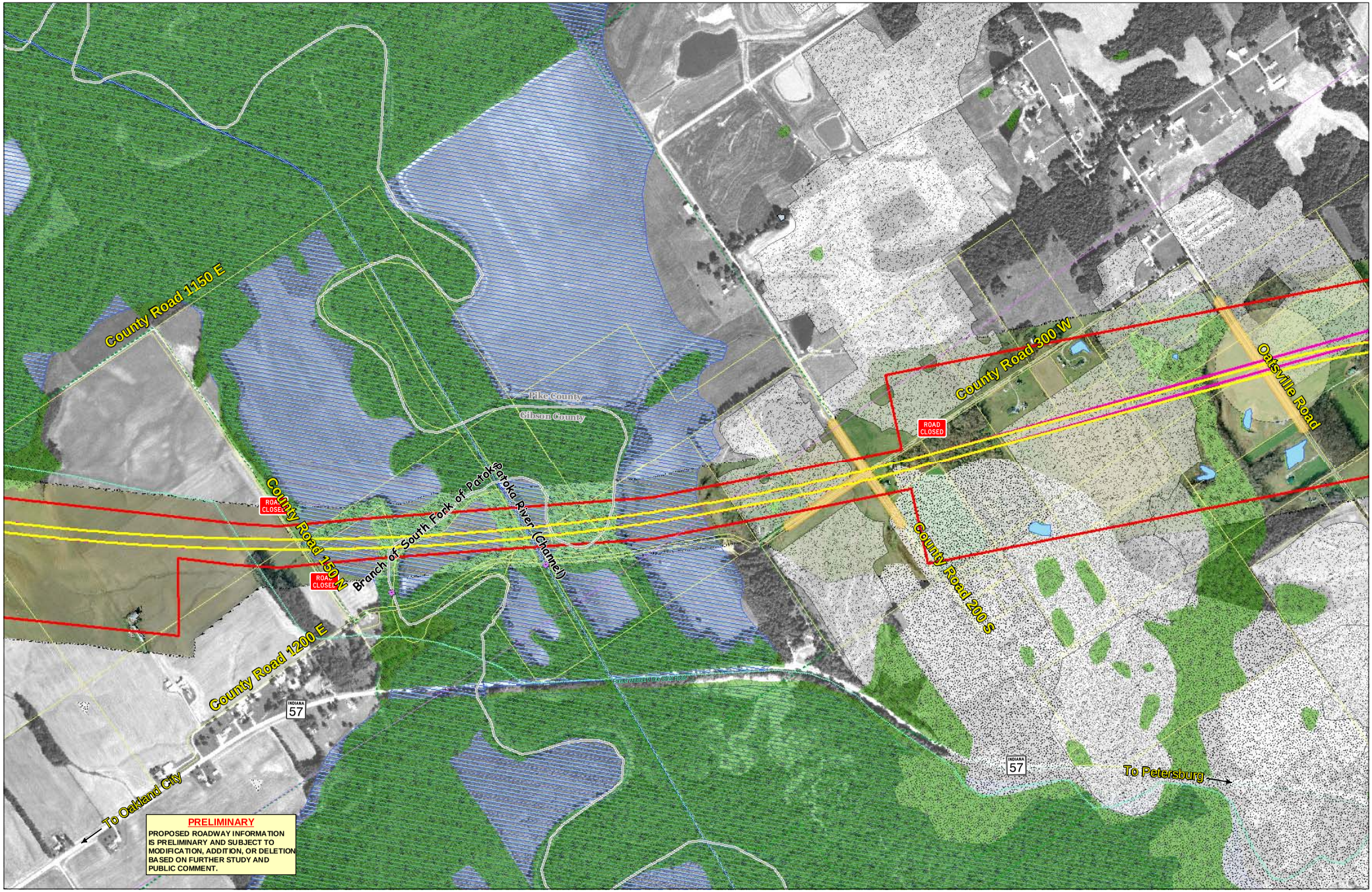
Public Meeting - February 2, 2005

Proposed Alternatives

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 8**
**Sheet 2 of 12**




**Legend**

- Section 2 Approved Corridor
- Section 1 Approved Corridor
- Section 3 Approved Corridor
- Parcels
- Lakes/Ponds
- Floodplain
- Patoka Rv. NWR
- Wetlands (adjusted)
- Wetlands (NWI)
- Coal Mines (surface)
- Coal Mines (underground)
- Cemetery Boundaries
- Cross Road to Remain Open
- Potential Interchange Location
- Pipelines
- Powerlines
- Rivers
- Canals
- Schools
- Churches
- Historic Structure
- Alternative 1 in Section 2
- Alternative 1 in Section 1
- Alternative 1 in Section 3
- Alternative 2 in Section 2
- Alternative 2 in Section 1
- Alternative 2 in Section 3

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

Indiana Department of Transportation

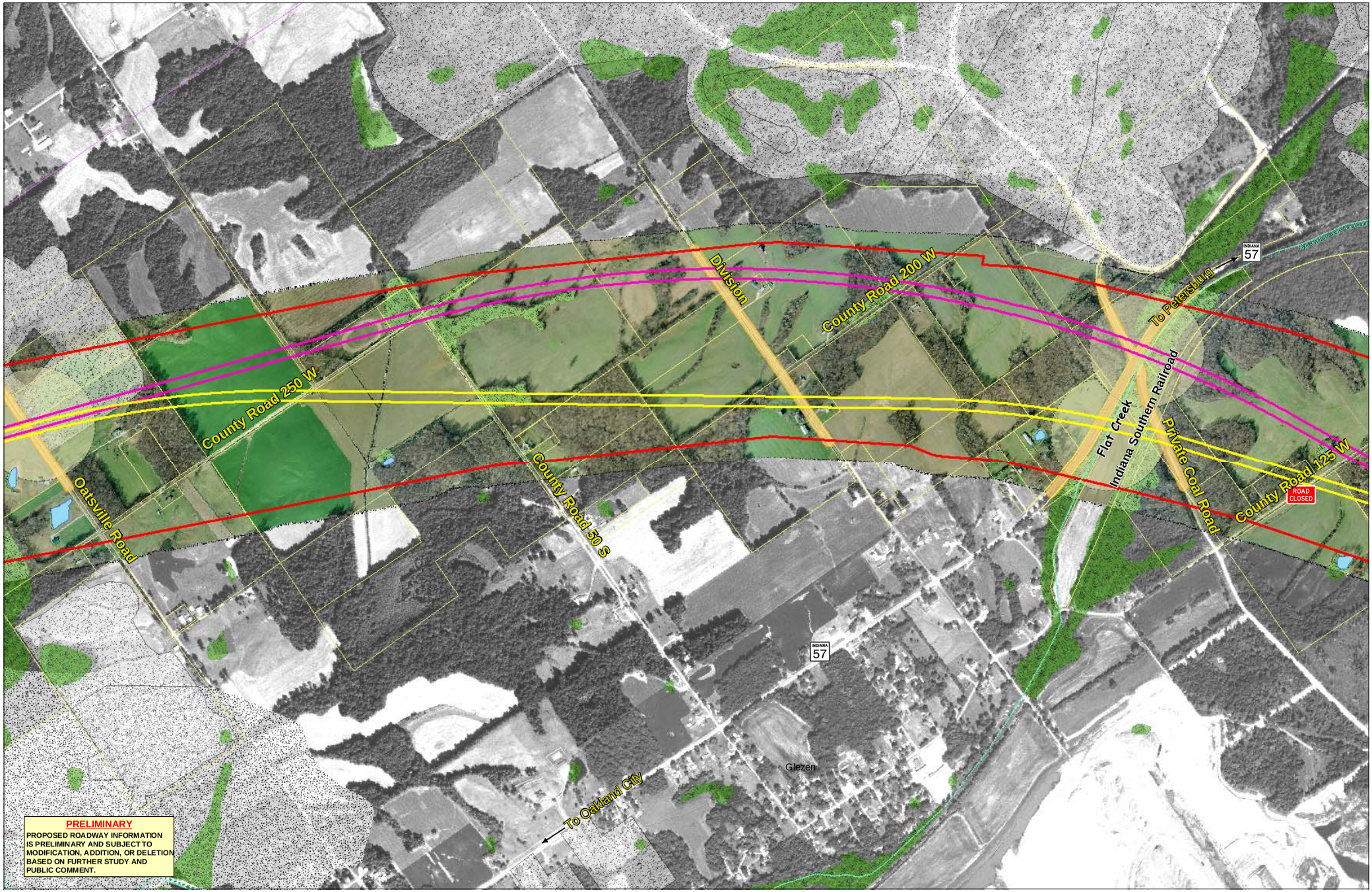
Public Meeting - February 2, 2005

Proposed Alternatives

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 8**
**Sheet 3 of 12**




**Legend**

- Section 2 Approved Corridor
- Section 1 Approved Corridor
- Section 3 Approved Corridor
- Parcels
- Lakes/Ponds
- Floodplain
- Patoka Rv. NWR
- Wetlands (adjusted)
- Wetlands (NWI)
- Coal Mines (surface)
- Coal Mines (underground)
- Cemetery Boundaries
- Cross Road to Remain Open
- Potential Interchange Location
- Pipelines
- Powerlines
- Rivers
- Canals
- Schools
- Churches
- Historic Structure
- Alternative 1 in Section 2
- Alternative 1 in Section 1
- Alternative 1 in Section 3
- Alternative 2 in Section 2
- Alternative 2 in Section 1
- Alternative 2 in Section 3

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

Indiana Department of Transportation

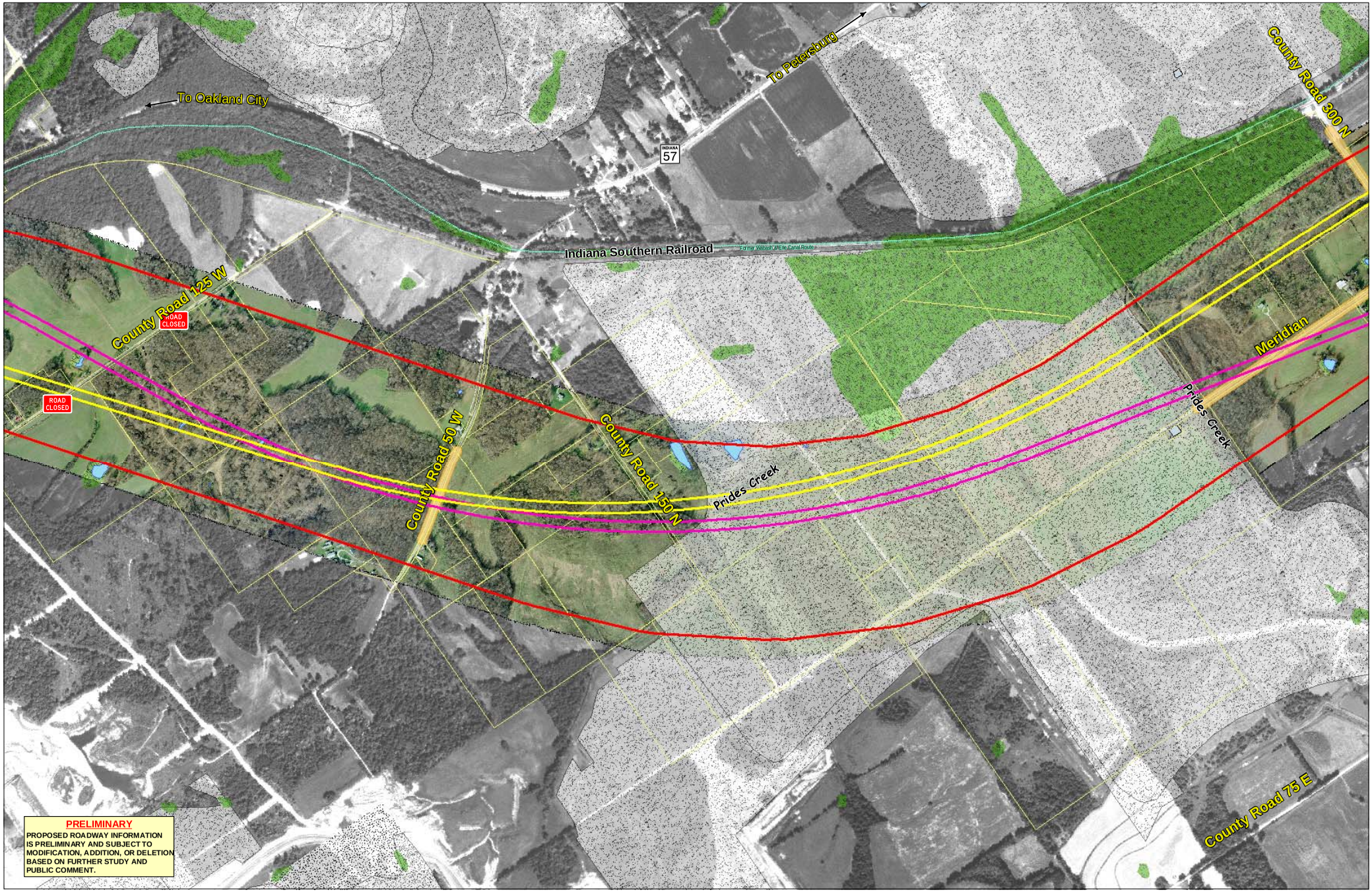
Public Meeting - February 2, 2005

Proposed Alternatives

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 8**
**Sheet 4 of 12**




**Legend**

- Section 2 Approved Corridor
- Section 1 Approved Corridor
- Section 3 Approved Corridor
- Parcels
- Lakes/Ponds
- Floodplain
- Patoka Rv. NWR
- Wetlands (adjusted)
- Wetlands (NWI)
- Coal Mines (surface)
- Coal Mines (underground)
- Cemetery Boundaries
- Cross Road to Remain Open
- Potential Interchange Location
- Pipelines
- Powerlines
- Rivers
- Canals
- Schools
- Churches
- Historic Structure
- Alternative 1 in Section 2
- Alternative 1 in Section 1
- Alternative 1 in Section 3
- Alternative 2 in Section 2
- Alternative 2 in Section 1
- Alternative 2 in Section 3

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

Indiana Department of Transportation

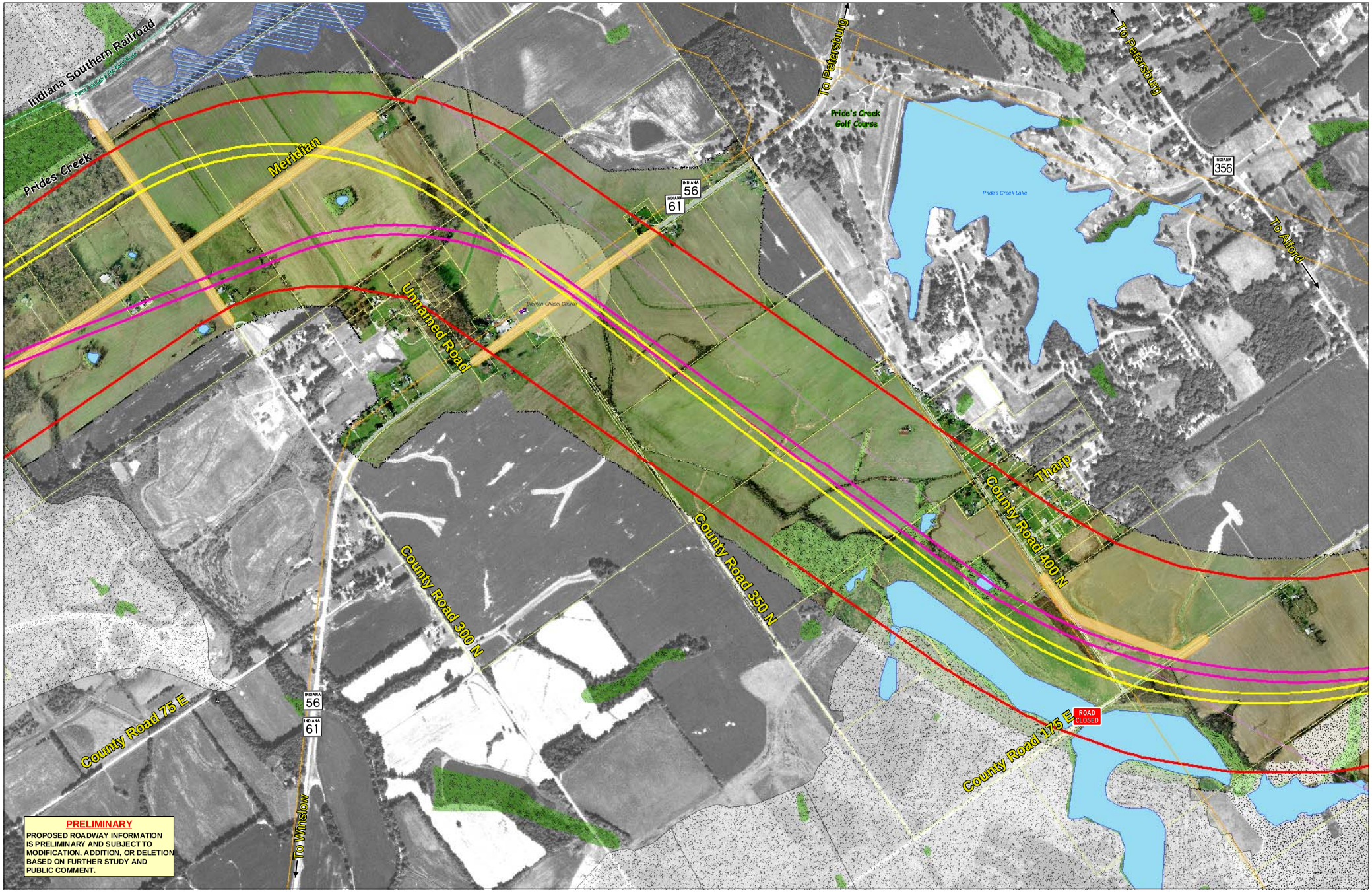
Public Meeting - February 2, 2005

Proposed Alternatives

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 8**
**Sheet 5 of 12**




**Legend**

- Section 2 Approved Corridor
- Section 1 Approved Corridor
- Section 3 Approved Corridor
- Parcels
- Lakes/Ponds
- Floodplain
- Patoka Rv. NWR
- Wetlands (adjusted)
- Wetlands (NWI)
- Coal Mines (surface)
- Coal Mines (underground)
- Cemetery Boundaries
- Cross Road to Remain Open
- Potential Interchange Location
- Pipelines
- Powerlines
- Rivers
- Canals
- Schools
- Churches
- Historic Structure
- Alternative 1 in Section 2
- Alternative 1 in Section 1
- Alternative 1 in Section 3
- Alternative 2 in Section 2
- Alternative 2 in Section 1
- Alternative 2 in Section 3

N

Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

Indiana Department of Transportation

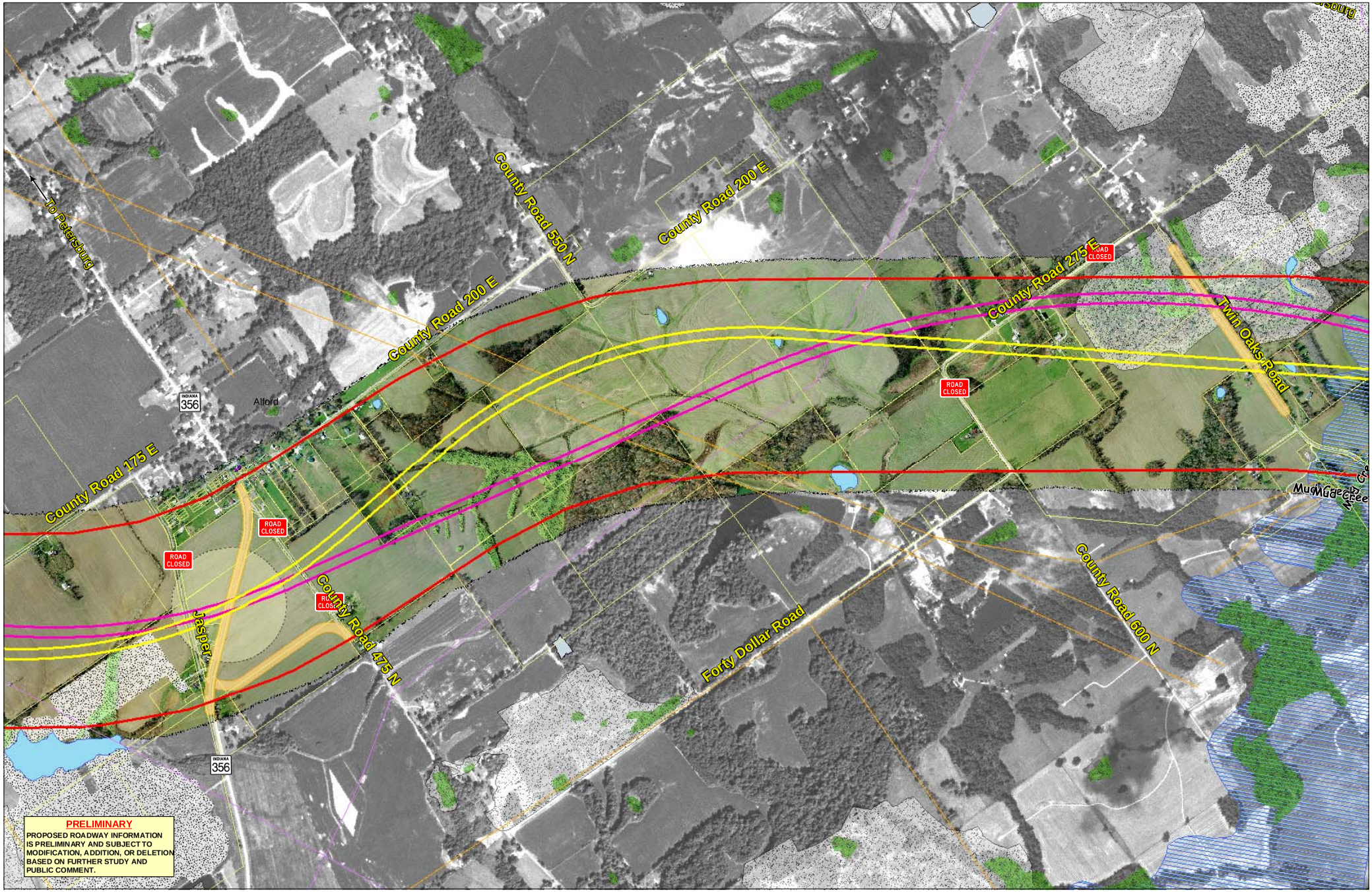
Public Meeting - February 2, 2005

Proposed Alternatives

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 8**
**Sheet 6 of 12**




**Legend**

- Section 2 Approved Corridor
- Section 1 Approved Corridor
- Section 3 Approved Corridor
- Parcels
- Lakes/Ponds
- Floodplain
- Patoka Rv. NWR
- Wetlands (adjusted)
- Wetlands (NWI)
- Coal Mines (surface)
- Coal Mines (underground)
- Cemetery Boundaries
- Cross Road to Remain Open
- Potential Interchange Location
- Pipelines
- Powerlines
- Rivers
- Canals
- Schools
- Churches
- Historic Structure
- Alternative 1 in Section 2
- Alternative 1 in Section 1
- Alternative 1 in Section 3
- Alternative 2 in Section 2
- Alternative 2 in Section 1
- Alternative 2 in Section 3

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

Indiana Department of Transportation

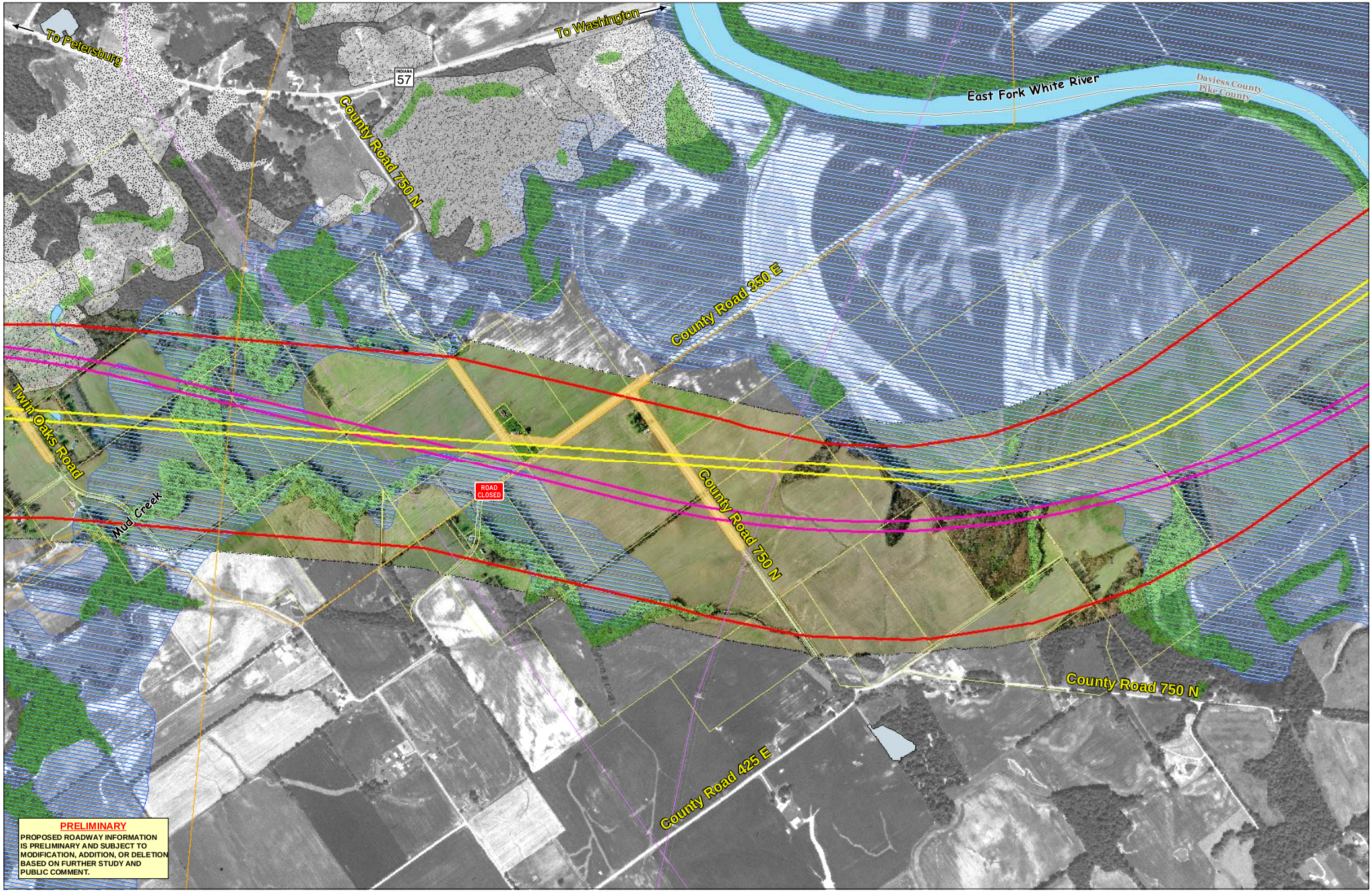
Public Meeting - February 2, 2005

Proposed Alternatives

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 8**
**Sheet 7 of 12**




**Legend**

- Section 2 Approved Corridor
- Section 1 Approved Corridor
- Section 3 Approved Corridor
- Parcels
- Lakes/Ponds
- Floodplain
- Patoka Rv. NWR
- Wetlands (adjusted)
- Wetlands (NWI)
- Coal Mines (surface)
- Coal Mines (underground)
- Cemetery Boundaries
- Cross Road to Remain Open
- Potential Interchange Location
- Pipelines
- Powerlines
- Rivers
- Canals
- Schools
- Churches
- Historic Structure
- Alternative 1 in Section 2
- Alternative 1 in Section 1
- Alternative 1 in Section 3
- Alternative 2 in Section 2
- Alternative 2 in Section 1
- Alternative 2 in Section 3

