I-69 EVANSVILLE TO INDIANAPOLIS
Tier 1 Re-evaluation Report

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Prepared for

Federal Highway Administration and
Indiana Department of Transportation

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Summary

This document is a Reevaluation of the Tier 1 Final Environmental Impact Statement (FEIS) for the I-69, *Evansville to Indianapolis Study*, approved on December 5, 2003. The Tier 1 Record of Decision (ROD) was issued by the Federal Highway Administration (FHWA) on March 24, 2004. The Tier 1 ROD approved I-69 based on analysis that assumed I-69 would be a non-toll facility.

After the Tier 1 ROD was issued and Tier 2 studies had begun, INDOT determined that funding this project with toll revenues could significantly accelerate its construction. Accordingly, beginning in mid 2005, INDOT and FHWA began discussing the steps necessary to introduce tolling as a funding option in the Tier 2 studies. Those discussions resulted in the decision to prepare this Tier 1 Reevaluation.

Purpose of the Tier 1 Reevaluation

Under FHWA regulations, a reevaluation can be prepared to determine whether new information or changes in a project require supplementation of a previously issued environmental document. The relevant section of 23 CFR § 771.130 provides that an EIS shall be supplemented if (1) "Changes in the proposed action would result in significant environmental impacts that were not evaluated in the EIS; or (2) New information or circumstances relevant to environmental concerns and bearings on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS". In this case, a reevaluation is being prepared primarily to address one specific change that has occurred since completion of the Tier 1 FEIS – namely, INDOT's decision to consider toll financing for the I-69 project – to determine if this change would cause any additional significant impacts at the Tier 1 level of analysis which would require the completion of a Tier 1 Supplemental EIS.

To assess the significance of this change in the project, this Tier 1 Reevaluation focuses on two specific issues:

- ***Would the use of tolling as a funding option result in significant environmental impacts which were not evaluated in the Tier 1 FEIS***?
- ***Would the use of tolling result in a decision to select a different corridor for I-69 between Evansville and Indianapolis?***

The answers to these questions will allow FHWA to determine whether there is a need to prepare a supplement to the Tier 1 FEIS. If a supplement is not needed, FHWA will issue an Amended Tier 1 Record of Decision (ROD), which would allow tolling to be considered as an option in the Tier 2 studies for the I-69 Evansville to Indianapolis Project.

It is important to note that this Tier 1 Reevaluation and the Tier 1 Amended ROD (if issued) will *not* decide whether I-69 will be a toll road. The only decision being made at this stage of the process is whether to place tolling "on the table" for consideration in the Tier 2 studies. The actual decision about whether to toll I-69 will be made on a section-by-section basis in the Tier 2 studies. To repeat, this document is not being used to decide whether to toll I-69; it is simply being used to determine *whether tolling can be considered as an option for I-69* in the ongoing Tier 2 studies.

Methodology and Assumptions for Studying Tolled Alternatives

For purposes of Reevaluation, tolling has been considered at a preliminary level consistent with the overall level of detail of a Tier 1 study. More detailed tolling concepts will be developed in Tier 2 studies. After Tier 2, even more detailed tolling studies will be conducted by potential project investors, if a decision is made in Tier 2 to advance I-69 as a tolled project. In short, this Tier 1 Reevaluation involves a preliminary, conceptual analysis of tolling concepts, at a level appropriate for a Tier 1 study. This information provides a reasonable basis for comparing the Tier 1 alternatives to one another and determining whether to proceed with further consideration of tolled alternatives in Tier 2.

In order to analyze the traffic flows which would occur under various toll assumptions, the Indiana Statewide Travel Demand Model (ISTDM) Version 4 was enhanced to permit consideration of toll alternatives.[1] The model is sensitive to factors such as the toll rate, time saved by using the toll route, and individual users' value of time – which is the amount users are willing to pay in order to save a given amount of travel time. This analysis involves a significant degree of uncertainty; for this reason, the Reevaluation considered a range of projected toll rates. In addition, ISTDM Version 4 has continued to undergo refinements for possible modeling of toll alternatives in Tier 2 studies. As a result of these refinements, Tier 2 forecasts will not be identical to those which would have been produced by ISTDM as it existed at the time of this Reevaluation.

As with any alternatives analysis, an evaluation of tolled alternatives requires some assumptions to be made about what each alternative would involve. For purposes of this Tier 1 Reevaluation, FHWA and INDOT developed a common set of assumptions that could be applied equally to all alternatives. These assumptions address issues such as toll rates; toll collection methods; and type of toll facility. Chapter 3 in this document explains the assumptions made in this report and the basis for those assumptions.

One important assumption made in this Reevaluation is that tolling would be fully electronic, which means that there would be no cash collection of tolls. With this method of toll collection, there would be no toll plazas; tolls would be collected automatically, at full highway speeds, when vehicles pass under toll collection "gantries" located at certain points along the highway. This assumption is important to the analysis because it means that tolling would not involve any of the impacts (footprint, traffic congestion, etc.) associated with toll plazas.

Future Refinements of Tolled Alternatives

In Tier 2, FHWA and INDOT will undertake more detailed studies to develop tolled alternatives in each Tier 2 section. As with every aspect of this tiered study, the Tier 2 process will involve a closer look at the issues facing each community along the corridor. These issues are likely to differ among the Tier 2 sections. For example, tolling raises different concerns in a rural area than in urban areas; it also may raise different concerns in areas where I-69 involves construction of a new highway as compared to areas where I-69 converts an existing roadway (SR 37 or US 41) to a tolled facility.

As part of the Tier 2 studies, FHWA and INDOT will take the information developed in the Tier 1 Reevaluation and refine the tolled alternatives. The overall goal in Tier 2 will be to develop tolled alternatives that best balance revenue needs, project purposes and traffic management considerations. Communities along the corridor will have an opportunity to review and comment on tolled alternatives as part of the Tier 2 studies.

Tier 2 studies will also determine basic tolling concepts – for example, toll collection methods for the tolled versions of the Build alternatives. Final decisions regarding exact toll rates and toll structures will be made in a separate State rulemaking process.

1 ISTDM Version 4 was developed for analysis of non-toll alternatives in Tier 2. See Section 2.4.4 for further discussion, including a comparison of ISTDM Version 4 with ISTDM Version 3, which was used in the Tier 1 study.

Role of Tolls in Funding I-69

In the past, projects were developed as toll roads only if tolls could support the full cost of planning, constructing, operating, and maintaining the road. This approach reflected, in part, federal laws that severely restricted States' ability to combine federal highway funds with toll revenues as part of a single funding package for a highway project. These restrictions were (and still are) greatest for projects on the Interstate System.

In recent years, Congress has provided greater flexibility to combine toll funding with federal funding for highway projects, including projects on the Interstate System, such as I-69. In addition, there have been significant advances in toll collection technology, which have made it possible to collect tolls electronically, without the need for toll barriers. At the same time, traditional funding sources – based primarily on fuel taxes – have declined substantially in relation to the total volume of traffic on our highway system. These changes have led to significant changes in the way major new transportation projects are funded. Rather than focusing entirely on fuel tax revenues, or entirely on toll revenues, it is increasingly common for major projects to be funded through a combination of revenue sources. Under this approach, tolling is considered as one element of a comprehensive funding package.

Consistent with this national trend, INDOT is considering tolling as a part of the funding package for I-69. The exact contribution of tolls to the overall funding package cannot be determined at this time. It also is unknown at this time whether tolling would be implemented by a public entity or through a public-private partnership. However, INDOT has publicly stated its intention to explore the use of public-private partnerships as a way to maximize the private sector's contribution to the cost of building I-69.

Relationship to "Major Moves" Legislation

The decision to prepare this Reevaluation was made by FHWA and INDOT in late 2005, well before the passage of the Major Moves legislation in mid-March 2006. This Reevaluation is not being prepared in order to address any new requirement or condition established in the Major Moves legislation. Nonetheless, the Major Moves legislation includes several provisions that may affect the future development of I-69 and that are indirectly relevant to this Reevaluation.

<u>New Funding for I-69</u>. Major Moves authorized a 75-year lease of the Indiana Toll Road in exchange for an upfront payment of approximately $3.8 billion, to be used to fund transportation projects throughout Indiana. A portion of those funds could be directed toward the development of I-69 between Evansville and Indianapolis and could be considered as part of a comprehensive funding package for the I-69 project if necessary.

<u>Authority to Seek Public-Private Partnership for I-69</u>. Major Moves authorized INDOT to proceed with efforts to develop the I-69 Evansville to Indianapolis through a public-private partnership. Specifically, for the Major moves legislation enables INDOT to issue a request for proposal (RFP) to private entities that may be interested in entering a public-private partnership with INDOT.

<u>Conditions Requiring Legislative Approval</u>. Major Moves legislation established several restrictions on the I-69 project which may be lifted through future State legislation. Specifically, additional approval by the General Assembly is needed in order for INDOT to 1) impose tolls on I-69 between Martinsville and Indianapolis, and (2) construct I-69 through Perry Township.

Overview of Reevaluation

The document has the following sections, plus technical appendices. The contents and principal findings in each section are as follows:

Section 1 – Background

This section summarizes the process of arriving at a decision in Tier 1. It presents key determinations made in the Tier 1 ROD. It specifies the parameters for conducting Tier 2 studies on the selected Tier 1 alternative, which have been underway since March of 2004.
Section 2 – Purpose and Need

This section summarizes how project goals were determined in the Tier 1 FEIS. Key elements of this section include:

- ***A summary of the policy framework for determining the Tier 1 Purpose and Need.*** Several key items of legislation and policy statement on both the federal and state level played key roles in determining the project goals. This project is part of a National I-69 project designated by the Congress.

- ***A summary of the Tier 1 needs assessment.*** An extensive technical process was used to determine project needs in Tier 1. This process also had extensive public involvement, which included six formal public meetings.

- ***Restatement of the Tier 1 project goals.*** The Tier 1 project goals and performance measures are restated. Most, but not all, of these performance measures will be applied to alternatives considered in this Reevaluation. All performance measures for core goals are applied to alternatives in this Reevaluation. The rationale for excluding certain Tier 1 performance measures is discussed.

- ***Description of traffic forecasting in Tier 1 and Tier 2.*** The current version of the Indiana Statewide Travel Demand Model (ISTDM) – known as ISTDM Version 4 – has been used for this Reevaluation. The Tier 1 FEIS used ISTDM Version 3, which was the current version of the model at the time of that study. Version 4 includes significant enhancements to the traffic model. These technical enhancements are described.

Section 3 – Alternatives

This section describes the analysis of alternatives in this Reevaluation. Key elements of this section include:

- ***Rationale for selection of alternatives for this Reevaluation.*** This reevaluation analyzes five of the 12 alternatives considered in the Tier 1 FEIS (Alternatives 1, 2C, 3C, 4B and 4C). The rationale for selecting these five alternatives is presented.

- ***Assumptions regarding toll rates.*** Three toll rates were used in the analysis. These toll rates are described. They provide a reasonable set of assumptions about possible toll rates, and are not intended to circumscribe the toll rates that may be implemented on I-69 after it is constructed. One toll rate, which is a midrange value between the other two, is used as the primary basis for evaluating the toll alternatives.

- ***Performance and cost analysis of alternatives.*** The five alternatives are evaluated using Tier 1 performance measures as well as additional toll-related performance measures. In order to provide a basis for comparison, the performance measures also were calculated (using the ISTDM Version 4 traffic model) for non-tolled versions of each alternative. Construction costs are presented for toll and non-toll versions of each alternative.

- ***Timing of benefits.*** This is a qualitative discussion of the tradeoff between receiving benefits sooner, and having some of them diminished in magnitude.

Section 4 – Affected Environment

This section discusses information regarding the Affected Environment (Chapter 4 of the Tier 1 FEIS). Since the alternatives in this Reevaluation are in the same locations as those analyzed in the Tier 1 FEIS, the information presented in the Tier 1 FEIS remains applicable to the Reevaluation alternatives.

Section 5 – Environmental Consequences

This section analyzes the environmental resources for which impacts change from those presented in the Tier 1 FEIS. It has the following key findings.

- ***Impacts to most resources are not affected by consideration of toll funding of alternatives.*** Most impacts are related to the footprint of the facility. These resources include: land use, social, economic, joint development, pedestrian and bicyclist, wild and scenic rivers, construction, historic and archaeology, mineral resource, visual and aesthetic, hazardous waste site, threatened and endangered species, floodplain, wetland, agricultural, forest, water body, ecosystem, water quality, permits, short-term uses vs. long-term productivity, and irretrievable and irreversible resource loss. These impacts would not be affected because the project would not include toll plazas and, as noted above, toll collection would be fully electronic.

- ***Impacts which are affected by traffic levels will change.*** These issues include environmental justice impacts, traffic impacts, cumulative impacts, air quality impacts, highway noise impacts, and energy impacts. For most of these resources (air quality, noise, energy, and cumulative impacts), impacts from I-69 for a toll alternative would be less than for a non-toll alternative. Conversely, there would be some offsetting increase resulting from the diversion of traffic to other local roads.

- ***For some tolled alternatives, traffic impacts include some traffic congestion which would not exist in the No-Build case.*** Four of the five alternatives include upgrading existing multi-lane divided facilities as part of I-69 (US 41 and SR 37). When tolls are imposed on these facilities, year 2030 traffic volumes generally fall below those in the No-Build case. This results in diversions of traffic to other facilities. In some cases, this results in undesirable Level of Service (LOS) conditions – that is, LOS D or lower in rural areas and LOS E or lower in urban areas – in certain locations, which would not exist in those locations in the No-Build case.

- ***The air quality analysis shows that emissions for all alternatives are within State Implementation Plan (SIP) budgets for Marion and Vanderburgh Counties.***

- ***Noise impacts along I-69 are significantly less for toll alternatives than for non-toll alternatives.*** Traffic levels are reduced on I-69 for toll alternatives. This results in a significant reduction in noise impacts on or near I-69. Traffic diversion may result in offsetting increases in noise impacts along local roads that are heavily used by traffic diverted from I-69.

Section 6 – Comparison of Alternatives

- ***This section synthesizes performance and cost information presented in this Reevaluation, as well as impact information.*** Impacts to key resources calculated in the Tier 1 FEIS also are presented. This section makes the determination that Alternative 3C is the preferred toll alternative, just as it also is the preferred non-toll alternative.

- ***It has been concluded that no new significant impacts have been identified which can be addressed at the Tier 1 scale.*** The impacts are localized and not significant at this "big picture" scale and are similar among the alternatives. New impacts associated with traffic diversion and impacts on low income communities need to be analyzed at the detailed scale which will be included in Tier 2 analysis. It is believed that these impacts can be adequately addressed and mitigated.

- ***Two additional areas are identified for mitigation studies in Tier 2.*** One such area is mitigation for traffic levels which would not exist in the No-Build condition. The other area is possible environmental justice impacts. Given the distribution of low-income households throughout the Study Area, all alternatives have some potential for impacts to low-income groups. Further analysis must be done in Tier 2 to determine whether Alternative 3C has a disproportionate impact to low-income communities.

Section 7 – Other Issues

This Reevaluation is anticipated to serve as the basis of an Amended Tier 1 Record of Decision (ROD). As part of that Amended ROD, it also is FHWA's intention to clarify several minor issues which have been identified since issuance of the Tier 1 ROD. These issues include:

- ***Location of interchanges and access roads beyond the Tier 1 Corridor.***

- ***Commitment regarding new terrain interchanges in Southwest Monroe County.***

- ***Commitment to bridge the Patoka River floodplain.***

Appendices

Several appendices are provided which contain technical information supporting the analysis in this Reevaluation. These appendices include:

- ***Appendix A – Estimation of Regional Economic Performance Measures***

- ***Appendix B – Cost Estimation Methodology***

- ***Appendix C – Application of ISTDM Version 4 to Model Toll Alternatives***

- ***Appendix D – Noise Distance Tables***

1 Background

The Indiana Department of Transportation (INDOT) is preparing six Tier 2 Environmental Impact Statements (EISs) for the I-69, Evansville to Indianapolis project. This project is intended to provide an improved transportation link between Evansville and Indianapolis. More information about the goals of this project is provided in ***Section 2 – Purpose and Need***.

A Tier 1 Record of Decision (ROD) for this project was approved by the Federal Highway Administration on March 24, 2004. The key findings in the Tier 1 ROD are summarized below in ***Section 1.1 – Tier 1 FEIS and ROD***. The Tier 1 ROD selected a build alternative for this project, and designated a corridor for that build alternative. The Tier 1 Final Environmental Impact Statement (FEIS) and ROD assumed that the highway would be constructed as a non-toll facility. Subsequent to this decision, the INDOT has determined that funding this project with toll revenues could significantly accelerate its construction.

1.1 Tier 1 FEIS and ROD

The Tier 1 FEIS for this project was approved on December 5, 2003. It analyzed 12 alternatives in detail. Each alternative was specified as a corridor in which an Interstate highway could be located. The corridor for each alternative typically was 2,000 feet wide; it was wider in some areas and narrower in others.

Of the 12 alternatives, five were designated as "preferred" in the Tier 1 Draft Environmental Impact Statement (DEIS), which was approved on July 22, 2002. The seven which were non-preferred fell into two groups. Three alternatives were not preferred for environmental reasons, and four alternatives were not preferred because of their inability to satisfy the goals of the project. These goals are discussed further below in ***Section 2 – Purpose and Need***. These 12 alternatives are shown in Figure 1-1 on the next page.

In their comments on the DEIS, various resource agencies, in particular the United States Environmental Protection Agency (USEPA) requested that the non-preferred status of one alternative, Alternative 1, be reconsidered. In response to these comments, the FHWA and INDOT re-examined the data presented in the DEIS and developed additional data where needed. This additional analysis yielded new insights, while at the same time confirming the basic conclusion stated in the DEIS regarding Alternative 1. This conclusion was that Alternative 1 was not a reasonable alternative because it did not satisfy the project purposes.

In its written comments on the DEIS, the USEPA requested that FHWA and INDOT consider alternatives that combined the best-performing segments of existing corridors; a specific hybrid alternative was suggested by USEPA in a meeting on October 17, 2002. After analyzing the hybrid route suggested by USEPA, as well as one other, FHWA and INDOT determined that neither would have been designated as a preferred alternative in the DEIS. Accordingly, they were not given further consideration.

Based upon comments on the DEIS, modifications were made to 9 of the 12 DEIS alternatives (2C, 3A, 3B, 3C, 4A, 4B, 4C, 5A and 5B) to reduce or eliminate impacts to environmental resources. The selection of a single preferred alternative was made after the estimated impacts for these alternatives were changed to reflect these modifications.

All of the non-preferred alternatives in the DEIS were found to be impracticable, as that term is used in the Clean Water Act's Section 404(b)1 Guidelines. Therefore, the selection of a single preferred alternative was made from among those identified in the DEIS as preferred alternatives.

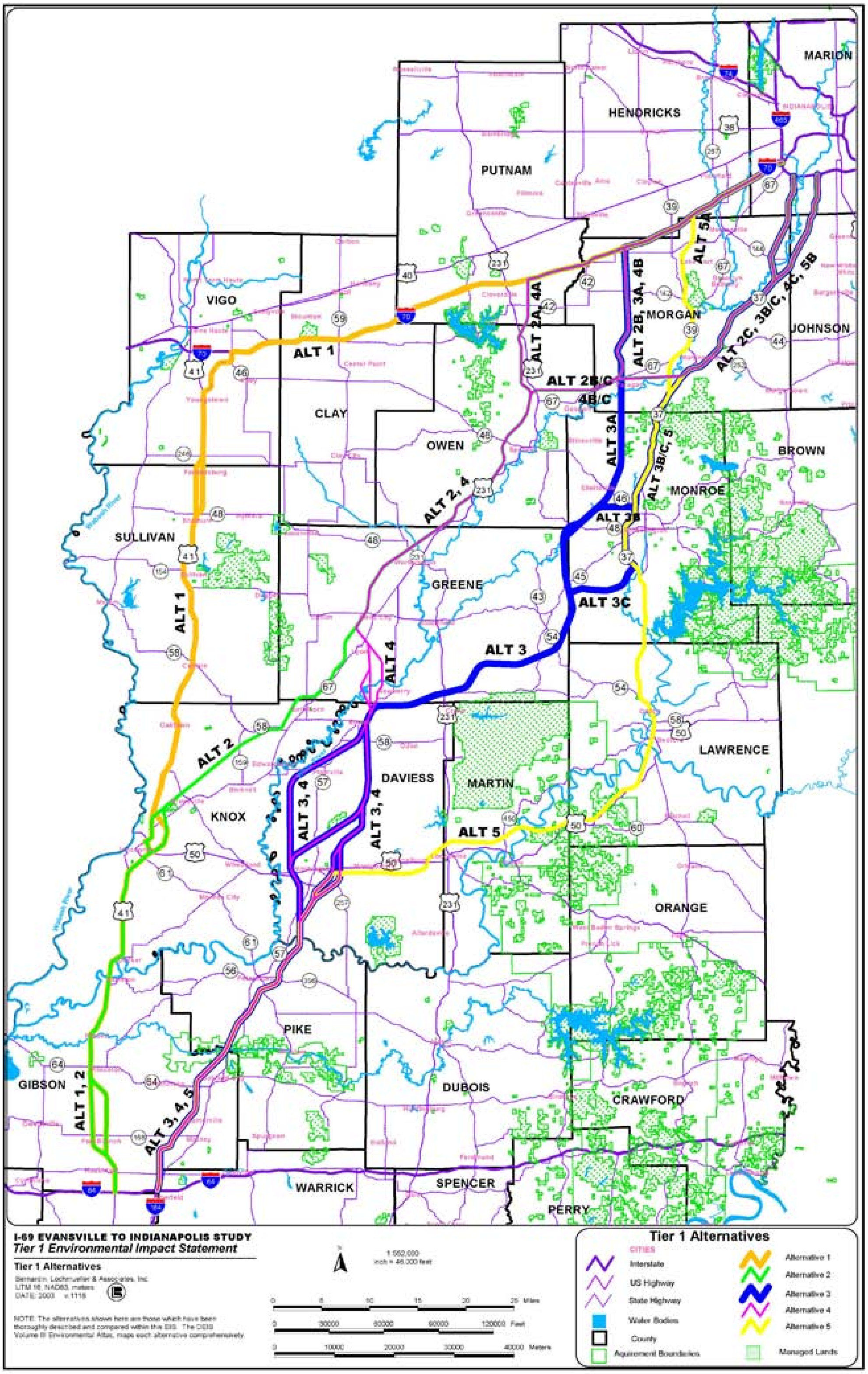

Figure 1-1 – Alternatives Considered in Tier 1 (same as Figure S-14 of Tier 1 FEIS)

Alternative 3C was selected as the single preferred alternative. It was rated as having "high" performance (relative to the other alternatives) on nearly all project goals, including the three core goals (see Section 2 – Purpose and Need for a discussion of core goals). It also performed highest on all economic development goals. In addition, it had the lowest wetland and farm impacts of any DEIS preferred alternative. INDOT and FHWA determined that Alternative 3C best satisfied the project purposes while having an acceptable level of impacts.

FHWA issued a Tier 1 Record of Decision (ROD) for this project on March 24, 2004. The key points that the ROD determined were:

- A "build" alternative was selected for an Interstate Highway, I-69, between Evansville and Indianapolis.
- The selected alternative was the Alternative 3C corridor, as depicted in the FEIS, Volume III, Environmental Atlas.
- The selected corridor generally is 2,000 feet in width. It is narrower is seven places in order to avoid potential impacts to sensitive resources; it is wider in two other places to provide flexibility to avoid potential impacts to historic and/or archaeological resources.
- The environmental impact calculations in the Tier 1 FEIS were based on working alignments, as defined in the FEIS. These working alignments were used solely for the purpose of estimating potential impacts, benefits, and costs. The Tier 1 ROD noted that decisions regarding the specific alignment for the project would be made during Tier 2 environmental studies and in the design phase, and were not a part of the Tier 1 ROD.
- The environmental impact calculations in the Tier 1 FEIS were based on typical cross-sections, as shown in the FEIS. These typical cross-sections were used solely for the purpose of estimating potential impacts, benefits, and costs. The Tier 1 ROD noted that final decisions regarding the cross section (including auxiliary elements such as access roads) for the project would be made during Tier 2 environmental studies and in the design phase and were not a part of the Tier 1 ROD.
- The Tier 1 FEIS identified potential interchange locations and potential grade separations. These features were identified solely for the purpose of estimating potential impacts, benefits, and costs. The Tier 1 ROD noted that final decisions regarding interchange locations and grade separations would be made during Tier 2 environmental studies and in the design phase, and were not a part of the Tier 1 ROD.
- The Tier 1 FEIS evaluated alternatives based on the assumption that each build alternative would have two northbound and two southbound rest areas. These assumptions were made solely for the purpose of estimating potential impacts, benefits, and costs. The Tier 1 FEIS noted that final decisions regarding the number and location of rest areas would be made during Tier 2 environmental studies and in the design phase, and were not a part of the Tier 1 ROD.
- The Tier 1 ROD approved the use of federal funds for property acquisition, to the extent that such acquisition would meet the conditions for hardship or protective acquisition.
- The Tier 1 ROD approved the selection of the SR 37 variation of Alternative 3C within Morgan and Marion Counties, and the variation designated as WE2 east of Washington.
- The Tier 1 ROD approved, and directed to be implemented, the mitigation measures listed in the Tier 1 FEIS, Chapter 7, Mitigation and Commitments. It also noted that some mitigation activities were directly related

to the quantity of impacts, and that Tier 2 studies may result in different quantities of mitigation, based upon impacts identified in Tier 2.

The Tier 1 ROD also specified parameters for conducting Tier 2 NEPA studies. These included:

- An Environmental Impact Statement (EIS) would be prepared for each Tier 2 study.
- The termini for the Tier 2 sections would be as specified in the Tier 1 FEIS, Volume 1, Section 6.5.1, Description of Tier 2 Sections.
- Each Tier 2 NEPA document will "look beyond" its section termini to ensure that there are no sensitive environmental resources just beyond the termini which should be considered in evaluating alternatives.
- The alternatives evaluated in Tier 2 will differ from those in a typical NEPA document. Alternatives will be considered within the corridor approved in the Tier 1 ROD, and key issues will include interchange location and design, access to abutting properties, and grade separations.
- The flexibility will exist in Tier 2 studies to consider alternatives outside the approved corridor to avoid significant impacts within the selected corridor.

1.2 Tier 2 Studies

Tier 2 NEPA studies began in each section in late March, 2004. In accordance with the Tier 1 ROD, a separate Tier 2 EIS is being prepared for each Tier 2 section. All six Tier 2 EISs were initiated simultaneously, and all are still under way.

For each Tier 2 study, FHWA and INDOT have adopted a schedule that provides for two major coordination points with environmental review agencies prior to distribution of a DEIS. These coordination points are: (1) the determination of the purpose and need (P&N) and development of preliminary alternatives; and (2) the screening of alternatives, which involves identifying the alternatives that will be studied in detail in the DEIS. This process is intended to ensure, to the greatest extent possible, that basic issues concerning purpose and need and the range of alternatives are to be resolved prior to publication of the DEIS.

To date, the first agency coordination point (Purpose and Need; Preliminary Alternatives) has been reached by all six Tier 2 sections. At this coordination point, FHWA and INDOT confirmed that the overall Purpose and Need identified in Tier 1 for the I-69 Evansville to Indianapolis project has been carried forward into Tier 2 and remains the foundation of the Purpose and Need for each Tier 2 Section. The only modification to the Purpose and Need in Tier 2 involves the identification of local goals specific to a particular Tier 2 Section.

In addition, the second agency coordination point (Alternatives Screening) has been reached by several of the Tier 2 sections. At this coordination point, FHWA and INDOT consider the impacts, costs, and traffic forecasts of preliminary alternatives. Those alternatives are then reviewed according to screening criteria. Alternatives remain after applying the screening criteria will be studied in detail in the DEIS.

After this Tier 1 Reevaluation is published and the public and agencies have had adequate opportunity to review and comment upon its findings, each section will, when ready, publish its DEIS document. If the Tier 1 Reevaluation results in a decision to consider tolling part of Tier 2, tolled versions of the build alternatives will be considered in each Tier 2 DEIS.

2 Purpose and Need

This section describes how the project goals were determined in the Tier 1 FEIS. It generally summarizes material which is presented in greater detail in the Tier 1 FEIS. It also describes how the Tier 1 Purpose and Need and its associated performance measures will be used to evaluate certain Tier 1 alternatives as tolled facilities in this Reevaluation.

This section contains the following sub-sections:

- ***Section 2.1 – Statement of Purpose and Need*** contains the Statement of Purpose and Need determined in Tier 1.
- ***Section 2.2 – Policy Framework*** summarizes the relevant federal and state policies that were considered in determining the Purpose and Need for this project in Tier 1.
- ***Section 2.3 – Needs Assessment*** summarizes the comprehensive needs analysis conducted for the 26-county Study Area in Tier 1 for this project. Transportation needs, economic development needs, and National I-69 needs were analyzed.
- ***Section 2.4 – Project Goals and Performance Measures*** gives the nine project goals and associated performance measures determined in the Tier 1 FEIS. It describes how these goals and performance measures will be used and/or modified to evaluate certain Tier 1 alternatives as toll facilities in this Reevaluation.

This section is a summary of the findings of the Purpose and Need Chapter of the Tier 1 FEIS. For details, consult *Chapter 2 – Purpose and Need,* of the Tier 1 FEIS.

In addition to the performance measures used in the Tier 1 FEIS, additional toll-related measures have been used to evaluate tolled alternatives in this Reevaluation. These toll-relate measures are described in ***Section 3.3 – Toll Rate Assumptions and Toll-Related Performance Measures.*** Tolling is being considered as a funding option because INDOT believes that toll revenues will allow I-69 to be constructed more quickly. Accordingly, tolled alternatives are compared with regard to their ability to generate revenue.

2.1 Statement of Purpose and Need

The Tier 1 FEIS stated that the purpose of the I-69, Evansville to Indianapolis Project is to provide an improved transportation link between Evansville and Indianapolis which

- Strengthens the transportation network in Southwest Indiana;
- Supports economic development in Southwest Indiana; and
- Completes the portion of the National I-69 project between Evansville and Indianapolis.

This purpose and need will be used in this Reevaluation to analyze the performance of certain Tier 1 alternatives as tolled alternatives.

2.2 Policy Framework

The Tier 1 FEIS was based upon a number of federal and state policy decisions. They are summarized in the following sections.

2.2.1 Federal Legislation and Policies

Major federal legislation and policy statements which were considered in preparing the purpose and need for the Tier 1 FEIS included:

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), and the Transportation Equity Act for the 21st Century of 1998 (TEA-21). These acts focused federal transportation funding on routes designated as part of the National Highway System, and established the policy of completing I-69 as an Interstate from Canada to Mexico. ISTEA established a major transportation corridor linking Indianapolis, Indiana and Memphis, Tennessee via Evansville, Indiana. TEA-21 expanded this corridor to extend from Port Huron, Michigan to the Mexican border in the lower Rio Grande Valley. It also designated this Canada-to-Mexico highway as "Interstate Route I-69," thus determining that it should be built as part of the Interstate System of highways.

National I-69 Purpose and Need. FHWA established a steering committee for the National I-69 project, which consisted of representatives of the eight state departments of transportation with responsibility for a portion of the National I-69 project, along with FHWA. In February 2000, this steering committee issued a purpose-and-need for the national I-69 project which listed seven overall goals. In a December 8, 2000 announcement in the Federal Register, FHWA announced that these overall goals would be considered in NEPA studies for individual portions of the national I-69 project. These goals included:

- Improving international and interstate freight movements
- Providing transportation capacity for future needs
- Facilitating economic development
- Facilitating intermodal connections
- Reducing crash risks for person and goods movements
- Upgrading (to freeways) existing facilities to be used by I-69
- Directly connecting certain urban areas (including Evansville and Indianapolis) designated in ISTEA and TEA-21.

2.2.2 Indiana Statewide Transportation Policies

Overall INDOT Transportation Policies. INDOT's 2000 – 2025 Statewide Transportation Plan (adopted in 2002 and amended in 2003) has stated and reaffirmed nine overall policies which guide all INDOT decisions. The nine overall policies include:

- Transportation system effectiveness

- Transportation safety
- Respond to demographic changes
- Provide adequate and reliable transportation funding
- Intergovernmental coordination
- Foster economic development
- Safeguard the natural environment and energy resources
- Support non-motorized forms of travel
- Develop and deploy advanced transportation technologies

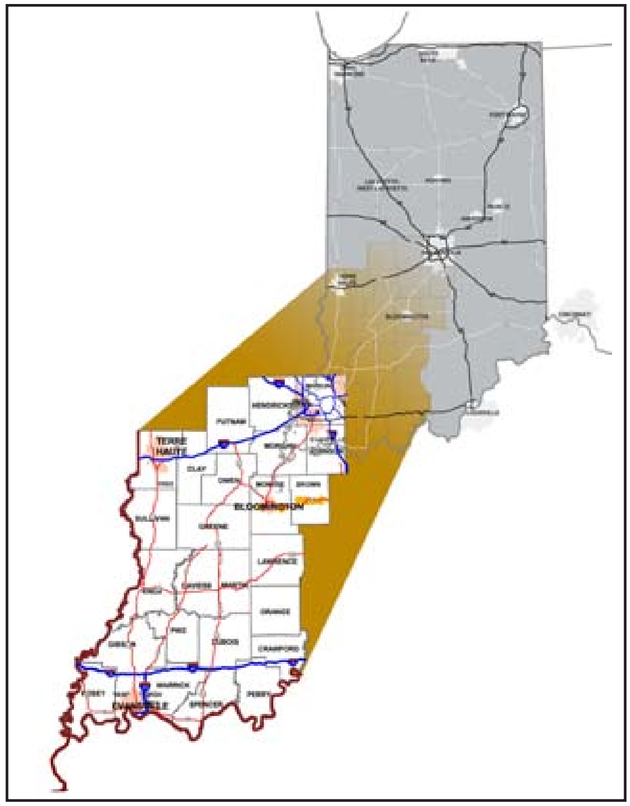

Figure 2-1: Tier 1 Study Area

Statewide Mobility Corridors. The INDOT 2000 – 2025 Long Range Plan identified Statewide Mobility Corridors as the top end of the highway system. These mobility corridors provide safe, free-flowing, high-speed connections between metropolitan areas of Indiana and surrounding states. The 2000-2025 Long Range Plan identified an as-yet unbuilt Statewide Mobility Corridor connecting Evansville, Bloomington, and Indianapolis.

Commerce Corridors. The 2000 – 2025 Long Range Plan also continued the designation (contained in the previous Statewide Plan) of certain highway corridors as "Commerce Corridors." These Commerce Corridors were designated at the direction of the Indiana legislature, which enacted legislation in 1991 directing INDOT to identify these corridors and assure that they offer an appropriate level of service to commerce-related traffic. These Commerce Corridors are major commercial routes which are high quality highways linking major centers of economic activity within Indiana. They are to connect Indiana's major concentrations of manufacturing, trade, and service employment. The plan identifies a link between Evansville and Bloomington as a yet-unbuilt Commerce Corridor.

2.3 Needs Assessment

Guided by the federal and state legislation and policy decisions described above, FHWA and INDOT conducted a comprehensive needs assessment in Tier 1 for the I-69, Evansville-to-Indianapolis project. The needs assessment involved extensive analysis of both transportation and economic conditions in Southwest Indiana. It made intensive use of the Indiana Statewide Travel Demand Model (ISTDM).

The Tier 1 needs assessment was conducted for a 26-county study area in Southwest Indiana. This Study area was defined to include all counties within the area between I-70 on the north, SR 37 on the east, and the state boundaries on the south and west. Brown County was also included in the Study Area when a route concept through Brown County was added during the scoping phase. These boundaries represent the limits within which major traffic shifts and diversions were expected to occur if a new Interstate facility were to be built between Evansville and Indianapolis. Figure 2-1 shows this Tier 1 Study Area.

Based on federal and state policies, as well as the needs assessment, the Tier 1 study identified nine overall project goals, which were grouped into three categories, are shown below. Three of the nine goals were identified as core goals for the project; the core goals are shown in *italics* in the list below.

Transportation Needs in Southwest Indiana

- Improve the transportation linkage between Evansville and Indianapolis.
- Improve personal accessibility for Southwest Indiana residents.
- Reduce existing and forecasted traffic congestion on the highway network in Southwest Indiana.
- Reduce traffic safety problems.

Economic Development Needs in Southwest Indiana

- Increase accessibility for southwest Indiana businesses to labor, suppliers, and consumer markets.
- Support sustainable, long-term economic growth (diversity of employer types)
- Support economic development that benefits a wide spectrum of Southwest Indiana residents (distribution of economic benefits).

Support of National I-69 Project

- Facilitate interstate and international movements of freight through the I-69 corridor, in a manner consistent with the national I-69 policies.
- Connect I-69 to major intermodal facilities in Southwest Indiana.

For an explanation of how these goals were determined, consult Section 2.3, *Needs Assessment*, of the Tier 1 FEIS.

2.4 Project Goals and Performance Measures

The following subsections list the project goals and performance measures used in the Tier 1 FEIS to assess the ability of alternatives to satisfy the project goals. Core goals are shown in ***bold italics;*** performance measures for core goals are shown in *italics.*

Section 2.5.4 describes which measures are used in this Tier 1 Reevaluation. It also explains that certain measures were not computed or estimated. Those which are computed (18 of the 26 used in the Tier 1 FEIS) provide an appropriate comparison of alternatives. Further, *all* performance measures for core goals were recomputed.

In addition to the Tier 1 performance measures, additional performance measures related to toll revenues also have been used in this Tier 1 Reevaluation. These toll-related performance measures are described in Section 3.3. These measures do not relate directly to an alternative's ability to meet the project's purpose and need. They are relevant to assessing tolled alternatives because they indicate an alternative's ability to generate toll revenue, which is an advantage from a funding standpoint.

2.4.1 Tier 1 Transportation Performance Measures

The following transportation performance measures were used in the Tier 1 FEIS.

Evansville - Indianapolis Connection (core goal)

- Free flow travel time savings between Evansville and Indianapolis is the savings in time which a vehicle would have if it made a trip in the absence of any traffic congestion.

- Congested travel time savings between Evansville and Indianapolis is the savings in time which a vehicle would have if it made a trip under typical weekday traffic conditions.

Personal Accessibility (core goal)

- Population within 1, 2, and 3 hours of Indianapolis is the sum of the increase in population within 1, 2 or 3 hours highway travel time of Indianapolis

- Additional Access Opportunities to Major Educational Institutions is the sum of the increase in population within a one hour highway travel time of major universities.

- Population within 30 minutes of Major Urbanized Area is the sum of the increase in population within a 30 minute travel time of Indianapolis, Terre Haute, Bloomington, or Evansville.

Traffic Congestion

- Volume-to-Capacity Ratio (v/c) on major highways, weighted by VMT is the ratio of the usage to capacity of Interstates and Other Principal Arterials.

- Percentage of congested road lane-miles is percentage of Study Area lane miles with v/c ratio of over 0.75.

- Percentage of congested VMT is percentage of Study Area Vehicle Miles of Travel (VMT) with v/c ratio of over 0.75.

- Percentage of congested VHT is percentage of Study Area Vehicle Hours of Travel (VHT) with v/c ratio of over 0.75.

- Percentage of VHT operated in delayed conditions is a measure of the “excess” VHT which occurs due to traffic congestion. *

- Efficient System Performance Index by VHT is an index which measures the amount of highly congested conditions.

Safety

- Reduction in number of fatal crashes is the reduction in Forecast Year crashes which involve a fatality.

- Reduction in number of injury crashes is the reduction in Forecast Year crashes which involve an injury, but no fatality.

- Reduction in number of property damage only (PDO) crashes is the reduction in Forecast Year crashes which do not involve a death or personal injury.

2.4.2 Tier 1 Economic Development Performance Measures

Business Accessibility

- Access to labor and consumer markets is the percentage increase in the population reachable within one-half hour of key locations in the I-69 Study Area.*

- Access to buyer and supplier markets is the increase in employment reachable within three hours of key locations in the I-69 Study Area.*

Long-Term Economic Growth

- Net change in employment is the increase in the number of jobs in the Study Area in the Forecast Year.

- Employment in high-growth industries is the increase in Study Area employment in the Forecast Year in the fastest growing industries in the United States.

- Employment in high-paying industries is the increase in Study Area employment in the Forecast Year in the industries with the highest average wage in the United States.

- Net change in real disposable income is the increase in total household disposable income in the Forecast Year (in 2001 dollars) for all households in the Study Area.

- Net change in farm income and forest income is the change in Study Area income in the Forecast Year (in 2001 dollars) from activities related to the raising and harvesting of agriculture and forestry products..*

- Estimated change in roadside business sales is the change in annual sales in the Forecast Year (in 2001 dollars) by businesses which are located on or near the proposed highway.*.

Social Distribution of Economic Benefits

- Transfer payments per capita is a measure of the per person payments of all forms of government assistance in the Study Area.*

- Young working-age population is the number of workers in the Study Area in the 25-44 year old age cohort.*

2.4.3 National I-69 Performance Measures

Interstate and International Trade (core goal)

- Daily truck-hours of vehicle travel saved is the reduction in the number of truck hours traveled in 2025.

- Intermodal Connectivity

- Accessibility to intermodal centers is a mathematical measure of access based on annual intermodal tonnage served at various freight facilities and the highway travel time to those destinations. "Intermodal tonnage" refers to freight which travels by more than one mode (Water, rail truck, air, etc.). *

* Measures marked with an asterisk were not computed in this Tier 1 Reevaluation, as explained in Section 2.5.4 below.

2.4.4 Recomputation of Tier 1 Performance Measures in Reevaluation

Use of ISTDM Version 4 to Re-Compute Tier 1 Measures

The Tier 1 FEIS used Version 3 of the Indiana Statewide Travel Demand Model (ISTDM). The ISTDM was updated from Version 3 to Version 4 for Tier 2 studies. Version 4 is being used with ongoing Tier 2 studies. ISTDM Version 4 was used in the Tier 1 Reevaluation for re-computing Tier 1 performance measures for the following reasons:

- ***It bases its demographic information and forecasts on the Year 2000 Census***. This information was not available for ISTDM Version 3, which had a base year of 1998.

- ***It has a forecast year of 2030***. ISTDM Version 3 had a forecast year of 2025. ISTDM Version 4 makes use of the most current population and employment forecasts to have a forecast year of 2030. Accordingly, all traffic forecasts and corresponding performance measures are for a forecast year of 2030.

- ***It contains a much more detailed roadway network***. ISTDM Version 3 had 18,000 links, with 23,000 miles of highway network. ISTDM Version 4 has 35,000 links, with 29,000 miles of highway network.

- ***Its zonal information is much more detailed***. ISTDM Version 3 had 844 Traffic Analysis Zones. ISTDM Version 4 has 4,720 TAZs. Version 4's zonal structure is five times more detailed than Version 3's. More detailed traffic analysis zones allow for a more accurate prediction of future traffic movements.

- ***Various technical improvements have been made to ISTDM Version 4***. These include enhancements to the computation of congested speeds, improved analysis of trips to or from outside of the modeled area (external trips), including the effect of traffic signalization throughout Indiana, and reflecting the effects of increased employee productivity in truck forecasts.

Appendix C, *Application of ISTDM Version 4 to Model Toll Alternatives*, documents the modifications made to ISTDM Version 4 to analyze the toll alternatives presented in this Reevaluation.

Decisions Regarding Which Tier 1 Measures to Re-Compute

The goal in conducting the Tier 1 Reevaluation was to recompute or estimate as many as possible of the performance measures, while recognizing that a level of analysis identical to that undertaken in Tier 1 was neither practical nor necessary. The comparative degree to which alternatives (whether tolled or non-tolled) satisfy the project purposes is to a great degree determined by their comparative locations. The Tier 1 FEIS documented that certain geographic features were associated with alternatives which had high levels of performance on project goals. As described in Section 3.4.2 of the Tier 1 FEIS, *Factors Associated With Better Performance*, these features included:

- Service to Bloomington

- Service to SR 37 Corridor
- Short Evansville to Indianapolis Mileage
- Service to Western Morgan County
- Service to Crane Naval Surface Warfare Center

Alternatives in this Reevaluation have the identical location as in the Tier 1 FEIS. The geographic factors associated with higher levels of performance remain associated with each alternative to which they pertained in Tier 1. This suggests that it is unnecessary to compute or estimate every performance measure used in the Tier 1 FEIS, especially where disproportionate effort or significant technical issues would be a factor in providing them for ISTDM Version 4[1]. A broad range of the Tier 1 performance measures (18 of the 26 used in the Tier 1 FEIS) were used in this Tier 1 Reevaluation; these measures correspond to a broad range of project goals. It also should be noted that ***every*** performance measure associated with a core goal is calculated in this Tier 1 Reevaluation.

The Tier 1 Reevaluation also must be considered in the context of ongoing Tier 2 Studies. Work on the Tier 1 Reevaluation commenced in the fall of 2005, about 18 months after the Tier 2 NEPA studies began in each section. At the time the decision was made to conduct a Tier 1 Reevaluation, several of the Tier 1 Sections were well along in preparing portions of their DEIS documents. The information provided in Tier 2 DEIS documents must reflect current conditions. Therefore, it was important to compute a broad and representative range of performance measures within a reasonable period of time.

These time considerations were especially relevant with regard to economic performance measures. In Tier 1, forecasts of economic benefits were provided by the Regional Economic Model, Inc. regional economic forecasting model. In its scope and complexity, it is comparable to the Indiana Statewide Travel Demand Model (ISTDM). The REMI model requires significant post-processing of ISTDM output prior to its running. Using the REMI model also is time-consuming. Accordingly, the decision was made to use statistical techniques to estimate key economic indicators (rather than using REMI). This approach allowed alternatives to be evaluated with regard to a range of measures of their economic development potential as toll roads, and still provided results within a reasonable time frame.

1 In Tier 1, the post-processing software programs (associated with ISTDM Version 3) which provided the performance measures were used repeatedly over a 3 – 4 year period. These post-processing programs for ISTDM Version 4 will not be used outside of the context of this Reevaluation, since the Tier 2 purpose and need analyses will be conducted for different goals, using a more detailed corridor model.

3 Alternatives

This section describes the scoping, screening, and analysis of alternatives in Tier 1. This is a condensation of information found in Chapters 3 and 6 of the Tier 1 FEIS. This section then explains how selected alternatives from Tier 1 were evaluated with regard to their performance as tolled alternatives.

- ***Section 3.1 – Overview – Tier 1 DEIS Alternative Evaluation*** describes how alternatives were evaluated in the Tier 1 DEIS, including the designation of "preferred" and "non-preferred" alternatives.

- ***Section 3.2 – Selection of Alternatives for Reevaluation*** describes how alternatives were selected for analysis in this Reevaluation.

- ***Section 3.3 – Toll Rate and Technology Assumptions; Toll-Related Performance Measures.*** This section documents the toll rate assumptions and toll collection practices assumed in this Reevaluation. It also documents the assumed toll collection technology. This section also defines and describes the toll-related performance measures that were used in this Reevaluation.

- ***Section 3.4 – Performance and Cost Analysis of Alternatives*** gives the performance of each tolled alternative in fulfilling the goals of this project, using both purpose and need performance measures from Tier 1, as well as toll-related performance measures. For the Tier 1 purpose and need measures, the performance of each alternative as a tolled alternative is compared to its performance as a non-tolled alternative. This section also gives the construction costs for each alternative.

- ***Section 3.5 – Timing of Benefits.*** This section discusses the timing of benefits for tolled alternatives and non-tolled alternatives. Tolled alternatives provide benefits sooner, albeit at a reduced level.

3.1 Overview – Tier 1 DEIS Alternative Evaluation

The scoping process in Tier 1 included meetings with federal and state review agencies and affected Metropolitan Planning Organizations (MPOs). Three public meetings also were held to solicit input into the scoping process. Fourteen route concepts, some with optional routings near Indianapolis, were specified as a result of this process. These route concepts were located throughout the 26-county Tier 1 study area.

To facilitate the screening of these route concepts, they were grouped into four geographic categories. For the initial screening, route concepts were compared only with other route concepts in their geographic group. These four categories were:

- ***Western Group.*** These route concepts generally followed US 41 for a significant distance along the western perimeter of the study area.

- ***Central Group – Bloomington Connection.*** Most of these route concepts followed SR 57 for a significant distance, and all of them served Bloomington.

- ***Central Group – No Bloomington Connection.*** These route concepts generally served the area east of the US 41 corridor but west of Bloomington.

- ***Eastern Group.*** These route concepts all provided connections to the eastern part of the study area, and all served Bloomington.

The fourteen route concepts were analyzed using a range of analytical methods to assess their ability to meet the various performance measures while ensuring that the alternatives carried forward for detailed study would have geographic diversity. In this screening process, some route concepts were eliminated, while others were carried forward for detailed study. The route concepts carried forward for detailed study were referred to as "Alternatives." Five main alternatives were designated, numbered Alternative 1 through Alternative 5. Several of these had optional routings near Indianapolis (which were designated as A, B, or C). Including these optional routings near Indianapolis, there were a total of 12 end-to-end alternatives analyzed in detail for environmental impacts, cost, and performance on purpose and need. These alternatives are shown in Figure 3-1.

In the Tier 1 DEIS, five of the twelve alternatives were designated as "preferred" because they were generally higher performing alternatives which were not fatally flawed from an environmental perspective. Of the other seven alternatives, four were non-preferred for performance reasons (failing to adequately satisfy the project purposes) and three were non-preferred for environmental reasons (having serious impacts on highly sensitive resources).

Non-Preferred Alternatives

Three of the alternatives (Alternatives 3A, 5A, and 5B) were non-preferred for environmental reasons, even though they were among the better performers in terms of achieving the project's goals. These three alternatives had such serious environmental impacts that they presented obstacles to selection as a preferred alternative, particularly in light of the availability of other alternatives with similar or better performance that avoided these highly sensitive resources. Alternative 3A would have traversed the Beanblossom Bottoms Nature Preserve, a high-quality natural area northwest of Bloomington. Alternatives 5A and 5B would have bisected the Tincher Special Area of the Hoosier National Forest west of Bedford, a unique ecosystem of global significance. In addition, these alternatives also would have passed over Blue Springs Cavern, which is a privately-owned cave which is a unique karst resource. In coordination with federal and state resource agencies, Tincher Special Area and Beanblossom Bottoms were identified as particularly important among the ecosystems in the state. Accordingly, FHWA and INDOT identified Alternatives 3A, 5A and 5B as non-preferred in the DEIS due to these serious environmental impacts.

Four of the alternatives (Alternatives 1, 2A, 2B and 4A) were non-preferred due to low performance on satisfying the project goals. Alternative 1 had low performance on all nine project goals. Alternatives 2A and 2B performed high on none of the project goals. Alternative 4A performed high on one project goal (travel time savings between Indianapolis and Evansville) while performing low on four goals and medium on four goals.

3.2 Selection of Alternatives for Reevaluation

The basic principle used to select alternatives to be included in the Tier 1 Reevaluation was to choose those alternatives which were "preferred" alternatives in the Tier 1 DEIS. These were Alternatives 2C, 3B, 3C, 4B, and 4C. These are the alternatives which the Tier 1 DEIS found to be generally higher performers, as well as not fatally flawed from an environmental perspective.

This list was modified by the elimination of one Alternative (Alternative 3B) as well as the addition of another Alternative (Alternative 1). The process which led to the selection of alternatives for the Reevaluation is described below.

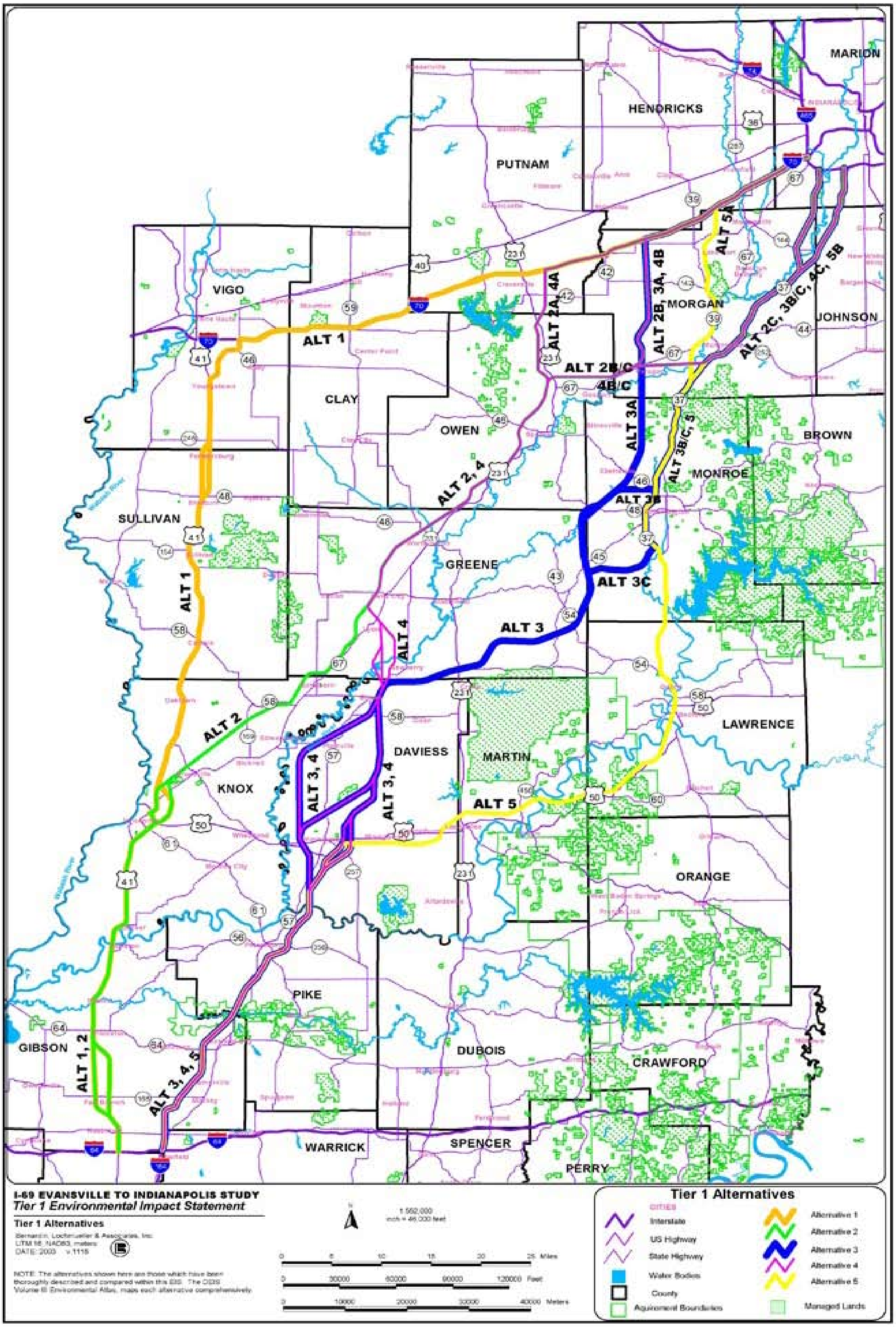

Figure 3-1 – Alternatives Considered in Tier 1

3.2.1 Alternative 3B

In its comments on the Tier 1 DEIS, the U.S. Fish and Wildlife Service (USFWS) stated that it regarded Alternative 3B, one of the Tier 1 DEIS preferred alternatives, an "environmentally unacceptable." This assessment was made because of the impacts of this alternative to the Garrison Chapel Valley (a high-quality karst ecosystem) and associated Indiana bat habitat. Other resource agencies made similar comments.

Alternative 3B was modified twice shortly before publication of the Tier 1 DEIS to avoid impacts to significant resources. It was modified to join SR 37 closer to Bloomington to avoid impacts to Beanblossom Bottoms. Then it was modified to avoid impacts to the Maple Grove Historic District, which is listed on the National Register.

Upon reviewing these comments and re-examining the corridor for Alternative 3B, INDOT and FHWA determined that it was not possible to further modify Alternative 3B to address these objections. Since there were other alternatives which performed well in satisfying project goals and did not have these major environmental impacts, Alternative 3B was eliminated from consideration in the FEIS. For these same reasons, it is not analyzed in this Reevaluation, even though it was a Tier 1 DEIS preferred alternative.

3.2.2 Alternative 1

In comments on the Tier 1 DEIS, the USEPA requested that INDOT and FHWA reconsider their finding that Alternative 1 was non-preferred. This reconsideration consisted of a detailed analysis of Alternative 1's ability to satisfy project goals (particularly core goals) by re-examining the data presented in the DEIS and developing additional data where needed.

This analysis confirmed the basic conclusions reached in the DEIS. These findings were that although Alternative 1 did have the fewest impacts for many key natural resources, it performed more poorly than any other alternative. It also had some of the highest impacts to the human environment (residential and business relocations and community disruption). Accordingly, Alternative 1 remained as non-preferred.

Even though Alternative 1 was non-preferred in Tier 1, FHWA and INDOT decided to include this alternative among those analyzed in the Reevaluation. The primary justification for re-analyzing Alternative 1 is that it is significantly different from the other build alternatives in terms of its geographic location and its use of existing roadways, and therefore has always been somewhat of an "outlier" among the alternatives. Rather than inferring that its relatively poor performance as a non-tolled alternative would be repeated as a tolled alternative, FHWA and INDOT decided to analyze this alternative as a tolled alternative in the same level of detail as the other alternatives included in the Reevaluation.

3.2.3 Hybrid Alternatives

In its comments on the Tier 1 DEIS, the USEPA requested that alternatives which combined the best-performing segments of existing routes be studied in order to determine if critical environmental resources could be avoided while maintaining high levels of performance. Two such "hybrid" alternatives were studied in the Tier 1 FEIS. They are both shown in Figure 3-2 below. One of these, Alternative 2/3C, was specifically suggested by USEPA staff in a meeting with FHWA and INDOT in October 2002.

The hybrid alternatives were analyzed in Tier 1 (between the DEIS and FEIS) with regard to their performance on project goals, as well as their resource impacts. As a result of this analysis, they were rejected in Tier 1. The following key findings were made with regard to these two hybrid alternatives.