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

Indiana Department of Transportation

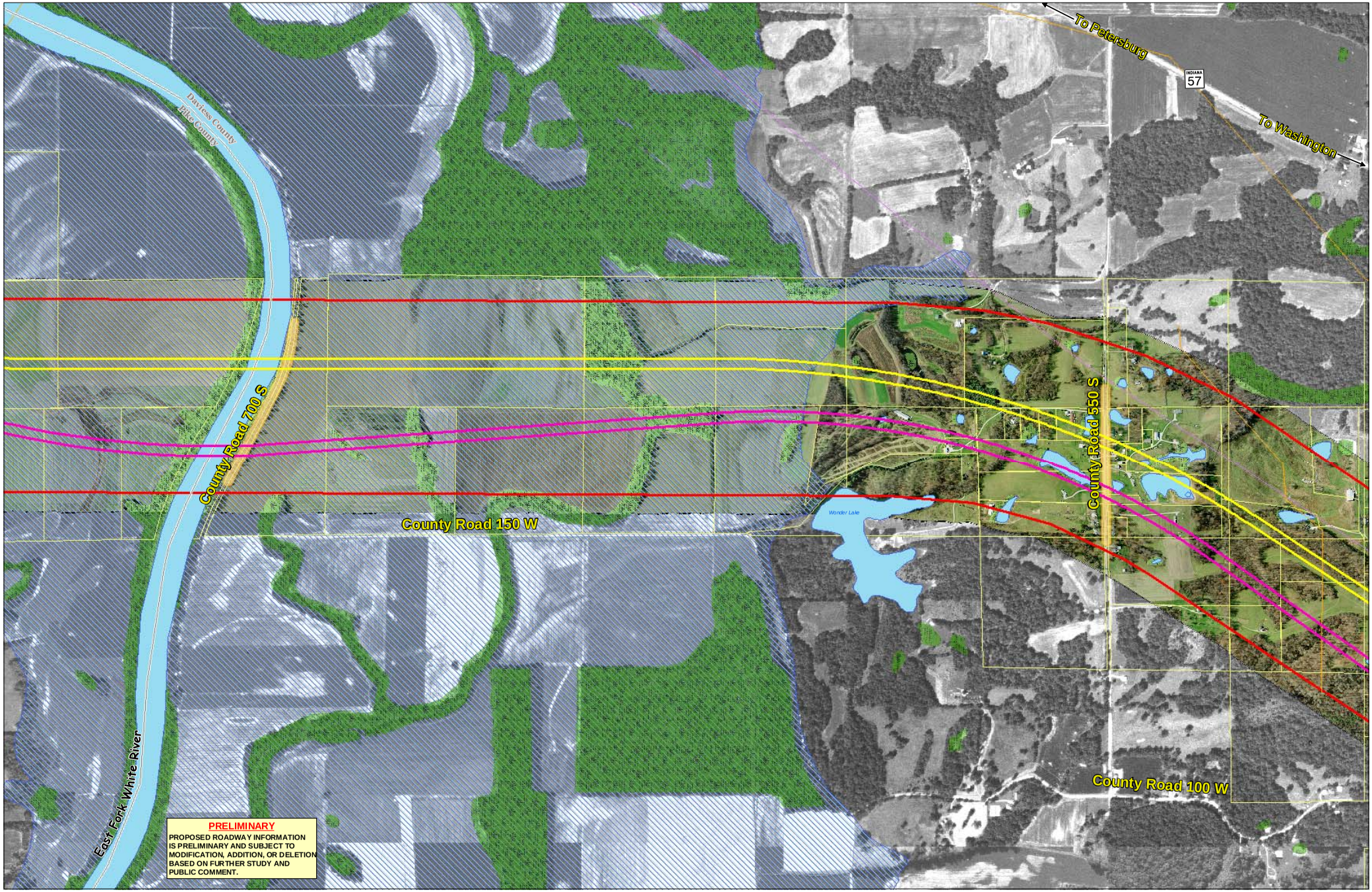
Public Meeting - February 2, 2005

Proposed Alternatives

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 8**
**Sheet 8 of 12**




**Legend**

- Section 2 Approved Corridor
- Section 1 Approved Corridor
- Section 3 Approved Corridor
- Parcels
- Lakes/Ponds
- Floodplain
- Patoka Rv. NWR
- Wetlands (adjusted)
- Wetlands (NWI)
- Coal Mines (surface)
- Coal Mines (underground)
- Cemetery Boundaries
- Cross Road to Remain Open
- Potential Interchange Location
- Pipelines
- Powerlines
- Rivers
- Canals
- Schools
- Churches
- Historic Structure
- Alternative 1 in Section 2
- Alternative 1 in Section 1
- Alternative 1 in Section 3
- Alternative 2 in Section 2
- Alternative 2 in Section 1
- Alternative 2 in Section 3

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

Indiana Department of Transportation

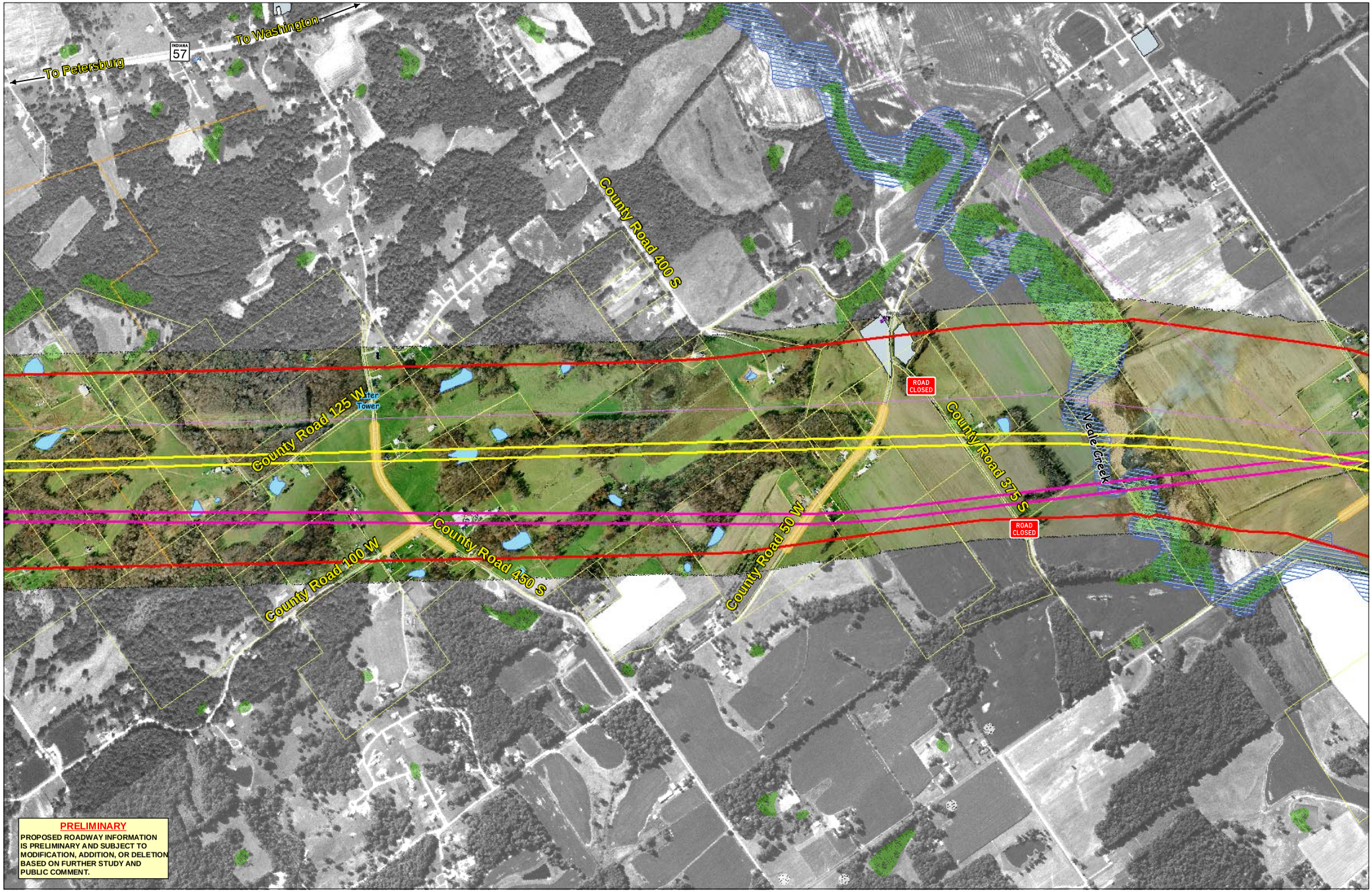
Public Meeting - February 2, 2005

Proposed Alternatives

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 8**
**Sheet 9 of 12**




**Legend**

- Section 2 Approved Corridor
- Section 1 Approved Corridor
- Section 3 Approved Corridor
- Parcels
- Lakes/Ponds
- Floodplain
- Patoka Rv. NWR
- Wetlands (adjusted)
- Wetlands (NWI)
- Coal Mines (surface)
- Coal Mines (underground)
- Cemetery Boundaries
- Cross Road to Remain Open
- Potential Interchange Location
- Pipelines
- Powerlines
- Rivers
- Canals
- Schools
- Churches
- Historic Structure
- Alternative 1 in Section 2
- Alternative 1 in Section 1
- Alternative 1 in Section 3
- Alternative 2 in Section 2
- Alternative 2 in Section 1
- Alternative 2 in Section 3

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

Indiana Department of Transportation

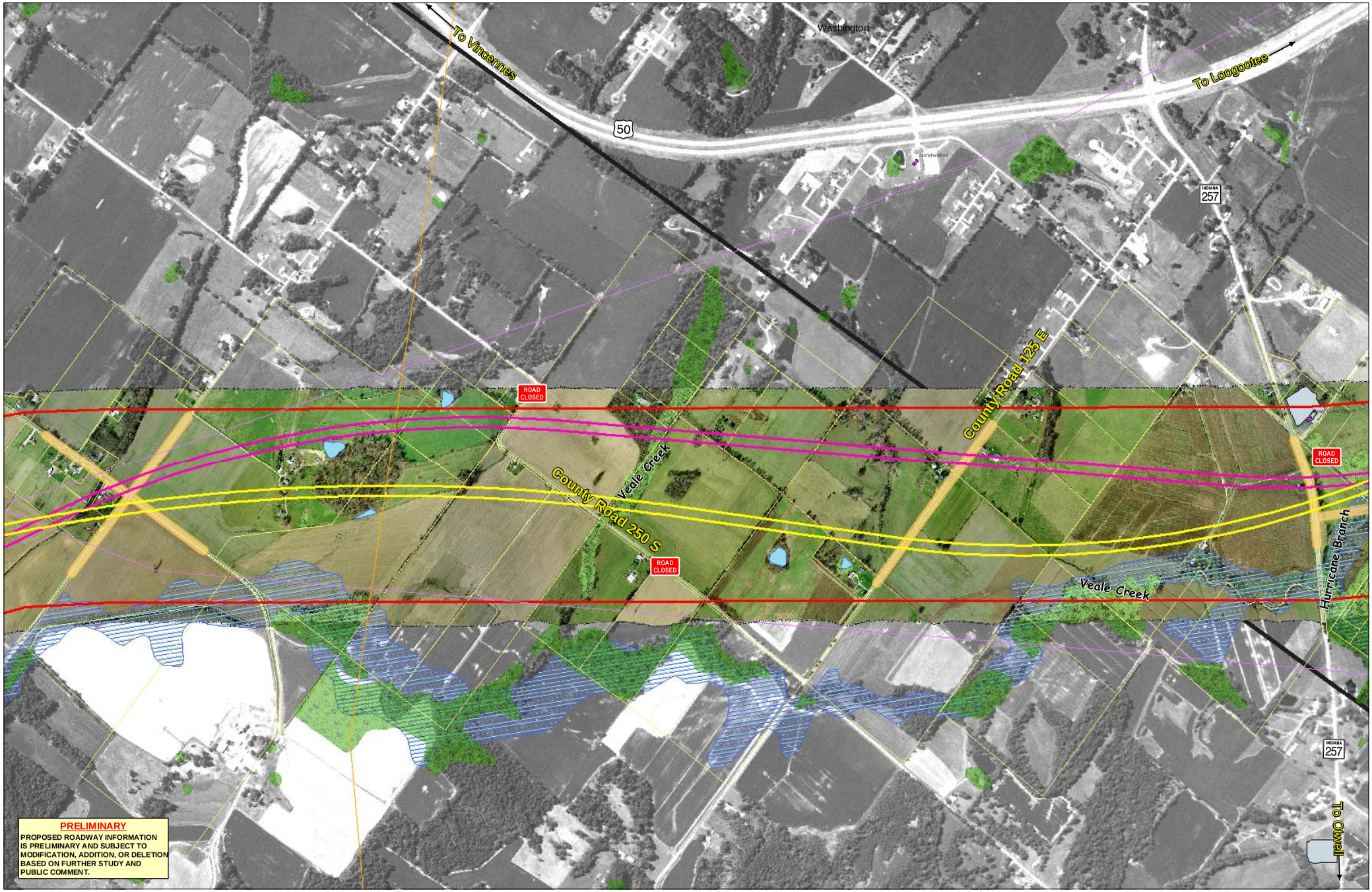
Public Meeting - February 2, 2005

Proposed Alternatives

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 8**
**Sheet 10 of 12**




**Legend**

- Section 2 Approved Corridor
- Section 1 Approved Corridor
- Section 3 Approved Corridor
- Parcels
- Lakes/Ponds
- Floodplain
- Patoka Rv. NWR
- Wetlands (adjusted)
- Wetlands (NWI)
- Coal Mines (surface)
- Coal Mines (underground)
- Cemetery Boundaries
- Cross Road to Remain Open
- Potential Interchange Location
- Pipelines
- Powerlines
- Rivers
- Canals
- Schools
- Churches
- Historic Structure
- Alternative 1 in Section 2
- Alternative 1 in Section 1
- Alternative 1 in Section 3
- Alternative 2 in Section 2
- Alternative 2 in Section 1
- Alternative 2 in Section 3

Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation
Public Meeting - February 2, 2005
Proposed Alternatives

HANNUM, WAGLE & CLINE engineering
JE JACOBS

**FIGURE 8**
**Sheet 11 of 12**


**Legend**

- Section 2 Approved Corridor
- Section 1 Approved Corridor
- Section 3 Approved Corridor
- Parcels
- Lakes/Ponds
- Floodplain
- Patoka Rv. NWR
- Wetlands (adjusted)
- Wetlands (NWI)
- Coal Mines (surface)
- Coal Mines (underground)
- Cemetery Boundaries
- Cross Road to Remain Open
- Potential Interchange Location
- Pipelines
- Powerlines
- Rivers
- Canals
- Schools
- Churches
- Historic Structure
- Alternative 1 in Section 2
- Alternative 1 in Section 1
- Alternative 1 in Section 3
- Alternative 2 in Section 2
- Alternative 2 in Section 1
- Alternative 2 in Section 3

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

Indiana Department of Transportation

Public Meeting - February 2, 2005

Proposed Alternatives

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 8**
**Sheet 12 of 12**

Design refinement efforts following the January and February meetings focused on minimizing environmental impacts. Earthwork was the main determinant of the overall costs of the alternatives. Inputs were made to the Quantm software to avoid or minimize wetland impacts. Both Alternatives 1 and 2 were then further adjusted following the Quantm runs to either miss wetlands entirely or to minimize impacts by crossing at the narrowest point. **The resulting two new alternatives were ultimately redesignated Alternatives A and B, respectively.**

Representatives from the study team met with local utility companies on March 3, 2005, to advise them of possible impacts on their systems, allowing each to plan future upgrades around the construction of the new highway and to identify possible major conflicts. One major issue identified as a result of this meeting was the need to keep a 765kV electric transmission line owned by Indiana Michigan Power Co. in service. This transmission line runs from the power company's Rockport facilities and supplies electricity to multiple states. The company requires a minimum of 69 feet of vertical clearance between the profile grade of pavement and this power line. Because this is only one of two outlets for the power from the Rockport generating facility, the company prefers that this line remain in service and be avoided if at all possible.

As the refinement process continued, Alternative 1 (Alternative A) was shifted to the western edge and partially outside the corridor just north of SR 64 to avoid a high quality wetland, as well as to minimize the angle of the alignment crossing the Norfolk Southern Railroad. Minor adjustments also were made at various other locations to avoid wetlands.

Alternatives A and B were presented to INDOT and FHWA at an Alternatives Screening Meeting on June 22, 2005. Both alternatives were modified as a result of this meeting. In general, modifications to the southern part of the corridor included: adding a bifurcated section to Alternative B (in the same area as the bifurcated segment in Alternative A); and realigning SR 61 to better accommodate an interchange and connection with existing SR 61. Modifications to the northern part of the corridor included: straightening some of the curves on Alternative A; realigning Alternative B to avoid a large business operation; and relocating the northern terminus of Alternative A eastward to cross the CSX Railroad tracks at a lower elevation to reduce earthwork costs. The Alternative A horizontal curves also were modified to improve geometrics.

Alternative B was modified in the area north of SR 61 in Pike County to avoid drilled mine shafts from an abandoned surface mining operation located on the east side of the transmission lines. This alternative would be selected only if the geotechnical investigation of the existing subsurface horizontal drilled mine shafts indicates that the area is not suitable to support construction of I-69. This alternative will impact residential properties, which otherwise would not be impacted by Alternative A.

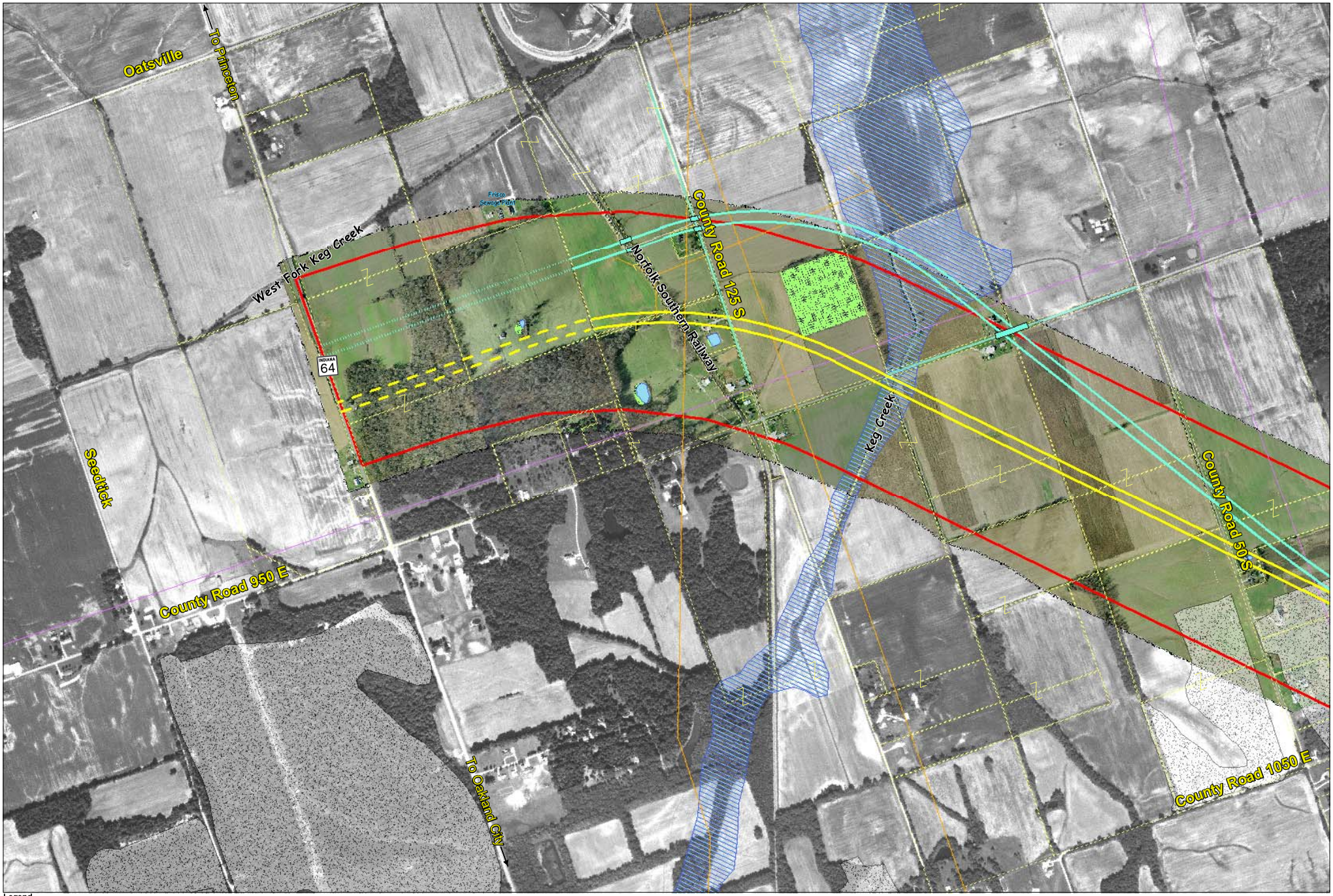
Both Alternatives A and B were reviewed at a Corridor Alignment Review meeting held on July 21, 2005 with the PMC. Several refinements were made as a result of this meeting. Those included a commitment to re-evaluate the Patoka River crossing to determine if treatment of stormwater runoff from the bridge was a viable option and additional modifications to the realignment of SR 61 to minimize impacts to individual properties.

Figure 9, sheets 1 through 13, shows the original Alternative 1 side by side the refined Alternative A. Figure 10, sheets 1 through 13, shows the original Alternative 2 side by side the refined Alternative B. Table 3 compares the significant differences between Alternative 1 and Alternative A. Table 4 compares the significant differences between Alternative 2 and

Alternative B. Alternatives A and B have lesser impacts than Alternatives 1 and 2, which they replaced.

Figure 9:  Alternatives 1 and A, side-by-side

Figure 10:  Alternatives 2 and B, side-by-side




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**
PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

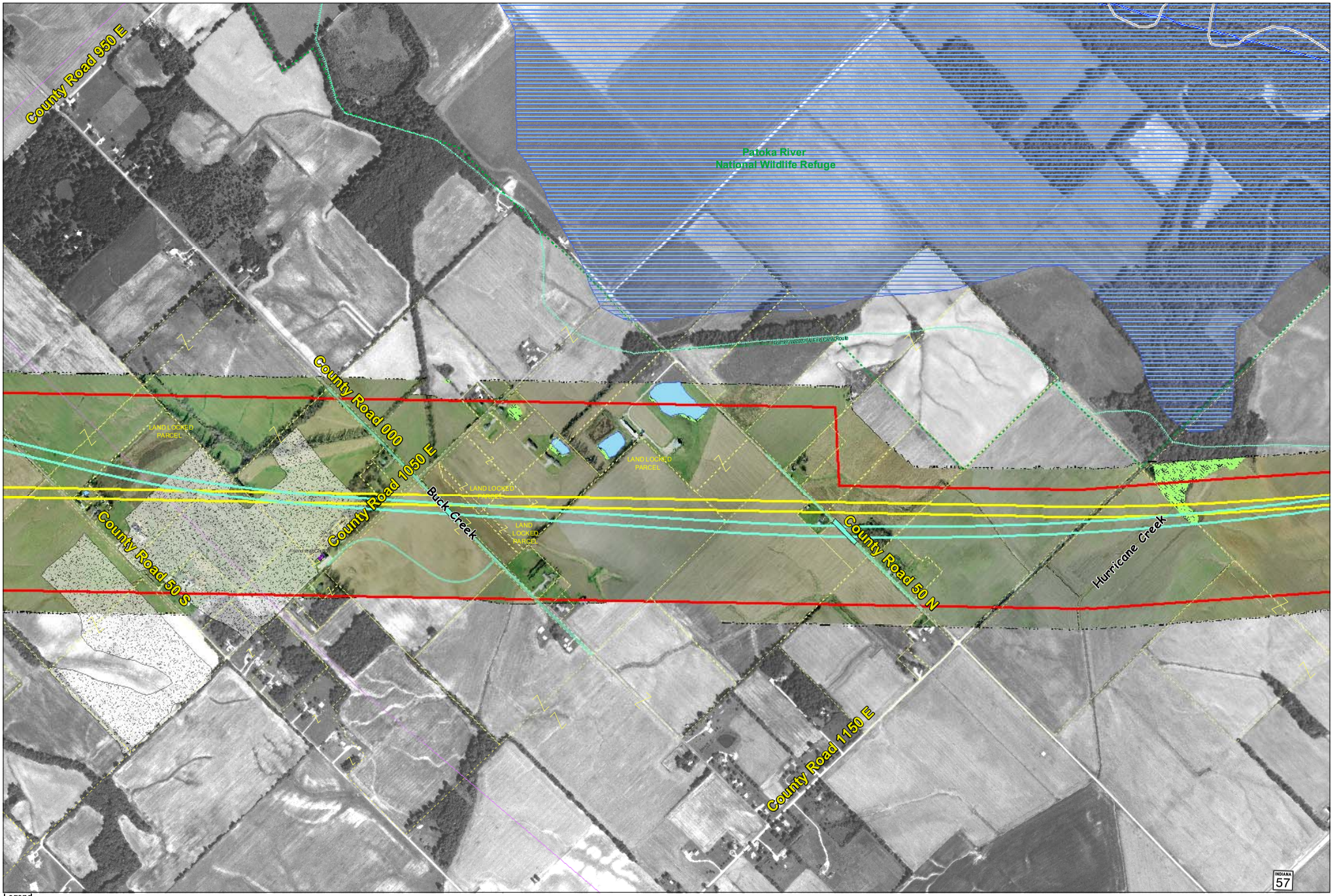
Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering
JACOBS

**FIGURE 9**
**Sheet 1 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

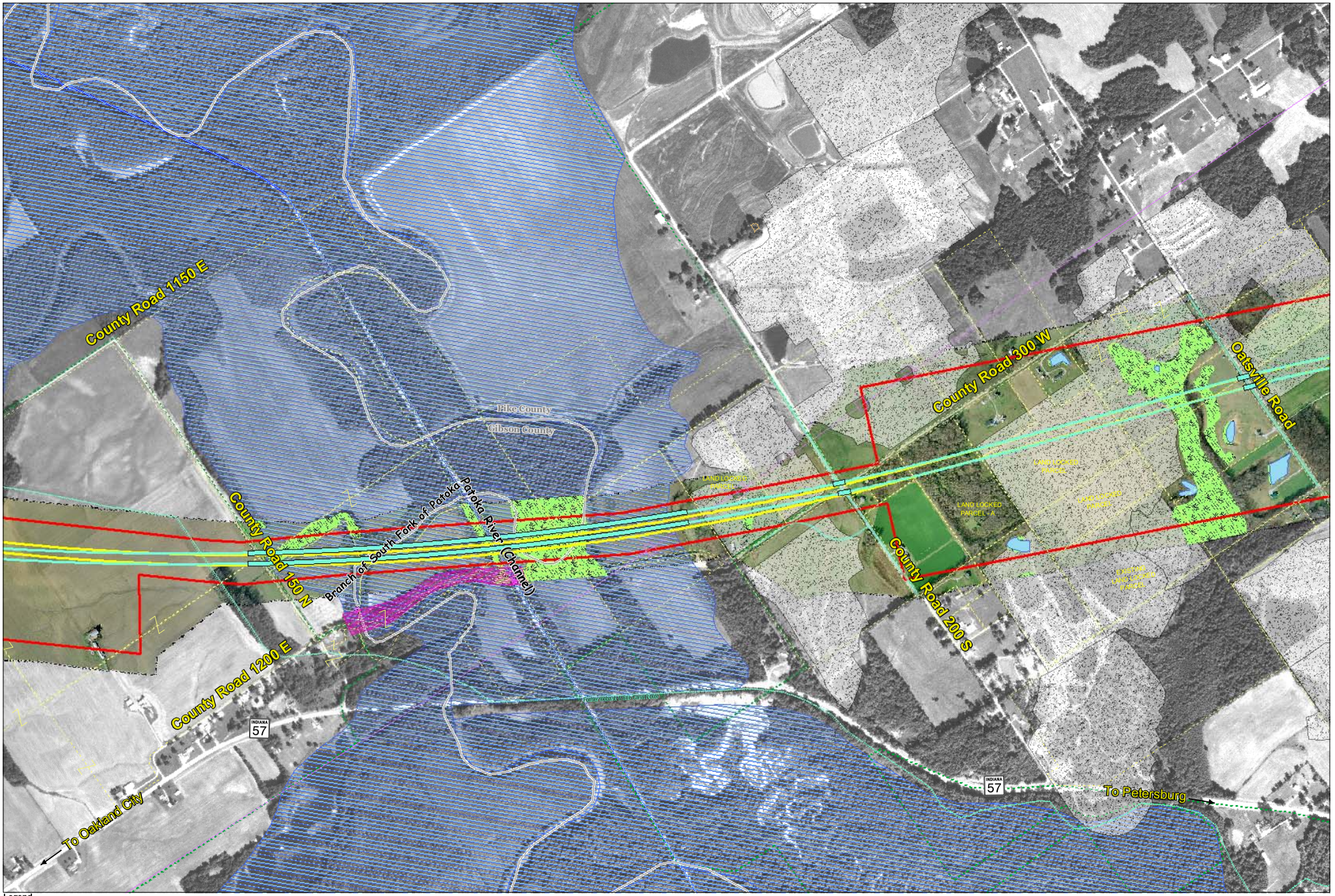
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 9**
**Sheet 2 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**
PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

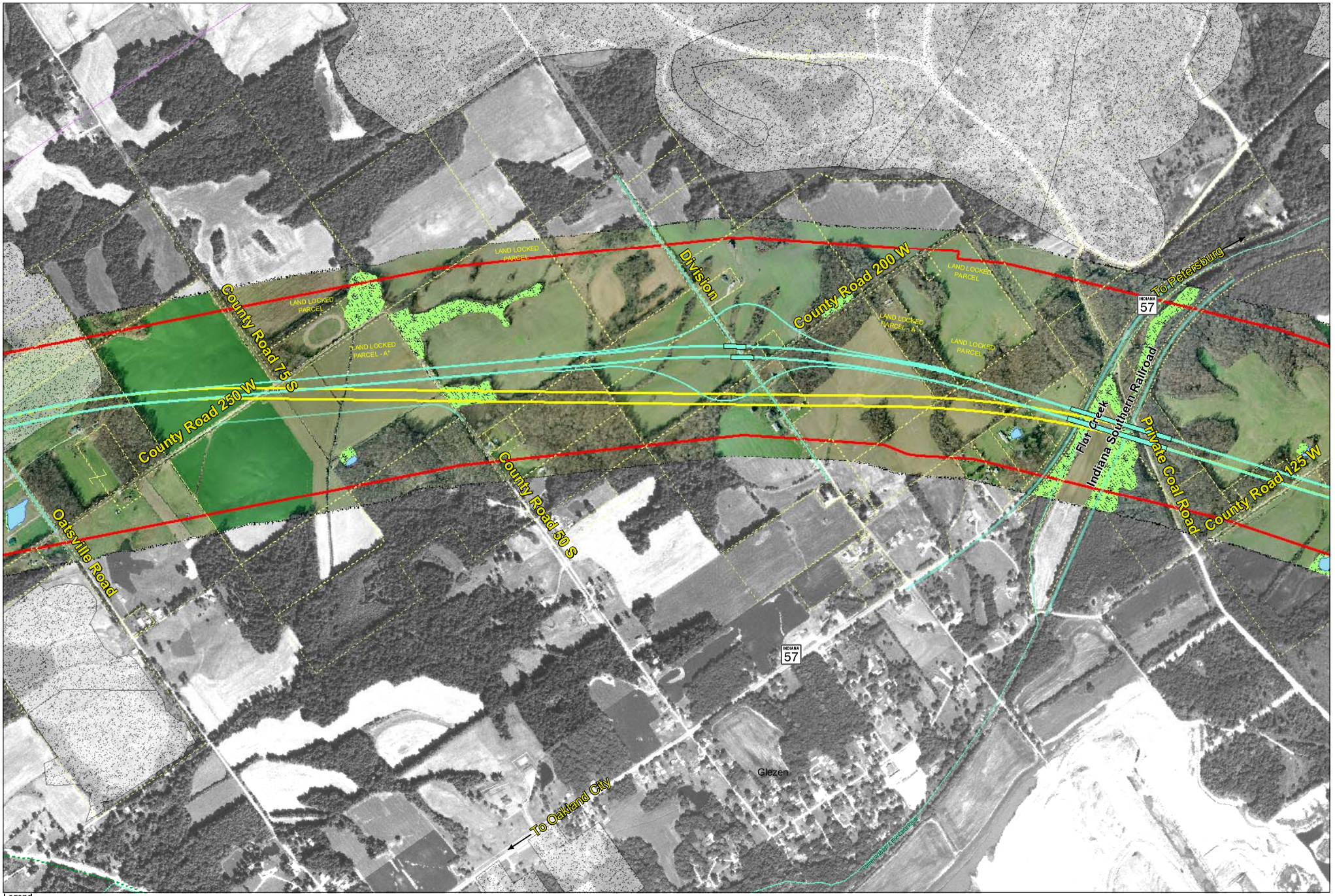
Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering
JE JACOBS

**FIGURE 9**
**Sheet 3 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**
PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

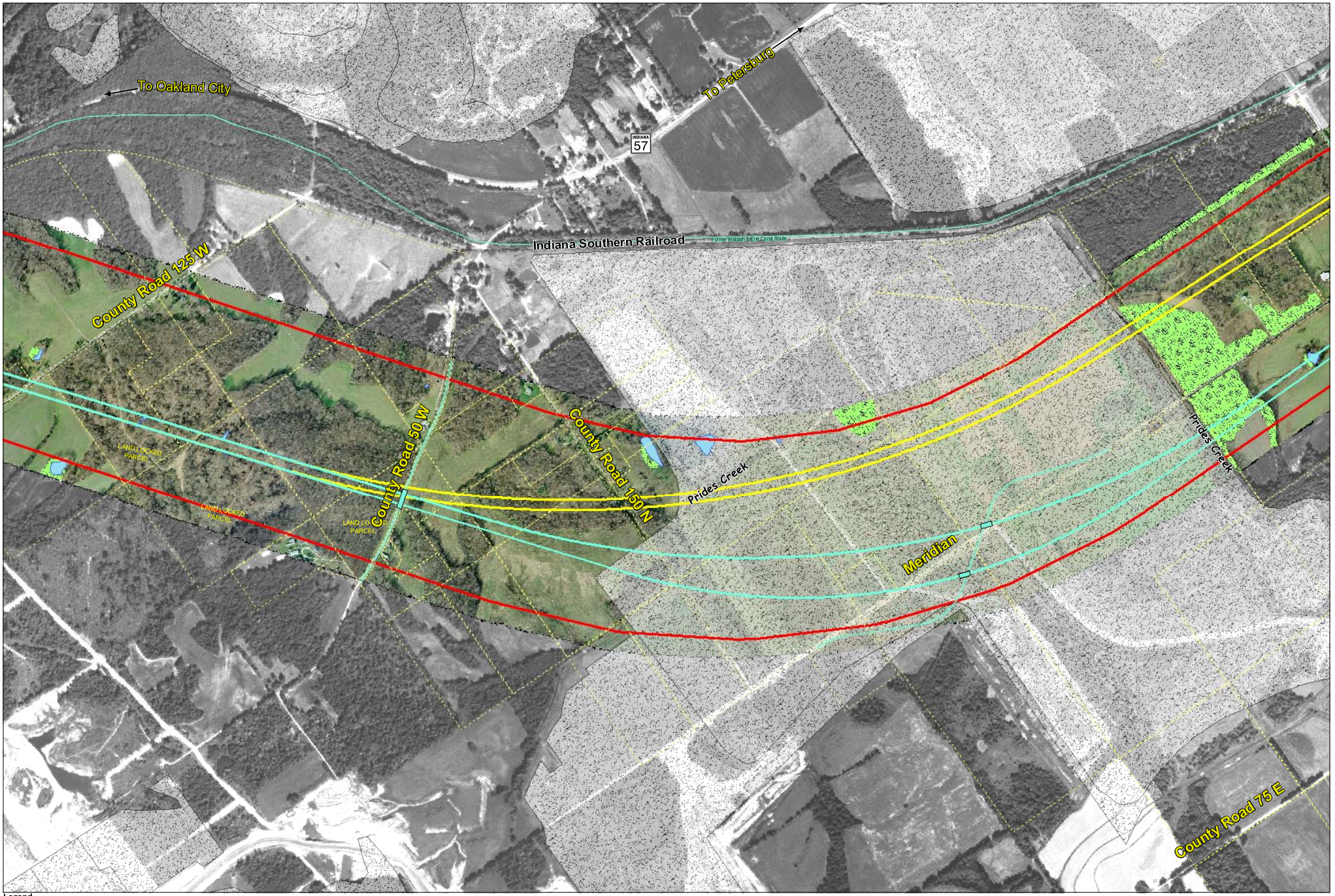
Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering
JACOBS

**FIGURE 9**
**Sheet 4 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

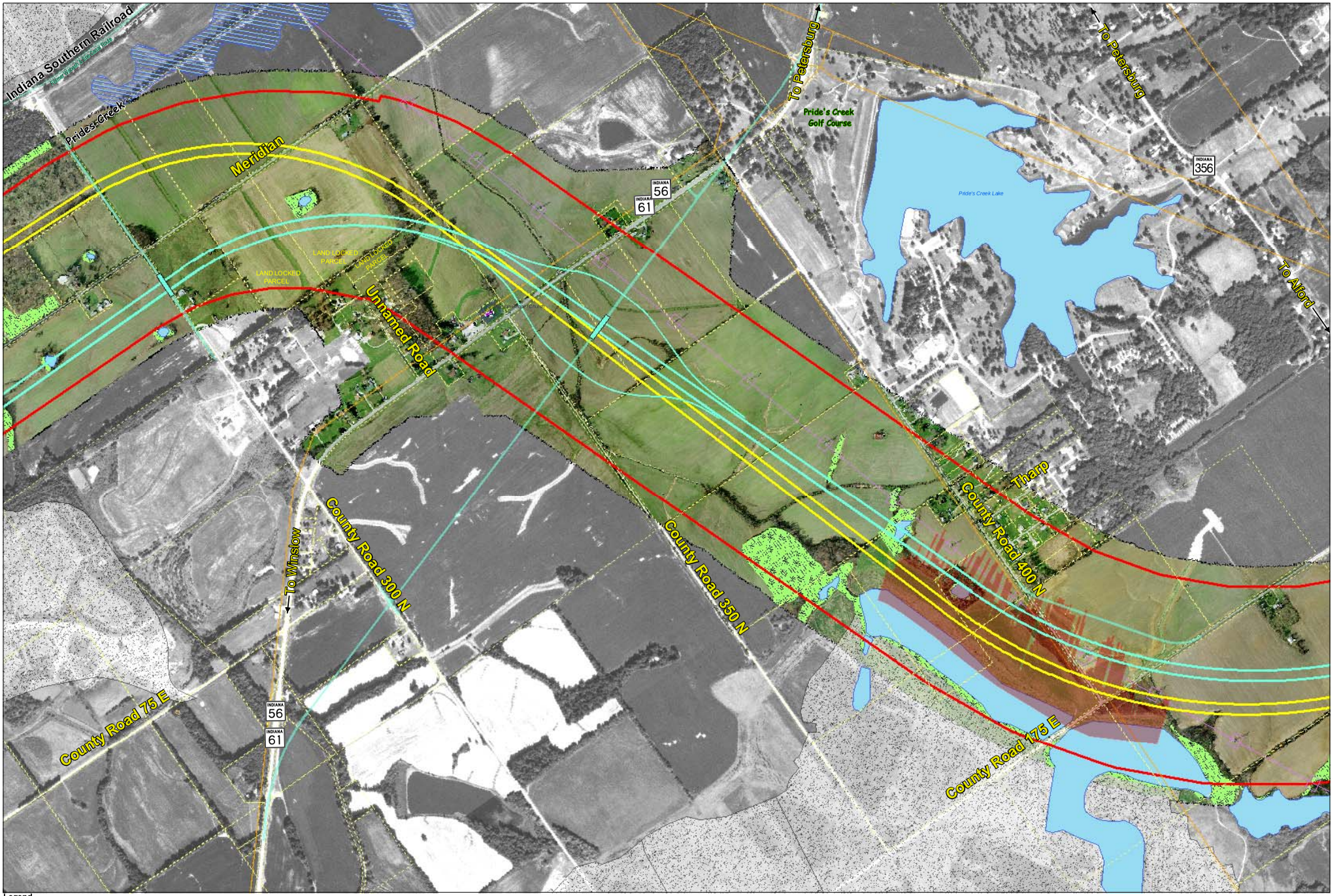
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 9**
**Sheet 5 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

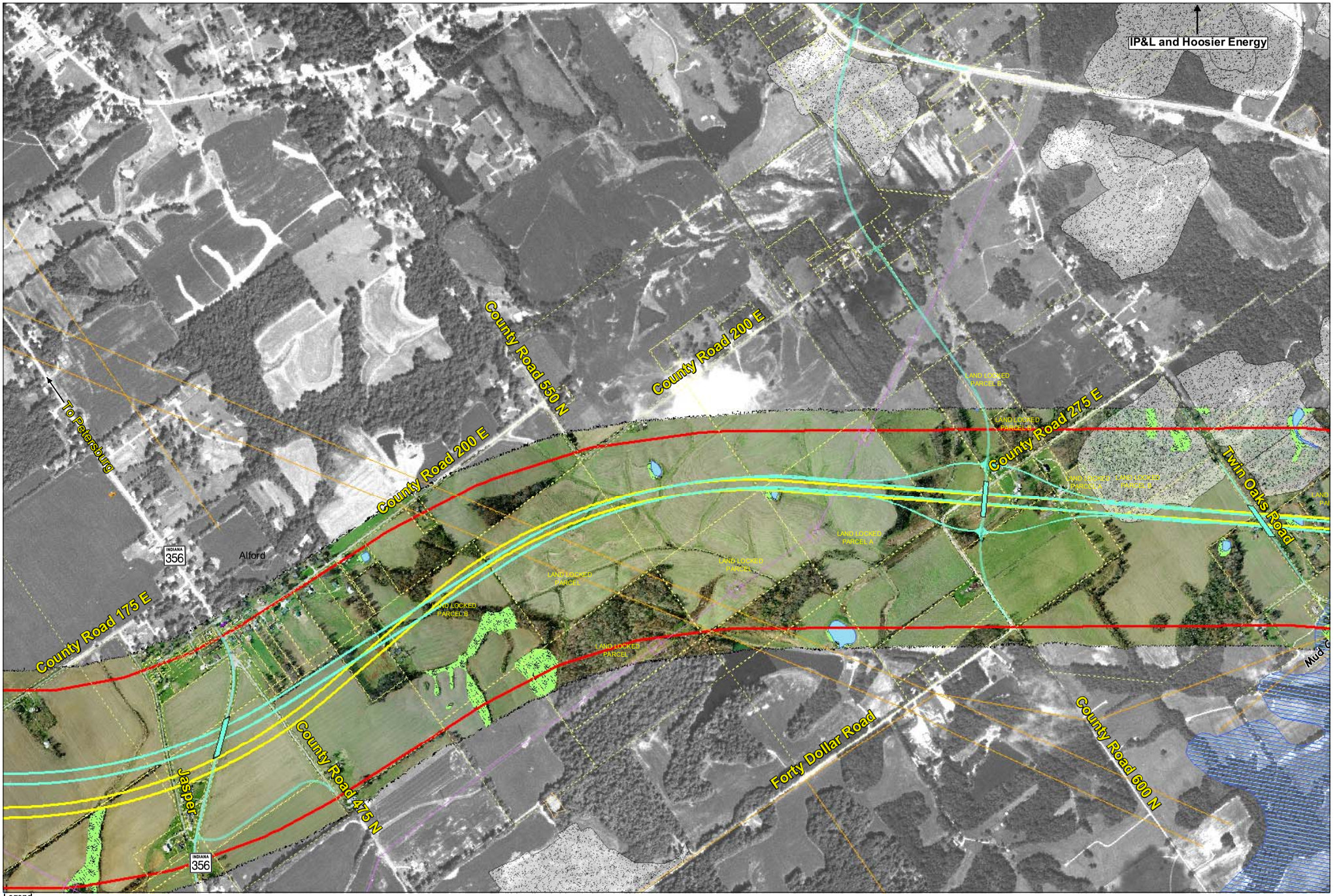
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 9**
**Sheet 6 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

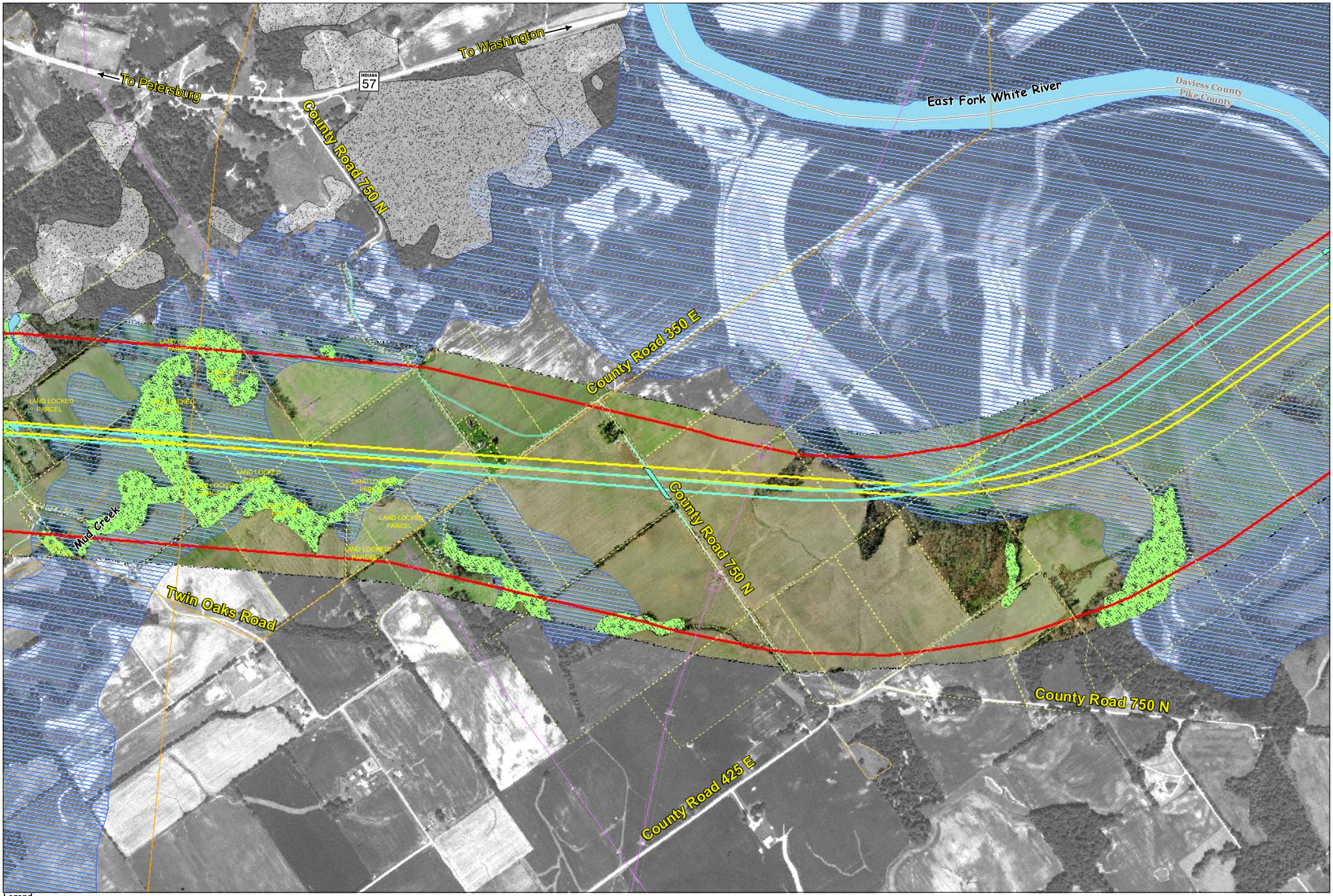
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 9**
**Sheet 7 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

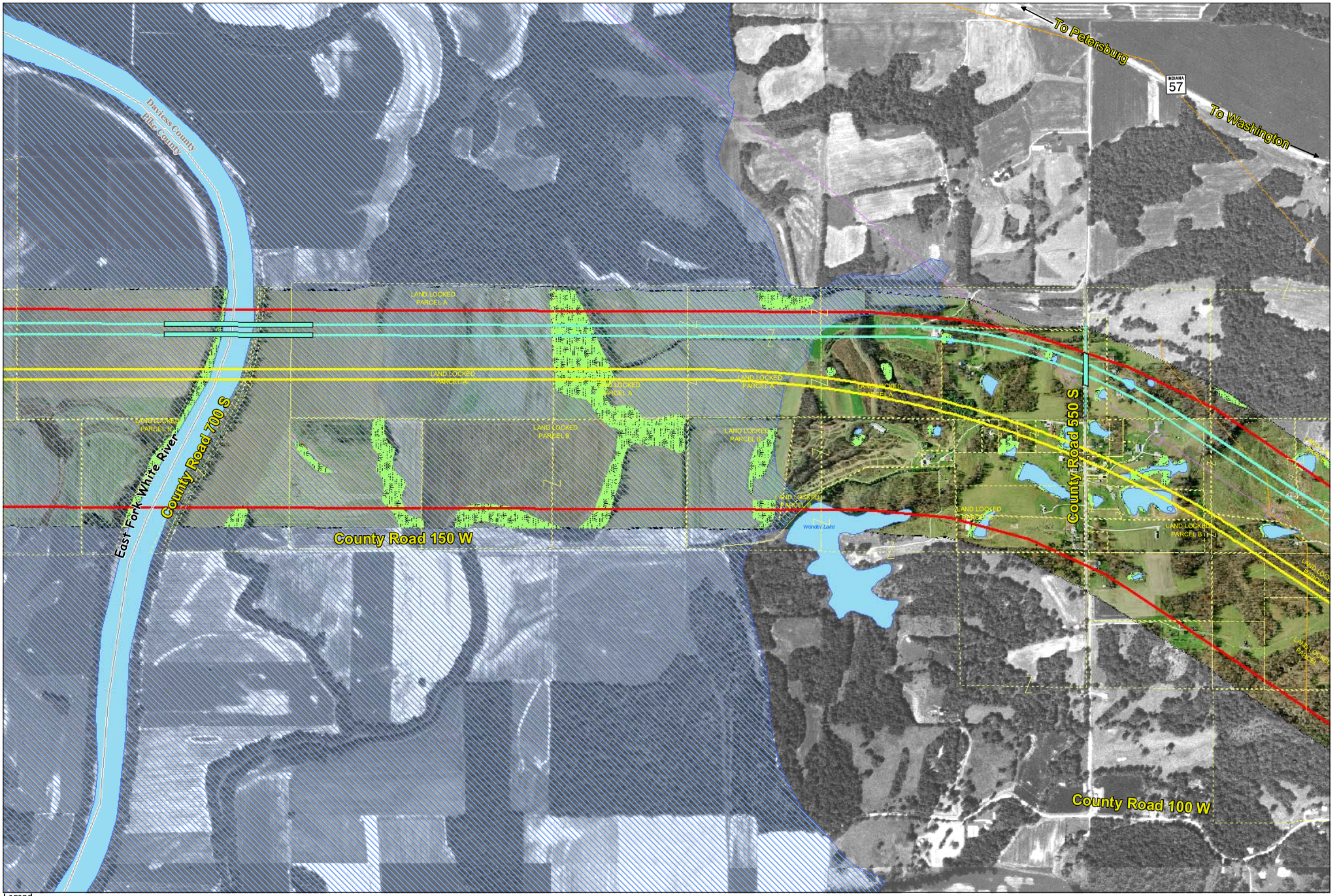
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 9**
**Sheet 8 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**
PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

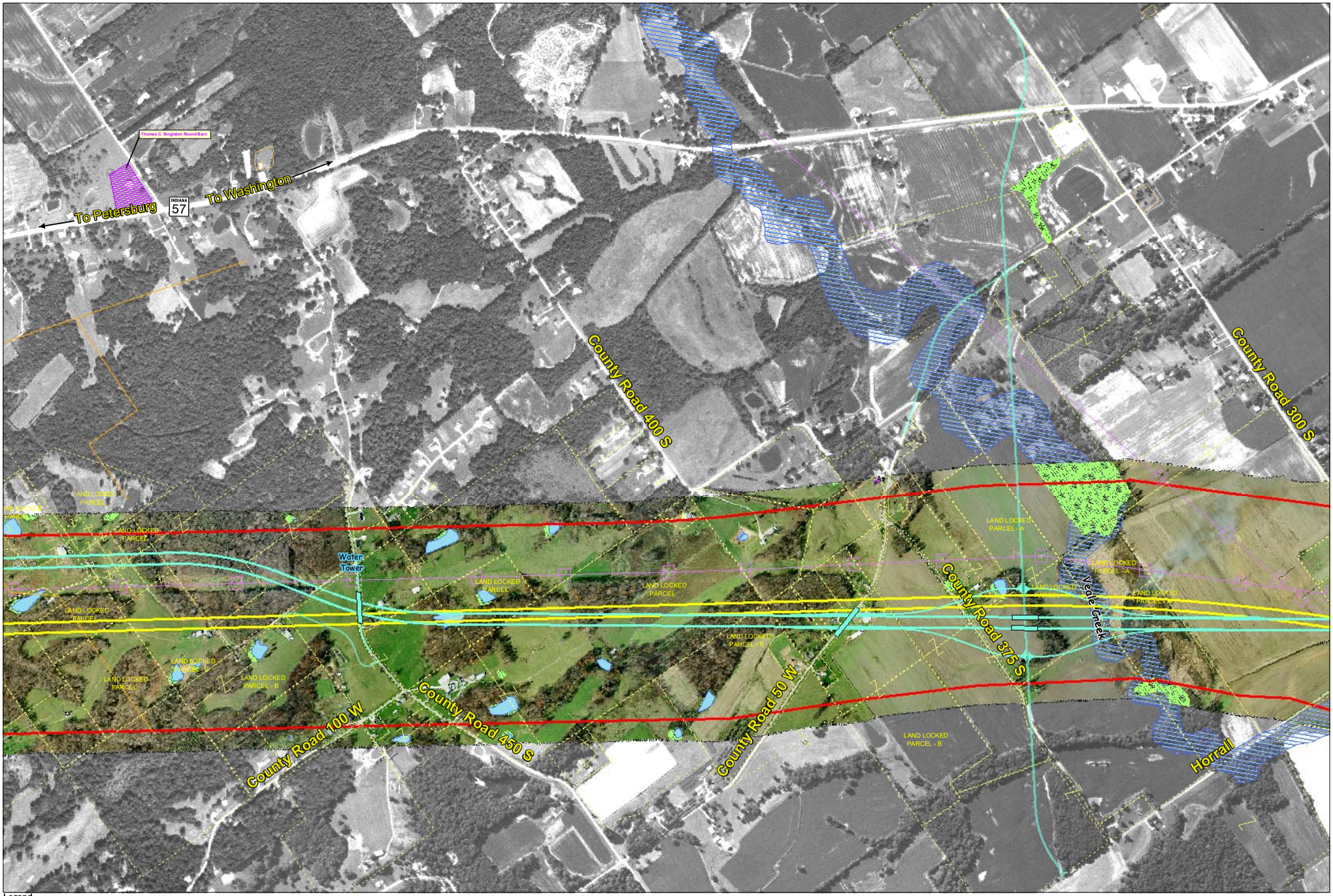
Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering
JE JACOBS

**FIGURE 9**
**Sheet 9 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

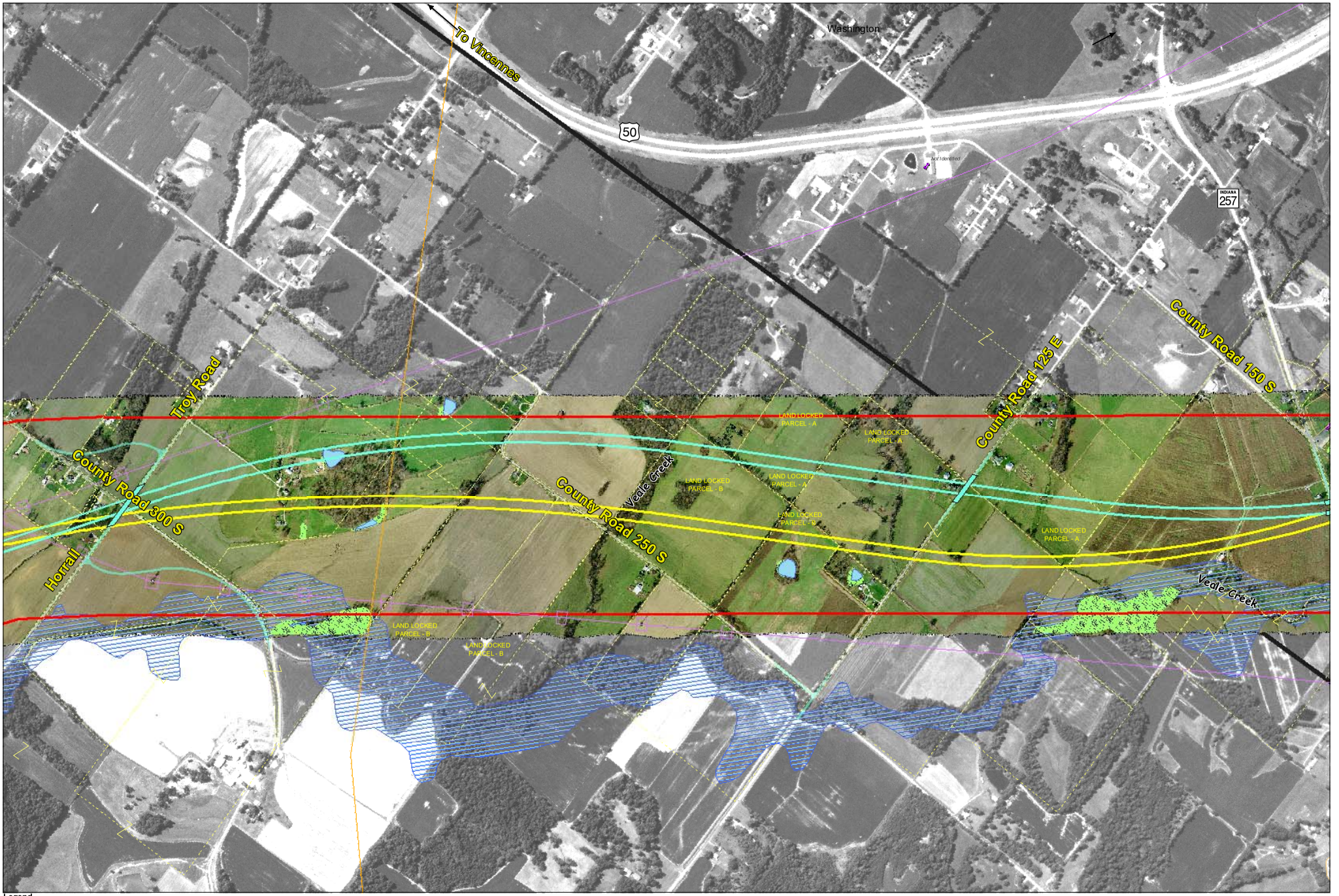
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 9**
**Sheet 10 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**

**PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.**

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

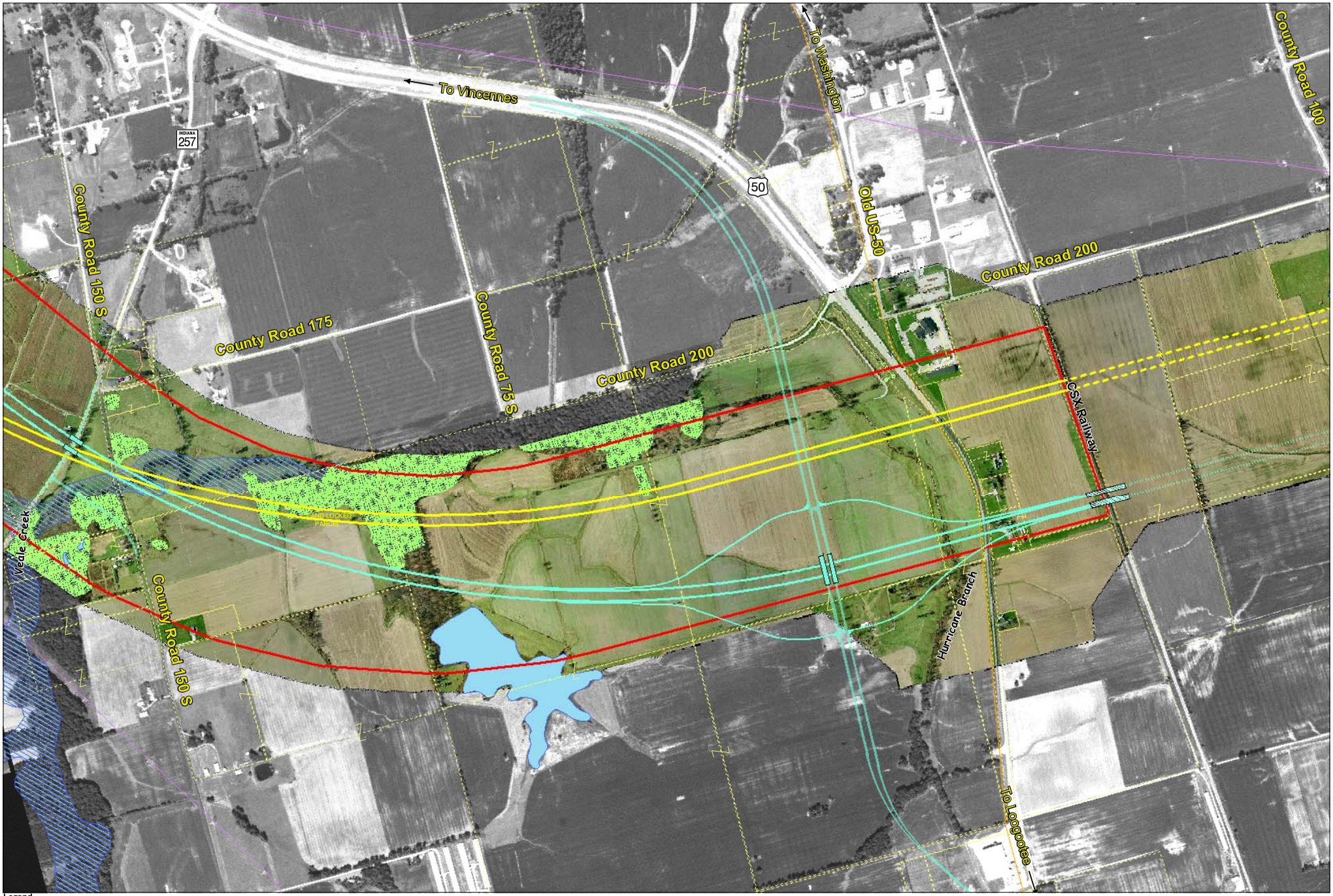
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 9**
**Sheet 11 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