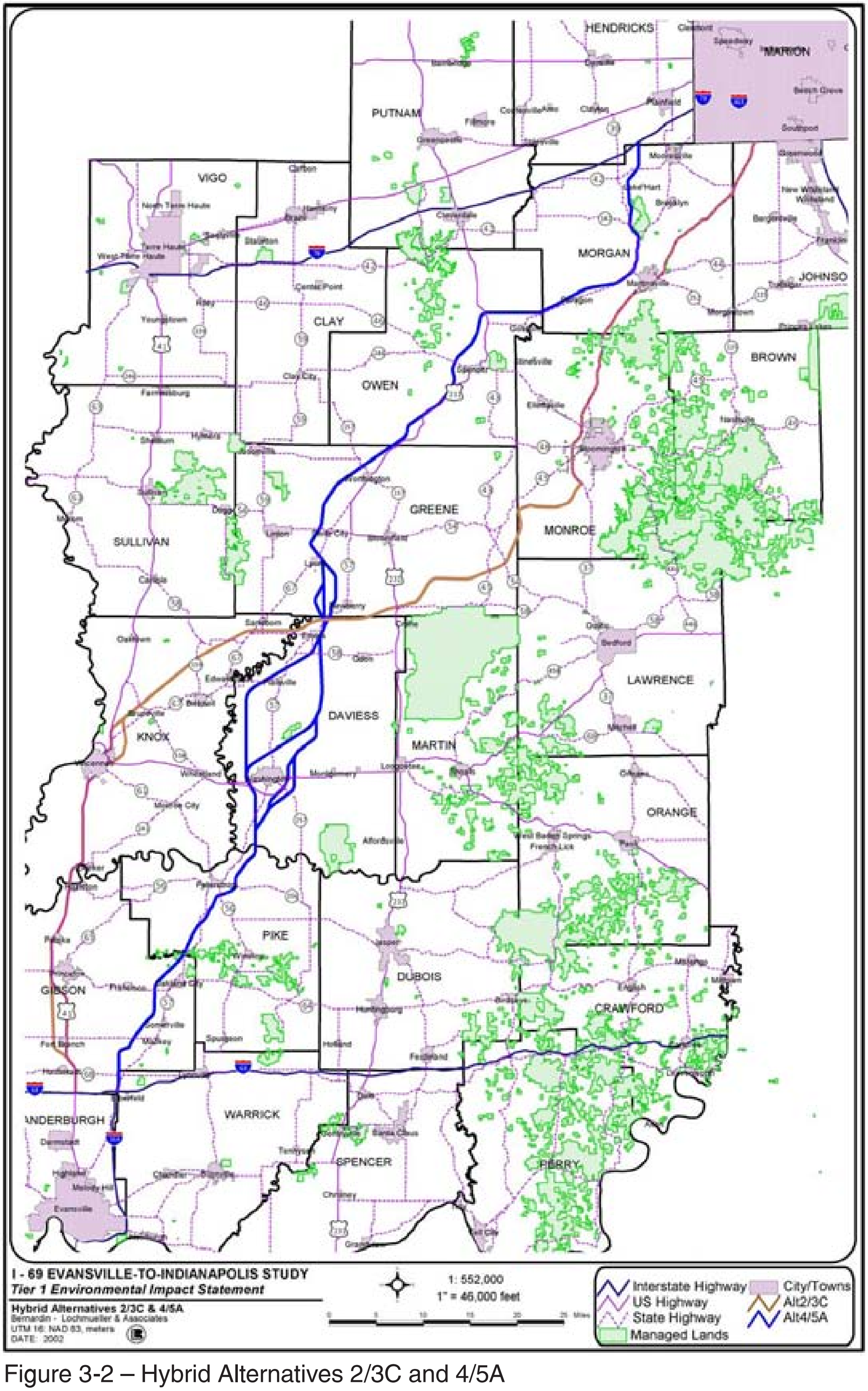

Figure 3-2 – Hybrid Alternatives 2/3C and 4/5A

Alternative 2/3C

- **Cost** was a significant factor. Its average capital cost was $175 million greater than any other alternative studied.

- The performance on project goals for the 2/3C hybrid was comparable to Preferred Alternative 3C in some areas, but lower in other areas. It performed well on accessibility goals (e.g., an additional 122,000 people within three hours of Indianapolis). However, it performed lower on two of the core project goals. Its Evansville to Indianapolis travel time savings was only 16 minutes, lower than that of any alternative other than Alternative 1. Its daily truck hours saved was only 2,100, which was lower than any alternative in the DEIS other than Alternative 1.

- Its socio-economic impacts were very high. It would result in more home relocations than any other alternative, as well as a high number of business relocations.

Alternative 4/5A

- Its performance was similar to Alternative 4B's, but its cost was somewhat higher ($1.21 billion versus $1.08 billion).

- Its wetlands impacts were relatively high (102 acres, as compared with 75 acres for the selected Alternative 3C)

- It would cause severe forest fragmentation adjacent to Bradford Woods (which was noted by the Indiana Department of Natural Resources in a comment letter).

- It included a significant longitudinal floodplain impact (2.1 miles) at Highland Creek.

- It had very high farmland impacts. Its estimated impacts of 5,350 acres were higher than all but one alternative.

These factors (cost and/or impacts) would not significantly change for a tolled version of these alternatives. Accordingly, neither hybrid alternative was considered as an alternative in the Tier 1 Reevaluation.

3.2.4 Variations Around Washington

Four of the five DEIS preferred alternatives (3B, 3C, 4B and 4C) had four variations in their routing around the City of Washington. Two of these were to the east of Washington, and two of these were to the west of Washington. To select a single routing around Washington, comments were solicited from resource agencies in the Tier 1 study between the DEIS and FEIS. The two routings to the east of Washington were found to be far preferable, due to their much lower impacts to aquatic resources. The eastern alternatives impacts about 30 to 40 fewer acres of wetlands than the western alternatives.

The impacts of the two eastern alternatives were similar. The easternmost alternative (designed WE-2 in the Tier 1 FEIS) was selected for cost and traffic engineering reasons. WE-2 is $5 to $7 million less expensive that WE-1; it also is superior from a traffic engineering standpoint.

All alternatives studied in this reevaluation assumed the WE-2 routing to the far east of Washington.

3.2.5 Mann Road Variation

In the DEIS, four of the five preferred alternatives (2C, 3B, 3C and 4C) used the SR 37 corridor to reach I-465. Each of these alternatives had two variations near Indianapolis. One continued on the existing SR 37 routing to very near I-465. The other variation left the SR 37 alignment in Morgan County to use a corridor along Mann Road, thereby avoiding Perry Township in Marion County.

During the public comment period, the Indianapolis MPO requested that the Mann Road variation for these routes be eliminated from consideration. Factors cited included its effect upon the operations of I-465, its effects upon efficient access to the Indianapolis Airport, its inconsistency with the Marion County Land Use Plan, and its impacts upon a local park. In addition, the Mann Road variation would result in significant increases in impacts to key resources. These included 50 added acres of forest impacts, 11 added acres of wetlands impacts, 126 added acres of floodplain impacts, and 227 added acres of farmland impacts. The USEPA in its comment letter on the DEIS stressed the importance of minimizing impacts to the aquatic environment. The elimination of the Mann Road variation and the retention of the SR 37 variation are consistent with USEPA's comments.

These environmental and planning considerations are not affected by the consideration of tolled alternatives. Therefore, the Reevaluation considered only routings which use the SR 37 alignment to just south of I-465, for Tier 1 alternatives that use the SR 37 corridor.

3.2.6 Post-DEIS Alignment Shifts

One or more alignment shifts were made between the DEIS and FEIS which affected Alternatives 3A, 3B, 3C, 4A, 4B, 5A, and 5B. These shifts were made to avoid or minimize wetlands impacts, as well as to avoid potential 4(f) resources. For any of the affected alternatives that are analyzed as part of this Reevaluation, their assumed alignment reflects these Tier 1 Post-DEIS alignment shifts. While this analysis did not affect the selection of alternatives to be considered in this Reevaluation, it serves to emphasize the consideration that must be given to avoiding and minimizing resource impacts in selecting an alternative in this Reevaluation.

3.2.7 Wetland Avoidance and Minimization Efforts

Based upon the written comments provided by the USEPA on the Tier 1 DEIS, FHWA and INDOT considered the Section 404(b)(1) Guidelines in selecting a Tier 1 preferred alternative.[1] This section of the FEIS documented alignment shift made between the DEIS and FEIS to minimize impacts to aquatic resources. These efforts resulted in decreasing wetlands impacts for 9 of the 12 DEIS alternatives. While this analysis did not affect the selection of alternatives to be considered in this Reevaluation, it serves to emphasize the consideration which must be given to avoiding aquatic resources in selecting an alternative in this Reevaluation.

3.2.8 Summary – Selection of Alternatives for Reevaluation

In the Tier 1 DEIS, five alternatives (Alternatives 2C, 3B, 3C, 4B, and 4C) were designated as preferred alternatives because they were generally higher performing alternatives which were not fatally flawed from an environmental

1 The "Section 404(b)(1) Guidelines" are actually regulations issued by the US EPA. These regulations provide the standards that must be applied by the U.S. Army Corps of Engineers when issued permits under Section 404 of the Clean Water Act for projects with impacts to wetlands and other waters within the Corps' jurisdiction. In general, the Section 404(b)(1) Guidelines allow a Section 404 permit to be granted only for the practicable alternative that causes the least harm to the aquatic ecosystem. This requirement is commonly known as the "least environmentally damaging practicable alternative" (LEDPA) requirement.

perspective. The alternatives chosen for study in this Reevaluation were based upon this list of DEIS preferred alternatives. Alternative 1 was added to this list in consideration of the post-DEIS consideration afforded it in the Tier 1 FEIS, as well as the uniqueness of a large portion of its routing. Alternative 3B was eliminated from this list because of the post-DEIS finding that it was fatally flawed from an environmental perspective.

Accordingly, the following five alternatives were selected for study in this Tier 1 Reevaluation – Alternatives 1, 2C, 3C, 4B, and 4C. Figure 3-3 below portrays these five alternatives. Alternatives in the SR 37 corridor would use only the SR 37 alignment to just south of I-465 (not the Mann Road variation). All affected alternatives would use the most easterly alignment around the City of Washington.

3.3 Toll Rate and Technology Assumptions; Toll-Related Performance Measures

Toll Rates

This Reevaluation considered a reasonable set of assumptions of potential future toll rates for the I-69 alternatives. For comparison purposes, these toll rates are expressed as percentages of the assumed projected toll rates on the Indiana Toll Road, which is located in northern Indiana and is the only existing toll road in the State.[2]

The existing toll rate (as of late 2005) on the Indiana Toll Road was $0.05 per mile for passenger cars, $0.12 per mile for single-unit trucks with more than four tires, and $0.196 per mile for multiple-unit trucks. These rates were projected to rise an average of 2.5% annually. With this increase, the toll rates in the forecast year of 2030 would be approximately $0.09 per mile for passenger cars, $0.22 per mile for single-unit trucks, and $0.35 per mile for multiple-unit trucks.

For purposes of this reevaluation, three toll scenarios were assumed. The baseline scenario involves a per-mile toll rate for I-69 in 2030 that is 75% of the projected per-mile toll rate for the Indiana Toll Road in 2030 (“75% Scenario”). In addition, two other scenarios were considered: a lower toll rate, set at 50% of the projected Indiana Toll Road rates in 2030 (“50% Scenario”), and a higher toll rate, set at 100% of the projected Indiana Toll Road rates in 2030 (“100% Scenario.”)

Toll Collection Points

Under all scenarios, it was assumed that all travel on I-69 would require payment of tolls; no toll-free travel would be allowed. In the tolling industry, this system is commonly referred to as a “closed barrier” system of tolling. This term refers to any system that requires all users to pay tolls, regardless of whether the system involves cash collection at toll plazas or a system of fully electronic tolling (which would not involve toll plazas).

For all alternatives, tolls are assumed to be collected ***only*** on newly-constructed or upgraded portions of I-69. For Alternative 1, tolls are assumed to be collected only between I-64 and SR 641 in Terre Haute; no tolls are collected where I-69 would use existing SR 641 or I-70. For Alternative 4B, tolls are assumed to be collected only between I-64 and I-70; no tolls are collected where I-69 would use existing I-70. For Alternatives 2C, 3C and 4C, tolls are assumed to be collected on I-69 between I-64 and I-465.

2 The “projected” Indiana Toll Road rates used in this analysis were determined in fall 2005, when preparation of this Reevaluation began. The “projected” toll rates for the Indiana Toll Road differ somewhat from the rates that were actually adopted by the Indiana Finance Authority for the Indiana Toll Road through a rulemaking in early 2006. The main difference is that the adopted toll rates include certain adjustments to minimize the impact of future toll increases on local residents in counties along the toll road. These differences do not have any material effect on the analysis in this Reevaluation. The “projected” toll rates for the Indiana Toll Road were used simply as a basis for determining a range of potential toll rates for I-69; INDOT is not proposing to establish any direct linkage between toll rates on the Indiana Toll Road and I-69.

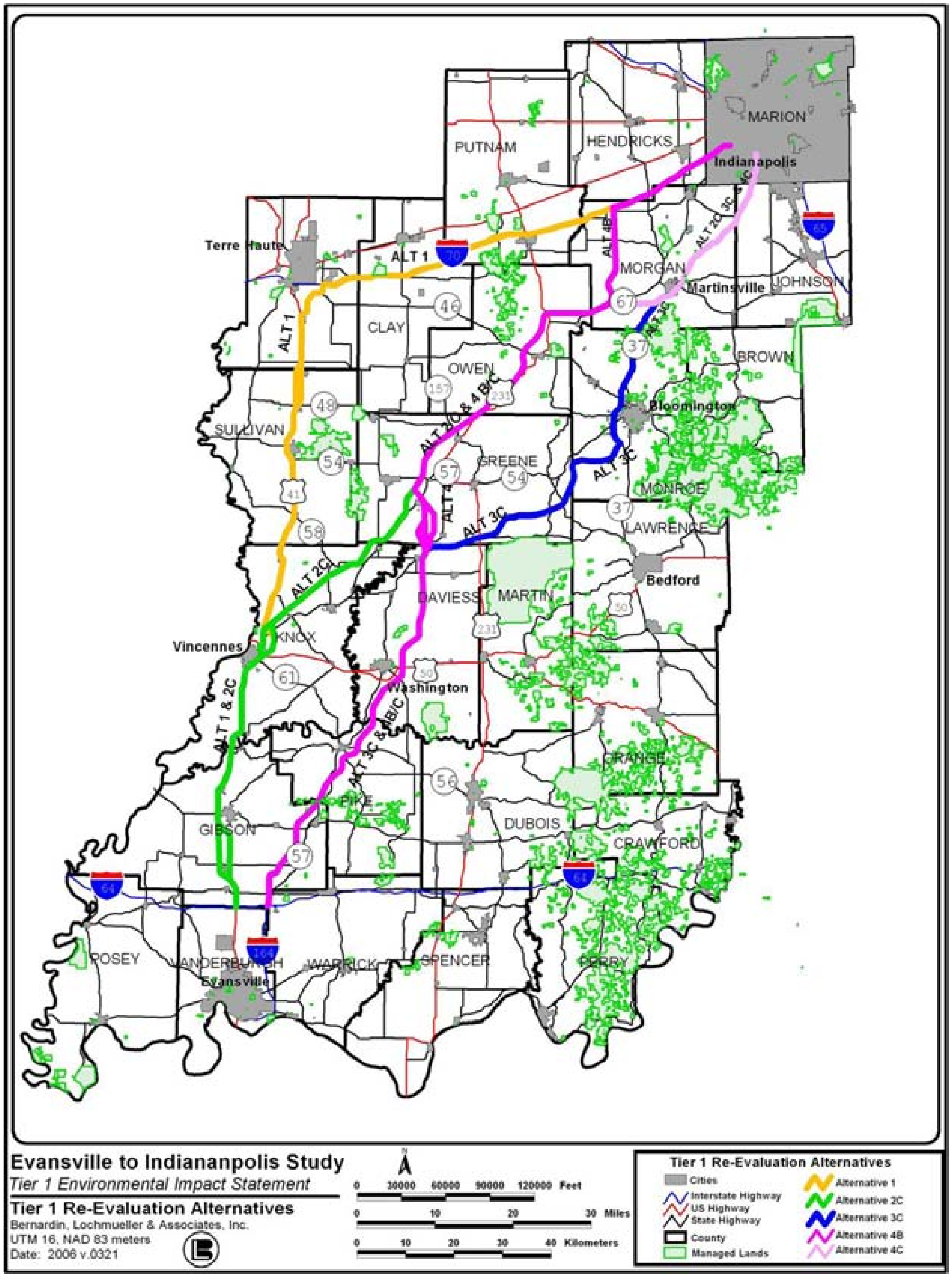

Figure 3-3 – Alternatives Considered in Tier 1 Reevaluation

Toll Collection Technology

A fully electronic toll-collection system was assumed for all toll alternatives. It is anticipated that this will be the standard for new toll facilities because it eliminates the need for motorists to stop periodically to pay tolls, and it has the potential to be more cost-effective from both a capital and operating expense standpoint. In addition, fully electronic toll collection may be required as a condition of obtaining FHWA approval to toll I-69.[3]

Under such a toll-collection system, gantries are place over all exit and entrance ramps, as well as at the beginning and ending points of the system. These gantries have equipment which identifies vehicle-based transponders, allowing a person's usage of the system to be quantified. Motorists without transponders are recognized via their license plates, and thereby are billed for use of the toll road. See Appendix B, Section 2.4, *Toll Road Costs* for more information regarding electronic toll collection technology.

Traffic Model

The forecasts for I-69 traffic used in this Reevaluation reflect the status of the ISTDM Version 4, as of April 26, 2006, and are suitable for comparison purposes in this Reevaluation. ISTDM Version 4 continues to undergo refinements for possible modeling of toll alternatives in Tier 2 studies. It is anticipated that as a result of these refinements, Tier 2 forecasts will not be identical to those which would have been produced by the ISTDM, as it existed at the time of this Reevaluation.

Toll-Related Performance Measures

In addition to the Tier 1 purpose and need measures, additional measures have been used to evaluate the performance of each alternative as a tolled alternative. These measures gauge the relative effectiveness of each alternative as a toll road. Each measure is described below.

- Total Daily Vehicle Miles Traveled (VMT) on Tolled Alternative. This measures the amount of vehicle travel subject to tolls. The higher the number, the better the alternative is at attracting toll-paying travel.

- Average Annual Daily Traffic (ADT). This is calculated as total daily VMT on the tolled facility divided by the center line miles of the tolled facility. This is a measure of the "average" traffic volume along the entire tolled facility. This measures the ability of a facility to attract tolled travel, while normalizing for the length of the facility being tolled. It is provided both for trucks, as well as all vehicles.

- Toll Revenue (Annual). This is a measure of annual toll revenue. It is provided for autos, trucks, and for all vehicles.

The toll-related performance measures do not directly measure an alternative's ability to meet the project's purpose and need. They are relevant to assessing tolled alternatives because they indicate an alternative's ability to generate toll revenue, which is an advantage from a funding standpoint.

3 The recent federal transportation legislation, known a SAFETEA-LU, created a New Interstate Construction pilot program, which allows tolling on new Interstates in order to fund construction of those facilities. This program includes several conditions for participation. One of those conditions is a requirement to use fully automatic toll collection (i.e., no cash payment).

3.4 Performance and Cost Analysis of Alternatives

This section contains the performance measure and cost information for the alternatives considered in this Tier 1 Reevaluation. The information presented in this section includes:

- Performance Measures for Tier 1 Purpose and Need. *Sections 3.4.1 through 3.4.3* present the purpose and need performance measures for the alternatives. The tables in these sections show the performance of each alternative under the 50%, 75% and 100% toll rate scenarios; for comparison purposes, the performance of each alternative under a non-toll scenario is also presented. Graphs in this section show the performance of all alternatives for the baseline toll scenario (75% toll rate).[4]

- Toll-Related Performance Measures. *Section 3.4.4* presents toll-related performance measures under the 50%, 75% and 100% scenarios. The tables in this section present the results for the alternatives under all toll rate scenarios (50%, 75%, and 100%), as well as the non-toll case. The graphs show the comparative performance of all alternatives for the baseline toll scenario (75% toll rate).

- Cost Estimates. *Section 3.4.5* presents cost estimates for each alternative under the 50%, 75% and 100% scenario, as well as for the corresponding non-toll scenario. Included are construction costs, mitigation costs, and rest area costs.

- *Overall Comparison*. *Section 3.4.6* provides an overall comparison of the alternatives on project goals and toll-related performance measures, highlighting those which performed well.

3.4.1 Transportation Performance Indicators

3.4.1.1 Improve Evansville-Indianapolis Linkage

A *core goal* of this project is to improve the connections between Evansville and Indianapolis. Two performance measures are used for this goal. These are:

- Typical travel time savings between Evansville and Indianapolis

- Free flow travel time savings between Evansville and Indianapolis

Table 3-1 gives the performance of each alternative on both of these measures. Performance on the benchmark 75% toll level is highlighted in yellow. For this measure, typical travel time savings is identical for all toll options for all alternatives. Free flow travel time savings are identical to toll and non-toll versions of all alternatives.

There is a significant variation in the performance of alternatives on this core goal for typical travel time savings. Alternatives fall into three groupings:

- Three alternatives with the highest typical travel time savings (Alternatives 2C, 3C and 4C) have similar performance (save 28 – 30 minutes) for all toll scenarios.

4 All performance measures are calculated based upon traffic assignments by ISTDM Version 4, which is the current version of the Indiana traffic model. The performance measures in the Tier 1 FEIS were calculated based on ISTDM Version 3, which was the current version at the time of that study. Because an updated model has been used, the modeling results for the non-toll alternatives will be similar, but not identical, to the results reported in the Tier 1 FEIS.

Table 3-1: Travel Time Savings between Evansville and Indianapolis by Alternative (minutes)

Scenario	Alternative				
	1	2C	3C	4B	4C
Typical 50% Toll	15	29	30	24	28
Typical 75% Toll	15	29	30	24	28
Typical 100% Toll	15	29	30	24	28
Typical Non-Toll	13	24	30	24	28
Free Flow (Toll or Non-Toll)	12	23	25	20	23

Source: Bernardin, Lochmueller & Associates, Inc. ISTDM Version 4. Benchmark 75% toll option highlighted in yellow.

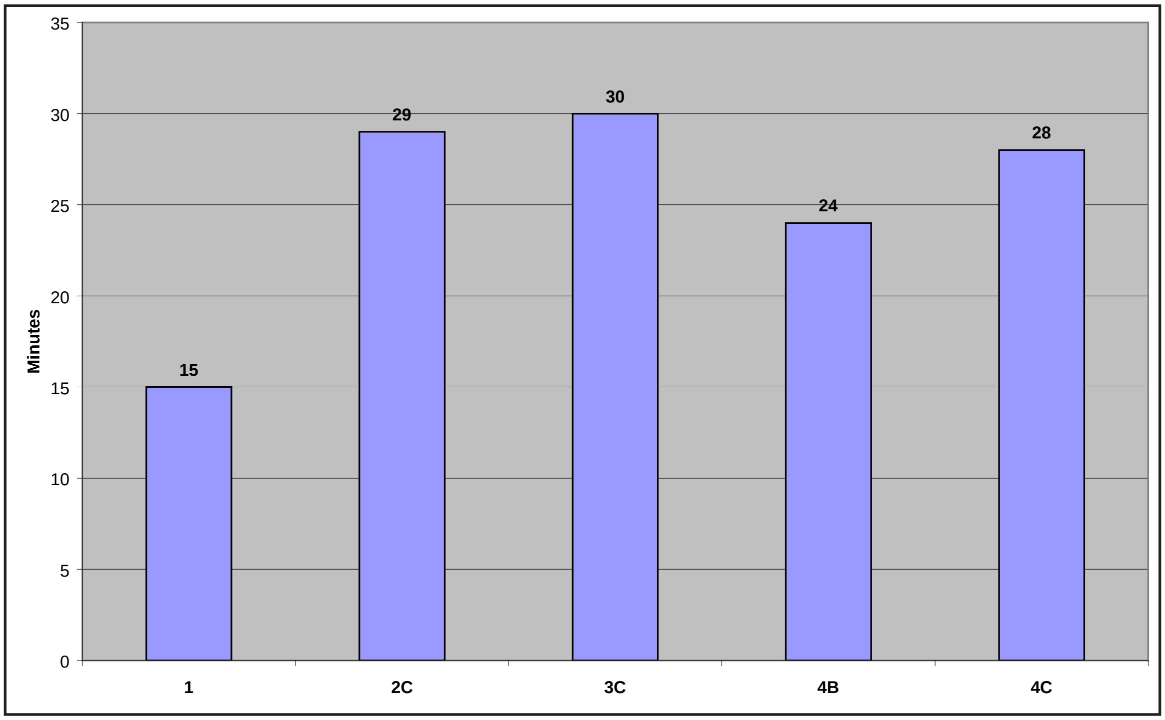

Figure 3-4 – Typical Travel Time Savings – Tolled Alternatives, 75% Toll Rate

Table 3-2 – Year 2030 Increase in Number of People within Given Proximity

Within	1	2C	3C	4B	4C
One Hour of Indianapolis	0	43,000	47,000	13,000	43,000
Two Hours of Indianapolis	11,000	37,000	49,000	33,000	37,000
Three Hours of Indianapolis	44,000	78,000	177,000	82,000	78,000
Added Access to Maj. Edu. Inst.	137,000	358,000	312,000	35,000	258,000
Thirty Minutes of Major Urban Area	5,000	4,000	7,000	2,000	3,000

Source: Bernardin, Lochmueller & Associates, Inc. ISTDM Version 4

- Alternative 4B has a typical travel time savings of 24 minutes for all toll scenarios.
- Alternative 1 has a significantly lower typical travel time savings than other alternatives. For all toll scenarios, its typical travel time savings is only 15 minutes.

For free flow travel time savings, the four higher alternatives perform more similarly. Alternatives 2C, 3C, 4B, and 4C have free-flow savings of 20 – 25 minutes. Alternative 1 has a much lower free flow travel time savings, only 12 minutes.

Figure 3-4 portrays the typical travel time savings for each tolled alternative at the 75% toll level.

Summary

On this core goal, three alternatives (2C, 3C, and 4C) have a similar high level of performance (28 – 30 minutes) on typical travel time savings for tolled alternatives. Alternative 4B has a somewhat lower typical travel time savings of 24 minutes for tolled alternatives. Alternative 1 has the lowest typical travel time savings for tolled alternatives, approximately 15 minutes. For the free flow travel time savings, four of the five alternatives (2C, 3C, 4B and 4C) have a similar performance, with a range of 20 – 25 minutes saved. On this measure, Alternative 1 has a much lower performance, with only 12 minutes saved.

3.4.1.2 Improve Personal Accessibility

A *core goal* of this project is to improve personal accessibility. In order to assess the comparative performance in improving personal accessibility, five performance measures were used. These measures gauge how many additional people gain access to important destinations. These destinations are those to which people wish to travel for important business, recreational, medical, or educational purposes. The measures are:

- Year 2030 increase in number of people within one, two, and three hours of Indianapolis.
- Year 2030 Added Access Opportunities to Higher Educational Institutions, defined as the added number of people within one hour of any major educational institution in the 26-county Tier 1 Study Area.
- Year 2030 increase in number of people within one-half hour of major urban centers (Evansville, Terre Haute, Bloomington, or Indianapolis). This measures access to locations such as major medical institutions, airports, cultural centers, and shopping.

Table 3-2 shows the performance of alternatives on each indicator. Accessibility is calculated based upon free flow speeds, and is not affected by the existence or level of tolls.

The alternatives vary significantly in improving personal accessibility. In accessibility to Indianapolis, Alternative 3C performs better, especially in providing additional three-hour access to Indianapolis (177,000 added persons, more than twice the next-best total of 82,000 for Alternative 4B). Alternatives 2C, 4B and 4C also perform well in access to Indianapolis, though not as well as Alternative 3C. Alternative 1 provides comparatively little added access to Indianapolis. Figure 3-5 compares the performance of alternatives in providing additional three-hour access to Indianapolis.

Alternatives 2C, 3C, and 4C all perform well in increasing access to major educational institutions. Alternative 2C performs the best at 358,000 persons, with Alternative 3C at 312,000 persons and Alternative 4C at 258,000 persons. Alternative 1 provides access to an additional 137,000 persons, while Alternative 4B provides access to only an

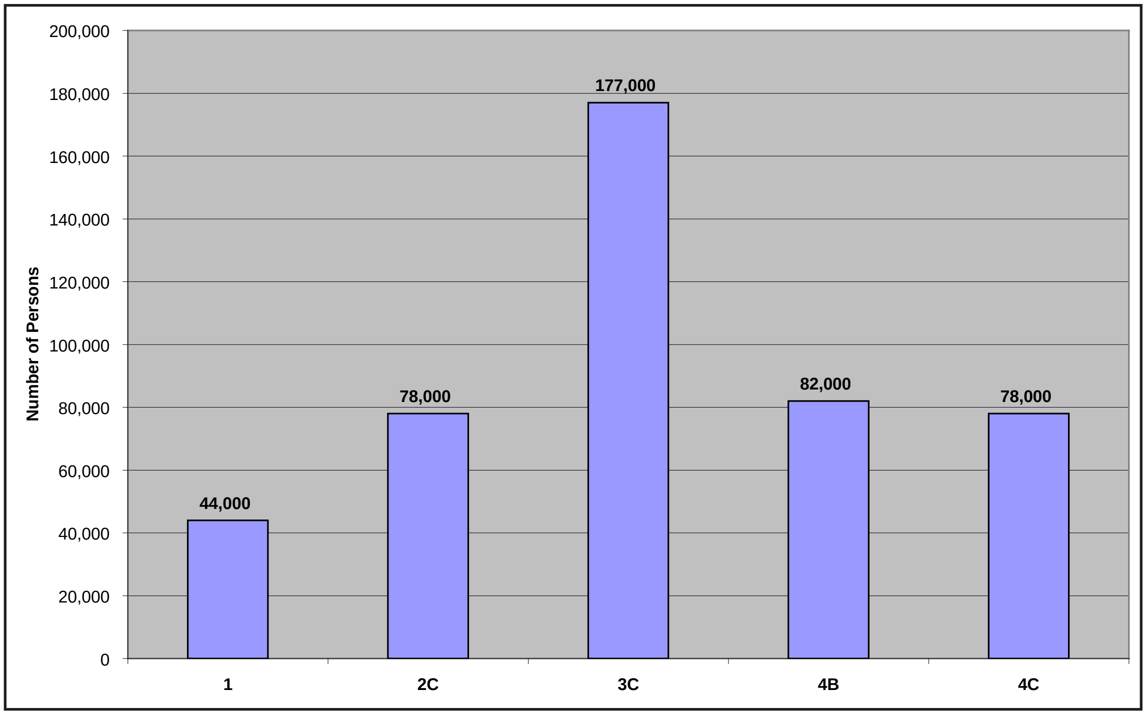

Figure 3-5 – Year 2030 Increase in Three-Hour Access to Indianapolis

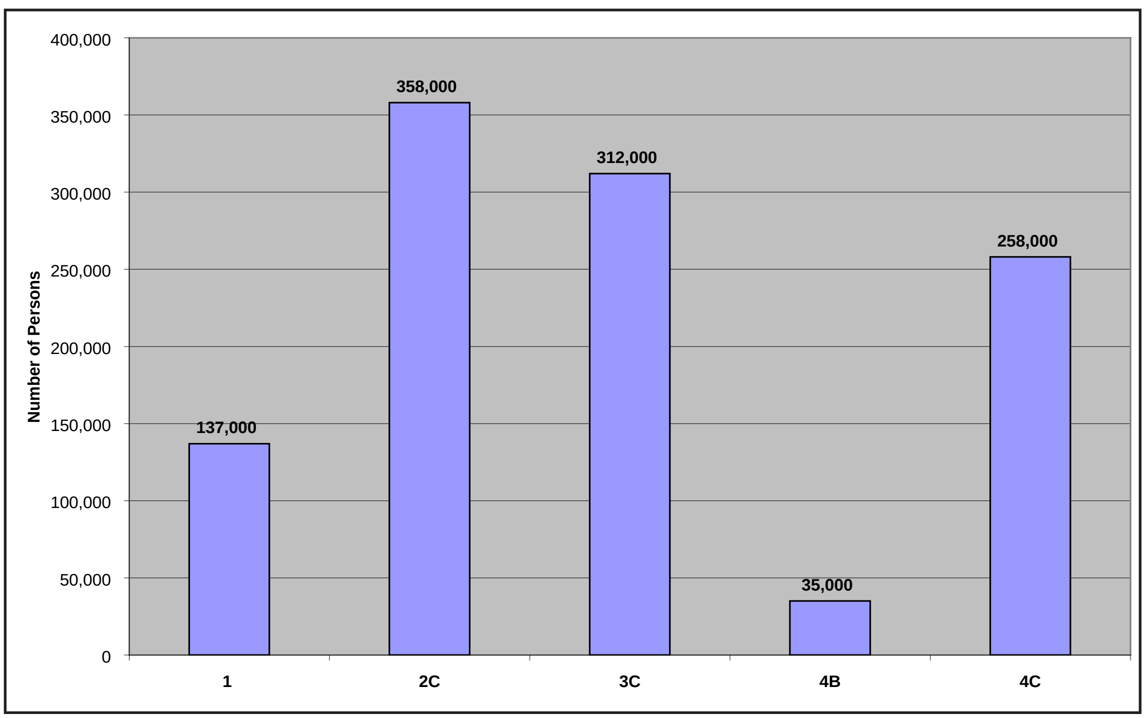

Figure 3-6 – Year 2030 Increases in Access Opportunities to Higher Education additional 35,000 persons. Figure 3-6 compares the performance of alternatives in providing additional access opportunities to higher education.

All alternative perform similarly in providing added access to urban areas. Alternative 3C provides the greatest added access to urban areas, at 7,000 persons.

Summary

Alternative 3C provides the overall greatest increase in the core goal of increased personal accessibility, providing the highest increase on four of the five measures. It provides the greatest increase in accessibility to Indianapolis, especially for three hour accessibility. Alternative 2C also provides a high level of increased accessibility, and performs the highest in providing increased access to educational opportunities.

3.4.1.3 Reduce Traffic Congestion

A goal of this project is to reduce forecasted traffic congestion. In order to assess the comparative ability of various alternatives to reduce traffic congestion, six performance measures were used for the 26 county Study Area. These measures, which are further explained in Section 2.5.1 are:

- Volume to Capacity Ratio (v/c) on Major Highways, weighted by Vehicle-Miles of Travel (VMT)
- Percentage of Congested Road Lane-Miles
- Percentage of Congested VMT
- Percentage of Congested Vehicle Hours of Travel (VHT)
- Efficient System Performance Index (ESPI) by VHT

Table 3-3 summarizes these performance measures for the Study Area.

As non-toll facilities, all alternatives (with the exception of Alternative 1) provide significant reductions in traffic congestion in the 26 county Study Area. As a non-toll facility, Alternative 1 actually leads to a slight increase in traffic congestion. Alternative 1 consists entirely of upgrading an existing four-lane facility with a significant amount of at-grade access. By converting this to a freeway, a significant amount of local travel which would use US 41 is diverted to other facilities with less capacity.

As tolled facilities for the 75% benchmark toll, only Alternative 2C provides significant congestion relief. Alternative 4B provides a lesser level of congestion relief. Alternatives 1, 3C and 4C generally provide minor levels of congestion relief. However, by one measure (% of congested VHT), Alternatives 3C and 4C as tolled facilities result in an overall increase in congestion in the 26 county Study Area. More detail about the locations where these congestion increases are experienced is provided in Section 5.1, Traffic Impacts.

On this issue, it is important to note that the congestion "hot spots" identified in this Tier 1 reevaluation are a result, in part, of the preliminary stage of the tolling analysis. Tolling concepts will be refined in Tier 2 studies (if a decision is made to proceed with consideration of tolled alternatives). The Tier 2 studies will consider refinements to tolling strat-

Table 3-3: Summary of Study Area Congestion Performance Indicators, by Alternative

Measure		No-Build	1	2C	3C	4B	4C
V/C ratio on major highways, weighted by VMT	Non-Toll	0.72	0.73	0.70	0.70	0.70	0.69
	50% Toll		0.72	0.70	0.70	0.71	0.70
	75% Toll		0.72	0.70	0.71	0.71	0.71
	100% Toll		0.72	0.71	0.71	0.71	0.71
% of congested road lane-miles	Non-Toll	12.87%	13.11%	11.23%	11.11%	11.27%	11.00%
	50% Toll		12.68%	11.95%	12.70%	12.43%	12.42%
	75% Toll		12.71%	11.95%	12.70%	12.43%	12.47%
	100% Toll		12.81%	11.94%	12.73%	12.44%	12.49%
% of congested VMT	Non-Toll	39.59%	39.60%	35.77%	35.49%	36.33%	35.47%
	50% Toll		38.72%	37.48%	39.32%	39.01%	38.78%
	75% Toll		38.75%	37.52%	39.40%	39.05%	38.95%
	100% Toll		39.01%	37.56%	39.53%	39.12%	39.05%
% of congested VHT	Non-Toll	50.95%	51.58%	49.08%	48.66%	49.16%	48.60%
	50% Toll		50.52%	50.17%	51.35%	50.88%	50.92%
	75% Toll		50.58%	50.19%	51.40%	50.89%	51.10%
	100% Toll		50.72%	50.18%	51.49%	50.94%	51.18%
ESPI by VHT	Non-Toll	12.92	12.68	13.23	13.33	13.19	13.36
	50% Toll		13.13	13.12	12.93	12.91	13.03
	75% Toll		13.11	13.13	12.92	12.94	13.00
	100% Toll		13.09	13.12	12.81	12.93	12.93

Source: Bernardin, Lochmueller & Associates, Inc. ISTDM Version 4. Benchmark 75% toll option highlighed in yellow.

egies, which can achieve a better balance between revenue generation and traffic management. FHWA and INDOT expect that these refinements will alleviate many of the congestion hotspots.

Also, it is important to note that these results assume that the toll and non-toll alternatives would exist at the same point in time. Tolled alternatives would provide an additional funding source, which allows projects to be built sooner and thus to begin delivering benefits sooner. The acceleration of benefits is addressed in ***Section 3.5, Timing of Benefits,*** below.

Summary

As tolled facilities at the 75% benchmark toll level, Alternative 2C provides a significant level of congestion relief, as compared with the No Build scenario. Alternative 4B provides a lesser level of congestion relief, and Alternatives 1, 3C and 4C provide comparatively small levels of congestion relief. By one measure (% of congested VHT), Alternatives 3C and 4C lead to a slight increase in congestion in the Study Area, based on the tolling assumptions made in

Table 3-4: Summary of Forecasted Year 2030 Annual Crash Reductions, by Alternative

Crash Type	Funding Type	Alternative				
		1	2C	3C	4B	4C
Fatal	Non-Toll	8	13	14	8	13
	50% Toll	2	3	4	3	4
	75% Toll	1	1	3	0	1
	100% Toll	(2)	(1)	0	0	0
Injury	Non-Toll	811	1,173	1,162	666	1,021
	50% Toll	437	537	510	344	446
	75% Toll	382	350	443	204	280
	100% Toll	286	307	270	158	245
Property Damage, Only	Non-Toll	778	1,328	1,404	835	1,284
	50% Toll	536	565	573	436	533
	75% Toll	476	297	471	254	272
	100% Toll	312	246	228	174	232

Source: Bernardin, Lochmueller & Associates, Inc. ISTDM Version 4. Benchmark 75% toll option highlighted in yellow.

this Tier 1 Reevaluation. It is anticipated that refinements to the tolling concepts in Tier 2 can reduce the congestion problems associated with alternatives (such as 3C) that use SR 37, so that the negative impacts of those alternatives on congestion are reduced.

3.4.1.3 Improve Traffic Safety

A goal of this project is to improve regional traffic safety. In order to assess the comparative performance of alternatives in satisfying this goal, three performance measures were used. Forecasts were made of Year 2030 annual reductions in fatal crashes, injury crashes, and property damage only crashes.

Table 3-4 summarizes the crash reduction forecasted for each alternative. It shows the forecasted reductions for each alternative all three toll scenarios. For comparison purposes, also shown are forecasted crash reductions under a non-toll scenario. Figures 3-7 and 3-8 compare the performance of tolled alternatives in reducing injury and property-damage only crashes at the benchmark 75% toll level.

At the benchmark toll level, Alternative 3C performs best in crash reduction. It performs the best in reducing fatal (3) and injury crashes (443). Alternative 1 performs the best in reducing property damage-only crashes (476), although Alternative 3C performs nearly as well (471).

Tolled alternatives provide smaller safety benefits than non-tolled alternatives. At the benchmark 75% toll scenario, injury crash reductions are 27% - 47% of those for a non-tolled scenario. Under this same scenario, fatal crash reductions are 0 – 21% of those for a non-tolled alternative, and property damage-only crash reductions are 21% – 61% of those for a non-tolled alternative.

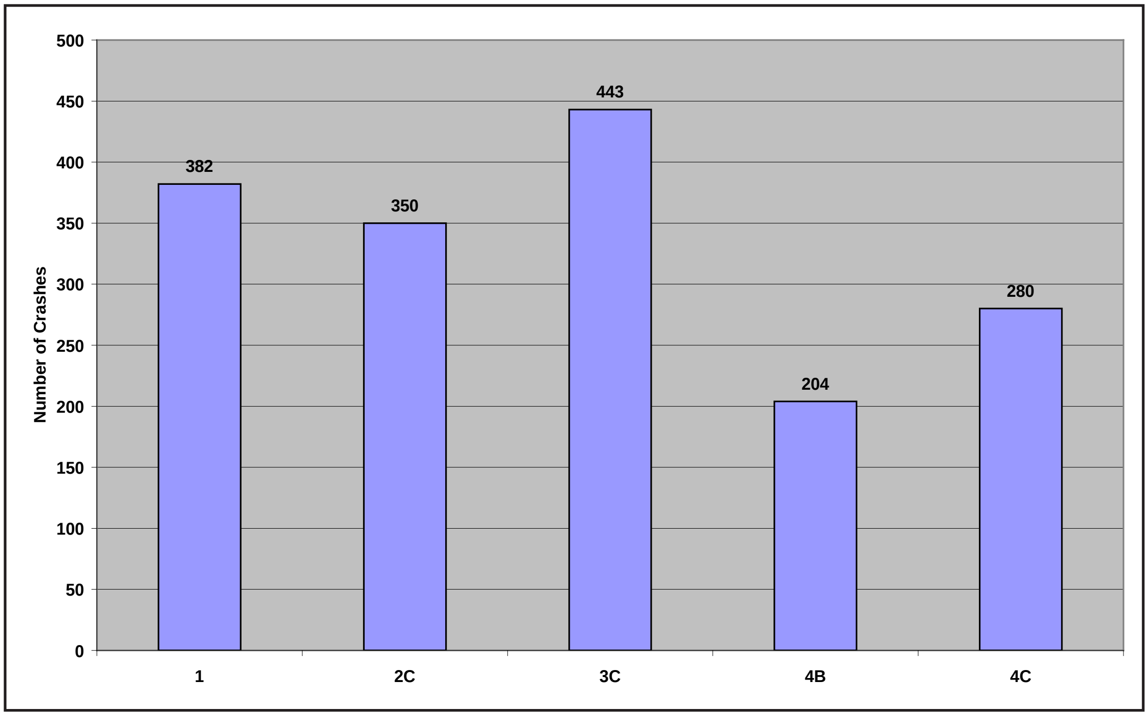

Figure 3-7 – Forecasted Year 2030 Injury Crash Reductions by Alternative, 75% Toll Rate

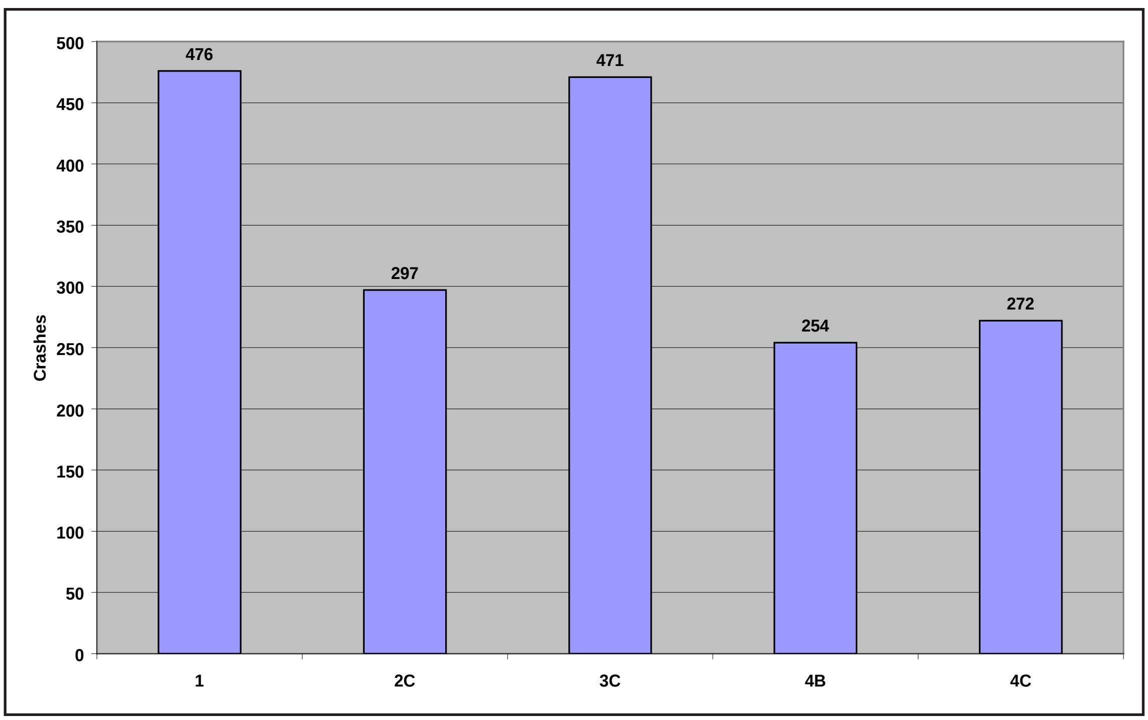

Figure 3-8 – Forecasted Year 2030 Property Damage Only Crash Reductions by Alternative, 75% Toll Rate

It is important to note that these results assume that the toll and non-toll alternatives would exist at the same point in time. Tolled alternatives would provide an additional funding source, which allows projects to be built sooner and thus to begin delivering benefits sooner. The acceleration of benefits is addressed in ***Section 3.5, Timing of Benefits,*** below.

Crash reductions are estimated by comparing crash rates by facility classification with forecasted traffic volumes on those facilities. Higher classification facilities (such as freeways and other divided highways with access control) have lower crash rates than other facilities. Non-tolled alternatives have greater crash reductions because they divert a greater share of traffic from local roads onto a new limited-access facility.

Summary

For the benchmark 75% toll scenario, Alternative 3C performs best in reducing crashes. Alternative 1 also performs comparatively well in reducing injury and property-damage only crashes.

3.4.2 Economic Development Indicators

The economic development indicators which are estimated for this Reevaluation all pertain to the project goal of supporting sustainable, long-term economic growth. In the Tier 1 FEIS, these indicators were calculated by the REMI modeling process. As described in Section 2.5.4 of this Reevaluation, statistical techniques were used to estimate several of the performance measures which were calculated by the REMI model in the Tier 1 FEIS. These techniques are documented in Appendix A, *Estimation of Regional Economic Performance Measures.* These performance measures are:

- Net Change in Disposable Income in the Study Area in 2030 (In 2001 dollars)[5]

Table 3-5: Summary of Forecasted Year 2030 Long-Term Study Area Economic Growth

Measure	Funding Type	1	2C	3C	4B	4C
Annual Disposable Income (Millions)	Non-Toll	$51	$146	$171	$108	$156
	50% Toll	$56	$133	$143	$104	$135
	75% Toll	$53	$109	$137	$84	$112
	100% Toll	$32	$103	$115	$81	$109
Total Employment	Non-Toll	1,300	3,900	4,500	2,800	4,100
	50% Toll	1,400	3,400	3,700	2,600	3,500
	75% Toll	1,300	2,800	3,600	2,100	2,800
	100% Toll	800	2,600	3,000	2,000	2,800
Employment in High Growth Industries	Non-Toll	600	1,700	2,000	1,300	1,800
	50% Toll	600	1,500	1,600	1,200	1,500
	75% Toll	600	1,200	1,500	900	1,200
	100% Toll	300	1,100	1,200	900	1,200
Employment in High Paying Industries	Non-Toll	500	1,300	1,400	1,000	1,300
	50% Toll	500	1,200	1,400	1,000	1,300
	75% Toll	500	1,200	1,300	1,000	1,200
	100% Toll	500	1,200	1,300	1,000	1,200
Source: Bernardin, Lochmueller & Associates, Inc. ISTDM Version 4. Benchmark 75% toll option highlighted in yellow.						

5 The statistical techniques used to estimate these economic indicators were based upon the Tier 1 analysis, which provided personal income forecasts for future years in constant (2001) dollars.

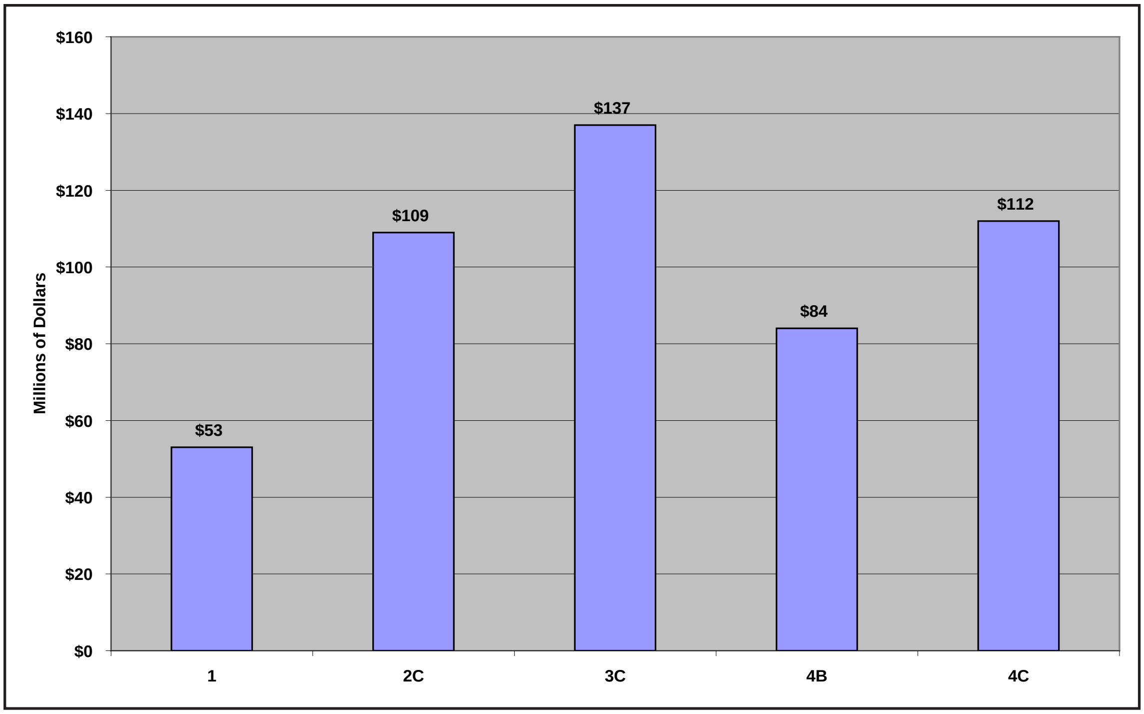

Figure 3-9: Forecasted Increase in Annual Disposable Income, Year 2030, 75% Toll Rate

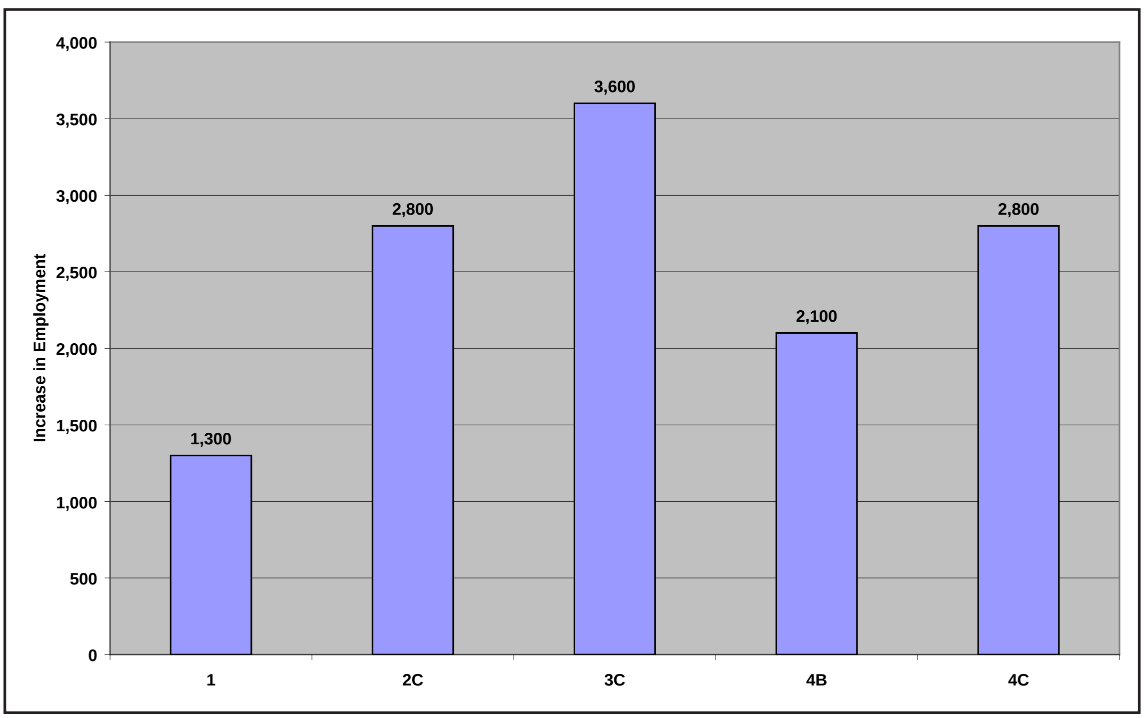

Figure 3-10: Forecasted Increase in Employment, Year 2030, 75% Toll Rate

- Net Change in Study Area Employment in 2030
- Increase in Employment in High Growth Industries in 2030
- Increase in High Paying Industries in 2030.

Table 3-5 provides the performance of each alternative under all three toll scenarios. As a reference, it also shows forecasted performance for a non-toll version of each alternative. Figures 3-9 and 3-10 show forecasted increases in personal income and total employment for the benchmark 75% toll scenario.

For the benchmark 75% toll scenario, Alternative 3C is the best-performing alternative. Alternatives 2C and 4C are similar in their performance, and provide about 80% of the level of economic growth as Alternative 3C. Alternatives 1 and 4B provide lower levels of economic growth.

Except for Alternative 1 (which has the lowest overall economic performance) the tolled alternatives at the benchmark 75% toll level generally provide 70 – 80% of the benefits provided by the corresponding non-toll alternative.

Toll alternatives provide a lesser level of economic benefits than a free alternative *if they are assumed to exist at the same point in time*. Tolls represent an increased cost of doing business, and as such lead to diminished economic benefits when compared with those provided by a non-tolled alternative – again, if it is assume that both alternatives exist at the same point in time. Of course, the reality is that tolled alternatives provide an additional funding source, which allows projects to be built sooner and thus to begin delivering benefits sooner. The acceleration of benefits is addressed in ***Section 3.5, Timing of Benefits,*** below.

Summary

Overall, Alternative 3C provides the greatest level of economic benefit as a tolled alternative. For the benchmark 75% toll scenario, its increases in income and jobs are about 20% greater than the next-best performing alternative. Alternatives 1 and 4B provide comparatively lower levels of economic growth as toll alternatives.

3.4.3 National I-69 Performance Indicators

This performance indicator supports the *core goal* of Improving Interstate and International Movement of Freight. For each alternative the daily savings (as compared to the No Build Alternative) in truck-hours of travel in 2030 was

Table 3-6: Summary of Forecasted Year 2030 Daily Truck Hours Saved

	Funding Type	1	2C	3C	4B	4C
Daily Truck Hours Saved	Non-Toll	2,300	4,000	4,600	2,100	3,700
	50% Toll	1,500	1,800	2,700	3,100	2,500
	75% Toll	1,700	1,000	2,500	600	0
	100% Toll	-800	1,000	-100	500	-100

Source: Bernardin, Lochmueller & Associates, Inc. ISTDM Version 4. Benchmark 75% toll option highlighted in yellow.