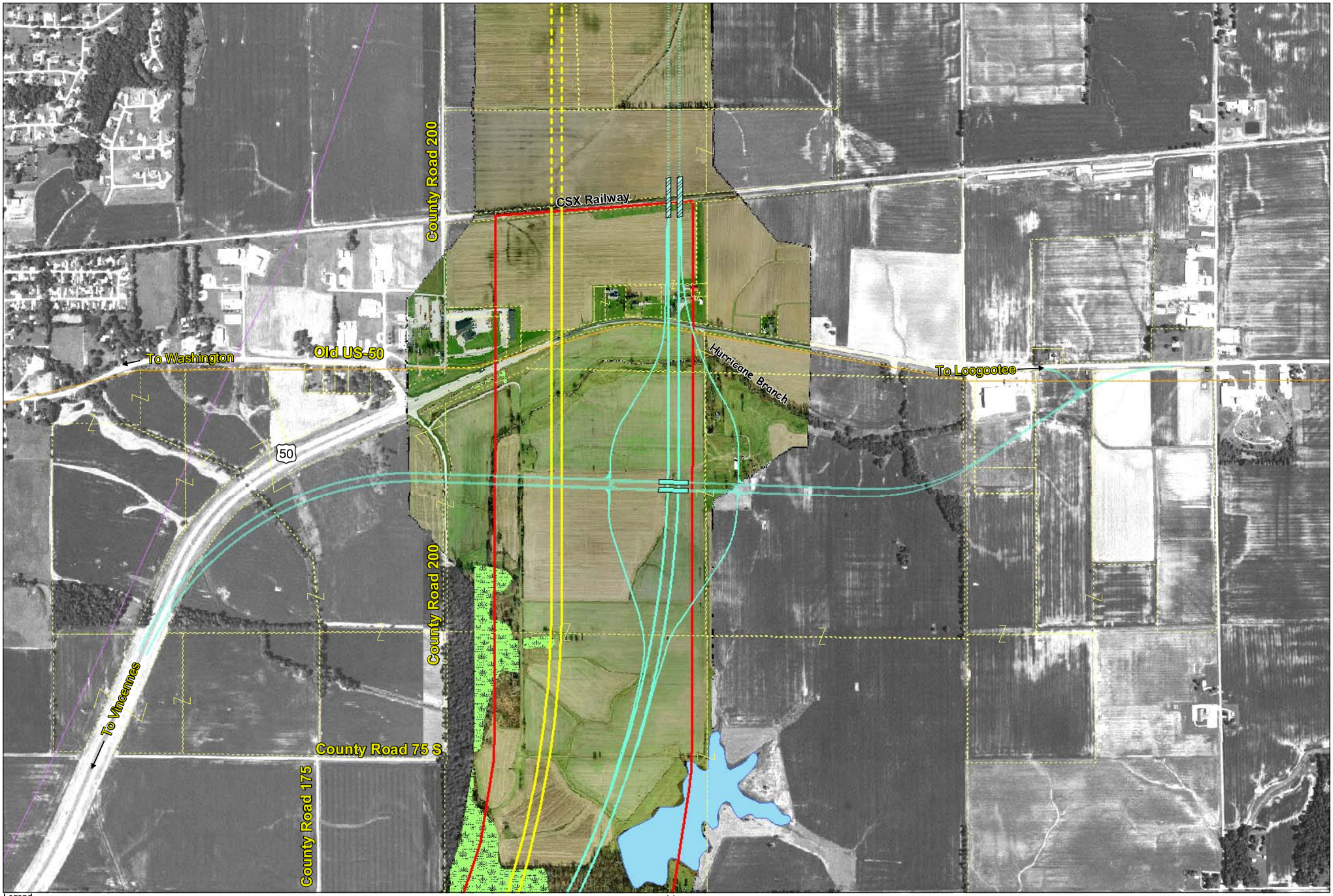
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 9**
**Sheet 12 of 13**




Legend

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative 1

**PRELIMINARY**
PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

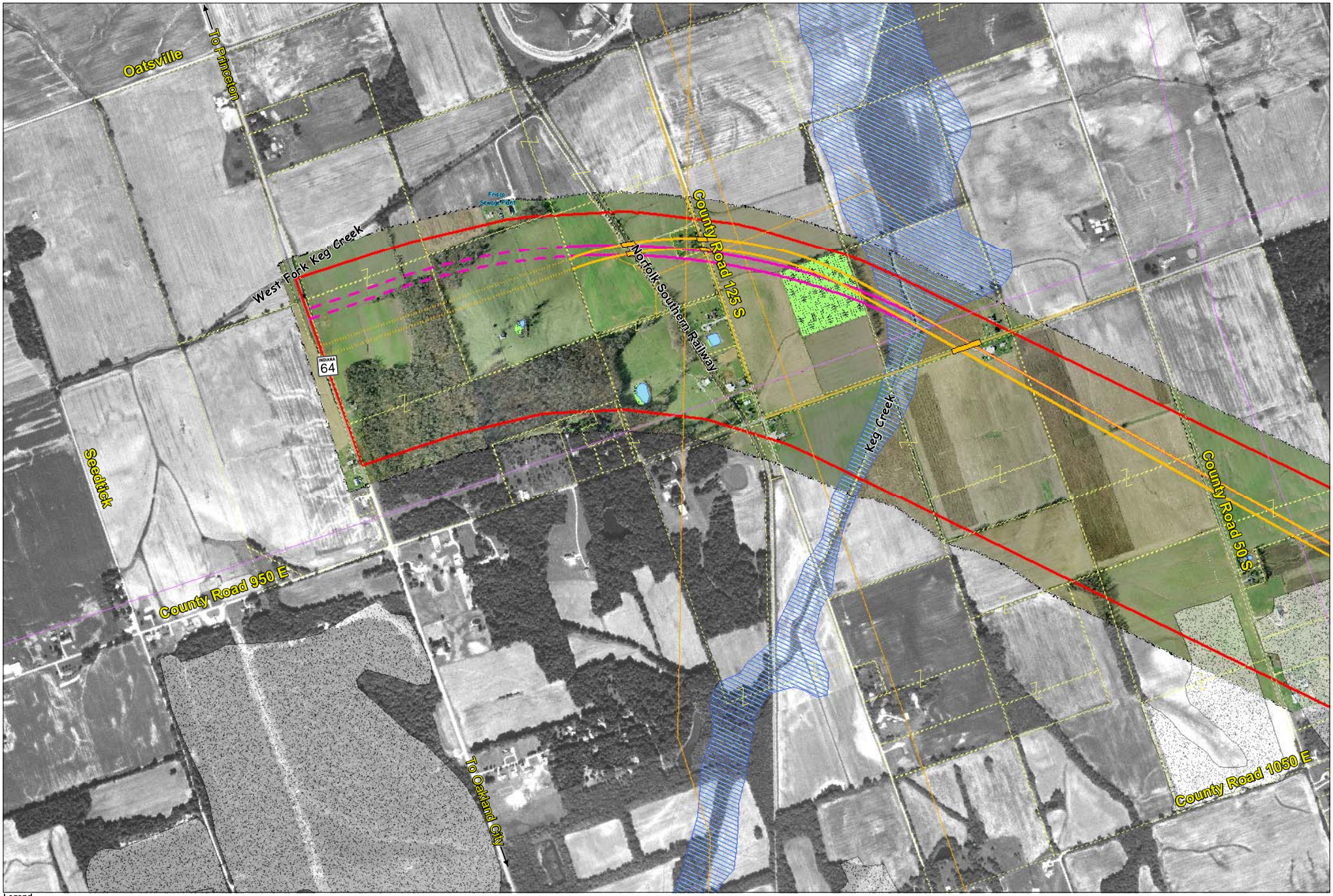
Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering
JACOBS

**FIGURE 9**
**Sheet 13 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**
PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

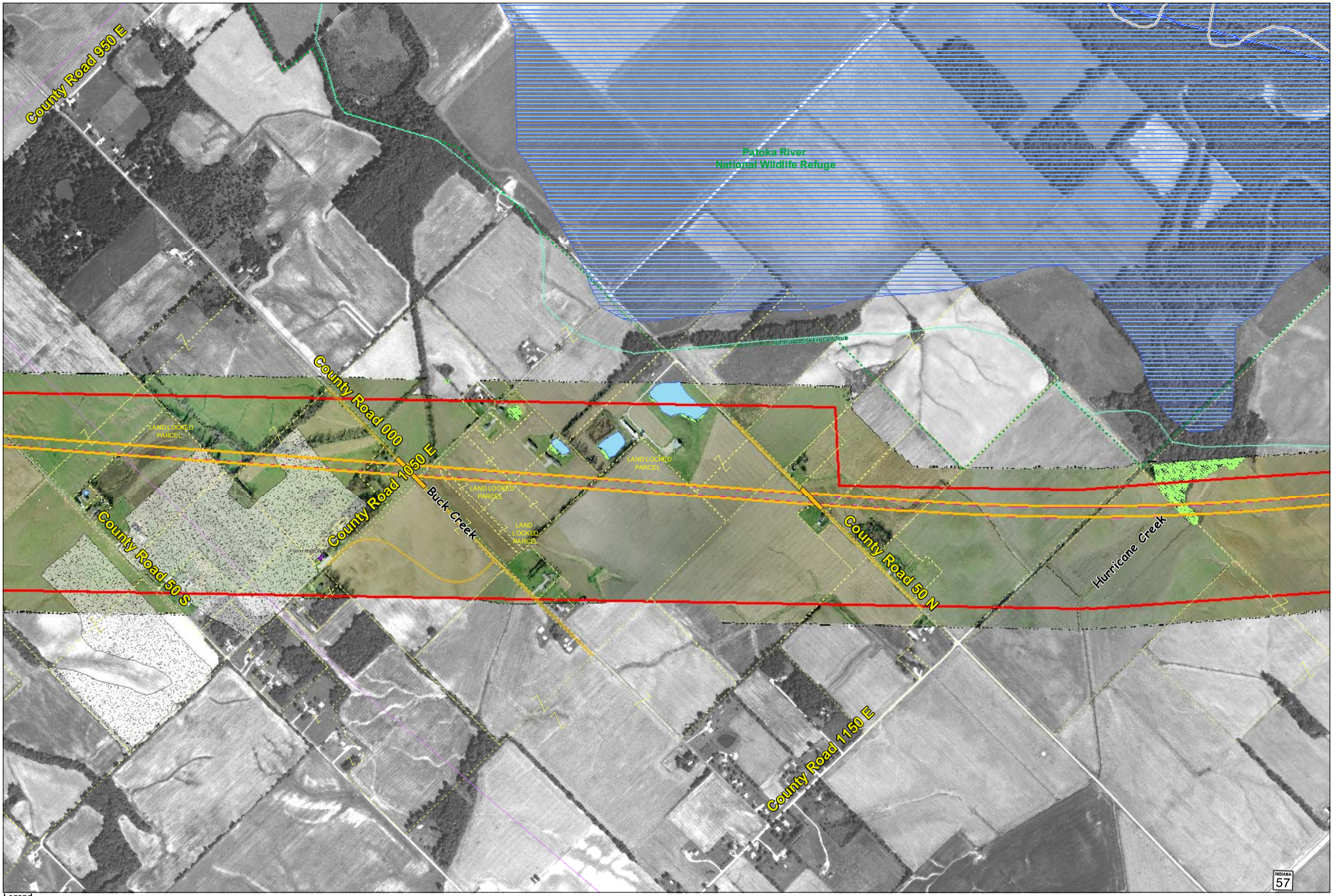
Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering
JACOBS

**FIGURE 10**
**Sheet 1 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

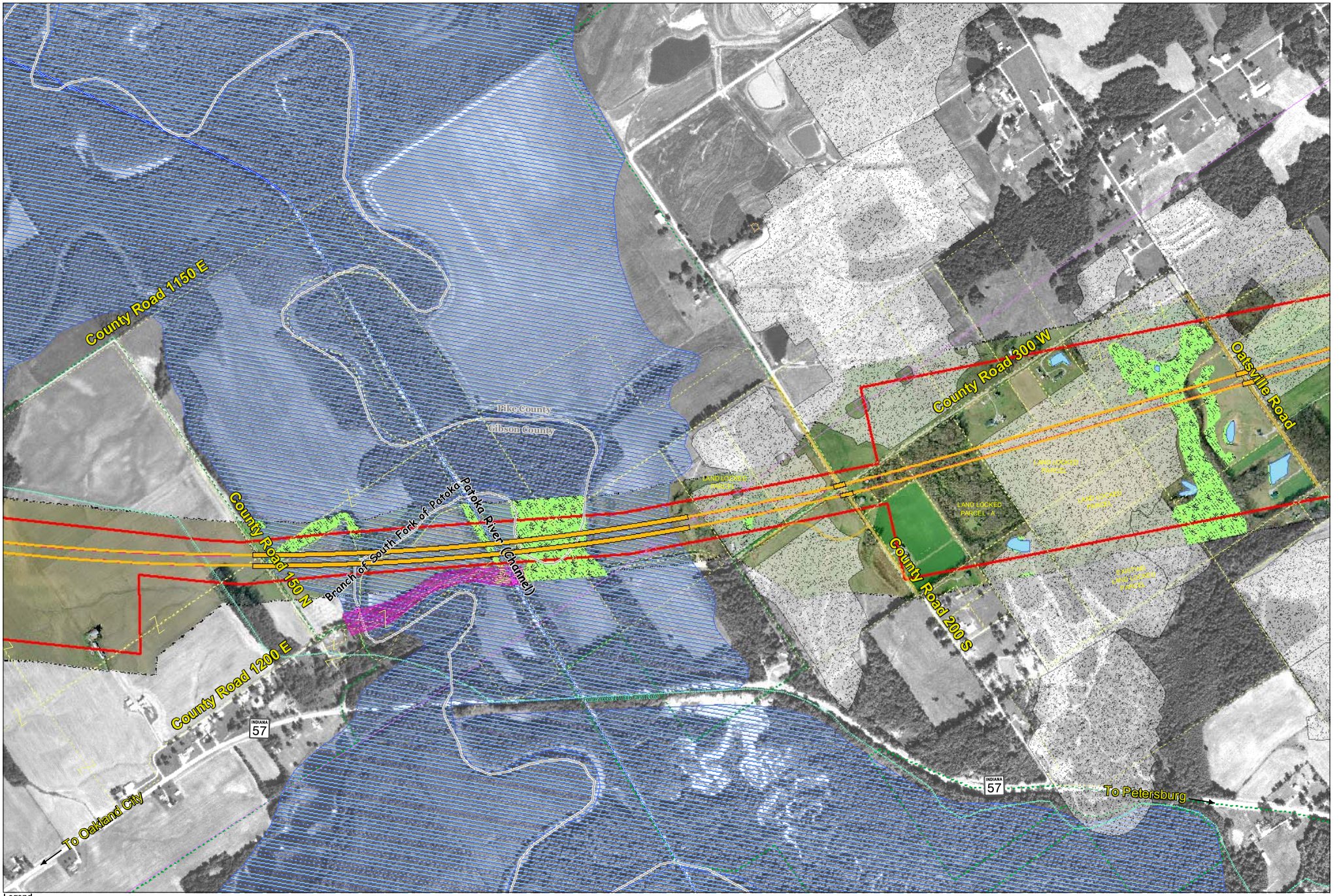
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 10**
**Sheet 2 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**
PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

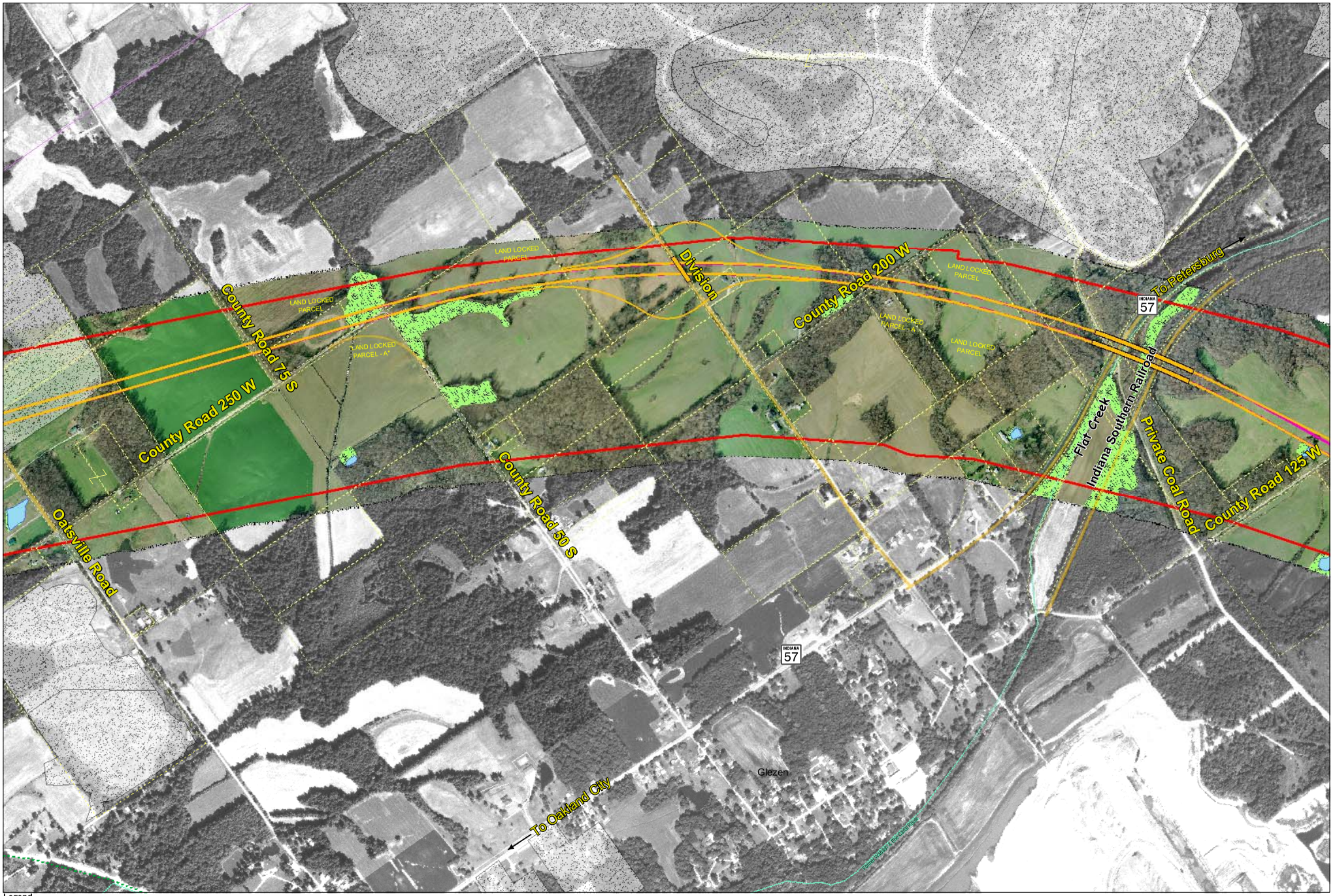
Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering
JACOBS

**FIGURE 10**
**Sheet 3 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

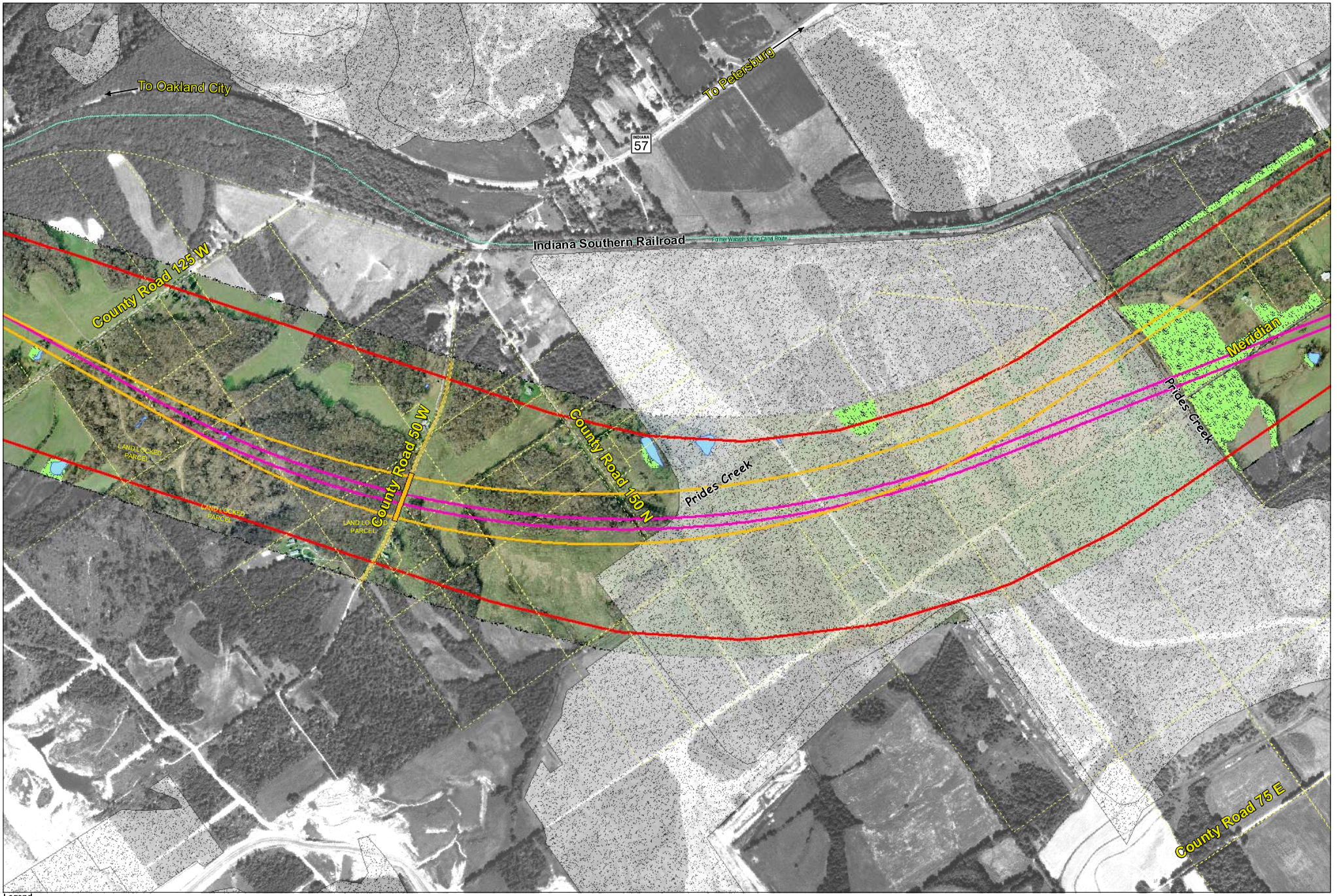
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 10**
**Sheet 4 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

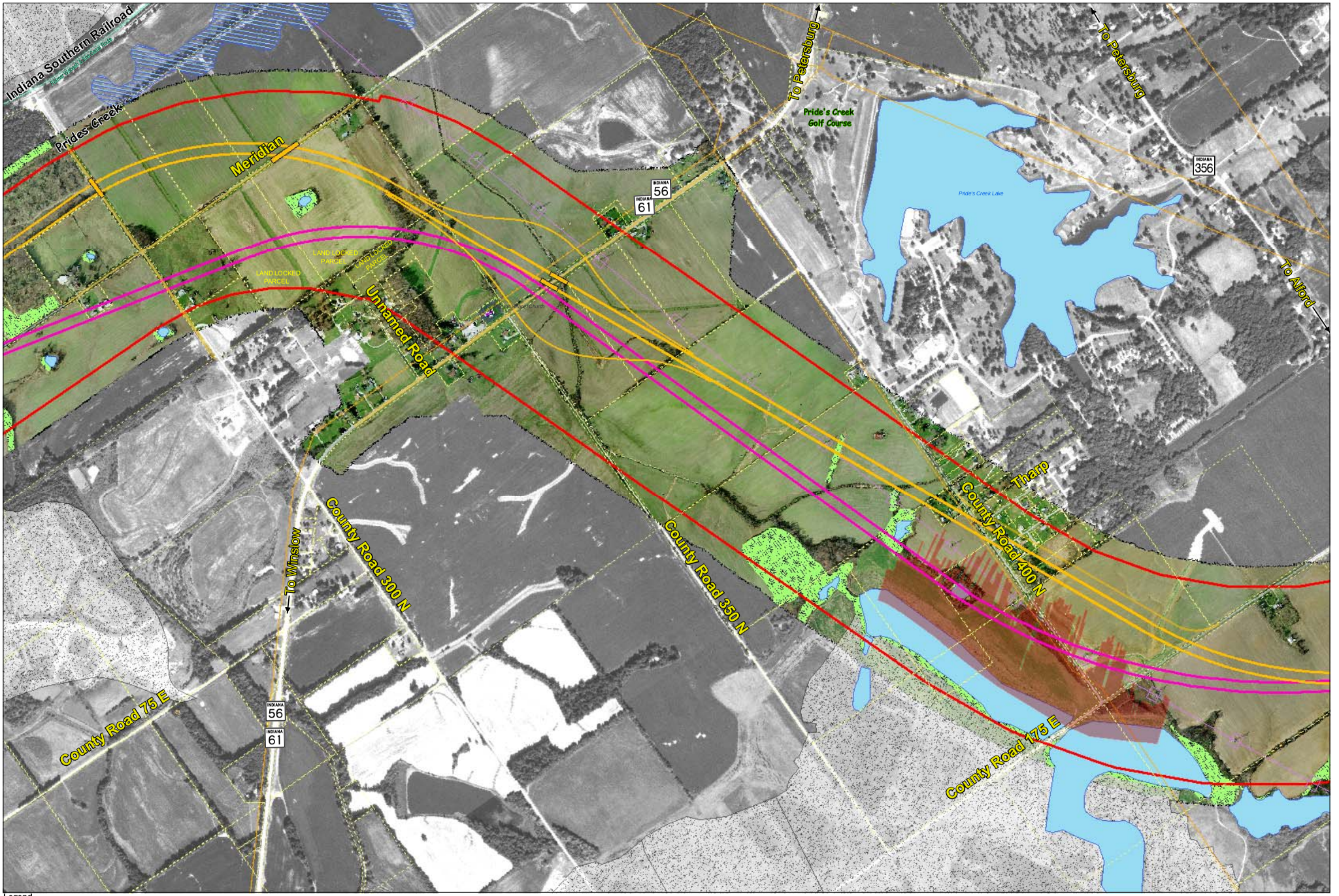
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 10**
**Sheet 5 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 10**
**Sheet 6 of 13**


**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

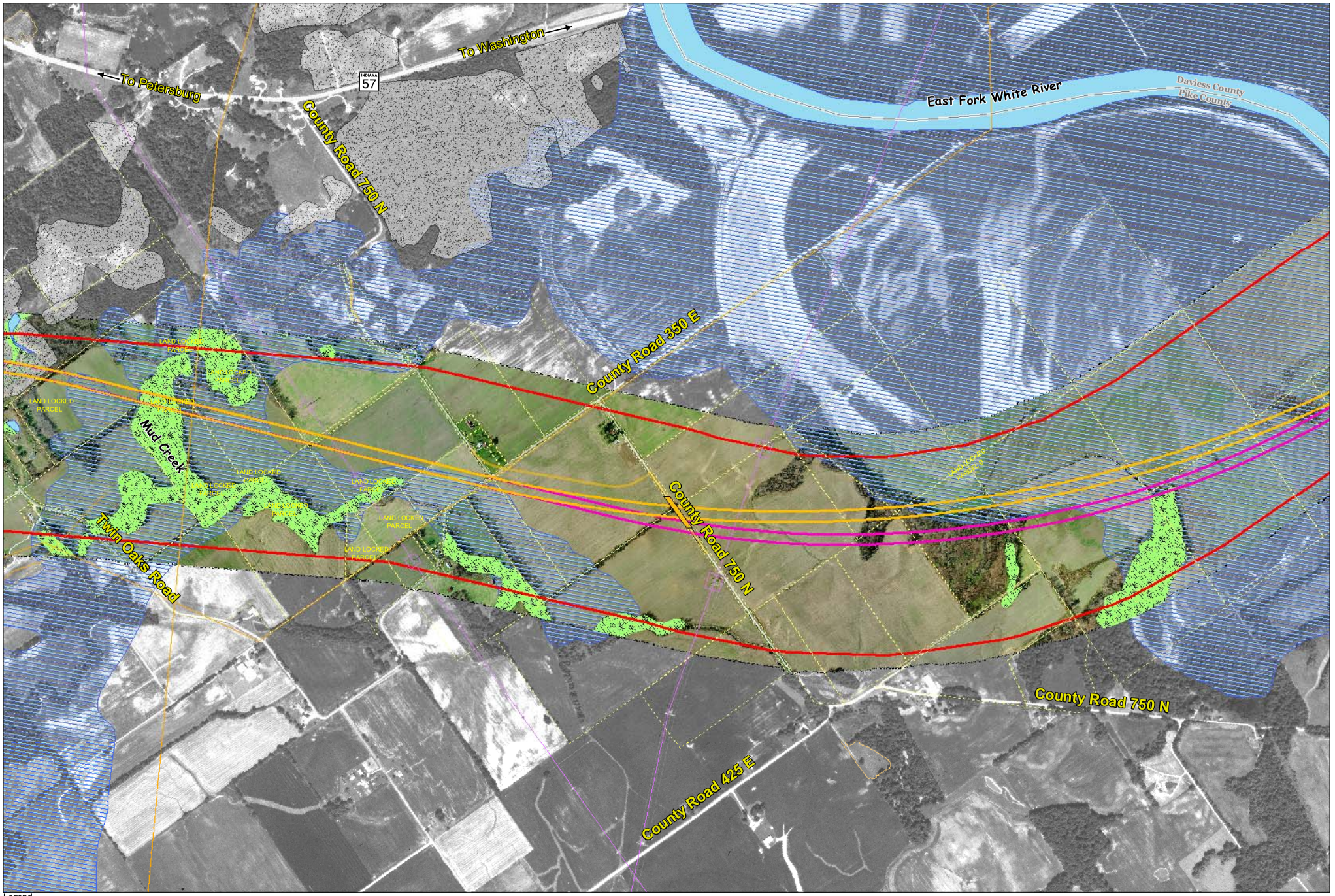
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 10**
**Sheet 7 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2

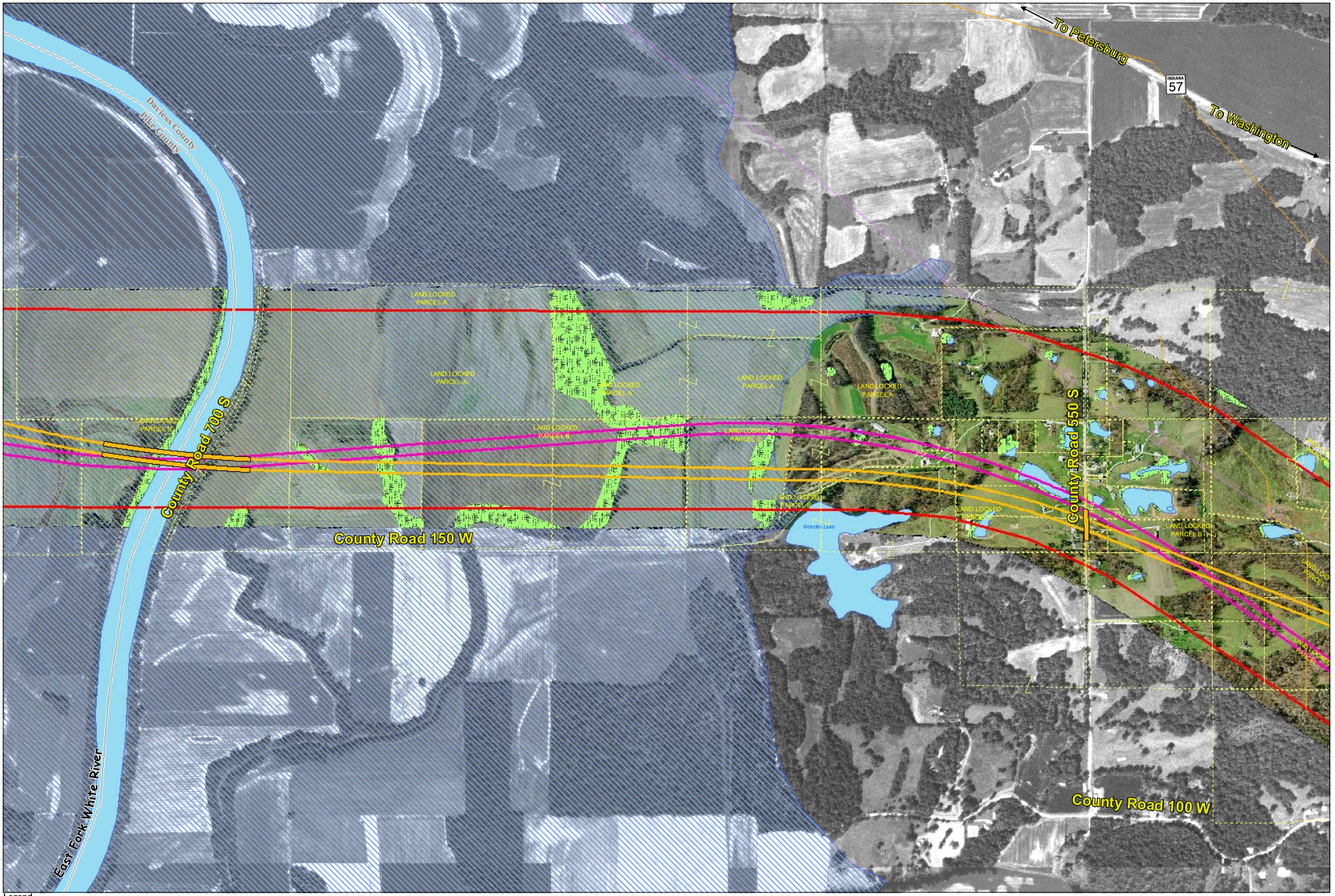
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 10**
**Sheet 8 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

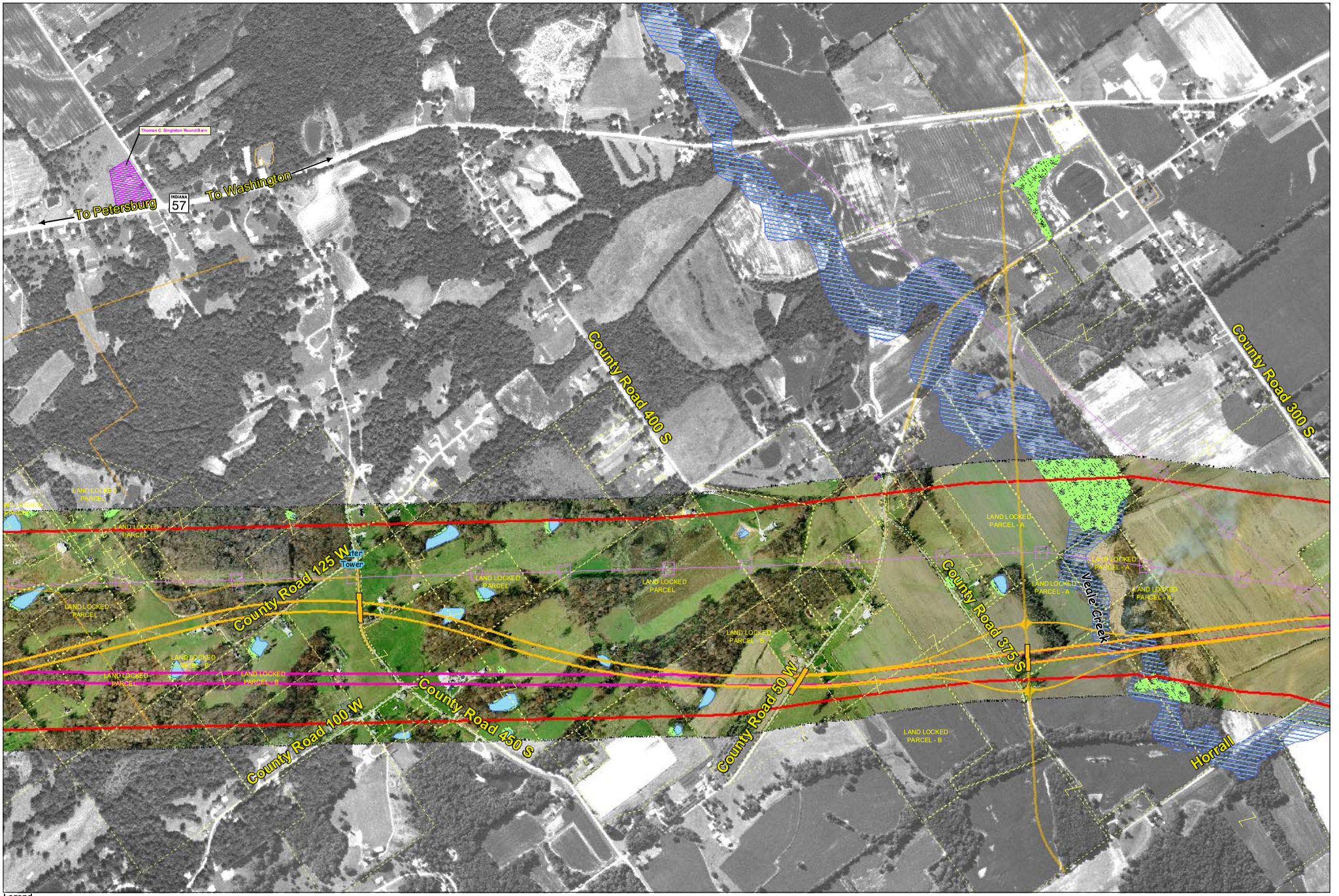
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 10**
**Sheet 9 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

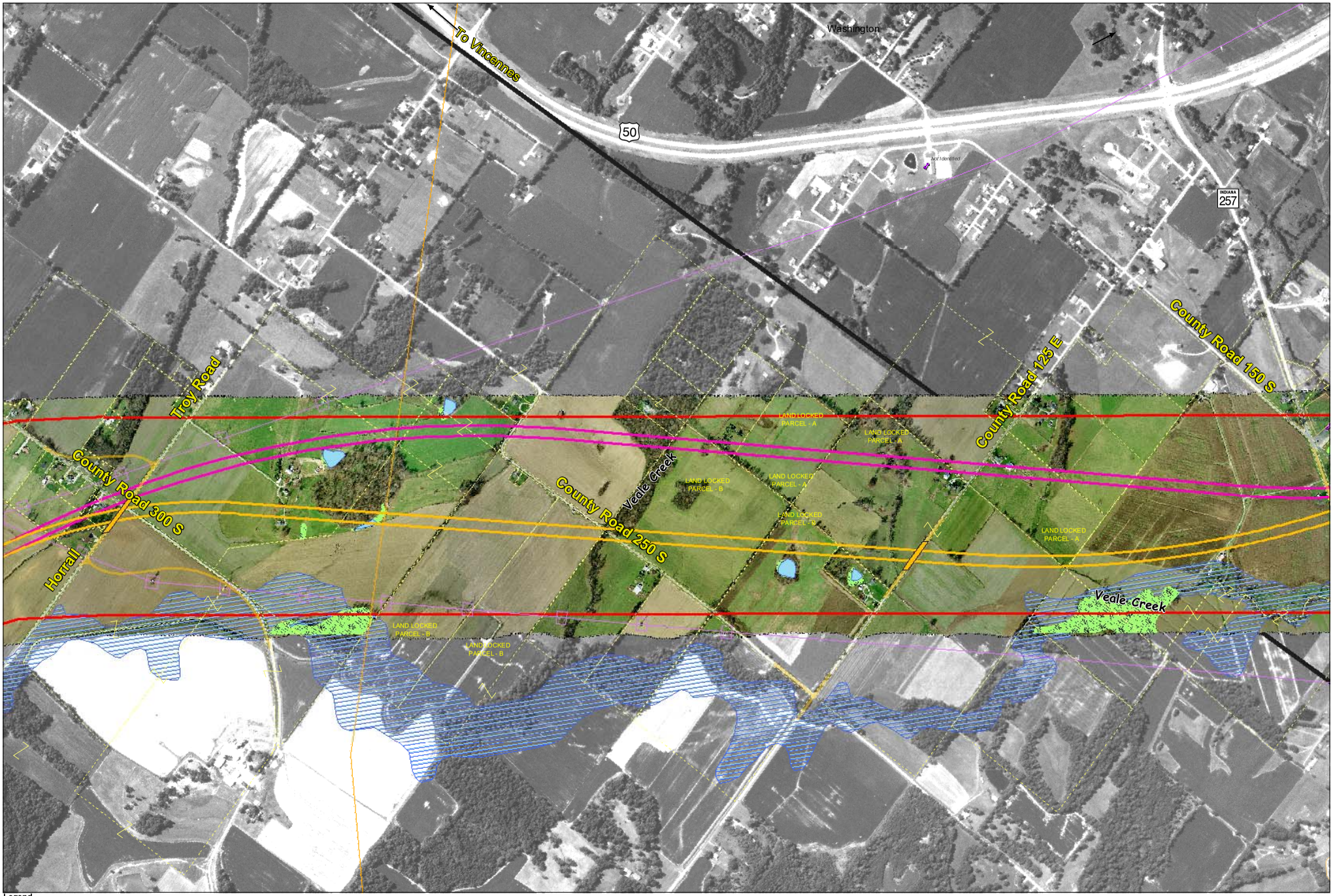
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 10**
**Sheet 10 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**

**PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.**

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

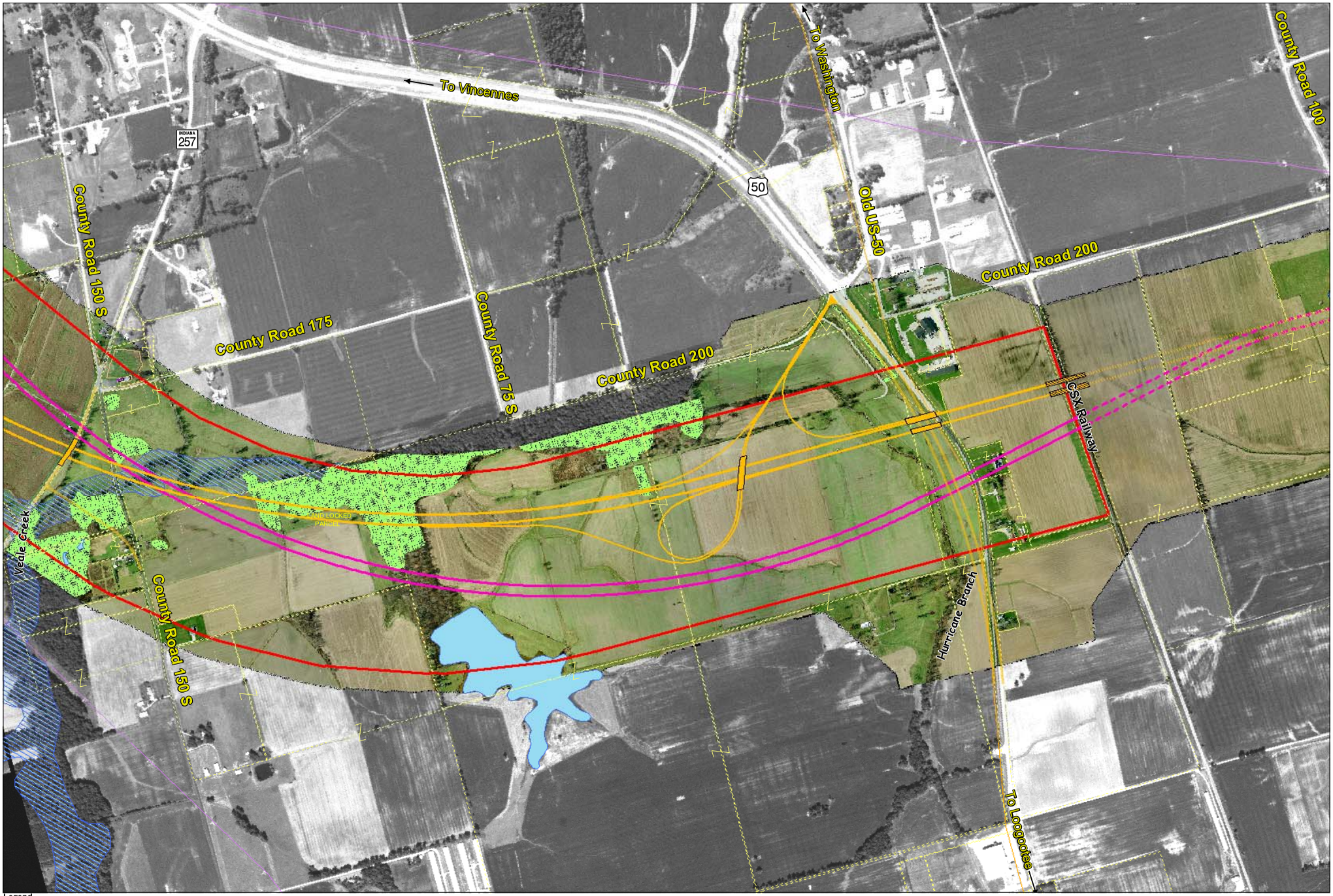
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 10**
**Sheet 11 of 13**




**Legend**

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

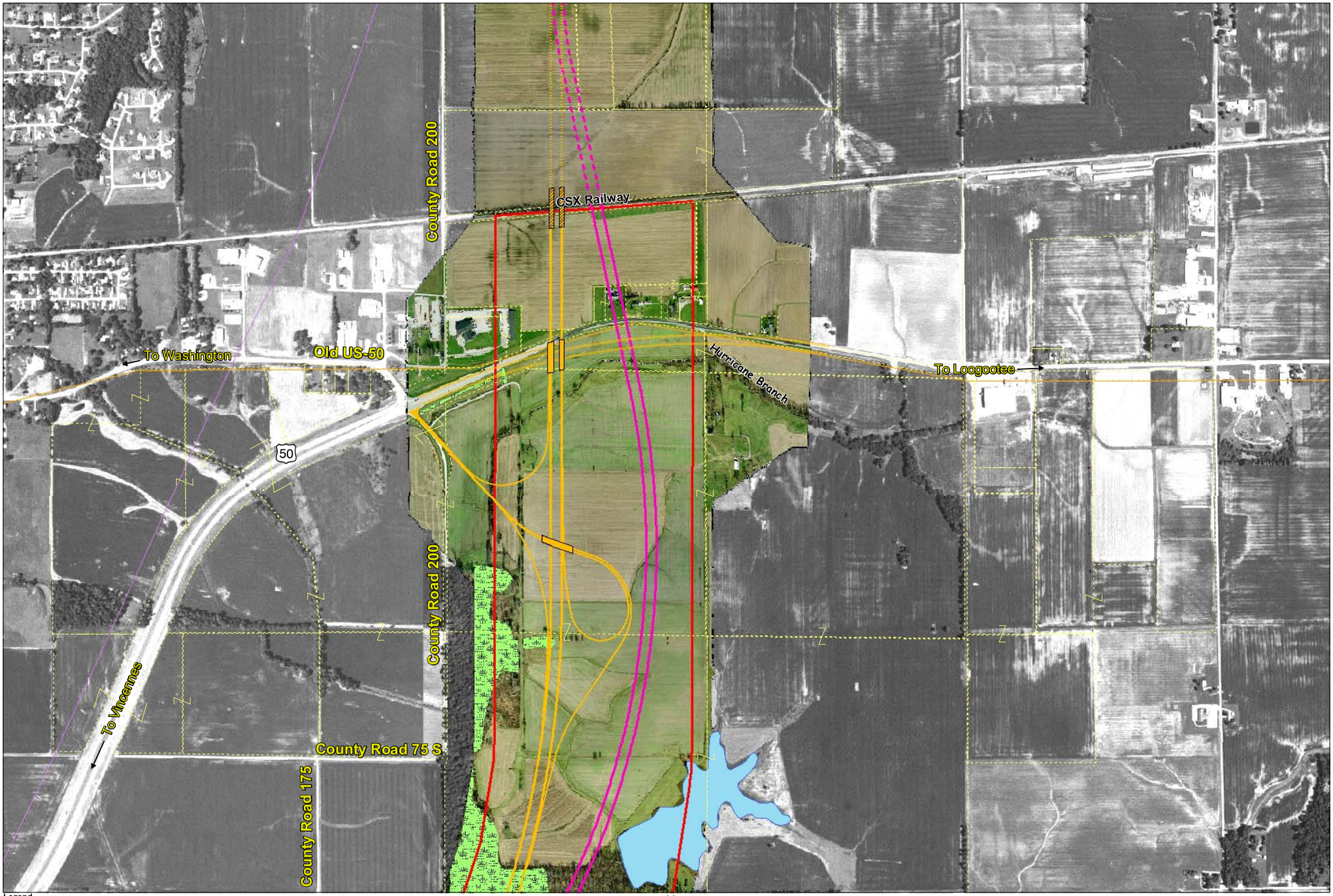
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 10**
**Sheet 12 of 13**




Legend

- Section 2 Approved Corridor
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Patoka Bridges Historic District
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative 2

**PRELIMINARY**
PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

300 150 0 300 600 900 1,200 1,500 1,800
Feet
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Alternative Development**

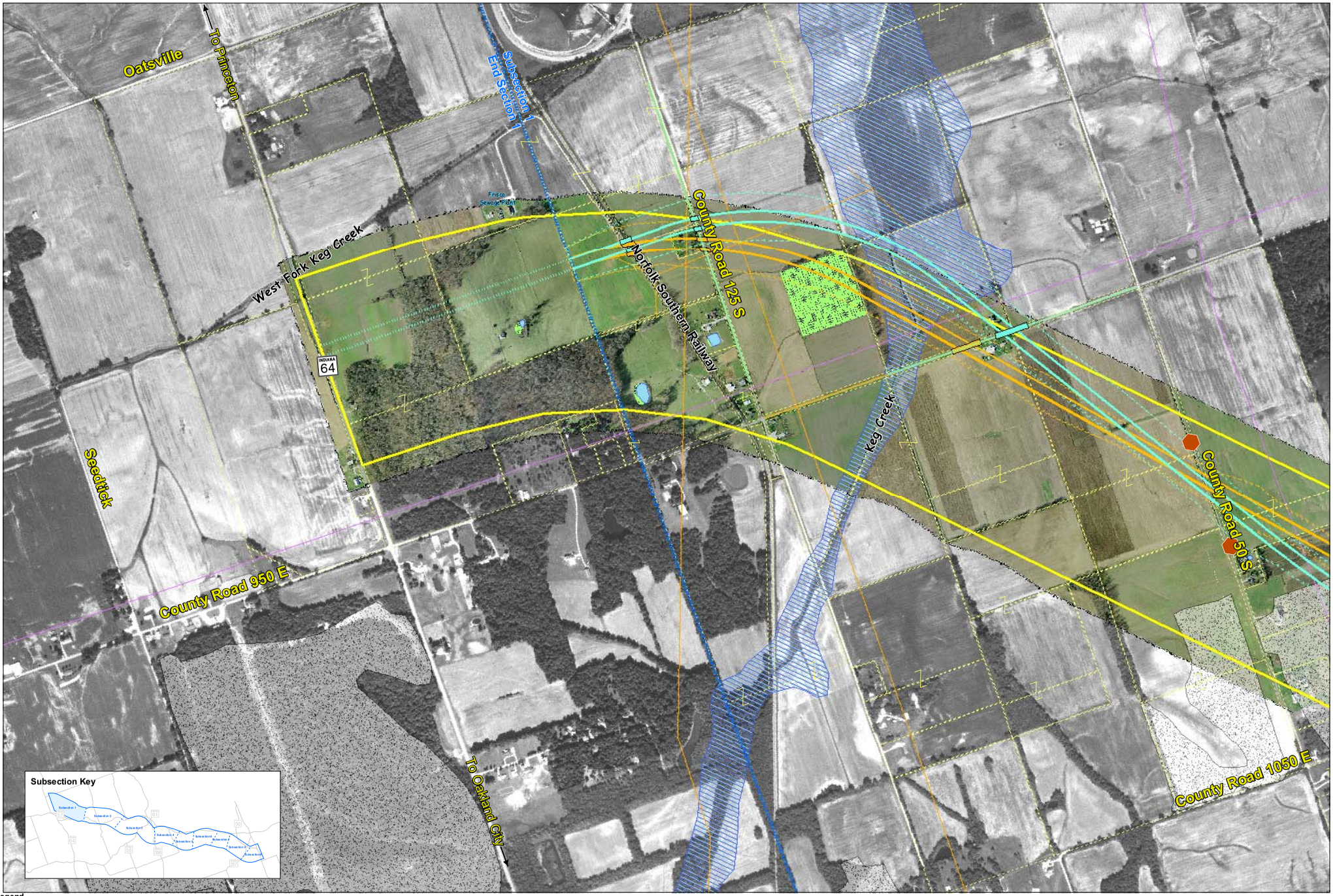
HANNUM, WAGLE & CLINE engineering
JACOBS

**FIGURE 10**
**Sheet 13 of 13**

| Table 3: Mainline Alternative 1 vs. Alternative A – Key Differences | | | | | | |
|---|---|---|---|---|---|---|
| Figure 9 Sheet No. | Key Differences | | | | A (compared with 1) | Lesser Impacts |
| | Displacements | Wetlands | Stream Crossings | Geometrics | | |
| 1 | | X | X | X | straightens skew of alignment over Indiana Southern Railroad crossing | A |
| 2 | | | X | X | | Neutral |
| 3 | | | | | | Neutral |
| 4 | | X | X | X | straightens skew of alignment over Indiana Southern Railroad crossing; minimizes impact to wetland at CR 50S | A |
| 5 | | | X | X | adds bifurcated section thru reclaimed mine land per INDOT's request | A |
| 6 | | X | | X | shifts alignment west to minimize impact to underground mine shafts | A |
| 7 | | X | | | | Neutral |
| 8 | | | X | | | Neutral |
| 9 | | X | X | X | shifts alignment to the west to minimize impacts to farmland and wetlands | A |
| 10 | | | X | | | Neutral |
| 11 | | | X | | | Neutral |
| 12 | X | | X | X | shifts alignment to the east to minimize earthwork at railroad and to accommodate relocated US 50 diamond interchange | A |
| 13 | X | | X | X | adds relocated US 50 to minimize impacts to Hurricane Branch | A |

| Table 4: Mainline Alternative 2 vs. Alternative B – Key Differences | | | | | | |
|---|---|---|---|---|---|---|
| Figure 10 Sheet No. | Key Differences | | | | B (compared with 2) | Lesser Impacts |
| | Displacements | Wetlands | Stream Crossings | Geometrics | | |
| 1 | | X | X | X | minimizes impacts to large wetland area; straightened skew of alignment over railroad crossing | B |
| 2 | | | X | | | Neutral |
| 3 | | | | | | Neutral |
| 4 | | | X | | | Neutral |
| 5 | | X | X | X | minimizes impact to large wetland area; adds bifurcated section thru reclaimed mine land per INDOT's request | B |
| 6 | X | X | | X | shifts alignment west to avoid impact to underground mine shafts; minimizes wetland impacts | B |
| 7 | | | | | | Neutral |
| 8 | | | X | X | shifts alignment to the west to better cross East Fork of the White River at less of a skew | B |
| 9 | | X | X | X | shifts alignment to the west to better cross East Fork of the White River at less of a skew; minimizes wetland impacts; minimizes crossing farmland at a skew | B |
| 10 | | | X | X | avoids large business operation | B |
| 11 | | | X | X | smoothes out alignment | B |
| 12 | X | | X | X | shifts alignment to the west to cross railroad perpendicular | B |
| 13 | X | | X | X | shifts alignment to the west to cross railroad perpendicular | B |

Alternatives A and B were presented at a CAC meeting on August 4, 2005, and subsequently at a Public Information Meeting on August 9, 2005. Figure 11, sheets 1 through 13, at the end of this document show Alternatives A and B side by side (with the addition of two post-August 9 interchange modifications made, based on August 9 meeting comments, at the South Daviess County—Sheet 10 of 13--and the North Pike County—Sheet 7 of 13--interchange locations).