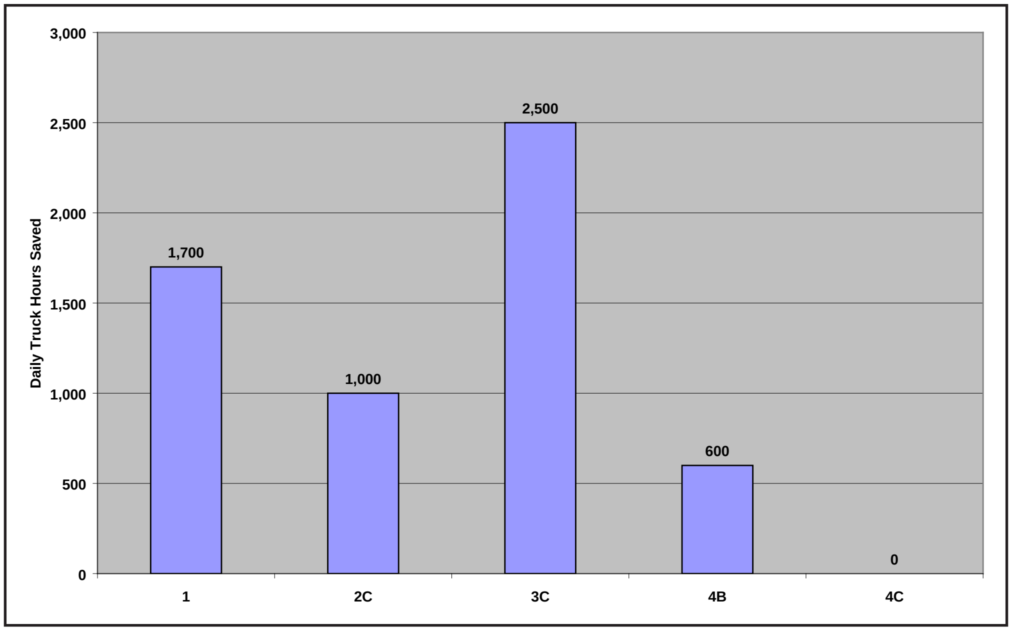

Figure 3-11: Daily Truck Hours Saved, Year 2030, 75% Toll Rate

Table 3-7: Toll-Related Performance Measures, Forecasted for Year 2030

Measure	Funding Type	1	2C	3C	4B	4C
Daily VMT on Tolled Alternative (Thousands)	Non-Toll	3,643	4,986	5,270	2,835	4,187
	50% Toll	1,681	2,676	2,736	1,342	2,184
	75% Toll	1,583	2,487	2,515	1,215	2,030
	100% Toll	1,492	2,286	2,314	1,077	1,855
Average Annual Daily Traffic - Trucks	Non-Toll	14,900	8,600	7,800	5,300	6,600
	50% Toll	5,000	3,800	3,300	2,200	2,900
	75% Toll	4,800	3,700	3,100	2,100	2,900
	100% Toll	4,800	3,600	3,100	2,000	2,800
Average Annual Daily Traffic - All Vehicles	Non-Toll	41,300	34,400	37,100	22,900	29,900
	50% Toll	19,100	18,400	19,300	10,800	15,600
	75% Toll	18,000	17,100	17,700	9,800	14,500
	100% Toll	16,900	15,800	16,300	8,700	13,300
Annual Toll Revenue - Autos (Millions)	50% Toll	$18.9	$34.2	$34.5	$16.2	$27.0
	75% Toll	$26.3	$47.2	$47.1	$21.6	$37.1
	100% Toll	$32.6	$57.1	$57.0	$25.0	$44.6
Annual Toll Revenue - Trucks (Millions)	50% Toll	$15.0	$21.3	$18.6	$12.2	$16.2
	75% Toll	$21.8	$30.8	$26.5	$17.6	$23.7
	100% Toll	$28.4	$39.3	$34.0	$22.1	$30.0
Annual Toll Revenue - Total (Millions)	50% Toll	$33.9	$55.5	$53.1	$28.4	$43.2
	75% Toll	$48.1	$78.0	$73.6	$39.2	$60.8
	100% Toll	$61.0	$96.4	$91.0	$47.1	$74.6

Source: Bernardin, Lochmueller & Associates, Inc. ISTDM Version 4. Benchmark 75% toll option highlighted in yellow.

forecasted. Table 3-6 gives the daily truck hours saved by alternative for each toll scenario. By way of comparison, forecasted truck hours saved for the equivalent non-toll alternative also is shown. Figure 3-11 compares the performance of each tolled alternative on this performance measure for the benchmark 75% toll option.

For the benchmark 75% toll scenario, all alternatives except for Alternative 4C satisfy this goal to some degree. Alternative 3C is the best performing alternative, saving 2,500 truck hours daily. It saves about 50% more truck hours than the next-best performing alternative, Alternative 1. Alternative 2C saves 1,000 truck hours daily. Alternative 4B has a small daily savings in truck hours (600), while Alternative 4C provides no truck hour savings.

Summary

For the benchmark 75% toll scenario, Alternative 3C is the best-performing alternative. Alternative 1 has the next-highest performance.

3.4.4 Toll-Related Performance Measures

As discussed in Section 3.3, four measures are presented to compare the relative effectiveness of each alternative as a toll road. They are:

- ***Total Vehicle Miles Traveled (VMT).*** Toll revenue is directly proportional to the miles of travel on the tolled facility. Toll facilities with higher VMT provide more revenue to fund highway construction and maintenance activities.

- ***Average Annual Daily Traffic (AADT) (Total VMT divided by center-line miles) for trucks and for all traffic.*** This is an assessment of toll revenue on a per-highway mile basis. Tolled facilities which are longer will tend to attract more traffic. This is a measure of the relative ability of alternatives to realize toll revenue on a per-highway mile basis.

- ***Toll Revenue (Autos, Trucks, and Total) – Year 2001 dollars.*** Higher levels of toll revenue furnish more revenue to fund highway construction and maintenance activities.

Table 3-7 shows the performance of alternatives at all toll levels. Figures 3-12 and 3-13 show the performance on two of the measures (average annual daily traffic (AADT) and annual toll revenue, both for all vehicles) for the benchmark 75% toll option. Toll revenue is given in Year 2030 dollars.

Alternatives 1, 2C and 3C tend to perform higher on toll-related performance measures. Alternative 1 has the highest AADT, followed closely by Alternatives 3C and 2C. Alternatives 2C and 3C provide the highest revenue, with Alternative 2C's being somewhat higher. Alternative 1 has the highest truck AADT, followed by Alternatives 2C and 3C.

Notably, the alternatives that perform best on the toll-related performance measures are all alternatives that involve the conversion of an existing four-lane, access-controlled highway to a toll facility: Alternative 1 would convert US 41 to a toll facility between Evansville and Terre Haute; Alternative 2C would convert US 41 to a toll facility between Evansville and Vincennes, and would convert SR 37 to a toll facility between Martinsville and Indianapolis; and Alternative 3C would convert SR 37 to a toll facility between Bloomington and Indianapolis.

Summary

Overall, Alternative 2C performs best on toll-related performance measures, followed by Alternatives 1 and 3C.

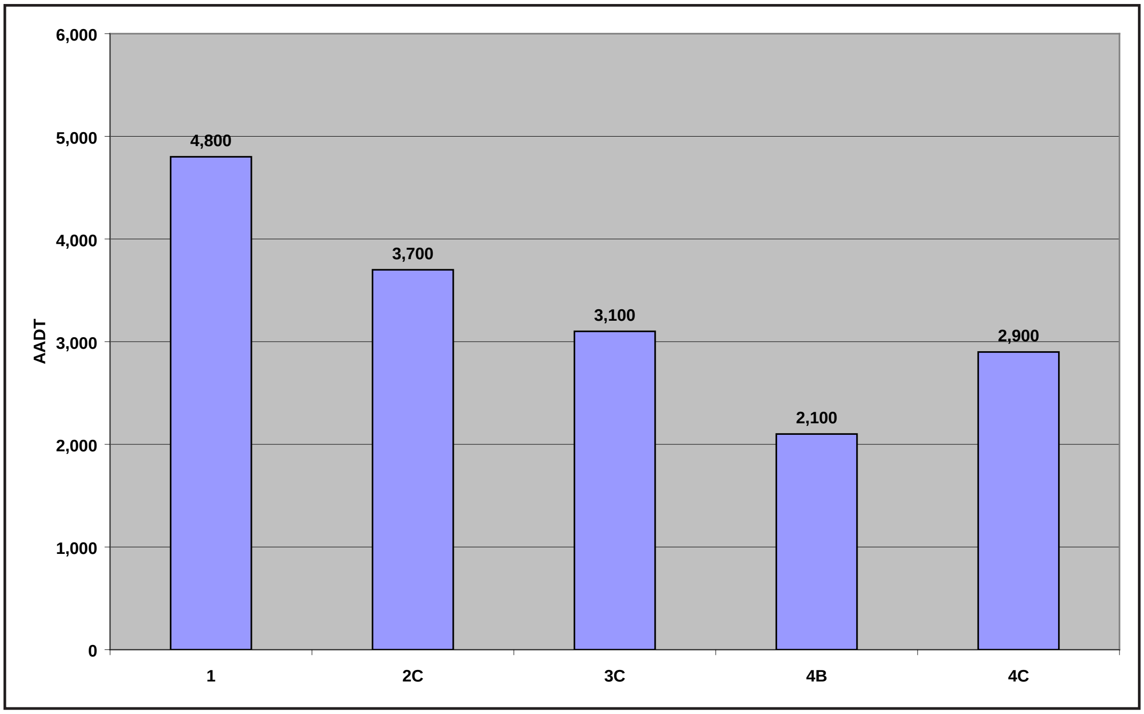

Figure 3-12: Average Annual Daily Traffic, Tolled Alternatives, Year 2030, 75% Toll Rate

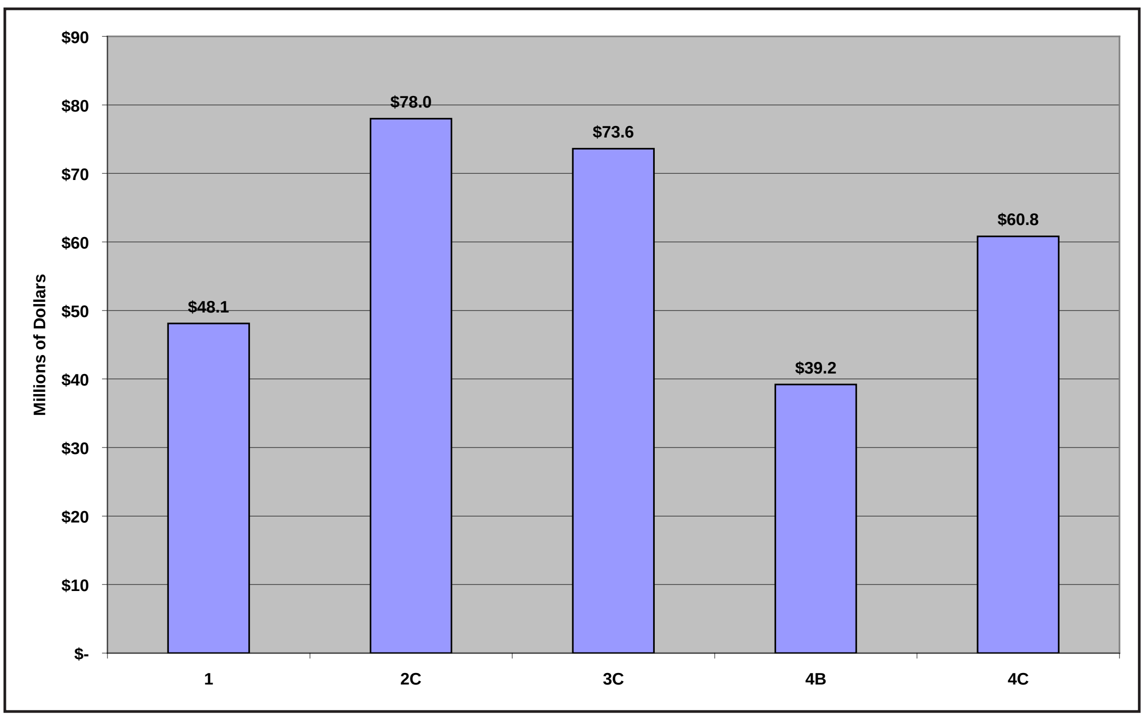

Figure 3-13: Annual Revenue, Tolled Alternatives, Year 2030, 75% Toll Rate

3.4.5 Cost Estimates

Costs were estimated with the same methodology used in the Tier 1 FEIS. See Appendix B, *Cost Estimation Methodology*, for additional information. These costs include estimates for design, land acquisition, toll collection equipment,

Table 3-8: Cost (Construction, Engineering, Right-of-Way, Toll Equipment) of all Toll Alternatives (in Billions of Year 2000 Dollars)

	1	2C	3C	4B	4C
Total Length (miles)	154 - 156	146 - 147	142	142	142
Total Impact Length (Miles)	87 - 89	146 - 147	142	123	142
Non-Toll Construction Cost	$0.81 - $1.04	$1.55 - $1.78	$1.73 - $1.83	$1.05 - $1.11	$1.43 - $1.53
Cost Savings due to Lane Reductions	($0.01)	($0.03 - $0.04)	($0.04)	$0.00	($0.02)
Toll Equipment Cost	$ 0.20 - $0.21	$0.27 - $0.29	$0.25	$0.16	$0.23
Change in Design Cost	$ 0 - $0.01	$0.01	$0.01	$0.01	$0.01
Toll Construction Cost	$ 1.00 - $ 1.25	$ 1.78 - $ 2.05	$ 1.95 - $ 2.05	$ 1.22 - $ 1.28	$ 1.65 - $ 1.74

Source: Bernardin, Lochmueller & Associates, Inc. Costs are identical for 50%, 75%, and 100% toll options.
"Total Length" is distance along alternative from I-64 to I-465
"Total Impact Length" is distance along which new construction occurs.
Some totals may not add exactly due to rounding.

and road and bridge construction. In addition, estimates of mitigation costs and rest area costs are provided for each alternative. The only differences between the cost estimates in the Tier 1 FEIS and in this Reevaluation are that the cost estimates in this Reevaluation (1) include the cost of toll collection equipment, and (2) account for the reduction in number of lanes required due to lowered travel volumes on tolled facilities. The same methodologies and assumptions were used to assure comparability with the cost estimates used in the Tier 1 FEIS.

Table 3-9: Mitigation Costs

Alternative	Cost (Millions)
1	$39.6
2C	$69.4
3C	$77.1
4B	$59.7
4C	$65.4

Rest Area Costs: Each Alternative is assumed to have four rest areas (two northbound and two southbound). The estimated cost of these four rest areas is $28.6 million.

Table 3-8 gives the construction cost range for each alternative. It shows the construction cost for each non-toll alternative; the cost savings for toll alternatives due to reductions in lane requirements[6]; the cost of tolling equipment, changes in design costs, and the total construction costs for the tolled alternatives. Capital cost estimates are identical for all toll scenarios (the 75% benchmark scenario, as well as the 50% and 100% toll scenarios). Traffic forecasts did not indicate that there would be any locations where the number of lanes required differed among these three toll scenarios. These construction cost estimates are in Year 2000 dollars (to be consistent with cost estimates in the Tier 1 FEIS). The costs of toll alternatives are higher than those shown in the Tier 1 FEIS for non-toll alternatives, because the added costs for electronic toll collecting equipment were greater in magnitude than cost savings from reductions in lane requirements due to diminished traffic levels.[7]

These estimates do not include mitigation or rest area costs. Table 3-9 gives the mitigation costs and mitigation costs for each alternative, which are unchanged from those shown in Table 3-33a of the Tier 1 FEIS. See Section 6.3 of this reevaluation for further discussion of mitigation costs.

6 These changes in lane requirements are documented in Appendix B.

7 Tolled alternatives have lower traffic levels than non-tolled alternatives. As a result, tolled alternatives require fewer travel lanes in certain locations than the comparable non-tolled alternatives.

Table 3-10: Performance of Tolled Alternatives on Project Goals and Performance Measures, Benchmark 75% Toll

Project Goal/Performance Measure	1	2C	3C	4B	4C
Indy-Evv Travel Time Savings	Low	High	High	Medium	High
Improved Personal Accessibility	Low	High	High	Medium	Medium
International & Interstate Freight Movement	Medium	Medium	High	Low	Low
Reduction in Traffic Crashes	High	Medium	High	Low	Medium
Congestion Relief	Low	Medium	Low	Low	Low
Long-Term Economic Growth	Low	Medium	High	Low	Medium
Toll-Related Performance	High	High	High	Low	Medium

Source: Bernardin, Lochmueller & Associates, Inc.
Note: The rating of each alternative is relative to other alternatives in Reevaluation.

○ Low ⊙ Medium ● High

3.4.6 Comparison of Alternatives – Performance Measures

Table 3-10 rates each toll alternative as "low," "medium," or "high" for each goal or performance measure group for the 75% benchmark toll. The Tier 1 core goals are listed first, followed by other Tier 1 goals, and ending with "Toll Related Performance."

This chart underscores the following key points.

- As tolled alternatives, Alternatives 2C and 3C generally perform better than other alternatives. Alternative 1 performs "low" in more than half of all categories. Alternative 4B does not perform "high" in any category. Alternative 4C performs "low" in two categories, and "high" in only 1 category.
- Overall, Alternative 3C is the superior-performing alternative. It performs "high" in six of seven categories. Alternative 2C performs "high" in only three of seven categories.
- Alternative 3C does perform "low" on one goal (congestion relief). However, this is not a core goal. Congestion management and traffic diversion will be a major focus in Tier 2 studies for toll alternatives.
- Overall, as would be expected, tolling results in a reduction of some of the benefits of the new highway. The reduction in benefits is directly correlated to the reduction in traffic volumes using the new Interstate. However, tolling would also allow benefits to be delivered sooner. This timing issued is addressed in the following section.

3.5 Timing of Benefits

Tolling is being advanced as a funding option in order to provide INDOT with the flexibility to construct I-69 sooner, perhaps much sooner, than would be possible using traditional funding (federal-aid highway funds, matched by state transportation funds). Toll funding would permit benefits to be realized sooner. Some of these benefits (increased regional accessibility; improved Indianapolis-to-Evansville travel) would be identical using either toll or non-toll funding; toll funding simply would provide these benefits sooner. Other benefits would be greater in magnitude using non-toll funding, as compared to using toll funding; for these benefits, there is a tradeoff between receiving benefits sooner and their being diminished in magnitude.

Toll funding could be used to accelerate construction of I-69 using at least two distinct approaches. First, future toll revenues may be used to underwrite bonds which provide construction funding. With the passage of SAFETEA-LU, there is now greater flexibility to combine toll funding with traditional funding for projects such as I-69. Second, toll revenues could be incorporated into a concessionaire agreement. Under such an arrangement, a private enterprise would construct and/or operate I-69, and would collect tolls to compensate for its investment in roadway construction costs and/or concession fees paid to INDOT.

As a “bottom line”, tolling offers significant opportunities to construct I-69 more quickly. It has significant potential to provide large amounts of capital funding which otherwise would not be available. However, there is a great deal of uncertainty about the timing of construction under the non-toll and various toll scenarios. In addition, some of the benefits are identical, whether toll or non-toll funding is used. Accordingly, this Reevaluation does not quantify the tradeoff between the magnitude of benefits and the timing of benefits.

4 Affected Environment

The Tier 1 FEIS provided a general overview of the 26-county Study Area using the Geographical Information System developed for the I-69 project. The Affected Environment chapter of the Tier 1 FEIS provided information in 3 categories: Natural Environment, Human Environment, and Cultural Environment. The Natural Environment section included discussions on the physiographic and natural regions, forests, farmland, wetlands, water bodies, karst, and seismic considerations within the 26-county Study Area (See Tier 1 FEIS Section 4.2, pages 4-3 through 4-18). The Human Environment section included discussions on the population, households, education, employment and economic environment, colleges and universities, airport, churches, cemeteries, federal and state recreation areas, hospitals, transportation facilities, and the Crane Navel Surface Warfare Center within the 26-county Study Area (See Tier 1 FEIS Section 4.3, pages 4-18 through 4-26). The Cultural Environment section included a brief discussion of Southwest Indiana history (See Tier 1 FEIS Section 4.4, pages 4-26 through 4-29). I-69 as a tolled project would be located within the same 26-county Study Area. The alternatives being reevaluated as toll alternatives are in the same locations as the non-toll alternatives presented in the Tier 1 FEIS. The Affected Environment for a toll facility would not differ from that presented in the Tier 1 FEIS for a non-toll facility.

5 Environmental Consequences

The Tier 1 FEIS evaluated the environmental consequences of 12 build alternatives. The environmental consequences included the following impacts: land use, social, environmental justice, economic, joint development, pedestrian and bicyclist, traffic, air quality, highway noise, wild and scenic rivers, construction, historic and archaeology, mineral resource, visual and aesthetic, hazardous waste site, threatened and endangered species, floodplain, wetland, agricultural, forest, water body, ecosystem, water quality, and energy. The Tier 1 FEIS also considered issues related to environmental consequences: permits, short-term uses vs. long-term productivity, and irretrievable and irreversible resource losses (See Chapter 5 of the Tier 1 FEIS, pages 5-1 through 5-301).

The environmental impact assessment in the Tier 1 FEIS assumed that I-69 would be built and operated as a non-tolled Interstate highway. This Reevaluation considers the potential for tolling to change the environmental impacts of the build alternatives.

In general, tolling can affect the environmental consequences of a highway project in three ways: (1) by altering the footprint of the project itself – e.g., by adding toll plazas; (2) by altering traffic volumes, which in turn affects impacts such as air quality and noise; and (3) by having a differential impact on low-income populations, which is considered an environmental justice issue. These potential impacts are considered below.

Impacts Related to Project Footprint

As described in Section 3.3, this Reevaluation assumes that for the I-69 project there would be no cash payment and, consequently, no toll plazas. Instead, toll collection would be fully electronic. Electronic toll collection equipment would be mounted on gantries that span ramps and the mainline section; these gantries can be installed within the typical section required for roadway sections, and do not require additional right-of-way. Therefore, construction of any build alternative as a toll road would not require additional right-of-way and could be built within the same footprint as the build alternatives studied in the Tier 1 FEIS[1].

Because no additional right-of-way would be needed, construction of I-69 as a toll road would result in no changes in the following impacts (from those presented in the Tier 1 FEIS): land use, social, pedestrian and bicyclist, wild and scenic rivers, construction, historic and archaeology, mineral resource, visual and aesthetic, hazardous waste site, threatened and endangered species, floodplain, wetland, agricultural, forest, water body, ecosystem, water quality.

Note also that impacts to key resources that do not vary from those presented in the FEIS will be considered in Section 6 as part of the comparison of alternatives.

Impacts Related to Traffic Volumes

While tolling would not increase the footprint of the project, it would affect traffic volumes on I-69 itself and on other roads in the vicinity of I-69. The change in traffic volumes can, in turn, affect impacts that are related to traffic volumes. These traffic-related impacts include traffic, cumulative, air quality, noise, energy, and economic impacts. Each of these issues is addressed below.

This Reevaluation has analyzed the potential for tolling to affect the traffic-related impacts of the build alternatives. To conduct this analysis, FHWA and INDOT adapted the existing Indiana statewide traffic model (ISTDM Version 4) so

1 The typical sections required for toll alternatives would be identical or slightly narrower than those required for non-toll alternatives.

that it can estimate the effect of toll rates on traffic volumes. This type of analysis is sensitive to factors such as the toll rate, the time saved by using the tolled route, and individual users' value of time – that is, the amount users are willing to pay in order to save a given amount of travel time. Therefore, any analysis of traffic-related impacts involves a substantial degree of uncertainty. Because of that uncertainty, this Reevaluation considers a range of potential future toll rates for each build alternative. These rates are: 50% of the projected Indiana Toll Road rates in 2030; 75% of those projected rates; and 100% of those projected rates.[2]

Other Impacts

The Environmental Consequences chapter of the Tier 1 FEIS also considered the following issues, which are part of the standard range of topics considered in any EIS: joint development, pedestrian and bicyclist, permits, short-term uses vs. long-term productivity, or irretrievable and irreversible resource loss. None of these issues would be affected by tolling I-69.

Methodology

This section addresses the traffic-related impacts of the build alternatives for I-69. This analysis covers the impacts of five build alternatives (1, 2C, 3C, 4B and 4C) for four scenarios in year 2030. The scenarios are: (1) non-toll, (2) 50% toll, (3) 75% toll, and (4) 100% toll. The No Build Alternative is used as a benchmark for comparison. Each of the tolled alternatives was modeled based on the following assumptions about toll collection to ensure that tolling scenarios are comparable between corridors:

- Fully electronic toll collection; no cash payment and no toll plazas.
- All vehicles using I-69 pay a toll; no free passage and no discounts.
- Toll rates differ by type of vehicle; rates are higher for trucks than for automobiles. Further, larger trucks have higher toll rates than smaller trucks.
- Toll rates are uniform along the entire project; no variation between sections of I-69.

The traffic modeling for this analysis was performed using Version 4 of the Indiana Statewide Travel Demand Model (ISTDM), which is the current version of the travel demand model. This model has a base year of 2000 and a future year of 2030.

For the No Build Alternative, the travel model assumed that the National I-69 corridor has not been completed, and does not include any additional traffic associated with completion of the National I-69 corridor. In addition, forecasts of future population and land use in the No Build scenario did not include any induced growth resulting from completion of I-69.

In contrast, the travel model runs for the Build Alternatives include traffic associated with a completed National I-69 project, as well as use future growth in population and employment due to growth induced by I-69. Different estimates of induced growth due to I-69 are made for each Build Alternative, based upon forecasts of induced growth for each alternative made for the Tier 1 FEIS.

2 For an explanation of the "projected" Indiana Toll Road toll rates, please refer to footnote 2 in Section 3.3 of this Reevaluation.

5.1 Traffic Impacts

The I-69 project itself, under a tolled or non-tolled scenario, will function at a high level of service (i.e., without traffic congestion) in the forecast year of 2030. Other roads in the network will have varying levels of traffic. In general, completion of I-69 will help to reduce traffic congestion on local roads, because I-69 will provide new capacity, which will help the system as a whole to accommodate the demand for travel. In other words, many users will divert from existing roads onto the new Interstate, which in most cases should reduce traffic volumes on the existing roads.

With tolling, some of the users who might otherwise have traveled on I-69 will choose to use local roads instead in order to avoid paying the toll. As a result, tolling has the potential to increase traffic on local roads. The potential effects on traffic levels are described below in two broad categories:

- Daily vehicle-miles of travel (VMT) and daily vehicle-hours of travel (VHT) for the State and major corridors in the Study Area, and

- Average daily traffic (ADT) and levels-of-service (LOS) for major corridors and parallel roadways in the corridors.

5.1.1 Vehicle Miles of Travel (VMT) and Vehicle Hours of Travel (VHT)

Because the Build Alternatives draw additional traffic through the State of Indiana and the 26-county Study Area of southwest Indiana as a result of national I-69 from Mexico to Canada, daily vehicle-miles of travel and daily vehicle-hours of travel are greater for the Build Alternatives than the No Build Alternative, regardless of the revenue scenario.

Traffic volumes are measured in two ways: daily vehicle-miles of travel (VMT) and daily vehicle-hours of travel (VHT). The VMT measures the amount of travel in terms of mileage; VHT measures travel in terms of time vehicles are traveling on the highway system.

In general, a project that provides new capacity on the highway network will result in an increase in the total distance traveled (VMT). The additional travel reflects the fact that users will take advantage of the new facility to make longer trips, or to make new trips that would have been too lengthy or time-consuming before the project was built. In this sense, an increase in VMT is a positive sign that reflects increased mobility in the study area. An increase in VMT does not necessarily correlate with increased congestion, because the increase in travel is accompanied by increased capacity on the highway network.

An increase in the overall distance traveled (VMT) may or may not be accompanied by an increase in the total time spent traveling (VHT). Again, an increase in time spent traveling does not necessarily indicate an increase in traffic congestion; it may simply result from more trips and longer trips being taken, in response to the availability of faster and safer routes. However, an increase in VHT, without a proportionate increase in VMT, would indicate that there has been an overall increase in traffic congestion.

5.1.1.1 VHT and VMT Statewide

On a statewide basis, a comparison of the Build Alternatives (both tolled and non-tolled) to the No Build Alternative shows that the Build Alternatives cause a 0.0% to 0.2% increase in daily vehicle-miles of travel (VMT) and a –0.1% to 0.2% change in daily vehicle-hours of travel (VHT). A change of 0.1% in VMT equals 427,000 vehicles-miles of travel; a change of 0.1% in VHT equals 8,200 vehicle-hours of travel.

Under the non-toll scenario, Alternative 3C results in the greatest increase in VMT and the greatest decrease in VHT. Alternatives 4C and 2C rank second and third in the reduction of VHT over the No Build Alternative.

With tolls imposed at the 50% level, Alternative 3C exhibits the greatest increase in VMT, followed by Alternatives 2C and 4C; Alternative 2C results in the greatest increase in VHT, followed by Alternatives 3C and 4C. With tolls imposed at the 75% level, Alternative 2C exhibits the greatest increase in VMT and VHT, followed by Alternatives 4C and 3C. With the tolls imposed at the 100% level, Alternative 2C still exhibits the greatest increase in VMT and VHT, followed by Alternatives 3C and 4C.

5.1.1.2 VMT and VHT in Tier 1 Study Area

Within the Tier 1 Study Area, under the non-toll scenario, the daily vehicle-miles of travel (VMT) would increase for all build alternatives. The increase would range from a low of 1.9% for Alternative 4B to a high of 2.9% for Alternative 3C; the variation reflects the relative effectiveness of the build alternatives in diverting traffic from other facilities. Alternative 4C shows the second lowest increase in VMT, followed by Alternatives 1 and 2C. In contrast, the daily vehicle-hours of travel (VHT) show the least increase at 0.9% for Alternative 4C, followed by Alternatives 4B at 1.0%, 3C at 1.2%, 2C at 1.5% and 1 at 2.5%.[3]

Under the tolled scenario, the VMT and VHT in the Study Area still increase, but the increase is smaller than under the non-toll scenario for all Build Alternatives. The data also indicate that higher toll rates generally correspond to higher VHT.[4] This data suggests that, in general, higher toll rates on I-69 are likely to correspond to higher traffic levels on local roads, because those roads are required to handle a larger share of the traffic. See Table 5.1-1.

Additional traffic impact performance indicators for the Study Area are found in Table 3-3.

5.1.2 VMT and VHT in Major Corridors

Tolling also affects the traffic impacts of the build alternatives on other major routes in the Study Area. The Tier 1 FEIS found that, in general, I-69 reduced traffic volumes on other major facilities by providing a faster, more direct, alternative to those routes. The Tier 1 FEIS also noted that traffic volumes on some routes (e.g., I-465 around Indianapolis) would increase if I-69 is constructed.

The Tier 1 Reevaluation examines the potential impacts of I-69 on these other facilities if I-69 is tolled. The traffic forecasts indicate that the build alternatives, even when tolled, will continue to divert traffic from alternative routes – for example, Alternative 3C diverts traffic from US 41 and SR 57. However, the amount of traffic diverted from those routes onto Alternative 3C is lower if I-69 is tolled. In this sense, tolling reduces the potential for I-69 to divert traffic from existing transportation corridors.

The traffic forecasts also consider existing routes that would be incorporated into one of the I-69 build alternatives. These include US 41, portions of which are incorporated into Alternative 1 and 2C, and SR 37, portions of which are incorporated into Alternatives 2C, 3C, and 4C. The traffic forecasts show that tolling reduces traffic volumes on portions of these routes when compared to the No Build condition. This is due to the diversion of traffic as some travelers use alternative routes to avoid paying tolls.

3 0.1% VMT equals 61,750 vehicle-miles of travel and 0.1% VHT equals 1,500 vehicle-hours of travel.

4 One exception to this pattern is Alternative 2C. For this alternative, the 75% toll scenario is greater than the 100% toll scenario)

Table 5.1-1 reports the percent change in VMT by corridor, comparing the No Build Alternative to the Build Alternatives by revenue scenario in the year 2030.

5.1.3 Average Daily Traffic (ADT) and Levels-of-Service (LOS)

The Build Alternatives were compared to determine their impacts on average daily traffic (ADT) and level of service (LOS) in major corridors, other parallel State routes, and local arterials in metropolitan areas in the Study Area. ADT measures the average number of vehicles using a segment of roadway each day; it is a measure of traffic volume. LOS measures the traffic flow on a segment of roadway on a scale ranging from A (free flow) to F (highly congested); LOS is a measure of traffic congestion.

Table 5.1-2 tracks the percent change in traffic volume (ADT) and level of service (LOS) for specific roadway segments. Within a particular segment, the roadway link with highest ADT and/or lowest LOS is reported. This information is provided for each build alternative (1, 2C, 3C, 4B, and 4C) under each revenue scenario (no toll; 50% toll; 75% toll; 100% toll).

The analysis shows that there are some roadway segments that would be congested under the No Build Condition in the year 2030. These segments are considered to be congested because they would fail to achieve the desired LOS, which is C in rural areas and D in urban areas. None of the Build Alternatives (non-toll or toll) alleviate these LOS deficiencies. These congested segments are:

- I-465 from I-70 to SR 67.
- I-70 from SR 641 to SR 59 and from US 231 to SR 267.
- SR 46/SR 67/US 231 through Spencer
- SR 45/46 from North Walnut Street to Fee Lane (in Bloomington).
- US 31 from Whiteland Road to Smith Valley Road and from Marion/Johnson County Line Road to Southport Road.
- Smith Valley Road from SR 135 to US 31.
- Greenwood Road from US 31 to I-65.
- Marion/Johnson County Line Road from Morgantown Road to US 31.
- Southport Road from US 31 to I-65.
- US 40 from High School Road to I-465.

The focus of the traffic impacts analysis is on roadway segments that experience an increased daily traffic volume (ADT) under a build alternative (as compared to No Build in 2030), and particularly segments that experience a drop in LOS compared to the No Build condition in 2030.

5.1.3.1 Overall Comparison of Toll and Non-Toll Scenarios

The percent change in average daily traffic (ADT) for the Build Alternatives coincides with the percent change in daily vehicle-miles of travel (VMT) reported in Table 5.1-1 for major corridors. Based on this data, some general observations can be made about daily traffic volume impacts that are common to all Build Alternatives:

For the ***non-toll*** scenario:

- A non-tolled Build Alternative for I-69 generally diverts traffic from some existing parallel roads (or other alternative routes) that are not incorporated into that alternative. This diversion reduces daily traffic volumes on those existing roads, compared to traffic volumes that would have occurred on those roads under the No Build Condition. For example, Alternative 3C as a non-tolled project diverts substantial traffic from SR 67 and US 41. This diversion is reflected in reduced VMT and reduced ADT as shown in Tables 5.1-1 and 5.1-2.

- A non-tolled Build Alternative generally increases traffic volumes on existing roads that are incorporated into that alternative. For example, Alternative 1 incorporates US 41 between I-64 and SR 641. For the non-tolled scenario, Alternative 1 causes increased traffic volumes along this entire section of US 41 (as compared to traffic under the No Build condition in 2030). Similarly, Alternatives 2C, 3C, and 4C all incorporate a substantial section of SR 37; under a non-tolled scenario, all of these alternatives result in increased traffic along this section of what is now SR 37.

- If a corridor feeds the I-69 corridor, a Build Alternative under the non-tolled scenario will cause an increase in traffic volumes compared to the No Build condition on segments of that corridor. While this increase in daily traffic volumes is normally confined to interchange crossroads in the vicinity of the I-69 interchange, there are some corridors that feed I-69 for greater distances.

For the ***toll*** scenarios:

- A tolled Build Alternative for I-69 generally diverts less traffic from parallel facilities (and other alternative routes) under a toll scenario than under the non-toll scenario. Further, the higher the toll is, the less the diversion from parallel facilities. This change is reflected in the VMT and ADT data in Tables 5.1-1 and 5.1-2. For example, Alternative 3C would reduce traffic volumes on US 41 by approximately 20 to 40% under a non-tolled scenario, but under a tolled scenario, Alternative 3C would reduce traffic volume on US 41 by less than 10 % and in some places less than 1%.

- The portion of a tolled Build Alternative that uses an existing corridor for I-69 results in lower traffic volumes than the non-toll scenario in the corridor. In some instances, it also may result in lower traffic volumes than would exist on that corridor under the No Build condition.

- When a tolled Build Alternative causes traffic volumes in an existing corridor to be lower than under the No Build condition (e.g. on portions of SR 37), the trips that otherwise would have been using that route are diverted to parallel highways, which must then handle the additional traffic. For example, Alternatives 2C, 3C and 4C all reduce traffic volumes on portions of SR 37 compared to the No Build condition; this toll-induced reduction in traffic in the SR 37 corridor corresponds to increased traffic on SR 67 and Bluff Road.

- With tolls, the I-69 feeder routes continue to have higher volumes than under the No Build condition. But traffic volumes on these feeder routes are lower than under the non-toll scenario and traffic volumes on those routes decline as the toll rates increase.

Table 5.1-1: Tier 1 Re-evaluation Daily Vehicle-Miles of Travel for Major Corridors - Percent Change Over No Build
(Shaded blue are segments that would become part of I-69 under this alternative.)

Corridor	Daily Vehicle-Miles of Travel by Alternative in Year 2030 -- Percent Change Over No Build																				
	No Build	1				2C				3C				4B				4C			
Segments		Non-Toll	50% toll	75% toll	100% toll	Non-Toll	50% toll	75% toll	100% toll	Non-Toll	50% toll	75% toll	100% toll	Non-Toll	50% toll	75% toll	100% toll	Non-Toll	50% toll	75% toll	100% toll
I-465																					
Airport Expressway to I-70	175,650	0.42%	-0.12%	-0.17%	-0.14%	1.99%	1.44%	1.60%	1.71%	2.27%	1.92%	1.89%	2.18%	0.87%	0.59%	0.70%	0.66%	1.93%	1.60%	1.73%	1.83%
I-70 to SR 67	157,938	0.17%	-0.65%	-0.67%	-0.72%	2.17%	2.24%	2.20%	2.26%	3.44%	3.02%	2.97%	2.99%	-0.77%	0.35%	0.42%	0.34%	2.05%	2.50%	2.81%	2.76%
SR 67 to SR 37	624,904	0.16%	-0.96%	-1.00%	-1.05%	4.77%	3.20%	3.15%	3.09%	5.85%	3.53%	3.46%	3.38%	-1.07%	0.32%	0.46%	0.34%	4.58%	3.13%	3.55%	3.33%
SR 37 to US 31	302,295	-0.08%	1.05%	1.06%	1.19%	0.32%	2.65%	2.36%	2.17%	-1.33%	2.67%	2.41%	2.29%	-0.25%	0.73%	0.86%	0.76%	-0.14%	2.95%	2.96%	2.53%
SR 37																					
SR 46 (Bloomington) to SR 39 (Martinsville)	447,106	-4.13%	8.53%	9.44%	10.94%	5.02%	-16.73%	-16.94%	-17.20%	82.66%	9.06%	1.66%	-4.92%	-10.92%	-7.02%	-5.93%	-5.50%	4.27%	-18.85%	-19.25%	-19.91%
SR 39 to SR 44	98,891	-2.07%	9.60%	10.47%	11.93%	86.24%	14.70%	9.01%	2.81%	84.48%	15.54%	8.51%	2.12%	-12.71%	-7.42%	-6.49%	-6.11%	85.95%	12.53%	8.11%	2.41%
SR 44 to Egbert Road	94,770	-1.09%	10.78%	11.65%	13.10%	104.08%	24.13%	17.34%	10.20%	106.62%	27.73%	19.52%	11.90%	-11.65%	-6.21%	-5.25%	-4.96%	99.97%	19.45%	14.11%	7.58%
Egbert Road to SR 144	231,405	-0.58%	10.99%	11.82%	13.21%	93.74%	17.12%	10.29%	3.03%	102.80%	20.65%	12.50%	4.56%	-10.75%	-5.35%	-4.41%	-4.12%	91.73%	13.71%	8.29%	1.54%
SR 144 to Marion/Johnson County Line Road	228,432	0.25%	6.91%	7.37%	8.28%	68.93%	-1.62%	-5.93%	-11.14%	77.20%	0.22%	-4.81%	-10.33%	-6.05%	-3.16%	-2.52%	-2.35%	68.04%	-3.58%	-7.02%	-11.97%
Marion/Johnson County Line Road to I-465	320,213	0.43%	3.90%	4.04%	4.45%	51.62%	-12.26%	-14.69%	-17.84%	55.01%	-11.37%	-14.28%	-17.45%	-3.35%	-1.56%	-1.22%	-1.13%	51.01%	-13.29%	-15.19%	-18.10%
I-65																					
US 31 to SR 44	384,165	-0.62%	-0.79%	-0.80%	-0.70%	0.24%	-0.59%	-0.49%	-0.55%	0.33%	-0.25%	-0.28%	-0.18%	-0.69%	-0.80%	-0.70%	-0.71%	0.27%	-0.68%	-0.58%	-0.65%
SR 44 to Marion/Johnson County Line Rd.	866,978	-0.37%	-0.11%	-0.10%	-0.05%	-1.28%	0.18%	0.30%	0.27%	-1.22%	0.41%	0.43%	0.53%	-0.25%	0.03%	0.12%	0.10%	-1.24%	0.13%	0.24%	0.24%
Marion/Johnson County Line Rd. to I-465	608,808	-0.25%	-0.19%	-0.17%	-0.10%	-2.71%	0.95%	1.05%	1.07%	-2.80%	1.06%	1.09%	1.18%	-0.38%	-0.26%	-0.16%	-0.18%	-2.79%	0.86%	0.98%	0.92%
US 41																					
I-64 to SR 168	233,513	41.58%	-27.33%	-30.57%	-33.68%	42.81%	-23.34%	-26.96%	-30.49%	-21.25%	-1.44%	0.76%	2.95%	-22.51%	-2.92%	-0.76%	1.20%	-22.24%	-2.31%	0.02%	2.12%
SR 168 to SR 64 (Princeton)	256,637	38.89%	-31.52%	-35.06%	-38.41%	37.35%	-28.92%	-32.83%	-37.11%	-23.95%	-3.82%	-1.32%	1.24%	-25.48%	-5.45%	-2.97%	-0.74%	-25.17%	-4.84%	-2.17%	0.23%
SR 64 to SR 241	355,652	50.28%	-30.83%	-35.05%	-39.01%	47.57%	-25.06%	-30.11%	-35.41%	-33.66%	-6.86%	-3.45%	0.14%	-35.63%	-8.80%	-5.34%	-2.23%	-35.21%	-8.11%	-4.45%	-1.15%
SR 241 to SR 441 (south Vincennes)	228,433	48.84%	-31.51%	-35.60%	-39.44%	46.01%	-26.15%	-31.04%	-36.17%	-32.06%	-6.85%	-3.58%	-0.17%	-33.85%	-8.60%	-5.28%	-2.35%	-33.47%	-7.98%	-4.46%	-1.35%
SR 441 to US 50 west (north Vincennes)	120,520	50.48%	-29.79%	-33.43%	-36.79%	48.17%	-24.73%	-29.23%	-34.03%	-32.16%	-7.81%	-4.72%	-1.48%	-33.77%	-9.70%	-6.54%	-3.84%	-33.40%	-9.10%	-5.73%	-2.83%
US 50 west to SR 67	50,288	38.31%	-42.05%	-45.31%	-48.35%	33.65%	-34.62%	-38.80%	-43.07%	-27.60%	-6.35%	-3.63%	-0.79%	-29.13%	-7.98%	-5.22%	-2.79%	-28.85%	-7.42%	-4.49%	-1.93%
SR 67 to SR 58	421,598	61.36%	-28.90%	-33.60%	-37.91%	-25.80%	-48.00%	-47.41%	-47.08%	-38.66%	-8.67%	-4.89%	-0.90%	-42.80%	-11.89%	-7.98%	-4.58%	-41.41%	-10.72%	-6.56%	-3.00%
SR 58 to SR 54 (Sullivan)	169,623	62.57%	-29.42%	-34.23%	-38.64%	-33.97%	-45.85%	-43.90%	-42.40%	-39.84%	-8.58%	-4.64%	-0.42%	-44.73%	-12.44%	-8.30%	-4.74%	-43.35%	-11.14%	-6.75%	-3.01%
SR 54 to SR 246	334,849	70.40%	-23.60%	-28.35%	-32.68%	-31.91%	-42.74%	-40.82%	-39.36%	-38.42%	-8.83%	-5.10%	-1.07%	-42.97%	-12.35%	-8.39%	-5.03%	-41.75%	-11.18%	-6.99%	-3.45%
SR 246 to SR 641	206,765	46.73%	-30.19%	-33.80%	-37.08%	-24.75%	-30.01%	-28.08%	-26.61%	-28.97%	-6.94%	-4.25%	-1.20%	-32.22%	-9.64%	-6.71%	-4.26%	-31.40%	-8.84%	-5.76%	-3.18%
SR 641 (Terre Haute)																					
US 41 to I-70	177,830	18.80%	-9.15%	-10.89%	-12.31%	-31.87%	-28.00%	-26.02%	-24.31%	-30.42%	-8.33%	-5.51%	-2.56%	-33.02%	-9.92%	-7.05%	-4.60%	-32.30%	-9.38%	-6.35%	-3.69%
I-70																					
SR 641 to SR 39	2,970,145	3.16%	-7.10%	-7.74%	-8.11%	-19.30%	-14.24%	-12.86%	-11.66%	-21.92%	-6.29%	-4.65%	-2.87%	-17.18%	-6.38%	-4.98%	-3.84%	-19.16%	-6.68%	-5.09%	-3.73%
SR 39 to SR 267	534,854	2.73%	-2.54%	-2.85%	-2.92%	-12.12%	-3.59%	-2.11%	-0.64%	-16.72%	-0.82%	0.85%	2.68%	10.49%	7.97%	8.15%	8.01%	-12.28%	-0.59%	0.83%	1.97%
SR 267 to Six Points Road	235,501	2.02%	-1.95%	-2.16%	-2.20%	-8.61%	-2.00%	-0.81%	0.17%	-11.69%	-0.23%	0.96%	2.31%	6.62%	4.97%	5.11%	5.03%	-8.73%	0.03%	1.10%	1.93%
Six Points Road to I-465	565,766	1.53%	-1.97%	-2.15%	-2.18%	-5.76%	-2.29%	-1.36%	-0.70%	-8.49%	-0.81%	0.11%	1.10%	4.82%	3.31%	3.42%	3.35%	-5.88%	-0.68%	0.14%	0.73%
SR 46																					
SR 67/US 231 north (east Spencer) to SR 43	43,211	0.39%	-0.11%	-0.18%	-0.11%	-1.81%	-0.35%	-0.11%	0.22%	-2.50%	-0.13%	0.58%	1.46%	-4.13%	-1.49%	-1.53%	-1.45%	-1.79%	0.53%	1.05%	1.16%
SR 43 to Hartstraight Road (east Ellettsville)	175,876	0.08%	-0.34%	-0.40%	-0.34%	-2.83%	-0.44%	-0.22%	-0.04%	-2.75%	2.06%	2.87%	3.94%	-4.00%	-1.67%	-1.73%	-1.67%	-2.79%	0.35%	0.72%	0.82%
Hartstraight to SR 37	190,233	-0.36%	-0.54%	-0.56%	-0.56%	-1.39%	-2.63%	-2.69%	-2.83%	-1.21%	-0.72%	-0.83%	-1.23%	-4.15%	-2.21%	-2.13%	-2.07%	-1.35%	-2.29%	-2.40%	-2.53%
SR 67																					
US 41 to SR 54	220,454	-3.17%	6.72%	7.43%	8.28%	-59.98%	-28.46%	-24.05%	-20.59%	-13.37%	-4.62%	-3.41%	-2.02%	-2.21%	1.76%	2.73%	3.34%	-0.32%	1.81%	2.71%	3.47%
SR 54 to SR 57/US 231 south	16,595	0.73%	-1.34%	-1.26%	-0.87%	-45.31%	-25.49%	-21.27%	-18.37%	-13.51%	-3.99%	-2.70%	-1.18%	-46.90%	-17.29%	-15.22%	-13.76%	-46.39%	-16.94%	-14.39%	-12.11%
SR 57/US 231 south to SR 46 west (Spencer)	104,227	-2.76%	38.74%	42.77%	47.63%	-56.28%	61.29%	69.35%	75.65%	-5.89%	18.26%	20.96%	24.11%	-58.33%	-29.23%	-25.47%	-21.78%	-58.14%	-10.18%	-4.26%	0.57%
SR 46 west to SR 46 east (Spencer)	22,123	-0.06%	8.11%	8.90%	9.74%	-6.67%	16.88%	18.37%	19.38%	-0.49%	4.22%	4.79%	5.55%	-8.25%	-1.84%	-1.15%	-0.65%	-6.67%	3.11%	4.13%	4.89%
SR 46 east to US 231	64,503	-1.28%	16.71%	18.48%	20.41%	-13.36%	38.94%	42.67%	45.51%	-7.11%	9.79%	12.65%	16.54%	-27.56%	-8.35%	-7.04%	-5.75%	-13.40%	9.08%	12.70%	14.69%
US 231 to SR 39 south	100,102	0.93%	-0.03%	-0.07%	0.00%	-41.33%	42.87%	47.98%	50.77%	-2.00%	50.66%	56.02%	61.46%	-19.68%	-2.82%	-1.86%	-1.28%	-41.44%	41.45%	45.41%	50.42%
SR 39 south to SR 39 north	65,292	-1.22%	0.32%	0.39%	0.49%	-11.25%	14.70%	17.59%	19.88%	-2.56%	10.83%	12.79%	15.66%	-11.23%	-3.77%	-3.30%	-2.98%	-11.32%	12.37%	14.45%	17.10%
SR 39 north to SR 144	198,656	-0.34%	0.07%	0.14%	0.20%	-8.48%	8.38%	10.51%	11.94%	-4.75%	5.30%	6.48%	8.55%	-4.88%	-2.35%	-2.12%	-2.00%	-8.60%	7.13%	8.43%	10.26%
SR 144 to I-465	323,681	0.33%	0.56%	0.55%	0.59%	-5.32%	7.70%	8.31%	8.90%	-4.77%	6.62%	7.17%	7.84%	-0.44%	0.22%	0.29%	0.33%	-5.35%	7.52%	7.99%	8.64%

Table 5.1-2: Tier 1 Re-evaluation Percent ADT Change Over No Build and LOS for Major Corridors
Shaded blue are segments that would become part of I-69 under this alternative. Bold lettering in larger type is used if traffic increases over No Build.

Corridor	Average Daily Traffic by Alternative																																																	
Corridor	No Build		1								2C								3C								4B								4C							
			Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll	
Segments	ADT	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS
I-465																																										
Airpot Expressway to I-70	152,847	D	0%	D	-0%	D	-0%	D	-0%	D	**2%**	D	**1%**	D	**2%**	D	**2%**	D	**2%**	D	**2%**	D	**2%**	D	**2%**	D	**1%**	D	**1%**	D	**1%**	D	**1%**	D	**2%**	D	**2%**	D	**2%**	D	**2%**	D
I-70 to SR 67	196,380	E	0%	E	-1%	E	-1%	E	-1%	E	**2%**	E	**2%**	E	**2%**	E	**2%**	E	**3%**	F	**3%**	F	**3%**	F	**3%**	F	-1%	E	0%	E	0%	E	0%	E	**2%**	E	**2%**	E	**3%**	E	**3%**	E
SR 67 to SR 37	151,839	D	0%	D	-1%	C	-1%	C	-1%	C	**6%**	D	**3%**	D	**3%**	D	**3%**	D	**8%**	D	**3%**	D	**3%**	D	**3%**	D	-1%	C	0%	D	0%	D	0%	D	**6%**	D	**3%**	D	**3%**	D	**3%**	D
SR 37 to US 31	144,506	C	-0%	C	**1%**	C	**1%**	C	**1%**	C	0%	C	**3%**	C	**2%**	C	**2%**	C	-1%	C	**3%**	C	**2%**	C	**2%**	C	-0%	C	**1%**	C	**1%**	C	**1%**	C	-0%	C	**3%**	C	**3%**	C	**3%**	C
SR 37																																										
Old SR 37 South to Fullerton Pike (Bloomington)	25,602	B	-2%	B	**8%**	B	**9%**	B	**11%**	B	-2%	B	-7%	B	-6%	B	-5%	B	-6%	B	-48%	A	-49%	A	-50%	A	-6%	B	-4%	B	-3%	B	-3%	B	-3%	B	-9%	B	-9%	B	-9%	B
Fullerton Pike to SR 45 (Bloomington)	40,120	B	-1%	B	**6%**	B	**7%**	B	**8%**	B	-0%	B	-3%	B	-3%	B	-2%	B	**52%**	B	-24%	A	-29%	A	-32%	A	-3%	B	-2%	B	-1%	B	-1%	B	-1%	B	-5%	B	-5%	B	-5%	B
SR 45 to SR 48 (Bloomington)	50,600	B	0%	B	**7%**	B	**8%**	B	**9%**	B	0%	B	-2%	B	-2%	B	-1%	B	**38%**	B	-28%	A	-32%	A	-34%	A	-2%	B	-1%	B	-0%	B	0%	B	-0%	B	-3%	B	-3%	B	-3%	B
SR 48 to SR 46 (Bloomington)	59,615	C	0%	C	**6%**	C	**7%**	C	**7%**	C	**1%**	C	-1%	C	-1%	C	-1%	C	**19%**	B	-36%	A	-39%	A	-41%	A	-1%	C	0%	C	1%	C	1%	C	**1%**	C	-2%	C	-2%	C	-2%	C
SR 46 to North Walnut Street (Bloomington)	20,909	A	-3%	A	**13%**	A	**14%**	A	**16%**	A	**1%**	A	-12%	A	-12%	A	-11%	A	**102%**	A	**12%**	A	**4%**	A	-4%	A	-10%	A	-6%	A	-4%	A	-4%	A	0%	A	-16%	A	-16%	A	-16%	A
North Walnut Street to SR 39	31,118	B	-4%	B	**7%**	B	**7%**	B	**9%**	B	**2%**	B	-11%	B	-10%	B	-10%	B	**74%**	B	**8%**	B	**1%**	A	-6%	A	-5%	B	-5%	B	-4%	B	-3%	B	**1%**	B	-13%	B	-13%	B	-13%	B
SR 39 to Mahalasville Road (Martinsville)	21,507	A	-3%	A	**12%**	A	**14%**	A	**15%**	A	**118%**	B	**37%**	A	**30%**	A	**23%**	A	**117%**	B	**37%**	A	**28%**	A	**20%**	A	-16%	A	-9%	A	-8%	A	-7%	A	**116%**	B	**32%**	A	**27%**	A	**21%**	A
Mahalasville Road to SR 44 (Martinsville)	30,100	B	-2%	B	**8%**	B	**9%**	B	**10%**	B	**72%**	A	**5%**	A	-0%	A	-6%	A	**70%**	A	**6%**	A	**0%**	A	-6%	A	-12%	A	-7%	A	-7%	A	-6%	A	**70%**	A	**2%**	A	-2%	A	-7%	A
SR 44 to Egbert Road (Morgan County)	25,100	B	-1%	B	**11%**	B	**12%**	B	**13%**	B	**105%**	B	**25%**	A	**18%**	A	**11%**	A	**107%**	B	**28%**	A	**20%**	A	**12%**	A	-12%	B	-6%	B	-5%	B	-5%	B	**103%**	B	**21%**	A	**16%**	A	**9%**	A
Egbert Road to SR 144	26,073	B	-1%	B	**11%**	B	**12%**	B	**13%**	B	**93%**	B	**17%**	A	**10%**	A	**3%**	A	**101%**	B	**20%**	A	**12%**	A	**4%**	A	-11%	B	-5%	B	-4%	B	-4%	B	**91%**	B	**13%**	A	**8%**	A	**1%**	A
SR 144 to Smith Valley Road (Johnson County)	42,502	B	0%	B	**7%**	B	**7%**	B	**8%**	B	**68%**	B	-2%	A	-6%	A	-11%	A	**77%**	C	0%	A	-5%	A	-11%	A	-6%	B	-3%	B	-3%	B	-2%	B	**67%**	B	-4%	A	-7%	A	-12%	A
Smith Valley Rd. to Marion/Johnson County Line Rd.	41,857	B	0%	B	**7%**	B	**8%**	B	**8%**	B	**76%**	C	**2%**	A	-2%	A	-7%	A	**85%**	C	**4%**	A	-1%	A	-6%	A	-6%	B	-3%	B	-2%	B	-2%	B	**75%**	C	0%	A	-3%	A	-8%	A
Marion/Johnson Co. Line Road to Southport Rd.	61,435	B	0%	B	**5%**	B	**5%**	B	**5%**	B	**67%**	C	-2%	B	-5%	A	-9%	A	**72%**	C	-1%	B	-4%	B	-8%	A	-4%	B	-2%	B	-2%	B	-2%	B	**66%**	C	-4%	B	-6%	A	-10%	A
Southport Road (Marion County) to I-465	85,856	C	0%	C	**4%**	C	**4%**	C	**4%**	C	-87%	A	-85%	A	-85%	A	-85%	A	-86%	A	-85%	A	-85%	A	-85%	A	-3%	C	-1%	C	-1%	C	-1%	C	-86%	A	-85%	A	-85%	A	-85%	A
I-65																																										
US 31 to SR 44	62,913	C	-1%	C	-1%	C	-1%	C	-1%	C	-0%	C	-0%	C	0%	C	0%	C	-0%	C	0%	C	0%	C	1%	C	-1%	C	-1%	C	-1%	C	-1%	C	-0%	C	-0%	C	-0%	C	-0%	C
SR 44 to Greenwood Road (Johnson County)	77,738	D	-0%	D	0%	D	0%	D	0%	D	-2%	D	0%	D	0%	D	0%	D	-2%	D	0%	D	0%	D	**1%**	D	-0%	D	0%	D	0%	D	0%	D	-2%	D	0%	D	0%	D	0%	D
Greenwood Rd. to Marion/Johnson County Line Rd.	96,147	C	-0%	C	-0%	C	-0%	C	-0%	C	-3%	C	0%	C	0%	C	0%	C	-3%	C	0%	C	0%	C	0%	C	-0%	C	-0%	C	-0%	C	-0%	C	-3%	C	0%	C	0%	C	0%	C
Marion/Johnson County Line Rd. to Southport Rd.	108,793	C	-0%	C	-0%	C	-0%	C	0%	C	-3%	C	**1%**	C	**1%**	C	**1%**	C	-3%	C	**1%**	C	**1%**	C	**1%**	C	-0%	C	-0%	C	0%	C	-0%	C	-3%	C	**1%**	C	**1%**	C	**1%**	C
(Marion County) Southport Road to I-465	122,911	C	-0%	C	-0%	C	-0%	C	-0%	C	-2%	C	**1%**	C	**1%**	C	**1%**	C	-2%	C	**1%**	C	**1%**	C	**1%**	C	-0%	C	-0%	C	-0%	C	-0%	C	-2%	C	**1%**	C	**1%**	C	**1%**	C
US 41																																										
I-64 to SR 168	39,551	C	**38%**	C	-29%	A	-32%	A	-35%	A	**39%**	C	-25%	A	-28%	A	-32%	A	-21%	B	0%	C	**3%**	C	**5%**	C	-22%	B	-1%	C	**1%**	C	**3%**	C	-22%	B	-0%	C	**2%**	C	**4%**	C
SR 168 to Main St. (Princeton)	40,070	C	**21%**	B	-40%	A	-43%	A	-46%	A	**20%**	B	-38%	A	-41%	A	-45%	A	-20%	B	-3%	C	-1%	C	**1%**	C	-21%	B	-5%	C	-3%	C	-1%	C	-21%	B	-4%	C	-2%	C	0%	C
Main St. to SR 64 (Princeton)	28,741	B	**40%**	B	-32%	A	-36%	A	-40%	A	**38%**	B	-29%	A	-34%	A	-38%	A	-27%	B	-5%	B	-2%	B	**1%**	B	-29%	A	-6%	B	-4%	B	-1%	B	-29%	B	-6%	B	-3%	B	0%	B
SR 64 to SR 241	27,529	B	**49%**	C	-31%	A	-35%	A	-39%	A	**47%**	C	-25%	A	-30%	A	-36%	A	-33%	A	-7%	B	-3%	B	0%	B	-35%	A	-8%	B	-5%	B	-2%	B	-34%	A	-8%	B	-4%	B	-1%	B
SR 241 to SR 441 (south Vincennes)	27,964	B	**49%**	C	-31%	A	-36%	A	-39%	A	**46%**	C	-26%	A	-31%	A	-36%	A	-32%	A	-7%	B	-4%	B	-0%	B	-34%	A	-9%	B	-5%	B	-2%	B	-33%	A	-8%	B	-4%	B	-1%	B
SR 441 to Hart Street (Vincennes)	22,472	A	**64%**	B	-19%	A	-24%	A	-28%	A	**61%**	B	-15%	A	-21%	A	-27%	A	-41%	A	-11%	A	-7%	A	-3%	A	-43%	A	-13%	A	-9%	A	-6%	A	-43%	A	-12%	A	-8%	A	-4%	A
Hart Street to US 50 west (north Vincennes)	32,484	B	**42%**	C	-27%	A	-30%	A	-33%	A	**38%**	B	-24%	A	-28%	A	-32%	A	-29%	A	-7%	B	-4%	B	-2%	B	-29%	A	-9%	B	-6%	B	-4%	B	-29%	A	-8%	B	-5%	B	-3%	B
US 50 west to SR 67	33,891	B	**38%**	C	-42%	A	-45%	A	-48%	A	**34%**	B	-35%	A	-39%	A	-43%	A	-28%	A	-6%	B	-4%	B	-1%	B	-29%	A	-8%	B	-5%	B	-3%	B	-29%	A	-7%	B	-4%	B	-2%	B
SR 67 to SR 58	23,940	B	**59%**	C	-29%	A	-33%	A	-38%	A	-32%	A	-43%	A	-41%	A	-40%	A	-37%	A	-8%	B	-4%	B	-1%	B	-41%	A	-11%	B	-8%	B	-4%	B	-40%	A	-10%	B	-6%	B	-3%	B
SR 58 to SR 54 (Sullivan)	23,692	B	**60%**	C	-29%	A	-33%	A	-38%	A	-30%	A	-41%	A	-39%	A	-37%	A	-35%	A	-6%	B	-2%	B	**2%**	B	-40%	A	-10%	B	-6%	B	-3%	B	-38%	A	-9%	B	-4%	B	-1%	B
SR 54 to SR 246	23,717	B	**71%**	C	-22%	A	-27%	A	-31%	A	-32%	A	-42%	A	-40%	A	-39%	A	-38%	A	-9%	B	-5%	B	-1%	B	-42%	A	-12%	B	-9%	B	-5%	B	-41%	A	-11%	B	-7%	B	-4%	B
SR 246 to Harlan Road (Vigo County)	30,424	B	**48%**	B	-30%	A	-33%	A	-37%	A	-26%	B	-31%	B	-29%	B	-28%	B	-30%	B	-7%	B	-5%	B	-1%	B	-33%	B	-10%	B	-7%	B	-5%	B	-33%	B	-9%	B	-6%	B	-3%	B
Harlan Road to SR 641	35,395	C	**42%**	B	-32%	A	-35%	A	-38%	A	-22%	B	-26%	B	-24%	B	-23%	B	-25%	B	-6%	B	-3%	C	-1%	C	-28%	B	-8%	B	-6%	B	-3%	C	-28%	B	-7%	B	-5%	B	-2%	C
SR 641 (Terre Haute)																																										
US 41 to Riley Road (relocated SR 46)	28,258	B	**20%**	B	-10%	A	-11%	A	-13%	A	-34%	A	-30%	A	-28%	A	-26%	A	-32%	A	-9%	A	-6%	B	-3%	B	-35%	A	-11%	A	-7%	A	-5%	B	-34%	A	-10%	A	-7%	A	-4%	B
Riley Road (relocated SR 46) to I-70	35,854	B	**16%**	B	-8%	B	-10%	B	-11%	B	-27%	A	-24%	B	-22%	B	-21%	B	-26%	A	-7%	B	-5%	B	-3%	B	-28%	A	-9%	B	-6%	B	-4%	B	-28%	A	-8%	B	-6%	B	-3%	B
I-70																																										
SR 641 to SR 59	67,936	E	**3%**	F	-8%	E	-9%	E	-10%	E	-20%	D	-16%	D	-15%	D	-14%	D	-21%	D	-7%	E	-6%	E	-4%	E	-20%	D	-8%	E	-7%	E	-5%	E	-20%	D	-8%	E	-6%	E	-5%	E
SR 59 to SR 243	59,033	D	**3%**	D	-9%	D	-9%	D	-10%	D	-22%	C	-19%	C	-17%	C	-16%	C	-23%	C	-8%	D	-6%	D	-5%	D	-22%	C	-9%	D	-7%	D	-6%	D	-22%	C	-8%	D	-7%	D	-5%	D
SR 243 to US 231	53,141	D	**3%**	D	-9%	C	-10%	C	-10%	C	-23%	C	-19%	C	-18%	C	-17%	C	-24%	C	-8%	C	-7%	C	-5%	C	-23%	C	-9%	C	-7%	C	-6%	C	-23%	C	-8%	C	-7%	C	-5%	C
US 231 to SR 39	61,771	D	**3%**	D	-5%	D	-5%	D	-5%	D	-16%	C	-9%	D	-7%	D	-5%	D	-22%	C	-4%	D	-3%	D	-0%	D	-22%	C	-8%	D	-6%	D	-5%	D	-16%	C	-5%	D	-3%	D	-2%	D

Table 5.1-2: Tier 1 Re-evaluation Percent ADT Change Over No Build and LOS for Major Corridors - Continued
Shaded blue are segments that would become part of I-69 under this alternative. Bold lettering in larger type is used if traffic increases over No Build.