**Legend**

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

**PRELIMINARY**

**PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.**

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

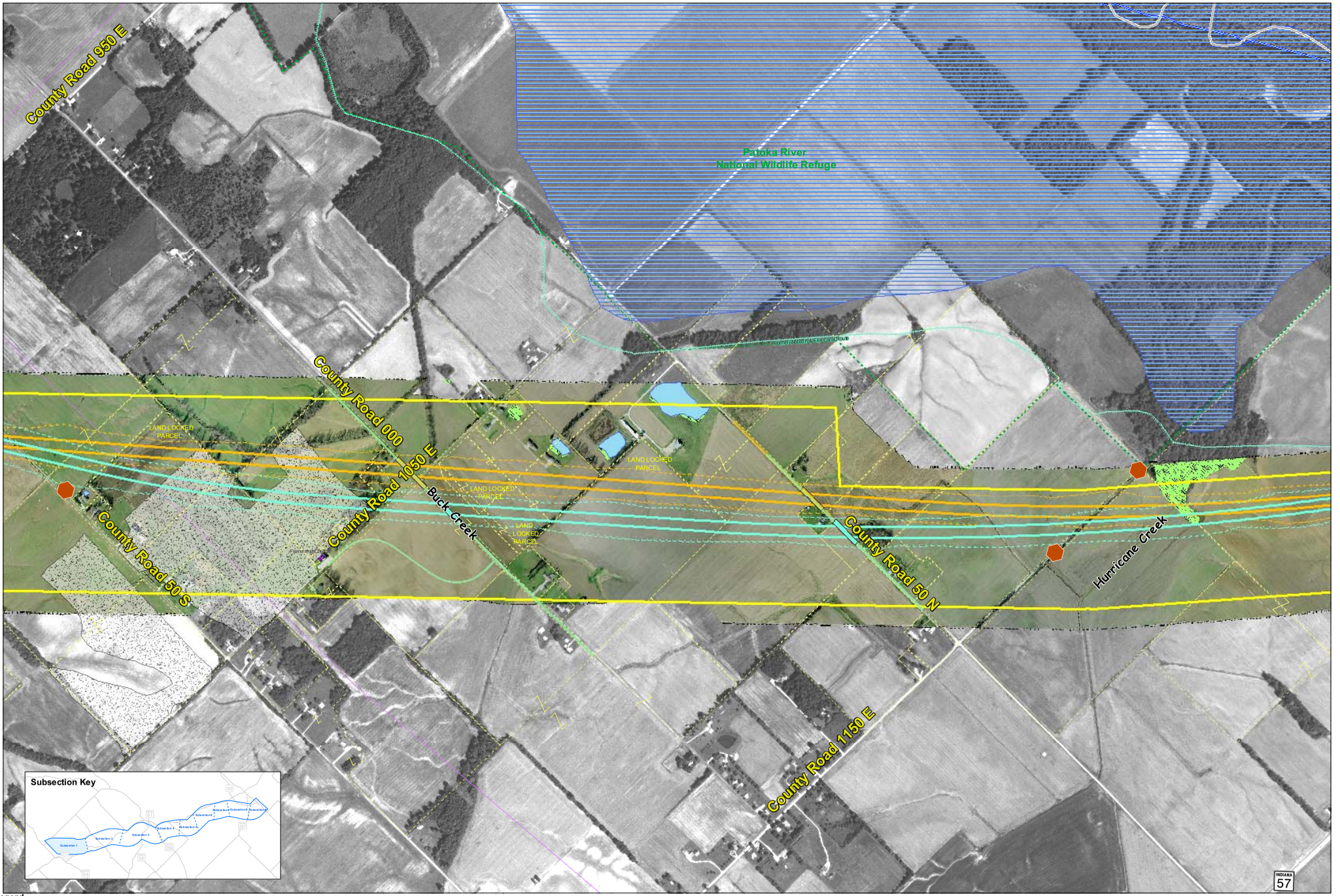
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 11**
**Sheet 1 of 13**




**Legend**

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

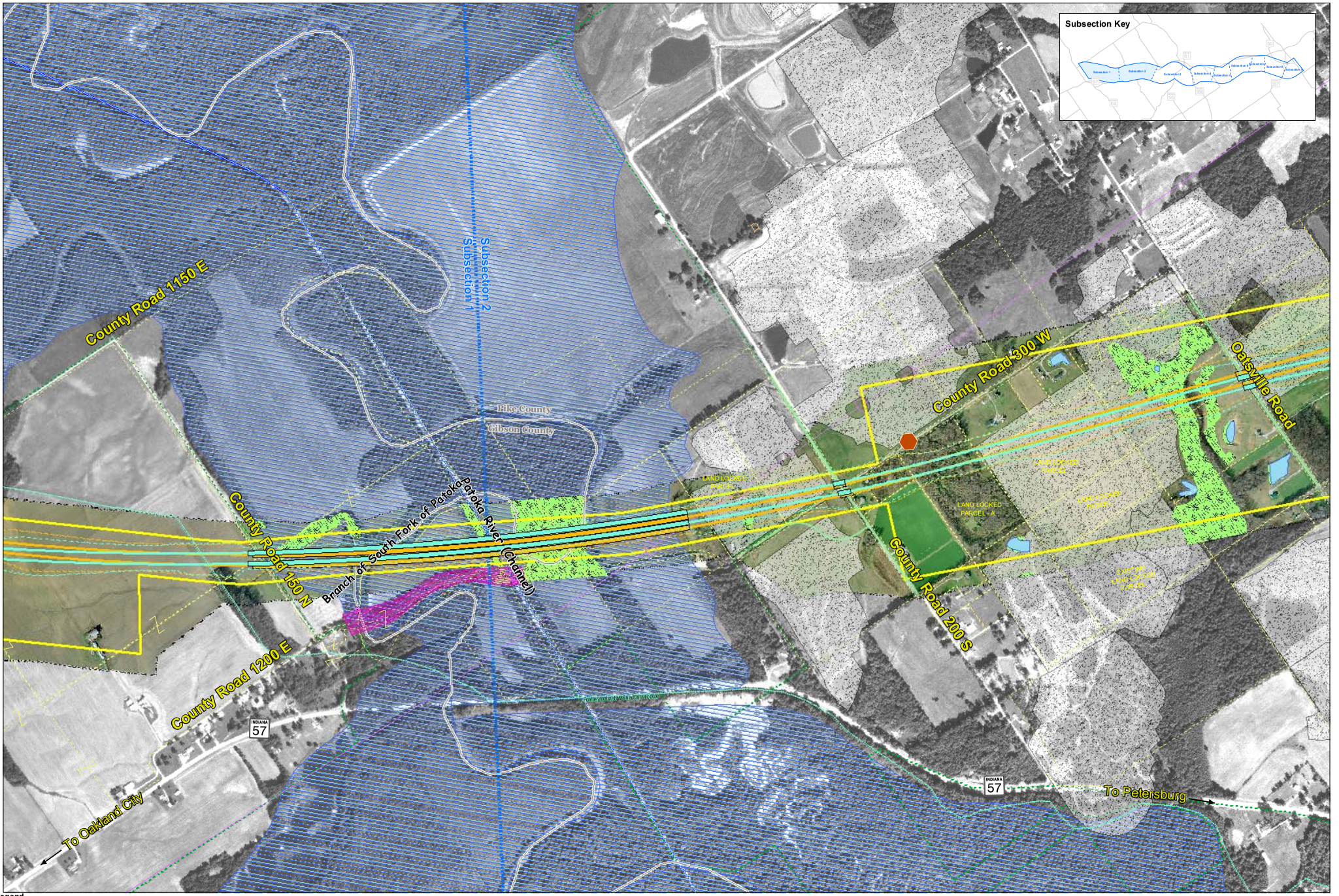
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 11**
**Sheet 2 of 13**




**Legend**

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

**PRELIMINARY**
PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

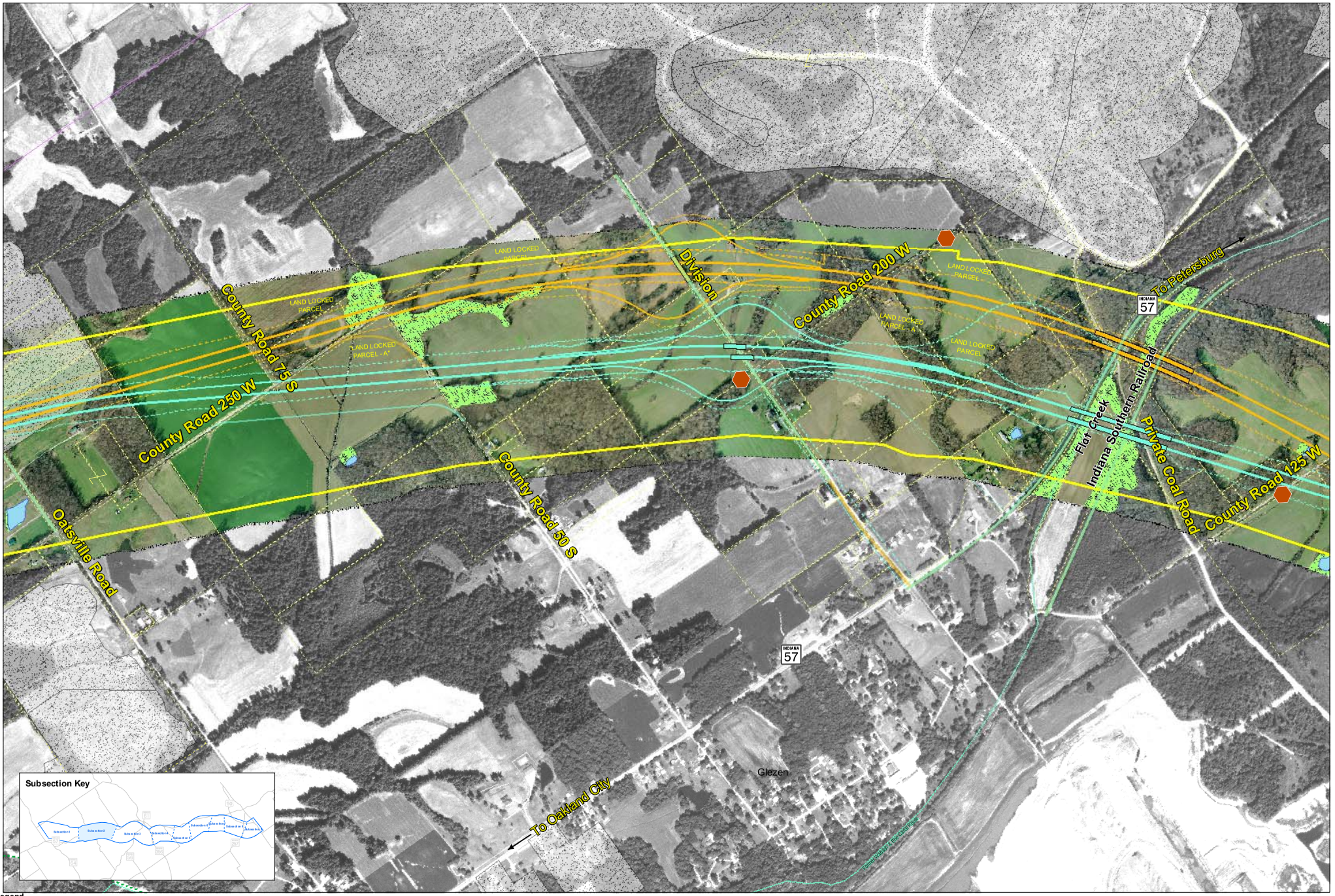
Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering
JACOBS

**FIGURE 11**
**Sheet 3 of 13**




**Legend**

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 11**
**Sheet 4 of 13**


**Legend**

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

**PRELIMINARY**

**PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.**

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

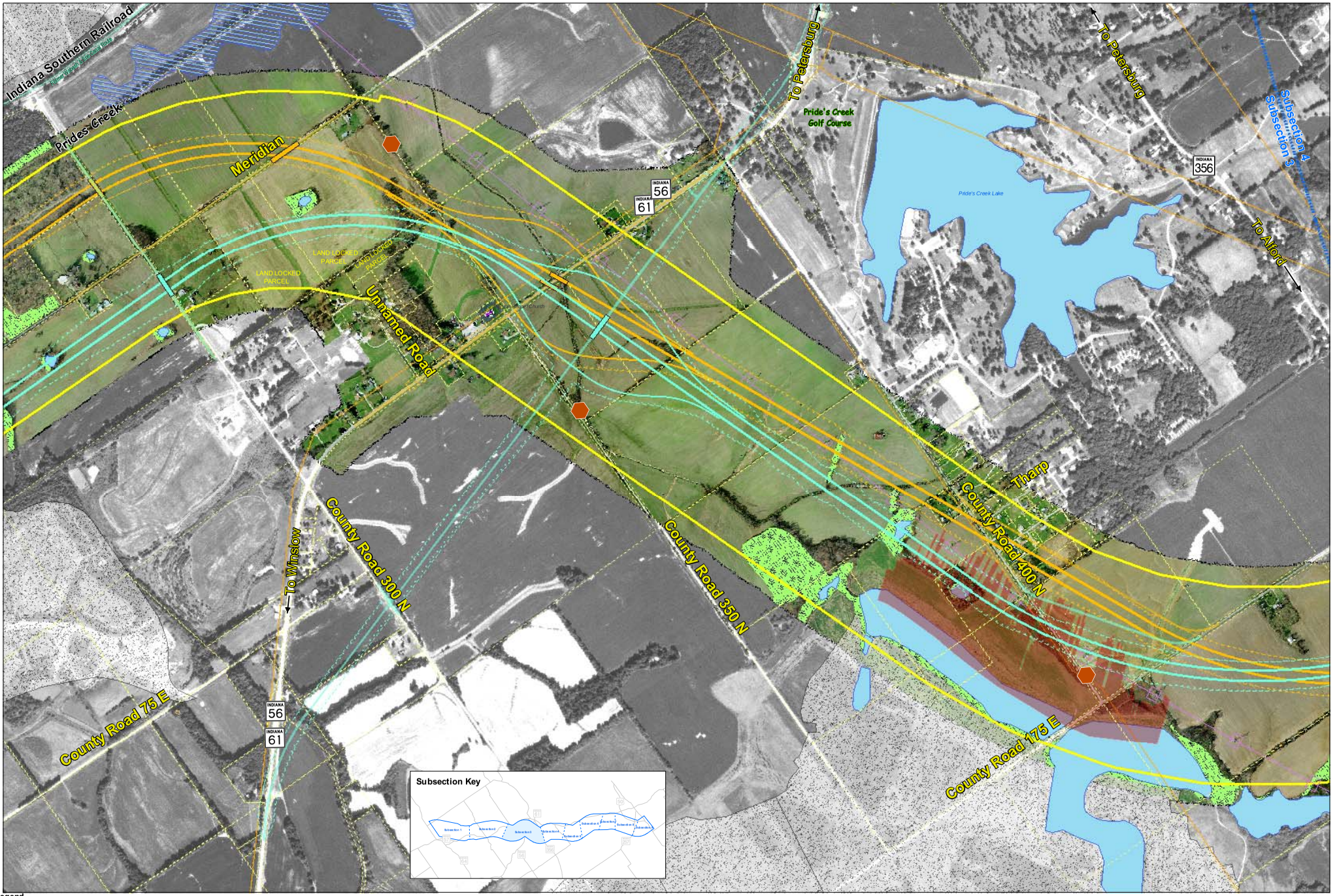
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 11**
**Sheet 5 of 13**




**Legend**

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

**PRELIMINARY**
PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

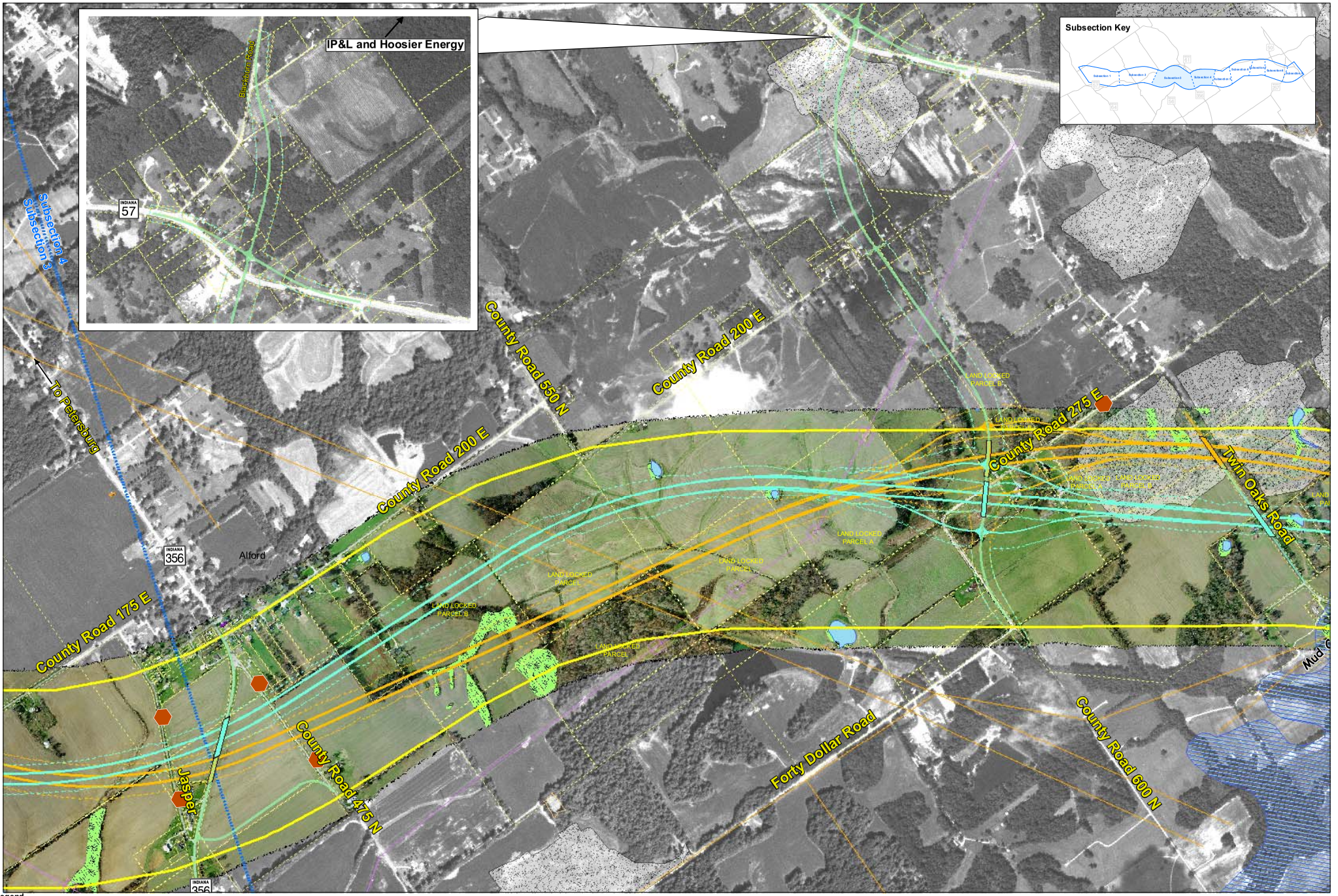
Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering
JACOBS

**FIGURE 11**
**Sheet 6 of 13**




**Legend**

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

**PRELIMINARY**
PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

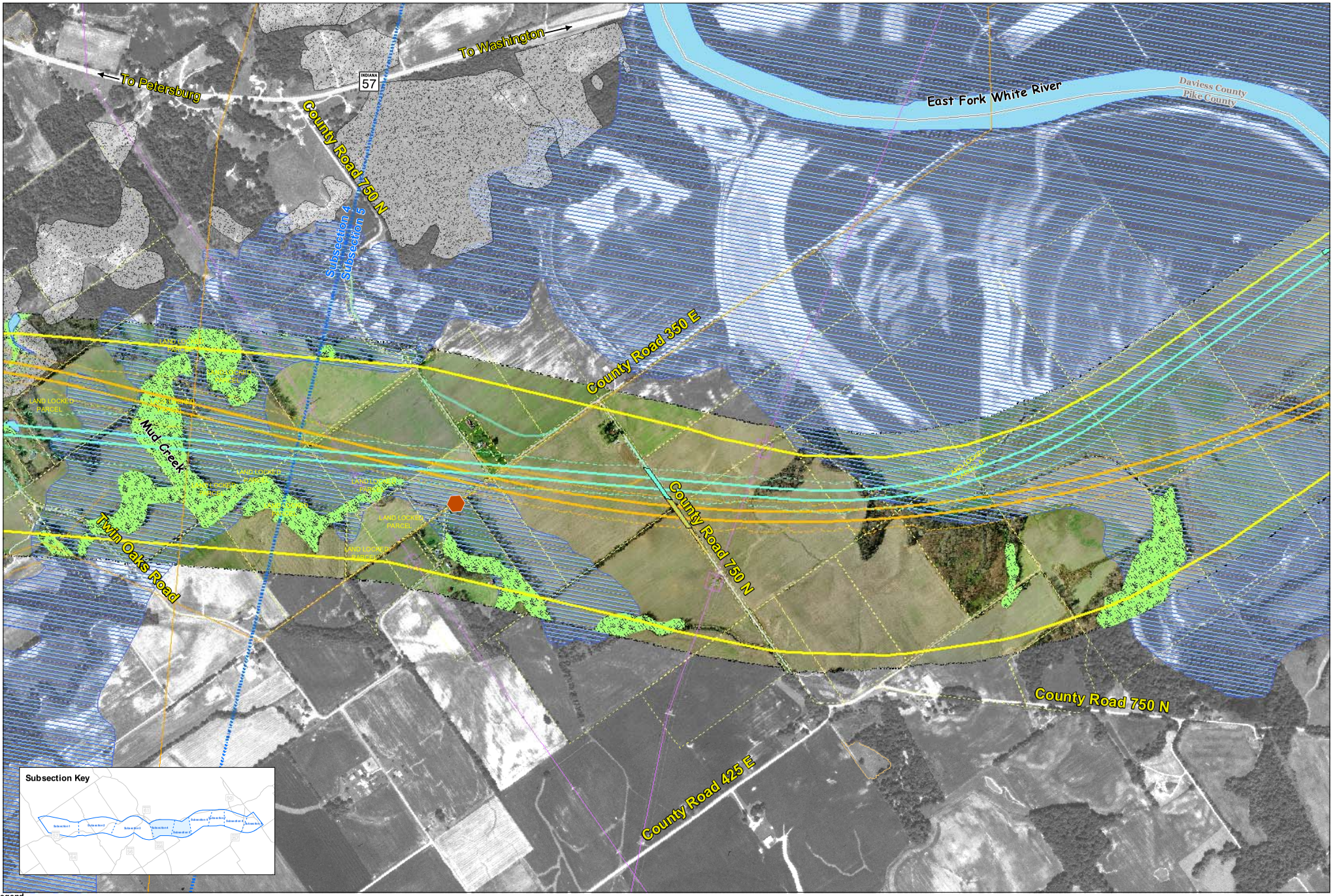
Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering
JACOBS

**FIGURE 11**
**Sheet 7 of 13**




**Legend**

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

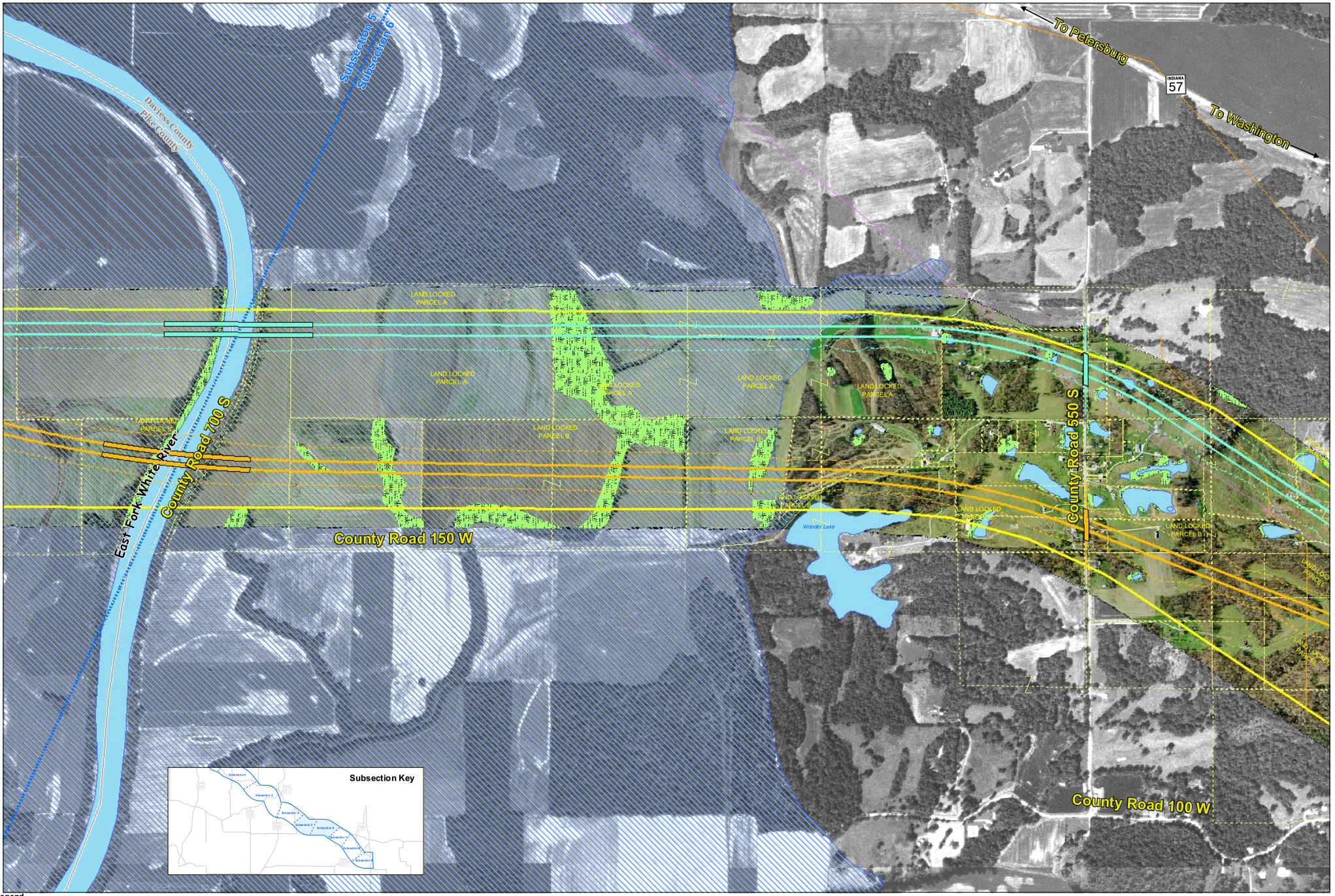
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 11**
**Sheet 8 of 13**




**Legend**

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

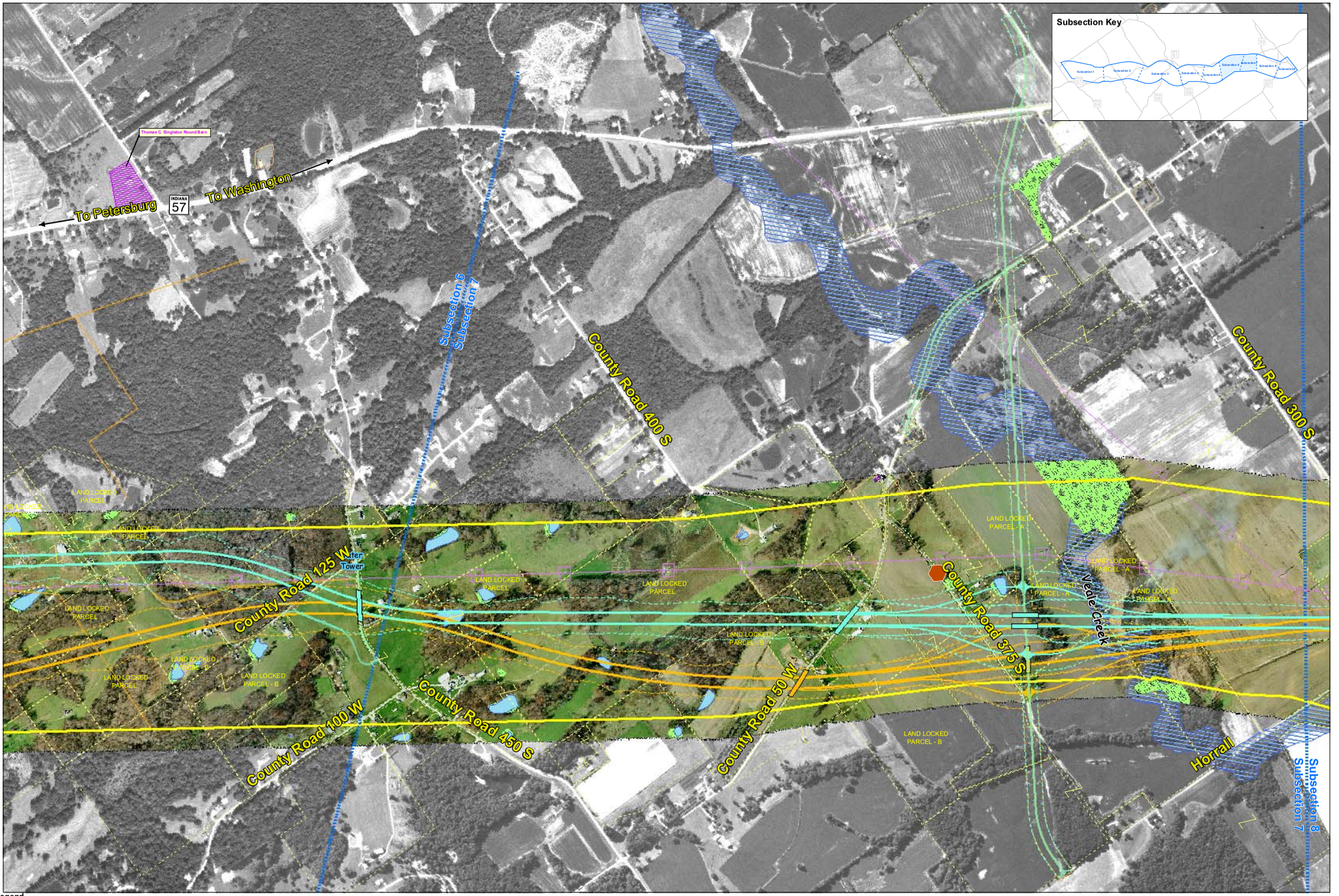
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 11**
**Sheet 9 of 13**




**Legend**

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

**PRELIMINARY**
PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

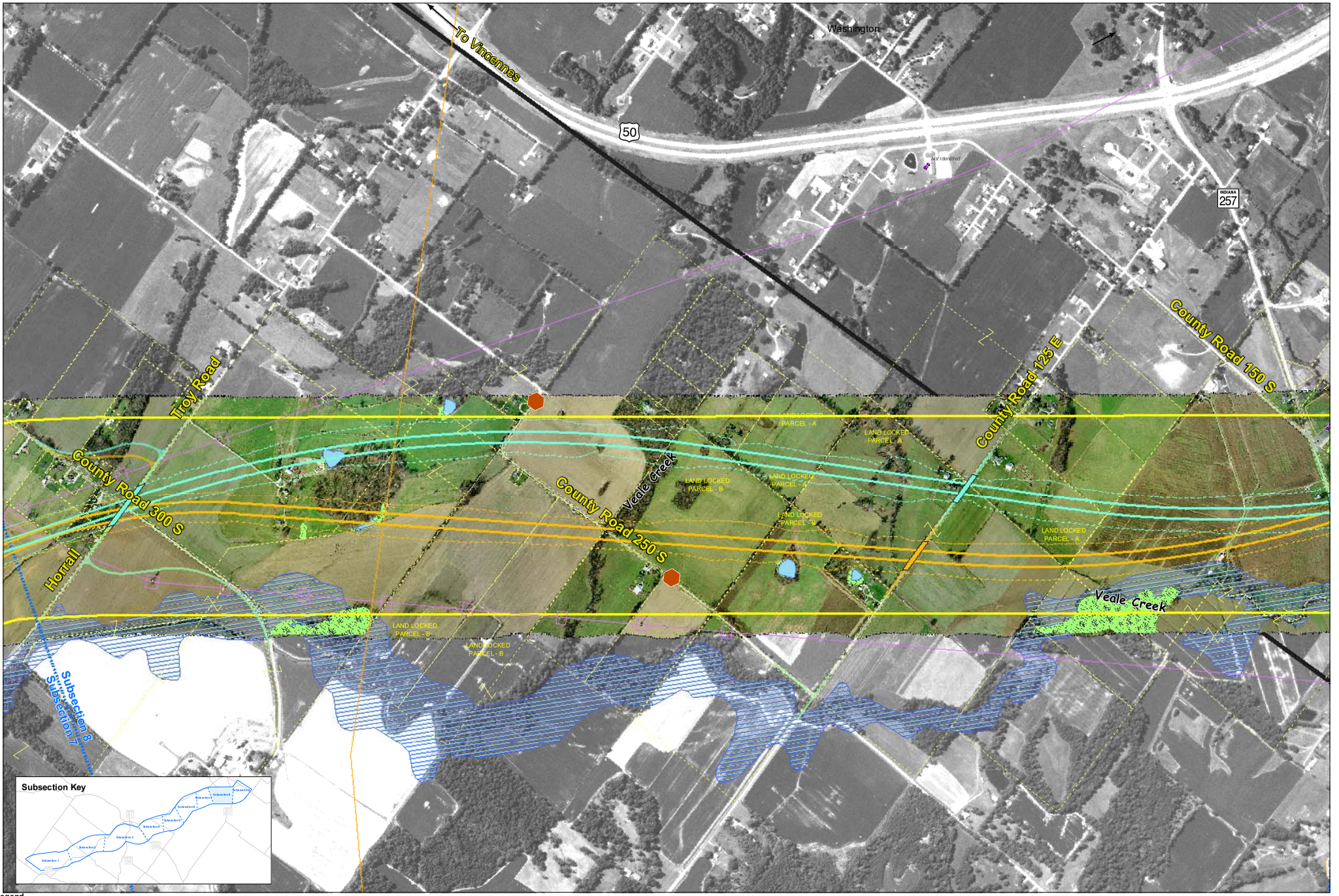
Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering
JACOBS