Average Daily Traffic by Alternative

Corridor	No Build		1								2C								3C								4B								4C							
			Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll	
Segments	ADT	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS
SR 39 to SR 267	76,565	F	3%	F	-3%	E	-3%	E	-3%	E	-12%	D	-4%	E	-2%	E	-1%	E	-17%	D	-1%	E	1%	E	3%	F	10%	F	8%	F	8%	F	8%	F	-12%	D	-1%	E	1%	E	2%	F
SR 267 to Six Points Road (Hendricks County)	106,892	D	2%	D	-2%	D	-2%	D	-2%	D	-9%	C	-2%	D	-1%	D	0%	D	-12%	C	-0%	D	1%	D	2%	D	7%	D	5%	D	5%	D	5%	D	-9%	C	0%	D	1%	D	2%	D
Six Points Road to I-465	126,638	B	2%	B	-2%	B	-2%	B	-2%	B	-7%	B	-3%	B	-2%	B	-1%	B	-9%	B	-1%	B	-0%	B	1%	B	5%	B	4%	B	4%	B	4%	B	-7%	B	-1%	B	-0%	B	0%	B
SR 46																																										
SR 246 to SR 67/US 231 south (west Spencer)	10,687	B	1%	B	1%	B	1%	B	1%	B	3%	B	4%	B	4%	B	4%	B	1%	B	-2%	B	-2%	B	-2%	B	3%	B	3%	B	3%	B	3%	B	4%	B	4%	B	4%	B	4%	B
SR 67/US 231 south to SR 67/US 231 north	28,780	F	-0%	F	7%	F	8%	F	9%	F	-5%	F	15%	F	16%	F	17%	F	-0%	F	4%	F	4%	F	5%	F	-8%	F	-2%	F	-1%	F	-1%	F	-5%	F	3%	F	4%	F	5%	F
SR 67/US 231 north (east Spencer) to SR 43	23,761	B	0%	B	-0%	B	-0%	B	-0%	B	-2%	B	-0%	B	-0%	B	0%	B	-2%	B	-0%	B	1%	B	1%	B	-4%	B	-1%	B	-2%	B	-1%	B	-2%	B	1%	B	1%	B	1%	B
SR 43 to Maple Grove Road (west Ellettsville)	21,987	A	0%	B	-0%	A	-0%	A	-0%	A	-3%	A	1%	B	1%	B	1%	B	-4%	A	5%	B	7%	B	8%	B	-3%	A	-1%	A	-1%	A	-1%	A	-3%	A	2%	B	2%	B	2%	B
Maple Grove Rd. to Hartstraight Rd. (east Ellettsville)	44,180	C	-0%	C	-0%	C	-0%	C	-0%	C	-2%	C	-2%	C	-2%	C	-2%	C	-0%	C	1%	C	2%	C	2%	C	-4%	C	-2%	C	-2%	C	-2%	C	-2%	C	-1%	C	-1%	C	-1%	C
Hartstraight Road to Union Valley Road (Ellettsville)	40,363	C	-1%	C	-1%	C	-1%	C	-1%	C	-2%	C	-3%	C	-3%	C	-4%	C	0%	C	0%	C	0%	C	-0%	C	-5%	C	-3%	C	-3%	C	-3%	C	-2%	C	-3%	C	-3%	C	-3%	C
Union Valley Road to Curry Pike (Monroe County)	44,692	D	-0%	D	-1%	D	-1%	D	-1%	D	-1%	D	-3%	D	-3%	D	-3%	D	1%	D	0%	D	0%	D	-0%	D	-4%	D	-2%	D	-2%	D	-2%	D	-1%	D	-3%	D	-3%	D	-3%	D
Curry Pike to SR 37 (Monroe County)	45,042	C	-0%	C	-0%	C	-0%	C	-0%	C	-1%	C	-2%	C	-2%	C	-2%	C	7%	C	14%	C	14%	C	14%	C	-3%	C	-2%	C	-1%	C	-1%	C	-1%	C	-2%	C	-2%	C	-2%	C
SR 37 to Kinser Pike (Bloomington)	57,275	C	2%	C	2%	C	2%	C	2%	C	1%	C	2%	C	2%	C	2%	C	12%	D	6%	D	6%	D	5%	D	0%	C	2%	C	2%	C	2%	C	1%	C	2%	C	2%	C	2%	C
Kinser Pike to North Walnut Street (Bloomington)	62,340	D	2%	D	2%	D	2%	D	2%	D	2%	D	2%	D	3%	D	2%	D	5%	D	2%	D	2%	D	1%	D	1%	D	2%	D	2%	D	2%	D	2%	D	2%	D	3%	D	3%	D
North Walnut Street to Fee Lane (Bloomington)	74,613	E	2%	E	2%	E	2%	E	2%	E	3%	E	3%	E	2%	E	2%	E	4%	E	2%	E	2%	E	2%	E	3%	E	2%	E	2%	E	2%	E	3%	E	2%	E	2%	E	2%	E
Fee Lane to 10th Street/SR 45 east (Bloomington)	30,193	B	-2%	B	-2%	B	-2%	B	-2%	B	-2%	B	-1%	B	-1%	B	-1%	B	0%	B	2%	B	2%	B	2%	B	-1%	B	-1%	B	-1%	B	-1%	B	-2%	B	-1%	B	-1%	B	-1%	B
10th St. to 3rd St./College Mall Rd. (Bloomington)	28,707	B	-2%	B	-2%	B	-2%	B	-2%	B	-1%	B	0%	B	0%	B	0%	B	2%	B	4%	B	3%	B	3%	B	-1%	B	-0%	B	-0%	B	-0%	B	-1%	B	0%	B	0%	B	0%	B
College Mall Road to Clarizz Blvd. (Bloomington)	35,376	C	1%	C	1%	C	1%	C	1%	C	0%	C	4%	C	4%	C	4%	C	4%	C	7%	C	7%	C	7%	C	1%	C	1%	C	1%	C	1%	C	0%	C	4%	C	4%	C	4%	C
Clarizz Blvd. to SR 446 (Bloomington)	16,402	A	-2%	A	-2%	A	-2%	A	-2%	A	-3%	A	5%	A	6%	A	6%	A	4%	A	10%	A	11%	A	12%	A	-2%	A	-2%	A	-2%	A	-2%	A	-4%	A	5%	A	5%	A	5%	A
SR 67																																										
US 41 to SR 550	14,873	C	-3%	C	13%	C	13%	C	14%	C	-47%	B	-25%	B	-22%	B	-20%	B	-3%	C	-1%	C	-0%	C	0%	C	-1%	C	1%	C	1%	C	1%	C	0%	C	1%	C	1%	C	1%	C
SR 550 to SR 159	8,718	B	-6%	B	4%	B	5%	B	6%	B	-66%	A	-33%	A	-31%	A	-28%	A	-5%	B	-1%	B	-1%	B	0%	B	-1%	B	1%	B	2%	B	2%	B	0%	B	1%	B	1%	B	2%	B
SR 159 to SR 54	6,950	A	-7%	A	4%	A	5%	A	6%	A	-69%	A	-29%	A	-23%	A	-19%	A	-5%	A	-1%	A	0%	A	1%	A	-2%	A	2%	A	3%	A	4%	A	0%	A	2%	A	3%	A	4%	A
SR 54 to SR 57/US 231 south	4,035	A	1%	A	-1%	A	-1%	A	-1%	A	-47%	A	-27%	A	-22%	A	-19%	A	-14%	A	-4%	A	-3%	A	-1%	A	-49%	A	-18%	A	-16%	A	-14%	A	-49%	A	-18%	A	-15%	A	-13%	A
SR 57/US 231 south to SR 46 west (Spencer)	5,695	A	-2%	A	38%	A	41%	B	46%	B	-30%	A	58%	B	63%	B	67%	B	4%	A	5%	A	6%	A	8%	A	-39%	A	-17%	A	-14%	A	-12%	A	-38%	A	-13%	A	-10%	A	-8%	A
SR 46 west to SR 46 east (Spencer)	28,780	F	-0%	F	7%	F	8%	F	9%	F	-5%	F	15%	F	16%	F	17%	F	-0%	F	4%	F	4%	F	5%	F	-8%	F	-2%	F	-1%	F	-1%	F	-5%	F	3%	F	4%	F	5%	F
SR 46 east to US 231 north	17,399	A	-1%	A	12%	A	13%	A	14%	A	-10%	A	26%	A	28%	B	30%	B	-5%	A	7%	A	9%	A	12%	A	-20%	A	-6%	A	-5%	A	-4%	A	-10%	A	5%	A	8%	A	9%	A
US 231 north to SR 39 south	6,053	A	1%	A	0%	A	0%	A	0%	A	-48%	A	112%	A	122%	A	129%	A	-2%	A	99%	A	109%	A	118%	A	-3%	A	5%	A	5%	A	5%	A	-48%	A	106%	A	113%	A	121%	A
SR 39 south to SR 39 north	20,417	A	-2%	A	-0%	A	-0%	A	0%	A	-1%	A	19%	B	22%	B	24%	B	7%	A	17%	B	18%	B	21%	B	-11%	A	-4%	A	-4%	A	-3%	A	-1%	A	17%	B	19%	B	21%	B
SR 39 north to SR 144	32,990	B	0%	B	0%	B	0%	B	0%	B	-5%	B	6%	B	7%	B	8%	B	-3%	B	4%	B	5%	B	6%	B	-3%	B	-2%	B	-1%	B	-1%	B	-5%	B	5%	B	6%	B	7%	B
SR 144 to SR 267 (relocated east of Mooresville)	52,119	C	0%	C	0%	C	0%	C	0%	C	-5%	C	3%	C	3%	C	4%	C	-5%	C	2%	C	2%	C	3%	C	-1%	C	-0%	C	-0%	C	-0%	C	-5%	C	2%	C	3%	C	4%	C
SR 267 to Ameriplex Blvd. (Marion County)	32,096	B	0%	B	1%	B	1%	B	1%	B	-6%	B	8%	B	8%	B	9%	B	-6%	B	6%	B	7%	B	8%	B	-0%	B	1%	B	1%	B	1%	B	-6%	B	8%	B	8%	B	9%	B
Ameriplex Blvd. to High School Road (Marion County)	28,180	B	0%	B	1%	B	1%	B	1%	B	-7%	A	11%	B	11%	B	12%	B	-6%	A	9%	B	10%	B	11%	B	0%	B	1%	B	1%	B	1%	B	-7%	A	10%	B	11%	B	12%	B
High School Road to I-465	70,487	C	0%	C	0%	C	0%	C	0%	C	-1%	C	6%	C	6%	C	6%	C	-1%	C	5%	C	5%	C	6%	C	-0%	C	0%	C	-0%	C	-0%	C	-1%	C	6%	C	6%	C	6%	C
SR 45																																										
SR 445 to CR 450N (Greene County)	9,879	B	-2%	B	6%	B	5%	B	5%	B	-5%	B	-8%	B	-8%	B	-8%	B	-47%	A	-24%	A	-21%	A	-18%	B	-5%	B	-5%	B	-5%	B	-5%	B	-5%	B	-7%	B	-7%	B	-8%	B
CR 450N (Greene Co.) to Curry Pile (Monroe Co.)	13,559	A	-2%	A	4%	A	3%	A	3%	A	-4%	A	-6%	A	-7%	A	-7%	A	-35%	A	-19%	A	-17%	A	-15%	A	-4%	A	-4%	A	-4%	A	-4%	A	-4%	A	-6%	A	-6%	A	-6%	A
Curry Pike to Liberty Drive (Bloomington)	17,285	A	-1%	A	3%	A	3%	A	2%	A	-3%	A	-5%	A	-5%	A	-5%	A	25%	A	57%	B	57%	B	55%	B	-3%	A	-4%	A	-3%	A	-3%	A	-3%	A	-5%	A	-5%	A	-5%	A
Liberty Drive to SR 37 (Bloomington)	44,336	C	0%	C	2%	C	2%	C	2%	C	-0%	C	-0%	C	-0%	C	-0%	C	-2%	B	-21%	B	-21%	B	-21%	B	-0%	C	-0%	C	-0%	C	0%	C	-0%	C	-0%	C	-0%	C	-0%	C
Bloomfield Road//2nd Street (Bloomington)																																										
SR 37 to Cory Lane	12,964	A	-1%	A	-2%	A	-2%	A	-2%	A	-1%	A	-3%	A	-3%	A	-4%	A	102%	B	63%	A	64%	A	62%	A	-2%	A	-3%	A	-3%	A	-3%	A	-2%	A	-3%	A	-4%	A	-4%	A
Cory Lane to Patterson Drive	3,325	A	-3%	A	-5%	A	-5%	A	-4%	A	-3%	A	-10%	A	-10%	A	-10%	A	149%	A	193%	A	195%	A	183%	A	-7%	A	-11%	A	-11%	A	-11%	A	-5%	A	-10%	A	-10%	A	-10%	A
Patterson Drive to Rogers Street	4,648	A	-3%	A	-4%	A	-4%	A	-3%	A	-1%	A	-8%	A	-8%	A	-8%	A	118%	A	156%	A	158%	A	150%	A	-3%	A	-7%	A	-7%	A	-7%	A	-3%	A	-8%	A	-8%	A	-8%	A
Rogers Street to Walnut Street	10,546	A	-2%	A	-2%	A	-2%	A	-1%	A	-1%	A	-3%	A	-3%	A	-3%	A	14%	B	28%	B	28%	B	23%	B	-2%	A	-3%	A	-3%	A	-3%	A	-2%	A	-3%	A	-3%	A	-3%	A
Tapp/County Club/Winslow/Rogers Road																																										
SR 37 to Weimer Road	12,640	A	1%	A	0%	A	0%	A	0%	A	0%	A	1%	A	1%	A	1%	A	-20%	A	-0%	A	-0%	A	-4%	A	0%	A	0%	A	0%	A	0%	A	1%	A	1%	A	1%	A	1%	A
Weimer Road to Rockport Road	12,640	B	1%	B	0%	B	0%	B	0%	B	0%	B	1%	B	1%	B	1%	B	-20%	B	-0%	B	-0%	B	-4%	B	0%	B	0%	B	0%	B	0%	B	1%	B	1%	B	1%	B	1%	B
Rockport Road to Rogers Street	25,917	D	0%	D	0%	D	0%	D	0%	D	0%	D	0%	D	0%	D	0%	D	-6%	D	7%	E	7%	E	6%	E	0%	D	0%	D	0%	D	0%	D	0%	D	0%	D	0%	D	0%	D
Rogers Street to Walnut Street	14,273	A	0%	A	-1%	A	-1%	A	-1%	A	0%	A	-0%	A	-0%	A	-1%	A	-1%	A	-7%	A	-7%	A	-9%	A	1%	A	-0%	A	-0%	A	-0%	A	0%	A	-0%	A	-0%	A	-0%	A

Table 5.1-2: Tier 1 Re-evaluation Percent ADT Change Over No Build and LOS for Major Corridors - Continued
Shaded blue are segments that would become part of I-69 under this alternative. Bold lettering in larger type is used if traffic increases over No Build.

Corridor	No Build		1								2C							
			Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll	
Segments	ADT	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS
Walnut Street to High Street	13,917	B	-0%	B	0%	B	0%	B	0%	B	0%	B	1%	B	1%	B	1%	B
High Street to Sare Road	17,807	C	-0%	C	-0%	C	-0%	C	-0%	C	-0%	C	0%	C	0%	C	0%	C
Sare Road/College Mall Road (Bloomington)																		
Rogers Road to Hillside Drive/Moores Pike	21,726	C	1%	C	1%	C	1%	C	1%	C	1%	C	2%	C	2%	C	2%	C
Hillside Drive/Moores Pike to Covenanter Drive	38,306	C	2%	C	2%	C	2%	C	2%	C	2%	C	2%	C	2%	C	2%	C
Covenanter Drive to 3rd Street /SR 46	30,385	B	5%	B	5%	B	5%	B	5%	B	5%	B	5%	B	5%	B	5%	B
Hillside Drive/Moores Pike (Bloomington)																		
Walnut Street to High Street	17,515	C	-1%	C	-1%	C	-1%	C	-1%	C	-0%	C	-0%	C	-0%	C	-0%	C
High Street to Sare Road	19,095	C	3%	C	3%	C	3%	C	3%	C	3%	C	4%	C	4%	C	4%	C
Sare Road/College Mall Road to SR 446	6,067	A	0%	A	0%	A	0%	A	0%	A	0%	A	2%	A	3%	A	3%	A
SR 48 (Bloomington)																		
Waynes Lane to Curry Pike	28,867	B	0%	B	1%	B	1%	B	1%	B	-1%	B	0%	B	0%	B	0%	B
Curry Pike to Liberty Drive	32,980	B	1%	C	1%	C	1%	C	1%	C	0%	C	1%	C	1%	C	1%	C
Liberty Drive to SR 37	38,228	B	0%	B	1%	C	1%	C	1%	C	0%	B	1%	C	1%	C	1%	C
3rd St./Adams St./Kirkwood Ave. (Bloomington)																		
SR 37 to Cory Lane	22,184	A	-1%	A	0%	A	0%	A	0%	A	-0%	A	1%	A	1%	A	1%	A
Cory Lane to Patterson Drive	8,873	A	-1%	A	2%	A	2%	A	2%	A	-1%	A	2%	A	2%	A	2%	A
Patterson Drive to 5th St. at Adams St.	6,124	A	2%	A	2%	A	2%	A	2%	A	2%	A	3%	A	3%	A	3%	A
5th at Adams Street to Rogers Street	6,124	A	2%	A	2%	A	2%	A	2%	A	2%	A	3%	A	3%	A	3%	A
Rogers Street to Walnut Street	9,077	A	4%	A	4%	A	4%	A	4%	A	3%	A	4%	A	5%	A	4%	A
3rd St/Atwater Ave. (Bloomington)																		
College Avenue to Walnut Street	20,224	A	6%	B	7%	B	7%	B	7%	B	7%	B	6%	B	6%	B	6%	B
Walnut Street to Lincoln Street	44,654	C	5%	D	5%	D	5%	D	5%	D	6%	D	6%	D	6%	D	6%	D
Lincoln Street to Dunn Street	33,335	B	10%	C	10%	C	10%	C	10%	C	10%	C	10%	C	10%	C	10%	C
Dunn Street to High Street	33,335	B	10%	C	10%	C	10%	C	10%	C	10%	C	10%	C	10%	C	10%	C
High Street to College Mall Road	38,484	C	6%	C	6%	C	6%	C	6%	C	6%	C	7%	C	7%	C	7%	C
Curry Pike (Bloomington)																		
SR 45 to SR 48 (Bloomington)	14,539	A	0%	A	0%	A	0%	A	0%	A	1%	A	0%	A	0%	A	0%	A
Rogers Street (Bloomington)																		
Old SR 37 South to Rhorer Road	2,000	B	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B
Rhorer Road to County Club Road	12,713	B	0%	B	-0%	B	-0%	B	-0%	B	1%	B	0%	B	0%	B	0%	B
Country Club Road to 2nd Street	1,069	A	2%	A	-12%	A	-13%	A	-13%	A	7%	A	-11%	A	-10%	A	-9%	A
2nd Street to Kirkwood Avenue	6,966	A	-1%	A	-2%	A	-2%	A	-2%	A	-0%	A	-1%	A	-1%	A	-1%	A
Kirkwood Avenue to 7th Street	11,194	B	2%	B	1%	B	1%	B	1%	B	1%	B	1%	B	1%	B	1%	B
7th Street to 11th Street	1,125	A	-1%	A	-1%	A	-1%	A	-1%	A	2%	A	1%	A	1%	A	1%	A
11th Street to Arlington Raod	746	A	-2%	A	-2%	A	-2%	A	-2%	A	1%	A	1%	A	1%	A	1%	A
Arlington Road to SR 46	8,288	A	4%	A	6%	A	6%	A	6%	A	2%	A	5%	A	4%	A	4%	A
Old SR 37/Walnut Street (Bloomington)																		
SR 37 to Rogers Street	6,463	A	-3%	A	-3%	A	-3%	A	-3%	A	-6%	A	-3%	A	-3%	A	-2%	A
Rogers Street to Rhorer Road	8,703	A	-2%	A	-2%	A	-2%	A	-2%	A	-4%	A	-2%	A	-2%	A	-2%	A
Rhorer Road to County Club Road/Winslow Road	21,511	D	-0%	D	-0%	D	0%	D	0%	D	-1%	D	0%	D	0%	D	0%	D
Country Club Road/Winslow Road to Hillside Drive	31,593	B	-0%	B	-0%	B	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B
Hillside Drive to Dodds Street	40,276	C	3%	C	3%	C	3%	C	3%	C	3%	C	3%	C	3%	C	3%	C
Dodds Street to 2nd Street	21,320	A	3%	A	4%	A	4%	A	4%	A	4%	A	5%	A	5%	A	5%	A
2nd Street to 3rd Street	22,126	A	3%	B	3%	B	3%	B	3%	B	4%	B	4%	B	4%	B	4%	B
3rd Street to Kirkwood Avenue	28,164	A	1%	A	1%	A	0%	A	0%	A	1%	A	2%	A	2%	A	1%	A
Kirkwood Avenue to 7th Street	25,416	A	0%	A	0%	A	0%	A	0%	A	1%	A	1%	A	1%	A	1%	A
7th Street to 11th Street	15,990	A	-3%	A	-5%	A	-5%	A	-5%	A	-2%	A	-3%	A	-3%	A	-3%	A

Average Daily Traffic by Alternative

Corridor	3C								4B								4C							
	Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll	
Segments	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS
Walnut Street to High Street	2%	B	4%	B	4%	B	5%	B	0%	B	0%	B	0%	B	0%	B	-0%	B	0%	B	0%	B	0%	B
High Street to Sare Road	1%	C	3%	C	3%	C	4%	C	-0%	C	0%	C	0%	C	0%	C	-0%	C	0%	C	0%	C	0%	C
Sare Road/College Mall Road (Bloomington)																								
Rogers Road to Hillside Drive/Moores Pike	3%	C	5%	D	5%	D	5%	D	1%	C	1%	C	1%	C	1%	C	1%	C	2%	C	2%	C	2%	C
Hillside Drive/Moores Pike to Covenanter Drive	2%	C	3%	C	3%	C	4%	C	2%	C	2%	C	2%	C	2%	C	2%	C	2%	C	2%	C	2%	C
Covenanter Drive to 3rd Street /SR 46	3%	B	7%	B	7%	B	8%	B	5%	B	5%	B	5%	B	5%	B	5%	B	5%	B	5%	B	5%	B
Hillside Drive/Moores Pike (Bloomington)																								
Walnut Street to High Street	1%	C	0%	C	0%	C	0%	C	-0%	C	-0%	C	-0%	C	-0%	C	-0%	C	-0%	C	-0%	C	-0%	C
High Street to Sare Road	3%	C	3%	C	4%	C	5%	D	3%	C	3%	C	3%	C	3%	C	3%	C	4%	C	4%	C	4%	C
Sare Road/College Mall Road to SR 446	3%	A	5%	A	6%	A	6%	A	-0%	A	-0%	A	-0%	A	-0%	A	0%	A	2%	A	2%	A	2%	A
SR 48 (Bloomington)																								
Waynes Lane to Curry Pike	-1%	B	-9%	B	-9%	B	-10%	B	-1%	B	-1%	B	-1%	B	-1%	B	-0%	B	-0%	B	-0%	B	-0%	B
Curry Pike to Liberty Drive	-5%	B	-20%	B	-20%	B	-22%	B	0%	C	0%	C	0%	C	0%	C	0%	C	1%	C	1%	C	1%	C
Liberty Drive to SR 37	-4%	B	-24%	B	-25%	B	-26%	B	0%	B	0%	B	0%	B	0%	B	0%	B	1%	B	1%	C	1%	C
3rd St./Adams St./Kirkwood Ave. (Bloomington)																								
SR 37 to Cory Lane	8%	B	24%	B	23%	B	23%	B	-1%	A	1%	A	1%	A	1%	A	-0%	A	1%	A	1%	A	1%	A
Cory Lane to Patterson Drive	44%	A	78%	A	77%	A	79%	A	-1%	A	2%	A	2%	A	2%	A	-1%	A	2%	A	2%	A	2%	A
Patterson Drive to 5th St. at Adams St.	83%	A	119%	A	119%	A	120%	A	2%	A	3%	A	3%	A	3%	A	2%	A	3%	A	3%	A	3%	A
5th at Adams Street to Rogers Street	83%	A	119%	B	119%	B	120%	B	2%	A	3%	A	3%	A	3%	A	2%	A	3%	A	3%	A	3%	A
Rogers Street to Walnut Street	-32%	A	-27%	A	-27%	A	-28%	A	4%	A	5%	A	4%	A	4%	A	4%	A	5%	A	4%	A	5%	A
3rd St/Atwater Ave. (Bloomington)																								
College Avenue to Walnut Street	15%	B	20%	B	21%	B	20%	B	6%	B	6%	B	6%	B	6%	B	6%	B	6%	B	6%	B	6%	B
Walnut Street to Lincoln Street	12%	D	15%	D	15%	D	13%	D	5%	D	6%	D	6%	D	6%	D	6%	D	6%	D	6%	D	6%	D
Lincoln Street to Dunn Street	16%	C	18%	C	18%	C	18%	C	9%	C	10%	C	10%	C	10%	C	10%	C	10%	C	10%	C	10%	C
Dunn Street to High Street	16%	C	18%	C	18%	C	18%	C	9%	C	10%	C	10%	C	10%	C	10%	C	10%	C	10%	C	10%	C
High Street to College Mall Road	6%	C	6%	C	6%	C	7%	C	5%	C	5%	C	5%	C	5%	C	5%	C	6%	C	7%	C	7%	C
Curry Pike (Bloomington)																								
SR 45 to SR 48 (Bloomington)	-12%	A	46%	B	48%	B	50%	B	1%	A	0%	A	0%	A	0%	A	1%	A	0%	A	0%	A	0%	A
Rogers Street (Bloomington)																								
Old SR 37 South to Rhorer Road	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B
Rhorer Road to County Club Road	-5%	B	34%	C	36%	C	36%	C	0%	B	0%	B	0%	B	0%	B	0%	B	-0%	B	-0%	B	-0%	B
Country Club Road to 2nd Street	66%	A	247%	A	258%	A	241%	A	9%	A	-11%	A	-10%	A	-10%	A	6%	A	-12%	A	-12%	A	-12%	A
2nd Street to Kirkwood Avenue	42%	B	40%	B	41%	B	41%	B	0%	A	-1%	A	-1%	A	-1%	A	-0%	A	-1%	A	-1%	A	-1%	A
Kirkwood Avenue to 7th Street	48%	C	60%	C	60%	C	60%	C	2%	B	2%	B	1%	B	1%	B	2%	B	2%	B	1%	B	2%	B
7th Street to 11th Street	363%	A	536%	A	535%	A	528%	A	0%	A	0%	A	0%	A	0%	A	2%	A	1%	A	1%	A	1%	A
11th Street to Arlington Raod	523%	A	754%	A	752%	A	739%	A	-0%	A	-0%	A	-0%	A	-0%	A	1%	A	1%	A	1%	A	1%	A
Arlington Road to SR 46	53%	B	52%	B	52%	B	52%	B	2%	A	3%	A	3%	A	4%	A	2%	A	5%	A	5%	A	5%	A
Old SR 37/Walnut Street (Bloomington)																								
SR 37 to Rogers Street	-3%	A	115%	C	118%	C	121%	C	-6%	A	-4%	A	-4%	A	-4%	A	-5%	A	-4%	A	-3%	A	-3%	A
Rogers Street to Rhorer Road	-4%	A	52%	B	55%	B	54%	B	-4%	A	-3%	A	-3%	A	-3%	A	-4%	A	-3%	A	-3%	A	-2%	A
Rhorer Road to County Club Road/Winslow Road	0%	D	18%	E	19%	E	20%	E	-1%	D	-0%	D	-0%	D	0%	D	-1%	D	0%	D	0%	D	0%	D
Country Club Road/Winslow Road to Hillside Drive	4%	B	20%	C	21%	C	20%	C	-0%	B	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B	0%	B
Hillside Drive to Dodds Street	6%	C	18%	C	19%	C	19%	C	3%	C	3%	C	3%	C	3%	C	3%	C	3%	C	3%	C	3%	C
Dodds Street to 2nd Street	6%	A	16%	A	17%	A	17%	A	4%	A	4%	A	4%	A	4%	A	4%	A	5%	A	5%	A	4%	A
2nd Street to 3rd Street	11%	B	24%	B	24%	B	23%	B	4%	B	4%	B	4%	B	4%	B	4%	B	4%	B	4%	B	4%	B
3rd Street to Kirkwood Avenue	5%	A	2%	A	1%	A	1%	A	1%	A	1%	A	1%	A	1%	A	1%	A	1%	A	2%	A	1%	A
Kirkwood Avenue to 7th Street	6%	A	3%	A	3%	A	2%	A	1%	A	1%	A	1%	A	1%	A	1%	A	1%	A	1%	A	1%	A
7th Street to 11th Street	-1%	A	20%	A	21%	A	19%	A	-2%	A	-4%	A	-4%	A	-4%	A	-2%	A	-4%	A	-4%	A	-4%	A

Table 5.1-2: Tier 1 Re-evaluation Percent ADT Change Over No Build and LOS for Major Corridors - Continued
Shaded blue are segments that would become part of I-69 under this alternative. Bold lettering in larger type is used if traffic increases over No Build.

Corridor	No Build		1								2C								3C								4B								4C							
			Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll	
Segments	ADT	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS
11th Street to 17th Street	16,018	A	-3%	A	-5%	A	-5%	A	-5%	A	-2%	A	-3%	A	-3%	A	-3%	A	-1%	A	**20%**	A	**20%**	A	**19%**	A	-2%	A	-4%	A	-4%	A	-4%	A	-2%	A	-4%	A	-4%	A	-4%	A
17th Street to Cascade Road	13,493	A	-3%	A	-5%	A	-6%	A	-5%	A	-2%	A	-4%	A	-4%	A	-4%	A	-1%	A	**24%**	A	**25%**	A	**23%**	A	-2%	A	-5%	A	-5%	A	-5%	A	-2%	A	-4%	A	-4%	A	-4%	A
Cascade Road to SR 46	21,344	A	-4%	A	-5%	A	-5%	A	-5%	A	-2%	A	-4%	A	-4%	A	-4%	A	-1%	A	**32%**	B	**34%**	B	**34%**	B	-2%	A	-4%	A	-4%	A	-4%	A	-2%	A	-5%	A	-5%	A	-5%	A
SR 46 to Fritz Road	19,708	A	-3%	A	-3%	A	-3%	A	-3%	A	**1%**	A	-3%	A	-3%	A	-3%	A	0%	A	**14%**	A	**14%**	A	**15%**	A	**2%**	A	-2%	A	-2%	A	-2%	A	**1%**	A	-3%	A	-4%	A	-4%	A
Fritz Road to Cascade Road (Old SR 37)	19,708	C	-3%	C	-3%	C	-3%	C	-3%	C	**1%**	C	-3%	C	-3%	C	-3%	C	0%	C	**14%**	D	**14%**	D	**15%**	D	**2%**	C	-2%	C	-2%	C	-2%	C	**1%**	C	-3%	C	-4%	C	-4%	C
Cascade Road to SR 37	15,903	B	-4%	B	-4%	B	-4%	B	-4%	B	**0%**	C	-5%	B	-5%	B	-5%	B	**6%**	C	**23%**	C	**23%**	C	**23%**	C	**2%**	C	-2%	B	-2%	B	-2%	B	0%	B	-5%	B	-5%	B	-5%	B
SR 39 (Martinsville)																																																		
SR 37 to Morgan Street	16,658	A	-2%	A	-0%	A	-0%	A	-0%	A	-17%	A	-14%	A	-14%	A	-12%	A	**4%**	A	-4%	A	-5%	A	-4%	A	-8%	A	-4%	A	-4%	A	-3%	A	-18%	A	-15%	A	-14%	A	-12%	A
Morgan Street to SR 67	20,475	A	-1%	A	-0%	A	-0%	A	-0%	A	-15%	A	-6%	A	-5%	A	-4%	A	**12%**	A	**5%**	A	**4%**	A	**4%**	A	-3%	A	0%	A	0%	A	0%	A	-15%	A	-5%	A	-4%	A	-3%	A
Bluff Road/Morgantown Road (Indianapolis Metro)																																																		
Smith Valley Rd. to Marion/Johnson County Line Rd.	8,267	B	**2%**	B	**1%**	B	0%	B	0%	B	**9%**	B	**44%**	B	**46%**	B	**47%**	B	**7%**	B	**44%**	B	**45%**	B	**47%**	B	**1%**	B	**1%**	B	**2%**	B	**1%**	B	**11%**	B	**45%**	B	**46%**	B	**47%**	B
Marion/Johnson Co. Line Road to Southport Rd.	22,764	B	0%	B	**1%**	B	**1%**	B	**1%**	B	-30%	A	**28%**	B	**29%**	B	**29%**	B	-30%	A	**27%**	B	**28%**	B	**29%**	B	-0%	B	**1%**	B	**1%**	B	**1%**	B	-30%	A	**28%**	B	**28%**	B	**29%**	B
Southport Road (Marion County) to I-465	21,830	B	0%	B	**2%**	B	**2%**	B	**2%**	B	-22%	A	**3%**	B	**3%**	B	**4%**	B	-22%	A	**3%**	B	**3%**	B	**4%**	B	-0%	B	**1%**	B	**1%**	B	**1%**	B	-23%	A	**3%**	B	**3%**	B	**4%**	B
SR 135 (Indianapolis Metro)																																																		
Smith Valley Rd. to Marion/Johnson County Line Rd.	47,137	C	0%	C	0%	C	-0%	C	-0%	C	-1%	C	-1%	C	-1%	C	-1%	C	-2%	C	-1%	C	-1%	C	-1%	C	**1%**	C	0%	C	0%	C	0%	C	-1%	C	-1%	C	-1%	C	-1%	C
Marion/Johnson Co. Line Road to Southport Rd.	55,539	D	0%	D	**1%**	D	**1%**	D	**1%**	D	-3%	D	**4%**	E	**4%**	E	**4%**	E	-3%	D	**4%**	E	**4%**	E	**4%**	E	**1%**	D	**1%**	D	1%	D	**1%**	D	-3%	D	**4%**	E	**4%**	E	**4%**	E
Southport Road (Marion County) to I-465	28,671	B	-0%	B	-0%	B	-0%	B	0%	B	-5%	B	**19%**	C	**20%**	C	**20%**	C	-5%	B	**19%**	C	**20%**	C	**20%**	C	-1%	B	-1%	B	-1%	B	-1%	B	-5%	B	**19%**	C	**20%**	C	**20%**	C
US 31 (Indianapolis Metro)																																																		
SR 44 to Whiteland Road	49,833	C	-0%	C	0%	C	0%	C	0%	C	-0%	C	**1%**	C	**1%**	C	**1%**	C	0%	C	**1%**	C	**1%**	C	**1%**	C	0%	C	0%	C	0%	C	0%	C	-0%	C	1%	C	**1%**	C	**1%**	C
Whiteland Road to Smith Valley Road	66,053	E	-0%	E	0%	E	0%	E	0%	E	-0%	E	-1%	E	-1%	E	-0%	E	-0%	E	-0%	E	-0%	E	-0%	E	0%	E	0%	E	0%	E	0%	E	-0%	E	-1%	E	-1%	E	-1%	E
Smith Valley Rd. to Greenwood Rd.	65,264	C	-0%	C	-1%	C	-1%	C	-1%	C	-2%	C	**1%**	C	**1%**	C	**1%**	C	-2%	C	**1%**	C	**1%**	C	**1%**	C	-0%	C	-1%	C	-1%	C	-1%	C	-2%	C	**1%**	C	**1%**	C	**1%**	C
Greenwood Rd. to Marion/Johnson County Line Rd.	63,282	C	**1%**	C	**1%**	C	**1%**	C	0%	C	**1%**	C	**3%**	C	**3%**	C	**3%**	C	**1%**	C	**3%**	C	**3%**	C	**3%**	C	**1%**	C	**1%**	C	**1%**	C	**1%**	C	**1%**	C	**3%**	C	**3%**	C	**3%**	C
Marion/Johnson Co. Line Road to Southport Rd.	90,356	E	0%	E	0%	E	0%	E	0%	E	-1%	D	**1%**	E	**1%**	E	**1%**	E	-1%	D	**1%**	E	**1%**	E	**1%**	E	0%	E	0%	E	0%	E	0%	E	-1%	D	**1%**	E	**1%**	E	**1%**	E
Southport Road (Marion County) to I-465	66,545	F	0%	F	0%	F	0%	F	0%	F	-13%	D	**4%**	F	**5%**	F	**5%**	F	-13%	D	**4%**	F	**5%**	F	**5%**	F	0%	F	0%	F	0%	F	0%	F	-13%	D	**5%**	F	**5%**	F	**5%**	F
SR 144/SR 44 Indianapolis Metro)																																																		
SR 37 to Whiteland Road	16,516	D	-0%	D	-1%	D	-1%	D	-1%	D	**17%**	E	**14%**	D	**14%**	D	**12%**	D	**17%**	E	**13%**	D	**13%**	D	**11%**	D	0%	D	-0%	D	-0%	D	-0%	D	**18%**	E	**14%**	D	**14%**	D	**12%**	D
Whiteland Road to SR 44	16,451	C	0%	C	-1%	C	-1%	C	-1%	C	**2%**	C	-1%	C	-1%	C	-1%	C	**1%**	C	-1%	C	-1%	C	-1%	C	0%	C	-1%	C	-1%	C	-1%	C	**2%**	C	-1%	C	-1%	C	-1%	C
SR 44 to US 31	20,348	C	0%	C	-0%	C	-0%	C	-0%	C	0%	C	-0%	C	-0%	C	0%	C	-0%	C	-0%	C	-0%	C	0%	C	**1%**	C	-1%	C	-1%	C	-1%	C	0%	C	-0%	C	-0%	C	0%	C
US 31 to I-65	24,713	D	0%	D	0%	D	0%	D	0%	D	-0%	D	**1%**	D	**1%**	D	**1%**	D	-0%	D	**1%**	D	**1%**	D	**1%**	D	0%	D	0%	D	0%	D	0%	D	-0%	D	**1%**	D	**1%**	D	**1%**	D
Smith Valley Road (Indianapolis Metro)																																																		
SR 37 to Morgantown Road	16,730	C	-0%	C	-0%	C	-0%	C	-0%	C	**32%**	E	-12%	C	-12%	C	-15%	C	**30%**	E	-11%	C	-12%	C	-15%	C	0%	C	0%	C	0%	C	0%	C	**31%**	E	-11%	C	-12%	C	-15%	C
Morgantown Road to SR 135	22,135	C	0%	C	0%	C	0%	C	1%	C	**4%**	D	-1%	C	-1%	C	-1%	C	**4%**	C	-1%	C	-1%	C	-1%	C	0%	C	0%	C	0%	C	**1%**	C	**4%**	D	-1%	C	-1%	C	-1%	C
SR 135 to US 31	60,837	F	0%	F	0%	F	0%	F	0%	F	-0%	F	**1%**	F	**1%**	F	**1%**	F	-0%	F	**1%**	F	**1%**	F	**1%**	F	0%	F	0%	F	0%	F	0%	F	-0%	F	**1%**	F	**1%**	F	**1%**	F
Greenwood Road (Indianapolis Metro)																																																		
US 31 to I-65	20,068	E	0%	E	0%	E	0%	E	0%	E	-0%	E	**1%**	E	**1%**	E	**1%**	E	-0%	E	**1%**	E	**1%**	E	**1%**	E	0%	E	0%	E	0%	E	0%	E	-0%	E	**1%**	E	**1%**	E	**1%**	E
Marion/Johnson Co. Line Road (Indianapolis Metro)																																																		
SR 37 to Morgantown Road	30,593	B	0%	B	**1%**	B	**1%**	B	**1%**	B	**20%**	C	-27%	B	-28%	B	-30%	A	**19%**	C	-27%	B	-28%	B	-29%	B	**1%**	B	**1%**	B	**1%**	B	**1%**	B	**20%**	C	-27%	B	-27%	B	-29%	B
Morgantown Road to SR 135	28,211	F	0%	F	-0%	F	-0%	F	-0%	F	**9%**	F	-5%	E	-6%	E	-6%	E	**9%**	F	-5%	E	-6%	E	-6%	E	0%	F	0%	F	0%	F	0%	F	**9%**	F	-5%	E	-5%	E	-6%	E
SR 135 to US 31	38,792	F	0%	F	0%	F	0%	F	0%	F	0%	F	**7%**	F	**8%**	F	**8%**	F	0%	F	**8%**	F	**8%**	F	**8%**	F	0%	F	0%	F	0%	F	0%	F	0%	F	**7%**	F	**7%**	F	**8%**	F
US 31 to I-65	25,507	E	-2%	D	-2%	D	-1%	E	-0%	E	-1%	E	-1%	E	-1%	E	-1%	E	-1%	E	-1%	E	-0%	E	-0%	E	-2%	D	-1%	E	-2%	D	-1%	E	-0%	E	-0%	E	-1%	E	-1%	E
Southport Road (Indianapolis Metro)																																																		
SR 37 to Morgantown Road	30,199	B	0%	B	0%	B	-0%	B	-0%	B	**68%**	C	**38%**	C	**38%**	C	**36%**	C	**68%**	C	**38%**	C	**38%**	C	**36%**	C	**1%**	B	**1%**	B	**1%**	B	**1%**	B	**67%**	C	**38%**	C	**38%**	C	**36%**	C
Morgantown Road to SR 135	29,118	B	**1%**	B	**1%**	B	**1%**	B	**1%**	B	**37%**	C	**31%**	C	**31%**	C	**30%**	B	**37%**	C	**31%**	C	**31%**	C	**29%**	B	**1%**	B	**2%**	B	**2%**	B	**2%**	B	**37%**	C	**31%**	C	**31%**	C	**30%**	B
SR 135 to US 31	33,787	B	**1%**	B	0%	B	**1%**	B	**1%**	B	**31%**	C	**19%**	C	**19%**	C	**19%**	C	**31%**	C	**19%**	C	**19%**	C	**18%**	C	**1%**	B	**1%**	B	**1%**	B	**1%**	B	**31%**	C	**19%**	C	**19%**	C	**18%**	C
US 31 to I-65	36,077	F	0%	F	0%	F	0%	F	0%	F	-3%	F	**2%**	F	**2%**	F	**2%**	F	-3%	F	**2%**	F	**2%**	F	**2%**	F	0%	F	0%	F	0%	F	0%	F	-3%	F	**2%**	F	**2%**	F	**2%**	F
US 40 (Indianapolis Metro)																																																		
Six Points Road to Girls School Road	30,525	B	0%	B	0%	B	0%	B	0%	B	-0%	B	0%	B	**1%**	B	**1%**	B	-0%	B	0%	B	**1%**	B	**1%**	B	**1%**	B	**1%**	B	**1%**	B	**1%**	B	0%	B	0%	B	**1%**	B	**1%**	B
Girls School Road to High School Road	47,240	D	0%	D	0%	D	0%	D	0%	D	0%	D	0%	D	0%	D	0%	D	0%	D	**1%**	D	**1%**	D	**1%**	D	**1%**	D	0%	D	0%	D	0%	D	**1%**	D	1%	D	0%	D	-0%	D

Table 5.1-2: Tier 1 Re-evaluation Percent ADT Change Over No Build and LOS for Major Corridors - Continued
Shaded blue are segments that would become part of I-69 under this alternative. Bold lettering in larger type is used if traffic increases over No Build.

	Average Daily Traffic by Alternative																	
Corridor	No Build		1								2C							
			Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll	
Segments	ADT	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS
High School Road to I-465	53,721	E	-0%	E	-0%	E	-0%	E	0%	E	1%	E	0%	E	0%	E	-0%	E
SR 57																		
I-64 to SR 168	9,969	B	-5%	B	24%	B	25%	B	28%	B	-7%	B	45%	C	51%	C	55%	C
SR 168 to SR 64 (Oakland City)	10,445	B	-5%	B	23%	B	25%	C	27%	C	-7%	B	45%	C	50%	C	53%	C
SR 64 to SR 56/SR 61 (Petersburg)	6,961	A	-7%	A	49%	B	53%	B	57%	B	-10%	A	83%	C	91%	C	99%	C
SR 56/SR 61 to US 50 Bypass (Washington)	8,640	B	-6%	B	27%	B	29%	B	31%	B	-9%	B	37%	B	38%	B	39%	B
US 50 Bypass to Old US 50 (Washington)	9,717	A	-1%	A	23%	B	25%	B	26%	B	-1%	A	33%	B	33%	B	33%	B
Old US 50 to SR 58 (Elnora)	6,051	A	-3%	A	34%	A	37%	A	39%	A	-3%	A	48%	B	48%	B	48%	B
SR 58 to SR 54/US 231	2,596	A	-6%	A	75%	A	83%	A	92%	A	2%	A	160%	A	164%	A	168%	A
SR 54 to SR 67	1,857	A	-7%	A	119%	A	130%	A	142%	A	10%	A	236%	A	241%	A	247%	A
US 231 (follows new Huntingburg/Jasper Bypass)																		
I-64 to SR 64 (Huntingburg)	9,352	B	-5%	B	30%	B	33%	B	36%	B	-6%	B	3%	B	5%	B	6%	B
SR 64 to SR 162 (Jasper)	12,992	B	-3%	B	21%	C	24%	C	26%	C	-4%	B	2%	B	3%	B	5%	C
SR 162 to SR 164 (Jasper)	8,364	B	-6%	A	36%	B	40%	B	45%	B	-5%	A	4%	B	5%	B	7%	B
SR 164 to SR 56 east	4,924	A	-3%	A	6%	A	7%	A	8%	A	2%	A	11%	A	12%	A	12%	A
SR 56 east to US 50 west (Loogootee)	9,024	B	-1%	B	5%	B	5%	B	6%	B	0%	B	4%	B	4%	B	5%	B
US 50 west to US 50 east (Loogootee)	20,195	C	-0%	C	-3%	C	-3%	C	-3%	C	-1%	C	-3%	C	-2%	C	-3%	C
US 50 east to SR 58 west (Farlen)	5,252	A	-3%	A	4%	A	5%	A	5%	A	2%	A	6%	A	7%	A	8%	A
SR 58 west to SR 58 east	6,674	A	-7%	A	17%	A	17%	A	17%	A	-6%	A	3%	A	4%	A	4%	A
SR 58 east to SR 54 (Bloomfiled)	4,645	A	-5%	A	9%	A	9%	A	11%	A	2%	A	13%	A	14%	A	15%	A
SR 67 to SR 42	8,055	A	-2%	A	26%	A	29%	A	32%	A	67%	A	77%	A	81%	A	84%	A
SR 42 (Cloverdale) to I-70	19,332	A	-1%	A	11%	B	12%	B	13%	B	24%	B	30%	B	32%	B	34%	B

	Average Daily Traffic by Alternative																							
Corridor	3C								4B								4C							
	Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll		Non-Toll		50% toll		75% toll		100% toll	
Segments	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS	% Change	LOS
High School Road to I-465	0%	E	0%	E	1%	E	0%	E	1%	E	0%	E	0%	E	-0%	E	1%	E	0%	E	0%	E	-0%	E
SR 57																								
I-64 to SR 168	-73%	A	-44%	A	-42%	A	-40%	A	-73%	A	-44%	A	-43%	A	-41%	A	-73%	A	-44%	A	-42%	A	-41%	A
SR 168 to SR 64 (Oakland City)	-73%	A	-41%	A	-39%	A	-37%	A	-73%	A	-41%	A	-40%	A	-38%	A	-73%	A	-41%	A	-40%	A	-38%	A
SR 64 to SR 56/SR 61 (Petersburg)	-68%	A	-32%	A	-29%	A	-26%	A	-68%	A	-32%	A	-29%	A	-27%	A	-68%	A	-32%	A	-29%	A	-26%	A
SR 56/SR 61 to US 50 Bypass (Washington)	-27%	A	-10%	B	-9%	B	-8%	B	-25%	A	-11%	A	-10%	B	-9%	B	-25%	A	-10%	A	-9%	B	-8%	B
US 50 Bypass to Old US 50 (Washington)	1%	B	4%	B	4%	B	4%	B	2%	B	3%	B	4%	B	4%	B	2%	B	5%	B	5%	B	5%	B
Old US 50 to SR 58 (Elnora)	-22%	A	-6%	A	-5%	A	-3%	A	-27%	A	-11%	A	-10%	A	-8%	A	-23%	A	-9%	A	-7%	A	-5%	A
SR 58 to SR 54/US 231	-3%	A	6%	A	8%	A	10%	A	-6%	A	-3%	A	-1%	A	0%	A	-8%	A	2%	A	5%	A	6%	A
SR 54 to SR 67	45%	A	25%	A	25%	A	28%	A	-13%	A	-12%	A	-9%	A	-7%	A	-12%	A	-2%	A	2%	A	4%	A
US 231 (follows new Huntingburg/Jasper Bypass)																								
I-64 to SR 64 (Huntingburg)	-9%	B	-5%	B	-5%	B	-4%	B	-18%	A	-6%	B	-6%	B	-5%	B	-11%	B	-7%	B	-6%	B	-6%	B
SR 64 to SR 162 (Jasper)	-8%	B	-5%	B	-4%	B	-4%	B	-16%	B	-6%	B	-5%	B	-4%	B	-12%	B	-8%	B	-7%	B	-7%	B
SR 162 to SR 164 (Jasper)	-12%	A	-8%	A	-7%	A	-6%	A	-24%	A	-9%	A	-7%	A	-6%	A	-17%	A	-12%	A	-11%	A	-10%	A
SR 164 to SR 56 east	38%	A	32%	A	32%	A	32%	A	-12%	A	-5%	A	-5%	A	-5%	A	-12%	A	8%	A	9%	A	9%	A
SR 56 east to US 50 west (Loogootee)	18%	B	17%	B	16%	B	17%	B	-7%	B	-3%	B	-3%	B	-3%	B	-7%	B	1%	B	2%	B	2%	B
US 50 west to US 50 east (Loogootee)	20%	D	7%	C	7%	C	7%	C	7%	C	-1%	C	-1%	C	-1%	C	7%	C	2%	C	3%	C	3%	C
US 50 east to SR 58 west (Farlen)	43%	A	35%	A	35%	A	36%	A	-12%	A	-6%	A	-5%	A	-5%	A	-12%	A	6%	A	7%	A	8%	A
SR 58 west to SR 58 east	31%	B	33%	B	33%	B	35%	B	-14%	A	-9%	A	-8%	A	-8%	A	-14%	A	1%	A	3%	A	3%	A
SR 58 east to SR 54 (Bloomfiled)	7%	A	24%	A	25%	A	27%	A	-11%	A	-5%	A	-5%	A	-4%	A	-12%	A	12%	A	14%	A	15%	A
SR 67 to SR 42	-10%	A	13%	A	17%	A	22%	A	4%	A	7%	A	8%	A	8%	A	62%	A	37%	A	36%	A	35%	A
SR 42 (Cloverdale) to I-70	-4%	A	6%	B	7%	B	9%	B	-1%	A	2%	A	2%	A	3%	A	22%	B	13%	B	13%	B	13%	B

- Some long distance trips chose other interstate routes, and no longer pass through the Study Area. Thus, long distance trips passing through the Study Area under the non-toll scenario divert to facilities both in and outside the Study Area.

5.1.3.2 Traffic Impacts by Alternative

5.1.3.2.1 Alternative 1

Alternative 1 follows the existing alignment of US 41 from I-64 (north of Evansville) to the SR 641 freeway (south of Terre Haute), then continues along the SR 641 freeway from US 41 to I-70, and follows the route of I-70 from SR 641 to I-465 (western Indianapolis).

Under the non-toll scenario, daily traffic volumes in the year 2030 along US 41, SR 641 and I-70 from I-64 to I-465 are higher than those of the No Build Condition because of the I-69 designation of this corridor.

When tolls are imposed, the year 2030 daily traffic volumes along the US 41, SR 641 and I-70 corridor drop below those of the No Build Condition. Reductions on US 41 are at least 29% on most of the route and as high as 48% at the 100% toll rate. When the traffic volumes are compared for the three toll scenarios, it is obvious that the 100% toll rate results in a greater reduction in traffic along US 41 than the 75% or 50% toll scenarios.

While tolls are not imposed on SR 641 and I-70 in the routing of I-69, daily traffic volumes for these two facilities fall below those of the No Build Condition because of lower traffic volumes on US 41 resulting from the tolls. Further, the 100% toll rate results in lower traffic volumes on SR 641 and I-70 than the 75% toll rate scenario, and the 75% toll rate results in lower traffic volumes on SR 641 and I-70 than the 50% toll rate scenario.

This type of analysis is sensitive to factors such as the toll rate, the time saved by using the tolled route, and individual users' value of time – that is, the amount users are willing to pay in order to save a given amount of travel time. Therefore, any analysis of traffic-related impacts involves a substantial degree of uncertainty.

Under the toll scenarios for Alternative 1, the following corridors experience an increase in daily traffic volumes compared to the No Build Condition:

- *All of SR 37 from south of Bloomington to I-465.* The increase ranges up to 13% for the 50% toll scenario, up to 14% for the 75% toll scenario, and up to 16% for the 100% toll scenario, with the greatest increases in the Bloomington, Martinsville and southern Indianapolis metropolitan fringe. However, a decline in the LOS over the No Build Condition is not observed.

- *Segments of SR 46 through Spencer (sharing a common route with SR 67 and US 231) and from SR 37 to Fee Lane in Bloomington.* However, a decline in the LOS over the No Build Condition is not observed.

- *The section of SR 67 from US 41 to SR 54 (Switz City).* Traffic volumes increase on this section because traffic continues up US 231 from SR 67 to I-70 to avoid tolls. A LOS decline over the No Build Condition from A to B is observed on SR 67 south of Spencer and on US 231 through Cloverdale to I-70.

- *Segments of SR 45 from SR 445 (in Greene County) to SR 37 (in Bloomington).* This increase in traffic volume does not cause a change in LOS over the No Build Condition.

- *College Mall Road/Sare Road from Rogers Road to SR 46, Hillside Drive from High Street to Sare Road, Rogers Street from Kirkwood Avenue to 7th Street and Arlington to SR 46, all in Bloomington.* The increases in traffic volume do not exceed 5%, do not alter the No Build LOS, and are comparable to the non-toll Build scenario.

- *SR 48 from Waynes Lane to SR 37 and 3rd Street/Atwater Avenue from Cory Lane to College Mall Road.* The increased traffic volumes cause the LOS to drop one level for all of these segments in Bloomington, which is similar to effect of the non-toll Build scenario, but LOS does not drop to an undesirable level.

- *Old SR 37/Walnut Street from Hillside Drive to 3rd Street* in Bloomington. This increase in traffic does not cause a decline in LOS.

- *SR 57 from I-64 to SR 67.* While traffic increases are observed over the No Build Condition, only two segments show a decline in LOS over the No Build Condition; these declines still result in an acceptable LOS.

- *US 231 from I-64 to US 50 west (west of Loogootee) and from US 50 east (east of Loogootee) to I-70.* Declines in LOS are observed on only two segments, but these declines still result in an acceptable LOS.

5.1.3.2.2 Alternative 2C

Alternative 2C follows the existing alignment of US 41 from I-64 (north of Evansville) to the SR 67 north of Vincennes, parallels SR 67 on new alignment from US 41 to SR 37 (at Martinsville), and continues along the existing alignment of SR 37 from about SR 39 to I-465.

Under the non-toll scenario, segments of US 41 and SR 37 that are incorporated into Alternative 2C experience higher traffic volumes than would have occurred on those segments under the No Build condition. On the other hand, where I-69 is on new alignment parallel to SR 67, daily traffic volumes are lower on SR 67 than under the No Build condition. This decrease reflects a diversion of traffic from SR 67 onto the non-tolled I-69.

When tolls are imposed, the year 2030 daily traffic volumes along all segments of US 41 and some segments of SR 37 incorporated into I-69 drop below the No Build Condition. Reductions on US 41 are again typically in the range of 25% to 45%. The higher the toll, the greater is the drop in daily traffic volumes. From US 41 to the SR 57/US 231 intersection (near Worthington), SR 67 continues to experience a decline in daily traffic volumes over the No Build Condition despite tolls on I-69, although the decline is less as tolls increase. From the SR 57/US 231 intersection to I-465, existing SR 67 experiences an increase in traffic volumes compared to the No Build and non-toll Build scenario. While daily traffic volumes decline on I-70 over the No Build Condition with tolls, only one of five segments with an undesirable LOS under the No Build Condition improves to an acceptable LOS.

This type of analysis is sensitive to factors such as the toll rate, the time saved by using the tolled route, and individual users' value of time – that is, the amount users are willing to pay in order to save a given amount of travel time. Therefore, any analysis of traffic-related impacts involves a substantial degree of uncertainty.

Under the toll scenarios for Alternative 2C, the following corridors experience an increase in daily traffic volumes over the No Build Condition:

- *Segments of SR 46 from SR 246 through Spencer to Maple Grove Road in Ellettsville.* A decline in LOS from A to B is experienced between Spencer and Ellettsville.

- *SR 46 from SR 37 to Fee Lane and from College Mall Road to SR 446 in Bloomington*. However, a decline in the LOS over the No Build Condition is not observed.

- *SR 67 from the SR 57/US 231 intersection (west of Worthington) to I465.* This section experiences increases. A LOS decline over the No Build Condition is observed on three of ten segments of SR 67 eastward from the SR 57/US 231 intersection, but does not result in undesirable LOS. However, as a toll facility, Alternative 2C results in the greatest increase of all Build Alternatives through Spencer where a LOS of F exists under the No Build Condition.

- *College Mall Road/Sare Road from Rogers Road to SR 46, Hillside Drive from High Street to SR 446, SR 48 from Curry Pike to SR 37, and Rogers Street from Kirkwood Avenue to SR 46, all in Bloomington.* However, the increases do not exceed 5%, do not alter the No Build LOS, and are comparable to the non-toll Build scenario.

- *3rd Street/Adams Street/Kirkwood Avenue from SR 37 to Walnut Street, and 3rd Street/Atwater Avenue from College Street to High Street in Bloomington.* These sections show an increase of up to 10% in traffic volume. The LOS drops one level on the 3rd Street/Atwater segments in Bloomington, similar to the non-toll Build scenario, but does not drop to an undesirable LOS.

- *Old SR 37/Walnut Street from Hillside Drive to 7th Street in Bloomington.* This increase in traffic volume causes LOS to decline from A to B between 2nd and 3rd Streets, but the LOS remains within the desirable range.

- *Bluff Road/Morgantown Road from Smith Valley Road to I-465.* While increases range from 3% to 47%, there is no decline in the LOS over the No Build Condition.

- *SR 135 from the Marion-Johnson County Line Road to I-465.* The drop of LOS from D to E on SR 135 from the Marion-Johnson County Line Road to Southport Road is undesirable.

- *US 31 from SR 44 to I-465.* While the non-toll Build scenario improves LOS over the No Build Condition, the toll revenue scenarios do not improve the undesirable LOS of the No Build Condition

- *SR 144 from SR 37 to Whiteland Road and from US 31 to I-65.* Traffic volumes increase on these sections, without a decline in LOS over the No Build Condition; there is no improvement in the undesirable No Build condition.

- *Smith Valley Road from SR 135 to US 31.* There would be no improvement in the LOS F No Build condition.

- *Greenwood Road from US 31 to I-65.* There would be no improvement in the LOS E No Build Condition.

- *Marion/Johnson County Line Road from SR 135 to US 31.* There would be no improvement in the LOS F No Build Condition.

- *Southport Road from SR 37 to US 31.* The increased traffic volumes would result in a LOS decline to C comparable to the non-toll Build scenario and a worsening of the LOS F No Build Condition from US 31 to I-65.

- *SR 57 from I-64 to SR 67.* Traffic increases over the No Build Condition result in a decline of LOS on five of eight segments, but these declines still result in an acceptable LOS.

- *US 231 from I-64 to US 50 west (west of Loogootee) and from US 50 east (east of Loogootee) to I-70.* Declines are observed on only two segments, but these declines still result in an acceptable LOS.

5.1.3.2.3 Alternative 3C

Alternative 3C parallels SR 57 from I-64 (north of Evansville) to SR 58 (Elnora), goes cross country from SR 57 to SR 37 roughly paralleling SR 45, and follows the alignment of SR 37 from south of SR 45 in Bloomington to I-465 in Indianapolis.

Under the non-toll scenario, traffic volumes in 2030 along existing segments of SR 37 that are incorporated into I-69 are higher than traffic volumes on those segments in the No Build condition. On the other hand, where I-69 is on new alignment parallel to SR 57 and SR 45, traffic volumes on those routes in the non-toll scenario are lower than the No Build Condition for those routes. Under the non-toll scenario, Alternative 3C also diverts significant traffic from the US 41, SR 641 and I-70, improving the LOS on these facilities.

When tolls are imposed, the year 2030 daily traffic volumes along SR 37 incorporated into I-69 drop below the No Build Condition except from SR 39 to SR 144 for the 100% toll scenario and from SR 46 to SR 144 for the 50% and 75% toll scenarios. Reductions in the range of 24% to 41% occur south of SR 46 in Bloomington. The higher the tolls are, the greater is the drop in daily traffic volumes. On the other hand, SR 57 experiences less of a traffic decline over the No Build Condition as tolls increase, and an increase in traffic over the No Build Condition north of SR 58 where I-69 turns northeast toward Bloomington. From the SR 57/US 231 intersection (near Worthington) to I-465, SR 67 experiences an increase in traffic over the No Build Condition; again, the higher the tolls, the greater the increase in traffic on this portion of SR 67. Traffic volumes on I-70 west of SR 39 are lower than under the No Build Condition; east of SR 39, traffic volumes are higher than under the No Build condition. The four segments of I-70 with an undesirable LOS under the No Build Condition do not improve regardless of the toll level, and the I-70 segment from SR 39 to SR 267 with a LOS F further deteriorates under the 75% and 100% toll scenarios (but not for the 50% toll scenario).

This type of analysis is sensitive to factors such as the toll rate, the time saved by using the tolled route, and individual users' value of time – that is, the amount users are willing to pay in order to save a given amount of travel time. Therefore, any analysis of traffic-related impacts involves a substantial degree of uncertainty.

Under the toll scenarios for Alternative 3C, the following corridors experience an increase in daily traffic volumes over the No Build Condition:

- *I-70 from SR 39 to SR 267.* This increase in traffic volumes would result in a LOS E or F between SR 39 and SR 267. In the No Build condition, this segment of I-70 would have LOS F.

- *Segments of SR 46 from SR 57/US 231 west of Spencer to Hartstraight Road in Ellettsville.* A decline in LOS from A to B is experienced between Spencer and Ellettsville.

- *SR 46 from Curry Pike to SR 446 in Bloomington.* The LOS drops from C to D on SR 46 between SR 37 and Kinser Pike, although LOS D is an acceptable LOS in an urban area.

- *SR 67 from the SR 57/US 231 intersection (west of Worthington) to I-465.* This section experiences increases in traffic volumes. A LOS decline over the No Build Condition is observed on one of ten segments of SR 67, but does not result in undesirable LOS. However, as a toll facility, Alternative 3C results in a 5% traffic increase through Spencer, where a LOS of F exists under the No Build Condition.

- *SR 45 from Curry Pike to Liberty Drive in Bloomington.* This section experiences an increase as traffic diverts to local roads to avoid tolls. But there is no change in the LOS over the No Build Condition.

- *Bloomfield Road from SR 37 to Walnut Street in Bloomington.* Traffic volumes on this road increase from 23% to 195%. However, because the facility is programmed for four lanes in the No Build Condition, the LOS only drops from A to B between Rogers Street and Walnut Street.

- *Tapp/Country Club/Winslow/Rogers Road from Rockport Road to Rogers Street and from Walnut Street to Sare Road.* The section from Rockport Road to Rogers Street drops from LOS D to E (which is undesirable for an urban area). The section from Walnut Street to Sare Road does not experience a decline in LOS.

- *College Mall Road/Sare Road from Rogers Road to SR 46.* The LOS drops from C to D between Rodgers Road and Hillside Drive.

- *Hillside Drive (in Bloomington) from High Street to SR 446.* The LOS drops from C to D between High Street and Sare Road (for the 100% toll scenario)

- *3rd Street/Adams Street/Kirkwood Avenue in Bloomington from SR 37 to Rogers Street.* With increasing traffic, the LOS drops from A to B between from SR 37 to Cory Lane and from Adams Street and Rogers Street.

- *3rd Street/Atwater Avenue (in Bloomington) from College Avenue to College Mall Road.* This section experiences up to a 21% increase in traffic volume. The LOS drops one level for the segments between Walnut Street and High Street similar to the non-toll Build scenario, but does not drop to an undesirable LOS.

- *Curry Pike (in Bloomington) between SR 45 and SR 48.* Traffic volumes on this section increase by 46% to 50% while the LOS drops from A to B for this four-lane facility.

- *Rogers Street from Old SR 37 to SR 46.* There is a decline in LOS on four of eight segments. However, the LOS remains acceptable.

- *Old SR 37/Walnut Street from SR 37 (south of Bloomington) to SR 37 (north of Bloomington.* There would be drop in LOS on 8 of 16 segments, one segment having an undesirable LOS E and one segment having an undesirable LOS D.

- *SR 39 north of Martinsville to SR 67.* There would be an increase in ADT of up to 12%, but the road would continue to operate at LOS A.

- *Bluff Road/Morgantown Road from Smith Valley Road to I-465.* While increases range from 3% to 47% (comparable to Alternatives 2C and 4C), there is no decline in the LOS over the No Build Condition.

- *SR 135 from the Marion-Johnson County Line Road to I-465.* The drop of LOS from D to E on SR 135 from the Marion-Johnson County Line Road to Southport Road is undesirable.

- *US 31 from SR 44 to I-465.* While the non-toll Build scenario improves LOS over the No Build Condition, the toll revenue scenarios do not improve the undesirable LOS of the No Build Condition.

- *SR 144 from SR 37 to Whiteland Road.* There would be no decline in LOS over the No Build Condition, but no improvement in the undesirable No Build Condition.

- *Smith Valley Road from SR 135 to US 31.* There would not be an improvement in the LOS F, which would exist in the No Build condition.

- *Greenwood Road from US 31 to I-65.* There would not be an improvement in the LOS F, which would exist in the No Build condition.

- *Marion/Johnson County Line Road from SR 135 to US 31.* There would not be an improvement in the LOS F, which would exist in the No Build Condition.

- *Southport Road from SR 37 to I-65,* Between SR 37 and US 31, there would be a decline in LOS to C in the non-toll and all toll options (as compared with a No Build LOS B). Between US 31 and I-65, the there are slight traffic increases, and the road remains at the LOS F which exists in the No Build Condition.

- *SR 57 from the US 50 Bypass (Washington) to Old US 50 (Washington) and from SR 58 (Elnora) to SR 67 (southwest of Worthington).* There would be a decline in LOS to B, which is comparable to the non-toll scenario.

- *US 231 from SR 164 (Jasper) to I-70.* There would be a decline in LOS to B on two segments (near Farlen and near I-70); the LOS on both would remain within the desirable range.

5.1.3.2.4 Alternative 4B

Alternative 4B parallels SR 57 from I-64 (north of Evansville) to SR 67 (southwest of Worthington), parallels SR 67 from SR 57/US 231 to Paragon, and cuts north cross country from SR 67 to I-70 (east of the Little Point interchange).

Under the non-toll scenario, traffic volumes in 2030 along existing segments of I-70 from west of SR 39 to I-465 incorporated into I-69 are higher than those of the No Build condition. On the other hand, where I-69 is on new alignment parallel to SR 57 and SR 67, daily traffic volumes on these roads are generally lower than the No Build condition, except for segments which feed I-69. Under the non-toll scenario, Alternative 4B also diverts significant traffic from the US 41, SR 641 and I-70 (from SR 641 to west of SR 39), improving the LOS on these facilities.

When tolls are imposed, the year 2030 daily traffic volumes along I-70 incorporated into I-69 still increase above the No Build Condition for all toll scenarios. On the other hand, SR 57 experiences less of a traffic decline over the No Build Condition as tolls increase, and experiences an increase in traffic over the No Build through Washington. With tolls, SR 67 experiences a modest increase in traffic over the No Build Condition. While daily traffic volumes still decline on I-70 west of SR 39 over the No Build Condition with tolls, the four segments with an undesirable LOS under the No Build Condition do not improve from SR 641 to I-465, and the I-70 segment from SR 39 to SR 267 at LOS F further deteriorates.

This type of analysis is sensitive to factors such as the toll rate, the time saved by using the tolled route, and individual users' value of time – that is, the amount users are willing to pay in order to save a given amount of travel time. Therefore, any analysis of traffic-related impacts involves a substantial degree of uncertainty.

Under the toll scenarios for Alternative 4B, the following corridors experience an increase in daily traffic volumes over the No Build Condition:

- *I-70 from SR 39 to I-465.* However, the LOS does not change, and the undesirable LOS F remains between SR 39 and SR 267.

- *Segments of SR 46 west of Spencer and from SR 37 to Fee Lane in Bloomington.* There would be no decline in LOS.
- *SR 67 from US 41 to SR 54, US 231 north to SR 39 south, and SR 267 to High School Road.* These sections would experience minor increases over the No Build Condition, with a maximum increase of 5%. However, there is no improvement through Spencer in the LOS F under the No Build Condition.
- *College Mall Road/Sare Road from Rogers Road to SR 46.* There would be no drop in LOS.
- *Hillside Drive (in Bloomington) from High Street to Sare Road.* There would be no drop in LOS.
- *3rd Street/Adams Street/Kirkwood Avenue (in Bloomington) from SR 37 to Walnut Street.* There would be no drop in LOS.
- *3rd Street/Atwater Avenue (in Bloomington) from College Avenue to College Mall Road.* Traffic volumes would increase up to 10%. The LOS drops one level for the segments between Walnut Street and High Street, but does not drop to an undesirable LOS.
- *Rogers Street from Kirkwood Avenue to 7th Street.* There would be no reduction in LOS.
- *Old SR 37/Walnut Street from Hillside Drive to 7th Street.* The LOS would drop from A to B on one segment, which is still within the desirable range.
- *Bluff Road/Morgantown Road from Smith Valley Road to I-465.* There would be no drop in LOS.
- *SR 135 from the Marion-Johnson County Line Road to Southport Roa*d. There would be no drop in LOS.
- *US 31 from the Marion-Johnson County Line Road to Greenwood Road.* There would be no drop in LOS.
- *Marion/Johnson County Line Road from SR 37 to Morgantown Road.* There would be no improvement in the LOS E and F that would exist under the No Build condition between Morgantown Road and I-65.
- *Southport Road from SR 37 to US 31.* There would be no decline in LOS.
- *SR 57 from the US 50 Bypass (Washington) to Old US 50 (Washington) and from SR 58 (Elnora) to SR 67 (southwest of Worthington).* There would be a decline in LOS to B on one segment in Washington.
- *US 231 from SR 67 (north of Spencer) to I-70.* There would be no decline in LOS.

5.1.3.2.5 Alternative 4C

Alternative 4C parallels SR 57 from I-64 (north of Evansville) to SR 67 (southwest of Worthington), parallels SR 67 from SR 57/US 231 to Paragon, cuts east cross country to SR 37 at SR 39 (south of Martinsville), and follows SR 37 from SR 39 to I-465.

Under the non-tolled scenario, traffic volumes in 2030 along existing segments of SR 37 from SR 39 to Southport Road incorporated into I-69 are higher than those of the No Build Condition. On the other hand, where I-69 is on new alignment parallel to SR 57 and SR 67, daily traffic volumes are lower than the No Build Condition except for segments feeding I-69. Under the non-toll scenario, Alternative 4C also diverts significant traffic from the US 41, SR 641 and I-70.

When tolls are imposed, the year 2030 daily traffic volumes along SR 37 incorporated into I-69 drop below the No Build Condition for a majority of the segments, except from SR 39 to SR 144. The higher the tolls are, the greater is the drop in daily traffic volumes. On the other hand, SR 57 experiences less of a traffic decline over the No Build Condition as tolls increase, and an increase in traffic over the No Build Condition north of SR 58 where I-69 turns northeast toward Bloomington. SR 67 experiences an increase in traffic over the No Build Condition between SR 46 west of Spencer to I-465. While daily traffic volumes continue to decline on I-70 west of SR 39 over the No Build Condition with tolls, traffic volumes increase on I-70 east of SR 39 with tolls at the 100% and 75% level (not for the 50% toll level). The four segments of I-70 with an undesirable LOS under the No Build Condition do not improve, and the I-70 segment from SR 39 to SR 267 with a LOS F further deteriorates for the 100% and 75% toll scenarios (but not the 50% toll scenario).

This type of analysis is sensitive to factors such as the toll rate, the time saved by using the tolled route, and individual users' value of time – that is, the amount users are willing to pay in order to save a given amount of travel time. Therefore, any analysis of traffic-related impacts involves a substantial degree of uncertainty.

Under the toll scenarios for Alternative 4C, the following corridors experience an increase in daily traffic volumes over the No Build Condition:

- *I-70 from SR 39 to I-465.* The LOS does not change from the No Build east of SR 267. For the 75% toll option, there is LOS E between SR 39 and SR 267(as compared to LOS F in the No Build; at the 100% toll option LOS F remains between SR 39 and SR 267.

- *Segments of SR 46 from west of Spencer to Maple Grove Road (Ellettsville) and SR 37 to SR 446 in Bloomington.* There would be a decline in LOS to B on one segment.

- *SR 67 from US 41 to SR 54 and from SR 46 west of Spencer to I-465.* There would be a drop in LOS to B on one segment.

- *College Mall Road/Sare Road from Rogers Road to SR 46.* There would be no drop in LOS.

- *Hillside Drive (in Bloomington) from High Street to SR 446*. There would be no drop in LOS.

- *3rd Street/Adams Street/Kirkwood Avenue (in Bloomington) from SR 37 to Walnut Street.* There would be no drop in LOS.

- *3rd Street/Atwater Avenue (in Bloomington) from College Avenue to College Mall Road* Traffic volumes on this route would increase up to 10%. The LOS drops one level for the segments between Walnut Street and High Street similar to the non-toll Build scenario, but does not drop to an undesirable LOS.

- *Rogers Street from Kirkwood Avenue to SR 46.* There would be no drop in LOS.

- *Old SR 37/Walnut Street from Hillside Drive to 7th Street.* The LOS would drop from A to B on one segment.

- *Bluff Road/Morgantown Road from Smith Valley Road to I-465.* While increases range from 3% to 47% (comparable to Alternatives 2C and 3C), there is no decline in the LOS over the No Build condition.

- *SR 135 from the Marion-Johnson County Line Road to I-465.* The drop of LOS from D to E on SR 135 from the Marion-Johnson County Line Road to Southport Road is considered undesirable.

- *US 31 from Smith Valley Road to I-465.* While the non-toll Build scenario improves LOS over the No Build Condition, the toll revenue scenarios do not improve the undesirable LOS of the No Build condition.

- *SR 144 from SR 37 to Whiteland Road and US 31 to I-65.* There would be no drop in LOS compared to the No Build Condition, but no improvement in the undesirable No Build condition.

- *Smith Valley Road from SR 135 to US 31.* There would be no improvement in the LOS F that would exist on this segment under the No Build condition.

- *Greenwood Road from US 31 to I-65.* There would be no improvement in the LOS E that would exist under the No Build condition.

- *Marion/Johnson County Line Road from SR 135 to US 31.* There would be no improvement in the LOS F that would exist under the No Build condition.

- *Southport Road from SR 37 to US 31.* The increase in traffic volume would result in a decline of LOS to C, which is comparable to the non-toll Build scenario; it would also result in a worsening of the LOS F from US 31 to I-65.

- *SR 57 from the US 50 Bypass (Washington) to Old US 50 (Washington) and from SR 58 (Elnora) to SR 67 (southwest of Worthington).* There would be no decline in LOS.

- *US 231 from SR 164 (Jasper) to I-70.* There would be a decline in LOS to B on one segment near I-70, which remains within the desirable range.

5.1.3.3 Summary

In general, tolling on I-69 reduces the diversion of traffic from the existing network onto a Build Alternative. In some cases, where a Build Alternative incorporates a section of an existing facility, tolling increases traffic on other facilities compared to the No Build condition.

Overall, there would be congestion on the local road network under both the Build and No-Build conditions, for all Build alternatives and all toll and non-toll scenarios. The specific locations affected by traffic congestion would vary among the Build alternatives and also would vary for a given Build alternative depending on whether it is tolled.

In general, tolled alternatives that incorporate substantial sections of existing roadways have some potential to create added traffic on the local road network beyond that which would exist in the No Build. In some instances, the added traffic results in increased congestion and reduced level of service.

5.2 Environmental Justice

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” states that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." Pursuant to the Executive Order, FHWA has adopted FHWA Order 6640.23, "FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," dated December 2, 1998.

Chapter 5.4 of the Tier 1 FEIS identified minority populations and low-income populations in the 26-county Study Area. The Tier 1 FEIS states that none of the alternatives would have a disproportionately high or adverse effect on minority or low-income populations in the 26-county Study Area. In a comment letter on the Tier 1 DEIS, the USEPA concurred that "the initial environmental review shows that none of the alternatives would have a disproportionately high and adverse effect on minority and low-income populations in the Study Area." The Tier 1 FEIS also stated that additional Environmental Justice analysis would be provided in Tier 2 studies.

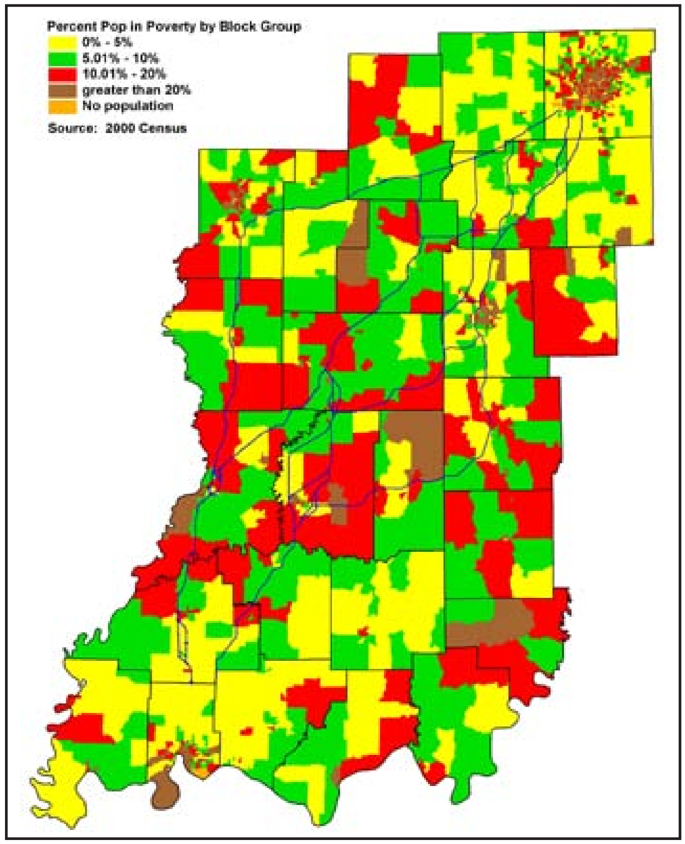

Figure 5.2-1: Percentage of Population in Poverty by Block Group

If this facility is built as a toll facility there would be no additional impacts to the minority populations within the 26-county Study Area. However, there could be additional impacts to low-income populations that were not considered in the Tier 1 FEIS. Four of the five alternatives considered in this Reevaluation have the potential for such impacts. The alternatives that provide for upgrading existing non-tolled SR 37 and US 41 would have an impact on low-income populations that currently do not have any out-of-pocket expense to use these existing facilities other than their out-of-pocket vehicle operating costs. Alternatives 1 and 2C would use portions of existing US 41. Alternatives 2C, 3C and 4C would use portions of existing SR 37. The alternatives or portions of the alternatives that are built on new terrain will have the minimal travel-related impacts to low-income populations if the facility is built as a toll road because existing non-toll routes would be maintained. Tier 2 NEPA studies for which tolling is an option will further examine impacts to low-income populations, and consider ways to minimize and/or mitigate those impacts.

Figure 5.2-1 (taken from the Tier 1 FEIS) shows the percentage of persons living in poverty, by census block groups. All alternatives considered in this Reevaluation pass through or near large areas with 10% or more of its population living in poverty. Areas with higher percentages of those living in poverty include portions of Gibson County (all alternatives), Knox County (Alternatives 1 and 2C), Sullivan county (Alternative 1), Daviess County (Alternatives 2C, 3C, 4B and 4C), Greene County (Alternatives 2C, 3C, 4B and 4C), Owen County (Alternatives 2C, 4B and 4C), Morgan County (Alternatives 2C, 3C, 4B and 4C), Martin County (Alternative 3C) and Monroe County (Alternative 3C).

5.3 Air Quality Impacts

When the Final Tier 1 EIS was approved, Vanderburgh County in the Evansville MPO Area and Marion County in the Indianapolis MPO Area were maintenance areas for the one-hour ozone National Ambient Air Quality Standards (NAAQS). Both MPOs had included the I-69 Tier 1 Alternative 3C alignment, interchange configuration and I-69 through traffic volumes in their Long Range Transportation Plans and had demonstrated air quality conformity of their Long Range Transportation Plans with the appropriate emissions budgets established in the State Implementation Plan (SIP) for Air Quality. I-69 was included in the MPO's plans as a non-tolled Interstate highway.

An air quality analysis was also performed for Alternatives 1, 2C, 3C, 4B and 4C in the Final Tier EIS demonstrating that ozone emissions from all the Build Alternatives were within the SIP budgets established for Vanderburgh County and Marion County.

For the Tier 1 Re-evaluation, the air quality analysis was redone using the same methodology as the Final Tier 1 EIS but with ISTDM Version 4. This analysis was performed for all four revenue scenarios: no toll, 50% toll, 75% toll, and 100% toll. As was the case with the Tier 1 FEIS analysis, this analysis indicated that the SIP budgets will not be exceeded.

The air quality analysis conducted for this Reevaluation was not a formal conformity analysis. Before the completion of the NEPA process and the approval of a Tier 2 Record of Decision (ROD) for a Tier 2 section, a conformity determination may need to be made for that section. These include conformity determinations with regard to air quality requirements (such as 8-hour standards for ozone and the PM 2.5 standards) that have come into effect since the Tier 1 ROD was issued. If a tolled alternative is selected in a Tier 2 section, conformity findings will be made for I-69 as a tolled facility. The two metropolitan areas that require conformity findings are the Indianapolis and Evansville areas. In addition, conformity will need to be demonstrated for Greene County and portions of Pike County.

5.3.1 Marion County Air Quality Impacts

In Marion County, the emissions generally increase as the tolls increase for each Build Alternative, except for Alternative 1 where tolls result in less freeway travel. The more effective the Build Alternative is in diverting traffic from non-freeway facilities, the greater the increase in emissions when tolls are imposed.

As can be seen in Table 5.3-1, the emissions are always greater for the Build Alternative than the No Build Alternative due to greater through traffic in Marion County from National I-69. However, the emissions for all Build Alternatives remain under the SIP budgets regardless of the revenue scenario. Further, there is less than a one percent (1%) difference between the lowest and highest emissions in Marion County for the Build Alternatives.

Table 5.3-1: Tier 1 Re-evaluation Marion County Air Quality

	2025 LRP	1				2C			
		Non-Toll	50% Toll	75% Toll	100% Toll	Non-Toll	50% Toll	75% Toll	100% Toll
VOC Emissions									
HPMS Adjusted Total (tons/day)	60.555	60.970	60.896	60.894	60.917	60.985	61.187	61.214	61.200
SIP Budget (tons/day)	71.700	71.700	71.700	71.700	71.700	71.700	71.700	71.700	71.700
Rank (low to high)		5	2	1	3	6	12	14	13
CO Emissions									
HPMS Adjusted Total (tons/day)	473.876	477.482	476.958	476.951	477.117	476.880	478.740	478.953	478.849
SIP Budget (tons/day)	521.600	521.600	521.600	521.600	521.600	521.600	521.600	521.600	521.600
Rank (low to high)		7	5	4	6	2	12	14	13
NOX Emissions									
HPMS Adjusted Total (tons/day)	44.895	45.110	45.033	45.031	45.051	45.403	45.419	45.439	45.426
SIP Budget (tons/day)	63.100	63.100	63.100	63.100	63.100	63.100	63.100	63.100	63.100
Rank (low to high)		4	2	1	3	10	12	14	13

Table 5.3-1: Tier 1 Re-evaluation Marion County Air Quality - Continued

	3C				4B				4C			
	Non-Toll	50% Toll	75% Toll	100% Toll	Non-Toll	50% Toll	75% Toll	100% Toll	Non-Toll	50% Toll	75% Toll	100% Toll
VOC Emissions												
HPMS Adjusted Total (tons/day)	60.989	61.257	61.259	61.277	60.993	60.990	61.019	61.020	60.969	61.237	61.275	61.263
SIP Budget (tons/day)	71.700	71.700	71.700	71.700	71.700	71.700	71.700	71.700	71.700	71.700	71.700	71.700
Rank (low to high)	7	16	17	20	9	8	10	11	4	15	19	18
CO Emissions												
HPMS Adjusted Total (tons/day)	476.895	479.249	479.278	479.406	477.632	477.618	477.840	477.849	476.764	479.113	479.395	479.313
SIP Budget (tons/day)	521.600	521.600	521.600	521.600	521.600	521.600	521.600	521.600	521.600	521.600	521.600	521.600
Rank (low to high)	3	16	17	20	9	8	10	11	1	15	19	18
NOX Emissions												
HPMS Adjusted Total (tons/day)	45.406	45.485	45.483	45.498	45.137	45.130	45.155	45.154	45.387	45.464	45.494	45.483
SIP Budget (tons/day)	63.100	63.100	63.100	63.100	63.100	63.100	63.100	63.100	63.100	63.100	63.100	63.100
Rank (low to high)	11	18	16.5	20	6	5	8	7	9	15	19	16.5

5.3.2 Vanderburgh County Air Quality Impacts

The Build Alternatives terminate at I-64 near the north Vanderburgh County line, and do not pass into Vanderburgh County. Thus, only external trips from the I-69 Evansville-to-Indianapolis project pass into Vanderburgh County. Except for Alternative 1, the emissions decrease as the tolls increase for each Build Alternative because of less total vehicle-miles of travel in Vanderburgh County and less interstate travel. In the case of Alternative 1, interstate travel increases with tolls off-setting the reduction in vehicle-miles of travel in Vanderburgh County. In general, the more effective the Build Alternative is in diverting traffic from other facilities north of Vanderburgh County, the less the increase in emissions when tolls are imposed because less external travel passes into Vanderburgh County.

As can be seen in Table 5.3-2, the emissions are always greater for the Build Alternative than the No Build Alternative due to greater through traffic in Vanderburgh County due to national I-69. However, the emissions for all Build Alternatives remain under the SIP budgets regardless of the revenue scenario.

There is less than a two percent (2%) difference between the lowest and highest emissions in Vanderburgh County for the Build Alternatives. Further, only the Alternative 2C non-toll revenue scenario and the Alternative 1 toll scenarios (plus the non-toll scenario for VOC emissions) exceed the Build Alternative with the lowest emissions by more than one percent (1%).

5.4 Noise Impacts

The prediction of future noise levels at receivers along the five alignments considered for the re-evaluation was conducted using the FHWA Traffic Noise Model (TNM 2.5) computer program. TNM 1.1 was used for the Tier 1 FEIS; TNM 2.5 was not available for use with the Tier 1 FEIS.

Although the alternatives for the Tier 1 Re-evaluation lack specific design detail, the TNM 2.5 model was utilized to perform a generic analysis to predict future hypothetical noise levels along the proposed "working" alignments. The primary purpose of the noise analysis in this Re-evaluation was to assess the predicted noise impacts of Alternatives 1, 2C, 3C, 4B and 4C under four traffic scenarios: non-toll, 50% toll, 75% toll, and 100% toll.

Table 5.3-2: Tier 1 Re-evaluation Vanderburgh County Air Quality

	2025 LRP	1				2C			
		Non-Toll	50% Toll	75% Toll	100% Toll	Non-Toll	50% Toll	75% Toll	100% Toll
VOC Emissions									
HPMS Adjusted Total (tons/day)	6.867	7.012	7.043	7.043	7.028	7.046	6.929	6.929	6.916
SIP Budget (tons/day)	10.910	10.910	10.910	10.910	10.910	10.910	10.910	10.910	10.910
Rank (low to high)		16	18.5	18.5	17	20	14	14	2
CO Emissions									
HPMS Adjusted Total (tons/day)	53.334	55.003	55.222	55.222	55.127	55.268	54.806	54.806	54.736
SIP Budget (tons/day)	77.940	77.940	77.940	77.940	77.940	77.940	77.940	77.940	77.940
Rank (low to high)		16	18.5	18.5	17	20	14.5	14.5	12
NOX Emissions									
HPMS Adjusted Total (tons/day)	8.159	8.521	8.553	8.553	8.545	8.567	8.514	8.514	8.509
SIP Budget (tons/day)	11.560	11.560	11.560	11.560	11.560	11.560	11.560	11.560	11.560
Rank (low to high)		16	18.5	18.5	17	20	14.5	14.5	13

	3C				4B				4C			
	Non-Toll	50% Toll	75% Toll	100% Toll	Non-Toll	50% Toll	75% Toll	100% Toll	Non-Toll	50% Toll	75% Toll	100% Toll
VOC Emissions												
HPMS Adjusted Total (tons/day)	6.929	6.918	6.918	6.913	6.921	6.917	6.917	6.927	6.921	6.917	6.917	6.927
SIP Budget (tons/day)	10.910	10.910	10.910	10.910	10.910	10.910	10.910	10.910	10.910	10.910	10.910	10.910
Rank (low to high)	14	7.5	7.5	1	9.5	4.5	4.5	11.5	9.5	4.5	4.5	11.5
CO Emissions												
HPMS Adjusted Total (tons/day)	54.766	54.658	54.658	54.661	54.722	54.579	54.579	54.648	54.722	54.579	54.579	54.648
SIP Budget (tons/day)	77.940	77.940	77.940	77.940	77.940	77.940	77.940	77.940	77.940	77.940	77.940	77.940
Rank (low to high)	13	8.5	8.5	5	10.5	2.5	2.5	6.5	10.5	2.5	2.5	6.5
NOX Emissions												
HPMS Adjusted Total (tons/day)	8.504	8.484	8.484	8.489	8.498	8.468	8.468	8.476	8.498	8.468	8.468	8.476
SIP Budget (tons/day)	11.560	11.560	11.560	11.560	11.560	11.560	11.560	11.560	11.560	11.560	11.560	11.560
Rank (low to high)	12	7.5	7.5	9	10.5	2.5	2.5	5.5	10.5	2.5	2.5	5.5

Although the alignments for each of the five alternatives are unchanged, traffic volumes anticipated for the non-toll, 50% toll, 75% toll and 100% toll scenarios differ from those used in the Tier 1 FEIS. Traffic volume, including its composition (proportions of cars, medium trucks, heavy trucks), is a key determining factor as to whether noise impacts may occur at any one location. The Tier 1 EIS noise analysis was based on 2025 design year traffic forecasts from the ISTDM Version 3. This re-evaluation is based on 2030 design year traffic volumes output from ISTDM Version 4. Therefore, for the purposes of equal comparison, predicted impacts for the "non-toll" scenario in the year 2030 were also re-assessed.

The various segments comprising each alternative were modeled based on appropriate typical sections[5] as shown within Appendix E of the Tier 1 FEIS. Separate roadways were used to model northbound and southbound traffic;

5 A typical section is a cross section whose elements remain consistent over a given length of highway. A typical section includes travel lanes, inside and outside shoulders, medians, and outside slopes.

however, northbound and southbound traffic volumes were assumed to be equally split for all vehicle classes in the absence of a more detailed directional breakdown. Each single northbound and southbound model roadway represented either two, three or four 12-foot lanes, depending on the typical section. Potential noise sensitive receivers included in the Southwest Indiana GIS dataset within 800 feet of the working alignment centerline were included in the model for each alternative as appropriate. Sites were generally classified as single-family residences, multi-family structures (i.e., apartments), churches, schools, hotels/motels, hospitals/health care facilities, businesses and recreational areas. Due to the length of each alternative, the large numbers of receivers, and lack of geometric detail (e.g., profile of the proposed roadway, current elevation of receiver), a number of assumptions were made for each model run:

- northbound and southbound roadways are on flat terrain
- receivers were vertically situated at-grade with the roadways
- I-69 is the sole source of highway noise traffic (no crossroads or potential frontage roads were included)
- all vehicle speeds = 70 mph
- building rows or tree zones do not shield any highway noise
- default ground type = lawn
- relative humidity = 50%
- temperature = 68°F

The US 641 bypass at Terre Haute marked the northern terminus of the noise analysis for Alternative 1. I-70 was the northern terminus for Alternative 4B. In other words, no potential receivers along the existing US641 or I-70 portions of these alternatives are included in the analysis. I-465 at Indianapolis was the northern terminus of the noise analysis for Alternatives 2C, 3C and 4C.

For the purposes of assessing potential highway noise impacts, the L_{Aeq}(h) descriptor measuring sound pressure levels in decibels is used. This descriptor quantifies the equivalent steady-state sound level containing the same acoustic energy as a time varying sound level over the course of an hour. Measurements are presented in A-weighted decibels, a metric which mimics the human ear's response to sound pressure levels at different frequencies.

Table 5.4-1: FHWA Noise Abatement Criteria

Activity Category	NAC L_{Aeq}(h)	Description of Activity Category
A	57 dBA (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 dBA (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches libraries, and hospitals.
C	72 dBA (exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	no NAC designated	Undeveloped lands.
E	52 dBA (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

The assessment of potential highway traffic-related noise impacts is accomplished by comparing the predicted future noise levels to the appropriate FHWA Noise Abatement Criteria (NAC) and existing noise levels. A noise level impact occurs when the predicted level approaches or exceeds the appropriate NAC level indicated in Table 5.4-1.

The resulting predicted L_{Aeq}(h) level for each receiver under each traffic volume scenario for each alternative (1, 2C, 3C, 4B, and 4C) were compiled and compared against the appropriate Noise Abatement Criteria (Category B or C) to determine the expected number of highway noise related impacts. Impacts to single-family and multi-family residences, as well as, schools, churches, hotels/motels, health care facilities, and recreation areas were assessed by the Category B 67 dBA NAC. Businesses were assessed against the Category C 72 dBA NAC.

Individual receivers predicted to experience highway noise impacts for the design year 2030 were subsequently mapped to show distribution and clustering. Based on general location and relative density of impacted receivers, inferences were made concerning the potential for noise abatement mitigation.

If a build alternative is selected a more thorough analysis identifying and quantifying impacted sites will be conducted in the subsequent Tier 2 studies.

5.4.1 Results for Tier 1 Re-Evaluation Analysis

The following summarizes the results for each of the toll options studied for Alternatives 1, 2C, 3C, 4B, and 4C. Each analysis focuses on the total number of single-family residences that are predicted to be impacted by highway noise (approach or exceed 67 dBA) and the approximate distance from the working alignment centerline at which such impacts begin to occur. The results will also identify specific non-residential sites, excluding businesses, where highway noise impacts are predicted to occur.

The total number of receivers that approach (within 1 dBA), equal or exceed the appropriate NAC are indicated on Table 5.4-2. Single-family residential impacts for each toll scenario and the five alternatives are illustrated on Figure 5.4-1. Individual apartment complexes, churches, schools, hotels/motels,

Table 5.4-2: Summary of Potential Highway Noise Related Impacts for I-69 Tier 1 Alternatives and Toll Options Based on 2030 Design Year Traffic Volume Forecasts

Alternative	Toll Options	Single Family Residences	Multiple Family Residences	Churches	Schools	Hotels/ Motels	Hospitals/ Health Care	Recreation Sites
Alt. 1	Non-toll	365	1	6	1	2	1	4
	50%	100	0	4	0	1	0	2
	75%	97	0	4	0	1	0	2
	100%	92	0	4	0	1	0	2
Alt. 2C	Non-toll	536	5	4	1	2	3	3
	50%	293	4	4	1	2	3	1
	75%	287	4	4	1	2	3	1
	100%	275	4	4	1	2	3	1
Alt. 3C	Non-toll	506	8	8	1	3	3	1
	50%	281	7	6	1	2	3	0
	75%	273	7	6	1	2	3	0
	100%	264	7	6	1	2	3	0
Alt. 4B	Non-toll	23	0	0	0	0	0	0
	50%	3	0	0	0	0	0	0
	75%	3	0	0	0	0	0	0
	100%	2	0	0	0	0	0	0
Alt. 4C	Non-toll	391	5	3	1	1	3	1
	50%	233	5	3	1	1	3	0
	75%	230	4	3	1	1	3	0
	100%	222	4	3	1	1	3	0

health care and recreation sites where highway noise impacts are predicted to occur are indicated on Table 5.4-3. Tables 1 through 5 of Appendix D, *Noise Distance Tables*, indicate the distance from the working alignment centerline for each interchange-to-interchange segment of each alternative that the 66 dBA L_{Aeq}(h) is predicted to occur.

Table 5.4-3: Potential Noise Sensitive Receivers along Tier 1 Alternatives Based on 2030 Design Year Traffic Volume Forecasts (excludes single family residential)

Receiver Name	County	1				2C				3C				4B				4C			
		Non-toll	50% toll	75% toll	100% toll	Non-toll	50% toll	75% toll	100% toll	Non-toll	50% toll	75% toll	100% toll	Non-toll	50% toll	75% toll	100% toll	Non-toll	50% toll	75% toll	100% toll
Apartments																					
Place Apartments	Vigo	x	--	--	--																
Wapehani Apartments	Monroe									x	x	x	x								
Brasswood Apartments	Monroe									x	x	x	x								
Bradford Apartments	Monroe									x	x	x	x								
Canterbury House Apartments	Monroe									--	--	--	--								
Arlington Park Apartments	Monroe									--	--	--	--								
Heather Heights Apartments	Morgan					x	--	--	--	x	--	--	--					x	x	--	--
Southfield Apartments	Morgan					x	x	x	x	x	x	x	x					x	x	x	x
Pines Apartments	Morgan					x	x	x	x	x	x	x	x					x	x	x	x
Williamsburg Apartments	Morgan					x	x	x	x	x	x	x	x					x	x	x	x
Lighthouse Landing Apartments	Marion					x	x	x	x	x	x	x	x					x	x	x	x
Churches																					
Nobles Church	Gibson																				
Enon Church	Gibson	x	x	x	x	x	x	x	x												
Kingdom Hall	Daviess									--	--	--	--	--	--	--	--	--	--	--	--
Fountain of Life United Pentecostal	Daviess									--	--	--	--	--	--	--	--	--	--	--	--
First Baptist Church	Knox	--	--	--	--	--	--	--	--												
Cornerstone Ministries	Knox	x	--	--	--	--	--	--	--												
Westside Church	Sullivan	--	--	--	--																
Church of God	Sullivan	x	--	--	--																
Souls Harbor Church	Sullivan	x	x	x	x																
Emmanuel Baptist Church	Sullivan	x	x	x	x																
Taylor Memorial Prayer-Chapel	Sullivan	x	x	x	x																
Sheppard of the Hills Wesleyan	Monroe									--	--	--	--								
Life Church	Monroe									x	x	x	x								
Calvery Baptist Church	Monroe									x	x	x	x								
United Pentecostal Church	Monroe									x	x	x	x								
New Testament Baptist Church	Morgan									x	--	--	--								
Martinsville Baptist Tabernacle	Morgan					x	x	x	x	x	x	x	x					x	x	x	x
First Church of the Nazarene	Morgan					x	x	x	x	x	x	x	x					x	x	x	x
Faith Church	Morgan					--	--	--	--	--	--	--	--					--	--	--	--

Table 5.4-3: Potential Noise Sensitive Receivers along Tier 1 Alternatives Based on 2030 Design Year Traffic Volume Forecasts (excludes single family residential) - Continued

Receiver Name	County	1				2C				3C				4B				4C			
		Non-toll	50% toll	75% toll	100% toll	Non-toll	50% toll	75% toll	100% toll	Non-toll	50% toll	75% toll	100% toll	Non-toll	50% toll	75% toll	100% toll	Non-toll	50% toll	75% toll	100% toll
Prince of Peace Lutheran Church	Morgan					--	--	--	--	--	--	--	--					--	--	--	--
Northside Christian Church	Monroe									x	--	--	--								
Glenns Valley United Methodist	Marion					x	x	x	x	x	x	x	x					x	x	x	x
Schools																					
Fort Branch Community School	Gibson	--	--	--	--	--	--	--	--												
North Central High School	Sullivan	x	--	--	--																
Bloomington North High School	Monroe									--	--	--	--								
Martinsville High School	Morgan					x	x	x	x	x	x	x	x					x	x	x	x
West Grove Elementary	Morgan					--	--	--	--	--	--	--	--					--	--	--	--
Hotels/Motels																					
Baymont Hotel at I-64 Interchange	Gibson	x	x	x	x	x	x	x	x												
Lodge of the Wabash at Vincennes	Knox	--	--	--	--	--	--	--	--												
Comfort Suites at Vincennes	Knox	--	--	--	--	--	--	--	--												
Super 8 at Carlisle	Sullivan	x	--	--	--																
Days Inn at Sullivan	Sullivan	--	--	--	--																
Rodeway at Bloomington	Monroe									x	--	--	--								
Hill View at Martinsville	Morgan					--	--	--	--	x	x	x	x					--	--	--	--
Super 8 at Martinsville	Morgan					x	x	x	x	x	x	x	x					x	x	x	x
Hospitals/Health Care																					
Carlisle Medical Center	Sullivan	x	--	--	--																
Heritage Home Health	Morgan					x	x	x	x	x	x	x	x					x	x	x	x
Grandview Convalescent Center	Morgan					x	x	x	x	x	x	x	x					x	x	x	x
Center for Behavioral Health	Morgan					x	x	x	x	x	x	x	x					x	x	x	x
Recreation																					
Jack Bishop Park	Gibson	x	--	--	--	x	--	--	--												
Pyramid Mound Park	Knox	x	x	x	x	x	x	x	x												
VFW Post 1157	Knox	--	--	--	--	--	--	--	--												
Vincennes Elks Country Club	Knox	--	--	--	--	--	--	--	--												
New Vision RV Park	Knox	x	x	x	x																
Shelburn Community Park	Sullivan	x	--	--	--																
Martinsville Country Club	Morgan					--	--	--	--	--	--	--	--					--	--	--	--
Whispering Meadows Riding Stables	Morgan					x	--	--	--	x	--	--	--					x	--	--	--

Empty cells indicate that the designated receiver is not located along the specific alignment.

-- Indicates that the receiver is located along the specific alignment, but L_{Aeq}(h) levels do not approach or exceed 67 dBA NAC.

x Indicates that the receiver is located along the specific alignment and L_{Aeq}(h) levels approach or exceed the 67 dBA NAC.

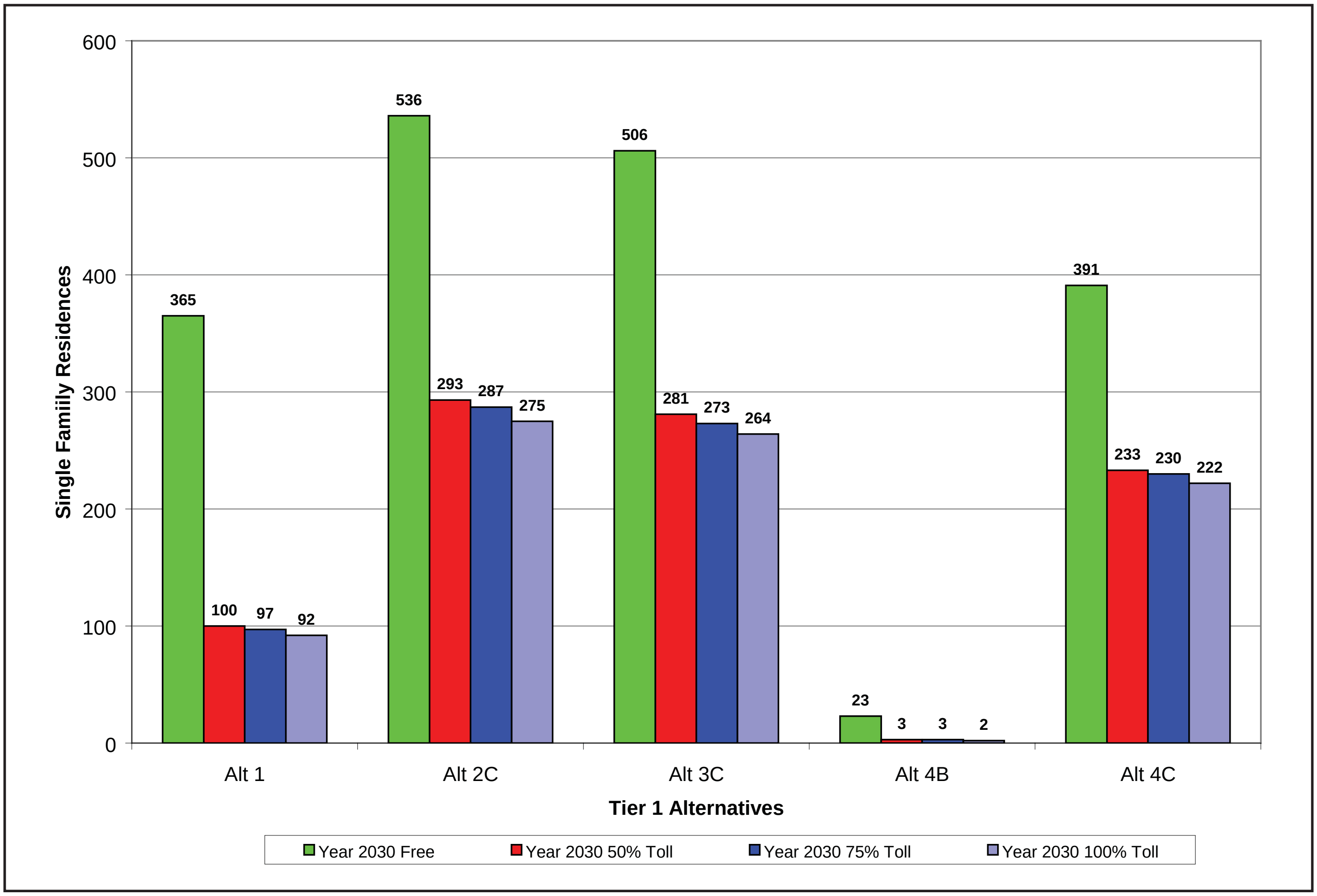

Figure 5.4-1 – I-69 Tier 1 Alternatives Re-Evaluation Number of Potentially Impacted Single Family Residences

Alternative 1

Alternative 1 follows US41 up through the towns of Fort Branch, Vincennes, Oaktown, Carlisle, Sullivan, Shelburn and Farmersburg on its way to the SR641 bypass around the southeast side of Terre Haute.

Under the non-toll scenario the forecasted traffic volumes for this alignment indicates the Category B NAC of 67 dBA would be approached at a minimum distance of 340 feet and maximum distance of 370 feet from the working alignment centerline. It is estimated that 365 single family residential receivers would be impacted.

Due to the reduction in the forecasted traffic volumes for the 50%, 75% and 100% toll options, predicted single family impacts are expected to be considerably lower under the tolled scenarios: 100, 97 and 92 residences, respectively. The minimum distance at which impacts are predicted to occur is 200 feet, while the maximum distance is 240 feet. The greatest concentration of potential residential impacts would occur where the alignment follows existing US41 through the towns of Fort Branch, Princeton, Patoka, Vincennes, Oaktown, Carlisle, Sullivan, Shelburn, Farmersburg and Youngstown.

In addition to residential properties, there are six churches in close proximity to US41 which are expected to experience levels of 66 dBA or greater under the non-toll scenario. Two of these would not be impacted under the 50%, 75%

and 100% toll options. North Central High School at Farmersburg is the only school identified along US41 for which highway noise may be a concern under the non-toll scenario. Fort Branch Community School west of US41 on the south side of Fort Branch is located over 500 feet from the existing centerline, placing it beyond anticipated 66 dBA levels for all of the toll scenarios. Two hotels/motels along US41 would be affected; however, only the Baymont at the I-64 interchange might be impacted under the 50%, 75% and 100% toll options. The Carlisle Medical Center (an out-patient clinic) would experience noise levels above 66 dBA for the non-toll scenario, but not the toll options. Although green space at the Sullivan County Community Hospital east of US41 is within an area where noise impacts will occur, the hospital structures are estimated at over 400 feet from the centerline and no such impacts are expected where external activities take place. Outdoor private or public recreational facilities immediately adjacent to US41 where noise impacts may occur include Jack Bishop Park at Princeton, the Pyramid Mound site at Vincennes (Knox County Parks and Recreation Department), an RV camping park along US41 outside of Oaktown and the Shelburn Community Park in Sullivan County.

This analysis does not include highway noise related impacts along the SR641 bypass at Terre Haute and I-70 from Terre Haute to Indianapolis since these are independent committed projects.

Alternative 2C

The Alternative 2C analysis included 2,346 single family residences, 536 of which are predicted to experience highway noise related impacts under the non-toll scenario.