**FIGURE 11**
**Sheet 10 of 13**




**Legend**

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

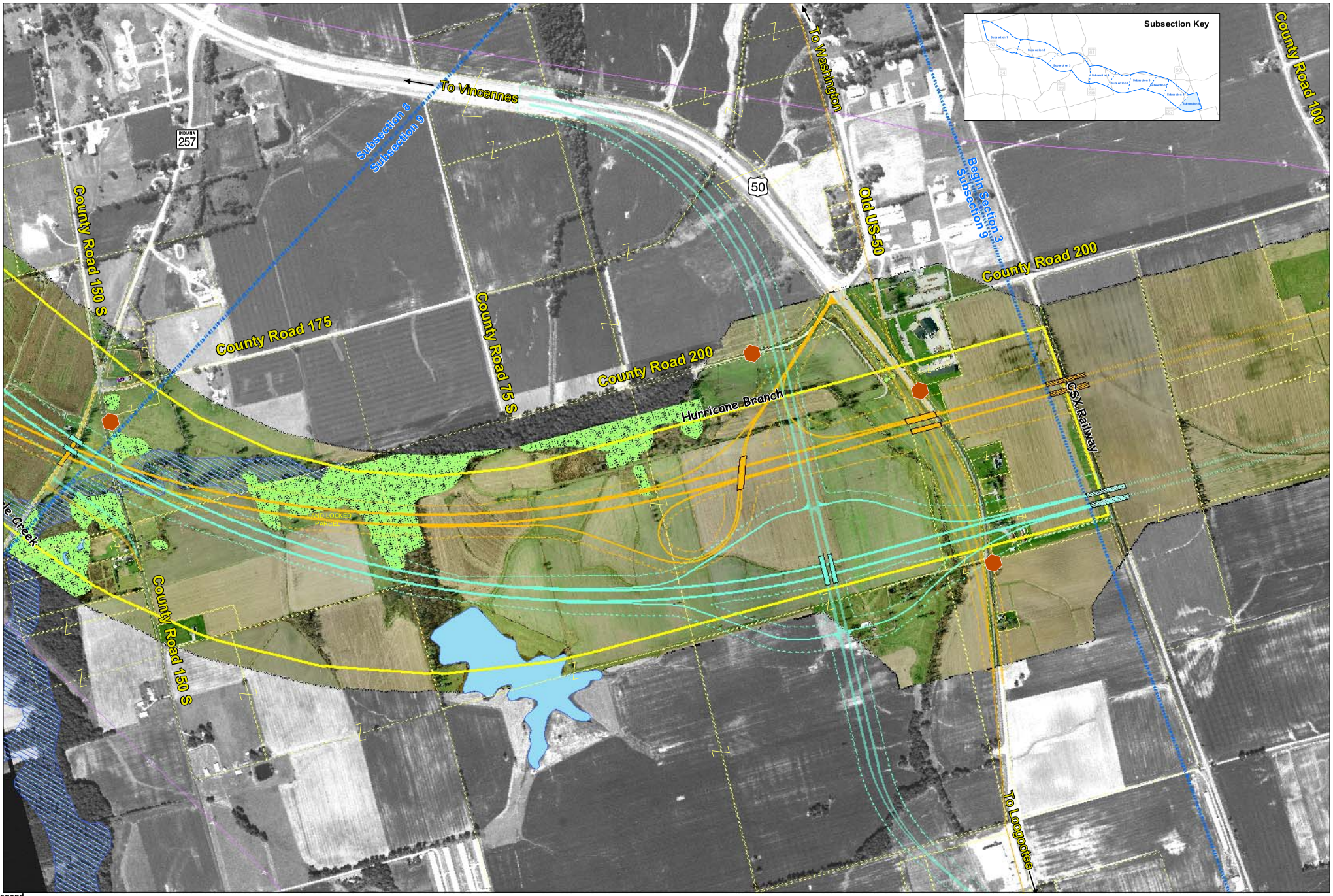
# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering

JE JACOBS

**FIGURE 11**
**Sheet 11 of 13**



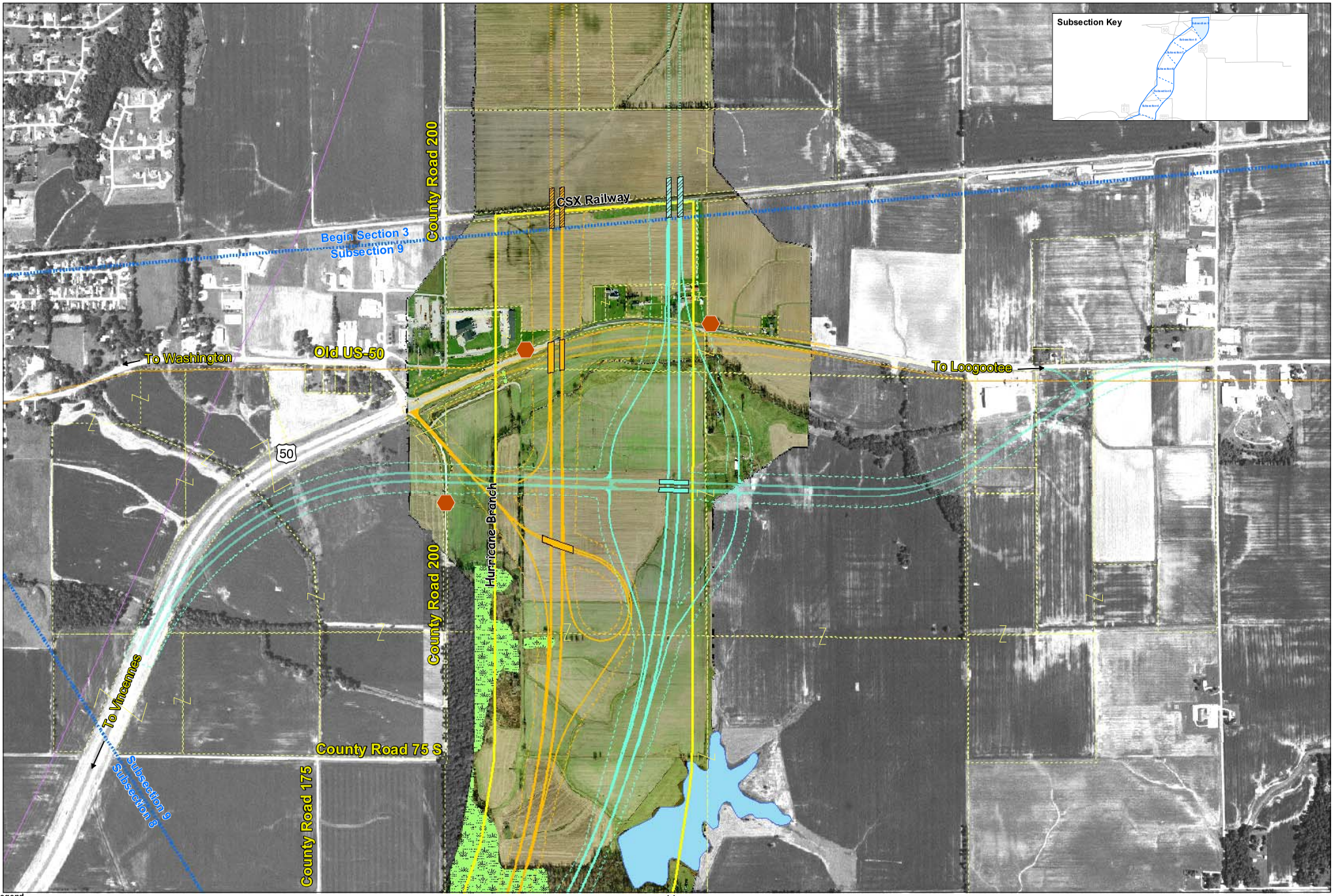

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 11**
**Sheet 12 of 13**




**Legend**

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Wetlands (Adjusted)
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Underground Mine Shafts
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

**PRELIMINARY**

PROPOSED ROADWAY INFORMATION IS PRELIMINARY AND SUBJECT TO MODIFICATION, ADDITION, OR DELETION BASED ON FURTHER STUDY AND PUBLIC COMMENT.

N

300 150 0 300 600 900 1,200 1,500 1,800 Feet

Scale 1"=300'

# I-69 Evansville to Indianapolis
## Tier 2 Studies
## Section 2
Indiana Department of Transportation

**Proposed DEIS Alternatives**

HANNUM, WAGLE & CLINE engineering

JACOBS

**FIGURE 11**
**Sheet 13 of 13**

## Interchange Alternatives

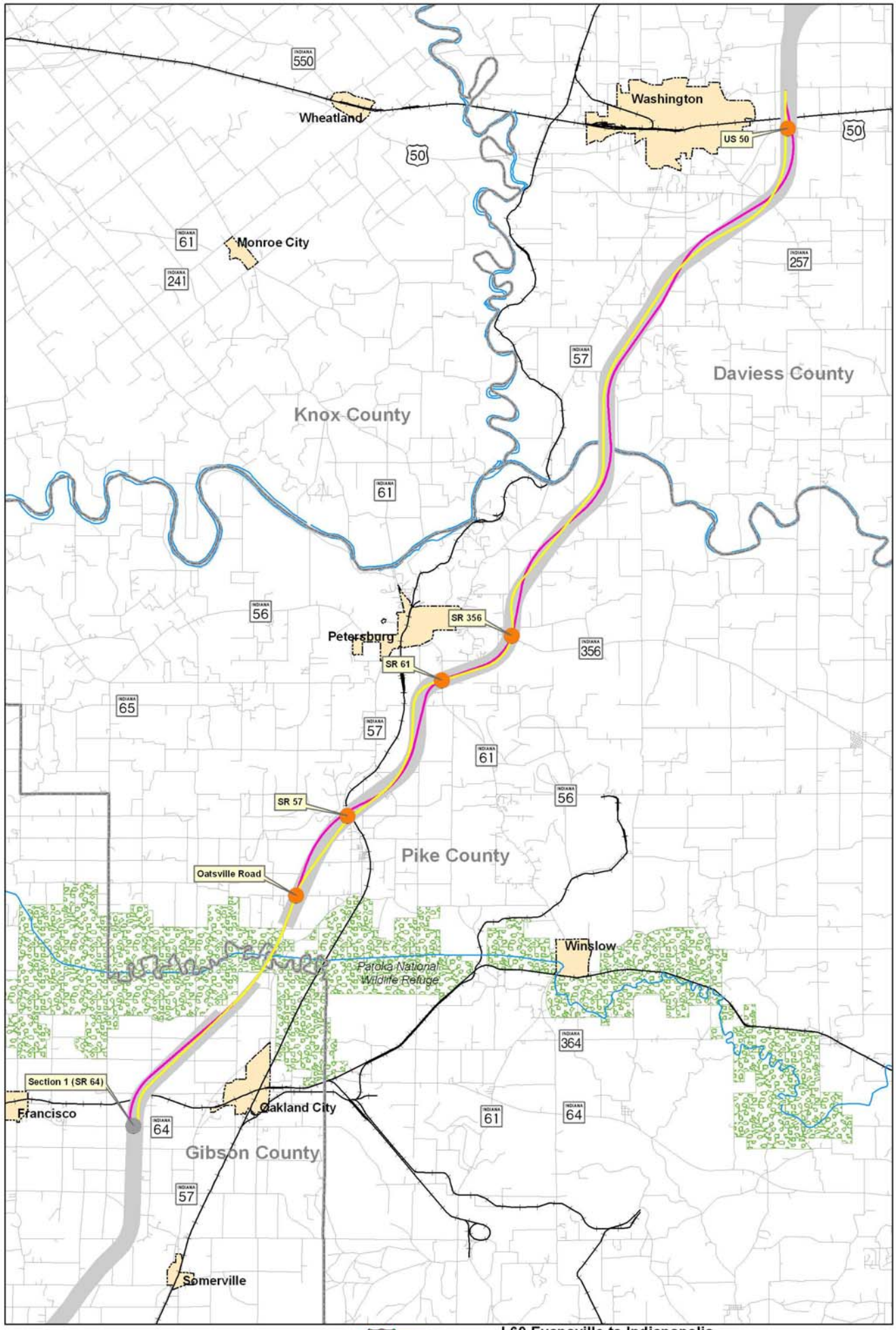
The Tier 1 Study proposed four interchanges in Section 2, at CR 125N (Oatsville Road), SR 61, SR 356, and US 50. Figure 12 shows these Tier 1 interchange locations along with an interchange at SR 57. These interchange locations were presented at the January 19, 2005, CAC meeting and the February 2, 2005, public involvement meeting. Following these meetings, the interchange locations along with other possible interchange locations and interchange types were evaluated to address the Section 2 Tier 2 Purpose and Need and to respond to public comments, as well as to satisfy engineering design criteria.

Figure 12: Initial Interchange Locations (e.g., Tier 1) – February 2005

Thirteen conceptual interchange locations, including considerations of interchange design type, were developed and presented to the CAC on May 3, 2005, and then discussed in detail at the June 22, 2005, Alternatives Screening Meeting with INDOT and FHWA. Conceptual interchanges were evaluated at CR 200S, Oatsville Road, Division Road, SR 57, SR 61 (two options), SR 356, CR 600N, Twin Oaks Road, CR 50W, Troy Road/CR 300S, CR 125E, and two alternatives of different interchange types at US 50. Figure 13 shows these interchange locations. Table 5 summarizes the key reasons why seven of these interchanges were not carried forward for additional study. The interchange evaluations are discussed in additional detail below.

Figure 13: Range of Alternative Interchanges Considered – May 2005

The conceptual interchanges shown south of Petersburg (CR 200S, Oatsville Road, Division Road, and SR 57) were discussed at length with the CAC members and then with INDOT and FHWA. CR 200S (Patoka 2) would provide immediate access to a possible future Patoka National Wildlife Refuge visitor center. Oatsville Road, or CR 125S (Patoka 1), has school bus traffic that could be affected by increased traffic flow from a proposed interchange at this location. School officials have expressed concern that even a small increase in traffic on Oatsville Road could adversely affect school bus operations. Both Patoka interchange locations were found to be too close to the wildlife refuge, potentially generating adverse traffic impacts and secondary development pressure. These issues were of concern to the US Fish & Wildlife Department, which manages the Patoka National Wildlife Refuge. The FHWA Lead Project Engineer and the INDOT Engineering Assessment Section Manager concurred in deleting these interchanges from further consideration in the June 22, 2005 alternates screening review meeting.


Wheatland
Washington
US 50
Monroe City
Daviess County
Knox County
Petersburg
SR 356
SR 61
SR 57
Oatsville Road
Pike County
Patoka National Wildlife Refuge
Winslow
Section 1 (SR 64)
Francisco
Oakland City
Gibson County
Somerville
Alternative 1 in Section 2
Alternative 2 in Section 2
County Boundary
Potential Interchange Location
Rivers
Approved Corridor
City Boundary
Patoka River NWR
N
I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation
Public Meeting - February 2, 2005
0 0.5 1 2 3 4 5
Miles
HANNUM, WAGLE & CLINE engineering
JACOBS

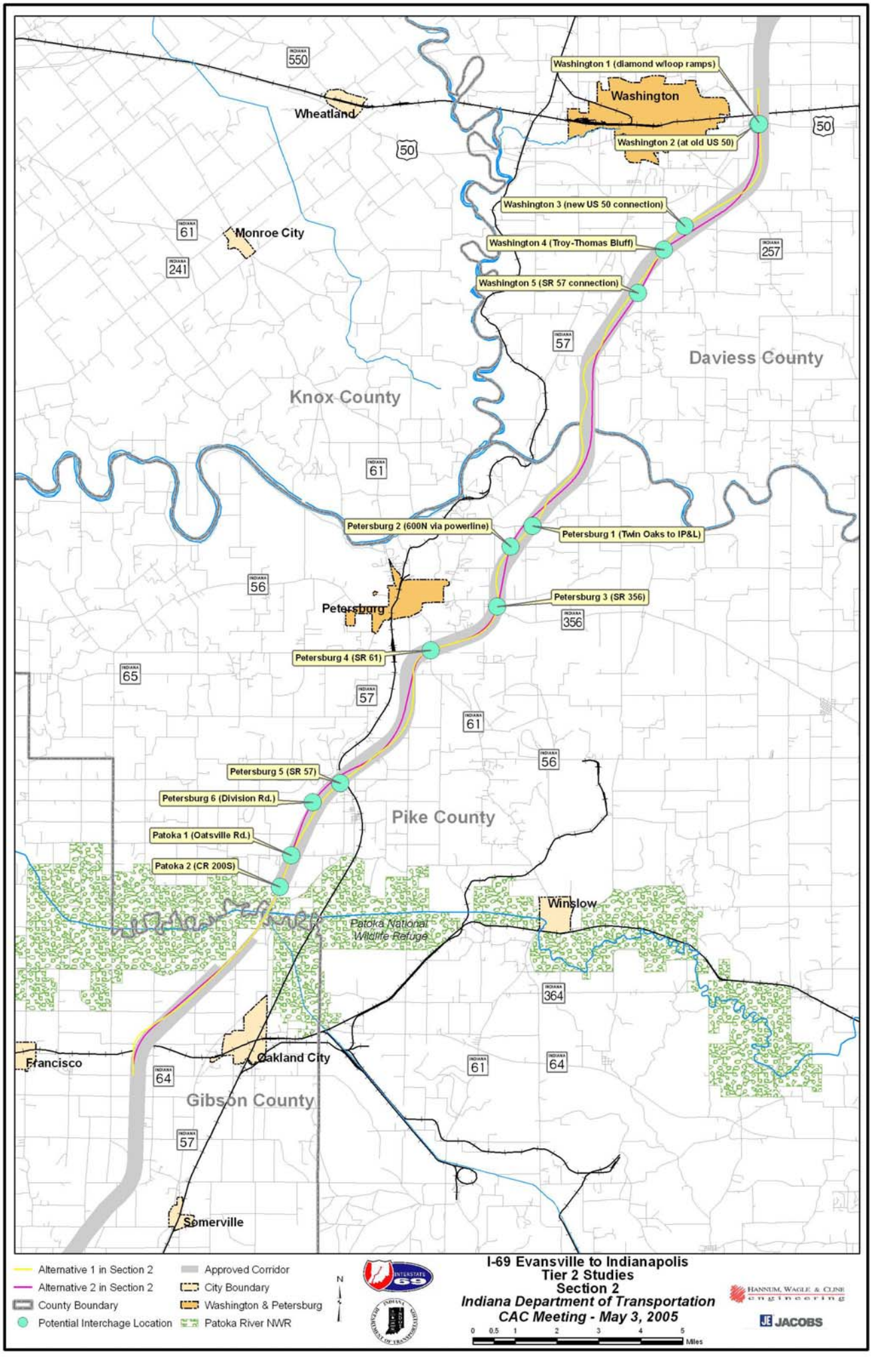

Washington 1 (diamond w/loop ramps)
Washington
Wheatland
Washington 2 (at old US 50)
Washington 3 (new US 50 connection)
Monroe City
Washington 4 (Troy-Thomas Bluff)
Washington 5 (SR 57 connection)
Daviess County
Knox County
Petersburg 2 (600N via powerline)
Petersburg 1 (Twin Oaks to IP&L)
Petersburg
Petersburg 3 (SR 356)
Petersburg 4 (SR 61)
Petersburg 5 (SR 57)
Petersburg 6 (Division Rd.)
Pike County
Patoka 1 (Oatsville Rd.)
Patoka 2 (CR 200S)
Winslow
Patoka National Wildlife Refuge
Francisco
Oakland City
Gibson County
Somerville
Alternative 1 in Section 2
Alternative 2 in Section 2
County Boundary
Potential Interchage Location
Approved Corridor
City Boundary
Washington & Petersburg
Patoka River NWR
N
I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation
CAC Meeting - May 3, 2005
0 0.5 1 2 3 4 5
Miles
HANNUM, WAGLE & CLINE engineering
JE JACOBS

**Table 5 – Reasons Interchange Locations Were Not Carried Forward**

Patoka 2 (CR 200S)

- Proximity to the Patoka National Wildlife Refuge could generate adverse traffic impacts and secondary development pressure adversely affecting the refuge
- Substandard roadway would require full replacement

Patoka 1 (Oatsville Road)

- Increased interchange traffic could conflict with school bus operations
- Proximity to the Patoka National Wildlife Refuge could generate adverse traffic impacts and secondary development pressure

Petersburg 5 (SR 57)

- Interchange would require folded diamond design because of the close proximity to the Indiana Southern Railroad and Flat Creek (design speed 30mph, radius 350', grades up to 4%, 800' of additional structure)
- Poorer operating conditions with folded diamond interchange design disfavored by FHWA and INDOT
- More right of way is required for a folded diamond layout at this location verses a conventional diamond interchange
- Cost of SR 57 interchange is $2.2 million more plus higher long-term maintenance for 480 vpd

Petersburg 3 (SR 356)

- Elementary school just west of the interstate alignment would be affected by increased traffic flow
- Circuitous route into Petersburg
- Substandard intersection design at SR 57 and SR 356

Petersburg 1 (Twin Oaks Road)

- The signed IP&L entrance/exit at SR 57 is not the primary truck entrance for the facility
- Several residential parcels located along Twin Oaks Road (CR 650N) would need to be acquired in whole or part
- This alignment would require developing a new alignment to access SR 57, whereas the alternative would parallel the existing transmission line corridor

Washington 4 (Troy Road/CR 300S)

- Would require realignment of Troy Road, which is the second most traveled road in Daviess County
- Neither Troy Road nor CR 300S were designed to handle the increased traffic, therefore both would have to be either upgraded or reconstructed
- Right-of-way acquisition would be required from several residential parcels along both roads
- Existing curb cuts along Troy Road would diminish the safety of interstate-feed traffic operations

Washington 3 (CR 125E)

- Close proximity to US 50 interchange would limit significantly this second interchange's utility because it would not enhance traffic distribution and may be difficult to sign

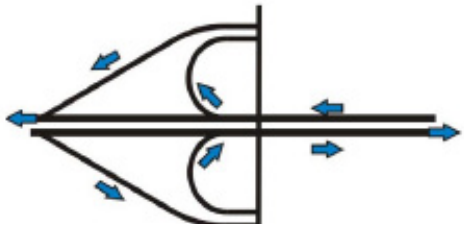


**Figure 14: Folded Diamond**

Building an interchange at SR 57 (Petersburg 5) would be particularly challenging because of the close proximity of the Indiana Southern Railroad, Flat Creek (the former Wabash & Erie Canal route), a county road, and wetlands. A folded diamond interchange (see Figure 14) is the only interchange type that could access existing SR 57 and avoid conflict with the above listed elements. A folded diamond interchange at this location would provide only a 30-mph design speed, require grades up to four percent, and has radii of only 350-ft on the loop ramps. Significantly, these tight ramp conditions necessitate building both 400 ft of on- and 400 ft of off-ramp acceleration and deceleration lanes on structure for the loop ramps. This construction essentially adds 50 percent to the cost of the mainline structure, which will also require long-term maintenance. In addition, the operating conditions resulting with this interchange type are undesirable due to the potential for wrong-way traffic to access the interstate. A folded diamond interchange at this location would require more right-of-way than a conventional diamond configuration at Division Road, and the earthwork required for an interchange at this rather hilly location would be more costly.

Building the interchange at Division Road (Petersburg 6) would provide convenient access to SR 57 and be more cost effective to build its diamond ramps on grade and upgrade the short distance of Division Road from the interchange to SR 57. (The Division Road upgrade does not require any additional residential displacements). This location will provide quick access to the interstate for residents who live in northern Gibson and southern Pike Counties, as well as an exit point for travelers who desire to visit the Patoka Refuge with good signage on SR 57 without stimulating commercial development at the Refuge.

Comparing a SR 57 interchange with a Division Road interchange shows that the SR 57 location is estimated to have daily total traffic on and off via all ramps which is about 25 percent higher (2,410 versus 1,930 vpd). However, to serve these 480 vehicles per day, the cost of the investment in a south Pike County interchange (including Division Road upgrades) increases 30 percent ($9.5 million versus $7.3 million). Building either interchange is estimated to displace two residential units. The CAC members at their May 3, 2005 meeting generally preferred the Division Road interchange. Both the FHWA Lead Project Engineer and the INDOT Engineering Assessment Section Manager recommended against the folded diamond interchange solution as expressed at the January 4, 2005 engineering assessment meeting and the June 22, 2005 alternates screening review meeting. Given that:

- the CAC members, in their May 3, 2005 interchange concept review meeting and in other sessions, expressed interest in having a south Pike County interchange to assist in drawing economic development to the county;
- the distance between interchanges will be 13 miles without a south Pike County interchange;
- comments have been made at the Section 2 project office that those traveling north from Gibson County or south from Petersburg will lack access without a south Pike County interchange;
- the expressed FHWA and INDOT design preference provided in the June 22, 2005 alternates screening review meeting is for an interchange at Division Rd.; and
- the significant additional cost for a small increase in estimated traffic;

the Division Road interchange was generally agreed to be the better overall access solution for a south Pike County interchange, and accordingly was carried forward, while the SR 57 interchange location was dropped from further consideration.

Interchange options at SR 61 and at SR 356 were discussed with the CAC members and then with INDOT/FHWA to serve Petersburg. SR 61 (Petersburg 4) provides direct access into the heart of Petersburg and has been unequivocally favored by the community and its officials. The interchange could be placed on existing SR 61, which would require removing existing curb cuts to multiple properties within 1,200 feet of each side of the interchange, or on a realigned section of SR 61, which would avoid the change in curb cuts and also permit eliminating some horizontal and vertical curves on existing SR 61. SR 356 (Petersburg 5) is very close to the SR 61 interchange location and offers a more circuitous route into Petersburg, and passes an elementary school just west of the interstate alignment. It intersects SR 57 at a substandard intersection with poor sightlines, which would require displacements to correct. Of the two, SR 61 offers the better solution to serve Petersburg, and SR 356 does not warrant further consideration.

Interchange options at CR 600N and Twin Oaks Road (CR 650N) were considered north of Petersburg. In either case, the roadway links to SR 57 would be developed and operated as state routes to ensure access control. CR 600N (Petersburg 2) follows the transmission line corridor to SR 57, intersecting at a low point on SR 57 near a creek. Following the existing transmission line corridor would avoid cutting another alignment across the landscape. This interchange would provide the power plants the opportunity to construct a new entrance to their properties so trucks would not be required to make a turn onto SR 57. Twin Oaks Road (Petersburg 1) has more displacements, and provides a direct connection to the signed Indianapolis Power & Light (IP&L) entrance/exit on SR 57. However, most trucks entering the IP&L facility, as well as those entering and exiting Hoosier Energy, use Blackburn Road, which intersects SR 57 at a point south of the IP&L signed entrance/exit. Thus, of the two options to divert coal truck traffic out of the heart of Petersburg (see local Purpose and Need goal 4B in Table 1), the CAC members favored the 600N tie-in over the Twin Oaks/IP&L tie-in. The INDOT Engineering Assessment Section Manager and the FHWA Lead Project Engineer concurred in going forward with this option and dropping the Twin Oaks option at the June 22, 2005 alternates screening review meeting.

Two primary interchange configurations were considered at US 50. The first is a trumpet-type interchange (for configuration see Alternative B on Figure 11, sheet 13 of 13) that connects to old US 50 and the US 50 by-pass (Washington 2). The second is a conventional diamond interchange (Washington 1). This interchange type would require realigning part of the existing four-lane-divided US 50 to locate the interchange sufficiently south of the railroad tracks to get clearance over them. A variation to the diamond interchange is a folded diamond (see Figure 14). A folded diamond interchange would permit crossing over the CSX Railroad tracks without realigning any of the existing four-lane-divided stretch of US 50. However, this interchange type does not function as well as a conventional diamond interchange. CAC members felt that the trumpet design at US 50 offered the greater possibility for economic development because it does not impede development along existing US 50 and brings all interchange traffic to a single point. The community felt this would maximize the potential of the highway to encourage tourism. INDOT/FHWA expressed concern about bringing all of the traffic to a single point for the following reasons: future traffic volumes might result in congestion, there is the potential for

"wrong-way" traffic entering the highway, and its flyover ramps would involve additional bridge structure costs.

Any US 50 interchange must accommodate a future eastward extension of the present US 50 four-lane divided roadway. Building a diamond interchange at US 50 requires rebuilding part of the existing four-lane-divided roadway to get sufficient horizontal clearance from the railroad tracks, which can be accomplished with few or no impacts to an existing blue line stream (Hurricane Branch) on the south of US 50, that runs parallel to the US route. A folded diamond interchange was rejected and not advanced because of its less desirable operating conditions at this location, given that this major route is expected to need to handle high volume movements. Due to the strong community support for the trumpet configuration, INDOT and FHWA agreed that both the trumpet and the full diamond interchanges should be presented at the public meeting.