Under the non-toll scenario, the forecasted traffic volumes for this alignment indicates the Category B NAC of 67 dBA would be approached at a minimum distance of 240 feet from the working alignment centerline where truck and auto volumes are forecast to be the lowest (US231 to SR37), and at a maximum distance of 400 feet, north of Southport Road in Marion County.

For the toll scenarios, noise impacts from I-69 are expected to be reduced. Single family residence impacts are expected to be nearly half that of the non-toll scenario for the 50% toll (293 residences), 75% toll (287 residences) and 100% toll (275 residences) options. For all toll options, the minimum distance at which noise levels are expected to reach 66 dBA is 170 to 180 feet (between SR59 and SR157) and the maximum distance is 320 feet, north of Southport Road. The alignment of Alternative 2C follows along SR37 northward through Martinsville where several high density residential clusters are located immediately adjacent to the existing facility principally between SR39 and SR252. An additional high density residential area along SR37 includes the recently developed Southern Dunes community abutting SR37 in Marion County. The analysis also identified five apartment complexes along SR37 in Morgan and Marion counties that would experience noise levels of 66 dBA or greater for the non-toll scenario. For the 50%, 75% and 100% toll scenarios, four apartment complexes would be affected.

There are four churches along Alternative 2C that are predicted to experience highway noise levels that approach or exceed the 67 dBA NAC for all four scenarios. Portions of the Martinsville High School property within 300 feet of the centerline would also experience noise impact levels. It should be noted that the portion of the school property within 300 feet of Alternative 2C is currently utilized for parking or open space exclusively, and that external activity areas (i.e., athletic fields) associated with the high school are located 500 feet or more from the centerline and are, for the most part, shielded by the school buildings. There are two hotels/motels that may be affected by Alternative 2C, one at I-64 and the other at Martinsville. Three health care facilities (Heritage Home Health, Grandview Convalescent Center and Center for Behavioral Health) are also predicted to experience noise levels approaching or above the 67 dBA NAC for the non-toll scenario and all toll options. However, exterior activities at these sites is minimal to none. Three recreational facilities (Jack Bishop Park, Pyramid Mound Park and Whispering Meadows Riding Stables) are expected to experience noise impacts under the non-toll option. The reduction in traffic volumes under the 50%, 75% and 100% toll options is of sufficient magnitude that only Pyramid Mound Park is predicted to experience levels of 66 dBA or greater.

Alternative 3C

The Alternative 3C analysis included 2,276 single family residences, 506 of which are predicted to experience highway noise related impacts under the non-toll scenario.

Under the non-toll scenario, the forecasted traffic volumes for this alignment indicates the Category B NAC of 67 dBA would be approached at a minimum distance of 250 feet from the working alignment centerline where truck and auto volumes are forecast to be the lowest (between US50 and US231), and at a maximum distance of 400 feet north of Southport Road in Marion County.

For the toll scenarios, noise impacts from I-69 are expected to be reduced. Single family residence impacts for the 50% toll (281 residences), 75% toll (273 residences) and 100% toll (264 residences) options are nearly half of that expected for the non-toll scenario. For all toll options, the minimum distance at which noise levels are expected to reach 66 dBA is 170 to 180 feet (between SR356 and US231) and the maximum distance is 320 feet, north of Southport Road. The alignment of Alternative 3C follows along SR37 from Bloomington northward through Martinsville up to I-465. As with Alternative 2C there are several high density residential clusters located immediately adjacent to the existing facility. Most of these occur from Martinsville north up to I-465 including the recently developed Southern Dunes community abutting SR37 in Marion County. From Bloomington to Martinsville most noise impacts are to isolated residences or relatively small clusters along SR37, with one exception. The Van Buren Park neighborhood along the west side of SR37 is comprised of closely spaced homes for a distance of approximately 800 feet. All front row residences are predicted to be impacted under the non-toll traffic conditions. Although only a few of these are also expected to be impacted under the 50%, 75% and 100% toll options, a more detailed analysis may prove otherwise. The analysis also identified eight apartment complexes along SR37 in Monroe, Morgan and Marion counties that would experience noise levels of 66 dBA or greater for the non-toll scenario. Three of the apartments are in Bloomington and four are in Martinsville. All but one of these apartment complexes are also expected to be affected by the 50%, 75% and 100% toll scenarios.

In addition to residences, there are eight churches in Monroe, Morgan and Marion counties where noise levels are predicted to approach or exceed the 67 dBA NAC. Two of these are not anticipated to be affected by any of the toll options. As described for Alternative 2C, the eastern edge of Martinsville High School will also experience 66 dBA levels. There are three hotels/motels anticipated to be affected by the non-toll scenario, one at Bloomington and two at Martinsville. Under the 50%, 75% and 100% toll options, only the Martinsville hotels/motels would be affected. The same three health care facilities identified for Alternative 2C at Martinsville would also be potential noise sensitive receivers impacted by Alternative 3C under all toll options. Potential noise-related impacts to recreational sites include Whispering Meadows Riding Stables, but only under traffic conditions forecasted for the non-toll scenario.

Alternative 4B

Alternative 4B is an all new terrain alignment (does not follow along US41 or SR37) and as such there were only 473 single family residences included in the analysis.

Under the non-toll scenario, Alternative 4B is predicted to produce L_{Aeq}(h) levels above 66 dBA at 23 homes. These impacts occur exclusively at individual widely scattered rural residences or small loosely grouped clusters at road crossings in the Washington area. Non-toll forecasted traffic volumes would potentially result in noise impacts at a minimum distance of 240 feet from the working alignment centerline where truck and auto volumes are forecast to be the lowest (between SR57 and SR67), and at a maximum distance of 280 feet between I-64 and SR68.

For the toll scenarios, noise impacts from I-69 are expected to be reduced. Due to the greatly reduced forecasted traffic volumes (especially trucks) for the 50%, 75% and 100% toll options, single family residential impacts are limited to just 3, 3 and 2, respectively. For all toll options, the minimum distance at which noise levels are expected to reach 66 dBA is 170 to 180 feet (between US50 and SR54) and the maximum distance is 190 to 200 feet (between I-64 and SR68). This alignment is not within close proximity to any multi-family residential dwellings.

Two churches at Washington in Daviess County were included in the analysis, but neither are predicted to experience noise levels of 66 dBA or greater with the non-toll scenario or the 50%, 75% and 100% toll options. There were no schools, hotels/motels, health care facilities or recreation sites along this alternative that were analyzed.

This analysis does not include highway noise related impacts along I-70 from the Alternative 4B tie-in to I-465 at Indianapolis.

Alternative 4C

Alternative 4C is also on all new terrain alignment up to SR37 at Martinsville. However, because the alignment follows SR27 from Martinsville to I-465 there were 1,704 single family residences included in the analysis.

Under the non-toll scenario, Alternative 4C is predicted to produce L_{Aeq}(h) levels above 66 dBA at 391 homes. As with Alternative 2C many of these would occur within Martinsville and other high density residential areas such as Southern Dunes in Marion County. Non-toll forecasted traffic volumes would potentially result in noise impacts at a minimum distance of 230 feet from the working alignment centerline where truck and auto volumes are forecast to be the lowest (between US231 and SR67), and at a maximum distance of 400 feet, north of Southport Road.

For the toll scenarios, noise impacts from I-69 are expected to be reduced. Anticipated single family residential impacts for the 50% (233 residences), 75% toll (230 residences) and 100% toll (222 residences) options are approximately 60%, 59% and 57% that of the non-toll scenario respectively. For all toll options, the minimum distance at which noise levels are expected to reach 66 dBA is 170 feet (between SR58 and SR67) and the maximum distance is 320 feet, north of Southport Road. As with Alternative 2C, noise impacts are anticipated at five multi-family residential properties (i.e., apartments) in Morgan and Marion counties under the non-toll scenario. For the 50%, 75% and 100% toll options, noise impacts are expected at four apartment complexes.

Three of the six churches analyzed along Alternative 4C are expected to experience highway noise impacts of 66 dBA or greater for the non-toll scenario, as well as the 50%, 75% and 100% toll options. As with Alternative 2C, portions of the Martinsville High School property within 300 feet of the centerline would also experience noise impact levels. Again, the portion of the school property within 300 foot of Alternative 2C is currently utilized for parking or open space exclusively, and external activity areas (i.e., athletic fields) associated with the high school are located 500 feet or more from the centerline and are, for the most part, shielded by the school buildings. Only one of the two hotels/motels at Martinsville analyzed for this alignment are predicted to experience levels at or above 66 dBA for the non-toll and all toll options. Three health care facilities (Heritage Home Health, Grandview Convalescent Center and Center for Behavioral Health) are also predicted to experience noise levels approaching or above the 67 dBA NAC for the non-toll and all toll scenarios. However, exterior activities at these sites are minimal to none. Potential noise-related impacts to recreational sites include Whispering Meadows Riding Stables, but only under traffic conditions forecast for the non-toll scenario.

5.4.2 Alternatives Noise Impact Comparison

Under the non-toll scenarios, Alternatives 2C and 3C are predicted to have the greatest number of single-family residential noise impacts (over 500) based on FHWA Noise Abatement Criteria (see Table 5.4-1, and Figure 5.4-1). The number of single-family residential noise impacts expected for Alternatives 1 and 4B are notably less (between 350 and 400) than those of Alternatives 2C and 3C. Because of its exclusively rural alignment, Alternative 4B would have fewer residential impacts (23 residences).

Due to smaller traffic levels, the 50%, 75% and 100% toll options of Alternatives 2C, 3C, and 4C have notably fewer numbers of single-family residences expected to be impacted by highway noise. For Alternative 2C, residential impacts associated with the 50%, 75% and 100% toll options are predicted to be between 275 and 293. For Alternative 3C, residential impacts for the toll options are predicted to be between 264 and 281. For Alternative 4C, residential impacts for the toll alternatives are predicted to be between 222 and 233. For Alternative 1, the number of single-family residences predicted to be impacted under the toll options are between 92 and 100. For Alternative 4B, only 2 – 3 residences are predicted to have noise impacts under the various toll options.

For all alternatives, the differences between the number of single-family residences impacted under the 50%, 75% and 100% toll options are minimal. For Alternatives 1, 2C, 3C and 4C the 100% toll option has between 5 and 12 fewer predicted residential impacts than the 75% toll option and only 8 to 18 fewer than that for the 50% toll option.

5.4.3 Mitigation

Once highway noise impacted sites have been identified they must be further evaluated to determine whether abatement is both feasible and reasonable. Abatement measures recommended by the FHWA in 23 CFR 772 include

- Traffic control measures (TCM) such as traffic control devices and signing to prohibit certain vehicle types, modified speed limits, and exclusive lane designations.
- Alteration of horizontal and/or vertical alignments
- Acquisition of real property to serve as a buffer zone, thus preventing future impacts from new development.
- Noise insulation of public use or non-profit institutional structures.
- Construction of highway noise barriers (inside or outside of right-of-way).

Potential mitigation in the design phase should take into consideration shifting of alignments away from densely populated neighborhoods, subdivisions or planned communities, if at all possible. In hillier terrain, changes in the roadway profile may assist in reducing predicted noise levels at impacted sites. When such measures are not possible the use of noise barrier walls will be considered.

INDOT policy considers abatement to be feasible if it is structurally and acoustically possible to reduce predicted noise levels at a specific receiver by at least 5 dBA. Furthermore, INDOT considers abatement reasonable only if such a measure is prudent based on the following:

- The number of receivers that will experience a benefit of at least 5 dBA at the noisiest hour through implementation of the abatement.

- The cost of abatement on a benefited receiver basis and on a project level basis.

- The severity of existing and future traffic noise levels. Severity is determined by comparing the decibel difference between the predicted level and existing level at a site to that of the decibel difference between the predicted level and the criteria level.

- The timing of development near the project. The state considers it appropriate to give more consideration for development that occurs before initial highway construction.

- The views of noise impacted residents. Although noise barrier walls offer adjacent residents a reduction in highway-related noise levels, negative impacts associated with these walls such as unsightliness, vandalism, degradation by weather, poor air circulation, shortened daylight, reduced safety, and restriction of access for emergency vehicles can be prohibitive in the eyes of the public under certain circumstances.

INDOT policy states that an acceptable cost for a noise barrier wall is $20,000 to $30,000 per benefited receiver as determined by applying a square footage cost to the total square footage of the wall required to achieve the necessary 5 dBA reduction. In rural areas where the residences are widely scattered the construction of short noise barriers for individual residences or tiny clusters is typically not cost effective and therefore may not be a reasonable solution.

Residential receivers that were predicted to be impacted for the each of the five alternatives under each tolling scenario were spatially plotted to indicate their relative distribution along the alignments and any clustering. Although the Tier 1 level noise analysis makes no attempt to analyze and determine where barrier walls would be required or whether they meet the feasible and reasonable criteria; a basic evaluation using field verified topographic data was conducted to locate areas where residential receivers appear to be of sufficient density and proximity to the proposed working alignment to warrant further evaluation. Table 5.4-4, on the following page, provides a listing of such locations. This list is not intended to be all-inclusive, yet serves to show the relative potential need for barrier mitigation for each of the alternatives as a non-toll scenario or under the three tolling scenarios. Additional detailed analyses may conclude that some of these areas do not meet the criteria and/or may reveal other areas not listed here which do require mitigation.

Under the Alternative 1 non-toll scenario there would be several locations along existing US 41 where impacts occur and barriers may be warranted. Due to the magnitude of the traffic reductions under the 50%, 75% and 100% tolling options, the majority of these same locations would either not have noise impacts, or the number of impacted residences would likely be greatly reduced to the point where barrier mitigation would not likely be an appropriate solution.

For the Alternative 2C non-toll scenario, there are also a number of sites along US 41 (8 locations) and along SR 37 in Morgan and Marion counties (at least 11 locations) where barriers may need to be evaluated. Again, due to the reduction in predicted traffic volume under the toll options, many of the sites along US 41 would not be expected to meet barrier criteria. Conversely, most of the areas along SR 37 from Martinsville up to I-465 that are candidates for barriers under the non-toll scenario may also warrant consideration under the toll scenarios.

For the new alignment portion of Alternative 3C up to Bloomington, there are no areas identified where barriers would likely need to be evaluated. Along SR 37 through Bloomington, two areas were identified where barriers should be considered under the non-toll scenario. Due to the magnitude of the forecasted traffic reductions under both toll options, one of these Bloomington locations may not include enough impacted residences to make barrier mitigation reasonable. The potential for barrier consideration on Alternative 3C along SR 37 from Martinsville to I-465 is essentially the same as that for Alternative 2C.

Table 5.4-4: Potential Residential Sites of Noise Barrier Consideration along Tier 1 Alternatives

City or Town	Description	1				2C				3C				4B				4C			
		Non-toll	50% Toll	75% Toll	100% Toll	Non-toll	50% Toll	75% Toll	100% Toll	Non-toll	50% Toll	75% Toll	100% Toll	Non-toll	50% Toll	75% Toll	100% Toll	Non-toll	50% Toll	75% Toll	100% Toll
Fort Branch	west side of existing US41 from CR800S to SR168	x	x	x	x	x	x	x	x												
	west side of existing US41 from SR168 to CR650S	x				x															
Princeton	west side of existing US41 south of CR50S	x				x															
Patoka	east side of existing US41 south of Main Cross St.	x				x															
Vincennes	east side of Old US41 between Elkhorn Rd. and Brown Rd.	x				x															
	east & west side of existing US41 south of SR61	x				x															
	east & west side of existing US41 north of SR61	x				x															
	east side of existing US41 from Bruceville Rd. to US41/US50 interchange	x				x															
Carlisle	east side of existing US41 north and south of Ledgerwood St.	x																			
Shelburn	east & west side of existing US41 from CR500N to CR575N	x	x	x																	
Shelburn to Farmersburg	west side of existing US41 north & south of Burnett Dr.	x																			
Farmersburg	east & west side of existing US41 south of Cyrus St. & CR1175N	x																			
	east & west side of existing US41 north of Cyrus St. & CR1175N	x																			
Terre Haute	east side of existing US41 from Dallas Dr. to Eaton Dr.	x																			
Bloomington	west side of existing SR37 at Van Buren Park									x											
	east side of existing SR37 near W. Evergreen Dr.									x	x	x	x								
Martinsville	north side of existing SR37 east of SR39 interchange					x				x								x			
	north & south side of existing SR37 from Burton Ln. to Ohio St.					x	x	x	x	x	x	x	x					x	x	x	x
	north side of existing SR37 from Ohio St. to Industrial Dr					x	x	x	x	x	x	x	x					x	x	x	x
	east & west side of existing SR37 south of SR252					x	x	x	x	x	x	x	x					x	x	x	x
East of Waverly	west side of existing SR37 south of Banta Rd.					x				x								x			

Table 5.4-4: Potential Residential Sites of Noise Barrier Consideration along Tier 1 Alternatives - Continued

City or Town	Description	1				2C				3C				4B				4C			
		Non-toll	50% Toll	75% Toll	100% Toll	Non-toll	50% Toll	75% Toll	100% Toll	Non-toll	50% Toll	75% Toll	100% Toll	Non-toll	50% Toll	75% Toll	100% Toll	Non-toll	50% Toll	75% Toll	100% Toll
Northeast of Bluffs	west side of existing SR37 north of Stones Crossing Rd.					x	x	x	x	x	x	x	x					x	x	x	x
West of Smith Valley	east side of existing SR37 south of Smith Valley Rd.					x				x								x			
Southern Dunes Development	west side of existing SR37 south of County Line Rd.					x	x	x	x	x	x	x	x					x	x	x	x
Glenns Valley	east side of existing SR37 north of Wicker Rd.					x	x	x	x	x	x	x	x					x	x	x	x
Southern Dunes Development	west side of existing SR37 south of Southport Rd.					x	x	x	x	x	x	x	x					x	x	x	x
Lighthouse Landing Apts.	west side of existing SR37 south of Banta Rd.					x	x	x	x	x	x	x	x					x	x	x	x

Note: Subsequent detailed Tier 2 studies may conclude that some of these areas do not meet the feasible and reasonableness criteria for noise barrier wall abatement and/or may reveal other areas not listed here which do meet the requirements.

Because of the relatively small number and scattered distribution of predicted residential noise impacts along Alternative 4B, the use of barriers for abatement would not be anticipated at any location.

The potential for barrier consideration on Alternative 4C along SR 37 from Martinsville to I-465 would be essentially the same as that for Alternative 2C.

Highway noise abatement extends beyond construction through coordination with local officials, planning commissions and zoning boards to insure the compatibility of the transportation system with future residential and community land development. Providing information to officials to identify locations susceptible to noise impacts near existing or proposed highways can help to direct the development of property along roadways to the best suited land use. In simplest terms, local officials should be kept informed of the noise environment associated with the highway so as to plan that new residential development be located at an appropriate distance from such facilities whenever possible. Estimates of future noise levels at various distances from existing or proposed roadways will also be of use to delineate areas of developed or undeveloped properties which should remain as noise buffer zones or that may require special noise protective measures if development is pursued.

5.5 Indirect and Cumulative Impacts

The Tier 1 FEIS included an analysis of indirect and cumulative impacts for the Build Alternatives. Indirect impacts to key resources, which included farmland, forests, and wetlands, were identified in areas that had the highest probability of being developed. These areas included the immediate vicinity of the highway near proposed interchanges, as well as in other areas suited for development within the 26-county study area. Building this facility as a toll road is anticipated to result in less secondary development than would accompany a non-toll facility, resulting in fewer indirect impacts. As was formally modeled in the Tier 1 FEIS, secondary development is a result of increases in employment.

These new jobs in turn attract additional residents. There is additional secondary development resulting from the construction of buildings for additional residences, as well as for additional employment locations. As described in Section 3.4.2 (see especially Table 3.5), employment increases under the various toll scenarios generally are 60 – 75% of those under non-toll scenarios.

Therefore, it is expected that the indirect and cumulative impacts will be slightly less than those shown in the Tier 1 FEIS if I-69 is built as a toll facility. The cumulative impacts shown in the Tier 1 FEIS may be regarded as a "worst case" for those alternatives considered in this Reevaluation.

5.6 Energy Impacts

For the Tier 1 Re-evaluation, the energy consumption was redone using the same methodology as the Final Tier 1 EIS, but with the vehicle-miles of travel (VMT) for the No Build and Build Alternatives for the three revenue scenarios from the ISTDM version 4.

As can be seen in Table 5.6-1, with the exception of Alternative 4B for the 50% toll scenario, the excess energy consumption over the No Build Condition always increases from the free revenue scenario to the 100% toll scenario because traffic is shifted from freeways to facilities involving interrupted traffic (signal or stop sign) flow and congested traffic flow. For the 50% toll scenario, excess energy consumption is less than the other revenue scenarios except for Alternative 1 where the 75% toll scenario is less. For the 75% toll scenario, excess energy consumption may be more or less than the other revenue scenarios due to more moderate speeds that consume less fuel than freeways or to modest traffic shifts to facilities involving interrupted traffic flow and congested traffic flow.

For the No Build Condition in the year 2030, the annual fuel consumption is 3,317,204 (in millions of BTUs). Thus, the fuel consumption for Alternative 2C for the 100% toll scenario, which has the greatest increase in fuel consumption of the Build Alternatives, was only 0.181% greater than the No Build Condition.

Table 5.6-1: Tier 1 Re-evaluation Energy Consumption in Excess of the No Build Alternative in Year 2030

	Additional Energy Consumption		
Alternative	Daily Fuel in Gallons	Daily Fuel in BTU's (in millions)	Rank (low to high)
1A Free	13,825	1,696	4
1A 50% Toll	3,511	390	3
1A 75% Toll	2,987	327	2
1A 100% Toll	25,610	3,349	12
2C Free	37,848	4,656	14
2C 50% Toll	21,249	2,517	7
2C 75% Toll	46,781	5,917	19
2C 100% Toll	47,399	6,004	20
3C Free	40,170	4,909	16
3C 50% Toll	23,649	2,795	10
3C 75% Toll	24,297	2,878	11
3C 100% Toll	46,731	5,887	18
4B Free	15,648	1,906	6
4B 50% Toll	(2,473)	(466)	1
4B 75% Toll	20,740	2,634	9
4B 100% Toll	19,887	2,527	8
4C Free	33,473	4,123	13
4C 50% Toll	16,460	1,895	5
4C 75% Toll	41,129	5,188	17
4C 100% Toll	38,694	4,881	15

5.7 Economic Impacts

In the Tier 1 FEIS, an assessment of economic impacts was made (in Section 5.5) of the effects which the changes in traffic patterns would have upon sales at existing businesses located along state highways on or near each alternative. Based upon various assumptions regarding the location of I-69[6], Table 5.7-1 shows the ranges of impacts in annual sales (for non-toll alternatives) for nearby business. It considered the trade-offs between reduced access to these businesses (due to traffic being diverted to a limited-access freeway) and increased traffic levels on I-69 (bringing greater numbers of potential customers to the vicinity of these businesses).

Given the reduction in traffic volumes for the various toll options, it is expected that the range of possible business sales impacts for each alternative would be narrower, but that alternatives would have the same relative performance. Accordingly, Alternatives 2C, 3C and 4C would have similar ranges of higher business sales increases, and Alternatives 1 and 4B would have a similar range of lower business increases.

Table 5.7-1: Range of Impacts on Nearby Roadside Business Sales

Level of Impact (Millions of 2001 Dollars)		
Alternative	Non-Adjacent	Adjacent
1	($7.30)	($7.30)
2C	$38.20	$337.30
3C	$39.30	$326.40
4B	($122.30)	$186.50
4C	($16.60)	$345.30
Data from Tier 1 FEIS, Table 5.5-1		

6 Data in Table 5.7-1 is taken from Table 5.5-1 in the Tier 1 FEIS. In this table, the "adjacent" scenario assumes that I-69 is build directly adjacent to existing two lane roads (such as SR 57 or SR 67). The non-adjacent scenario assumes that I-69 is built at least one-quarter mile from existing two-lane roads. In actual practice, various portions of I-69 will be adjacent or non-adjacent to other state highways. Accordingly, the estimates provided in Table 5.7-1 show the greatest possible range of business sales impacts; in actuality, business sales impacts will be somewhere between these two values.

6 Comparison of Alternatives

6.1 Introduction

This section provides a synthesis of the performance and cost information found in Section 3, as well as key impacts determined during the Tier 1 FEIS. Table 6-1 summarizes these key performance, cost and impact indicators. This section is organized as follows:

- Section 6.1, Key Findings of Tier 1 Reevaluation
- Section 6.2, Selection of a Preferred Toll Alternative

Table 6-1: Tolled Alternatives - Summary of Key Performance Measures and Environmental Impacts

	Alternative				
Criteria	1	2C	3C	4B	4C
Total Length (Miles)	154 - 156	146 - 147	142	142	142
Total Impact Length (Miles)	87-89	146-147	142	123	142
Total New Right-of-Way Impacted (acres)	1,850-2,370	5,750-5,960	5,860	6,150	6,420
Estimated Cost (billions of 2000 dollars)	1.00 - 1.25	1.78 - 2.05	1.95 - 2.05	1.22 - 1.28	1.65 - 1.74
Purpose & Need Peformance, 75% Benchmark Toll Option					
Indy-Evv Connection - Free-flow Travel Time Savings (min.)	12	23	25	20	23
Indy-Evv Connection - Typical Travel Time Savings (min.)	15	29	30	24	28
Accessibility - Increase in # of People Within 1 Hr of Indy	0	43,000	47,000	13,000	43,000
Accessibility - Increase in # of People Within 2 Hr of Indy	11,000	37,000	49,000	33,000	37,000
Accessibility - Increase in # of People Within 3 Hr of Indy	44,000	78,000	177,000	82,000	78,000
Accessibility - Cumulative # of People With New 1 Hr Access to Major Educational Inst	137,000	358,000	312,000	35,000	258,000
Accessibility - Increase in # of People within 1/2 Hour of Major Urban Area	5,000	4,000	7,000	2,000	3,000
National I-69 - Daily Truck-Hours Saved	1,700	1,000	2,500	600	0
Environmental Consequences					
Potential Relocations:					
Homes	264 - 335	299 - 360	390	156 - 165	261 - 274
Businesses	70 - 131	81 - 115	76	11	60
Farmland (acres)	1,410 - 1, 940	4,550 - 4,810	4,470	5,160	5,460
Prime Farmland (acres)	1,010 - 1,420	3,490 - 3,740	2,900	3,800	4,120
Forest (acres)	115 - 170	850 - 865	1,150	965	820
Estimated Core Forest Habitat (acres)	0	85	387	144	98
Wetlands (acres)	22 - 40	80 - 100	75	90	105
Floodplains Crossed (acres)	370 - 470	1,550 - 1,640	830	1,050	1,520

Source: Bernardin, Lochmueller & Associates. Estimated Cost and Purpose & Need Performance Measures from Section 3, Tier 1 Reevaluation. Other Measures and Impacts from Table 6-1, Tier 1 FEIS.

6.2 Key Findings of Tier 1 Reevaluation

This Tier 1 Reevaluation has provided important insights into the potential benefits and impacts of completing I-69 as a tolled highway. These key points are summarized below.

Benefits of Build Alternatives

- Tolling reduces the traffic volumes that would use I-69. The reduction in traffic volume on I-69 reduces some of the benefits of completing this new Interstate. For example, I-69 as a toll road would provide less congestion relief and less safety benefit, because more cars would remain on two-lane rural roads, city streets, and other non-access-controlled facilities – which have less capacity and higher crash rates than an Interstate. I-69 also would provide lower economic benefits, at least with regard to economic benefits that correlate directly to traffic volumes.

- In general, the reduction in benefits tends to compress the variation in performance of the Build Alternatives, without significantly altering the overall ranking. In particular, Alternative 3C generally still performs best across the range of performance measures, particularly on the core goals. Alternative 2C is closer to Alternative 3C overall, and out-performs 3C on some measures, but overall is still inferior to 3C. Alternative 1 is still a lower-performing alternative for most performance measures.

- The reduction in benefits for I-69 as a tolled Interstate would be offset, to some extent, by the ability to deliver those benefits sooner if I-69 is tolled. In fact, the main reason that INDOT is considering tolling is that tolling will provide an additional revenue source and therefore will allow I-69 to be completed more quickly. While the benefit of building I-69 "sooner" has not been quantified, it is reasonable to expect that I-69 could be completed years – and possibly decades – sooner as a toll road than as a non-toll road.

- The benefits of building I-69 as a toll road will depend, in part, on the toll rates charged for travel on I-69. In general, lower tolls will tend to attract higher traffic volumes onto I-69, which will tend to increase the benefits of I-69. Since toll rates and toll structures have not yet been determined, this Reevaluation considered a broad range of potential toll rates. This analysis showed that, particularly at higher toll levels, traffic volumes on I-69 could be greatly reduced. Based on this analysis, INDOT has committed to adopting an approach that considers both revenue needs and traffic management considerations.

- Some of the benefits of I-69 are largely unaffected by tolling. For example, I-69 as a toll road would provide essentially equivalent travel time savings to I-69 as a non-tolled road. In addition, I-69 would provide the same personal accessibility benefits, in terms of the number of additional people who would be located within a given travel time of major destinations in the Study Area.

- Not all of the benefits of completing I-69 are measurable. Estimates of economic benefits, in particular, are inherently difficult to measure. One of the greatest sources of economic development in Southwest Indiana in recent years has been the Toyota plant in Princeton, Indiana. Such developments can have an enormous economic impact, but cannot be predicted by economic models. Completing I-69 years earlier – as would be possible with tolling – would enhance Southwest Indiana's ability to attract major new employers of this kind. This potential advantage, while impossible to quantify, also has to be taken into account when considering tolling on I-69.

- In sum, while tolling will reduce the quantifiable benefits of I-69, the project will still deliver substantial benefits as a toll road. In addition, while the disparity in performance among the alternatives is somewhat compressed, Alternative 3C is still the best-performing alternative (and especially on core goals) and Alternative 1 continues to be a lower-performing on most performance measures.

Impacts of Build Alternatives

- The direct impacts from construction of I-69 are largely unaffected by tolling. Because I-69 would be constructed with fully electronic toll collection, there would be no toll plazas; tolls would be collected with overhead gantries, which could be constructed adjacent to the highway and would not require any additional right-of-way. With this type of toll collection, the footprint of tolled alternatives would be no greater than the footprint of non-tolled alternatives. In fact, because traffic may be lower on a toll road, it may be possible to reduce the number of lanes in some areas – and thereby reduce the project's impacts – if I-69 is constructed as a toll facility. (Specific decisions about the number of lanes needed in each Tier 2 section will be made in the Tier 2 studies.)

- Because the direct impacts of the Build Alternatives are largely unaffected by tolling, the key environmental factors considered in selecting Alternative 3C in Tier 1 remain valid. One of the most important factors in the choice of Alternative 3C was the fact that it caused the least impact on wetlands among the preferred alternatives in the Tier 1 FEIS. This factor was specifically cited in the Tier 1 FEIS as part of the basis for selecting Alternative 3C. Nothing in this Tier 1 Reevaluation changes the relative standing of the alternatives in terms of their wetlands impacts. This factor has substantial weight because of the permitting requirements under Section 404 of the Clean Water Act, which mandate selection of the practicable alternative that causes the least impact to the aquatic ecosystem.

- The principal change in environmental impacts under a tolled scenario is that a tolled I-69 increases traffic on some local roads (compared to the No Build condition). This increased traffic has the potential to cause noise impacts and to adversely affect the quality of life for residents and businesses along those roads. These impacts must be given careful consideration. However, there will be localized congestion at various points throughout the road network in the 26-county Study Area under all Build and No-Build scenarios. Moreover, INDOT will focus in Tier 2 on refining the tolling concepts to minimize traffic impacts on local roads.

- Another potential change is that tolling could cause adverse impacts on low-income users, who may have more difficulty affording the toll. The potential for an adverse impact on low-income populations has been acknowledged in this Tier 1 reevaluation. The potential impact is greatest in areas where a Build Alternative would convert an existing free route into a tolled facility (e.g., Alternatives 1 and 2C converting portions of US 41, and Alternative 2C, 3C, and 4C converting portions of SR 37). The magnitude of the adverse impact on low-income populations will depend on how tolling is implemented. Based on INDOT's commitment to adopt tolling strategies that consider both revenue needs and traffic management considerations, the potential for highly adverse effects on low-income populations appears to be low.

- Tolling may reduce the induced development (indirect effects) caused by the construction of I-69. Induced development is development that results from construction of a new transportation facility. As noted above in the discussion of benefits, this Tier 1 Reevaluation has found that economic benefits of I-69 would be reduced if I-69 is tolled. If economic benefits are reduced, that means the environmental impacts associated with economic development also would be reduced.

- The conclusion in the Tier 1 FEIS regarding Section 4(f) impacts would be unaffected by tolling. The Tier 1 FEIS found that all of the Build Alternatives had the potential to use Section 4(f) resources, and that they were all approximately equal in terms of the potential harm that they might cause to Section 4(f) resources. The Tier 1 FEIS also committed to avoiding, minimizing, and mitigating any use of Section 4(f) resources that may be identified along the selected corridor in Tier 2. With tolling, the locations of the alternatives would not change, and the footprint would not increase. Therefore, the basic conclusions in the Tier 1 FEIS regarding Section 4(f) impacts remain valid for the tolled alternatives.

- Overall, the conclusions of the Tier 1 FEIS regarding the environmental impacts of the Build Alternatives remain valid. In particular, the conclusions remain valid for the resources that are subject to regulation under Section 404 and Section 4(f) – the laws that have the potential to dictate selection of an alternative. To the extent that the impacts have changed, the changes primarily involve shifts in the distribution of traffic, noise, economic development, or other traffic-related impacts. Relative to the non-tolled scenario, these impacts would increase along roads that experience increased traffic volumes, and would decrease along I-69.

6.3 Selection of a Preferred Toll Alternative

Based on all of the information considered in this Tier 1 Reevaluation, FHWA and INDOT have concluded that Alternative 3C is the best alternative for completing I-69 as a toll road. The fundamental reasons for selecting Alternative 3C remain valid: it is the best-performing alternative overall; it has the lowest impacts on wetlands among the alternatives that satisfy basic project purposes; and it avoids the sensitive environmental sites that were of greatest concern to the environmental agencies. It also is important to note that, as with any Build Alternative, Alternative 3C includes a comprehensive mitigation package that effectively addresses the project's impacts on forests, streams, wetlands, and other resources.

Therefore, FHWA and INDOT are now identifying Alternative 3C as the preferred toll alternative for I-69. After providing an opportunity for comment by agencies and the public, FHWA intends to issue an Amended Tier 1 ROD approving consideration of toll options for Alternative 3C in the Tier 2 studies. This decision would allow both toll and non-toll options to be considered in the Tier 2 studies. The final decision about whether to build I-69 as a toll road would be made in Tier 2 studies. This allows for the best opportunity to create a tolling package which minimizes impacts and maximizes benefits at the local level, which could not be considered in a Tier 1 analysis.

This analysis also has concluded that no new significant impacts have been identified for a tolled facility in a Tier 1 level of analysis. The impacts which occur are not significant at this "big picture" scale and are similar among the alternatives. New impacts associated with traffic diversion and impacts on low income communities need to be analyzed at a detailed level appropriate for Tier 2 studies. It is believed that these impacts can be adequately addressed and mitigated.

As part of the Tier 2 studies, FHWA and INDOT will refine the basic tolling concepts presented in this Reevaluation. Every effort will be made to develop tolling concepts that minimize diversion of traffic to local roads. In addition, every effort will be made to minimize potential adverse effects on low-income communities. If adverse effects are found, the Tier 2 studies will consider appropriate mitigation.

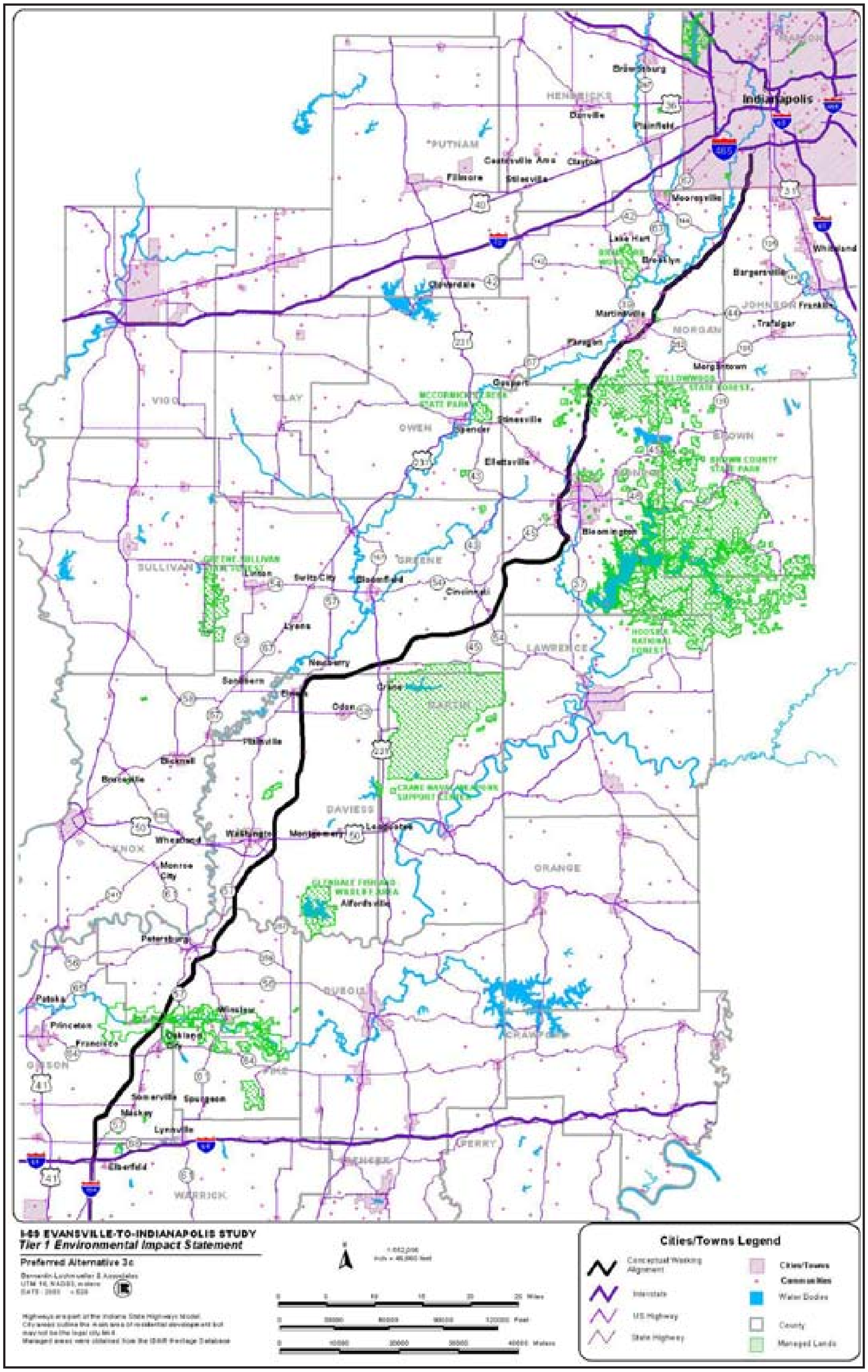

Figure 6-1 – Preferred Tolled Alternative 3C (same as FEIS Figure 6-15)

7 Other Issues

The Tier 1 Record of Decision (Tier 1 ROD) for this project was approved by FHWA on March 24, 2004. It is intended that this Reevaluation serve as the basis for determining whether imposing a toll on any of the alternatives requires FHWA to conduct a supplemental Tier 1 NEPA analysis. Following an opportunity for public review and comment on this Reevaluation, it is FHWA's intent to issue an Amended Tier 1 ROD that allows tolling to be considered as a funding option for I-69 in the Tier 2 studies. As part of an Amended Tier 1 ROD, it is also FHWA's intent to clarify several minor issues which have been identified since the issuance of the Tier 1 ROD. These issues will be discussed in the following sections.

- Section 7.1 – Interchanges and Access Roads Located Beyond the Tier 1 Corridor.
- Section 7.2 – Commitment Regarding New Terrain Interchanges in Southwest Monroe County
- Section 7.3 – Commitment to Bridge the Patoka River Floodplain

7.1 Interchanges and Access Roads Located Beyond the Tier 1 Corridor

Section 2.3.5 of the Tier 1 ROD states that "the range of alternatives considered in a Tier 2 study will be confined to the selected Alternative 3C corridor." In Tier 2 studies, footprints for a number of components of alternative alignments are specified. These components include:

- Alternative mainline
- Interchanges, including access restrictions on cross roadways
- Grade separations
- Access roads

Figure 7-1 shows the footprint of Alternative 1-S3 in Section 1, including an interchange at SR 68.

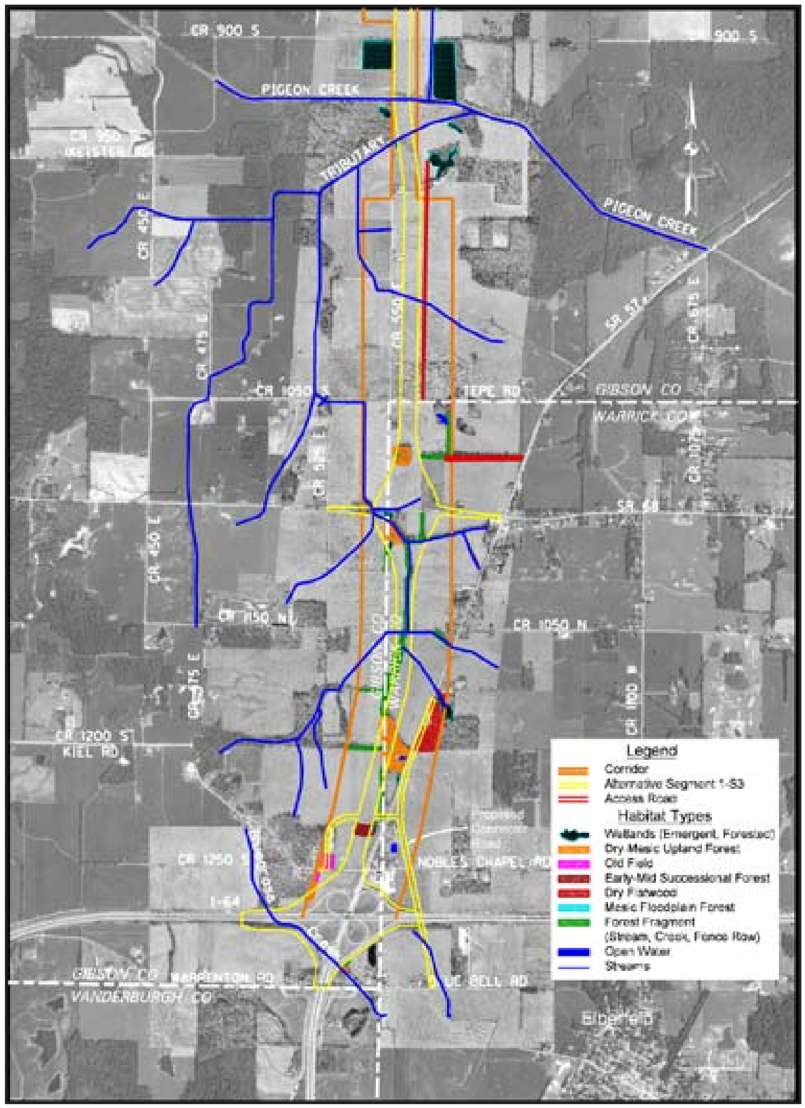

Figure 7-1 – Section 1 Corridor, Showing Footprint of Alternative 1-S3, With Interchange Footprint and Access Controls

Typical mainline sections on new terrain portions of the Build Alternatives in the Tier 2 studies are 300 to 350 feet wide. As Figure 7-1 illustrates, at interchanges and grade separations this footprint becomes much wider. Including access controls[1] in this footprint typically provides an interchange footprint that is wider than the corridor itself. Even if the area with access restrictions is not considered, the interchange footprint itself typically is 60 – 70% of the width of the corridor.

If the footprints for interchanges and grade separations were required to remain entirely within the corridor, it would have the effect of restricting the highway mainline to remain very near the middle of the corridor. This would have the effect of eliminating the flexibility needed to minimize environmental impacts. In addition, it would be impossible to include all of the necessary access roads and other ancillary improvements entirely within the corridor.

The same logic applies to restricting access and frontage roads to be entirely within the corridor. Since such roads typically provide access to and from interchanges, this also would serve to restrict mainline alternatives to the very middle of the corridor.

Accordingly, as part of the Amended Tier 1 ROD, a clarification will be provided which states that the requirement to remain within the corridor selected in Tier 1 applies to the mainline of alternatives studied in Tier 2. All impacts associated with interchanges, grade separations, and frontage/access roads will be calculated and considered as an impact of that alternative, but the Tier 1 Amended ROD would clarify that these facilities could extend beyond the corridor. In addition, the flexibility will continue to exist to consider mainline alternatives outside the selected corridor to avoid significant impacts within the selected corridor.

7.2 Commitment Regarding New Terrain Interchanges in Southwest Monroe County

In its comment letter on the Tier 1 DEIS, the United States Environmental Protection Agency (USEPA) expressed concern that alternatives located in regions with a high number of karst features would facilitate secondary development and that this secondary development (also referred to as "induced growth") could in turn negatively impact ground water quality. Its comment letter (dated November 7, 2002) stated in part:

"Much of the karst region has limited sanitary sewer service and little regulatory control over on-site wastewater treatment systems. It also has limited local land use planning or controls. Portions of it are served by public rural water supplies, permitting additional growth and development, potentially spurred at interchanges or by easier commuting accessibility. Poorly designed or operated on-site wastewater treatment systems (e.g., septic systems) have a high potential for ground/surface water contamination, since it can be easy to discharge wastewater into the ground and hard to achieve good soil filtration from a drain field."

For the selected Alternative 3C, these issues are of greatest concern in Southwest Monroe County. Accordingly, the following commitment was made in Section 7.3.14 (*Mitigation – Water Quality Impacts*) of the Tier 1 FEIS[2]:

"**Interchanges in Karst Areas** – Efforts have been made to limit interchanges in karst areas, thereby limiting access and discouraging secondary growth and impacts. No interchange will be provided in Monroe County where I-69 is on new alignment."

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1 At interchanges, access controls are imposed on the cross road that the interchange serves. INDOT'S Design Manual (Section 48-6.06) states that in rural areas, access controls should be provided for a distance of 90 to 150 meters (295 to 492 feet) on each side of an interchange beyond the ramp terminal. The footprint of the interchange including these access controls (which INDOT's Design Manual provides should extend 590 to 984 feet) typically is wider than the 2000 foot corridor.

2 The Tier 1 ROD (Section 5.0) incorporated by reference all mitigation commitments made in Chapter 7, *Mitigation*, of the Tier 1 FEIS. This section of the ROD also stated, "Mitigation measures specified in Tier 1 will be reviewed and may be modified in Tier 2 in consultation with environmental resource agencies, based on more detailed environmental impact data developed in the Tier 2 studies."

Ongoing Tier 2 Studies in Section 4 of the project have identified an interchange location near the Monroe/Greene County line that has the potential to serve significant local access needs in Greene County, and thereby help to satisfy Section 4's Tier 2 purpose and need. It is possible that part of the footprint of such an interchange would be in Monroe County. However, it would provide access only to and from Greene County, would not provide access to the local road system in Monroe County, and could be built with limited access right-of-way in Monroe County to further control development. In addition, this interchange would replace one of the Tier 1 proposed interchanges in eastern Greene County; thus, it would not result in any net increase in the number of interchanges along I-69 from the number proposed within Section 4 in the Tier 1 FEIS.

Accordingly, it is FHWA's intention, as part of an Amended Tier 1 ROD, to insert a clarification. This clarification will provide that an interchange may be situated near the Monroe/Greene County line which may have part of its footprint within Monroe County. However, such an interchange would provide access only to and from Greene County, and would not provide access directly to the local road system in Monroe County. If this County Line interchange were built, as least one of the Tier 1 proposed interchanges in southeast Greene County (at SR 45 and/or SR 58) would ***not*** be built.

The Tier 1 Amended ROD would not actually make the decision to provide an interchange at the Greene/Monroe County line or to eliminate one of the proposed Tier 1 interchanges in eastern Greene County. It would simply allow for consideration in Tier 2 of an alternative that includes the interchange at the Greene/Monroe County line and eliminates one of the proposed interchanges in eastern Greene County. The decision about whether to select this interchange alternative would be made in the Tier 2 study for Section 4.

7.3 Commitment to Bridge the Patoka River Floodplain

In the Tier 1 FEIS, a commitment was made to bridge the Patoka River floodplain. Section 7.3.8 of the Tier 1 FEIS (Mitigation – Floodplain Impacts) states:

> "Patoka River – The Patoka River floodplain will be bridged in its entirety, thus minimizing impacts to many different habitats."

This commitment to bridge the floodplain also is intended to avoid wetlands impacts. Section 5.19 (Wetlands) of the Tier 1 FEIS stated (p.5-194):

> "Without bridging the Patoka floodplain, the Preferred Alternative 3C would impact approximately 14 acres in the Patoka area. With bridging, the Preferred Alternative 3C would impact approximately 3 – 5 acres of wetlands in this area."

A structure bridging the entire Patoka River floodplain would be approximately 0.9 miles in length. In ongoing Tier 2 studies, the following additional findings have been made.

- The portions of the corridor at the north end and south end of the Patoka floodplain consist of agricultural land planted in row crops. It provides no natural habitat.

- These agricultural lands at the north end and south end of the Patoka floodplain have virtually no wetlands acreage. Their only wetlands acreage (approximately 1 acre) is a very small area associated with a ditch at the south end of the corridor.

- Bridging these agricultural lands would not serve either of the intended purposes of this mitigation measure. These purposes were to preserve habitat and the wildlife corridor associated with the Patoka River National Wildlife Refuge, and to avoid wetland impacts.

- A shorter bridge that bridges the South Fork of the Patoka River, the channelized Patoka Rive (also known as Houchins Ditch) and its oxbow to the north (also known as Snoopy's Nose) would preserve the ecological values of this area. Impacts to critical resources (wetlands, forests, wildlife corridors, and water quality) would be avoided. Significant construction costs also would be avoided.

Based on this information, it may be possible to achieve the purposes of the Tier 1 mitigation commitment without bridging the entire Patoka River floodplain. Accordingly, FHWA may, as part of any Amended Tier 1 ROD, modify the commitment to bridge the Patoka floodplain to allow for consideration in Tier 2 of a shorter bridge at the Patoka River. FHWA will consult with the USFWS and other regulatory agencies before deciding whether to make this change in the Amended Tier 1 ROD.

Appendix A – Estimation of Regional Economic Performance Measures

1.1 Transportation and Economic Development – a Brief Summary of the Major Corridor Investment Benefit Analysis System (MCIBAS)

The REMI economic forecasting model is used by INDOT as part of the Major Corridor Investment Benefit Analysis System (MCIBAS). MCIBAS predicts changes in economic activity (such as overall employment, employment by economic sector, personal income) due to improvements in the transportation system. Within MCIBAS, detailed output from the Indiana Statewide Travel Demand Model (ISTDM) serves as input to the REMI model. The REMI model uses this input to analyze the effects which the transportation improvement has upon economic activity.

Within MCIBAS, transportation improvements are modeled as affecting economic activity in the following four major ways. It should be noted that in the long run, the second and third major points cited (cost savings and increased sales due to increased accessibility) tend to have the largest effects upon the level of economic activity.

- ***Business cost savings result from reduced transportation costs.*** Three kinds of user benefits (cost savings) can be provided by transportation improvements. These are:
    - ***Mobility (travel time) benefits.*** Reductions in the time required for on-the-clock business-related travel represents a cost savings to businesses. The NET_BC post-processor estimates (separately) mobility benefits for decreases in travel time for auto work trips[1] and truck trips.
    - ***Vehicle operating benefits.*** Out-of-pocket costs for vehicle operation are a direct expense for businesses. These costs include expenditures for fuel, lubricants, tires, vehicle maintenance, and depreciation. NET_BC calculates the change in out-of-pocket costs both for auto work trips and truck trips. NET_BC considers both the per-mile consumption rate for each cost category, as well as how these cost-per-mile rates vary by vehicle speed and terrain type (flat versus sloped). A transportation improvement reduces vehicle operating cost for some trips (e.g., by providing a shorter, more direct route). It increases vehicle operating cost for other trips (increased vehicle speeds, such as those achieved on a freeway, generally increase per-vehicle-mile operating costs). For these reasons, vehicle operating benefit for a transportation improvement can be either positive or negative.
    - ***Safety benefits.*** Operating on safer facilities (such as a freeway) will result in fewer accidents, since travel on a divided multi-lane facility has a much lower crash rates than travel on other roads. For purposes of business cost savings, only those costs which represent out-of-pocket cost savings due to crash reductions are considered a business cost savings. Such costs include medical costs, insurance premiums and vehicle repair costs.
- ***Business cost savings result from increased access to labor and supplier markets.*** A major transportation project gives businesses access to larger labor pools, as well as more suppliers. This enables businesses to lower their costs through increased competition within the labor pool and among suppliers.

1 "Auto work" trips are defined as those made by employees engaging in business-related travel while "on the clock." Separate computations are made of mobility benefits for auto commute trips and other auto trips. These other auto mobility benefits are not considered in the determination of business cost savings.

- ***Business sales increases result from increased access to business-to-business and retail markets.*** A major transportation improvement gives a business access to more customers. Depending upon the nature of the business, businesses have potential access to a greater number of retail and/or business-to-business customers.

- ***Tourism activity increases due to increased access to tourism destinations.*** Access to a region's tourism attractions is increased by a major transportation improvement. This may be regarded as a "special case" of the previous point. The nature of tourism is such that it is analyzed with a set of techniques separate from those used for other categories of businesses.

In a MCIBAS analysis, input data to REMI from the ISTDM is provided in the following general categories:

- ***Monetized user benefits.*** These are transportation-related cost savings which change the flow of dollars in the economy. These include travel time benefits for Auto Work and Truck trips; vehicle operating benefits for all trips; and out-of-pocket safety benefits for all trips.

- ***Changes in access to business-to-business customers and suppliers.*** This is measured by the percentage change in the number of employees within three hours of a given Traffic Analysis Zone (TAZ). This serves to quantify the additional number of business customers and suppliers to which a business in a given TAZ has access due to the transportation improvement.

- ***Changes in access to labor and retail markets.*** This is measured by the percentage change in the number of residents within 30 minutes of a given TAZ. This serves to quantify the additional number of potential workers and retail buyers to which a business in a given TAZ has access due to the transportation improvement.

2.0 Economic Performance Measures and the Tier 1 Reevaluation

The alternatives being considered within the Tier 1 Reevaluation are very similar to alternatives considered in Tier 1; they are tolled versions of Alternatives (1, 2C, 3C, 4B and 4C) which were evaluated as non-toll alternatives in Tier 1. Given this similarity, BLA is assisting INDOT in determining the feasibility of expediting the Tier 1 Reevaluation by avoiding the considerable effort of estimating economic performance measures using the full MCIBAS analysis. A series of regression analyses were performed to quantify the relationship between the input variables provided to REMI in Tier 1, and the forecasts of increased economic activity.

Table 1 contains the input data used to perform six linear regression analyses. These analyses quantified the relationship between up to 12 independent variables (representing user benefits and accessibility increases in the Tier 1 Forecast Year of 2025, for the 26-County Tier 1 Study Area) and the dependent variable of forecasted increases in employment in the Year 2025 for the Tier 1 Study Area. Following are definitions of each dependent and independent variable considered in one or more of these analyses. In Tier 1, all monetized benefits were expressed in Year 2000 dollars, using the appropriate CPI or PPI indices for all of the year 2000.

- ***Auto Work Mobility Benefit.*** This is the annual monetized travel time benefit for "on the clock" work trips.

- ***Truck Mobility Benefit.*** This is annual monetized travel time benefit for truck trips.

- ***Auto Work Vehicle Operating Benefit.*** This is the annual monetized vehicle operating benefit for auto work trips.

Table 1: Tier 1 NET_BC Benefits, by Alternative

Alternative	Run Date	Auto Work Mobility	Auto Commute Mobility	Auto Non-Work Mobility	Total Auto Mobility	Truck Mobility	Total Mobility	Auto Work VO	Auto Commute VO	Auto Non-Work VO	Total Auto VO	Truck VO	Total VO
1	21-Mar-02	$2,106,122	$5,992,034	$13,805,068	$21,903,224	$6,353,404	$28,256,628	$(1,300,662)	$(5,735,704)	$(14,285,954)	$(21,322,320)	$(10,098,862)	$(31,421,182)
2A	21-Mar-02	$2,995,540	$8,522,478	$19,634,965	$31,152,983	$9,422,100	$40,575,083	$(1,996,173)	$(8,802,793)	$(21,925,173)	$(32,724,139)	$3,941,849	$(28,782,290)
2B	21-Mar-02	$3,286,560	$9,350,446	$21,542,524	$34,179,530	$11,009,673	$45,189,203	$(1,964,230)	$(8,661,932)	$(21,574,330)	$(32,200,492)	$4,301,079	$(27,899,413)
2C - Mann Rd.	21-Mar-02	$6,226,303	$17,714,178	$40,811,755	$64,752,236	$13,737,112	$78,489,348	$(3,779,275)	$(16,665,982)	$(41,510,067)	$(61,955,324)	$4,447,318	$(57,508,006)
2C - SR 37	13-Feb-03	$6,434,015	$18,305,129	$42,173,248	$66,912,392	$14,963,592	$81,875,984	$(3,728,440)	$(16,441,809)	$(40,951,718)	$(61,121,967)	$11,918,673	$(49,203,294)
2 - 3 Hybrid	20-Dec-02	$7,378,024	$20,990,888	$48,360,977	$76,729,889	$15,694,019	$92,423,908	$(4,058,676)	$(17,898,096)	$(44,578,902)	$(66,535,674)	$2,458,001	$(64,077,673)
3A	21-Mar-02	$3,413,420	$9,711,369	$22,374,056	$35,498,845	$16,198,872	$51,697,717	$(1,447,450)	$(6,383,015)	$(15,898,215)	$(23,728,680)	$9,841,123	$(13,887,557)
3B - Mann Rd.	21-Mar-02	$5,641,550	$16,050,522	$36,978,851	$58,670,923	$18,522,783	$77,193,706	$(1,777,515)	$(7,838,548)	$(19,523,521)	$(29,139,584)	$10,946,139	$(18,193,445)
3B - SR 37	13-Feb-03	$4,866,683	$13,845,984	$31,899,810	$50,612,477	$15,879,239	$66,491,716	$(946,613)	$(4,174,409)	$(10,397,228)	$(15,518,250)	$10,028,816	$(5,489,434)
3C - Mann Rd.	21-Mar-02	$6,817,386	$19,395,841	$44,686,144	$70,899,371	$17,737,320	$88,636,691	$(3,079,338)	$(13,579,376)	$(33,822,239)	$(50,480,953)	$6,696,941	$(43,784,012)
3C - SR 37	13-Feb-03	$7,138,950	$20,310,710	$46,793,912	$74,243,572	$18,989,796	$93,233,368	$(2,319,135)	$(10,227,004)	$(25,472,465)	$(38,018,604)	$13,098,573	$(24,920,031)
3C - SR 37 Cong TT	13-Feb-03	$8,396,090	$23,887,342	$55,034,127	$87,317,559	$17,563,068	$104,880,627	$(2,319,135)	$(10,227,004)	$(25,472,465)	$(38,018,604)	$13,098,573	$(24,920,031)
3C - SR 37 I-465	27-Feb-05	$21,496,172	$61,157,802	$140,901,664	$223,555,638	$42,685,914	$266,241,552	$(3,424,703)	$(15,102,377)	$(37,615,585)	$(56,142,665)	$8,916,270	$(47,226,395)
4A	21-Mar-02	$2,346,350	$6,675,496	$15,379,697	$24,401,543	$10,858,291	$35,259,834	$(540,850)	$(2,385,061)	$(5,940,486)	$(8,866,397)	$2,320,530	$(6,545,867)
4B	21-Mar-02	$2,614,848	$7,439,388	$17,139,631	$27,193,867	$11,875,512	$39,069,379	$(714,018)	$(3,148,700)	$(7,842,488)	$(11,705,206)	$2,456,757	$(9,248,449)
4C - Mann Rd.	21-Mar-02	$5,577,734	$15,868,962	$36,560,555	$58,007,251	$14,567,327	$72,574,578	$(2,688,197)	$(11,854,509)	$(29,526,101)	$(44,068,807)	$(5,409,593)	$(49,478,400)
4C - SR 37	13-Feb-03	$5,712,226	$16,251,600	$37,442,117	$59,405,943	$15,680,254	$75,086,197	$(1,687,299)	$(7,440,709)	$(18,532,622)	$(27,660,630)	$(1,154,521)	$(28,815,151)
4 - 5 Hybrid	20-Dec-02	$3,368,463	$9,583,464	$22,079,374	$35,031,301	$12,120,903	$47,152,204	$(603,504)	$(2,661,355)	$(6,628,653)	$(9,893,512)	$3,413,506	$(6,480,006)
5A	21-Mar-02	$5,345,326	$15,207,750	$35,037,185	$55,590,261	$14,606,786	$70,197,047	$(2,640,030)	$(11,642,100)	$(28,997,052)	$(43,279,182)	$423,725	$(42,855,457)
5B - Mann Rd.	21-Mar-02	$6,810,793	$19,377,086	$44,642,932	$70,830,811	$15,604,533	$86,435,344	$(3,404,419)	$(15,012,929)	$(37,392,797)	$(55,810,145)	$2,335,520	$(53,474,625)
5B - SR 37	13-Feb-03	$7,153,467	$20,352,010	$46,889,063	$74,394,540	$16,804,193	$91,198,733	$(3,404,983)	$(15,015,416)	$(37,398,991)	$(55,819,390)	$3,370,550	$(52,448,840)
TOTAL		**$5,958,382**	**$16,951,928**	**$39,055,603**	**$61,965,912**	**$15,755,938**	**$77,721,850**	**$(2,277,364)**	**$(10,042,801)**	**$(25,013,669)**	**$(37,333,835)**	**$4,635,760**	**$(32,698,074)**

Table 1: Tier 1 NET_BC Benefits, by Alternative - Continued

Alternative	Run Date	Auto Work Safety	Auto Commute Safety	Auto Non-Work Safety	Total Auto Safety	Truck Safety	Total Safety	Personal Income	Employment	High Growth Emp	High Wage Emp	Accessibility Changes	
												Labor Markets	Supplier Markets
1	21-Mar-02	$1,394,244	$6,148,388	$15,313,829	$22,856,461	$4,257,483	$27,113,944	$52,091,000	1,390	650	510	0.55%	1.52%
2A	21-Mar-02	$1,077,725	$4,752,591	$11,837,309	$17,667,625	$5,713,622	$23,381,247	$88,173,000	2,250	1,020	880	0.39%	2.41%
2B	21-Mar-02	$1,162,296	$5,125,536	$12,766,206	$19,054,038	$7,152,518	$26,206,556	$98,520,000	2,510	1,150	980	0.43%	2.67%
2C - Mann Rd.	21-Mar-02	$2,071,679	$9,135,766	$22,754,512	$33,961,957	$8,419,755	$42,381,712	$130,087,000	3,390	1,480	1,210	2.72%	3.41%
2C - SR 37	13-Feb-03	$2,055,928	$9,066,304	$22,581,500	$33,703,732	$6,230,132	$39,933,864	$141,062,000	3,680	1,600	1,290	3.14%	3.49%
2 - 3 Hybrid	20-Dec-02	$2,528,826	$11,151,706	$27,775,626	$41,456,158	$11,990,651	$53,446,809	$147,021,000	3,970	1,710	1,200	3.92%	3.39%
3A	21-Mar-02	$833,783	$3,676,848	$9,157,949	$13,668,580	$10,674,654	$24,343,234	$133,364,000	3,380	1,580	1,280	0.47%	3.45%
3B - Mann Rd.	21-Mar-02	$2,006,096	$8,846,555	$22,034,170	$32,886,821	$13,381,649	$46,268,470	$164,626,000	4,260	1,940	1,470	2.74%	4.09%
3B - SR 37	13-Feb-03	$1,982,249	$8,741,395	$21,772,249	$32,495,893	$9,034,995	$41,530,888	$146,131,000	3,800	1,750	1,260	3.08%	3.54%
3C - Mann Rd.	21-Mar-02	$2,175,116	$9,591,904	$23,890,617	$35,657,637	$9,983,776	$45,641,413	$162,373,000	4,320	1,930	1,360	3.76%	3.84%
3C - SR 37	13-Feb-03	$2,420,106	$10,672,272	$26,581,497	$39,673,875	$8,171,713	$47,845,588	$173,144,000	4,610	2,100	1,420	4.25%	3.83%
3C - SR 37 Cong TT	13-Feb-03	$2,420,106	$10,672,272	$26,581,497	$39,673,875	$8,171,713	$47,845,588	$200,064,000	5,270	2,420	1,710	4.01%	4.58%
3C - SR 37 I-465	27-Feb-05	$2,399,307	$10,580,548	$26,353,039	$39,332,894	$8,157,877	$47,490,771	$283,435,000	7,460	3,430	2,270	7.30%	5.96%
4A	21-Mar-02	$917,003	$4,043,832	$10,071,999	$15,032,834	$5,666,413	$20,699,247	$98,160,000	2,460	1,160	1,000	0.16%	2.72%
4B	21-Mar-02	$1,039,301	$4,583,148	$11,415,276	$17,037,725	$5,140,895	$22,178,620	$105,584,000	2,670	1,250	1,060	0.37%	2.86%
4C - Mann Rd.	21-Mar-02	$1,712,859	$7,553,430	$18,813,376	$28,079,665	$6,931,689	$35,011,354	$134,833,000	3,500	1,570	1,290	2.59%	3.62%
4C - SR 37	13-Feb-03	$1,996,602	$8,804,689	$21,929,895	$32,731,186	$5,848,602	$38,579,788	$144,811,000	3,770	1,700	1,350	3.01%	3.62%
4 - 5 Hybrid	20-Dec-02	$1,683,978	$7,426,065	$18,496,148	$27,606,191	$6,493,837	$34,100,028	$109,289,000	2,790	1,290	1,060	0.74%	2.79%
5A	21-Mar-02	$2,136,908	$9,423,412	$23,470,952	$35,031,272	$9,275,070	$44,306,342	$125,265,000	3,320	1,450	1,090	1.87%	3.06%
5B - Mann Rd.	21-Mar-02	$2,540,838	$11,204,678	$27,907,563	$41,653,079	$9,666,413	$51,319,492	$142,154,000	3,790	1,640	1,190	3.56%	3.41%
5B - SR 37	13-Feb-03	$2,550,426	$11,246,959	$28,012,873	$41,810,258	$8,509,232	$50,319,490	$149,019,000	4,000	1,700	1,240	4.04%	3.40%
TOTAL		**$1,862,161**	**$8,211,824**	**$20,453,242**	**$30,527,226**	**$8,041,557**	**$38,568,783**	**$139,486,000**	**$3,647**	**$1,644**	**$1,244**	**2.53%**	**3.41%**

- ***Auto Commute Vehicle Operating Benefit.*** This is the annual monetized vehicle operating benefit for auto commute trips.

- ***Auto Non-Work Vehicle Operating Benefit.*** This is the annual monetized vehicle operating benefit for auto non-work trips.

- ***Truck Vehicle Operating Benefit.*** This is the annual monetized vehicle operating benefit for truck trips.

- ***Auto Work Safety Benefit.*** This is the annual monetized safety benefit for auto work trips. As described above, all safety benefits input to REMI and used in this analysis represent only the change in out-of-pocket costs (such as medical costs, insurance premiums and vehicle repair costs) which lead to a direct change in the flow of dollars in the economy. This benefit does not include such items as lost productivity or pain and suffering.

- ***Auto Commute Safety Benefit.*** This is the annual monetized safety benefit for auto commute trips.

- ***Auto Non-Work Safety Benefit.*** This is the annual monetized safety benefit for auto non-work trips.

- ***Truck Safety Benefit.*** This is the annual monetized safety benefit for truck trips.

- ***Labor Markets Access.*** This is the average percent change in population within 30 minutes of a typical TAZ in the Study Area.

- ***Supplier Markets Access.*** This is the average percent change in employment within 3 hours of a typical TAZ in the Study Area.

- ***Employment.*** This is the increase in employment in the forecast year. It is the ***dependent*** variable in these analyses. All other variables are ***independent*** variables.

Following is a summary of the results of each analysis, showing the equation to be used to estimate forecast year employment in the reevaluation.

Regression 1. This equation uses the all 12 independent variables to predict forecast year employment. See *Table 2: Employment Regression 1 Results* for details. Points to note include:

- The values of both r-square (0.995) and adjusted[2] r-square (0.988) are very high.

- Most of the Student's t-statistics for independent variable coefficients indicate that the numerical value of that coefficient is not significantly different from 0. Only the coefficient for Supplier Markets is significantly different from 0 at a 95% confidence level.[3]

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2 In a multiple linear regression model, adjusted R square measures the proportion of the variation in the dependent variable accounted for by the explanatory variables. Unlike R square, adjusted R square allows for the degrees of freedom associated with the sums of the squares. Therefore, even though the residual sum of squares decreases or remains the same as new explanatory variables are added, the residual variance does not. For this reason, adjusted R square is generally considered to be a more accurate goodness-of-fit measure than R square. Source: SAP Library, found at http://help.sap.com/saphelp_46c/helpdata/en/35/e1e6b9e2df0c04e10000009b38f983/content.htm

3 For 21 samples, the degrees of freedom (d.f.) are 21 – (# of independent variables and constant factors used). In this case, the critical value of the Student's t-statistic is 2.306 (for a two-tailed test, d.f. = 8).

- Three of the independent variable coefficients (Auto Work Vehicle Operating Benefit, Auto Non-Work Vehicle Operating Benefit, and Auto Commute Safety Benefit) are negative. The coefficients of all independent variables should be positive – any positive dollar benefit or increase in accessibility should lead to an increase in employment.

- Underlying assumptions in NET_BC result in a 100% correlation among vehicle operating and safety benefits for auto modes. These benefits are apportioned among auto modes at a constant ratio of 6.1% to auto work trips, 26.9% to auto commute trips, and 67.0% to auto non-work trips.

Regression 2. While Regression 1 has a high adjusted r-square value, most of its individual independent variables have little explanatory power, and three have a counterintuitive sign. Regression 2 did not use four of the independent variables used in Regression 1 (Auto Commute and Auto Non-Work Vehicle Operating Benefit; Auto Commute and Auto Non-Work Safety Benefit) which have a less-meaningful impact on economic growth. See *Table 3: Employment Regression 2 Results* for details. Points to note include:

- The values of both r-square (0.993) and adjusted r-square (0.989) remain high.

- With one exception, the Student's t-statistic for each independent variable increased in absolute value. The exception is that for Truck Mobility Benefit.

- Only the coefficients for Truck Vehicle Operating Benefit and Supplier Markets are significantly different from 0 at the 95% confidence level (d.f. = 12).

Regression 3. The previous two analyses did not constrain forecasted employment to be zero if each independent variable also is zero. It should be expected that absent any monetary user benefit or increase in accessibility, there will be no change in employment. Regression 3 used the same independent variables as Regression 2, while in addition constraining the intercept to equal zero. *See Table 4: Employment Regression 3 Results*, for details. Points to note include:

- The values of both r-square (0.993) and adjusted r-square (0.913) remain high.

- The drop in the value of the adjusted r-square (compared to Regressions 1 and 2) suggest that allowing for a non-zero intercept does provide addition explanatory power. However as noted above, there are legitimate *a priori* reasons for specifying a zero intercept.

- The Student's t-statistic for the coefficients of most independent variables increases significantly. The coefficients for two, Truck Mobility Benefit (0.129) and Truck Safety Benefit (0.902) remain fairly low.

- The coefficients for three of the eight independent variables (Truck Vehicle Operating Benefit, Labor Markets, and Supplier Markets) are significantly different from 0 and the 95% confidence level (d.f. = 13). The coefficient of a fourth (Auto Work Vehicle Operating Benefits) is near the 95% critical value (2.064, compared with 2.160).

Table 2: Employment Regression 1 Results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.998
R Square	0.995
Adjusted R Square	0.988
Standard Error	134.541
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	12	30775619.013	2564634.918	141.683	0.000
Residual	8	144809.559	18101.195		
Total	20	30920428.571			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-262.932	451.226	-0.583	0.576	-1303.461	777.596	-1303.461	777.596
Auto Work Mobility	0.000	0.000	0.550	0.597	-0.000	0.000	-0.000	0.000
Truck Mobility	0.000	0.000	0.408	0.694	-0.000	0.000	-0.000	0.000
Auto Work VO	-109.530	143.805	-0.762	0.468	-441.146	222.086	-441.146	222.086
Auto Commute VO	93.466	377.623	0.248	0.811	-777.334	964.266	-777.334	964.266
Auto Non-Work VO	-27.554	158.396	-0.174	0.866	-392.816	337.709	-392.816	337.709
Truck VO	0.000	0.000	1.324	0.222	-0.000	0.000	-0.000	0.000
Auto Work Safety	160.313	152.794	1.049	0.325	-192.032	512.657	-192.032	512.657
Auto Commute Safety	-180.655	342.898	-0.527	0.613	-971.380	610.069	-971.380	610.069
Auto Non-Work Safety	57.936	136.388	0.425	0.682	-256.575	372.448	-256.575	372.448
Truck Safety	0.000	0.000	0.431	0.678	-0.000	0.000	-0.000	0.000
Labor Markets	11418.336	14041.830	0.813	0.440	-20962.204	43798.876	-20962.204	43798.876
Supplier Markets	82008.673	16982.245	4.829	0.001	42847.520	121169.826	42847.520	121169.826

RESIDUAL OUTPUT

Observation	Predicted Employment	Residuals	Standard Residuals	Actual Employment	*Predicted - Actual*
1	1332.664	57.336	0.674	1,390	(60)
2A	2259.082	-9.082	-0.107	2,250	10
2B	2503.872	6.128	0.072	2,510	(10)
2C - Mann Rd.	3595.816	-205.816	-2.419	3,390	210
2C - SR 37	3719.909	-39.909	-0.469	3,680	40
2 - 3 Hybrid	3944.763	25.237	0.297	3,970	(30)
3A	3258.382	121.618	1.429	3,380	(120)
3B - Mann Rd.	4369.250	-109.250	-1.284	4,260	110
3B - SR 37	3899.935	-99.935	-1.174	3,800	100
3C - Mann Rd.	4293.243	26.757	0.314	4,320	(30)
3C - SR 37	4507.751	102.249	1.202	4,610	(100)
3C - SR 37 Cong TT	5122.430	147.570	1.734	5,270	(150)
3C - SR 37 I-465	7483.001	-23.001	-0.270	7,460	20
4A	2496.742	-36.742	-0.432	2,460	40
4B	2680.235	-10.235	-0.120	2,670	10
4C - Mann Rd.	3448.852	51.148	0.601	3,500	(50)
4C - SR 37	3843.475	-73.475	-0.863	3,770	70
4 - 5 Hybrid	2839.853	-49.853	-0.586	2,790	50
5A	3219.539	100.461	1.181	3,320	(100)
5B - Mann Rd.	3827.496	-37.496	-0.441	3,790	40
5B - SR 37	3943.707	56.293	0.662	4,000	(60)

PROBABILITY OUTPUT

Percentile	*Employment*
2.381	1390
7.143	2250
11.905	2460
16.667	2510
21.429	2670
26.190	2790
30.952	3320
35.714	3380
40.476	3390
45.238	3500
50	3680
54.762	3770
59.524	3790
64.286	3800
69.048	3970
73.810	4000
78.571	4260
83.333	4320
88.095	4610
92.857	5270
97.619	7460

Table 3: Employment Regression 2 Results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.997
R Square	0.994
Adjusted R Square	0.989
Standard Error	127.617
Observations	21

ANOVA

	df	SS	MS	F	Significance F
Regression	8	30724994.632	3840624.329	235.821	0.0
Residual	12	195433.939	16286.162		
Total	20	30920428.571			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-57.023	381.608	-0.149	0.884	-888.475	774.429	-888.475	774.429
Auto Work Mobility	0.000	0.000	1.476	0.166	-0.000	0.000	-0.000	0.000
Truck Mobility	0.000	0.000	0.182	0.859	-0.000	0.000	-0.000	0.000
Auto Work VO	0.000	0.000	1.684	0.118	-0.000	0.000	-0.000	0.000
Truck VO	0.000	0.000	2.339	0.037	0.000	0.000	0.000	0.000
Auto Work Safety	0.000	0.000	1.081	0.301	-0.000	0.001	-0.000	0.001
Truck Safety	0.000	0.000	0.724	0.483	-0.000	0.000	-0.000	0.000
Labor Markets	10927.307	8661.006	1.262	0.231	-7943.403	29798.017	-7943.403	29798.017
Supplier Markets	73942.922	10964.213	6.744	0.000	50053.955	97831.890	50053.955	97831.890

RESIDUAL OUTPUT

Observation	Predicted Employment	Residuals	Standard Residuals	Actual Employment	Predicted - Actual
1	1381.005	8.995	0.091	1,390	(10)
2A	2233.905	16.095	0.163	2,250	(20)
2B	2509.706	0.294	0.003	2,510	-
2C - Mann Rd.	3584.348	-194.348	-1.966	3,390	190
2C - SR 37	3798.228	-118.228	-1.196	3,680	120
2 - 3 Hybrid	3888.236	81.764	0.827	3,970	(80)
3A	3258.822	121.178	1.226	3,380	(120)
3B - Mann Rd.	4419.462	-159.462	-1.613	4,260	160
3B - SR 37	3959.999	-159.999	-1.619	3,800	160
3C - Mann Rd.	4227.476	92.524	0.936	4,320	(90)
3C - SR 37	4492.798	117.202	1.186	4,610	(120)
3C - SR 37 Cong TT	5111.525	158.475	1.603	5,270	(160)
3C - SR 37 I-465	7489.695	-29.695	-0.300	7,460	30
4A	2468.278	-8.278	-0.084	2,460	10
4B	2622.848	47.152	0.477	2,670	(50)
4C - Mann Rd.	3528.437	-28.437	-0.288	3,500	30
4C - SR 37	3784.262	-14.262	-0.144	3,770	10
4 - 5 Hybrid	2839.808	-49.808	-0.504	2,790	50
5A	3232.029	87.971	0.890	3,320	(90)
5B - Mann Rd.	3840.347	-50.347	-0.509	3,790	50
5B - SR 37	3918.786	81.214	0.822	4,000	(80)

PROBABILITY OUTPUT

Percentile	Employment
2.381	1390
7.143	2250
11.905	2460
16.667	2510
21.429	2670
26.190	2790
30.952	3320
35.714	3380
40.476	3390
45.238	3500
50	3680
54.762	3770
59.524	3790
64.286	3800
69.048	3970
73.810	4000
78.571	4260
83.333	4320
88.095	4610
92.857	5270
97.619	7460

Table 4: Employment Regression 3 Results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.997
R Square	0.994
Adjusted R Square	0.913
Standard Error	122.725
Observations	21

ANOVA

	df	SS	MS	F	Significance F
Regression	8	30724630.982	3840578.873	254.996	0.0
Residual	13	195797.590	15061.353		
Total	21	30920428.571			

RESIDUAL OUTPUT

Observation	Predicted Employment	Residuals	Standard Residuals	Actual Employment	Predicted - Actual
1	1390.757	-0.757	-0.008	1,390	-
2A	2240.336	9.664	0.100	2,250	(10)
2B	2511.896	-1.896	-0.020	2,510	-
2C - Mann Rd.	3582.849	-192.849	-1.997	3,390	190
2C - SR 37	3798.225	-118.225	-1.224	3,680	120
2 - 3 Hybrid	3892.324	77.676	0.804	3,970	(80)
3A	3257.764	122.236	1.266	3,380	(120)
3B - Mann Rd.	4416.540	-156.540	-1.621	4,260	160
3B - SR 37	3966.459	-166.459	-1.724	3,800	170
3C - Mann Rd.	4228.522	91.478	0.947	4,320	(90)
3C - SR 37	4494.746	115.254	1.194	4,610	(120)
3C - SR 37 Cong TT	5111.441	158.559	1.642	5,270	(160)
3C - SR 37 I-465	7490.494	-30.494	-0.316	7,460	30
4A	2471.876	-11.876	-0.123	2,460	10
4B	2621.985	48.015	0.497	2,670	(50)
4C - Mann Rd.	3525.129	-25.129	-0.260	3,500	30
4C - SR 37	3781.088	-11.088	-0.115	3,770	10
4 - 5 Hybrid	2834.967	-44.967	-0.466	2,790	40
5A	3222.991	97.009	1.005	3,320	(100)
5B - Mann Rd.	3837.837	-47.837	-0.495	3,790	50
5B - SR 37	3918.152	81.848	0.848	4,000	(80)

PROBABILITY OUTPUT

Percentile	Employment
2.381	1390
7.143	2250
11.905	2460
16.667	2510
21.429	2670
26.190	2790
30.952	3320
35.714	3380
40.476	3390
45.238	3500
50.000	3680
54.762	3770
59.524	3790
64.286	3800
69.048	3970
73.810	4000
78.571	4260
83.333	4320
88.095	4610
92.857	5270
97.619	7460

Table 5: Employment Regression 4 Results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.996
R Square	0.993
Adjusted R Square	0.924
Standard Error	120.057
Observations	21

ANOVA

	df	SS	MS	F	Significance F
Regression	6	30704222.516	5117370.419	355.034	0.0
Residual	15	216206.055	14413.737		
Total	21	30920428.571			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0	#N/A!	#N/A!	#N/A!	#N/A!	#N/A!	#N/A!	#N/A!
Auto Work Mobility	0.000	0.000	3.819	0.002	0.000	0.000	0.000	0.000
Auto Work VO	0.000	0.000	2.377	0.031	0.000	0.000	0.000	0.000
Truck VO	0.000	0.000	3.030	0.008	0.000	0.000	0.000	0.000
Auto Work Safety	0.000	0.000	1.962	0.069	-0.000	0.000	-0.000	0.000
Labor Markets	10932.711	4992.450	2.190	0.045	291.550	21573.873	291.550	21573.873
Supplier Markets	77222.690	5154.066	14.983	0.000	66237.051	88208.329	66237.051	88208.329

RESIDUAL OUTPUT

Observation	Predicted Employment	Residuals	Standard Residuals	Actual Employment	Predicted - Actual
1	1387.267	2.733	0.027	1,390	-
2A	2258.190	-8.190	-0.081	2,250	10
2B	2512.437	-2.437	-0.024	2,510	-
2C - Mann Rd.	3599.670	-209.670	-2.066	3,390	210
2C - SR 37	3857.679	-177.679	-1.751	3,680	180
2 - 3 Hybrid	3838.978	131.022	1.291	3,970	(130)
3A	3207.318	172.682	1.702	3,380	(170)
3B - Mann Rd.	4349.795	-89.795	-0.885	4,260	90
3B - SR 37	3948.114	-148.114	-1.460	3,800	150
3C - Mann Rd.	4212.152	107.848	1.063	4,320	(110)
3C - SR 37	4508.702	101.298	0.998	4,610	(100)
3C - SR 37 Cong TT	5163.965	106.035	1.045	5,270	(110)
3C - SR 37 I-465	7484.794	-24.794	-0.244	7,460	20
4A	2482.041	-22.041	-0.217	2,460	20
4B	2646.501	23.499	0.232	2,670	(20)
4C - Mann Rd.	3542.641	-42.641	-0.420	3,500	40
4C - SR 37	3813.772	-43.772	-0.431	3,770	40
4 - 5 Hybrid	2845.217	-55.217	-0.544	2,790	60
5A	3201.879	118.121	1.164	3,320	(120)
5B - Mann Rd.	3824.004	-34.004	-0.335	3,790	30
5B - SR 37	3916.772	83.228	0.820	4,000	(80)

PROBABILITY OUTPUT

Percentile	Employment
2.381	1390
7.143	2250
11.905	2460
16.667	2510
21.429	2670
26.190	2790
30.952	3320
35.714	3380
40.476	3390
45.238	3500
50	3680
54.762	3770
59.524	3790
64.286	3800
69.048	3970
73.810	4000
78.571	4260
83.333	4320
88.095	4610
92.857	5270
97.619	7460

Regression 4. Regression 4 dropped the two independent variables used in Regression 3 (Truck Mobility Benefit and Truck Safety Benefit) whose coefficients had low values of their Student's t-statistics. It retained the constraint that the intercept be equal to 0. See *Table 5: Employment Regression 4* Results, for details. Points to note include:

- The values of both r-square (0.993) and adjusted r-square (0.924) remain high. The small increase in the adjusted r-square suggests that dropping two variables actually resulted in an *increase* in explanatory power for the equation.

- The Student's t-statistics for the coefficients of all but one of the independent variables (Auto Work Safety Benefit) are significantly different from 0 at the 95% confidence level (d.f. = 15). The Student's t-statistic for the Auto Work Safety Benefit, 1.96, indicates that this coefficient is significantly different from 0 at a 92% confident level.

3.0 Recommended Approach – Employment Forecasts

The equation estimated in Regression 4 was used to predict Forecast Year employment for the Tier 1 Reevaluation. The functional form of this equation is:

> Employment =0.0000814* Auto Work Mobility Benefit + 0.0000840* Auto Work Vehicle Operating Benefit + 0.0000177* Truck Vehicle Operating Benefit + 0.0001935* Auto Work Safety Benefit + 10,933* Percent Change Access to Labor Markets + 77,223* Percent Change Access to Supplier Markets

Points to note include:

- The user benefits will be calculated by NET_BC for all alternatives in the reevaluation. Any tolls paid by vehicles making Auto Work and Truck trips will be deducted from the vehicle operating benefit calculated by NET_BC for purposes of using this equation.

- The Percent Change in Access to Labor Markets and Supplier Markets will be used unchanged from that determined in the Tier 1 non-toll analysis. The access improvement provided by a given I-69 alternative will not change in a tolled scenario; the added impedance imposed by tolls will be reflected by including all tolls paid as an additional vehicle operating cost.

- This equation is consistent with important findings in the use of MCIBAS for the I-69 Tier 1 analysis, as well as its use in other circumstances. In the forecast year, most of the increased economic activity was found to be due to increases in accessibility; business cost reductions are a greater relative factor in the short term case. The coefficients of this equation, in particular for access to supplier markets, are consistent with these findings.

4.0 Recommended Approach – Forecasts of Other Indicators

A similar analysis process was followed to estimate regression equations to estimate forecast year personal income increases, forecast year increases in employment in high growth industries, and forecast year increases in employment in high wage industries. The function forms of these equations are as follows. Tables 6 through 8 provide details regarding each of these regressions.

> Personal Income ($) =3.073* Auto Work Mobility Benefit + 3.497* Auto Work Vehicle Operating Benefit + 0.681* Truck Vehicle Operating Benefit + 5.274* Auto Work Safety Benefit + 293,700,000* Percent

Change Access to Labor Markets + 3,187,000,000* Percent Change Access to Supplier Markets

Employment in Fast Growing Industries =0.0000424* Auto Work Mobility Benefit + 0.0000719* Auto Work Vehicle Operating Benefit + 0.00000822* Truck Vehicle Operating Benefit + 0.0000672* Auto Work Safety Benefit + 3,889* Percent Change Access to Labor Markets + 37,890* Percent Change Access to Supplier Markets

Employment in High Wage Industries =0.000007269* Auto Work Mobility Benefit + 0.00001983* Auto Work Vehicle Operating Benefit + 0.000001587* Truck Vehicle Operating Benefit + 36,270* Percent Change Access to Supplier Markets

One point to note is that two of the variables which had strong explanatory power for estimating other variables (Auto Work Safety Benefit, % Change in Access to Labor Markets) did not provide any significant explanatory power for estimating growth in High Wage Employment. The overwhelming factor for forecasting growth in high wage employment is Change in Access to Supplier Markets, which describes improvements in access offered to businesses' suppliers and business-to-business customers. Accordingly, growth in high way employment is very little affected by imposition of tolls.

Table 6: Income Regression Results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.998
R Square	0.995
Adjusted R Square	0.927
Standard Error	3625428.927
Observations	21

ANOVA

	df	SS	MS	F	Significance F
Regression	6	42780189132398700	7130031522066440	542.466	0.0
Residual	15	197156023601331	13143734906755.4		
Total	21	42977345156000000			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0	#N/A!	#N/A!	#N/A!	#N/A!	#N/A!	#N/A!	#N/A!
Auto Work Mobility	3.073	0.644	4.774	0.000	1.701	4.445	1.701	4.445
Auto Work VO	3.497	1.067	3.277	0.005	1.222	5.772	1.222	5.772
Truck VO	0.681	0.176	3.865	0.002	0.306	1.057	0.306	1.057
Auto Work Safety	5.274	2.979	1.771	0.097	-1.075	11.623	-1.075	11.623
Labor Markets	293720143.268	150759541.075	1.948	0.070	-27616409.577	615056696.114	-27616409.577	615056696.114
Supplier Markets	3187071686.147	155639956.752	20.477	0.0	2855332767.130	3518810605.164	2855332767.130	3518810605.164

RESIDUAL OUTPUT

Observation	Predicted Personal Income	Residuals	Standard Residuals
1	52454315.406	-363315.406	-0.119
2	88547920.731	-374920.731	-0.122
3	98648573.235	-128573.235	-0.042
4	136540834.858	-6453834.858	-2.106
5	146148052.407	-5086052.407	-1.660
6	143045548.594	3975451.406	1.297
7	127864578.935	5499421.065	1.795
8	167557635.444	-2931635.444	-0.957
9	150801323.040	-4670323.040	-1.524
10	159642405.360	2730594.640	0.891
11	170063763.689	3080236.311	1.005
12	197124770.090	2939229.910	0.959
13	284197417.678	-762417.678	-0.249
14	98894442.915	-734442.915	-0.240
15	104930461.812	653538.188	0.213
16	136065539.989	-1232539.989	-0.402
17	145608639.170	-797639.170	-0.260
18	110540595.897	-1251595.897	-0.408
19	121768856.311	3496143.689	1.141
20	143150510.199	-996510.199	-0.325
21	146048484.451	2970515.549	0.969

PROBABILITY OUTPUT

Percentile	Personal Income
2.381	52091000
7.143	88173000
11.905	98160000
16.667	98520000
21.429	105584000
26.190	109289000
30.952	125265000
35.714	130087000
40.476	133364000
45.238	134833000
50	141062000
54.762	142154000
59.524	144811000
64.286	146131000
69.048	147021000
73.810	149019000
78.571	162373000
83.333	164626000
88.095	173144000
92.857	200064000
97.619	283435000

Table 7: High Growth Employment Regression Results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.996
R Square	0.992
Adjusted R Square	0.922
Standard Error	59.433
Observations	21

ANOVA

	df	SS	MS	F	Significance F
Regression	6	6350511.391	1058418.565	299.644	0.0
Residual	15	52983.847	3532.256		
Total	21	6403495.238			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0	#N/A!	#N/A!	#N/A!	#N/A!	#N/A!	#N/A!	#N/A!
Auto Work Mobility	0.000	0.000	4.016	0.001	0.000	0.000	0.000	0.000
Auto Work VO	0.000	0.000	4.110	0.001	0.000	0.000	0.000	0.000
Truck VO	0.000	0.000	2.844	0.012	0.000	0.000	0.000	0.000
Auto Work Safety	0.000	0.000	1.376	0.189	-0.000	0.000	-0.000	0.000
Labor Markets	3888.707	2471.448	1.573	0.136	-1379.064	9156.477	-1379.064	9156.477
Supplier Markets	37894.180	2551.454	14.852	0.000	32455.881	43332.480	32455.881	43332.480

RESIDUAL OUTPUT

Observation	Predicted High Growth Emp	Residuals	Standard Residuals
1	603.805	46.195	0.920
2	1016.665	3.335	0.066
3	1140.012	9.988	0.199
4	1565.876	-85.876	-1.710
5	1685.337	-85.337	-1.699
6	1648.053	61.947	1.233
7	1503.137	76.863	1.530
8	1992.500	-52.500	-1.045
9	1815.067	-65.067	-1.295
10	1870.086	59.914	1.193
11	2022.726	77.274	1.538
12	2350.878	69.122	1.376
13	3441.670	-11.670	-0.232
14	1178.196	-18.196	-0.362
15	1247.681	2.319	0.046
16	1586.229	-16.229	-0.323
17	1734.275	-34.275	-0.682
18	1326.619	-36.619	-0.729
19	1416.084	33.916	0.675
20	1664.438	-24.438	-0.487
21	1702.949	-2.949	-0.059

PROBABILITY OUTPUT

Percentile	High Growth Emp
2.381	650
7.143	1020
11.905	1150
16.667	1160
21.429	1250
26.190	1290
30.952	1450
35.714	1480
40.476	1570
45.238	1580
50	1600
54.762	1640
59.524	1700
64.286	1700
69.048	1710
73.810	1750
78.571	1930
83.333	1940
88.095	2100
92.857	2420
97.619	3430

Table 8: High Wage Employment Regression Results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.997
R Square	0.995
Adjusted R Square	0.935
Standard Error	26.055
Observations	21

ANOVA

	df	SS	MS	F	Significance F
Regression	4	2268754.290	567188.573	835.478	0.0
Residual	17	11540.948	678.879		
Total	21	2280295.238			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0	#N/A!	#N/A!	#N/A!	#N/A!	#N/A!	#N/A!	#N/A!
Auto Work Mobility	0.000	0.000	3.355	0.004	0.000	0.000	0.000	0.000
Auto Work VO	0.000	0.000	3.306	0.004	0.000	0.000	0.000	0.000
Truck VO	0.000	0.000	1.415	0.175	-0.000	0.000	-0.000	0.000
Supplier Markets	36273.709	570.361	63.598	0.0	35070.350	37477.067	35070.350	37477.067

RESIDUAL OUTPUT

Observation	Predicted High Wage Emp.	Residuals	Standard Residuals
1	524.852	-14.852	-0.634
2	862.647	17.353	0.740
3	960.278	19.722	0.841
4	1214.316	-4.316	-0.184
5	1257.711	32.289	1.377
6	1206.736	-6.736	-0.287
7	1263.174	16.826	0.718
8	1506.731	-36.731	-1.567
9	1316.612	-56.612	-2.415
10	1392.038	-32.038	-1.367
11	1415.980	4.020	0.171
12	1697.171	12.829	0.547
13	2264.410	5.590	0.238
14	996.659	3.341	0.143
15	1046.177	13.823	0.590
16	1291.766	-1.766	-0.075
17	1319.341	30.659	1.308
18	1029.972	30.028	1.281
19	1097.157	-7.157	-0.305
20	1222.645	-32.645	-1.393
21	1223.140	16.860	0.719

PROBABILITY OUTPUT

Percentile	High Wage Emp.
2.381	510
7.143	880
11.905	980
16.667	1000
21.429	1060
26.190	1060
30.952	1090
35.714	1190
40.476	1200
45.238	1210
50	1240
54.762	1260
59.524	1280
64.286	1290
69.048	1290
73.810	1350
78.571	1360
83.333	1420
88.095	1470
92.857	1710
97.619	2270

Appendix B - Cost Estimation for I-69 Toll Alternatives

1.0 Introduction

To estimate costs for the I-69 Alternatives, several Excel spreadsheets were created and linked to each other. This permitted related data and estimate consistency among spreadsheets. For example, if a unit cost changed, it was changed in only one location, and the information in all corresponding sheets was automatically updated. This eliminated many possible sources of error. In addition, the use of these linked spreadsheets ensured that all alternatives were compared on an equal basis and that "like construction" had similar cost irrespective of the alternative being studied. This ensured an "apples to apples" comparison of construction cost between alternatives.

Section 2, Cost Methodology, documents the procedures employed in determining the various costs for the components of highway construction. A series of linked spreadsheets used these derived costs to estimate construction costs for each route concept and ultimately the costs involved with the Alternatives presented in the Draft Environmental Impact Statement (DEIS). These templates are internal working documents of the consultant team, and are not included as a part of this documentation. Following the comment period on the DEIS, refinements were made and final selection of the preferred route was made. Further refinements were made in the selection of the preferred variation within an alternative (e.g. Around Washington). Although, the same methodology of cost estimation was used in the Final Environmental Impact Study (FEIS), there were adjustments made for modified grade separation locations, and refined costs at select interchanges. In addition, costs for design engineering was updated to reflect the new construction costs and right-of-way engineering and services costs were applied to the latest right-of-way cost. The cost associated with mitigation and rest areas have also been included.

Section 3 addresses costs that were not included in the Tier 1 Study but will be included in the Tier 2 studies. Section 4 addresses the proposed methodology to be used in Tier 2 studies to estimate costs. Finally, maps of the alternatives and accompanying cost summary tables are included. Also included with the cost summary tables is a comparison of the number of travel lanes required under toll and non-toll options.

2.0 Cost Methodology

Cost.xls is a spreadsheet consisting of unit prices for each item. This sheet is the basis for all the cost estimating work that follows as all templates are linked to this spreadsheet. The unit prices used in *"Cost.xls"* have been obtained from various sources. The basic spreadsheet was copied from a "Pre-engineering Cost Parameters General Guidelines" compiled by the Indiana Department of Transportation (INDOT) and dated 1/16/97. This report was developed by compiling the average unit costs from the bid history of selected awarded contracts for major items (pavement, traffic control, etc.) during the years 1994 through 1996 for similar projects. Also some items listed were the result of interviews held with Design Experts in those areas (i.e. bridge rehabilitation, signal, sign and lighting, right-of-way, etc) to develop reasonable parametric costs. This report represented the most recent published data by INDOT for the estimation of costs of construction during the planning/environmental/engineer's report phase.

This data was updated to reflect anticipated costs at the time of publication (1/6/97). These guidelines served as the starting point in the development of "Cost.xls" in the year 2000. The Producer Price Index changed from 124.6 to 126.5 (or a total of 1.52%) between January 1997 and January 1999. This reflected the change in construction costs experienced from 1997 to 1999. The cost information was developed in year 2000 and at the time the information on producer price index (inflation) was not available beyond 1999. To account for this change, these costs were adjusted by 1.52% to obtain costs for 1999. Since publication of the DEIS, the producer price index increased about 7.8%

between 1999 and 2000. Further investigation of this trend found that the producer price index had increased by a total of 8.2% between 1999 and 2001. As will be seen in the discussion below, very few items were used from this updated report. They tended to be minor items and the variation caused by the producer price index (PPI) effects was not significant when compared to the total cost of construction. Construction costs for selected Alternative 3C were investigated to see the effect of bringing these select items to year 2000 cost (based on a 7.8% increase in PPI). The result was an increase in total construction cost of only 0.18%. Consequently, no effort has been made to further refine the cost of these minor items.

The remainder of the costs needed to complete cost estimates within each segment were hand-calculated. Unit prices used for these hand-calculations are from American Association of State Highway and Transportation Officials' (AASHTO) Trns-port Estimator program. Other hand-calculated unit costs were used from previous studies as guides to determine estimated costs for particular locations or types of work. The two major items of cost, namely earthwork and pavement were computed by use of this prior work. The computed values of pavement and earthwork quantities along with their relevant pay item descriptions were used with year 2000 unit prices from the Trns-port Estimator program. These components together were significantly higher than the per mile costs derived from the "Pre-engineering Cost Parameters General Guidelines" for a four-lane rural Interstate highway and thus were used.

In conclusion the cost estimating template used a combination of sources. For minor items, costs derived from "Pre-engineering Cost Parameters General Guidelines" (converted to 1999 dollars) was used with no further refinement deemed necessary. For the major items such as pavement and earthwork, etc. computed information and used to derive the cost. This ensured that the best available data was used. Because of this approach, it was not felt that there were any significant gaps in the cost and thus a contingency was not added. This enabled a direct comparison of costs between alternatives.

Following is a summary of methodologies used to estimate all unit costs used to calculate the alternative cost estimates.

2.1 Roadway Costs

2.1.1 Mainline Pavement

The unit costs were incorporated into the mainline pavement per mile cost: 1) 13 inches of QC/QA plain cement concrete pavement; 2) 7 inches of subbase for cement concrete pavement; 3) 12 inches of compacted aggregate; 4) D-1 construction joints; and 5) concrete median barrier (for urban sections only). The unit cost for each of these components was obtained from the American Association of State Highway and Transportation Officials' (AASHTO) Trns-port Estimator program (for year 2000). Since the cost estimation program applies the full depth concrete pavement section to the traffic lanes and the paved portion of the shoulders, the resulting cost estimates are conservatively high. During Tier 2 studies more definitive pavement quantities will be developed and the actual section of the shoulder will be used rather than applying the thicker travel lane pavement section. By utilizing these unit costs, a per mile cost was established for the following scenarios:

1. Rural, four-lane segment with 12 ft lanes, 11 ft outside shoulders [10 ft paved], 4 ft inside shoulders, and an 80 ft grass median (60 ft grass median representing use of an existing four-lane divided highway such as US 41 and SR 37).

2. Rural, six-lane segment with 12 ft lanes, 12 ft outside shoulders [10 ft paved], 10 ft inside shoulders, and an 80 ft grass median (60 ft grass median representing use of an existing four-lane divided highway such as US 41 and SR 37).

3. Urban, four-lane segment with 12 ft lanes, 12 ft outside shoulders [12 ft paved], 26 ft inside shoulders [12 ft paved], and a concrete median barrier. An additional 2 feet of pavement is provided beyond the outside shoulder to provide enough room for future maintenance of traffic needs between the median barrier and the outside barrier.

4. Urban, six-lane segment with 12 ft lanes, 14 ft outside shoulders [14 ft paved], 26 ft inside shoulders [12 ft paved], and a concrete median barrier. An additional 2 feet of pavement is provided beyond the outside shoulder to provide enough room for future maintenance of traffic needs between the median barrier and the outside barrier.

5. Urban, eight-lane segment with 12 ft lanes, 14 ft outside shoulders [14 ft paved], 26 ft inside shoulders [12 ft paved], and a concrete median barrier. An additional 2 feet of pavement is provided beyond the outside shoulder to provide enough room for future maintenance of traffic needs between the median barrier and the outside barrier.

"Cost.xls" was modified to reflect the above scenarios to calculate costs for the pavement so that earthwork (a direct function of terrain) could be applied separately. The per mile costs for new road construction contained in the "Pre-engineering Cost Parameters General Guidelines" were not used in the calculations but served only as a basis of comparison for the reasonableness of the computed costs. The costs used are displayed in Table B-1 at the end of Section 2.4.

2.1.2 Earthwork

The following unit costs were incorporated into the earthwork per mile cost: 1) common excavation; 2) borrow; and 3) rock excavation. The unit cost for each of these components was obtained from the aforementioned Trns-port Estimator program (for year 2000). The amount (in cubic yards) per mile for each of these components was determined by taking an average from the 1996 Southwest Highway Draft EIS (preferred alignment) per mile quantities for the following types of terrains: 1) flat (level); 2) rolling, with solely common excavation; 3) rolling with common as well as rock excavation; and 4) hilly. These values were determined by use of a digital terrain model to establish the base condition off USGS contour maps. Then a roadway profile was determined. A cross section template was used with this proposed roadway profile to get a series of cross sections showing the proposed as well as the existing ground line. From that quantities of cut and fill were determined. By utilizing these per mile quantities of earthwork and the available unit prices from Trns-port Estimator program (for year 2000) as well as a judgment on the level of precision, a per mile cost was established for the four (4) different types of terrains. The terrain type for each segment was determined from knowledge of the topography, field reviews of the corridor, and engineering judgment using USGS 7.5 minute topographic quadrangle maps. Since pavement and earthwork make up the major components of roadway costs, it was decided to treat these two separately from the all inclusive per mile costs contained in the "Pre-engineering Cost Parameters General Guidelines". It is believed that basing the earthwork on terrain type and developing segments where pavement requirements and terrain type are known can lead to a better-defined cost. The costs used are displayed in Table B-1 at the end of Section 2.4.

2.1.3 Additional Earthwork For Elevated Interstate

The cost for Structural Backfill was the only cost used to determine the additional earthwork per mile cost to elevate the Interstate. The height of fill was assumed to be 15 ft. The unit cost for the Structural Backfill was obtained from the Trns-port Estimator program. By utilizing the computed volume of structural backfill per mile for the following scenarios: 1) elevated four-lane Interstate, 100 ft width; and 2) elevated six-lane Interstate 124 ft width; 3) elevated eight-lane Interstate 148 ft width and the unit price, a per mile cost was established. The costs used are displayed in Table B-1 at the end of Section 2.4.

2.1.4 Maintenance of Traffic

The following costs were incorporated into the maintenance of traffic per mile cost: 1) temporary cross over, type "B"; 2) two-way traffic with temporary concrete median barrier and strengthened shoulders; and 3) two-way traffic with temporary concrete median barrier. The unit cost for the first two components was taken from the January 16, 1997 edition of the "Pre-engineering Cost Parameters General Guidelines", multiplied by a factor to convert the unit prices to 1999 dollars; the unit cost for the third component was obtained from the Trns-port Estimator program (for year 2000). By utilizing these unit costs, a per mile cost was established for maintenance of traffic. This cost was only applied to those segments which utilized existing roadways, if a segment was to be constructed through new terrain, the per mile maintenance of traffic cost was assumed to be negligible. The costs used are displayed in Table B-1 at the end of Section 2.4.

2.1.5 Signing and Lighting

The per mile cost for signing and lighting utilized in this study was obtained through the use of engineering judgment as well as an average cost for signing and lighting from previous projects. The costs used are displayed in Table B-1 at the end of Section 2.4.

2.1.6 Additional (Miscellaneous) Road Costs

Two types of costs for local road improvements were estimated: 1) cost for road approaches for a grade separation (county road over Interstate only); and 2) cost for new frontage or access roads on the local road network. For the former, 0.5 miles of new roadway per grade separation was assumed; for the latter, scaling off of USGS topographic quadrangle or aerial maps was used to determine the length of roadway needed. The same unit cost, obtained from engineering judgment as well as from previous projects involving county roads, was used for both cases of local road improvements.

The unit cost of constructing mechanically stabilized earth (MSE) walls was taken from the aforementioned INDOT General Guidelines (converted to 1999 dollars). The walls were assumed to be 15 ft (5 m) high, with a 1,000 ft (305 m) taper at the beginning and end of the elevated section. Two walls (one on each side of the roadway) were assumed for each elevated section of the Interstate in areas where the Interstate would be elevated to provide grade separation over cross roads. The unit cost of constructing the leveling pads for the mechanically stabilized earth (MSE) walls was taken from the Trns-port Estimator program (for year 2000).

The costs used for these miscellaneous road costs are displayed in Table B-1 at the end of Section 2.4.

2.1.7 Mainline Removal

The unit cost for (concrete) pavement removal was taken from the Trns-port Estimator program (for year 2000). This category was only used when the Interstate was to be constructed over an existing major state or U.S. highway (e.g. U.S. 41 or S.R. 37). It was assumed that one half of the roadway along the segment was constructed with concrete, thereby requiring this cost to be included.

The unit cost for bridge removal was obtained from the aforementioned INDOT General Guidelines (converted to 1999 dollars). Three categories were established for bridges of different ranges of length: 1) bridges with a length less than 49 ft; 2) bridges with a length greater than 49 ft, but less than 98 ft; and 3) bridges with a length greater than 98 ft, but less than 148 ft. If a bridge length was longer than 148 ft, the length was divided by 148 and the answer was rounded down to the nearest tenth to obtain the equivalent number of bridges to be removed with a length between 98 and 148 ft.

The mainline removal costs used are displayed in Table B-1 at the end of Section 2.4.

2.2 Interchange Costs

2.2.1 Interchange Pavement and Earthwork

The unit cost for the pavement for the different types of interchanges was obtained by calculating an average cost from INDOT's Mini-Scope Cost Estimate & Environmental Overview for S.R. 69 along U.S. 41, S.R. 641 and I-70 (dated April 28, 1997) and INDOT's Mini-Scope and Cost Estimate for S.R. 37/S.R. 69 (dated September 6, 1996). For interchange types not utilized in either of these studies, these types were compared to those that were utilized, and a scaling factor was applied to determine a cost. The order of costs for the different types of interchanges, from lowest to highest was: 1) directional ramp; 2) tight diamond; 3) urban single point diamond; 4) rural diamond; 5) trumpet; 6) partial cloverleaf; 7) full cloverleaf; and 8)directional. The cost figures used from INDOT's Mini-Scope Cost Estimates only included pavement costs. Therefore, to determine the pavement and earthwork cost, the following percentages were applied for the construction of an interchange: pavement – 40%; earthwork – 35%; and bridges and right-of-way – 25%. By utilizing these percentages, an earthwork cost was calculated for each type of interchange based on the pavement costs. These two numbers were summed to obtain a total pavement and earthwork cost for each type of interchange. For each type of interchange a range of costs was given. This range will help to account for any variety of scenarios that could be encountered at the interchange locations.

The system interchange located at I-465 and SR 37 was a unique situation. Rather than using the unit value for a directional interchange, an independent estimate was performed here. Reasonable ramp configurations that could be studied in Tier 2 were identified. Square footage of the bridges was determined. The amount of ramp embankment sections and the need for earth-retained walls were also computed. Finally the amount of exit and entrance ramp work was estimated. This resulted in an interchange cost ranging from $60 million to $80 million. This was used rather than the value of $11.25 million in Table B-1. All interchange costs used are displayed in Table B-1 at the end of Section 2.4.

The system interchange located at I-64 and I-164 was another unique situation. Rather than using the unit value in Table B-1 for a directional interchange ($9.4 to $11.25 million), an estimate of $20 million to $30 million was used. Reasonable ramp configurations that could be studied in Tier 2 were identified. Square footage of the bridges was determined. The amount of ramp embankment sections and pavement was determined. Finally the amount of exit and entrance ramp work was estimated. The interchange costs used are displayed in Table B-1 at the end of Section 2.4.

2.2.2 Interchange Bridges

The unit cost of constructing a new bridge for an interchange was obtained from average construction costs from previous bridge design projects. Bridges associated with the Urban Single Point Diamond interchange had higher unit costs than other interchange bridges due to the complexity of that type of interchange. Segments utilizing existing roadways (e.g. U.S. 41 or S.R. 37) would use the existing bridges, with some rehabilitation (e.g. widening, deck overlaying, railing replacement, etc.). The unit cost for these bridges was estimated at 40% of the unit cost for a new bridge. The length of each bridge was evaluated on a case-by-case basis. The costs used are displayed in Table B-1 at the end of Section 2.4.

2.2.3 Interchange Maintenance of Traffic

The unit cost associated with maintaining traffic during the construction of new interchanges, or reconstruction of existing interchanges, was assumed to only involve detour signage. This cost taken from an average cost for interchange maintenance of traffic from previous projects. It should be noted that a larger amount for maintenance of traffic is included with the mainline maintenance of traffic described above. The costs used are displayed in Table B-1 at the end of Section 2.4.

2.2.4 Interchange Signing and Lighting

The unit cost of Signing and lighting for interchanges was taken from the aforementioned INDOT General Guidelines (converted to 1999 dollars). For interchange types not listed in these guidelines, these types were compared to the size of the interchanges listed, and a scaling factor was used to determine the cost. The order of costs for the different types of interchanges, from lowest to highest was assumed as: 1) directional ramp; 2) tight diamond; 3) urban single point diamond; 4) rural diamond; 5) trumpet; 6) partial cloverleaf; 7) full cloverleaf; and 8) directional. The costs used are displayed in Table B-1 at the end of Section 2.4.

2.3 Bridge Costs

2.3.1 Creek/River Crossings

The unit costs for new bridge construction over a creek or river were obtained by calculating an average construction cost from previous bridge design projects. Segments utilizing existing roadways (e.g. U.S. 41 or S.R. 37) would use the existing bridges, with some rehabilitation (e.g. widening, deck overlaying, railing replacement, etc.); the unit cost for such a use of existing bridges is approximately 40% of the unit cost for a new bridge. The length of a bridge for segments along new alignment was obtained by finding a state or U.S. highway nearby that crosses the same creek or river, and then increasing that bridge's length (as found in the Inventory of Bridges State Highway System of Indiana) by 30% for creeks and 20-25% for major rivers. If no state or U.S. highway crossed a particular creek, the length of the bridge was assumed to be 100 ft. Bridge widths were assumed as: 1) 43 feet for a four-lane rural section; 2) 49 feet for a four-lane urban section; 3) 55 feet for a six-lane rural section; 4) 61 feet for a six-lane urban section; 5) 73 feet for an eight-lane urban section; 6) 85 feet for a ten-lane urban section; and 7) 97 feet for a twelve-lane urban section. The costs used are displayed in Table B-1 at the end of Section 2.4.

2.3.2 Grade Separations (County Road over Interstate)

The unit cost of constructing a new county road bridge over the mainline was obtained from average construction costs from previous bridge design projects. For segments utilizing existing roadways (e.g. U.S. 41 or S.R. 37) all existing overhead bridges were assumed to need no work unless the existing mainline roadway was to be widened. In that case, the overhead bridge would be lengthened to account for the wider roadway it bridged. The length of new bridges was assumed to be 250 ft (slightly longer bridge lengths were used when associated with more lanes on the mainline roadway). The width of these bridges was assumed to be 45 ft. The bridge width was increased if the width of the crossing road was known (or assumed) to be larger than 45 ft. The costs used are displayed in Table B-1 at the end of Section 2.4.

2.3.3 Grade Separations (Interstate over County Road)

The unit cost of constructing a new mainline bridge over a county road was obtained from average construction costs from previous bridge design projects. For segments utilizing existing roadways (e.g. U.S. 41 or S.R. 37), all existing bridges were assumed to be adequate, with some rehabilitation (e.g. widening, deck overlaying, railing replacement, etc.) needed. The unit cost was estimated to be 40% of the unit cost for a new bridge. The length of a bridge for segments along new alignment was assumed to be 165 ft, while the width was assumed to be: 1) 43 feet for a four-lane rural section; 2) 49 feet for a four-lane urban section; 3) 55 feet for a six-lane rural section; 4) 61 feet for a six-lane urban section; 5) 73 feet for an eight-lane urban section; 6) 85 feet for a ten-lane urban section; and 7) 97 feet for a twelve-lane urban section. The costs used are displayed in Table B-1 at the end of Section 2.4.

2.4 Toll Road Costs

The toll road costs are based on open road tolling (ORT) procedures and facilities. It is anticipated that this will be the standard for new toll facilities due to the enhancement of the motorist's experience and the potential for being more cost effective in terms of both capital and operating expenditures. ORT utilizes transponder holders for a majority of traffic on the toll road. Motorists without a transponder will be recognized via their license plates, and will then be billed for the use of the toll road.

Costs associated with the toll road facilities are based on information collected during a toll road study. Within this study, the following toll authorities were studied: E-470 Toll Authority (in Denver, CO); Harris Co. Toll Road Authority (in Houston, TX); Orange Co. Transportation Corridor Agencies (in Orange County, CA); the Illinois State Toll Highway Authority; and the toll road authority in Toronto, Canada.

2.4.1 Mainline Gantries

The mainline gantries will be placed over the mainline at the begin/end points of the system. For the purposes of this study, it is assumed that for the beginning point (i.e. I-64), the gantries will be placed immediately north of the I-64/I-164/I-69 interchange. Likewise, at the end of the tolling portion of I-69 (i.e. I-70 or I-465), the mainline gantries will be placed immediately south of the I-70/I-69 or I-465/I-69 interchange. Furthermore, for the purposes of this study, it was assumed that one gantry would be required for all northbound and southbound lanes. The costs assumed with the mainline gantries are displayed in Table B-1 at the end of Section 2.4.

2.4.2 Ramp Gantries

The ramp gantries will be placed over each ramp of all interchanges within the portion of the corridor that will be a toll road. For the purposes of this study, it was assumed that each ramp would be a one or two lane ramp, and therefore only one gantry would be required over each ramp. The costs assumed with the ramp gantries are displayed in Table B-1 at the end of Section 2.4.

2.4.3 Roadside Equipment

The roadside equipment will be quantified per toll lane. Roadside equipment will be required each time there is a gantry, thus it will be included at the beginning and end of the toll road corridor and at each ramp. The costs associated with the roadside equipment are displayed in Table B-1 at the end of Section 2.4.