Conceptual interchanges south of Washington (CR 50W, Troy Road/CR 300S, and CR 125E) were also discussed with the CAC and INDOT/FHWA. The CR 50W interchange (Washington 5) would avoid backtracking by motorists going between southbound I-69 and the central and western parts of Washington. The Troy Road/CR 300S interchange (Washington 4) would require the realignment of Troy Road, the second most traveled road in Daviess County, in an area constrained by transmission lines. Because both Troy Road and CR 300S originally were not designed to handle the increased traffic an interchange would generate, both would have to be upgraded or reconstructed. Several residential parcels are located along both roads which would need to be acquired, at least in part. The proposed interchange at CR 125E (Washington 3) would connect I-69 to the US 50 by-pass, but would be located only about three miles away from the US 50 interchange. This proximity would make such an interchange location of significantly reduced utility because it would not enhance traffic distribution and may be difficult to sign. To the extent possible, the interchange connector road would be developed and operated as a state roadway to control access. Of the three, INDOT/FHWA approved advancing the southerly option for consideration at CR 50, given the problems at the other two locations.

The result of the development and review process with the CAC and with INDOT/FHWA was a total of five interchange locations (Division Road, SR 61, CR 600N, CR 50W, and US 50), involving two different design solutions at two locations (SR 61 and US 50) to be presented for public review and comment. These interchanges were reviewed again with the CAC on August 4, 2005, and presented to the public on August 9, 2005.

The interchange north of Petersburg and the interchange south of Washington were subsequently further modified based on comments received at the August 9 meeting and additional field checking. The interchange north of Petersburg was adjusted to tie directly to Blackburn Road (including realignment of a short segment of Blackburn Road west of SR 57) as well as a short realignment of SR 57. This improvement will better handle truck traffic going to and from IP&L and Hoosier Energy and avoid a SR 57 sight distance problem that would have been created with the previously proposed interchange connector roadway link to SR 57. This revised roadway link would be developed and operated as a state roadway to limit development along the corridor.

The connecting roadway for the interchange south of Washington was realigned northward to avoid some new residential development and place the interchange access point as close as possible to the city of Washington, as requested at the public meeting. The resulting access point

on SR 57 is only about 1 1/2 miles south of the US 50 by-pass /SR 57 intersection, which is a development node and leads into the heart of Washington. This interchange connecting roadway would also be developed and operated as a state roadway to control access.

Figure 15 shows the five interchange locations resulting from the evaluation of the 13 preliminary interchange alternatives. The five interchanges, named to reflect their service areas, are in north-to-south order: Washington, South Daviess County, North Pike County, Petersburg, and South Pike County. The spacing of the interchanges are as follow: Washington - South Daviess County interchange—5 miles, South Daviess County-North Pike County—7 miles, North Pike County-Petersburg—4 miles, Petersburg-South Pike County—5 miles, South Pike County-SR 64—8 miles. This provides an average spacing between each of the five interchanges under consideration in Section 2 of about six miles.

Figure 15: Five Potential Interchange Locations

### 3.2.3 Consideration of Tolling

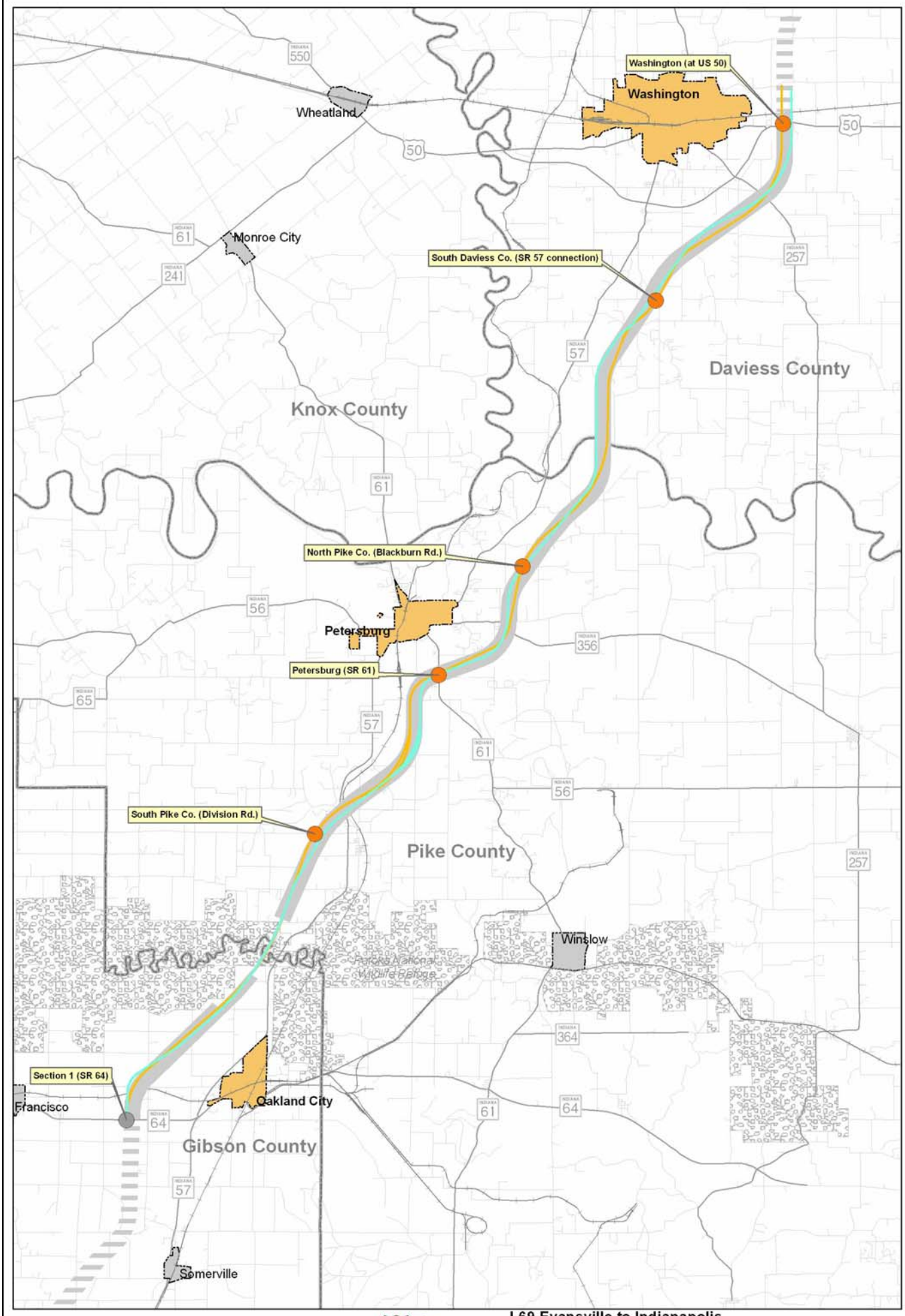
As of the time of the preparation of this package, INDOT and FHWA are preparing a Tier 1 Reevaluation to consider the use of tolled alternatives in Tier 2. This Reevaluation may result in the analysis of toll alternatives in Tier 2 NEPA documents. It is anticipated that tolled alternatives would have an identical footprint to non-toll alternatives in most sections, and that impacts to most resources (such as those discussed in this package) would not be affected by the imposition of tolls. Traffic-related impacts, such as noise and air quality, will change for tolled alternatives, as compared to non-toll alternatives. In addition, in some sections the footprint of toll alternatives may be slightly smaller than that of non-toll alternatives, due to reductions in the number of travel lanes required. If the decision is made to analyze toll alternatives, their impacts and performance will be fully analyzed Tier 2 DEIS documents. However, since the analysis in this package is based upon consideration of footprint-dependent impacts, its results would not change in any meaningful way by consideration of tolled alternatives.

## *4.0 Description of Alternatives Carried Forward*

### 4.1 Alternatives Development Process

Section 2's iterative process, which engaged both the CAC and the public, as well as state and federal review agencies through the scoping process, resulted in the consideration of four different alternatives (1, 2, A, and B) and over 15 different interchange locations/concepts. The process yielded two refined alternatives, termed A and B, (each having nine subsections and five potential interchanges) that are being fully evaluated in the Section 2 EIS. Two of the interchange locations (SR 61 and US 50) are considered required with any build alternative and the remaining three are considered optional. It is likely that no more than two of these will be selected as part of the preferred alternative.

Both Alternatives A and B were divided into nine subsections. The subsection breakpoints were selected to occur at major natural barriers, such as the major river crossings--the Patoka River and the East Fork of the White River (which also are county boundary lines). The subsection breakpoints were also selected to occur at points where the A and B alternatives intersect in order to be able to connect an A Alternative in one subsection with a B Alternative in another




**I-69 Evansville to Indianapolis**
**Tier 2 Studies**
**Section 2**
***Indiana Department of Transportation***

HANNUM, WAGLE & CLINE engineering

JACOBS

subsection (except at the two major river crossings). These breakpoints will permit selecting the better of the two alignments in the subsections to define the preferred alternative. Thus, rather than only having a choice between Alternative A or Alternative B when selecting the preferred alternative, it is possible to choose a combination from among the nine Alternative A and nine Alternative B subsections. A preferred alternative in each subsection will be selected based on its ability to minimize impacts, minimize cost, and satisfy local Purpose and Need. Figure 16 shows Alternatives A and B with the five potential interchanges, as well as the nine subsections and sheet layout for Figure 11, sheets 1 through 13, which also show the subsections.

Figure 16: Alternatives for EIS Evaluation-Subsection Locations

## 4.2 Mainline Alternatives

Alternatives A and B as shown in Figure 16 will be carried forward for detailed evaluation in the DEIS. The differing effects of the alternatives in each of the nine subsections will be individually determined in order to choose the better of the two alternatives in each subsection for inclusion in the preferred alternative.

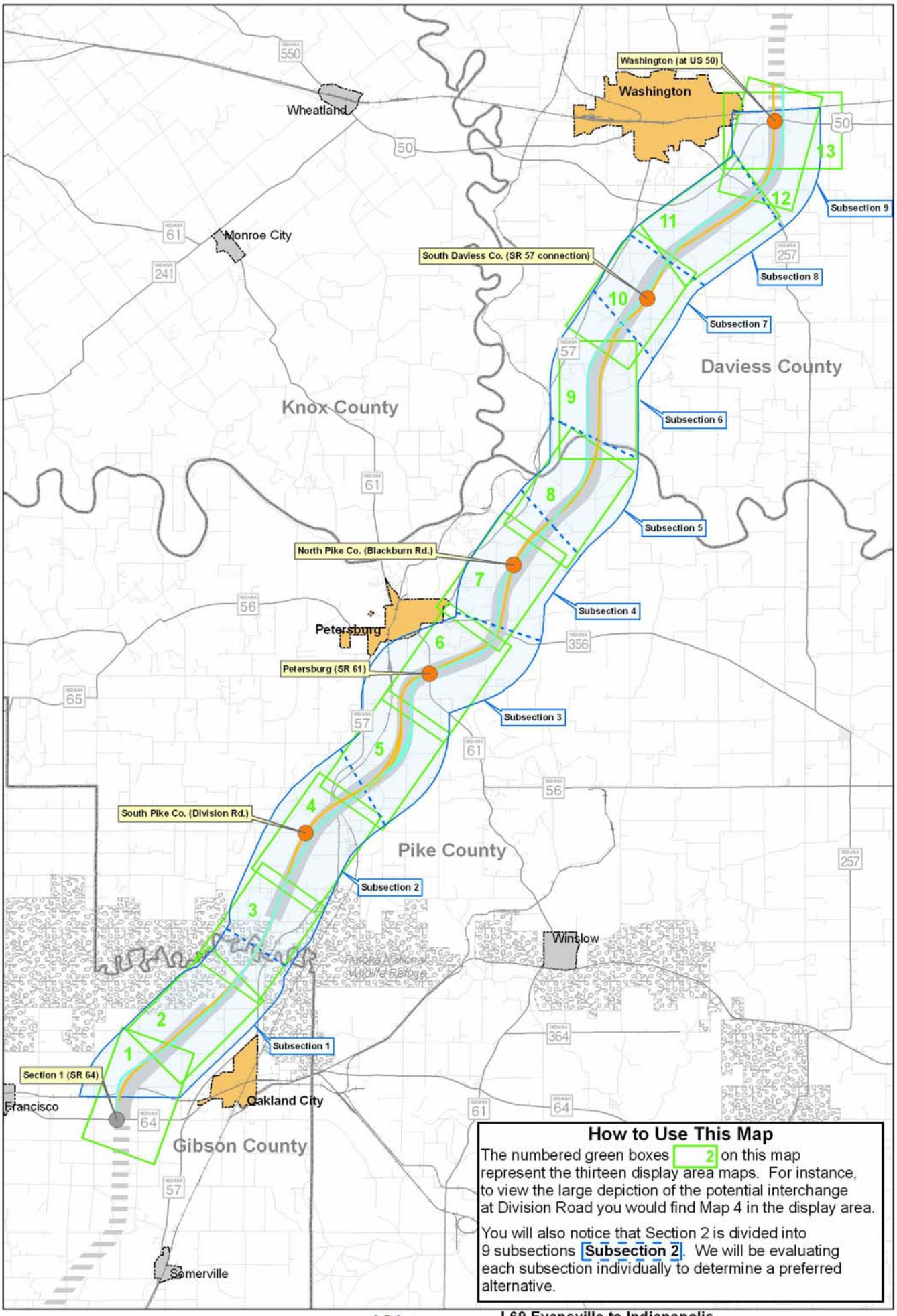
## 4.3 Interchange Alternatives

The five interchange concepts located on both Alternatives A and B that were presented at the August 4, 2005, CAC meeting and the August 9, 2005, public meeting will be carried forward for detailed evaluation in the DEIS with two refinements. The interchange south of Washington and the interchange north of Petersburg were further modified after the August meetings, based on the comments received at those meetings and additional field work. The five DEIS interchanges are named, in north to south order, to reflect their service areas, as follows: Washington (US 50), South Daviess County (which connects with SR 57 at CR 300S), North Pike County (which connects with realigned Blackburn Road at realigned SR 57), Petersburg (SR 61), and South Pike County (at rebuilt Division Road connecting to SR 57).

While one interchange will, at a minimum, serve Washington (at US 50) and one will serve Petersburg (at SR 61), other interchanges may be included in the preferred alternative based on need, project benefits, and cost. The factors to be considered include: their performance on purpose and need measures; spacing guidelines; functional classification; road jurisdiction; NHS designation; INDOT long-range plan designation; State 3R and 3R systems; traffic volume; impact minimization; site topography; cost; and trip type.

Figure 15 shows the five locations identified for possible interchanges based on local demographics, existing traffic patterns, areas of interest, and access spacing. Alternatives A and B and the five potential interchanges have been analyzed in nine traffic scenarios to evaluate the effects of including or excluding various interchanges:

- Scenario 1 shows the traffic forecasted for building Alternative B with the trumpet interchange at Business Route US 50 and the US 50 bypass, as well as with the Petersburg interchange at SR 56/61.
- Scenario 2 shows the traffic forecasted for building Alternative A's diamond interchange at realigned US 50, as well as with the Petersburg SR 56/61 interchange.
- Scenario 3 adds the South Daviess County interchange to Scenario 2.
- Scenario 4 adds the North Pike County interchange to Scenario 2.


Washington (at US 50)
Washington
Wheatland
Monroe City
South Daviess Co. (SR 57 connection)
North Pike Co. (Blackburn Rd.)
Petersburg
Petersburg (SR 61)
South Pike Co. (Division Rd.)
Section 1 (SR 64)
Francisco
Oakland City
Somerville
Winslow
Knox County
Daviess County
Pike County
Gibson County
Subsection 1
Subsection 2
Subsection 3
Subsection 4
Subsection 5
Subsection 6
Subsection 7
Subsection 8
Subsection 9
1
2
3
4
5
6
7
8
9
10
11
12
13
How to Use This Map
The numbered green boxes 2 on this map represent the thirteen display area maps. For instance, to view the large depiction of the potential interchange at Division Road you would find Map 4 in the display area.
You will also notice that Section 2 is divided into 9 subsections Subsection 2. We will be evaluating each subsection individually to determine a preferred alternative.
Alternative A in Section 2
Alternative B in Section 2
County Boundary
Potential Interchange Location
Section 2 Approved Corridor
Section 1 & 3 Approved Corridors
Washington, Petersburg, & Oakland City
I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation
N
0 0.5 1 2 3 4 5
Miles
HANNUM, WAGLE & CLINE engineering
JACOBS

- Scenario 5 adds both the South Daviess and the North Pike County interchanges to Scenario 2.
- Scenario 6 adds both the North and South Pike County interchanges to Scenario 2.
- Scenario 7 adds the South Pike, North Pike, and South Daviess County interchanges to Scenario 2.
- Scenario 8 is the same as Scenario 7, except that the South Pike County interchange is located directly on SR 57.
- Scenario 9 adds the South Daviess and South Pike County interchanges to Scenario 2.

The scenarios are listed and the resulting traffic comparison of the volumes produced by the travel demand forecasting analyses are shown in Table 6. A minimum of two access points are necessary given the length of Section 2; interchange alternatives at Washington and Petersburg were identified as priority locations. Each of the nine scenarios included these two interchanges, as shown in Table 6. Scenarios 3 through 9 tested Alternative A with various combinations of the remaining interchanges: South Daviess County, North Pike County, and South Pike County. As might be expected, travel demand forecasting predicted that Scenarios 7 and 8, which included all proposed interchanges, would draw the highest interchange traffic volumes. However, the results also make it possible to compare the travel demand for combinations of fewer interchanges, and between interchange locations. All five interchanges will be evaluated in the DEIS.

## 4.4 DEIS Alternatives

All nine subsections in both Alternatives A and B, along with the three optional interchanges, will be carried forward for evaluation in the DEIS. A preferred alternative will be recommended in the DEIS from among the subsection choices and the optional interchanges. The selection of those components to be included in the preferred alternative will be based on which subsection or optional interchanges best minimize adverse environmental impacts and cost while satisfying the Section 2 Purpose and Need.

Three interchanges combinations will be carried forward as alternatives into the DEIS. These three combinations are defined as: Option AA (South Daviess and North Pike County interchanges – same as Scenario 5); Option BB (North and South Pike County interchanges – same as Scenario 6); and Option CC (South Daviess and South Pike County interchanges – same as Scenario 9). The South Daviess County interchange will tie to SR 57 at CR 300S. The North Pike County interchange will tie to a relocated section of SR 57 at relocated Blackburn Road. The South Pike County interchange will tie to SR 57 via an improved section of Division Road. These interchange scenarios will allow for a comparison of the full range of interchange locations in Section 2. It is anticipated that no more than four interchanges will be constructed in Section 2. It also is anticipated that interchanges at SR 56/61 (Petersburg) and US 50 (Washington) will be constructed.

Consideration of these interchange options does not preclude selection of a preferred alternative consisting of one of the other scenarios. These interchange options provide a range of reasonable interchange alternatives. If the detailed analysis of local purpose and need and impacts indicates that another interchange scenario should be considered, it could be added to this analysis framework.

Table 7 provides an initial estimation of the environmental effects of each of the nine subsections in both Alternatives A and B, as well as an end-to-end total for both Alternative A and B to give a range of potential impacts. The effects of committed interchanges at Washington and Petersburg are included within their respective subsections. The effects of each of the three optional interchanges are given separately to permit a comparison of their effects.

## Table 6: Section 2 – AADT Traffic Volume Summary*

| Scenario | Interchange (Crossroad) | Sum of all 4 Ramps | Mainline North of Interchange | | Crossroad | |
|---|---|---|---|---|---|---|
| | | | NB | SB | East of Interchange | West of Interchange |
| 1 | US 50 (Alt B trumpet at Washington) | 7,970 | 10,550 | 10,930 | 16,140 | 7,030 |
| | SR 56/61 (Petersburg) | 6,580 | | | 4,660 | 7,850 |
| | South of SR 56/61 (Petersburg) | | 13,710 | 13,410 | | |
| | **Total** | **14,550** | | | | |
| 2 | US 50 (Alt. A diamond at Washington) | 8,080 | 10,660 | 10,860 | 16,100 | 15,461 |
| | SR 56/61 (Petersburg) | 6,610 | | | 6,340 | 15,710 |
| | South of SR 56/61 (Petersburg) | | 13,690 | 13,410 | | |
| | **Total** | **14,690** | | | | |
| 3 | US 50 (Alt. A diamond at Washington) | 7,620 | 10,650 | 10,860 | 16,070 | 14,726 |
| | South Daviess County | 2,870 | | | 760 | 3,020 |
| | SR 56/61 (Petersburg) | 5,520 | | | 4,710 | 6,070 |
| | South of SR 56/61 (Petersburg) | | 13,750 | 13,470 | | |
| | **Total** | **16,010** | | | | |
| 4 | US 50 (Alt. A diamond at Washington) | 8,150 | 10,660 | 10,860 | 16,100 | 15,130 |
| | North Pike County | 3,540 | | | 300 | 3,620 |
| | SR 56/61 (Petersburg) | 4,800 | | | 4,670 | 4,960 |
| | South of SR 56/61 (Petersburg) | | 13,710 | 13,430 | | |
| | **Total** | **16,490** | | | | |
| 5 | US 50 (Alt. A diamond at Washington) | 7,870 | 10,660 | 10,860 | 16,070 | 14,560 |
| | South Daviess County | 2,970 | | | 770 | 3,100 |
| | North Pike County | 1,870 | | | 300 | 1,810 |
| | SR 56/61 (Petersburg) | 4,750 | | | 4,740 | 4,850 |
| | South of SR 56/61 (Petersburg) | | 13,750 | 13,470 | | |
| | **Total** | **17,460** | | | | |
| 6 | US 50 (Alt. A diamond at Washington) | 8,190 | 10,660 | 10,860 | 16,100 | 15,170 |
| | North Pike County | 3,570 | | | 300 | 3,630 |
| | SR 56/61 (Petersburg) | 4,280 | | | 4,690 | 4,420 |
| | South Pike County (Division Road) | 1,090 | | | 1,030 | 60 |
| | South of South Pike County (Div. Rd.) | | 13,880 | 13,610 | | |
| | **Total** | **17,130** | | | | |
| 7 | US 50 (Alt. A diamond at Washington) | 7,880 | 10,670 | 10,860 | 16,080 | 14,570 |
| | South Daviess County | 3,310 | | | 770 | 3,440 |
| | North Pike County | 1,820 | | | 300 | 1,730 |
| | SR 56/61 (Petersburg) | 4,060 | | | 4,770 | 4,120 |
| | South Pike County (Division Road) | 1,930 | | | 1,860 | 70 |
| | South of South Pike County (Div. Rd.) | | 13,910 | 13,650 | | |
| | **Total** | **19,000** | | | | |
| 8 | US 50 (Alt. A diamond at Washington) | 7,880 | 10,660 | 10,860 | 16,075 | 14,570 |
| | South Pike County | 3,320 | | | 780 | 3,440 |
| | North Pike County | 1,950 | | | 300 | 1,860 |
| | SR 56/61 (Petersburg) | 4,210 | | | 4,870 | 4,170 |
| | South Pike County (SR 57) | 2,410 | | | 2,880 | 2,340 |
| | South of South Pike County (SR 57) | | 13,900 | 13,620 | | |
| | **Total** | **19,770** | | | | |
| 9 | US 50 (Alt. A diamond at Washington) | 7,630 | 10,655 | 10,855 | 16,070 | 14,740 |
| | South Daviess County | 3,210 | | | 765 | 3,360 |
| | SR 56/61 (Petersburg) | 4,750 | | | 4,740 | 5,270 |
| | South Pike County (Division Road) | 1,900 | | | 1,830 | 65 |
| | South of South Pike County (Div. Rd.) | | 13,910 | 13,640 | | |
| | **Total** | **17,490** | | | | |

*All numbers are rounded to the nearest 10 vehicles. NOTE: The South Daviess County interchange connects with SR 57 at CR300S. The North Pike County interchange connects with realigned Blackburn Road at realigned SR 57. Also note that for Scenario 1, US 50 interchange ramps are west of the intersection of US 50 and Old US 50. This accounts for traffic volumes "West of the Interchange" being significantly different than for other scenarios.

**Table 7: Section 2 - Potential Environmental Impacts**

| | Length (miles) | Est. Const. Cost (millions $) | Right-of-Way (acres) | Residential Displacements | Road Closures | Farmland (acres) | Historic Properties Affected |
|---|---|---|---|---|---|---|---|
| **Alternative A** (including Washington and Petersburg interchanges) | | | | | | | |
| Subsection 1 | 4.91 | $76 | 178 | 4 | 2 | 154 | 0 |
| Subsection 2 | 4.43 | $74 | 168 | 4 | 3 | 86 | 1 |
| Subsection 3 | 5.24 | $58 | 294 | 1 | 4 | 230 | 0 |
| Subsection 4 | 2.77 | $33 | 108 | 2 | 1 | 79 | 0 |
| Subsection 5 | 2.25 | $36 | 84 | 0 | 1 | 79 | 0 |
| Subsection 6 | 2.82 | $42 | 130 | 5 | 0 | 65 | 0 |
| Subsection 7 | 1.76 | $24 | 75 | 2 | 1 | 44 | 0 |
| Subsection 8 | 2.61 | $26 | 106 | 3 | 2 | 91 | 0 |
| Subsection 9 | 1.99 | $36 | 184 | 1 | 0 | 166 | 0 |
| **Subtotal:** | **28.78** | **$406** | **1,327** | **22** | **14** | **994** | **1** |
| **Interchange Options** | | | | | | | |
| South Pike Co. | - | $5 | 27 | 2 | 0 | 15 | 0 |
| North Pike Co. | - | $9 | 78 | 3 | 0 | 28 | 0 |
| South Daviess Co. | - | $8 | 54 | 2 | 0 | 35 | 0 |
| ***Worst Case* Total:** | **28.78** | **$428** | **1,486** | **29** | **14** | **1,072** | **1** |
| **Alternative B** (including Washington and Petersburg interchanges) | | | | | | | |
| Subsection 1 | 4.77 | $73 | 174 | 4 | 2 | 147 | 0 |
| Subsection 2 | 4.55 | $75 | 181 | 6 | 3 | 81 | 1 |
| Subsection 3 | 5.27 | $55 | 296 | 7 | 4 | 190 | 0 |
| Subsection 4 | 2.77 | $27 | 105 | 3 | 1 | 66 | 0 |
| Subsection 5 | 2.20 | $31 | 81 | 0 | 1 | 73 | 0 |
| Subsection 6 | 2.77 | $46 | 127 | 8 | 1 | 78 | 0 |
| Subsection 7 | 1.78 | $19 | 70 | 2 | 1 | 47 | 0 |
| Subsection 8 | 2.61 | $24 | 99 | 4 | 2 | 84 | 0 |
| Subsection 9 | 1.87 | $38 | 130 | 1 | 1 | 125 | 0 |
| **Subtotal:** | **28.59** | **$387** | **1,263** | **35** | **16** | **891** | 1 |
| **Interchange Options** | | | | | | | |
| South Pike Co. | - | $5 | 26 | 1 | 0 | 13 | 0 |
| North Pike Co. | - | $8 | 74 | 2 | 0 | 23 | 0 |
| South Daviess Co. | - | $8 | 51 | 1 | 0 | 34 | 0 |
| ***Worst Case* Total:** | **28.59** | **$408** | **1,414** | **39** | **16** | **961** | **1** |

**Table 7: Section 2 - Potential Environmental Impacts (con't)**

| | Floodplains (acres) | Forests (acres) | Wetlands (acres) | Ephemeral Stream Segments (LF) | Intermittent Stream Segments (LF) | Perennial Steam Segments (LF) |
|---|---|---|---|---|---|---|
| **Alternative A** (including Washington and Petersburg interchanges) | | | | | | |
| Subsection 1 | 20 | 16 | 1.4 | 0 | 2,457 | 1,831 |
| Subsection 2 | 9 | 75 | 8.5 | 2,465 | 3,836 | 287 |
| Subsection 3 | 0 | 55 | 6.4 | 3,860 | 4,973 | 707 |
| Subsection 4 | 24 | 16 | 6.3 | 496 | 355 | 710 |
| Subsection 5 | 65 | 4 | 0 | 593 | 790 | 512 |
| Subsection 6 | 53 | 26 | 4 | 1,680 | 2 | 434 |
| Subsection 7 | 3 | 26 | 0 | 1,998 | 951 | 849 |
| Subsection 8 | 0.2 | 6 | 0.1 | 965 | 882 | 748 |
| Subsection 9 | 4 | 7 | 1.1 | 731 | 1,532 | 1,070 |
| **Subtotal:** | **178** | **231** | **27.8** | **12,788** | **15,778** | **7,147** |
| **Interchange Options** | | | | | | |
| South Pike Co. | 0 | 426 | 0 | 806 | 1,590 | 0 |
| North Pike Co. | 0 | 32 | 2.7 | 0 | 1,522 | 355 |
| South Daviess Co. | 5 | 10 | 0.5 | 793 | 165 | 825 |
| ***Worst Case* Total:** | **183** | **279** | **31.0** | **14,387** | **19,055** | **8,328** |
| **Alternative B** (including Washington and Petersburg interchanges) | | | | | | |
| Subsection 1 | 15 | 20 | 8.6 | 3,559 | 1,436 | 0 |
| Subsection 2 | 10 | 88 | 12.2 | 2,813 | 5,400 | 437 |
| Subsection 3 | 0 | 91 | 4.5 | 5,479 | 5,424 | 1,212 |
| Subsection 4 | 18 | 30 | 6.9 | 1,579 | 2,681 | 811 |
| Subsection 5 | 59 | 8 | 0 | 750 | 2,493 | 555 |
| Subsection 6 | 55 | 24 | 4.6 | 2,273 | 0 | 419 |
| Subsection 7 | 3 | 20 | 0 | 1,557 | 211 | 1,006 |
| Subsection 8 | 0 | 6 | 0.67 | 1,004 | 712 | 768 |
| Subsection 9 | 5 | 5 | 10 | 959 | 1,236 | 998 |
| **Subtotal:** | **165** | **292** | **47.5** | **19,974** | **19,593** | **6,206** |
| **Interchange Options** | | | | | | |
| South Pike Co. | 0 | 5 | 0 | 290 | 728 | 0 |
| North Pike Co. | 0 | 33 | 2.7 | 0 | 1,291 | 355 |
| South Daviess Co. | 3 | 9 | 0.5 | 178 | 165 | 442 |
| ***Worst Case* Total:** | **168** | **339** | **50.7** | **20,441** | **21,777** | **7,003** |