2.4.4 Backroom Systems

The backroom systems, including the floor space to house them, will be a lump sum cost added to the final cost of each alternative. The costs associated with the backroom systems are displayed in Table B-1 below.

Table B-1: Standardized Costs

ITEM	UNIT COST	SOURCE:
MAINLINE PAVEMENT COSTS:		
	$ / mile	
- Reconstruct existing 6-lane interstate into a 12-lane interstate (excludes bridges & interchanges)	10,000,000	
- Rural four (4) lane divided high speed arterial (excludes bridges & interchanges):	2,000,000	Calculations/ Transport Estimator
- Urban four (4) lane divided high speed arterial with concrete median barrier (excluding bridges & interchanges):	2,500,000	Calculations/ Transport Estimator
- Rural six (6) lane divided high speed arterial (excludes bridges & interchanges):	2,850,000	Calculations/ Transport Estimator
- Urban six (6) lane divided high speed arterial with concrete median barrier (excludes bridges & interchanges):	3,250,000	Calculations/ Transport Estimator
- Urban eight (8) lane divided high speed arterial with concrete median barrier (excludes bridges & interchanges):	3,750,000	Calculations/ Transport Estimator
EARTHWORK COSTS:		
	$ / mile	
- Flat Terrain	1,300,000	Calculations/Prev. Studies
- Rolling Terrain / Common Excavation	2,450,000	Calculations/Prev. Studies
- Rolling Terrain / Rock Excavation	4,100,000	Calculations/Prev. Studies
- Hilly Terrain	11,300,000	Calculations/Prev. Studies
ADDITIONAL EARTHWORK FOR ELEVATED INTERSTATE COSTS:		
	$ / mile	
- Elevate Roadway 15 ft Above Grade (4 Lanes)	3,925,000	Calculations/Trns-port Estimator
- Elevate Roadway 15 ft Above Grade (6 Lanes)	4,900,000	Calculations/Trns-port Estimator
- Elevate Roadway 15 ft Above Grade (8 Lanes)	5,800,000	Calculations/Trns-port Estimator
MAINTENANCE OF TRAFFIC COSTS:		
	$ / mile	
- Temporary runaround	130	
- Temporary pipe for runaround	610	
	$ / (ft2)	
- Temporary bridge for runaround	30	
	$	
- Detour signage	10,200	
- Temporary crossovers (type “B”) - one X	61,000	

Table B-1: Standardized Costs - Continued

ITEM	UNIT COST		SOURCE:
	$ / mile		
- Partial closure of lane - rural (4 lane)	30,500		
- Two way traffic with bituminous curb divider	76,200		
- Two way traffic with temp. concrete barrier wall (incl.Shldr rehab)	305,000		
- Urban added travel lanes (one side at a time)	270,000		
- Urban added travel lanes (two lane to three lane)	244,000		
- Two way traffic (incl. Shldr rehab, concrete median barrier, temp. crossover, type "B", both directions)	430,000		Combination: General Guidelines/Calculations/Prev. Studies
SIGNING AND LIGHTING COSTS:			
	$ / mile		
- Signing and Lighting (not including Interchanges)	150,000		Calculations/Prev. Studies
- Signing and Lighting (for adding a travel lane to existing Interstate)	125,000		Calculations/Prev. Studies
ADDITIONAL (MISCELLANEOUS) ROAD COSTS:			
	$ / mile		
- Rural two (2) lane frontage road (excludes bridges & interchanges) and Rural two (2) road at grade separations:	825,000		Calculations/Previous Studies
	$ / (ft2)		
- Mechanically stabilized earth (MSE) retaining walls	30		General Guidelines
	$ / (ft2)		
- Leveling Pads, Concrete	20		Calculations/ Transport Estimator
MAINLINE REMOVAL COSTS:			
	$ / yd2		
- Pavement removal (concrete)	6		Calculations/ Transport Estimator
- Bridge Removal	$		
1. Steel beam, slab, box beam (< 15 m span, 49 ft span)	15,300		General Guidelines
2. Steel beam, slab, box beam (15-30 m span, 49-98 ft span)	25,400		General Guidelines
3. Steel beam, slab, box beam (30-45 m span, 98-148 ft span)	35,600		General Guidelines
INTERCHANGE COSTS (Pavement and Earthwork):			
	LOW	HIGH	
- Simple / traditional diamond	4,700,000	7,500,000	Previous Studies
- Tight diamond	3,750,000	5,650,000	Previous Studies
- Urban single point diamond	4,700,000	6,575,000	Previous Studies
- Partial cloverleaf	7,050,000	8,925,000	Previous Studies

Table B-1: Standardized Costs - Continued

ITEM	UNIT COST		SOURCE:
- Full cloverleaf	7,975,000	9,850,000	Previous Studies
- Directional	9,400,000	11,250,000	Previous Studies
- Trumpet	4,700,000	7,500,000	Previous Studies
- Directional Ramp	1,175,000	1,875,000	Previous Studies
- Folded diamond	4,700,000	7,500,000	Previous Studies
- System Interchange at I-465 and SR 37	$60 - $80 million		Hand Calculated
- System Interchange at I-64 and I-164	$20 - $30 million		Hand Calculated
INTERCHANGE COSTS (BRIDGES)			
	$ / (ft2) of deck area		
- Grade Separation	85		Calculations/ Previous Studies
- Single Point Urban Grade Separation	120		Calculations/ Previous Studies
INTERCHANGE MAINTENANCE OF TRAFFIC COSTS:			
	$ / interchange		
- Rural Diamond	20,000		Calculations/ Previous Studies
- Tight Diamond	20,000		Calculations/ Previous Studies
- Partial Cloverleaf	30,000		Calculations/ Previous Studies
- Directional Interchange	40,000		Calculations/ Previous Studies
- Urban Single Point Diamond	100,000		Calculations/ Previous Studies
- Full Cloverleaf	30,000		Calculations/ Previous Studies
- Trumpet Interchange	40,000		Calculations/ Previous Studies
- Directional Ramp	10,000		Calculations/ Previous Studies
INTERCHANGE SIGNING AND LIGHTING COSTS:			
	$		
- Interchange signing:			
1. Diamond interchange	254,000		General Guidelines
2. Partial Cloverleaf	407,000		Scaling Factor * General Guidelines
3. Full Cloverleaf	407,000		General Guidelines

Table B-1: Standardized Costs - Continued

ITEM	UNIT COST	SOURCE:
4. Directional Interchange	410,000	Scaling Factor * General Guidelines
5. Trumpet Interchange	275,000	Scaling Factor * General Guidelines
	$	
- Interchange lighting:		
1. Diamond interchange	153,000	General Guidelines
2. Partial cloverleaf	305,000	General Guidelines
3. Full Cloverleaf	508,000	General Guidelines
4. Directional Interchange	510,000	Scaling Factor * General Guidelines
5. Trumpet Interchange	175,000	Scaling Factor * General Guidelines
BRIDGE COSTS:		
	$ / (ft2) of Deck Area	
- New construction		
1. Creek / River Crossing (slab, steel beam, concrete girder)	85	Previous Studies
2. Grade Separations (steel beam, concrete girder, etc.)	85	Previous Studies
TOLL ROAD COSTS:		
	$	
-Mainline Gantry	6,000,000	Previous Studies
-Ramp Gantry	1,500,000	Previous Studies
-Backroom Systems	16,000,000	Previous Studies
	$ / Toll Lane	
-Roadside Equipment	300,000	Previous Studies

2.5 Rest Areas

The costs to construct rest areas were combined as one unit cost per rest area. Costs were obtained from recently constructed rest areas. This cost of $6.2 million was rounded up to $7 million for purposes of this estimate. Each alternative is assumed to have two rest area locations with rest areas for both northbound and southbound traffic (4 total). It was estimated that each rest area would utilize approximately 40 acres of right-of-way (160 acres total).

2.6 Right-of-Way Costs

In determining the cost of right-of-way, two different scenarios were used. The first involved right-of-way and relocation for new terrain roads where there was minimal development. A cost of approximately $450,000 per mile was assigned to this case. This cost was derived from the 1995 right-of-way and relocation costs from the Draft EIS for Option 1 for the Southwest Indiana Highway. A 5% annual inflation rate for six years was computed and then a

15% contingency was added. This cost estimate was in 2001 dollars and assumes no major additional commercial or industrial development has occurred. This approach was used to prepare cost for the Alternative Concept Screening conducted early in the study.

The second scenario involved field review of all the alternatives with a more in depth field reviews in more heavily developed locations. An INDOT approved appraiser evaluated the properties that would be impacted by the various working alignments and categorized properties into a range of values. This approach was used to prepare cost for the Alternatives identified in the DEIS published in 2002.

During the latter stages of the preparation of the draft environmental impact statement in 2002, the alternatives were broken down into smaller segments. Field surveys for each alignment resulted in a more detailed accounting of right-of-way cost based on the actual development noted. Right-of-Way costs for each alternative and each enclosed segment were developed. These were a summation of the various sections that made up the segments. Representing better data, this appraised cost in undeveloped and developed areas was used for the cost of right-of-way in the DEIS rather than the template values.

Impacts were assessed using working alignments depicted on aerial photos for the build alternatives. Generally, a 300-foot right-of-way width was used for assessing impacts; however, right-of-way width variations were made depending on terrain and accessibility. These variations generally follow the changes in cross-section widths as described in Appendix E.

Some properties that were close but outside of the working alignment were assumed to be taken. The actual right-of-way width will vary depending on terrain, stream crossings and placement of frontage roads. The possible upgrade of US 41 or SR 37 from four-lane divided highways to Interstate facilities would utilize much of the existing right-of-way, although there are locations where additional right-of-way would be required, namely strip right-of-way where the current section is not wide enough for current design standards and at proposed interchange locations and for access/frontage roads.

The numbers shown for relocations in the FEIS are based on the working alignment within each corridor. The homes and businesses were field checked. Neighborhoods and communities that were impacted by the roadway or through lost access were evaluated in the field. The Tier 2 NEPA document will ultimately select an alignment within the corridor.

Right-of-way and relocation costs include right-of-way costs for acreage and improvements required for actual construction, relocation costs, costs for acquiring structures and improvements, loss of access, and administrative fees. These costs are estimates only and are based on a field survey. An INDOT approved appraiser evaluated the properties that would be impacted by the various working alignments and categorized properties into a range of values. Utility facility relocation costs were not included in these estimates. The right-of-way for proposed interchanges has not yet been determined precisely and is only estimated at this time based on the type of interchange and approximations of right-of-way. These costs are for comparison purposes only. They could change after more precise right-of-way requirements have been determined.

2.7 Engineering Costs

2.7.1 Highway Design Engineering

The cost for highway design engineering was estimated as a percentage of the construction costs for the various highway components: mainline pavement; earthwork; maintenance of traffic; signing and lighting; miscellaneous road costs; mainline removal; and interchange pavement and earthwork. Different percentages were used depending on if the construction was through an urban or a rural area. For Highway design in a rural area, the design engineering is estimated at 4% of the construction cost. Due to more complexities, design engineering in an urban section was estimated at 6% of the construction cost (with a typically higher construction cost per mile for the urban section).

2.7.2 Bridge Design Engineering

The cost for bridge design engineering was estimated as a percentage of the construction costs for the various bridges: creek/river crossings; grade separations (county road over Interstate); grade separations (Interstate over county road); and interchanges. Different percentages were used for construction in urban and rural areas. This percentage was 7% of construction cost for bridges in rural areas and 8% of construction cost in urban areas.

2.7.3 Right-of-Way Engineering and Services

The cost for right-of-way engineering & services was assumed to be 10 percent of the total costs for right-of-way land acquisition, improvements, and relocation costs.

2.8 Environmental Mitigation Costs

The cost for environmental mitigation was determined on the following basis:

1. Wetland Mitigation: The acres needed for Wetland Mitigation was determined for each alternative based on the expected impact acreage. The acreage needed for mitigation was determined by using a 3:1 ratio. The cost of this mitigation, including securing suitable parcels, designing and constructing wetlands as well as administrative costs was estimated at $20,000 per acre.

2. Forest Mitigation: The acres needed for Forest Mitigation was determined for each alternative based on the expected impact acreage. The acreage needed for mitigation was determined by using a 3:1 ratio. The cost of this mitigation, including securing suitable parcels, designing and planting of trees as well as administrative costs was estimated at $10,000 per acre.

3. Noise Impact Mitigation: The impact of noise mitigation for each alternative was determined by using the number of residential receivers potentially affected and then applying a $30,000 cost per receiver to determine the cost of the noise barriers. The $30,000 cost per receiver represents the maximum INDOT can spend per impacted receiver according to their noise policy.

4. A uniform value of $2 million was applied to each alternative to represent an approximate cost to obtain access rights to any mitigation site developed.

5. Those alternatives passing through karst topography would have a mitigation cost of up to $1 million for mitigation.

6. A uniform value of up to $5 million was applied to each alternative to represent potential cost to mitigate for historic and archaeological impacts.

7. A uniform value of up to $2 million was allocated for planning grants for local governments to use for setting up comprehensive plans to aid in planned development likely to occur at or near interchanges.

8. A contingency of $15 million was applied to all alternatives for other mitigation that might be needed as a result of the Tier 2 Studies and subsequent design.

3.0 Costs Not Included in Tier 1 Study

Since the Tier 1 study was based on a working alignment within a 2000-foot wide corridor, there is adequate room for adjustments in alignment during Tier 2 to minimize impacts. As such there were some items that were not included in the cost estimates during this phase.

The cost of utility relocations has not been determined. It is recognized that utility relocation is a normal part of construction work. For the project of this size, utility costs could be 1-3% of the construction cost. It is not possible at this time to determine precisely where these relocations will occur and how much they will cost. These determinations will be made is the Tier 2 studies.

Construction Engineering typically costs about 10 percent of the construction costs for large projects such as these. This value will be based on the staging of contracts and the actual bids received. As the project develops and more refined estimates are determined and the actual timing of the contracts is determined, a better estimate of construction costs can be made.

4.0 Cost Refinement After Tier 1

During the Tier 2 studies, the Preferred Alternative is divided into sections. The alignment within each respective section will be defined based on a controlled aerial survey. Digital Terrain Modeling (DTM) will be employed to help develop the roadway line and grade. This computer-generated model will show the alignment both in horizontal as well as vertical dimensions.

The location of the alignment will be adjusted or refined when sensitive environmental features are encountered to minimize impacts. Preliminary access will be developed and additional shifts to the alignment may be necessary. Bridges will be located and sized when the alternative alignment crosses streams and other highway/railroad features. Estimates of earthwork will be able to be developed based on the Digital Terrain Model. An estimate of utility relocation costs will also be determined based on the working alignment.

All this work will result more precise estimates of quantities needed to construct the road. Based on the more detailed alignment and more precise quantities it will be possible to develop cost estimates that will be representative of the final design costs. Construction costs will be developed at that time based on the latest unit prices. Utility coordination costs and construction engineering costs will also be included during this Tier 2 study.

During the design stages of this project, the costs will continue to be refined. These refinements will result from a more detailed analysis. The design of the roadway and bridges will begin to go through design review processes and the detailed portions of the design will be considered. With these details, the final quantities can be determined, and a final cost estimate can be determined, using the latest unit costs, for the time of construction.

SUMMARY COST TABLES BY ALTERNATIVE AND ALTERNATIVE MAPS

SUMMARY OF COSTS PER ALTERNATIVE

Table B-2: Cost (Construction, Engineering, Right-of-Way) and Mileage Estimates of Alternatives

		Cost			Driving Miles	
Alternative		Low	High	Average	Low	High
Free	1	$ 810,000,000	$ 1,040,000,000	$ 925,000,000	154	156
	2C	$ 1,550,000,000	$ 1,780,000,000	$ 1,665,000,000	146	147
	3C	$ 1,730,000,000	$ 1,830,000,000	$ 1,780,000,000	142	142
	4B	$ 1,050,000,000	$ 1,110,000,000	$ 1,080,000,000	142	142
	4C	$ 1,430,000,000	$ 1,530,000,000	$ 1,480,000,000	142	142
Toll (All Options)	1	$ 1,000,000,000	$ 1,250,000,000	$ 1,125,000,000	154	156
	2C	$ 1,790,000,000	$ 2,050,000,000	$ 1,915,000,000	146	147
	3C	$ 1,950,000,000	$ 2,050,000,000	$ 2,000,000,000	142	142
	4B	$ 1,220,000,000	$ 1,280,000,000	$ 1,250,000,000	142	142
	4C	$ 1,650,000,000	$ 1,740,000,000	$ 1,695,000,000	142	142

\Note: Costs above have been rounded to the nearest $10 million

Mitigation Costs

Table B-3: Mitigation Costs

Alternative	Cost
1	$ 39,640,000
2C	$ 69,350,000
3C	$ 77,130,000
4B	$ 59,670,000
4C	$ 65,390,000

Rest Area Costs: Each alternative will have 4 rest areas (2 northbound and 2 southbound). The estimated cost of these 4 rest areas is $ 28,640,000. This cost of mitigation and rest areas is to be added to each alternative

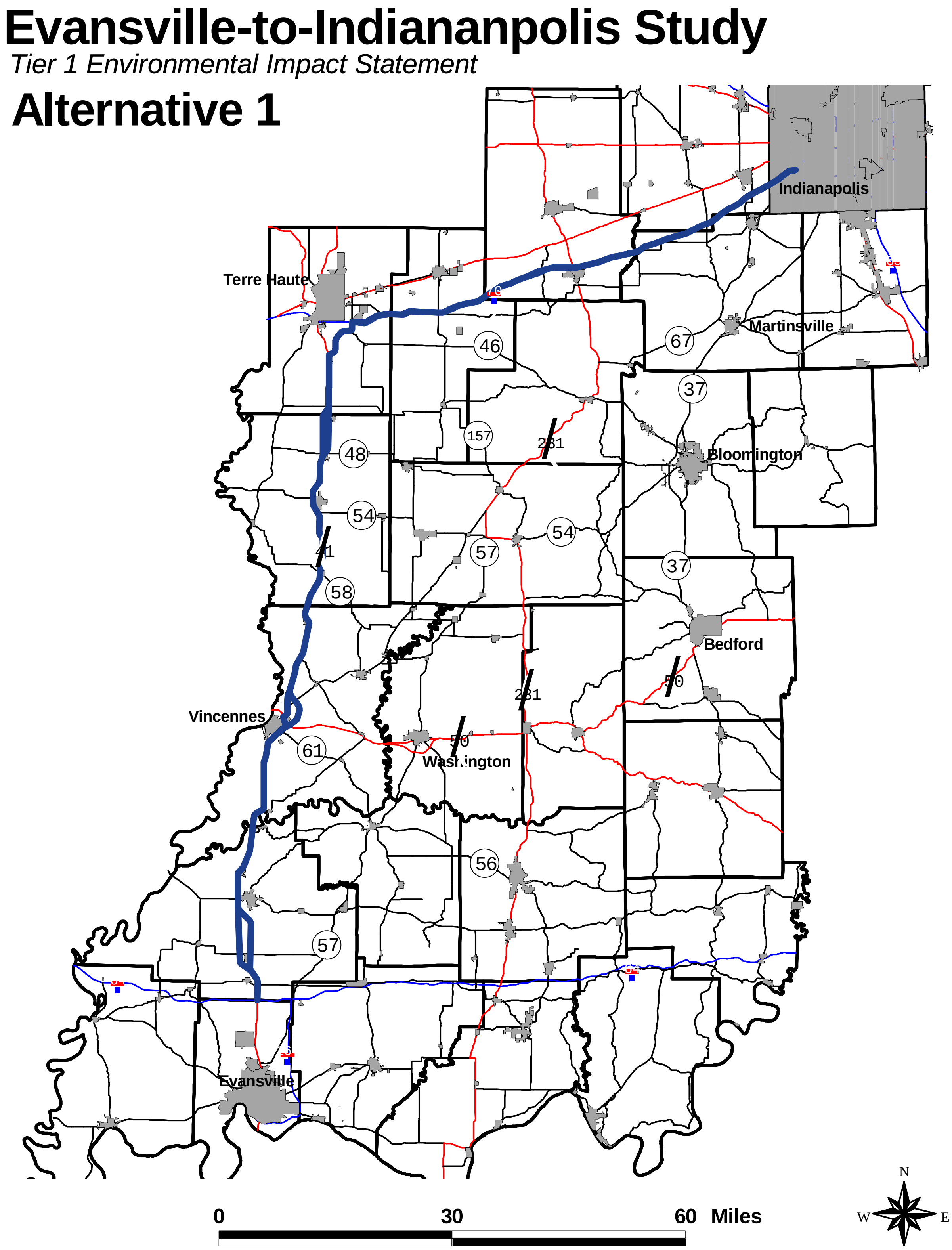

Figure: Alternative 1 Map

Table B-4: Alternative 1 (Non-Tolled) Costs and Mileage

Construction Length:	86.65 mi - 89.02 mi
Driving Length:	153.92 mi - 156.29 mi
Construction Roadway Cost:	$520,446,128 - $689,289,099
Construction Bridge Cost:	$114,638,651 - $117,639,456
Subtotal Construction Cost:	$635,084,779 - $806,928,555
Design Engineering Cost:	$31,193,683 - $43,808,270
Right-of-Way Engineering and Services Cost:	$12,890,000 - $17,280,000
Subtotal Engineering Cost:	$44,083,683 - $61,088,270
Right-of-Way Cost:	$128,900,000 - $172,800,000
Total (Construction / Right-of-Way / Engineering) Cost:	$808,068,462 - $1,040,816,825

Additional Costs:

Mitigation Cost: $39,640,000

Rest Area Cost: $28,640,000

Table B-5: Alternative 1 (50, 75% or 100% Toll) Costs and Mileage

Construction Length:	86.65 mi - 89.02 mi
Driving Length:	153.92 mi - 156.29 mi
Construction Roadway Cost:	$509,060,628 - $678,856,599
Construction Bridge Cost:	$113,047,451 - $117,139,230
Subtotal Construction Cost:	$622,108,079 - $795,995,829
Construction Toll Road Cost:	$183,600,000 - $194,400,000
Backroom Systems	$16,000,000 - $16,000,000
Subtotal Toll Cost:	$199,600,000 - $210,400,000
Design Engineering Cost:	$38,831,795 - $52,934,302
Right-of-Way Engineering and Services Cost:	$12,890,000 - $17,280,000
Subtotal Engineering Cost:	$51,721,795 - $70,214,302
Right-of-Way Cost:	$128,900,000 - $172,800,000
Total (Construction / Right-of-Way / Engineering) Cost:	$1,002,329,874 - $1,249,410,131

Additional Costs:

Mitigation Cost: $39,640,000

Rest Area Cost: $28,640,000

Segment Location		Number of Lanes Req'd	
From	To	Non-Toll	Toll
I-64	SR 64	6	4
SR 64	SR 641	4	4

Evansville-to-Indiananpolis Study

Tier 1 Environmental Impact Statement

Alternative 2C

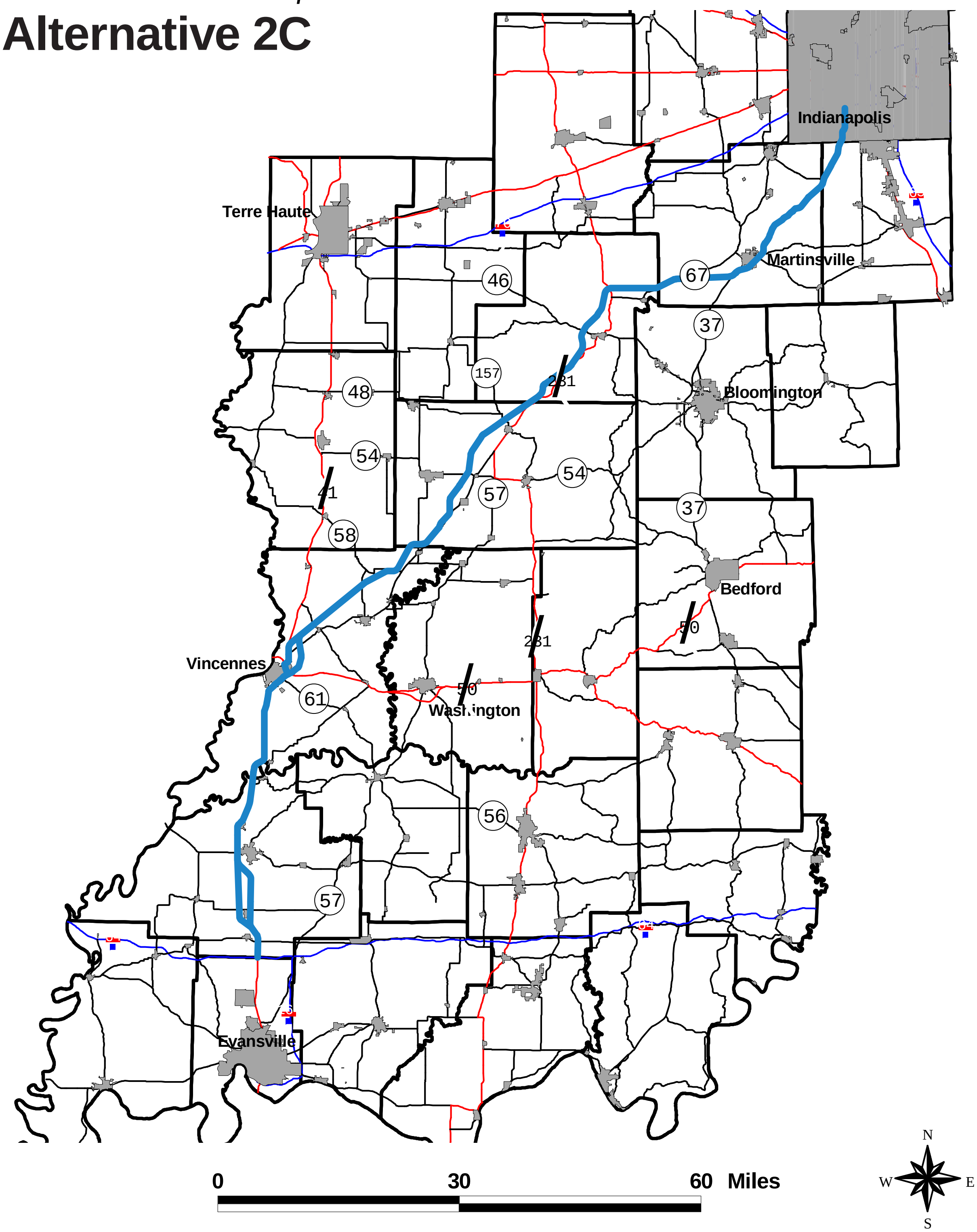

Figure: Alternative 2C Map

Table B-6: Alternative 2C (Non-Tolled) Costs and Mileage

Construction Length:	145.82 mi - 146.94 mi
Driving Length:	145.82 mi - 146.94 mi
Construction Roadway Cost:	$1,022,613,632 - $1,210,723,761
Construction Bridge Cost:	$210,940,263 - $215,511,518
Subtotal Construction Cost:	$1,233,553,895 - $1,426,235,279
Design Engineering Cost:	$62,367,799 - $74,927,698
Right-of-Way Engineering and Services Cost:	$22,810,000 - $25,580,000
Subtotal Engineering Cost:	$85,177,799 - $100,507,698
Right-of-Way Cost:	$228,100,000 - $255,800,000
Total (Construction / Right-of-Way / Engineering) Cost:	$1,546,831,694 - $1,782,542,977

Additional Costs:

Mitigation Cost: $69,350,000

Rest Area Cost: $28,640,000

Table B-7: Alternative 2C (50%, 75% or 100% Toll) Costs and Mileage

Construction Length:	145.82 mi - 146.94 mi
Driving Length:	145.82 mi - 146.94 mi
Construction Roadway Cost:	$992,915,632 - $1,181,978,761
Construction Bridge Cost:	$204,084,997 - $209,747,226
Subtotal Construction Cost:	$1,197,000,629 - $1,391,725,987
Construction Toll Road Cost:	$252,600,000 - $277,800,000
Backroom Systems	$16,000,000 - $16,000,000
Subtotal Toll Cost:	$268,600,000 - $293,800,000
Design Engineering Cost:	$72,323,530 - $86,803,349
Right-of-Way Engineering and Services Cost:	$22,810,000 - $25,580,000
Subtotal Engineering Cost:	$95,133,530 - $112,383,349
Right-of-Way Cost:	$228,100,000 - $255,800,000
Total (Construction / Right-of-Way / Engineering) Cost:	$1,788,834,159 - $2,053,709,336

Additional Costs:

Mitigation Cost: $69,350,000

Rest Area Cost: $28,640,000

Segment Location		Number of Lanes Req'd	
From	To	Non-Toll	Toll
I-64	SR 64	6	4
SR 64	SR 67	4	4
SR 67	SR 37	4	4
SR 37	SR 252	6	4
SR 252	SR 44	8	4
SR 44	SR 144	6	6
SR 144	I-465	8	6

Evansville-to-Indiananpolis Study

Tier 1 Environmental Impact Statement

Alternative 3C

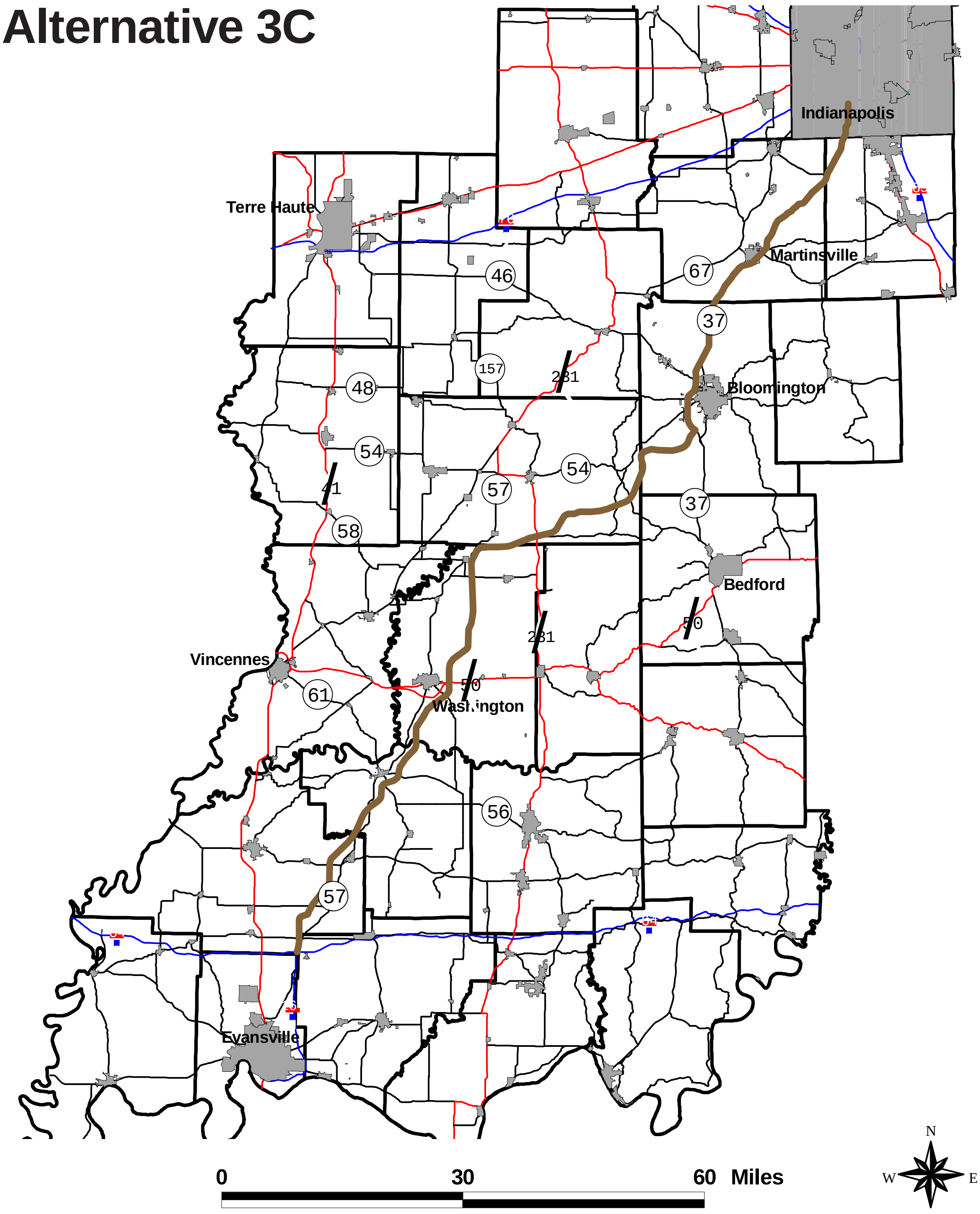

Figure: Alternative 3C Map

Table B-8: Alternative 3C (Non-Tolled) Costs and Mileage

Construction Length:	141.55 mi
Driving Length:	141.55 mi
Construction Roadway Cost:	$1,188,912,982 - $1,288,162,982
Construction Bridge Cost:	$209,622,151
Subtotal Construction Cost:*	$1,398,535,133 - $1,497,785,133
Design Engineering Cost:	$70,376,979 - $75,347,979
Right-of-Way Engineering and Services Cost:	$23,510,000 - $23,510,000
Subtotal Engineering Cost:	$93,886,979 - $98,857,979
Right-of-Way Cost:	$235,100,000 - $235,100,000
Total (Construction / Right-of-Way / Engineering) Cost:	$1,727,522,112 - $1,831,743,112
* The range in construction costs is due to a range in cost for each individual interchange within the alternative.	

Additional Costs:

Mitigation Cost: $77,130,000

Rest Area Cost: $28,640,000

Table B-9: Alternative 3C (50%, 75% or 100% Toll) Costs and Mileage

Construction Length:	141.55 mi
Driving Length:	141.55 mi
Construction Roadway Cost:	$1,152,800,482 - $1,252,050,482
Construction Bridge Cost:	$202,618,577
Subtotal Construction Cost:*	$1,355,419,059 - $1,454,669,059
Construction Toll Road Cost:	$238,200,000
Backroom Systems	$16,000,000
Subtotal Toll Cost:	$254,200,000
Design Engineering Cost:	$79,551,438 - $84,522,438
Right-of-Way Engineering and Services Cost:	$23,510,000 - $23,510,000
Subtotal Engineering Cost:	$103,061,438 - $108,032,438
Right-of-Way Cost:	$235,100,000
Total (Construction / Right-of-Way / Engineering) Cost:	$1,947,780,497 - $2,052,001,497
* The range in construction costs is due to a range in cost for each individual interchange within the alternative.	

Additional Costs:

Mitigation Cost: $77,130,000

Rest Area Cost: $28,640,000

Segment Location		Number of Lanes Req'd	
From	To	Non-Toll	Toll
I-64	SR 37	4	4
SR 37	Rockport Rd.	6	4
Rockport Rd.	SR 45	8	4
SR 45	SR 252	6	4
SR 252	SR 44	8	4
SR 44	SR 144	6	4
SR 144	I-465	8	6

Evansville-to-Indiananpolis Study

Tier 1 Environmental Impact Statement

Alternative 4B

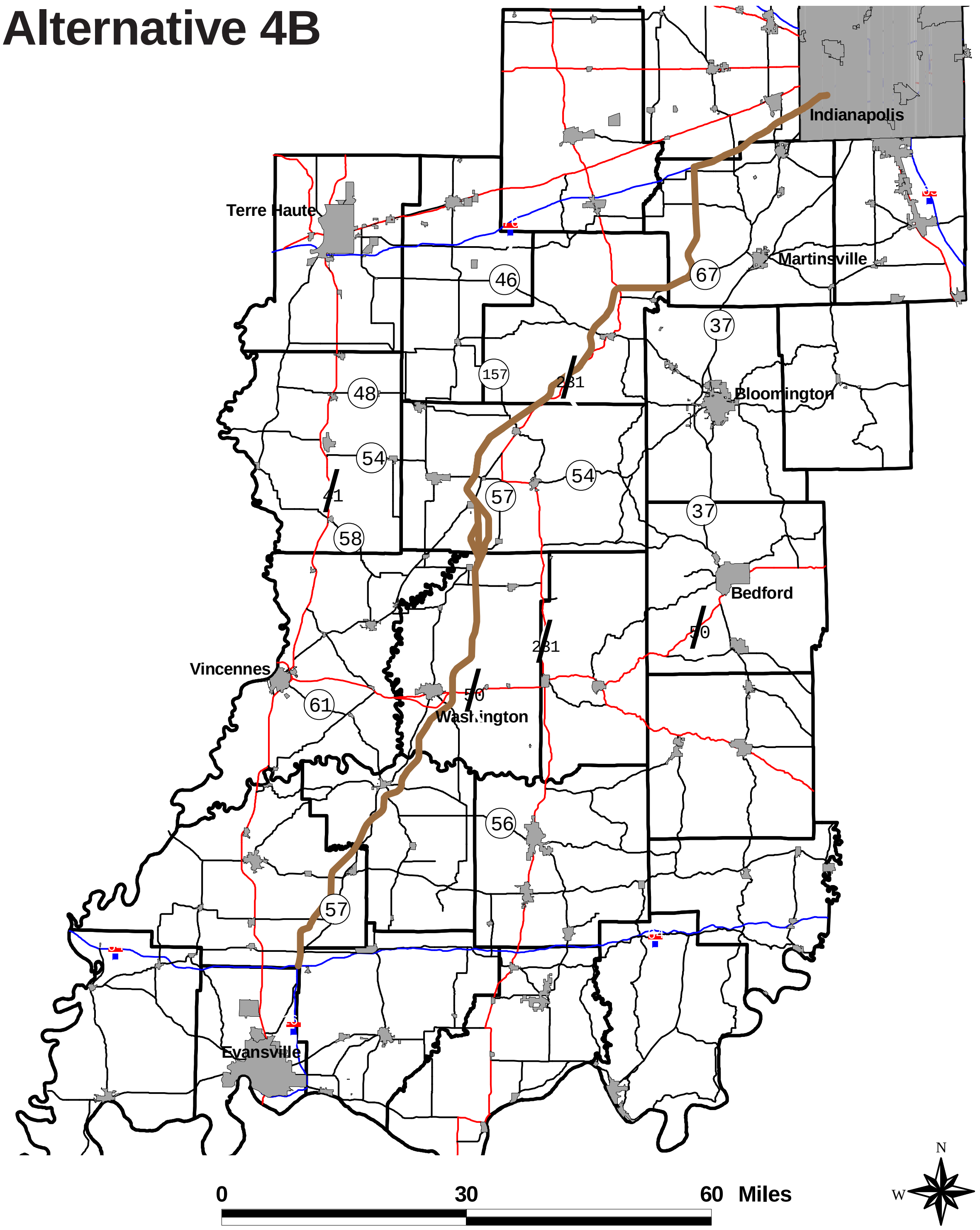

Figure: Alternative 4B Map

Table B-10: Alternative 4B (Non-Tolled) Costs and Mileage

Construction Length:	129.49 mi
Driving Length:	141.53 mi
Construction Roadway Cost:	$736,386,010 - $793,061,010
Construction Bridge Cost:	$172,844,442 - $176,207,602
Subtotal Construction Cost:*	$909,230,452 - $969,268,612
Design Engineering Cost:	$42,191,347 - $44,727,400
Right-of-Way Engineering and Services Cost:	$8,630,000 - $8,630,000
Subtotal Engineering Cost:	$50,821,347 - $53,357,400
Right-of-Way Cost:	$86,300,000 - $86,300,000
Total (Construction / Right-of-Way / Engineering) Cost:	$1,046,351,799 - $1,108,926,012

* The range in construction costs is due to a range in cost for each individual interchange within the alternative and a range in cost of rehabilitating bridges along the existing I-70.

Additional Costs:

Mitigation Cost: $59,670,000

Rest Area Cost: $28,640,000

Table B-11: Alternative 4B (50%, 75% or 100% Toll) Costs and Mileage

Construction Length:	129.49 mi
Driving Length:	141.53 mi
Construction Roadway Cost:	$736,386,010 - $793,061,010
Construction Bridge Cost:	$172,844,442 - $176,207,602
Subtotal Construction Cost:*	$909,230,452 - $969,268,612
Construction Toll Road Cost:	$147,600,000
Backroom Systems	$16,000,000
Subtotal Toll Cost:	$163,600,000
Design Engineering Cost:	$48,095,347 - $48,096,867
Right-of-Way Engineering and Services Cost:	$8,630,000 - $8,630,000
Subtotal Engineering Cost:	$56,725,347 - $56,726,867
Right-of-Way Cost:	$86,300,000
Total (Construction / Right-of-Way / Engineering) Cost:	$1,215,855,799 - $1,275,895,479

* The range in construction costs is due to a range in cost for each individual interchange within the alternative and a range in cost of rehabilitating bridges along the existing I-70.

Additional Costs:

Mitigation Cost: $59,670,000

Rest Area Cost: $28,640,000

Segment Location		Number of Lanes Req'd	
From	To	Non-Toll	Toll
I-64	I-70	4	4

Evansville-to-Indiananpolis Study

Tier 1 Environmental Impact Statement

Alternative 4C

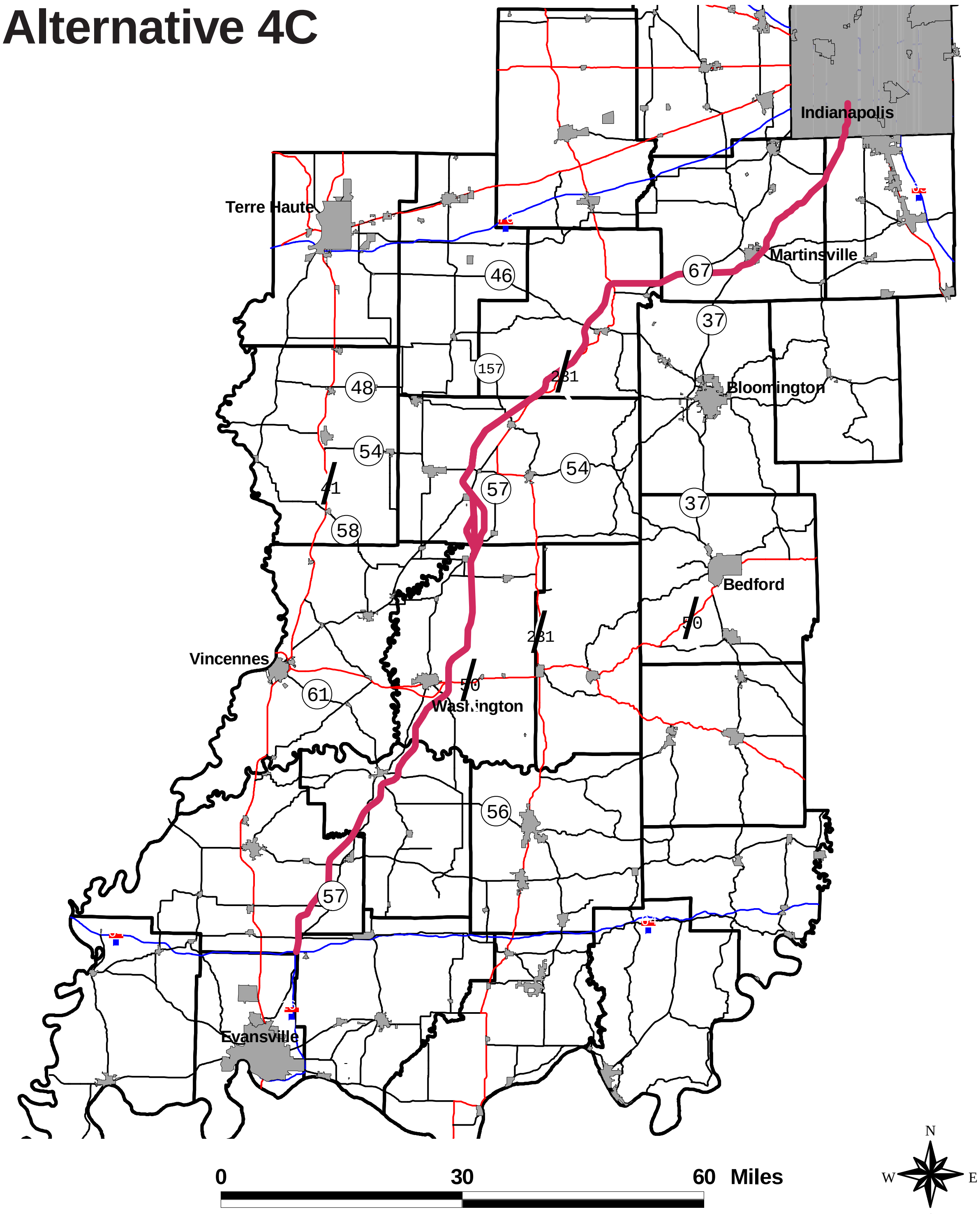

Figure: Alternative 4C Map

Table B-12: Alternative 4C (Non-Tolled) Costs and Mileage

Construction Length:	142.28 mi
Driving Length:	142.28 mi
Construction Roadway Cost:	$940,692,482 - $1,031,417,482
Construction Bridge Cost:	$213,807,330
Subtotal Construction Cost:*	$1,154,499,812 - $1,245,224,812
Design Engineering Cost:	$57,228,174 - $61,538,174
Right-of-Way Engineering and Services Cost:	$20,030,000 - $20,030,000
Subtotal Engineering Cost:	$77,258,174 - $81,568,174
Right-of-Way Cost:	$200,300,000 - $200,300,000
Total (Construction / Right-of-Way / Engineering) Cost:	$1,432,057,986 - $1,527,092,986

* The range in construction costs is due to a range in cost for each individual interchange within the alternative.

<u>Additional Costs:</u>
Mitigation Cost: $65,390,000
Rest Area Cost: $28,640,000

Table B-13: Alternative 4C (50%, 75% or 100% Toll) Costs and Mileage

Construction Length:	142.28 mi
Driving Length:	142.28 mi
Construction Roadway Cost:	$922,379,982 - $1,013,104,982
Construction Bridge Cost:	$208,543,264
Subtotal Construction Cost:*	$1,130,923,246 - $1,221,648,246
Construction Toll Road Cost:	$213,000,000
Backroom Systems	$16,000,000
Subtotal Toll Cost:	$229,000,000
Design Engineering Cost:	$65,449,793 - $69,759,793
Right-of-Way Engineering and Services Cost:	$20,030,000 - $20,030,000
Subtotal Engineering Cost:	$85,479,793 - $89,789,793
Right-of-Way Cost:	$200,300,000
Total (Construction / Right-of-Way / Engineering) Cost:	$1,645,703,039 - $1,740,738,039

* The range in construction costs is due to a range in cost for each individual interchange within the alternative.

<u>Additional Costs:</u>
Mitigation Cost: $65,390,000
Rest Area Cost: $28,640,000

Segment Location		Number of Lanes Req'd	
From	To	Non-Toll	Toll
I-64	SR 37	4	4
SR 37	SR 252	6	4
SR 252	SR 44	8	4
SR 44	SR 144	6	4
SR 144	I-465	8	6

Appendix C – Application of ISTDM Version 4 to Model Toll Alternatives

Methodology

The Toll Choice Model determines the likeliness that a user, who travels between an *origin-destination pair*, uses the new facility. By applying this probability to the total number of trips exchanged between the *o-d* pair, we get the total number of "*toll-eligible*" trips. In other words, when the "build" alternative assumes a "tolled" facility, the total number of trips between an *origin-destination* pair is split in "*toll-eligible*" and "*non-toll*" trips. To generate toll forecasts for I-69 from Indianapolis to Evansville, a Logit Toll Choice Model is adopted and then incorporated in the Indiana Statewide Travel Demand Model. There are several factors that influence the toll probability and they serve as the independent variables of the toll model. The mathematical relationship is expressed in the following formulation:

$$P_{Toll} = \frac{1}{1+e^{[a(T_{Toll}-T_{Free})+b(C_{Toll})]}} \qquad (1)$$

where P_{Toll} is the probability of using the toll route, T_{Toll} is the travel time using the toll route, T_{Free} is the travel time using the non-toll route, C_{Toll} is the toll cost using the toll route, a is a time coefficient, and b is a cost coefficient.

The Toll Choice Model is a logit utility function that uses a combination of travel time and cost to determine if a trip is likely to make use of (or would be "eligible" for) a toll route. For input, the model requires the total travel time needed for each vehicle-trip. It then compares the travel time using both a toll route and a non-toll route. Using an appropriate monetary "*value-of-time*", the value of "b" is computed and the cost of the toll is added to the toll route in the logit model. If the generalized cost using the toll route is less than that of the shortest non-toll route, then each trip between the *origin-destination* is considered to be "*toll-eligible*" one and its likeliness is determined using equation 1.

ISTDM Version 4.0 Toll

The first task in generating toll forecasts for I-69 from Indianapolis to Evansville was the development of an adaptation to the Indiana State Travel Demand Model ISTDM (v 4.0) to allow for the modeling of tolls. (Figure 1 shows the Model Design).

To better capture the user behavior in the congested situation, a *Time-Of-Day* (AM Peak Period, PM Peak Period and Off-Peak Period) variant of ISTDM is developed. This serves as a first step in the process and it produces more realistic results for toll probabilities. For each period, the process uses a baseline toll-free traffic assignment to estimate average congested speeds on all facilities (i.e., the existing "3C" I-69 "Build" forecast). Peak and Off-peak average congested travel times are calculated using specially created post-processors. Congested travel time between each o-d pair is than calculated for two scenarios; one where the toll facility is considered part of the network (representing the network which is available or can be "seen" by "*toll-eligible*" users) and another one where the toll facility is not considered part of the network (representing the network which is available or can be "seen" by "*non-toll*" users). By skimming these two networks we get the values of two time variables; T_{Toll} and T_{Free} which enter the Toll Choice Model (equation 1).

The Toll Cost C_{Toll} that a user will have to experience when traveling between the *o-d* pair is calculated by skimming the shortest time path based on the whole network. The value of *toll-per-mile* is coded as a link attribute for the links that are part of the toll facility. Different unit toll values are coded for autos, single unit trucks and multi unit trucks.

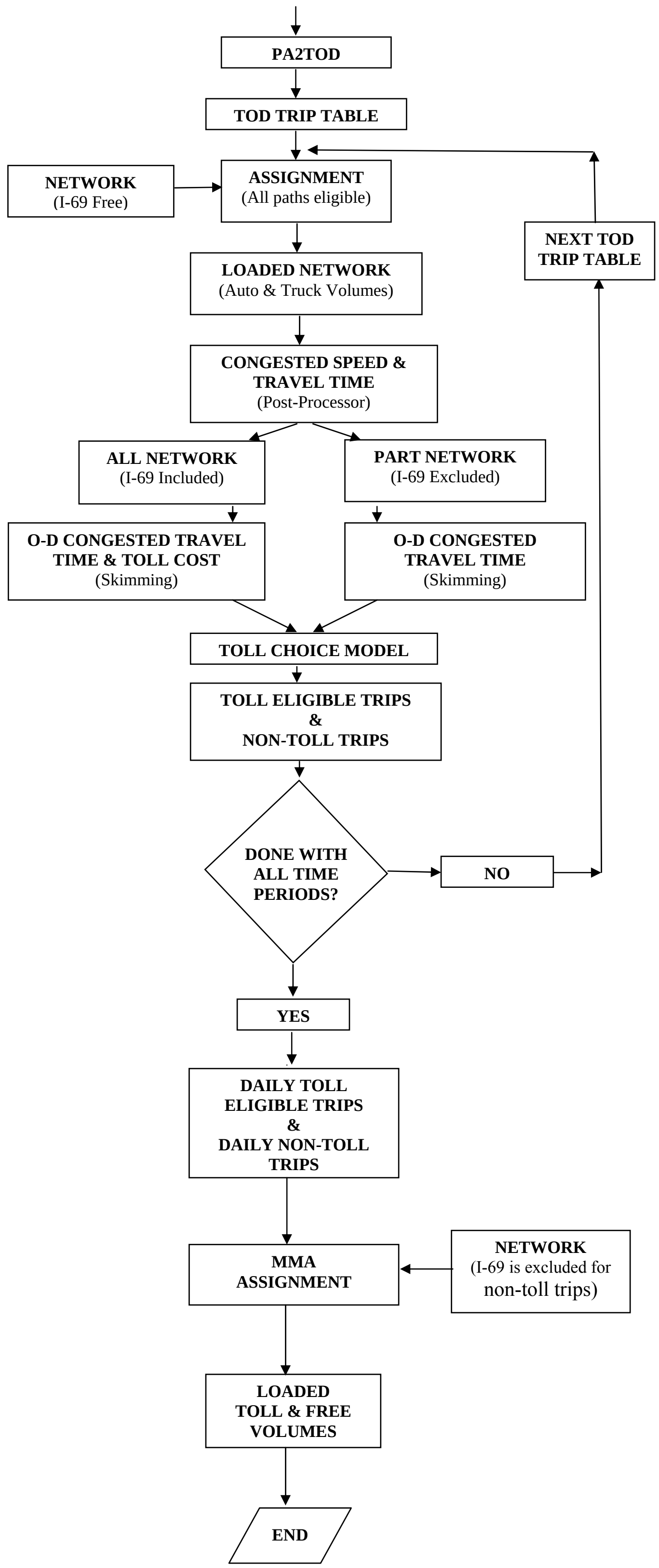

Figure 1. ISTDM Toll Model Design

Moreover, considering that the behavior of a single user differs depending on the purpose of the trip he is doing, the Toll Choice model is applied separately for each of the trip purposes composing the trips occurring between the *origin-destination* pair. This is why the *Time-Of-Day* ISTDNM model is set up to report the *origin-destination* trips by trip purpose. The trip purposes that are considered in the model are:

- Home Based Work (HBW)
- Home Based Other (HBO)
- Non-Home Based (NHB)
- Long Trips (≥ 50 miles)
- External Auto Trips (trips with at least one trip end outside the study area)
- Non-Freight Trucks
- Freight Trucks

For each trip purpose different values of the *time coefficient (a)* and *value-of-time (vot)* are used. Value of time (vot) is calculated as a percentage of the median hourly wage that is purpose specific. Moreover, *value-of-times (vot)* are unique for each Indiana county and they are calculated as a percentage of the county average hourly wage. The reason for using county specific wage data was to capture increased toll probability from high income counties, and conversely lower toll usage from poorer areas. Values of the *time coefficient (a) and percentage of the hourly wage for each trip purpose* are given for different trip purposes in table 1.

Table 1. Value of Time (2006 Dollars)

Trip Purpose	Alpha	Percentage of VOT
HB Work	0.12280	61.2%
HB Shop	0.05846	29.6%
HB Other	0.03501	55.2%
Work Based Other	0.14620	53.8%
Other Based Other	0.06371	64.1%
Trucks	0.02375	335.1%
Source: URS Corporation		

The *beta coefficient* (*b*) is then calculated using the following formula:

$$b = (a * 60) / vot$$

Aggregating by *trip purpose* and then by *time-of-day*, the daily trip table is obtained. The daily trip table is a multi class one (autos, single unit trucks and multi unit trucks). For each mode, "*toll-eligible*" and "*non-toll*" trips are assigned using TransCAD's multi-class assignment technique, where "*non-toll*" vehicles are excluded from use of the I-69 toll facility. The daily trip table is assigned to the network using daily capacities, which is consistent with the ISTDM 24-hour model design and the current 24-hour validated statewide model.

Base Case Toll Rates

Based on collaboration with the Indiana Department of Transportation, the base case toll prices shown in Table 2 were adopted for this analysis. These base case toll rates are referred to as the Base Scenario since further scenarios were based on adjustments to these rates. For purposes of the analysis, these base case rates were "inflated" 2.5% per year and implemented every fifth year.

Table 2. Base Case Toll Rates per Mile (Rounded to the nearest cent)

	Base Case Toll Rates			
	Year	Auto	Single-Unit	Combo-Unit
INDOT Implementation Schedule	2006	$ 0.05	$ 0.12	$ 0.20
	2011	$ 0.06	$ 0.14	$ 0.22
	2016	$ 0.07	$ 0.15	$ 0.25
	2021	$ 0.07	$ 0.17	$ 0.28
	2026	$ 0.08	$ 0.20	$ 0.32
	2031	$ 0.09	$ 0.22	$ 0.36
Model Years	2015	$ 0.06	$ 0.15	$ 0.24
	2020	$ 0.07	$ 0.17	$ 0.28
	2025	$ 0.08	$ 0.19	$ 0.31
	2030	$ 0.09	$ 0.22	$ 0.35

Assumptions

In order to estimate revenue for the truck purposes, truck traffic was disaggregated into three components: Single-Unit (4 Tire), Single-Unit (Greater than 4 Tire), and Multi-Unit. The Indiana Statewide Model does not define Single-Unit versus Multi-Unit trucks, but rather contains a freight and non-freight bifurcation. A visual inspection of the loading patterns by freight and non-freight trucks (Figure 1 and Figure 2) shows that non-freight trucks are more focused around urban areas while freight trucks are more prevalent on longer Interstate corridors. Thus, it was decided that for purposes of this analysis, non-freight trucks could be equated to single-unit, and combo-unit trucks equated to freight trucks.

Finally, single-unit trucks were disaggregated into those of four tires and those with more than four tires based on data analyzed by INDOT from the Indiana East West Toll Road. From that data, 66% of the single-unit trucks are four tire while the remaining are greater than four tire. For toll revenue purposes, we have kept four tire single-unit trucks as Autos. Accordingly, it was necessary to develop two single-unit truck probabilities.

All 2030 forecasts assume that I-69 has been completed at the national level – from Mexico to Canada. While this may appear to be a liberal assumption, in reality the “build-out” assumption has only a fractional impact on Indiana’s 2030 forecasted traffic volumes and toll revenue.

All revenue data provided in this report are annualized. However, these data are less than 365 times the average daily revenue, which is the “daily weekday” figure generated directly from the model. Specifically, the revenue data is 90% of an annualized 365-day year to reflect the fact that typical weekend traffic volumes are less than weekday volumes.

Selection of Performance Measures for Reevaluation

The following factors were considerations in calculating or estimating performance measures for alternatives studied in the Reevaluation.

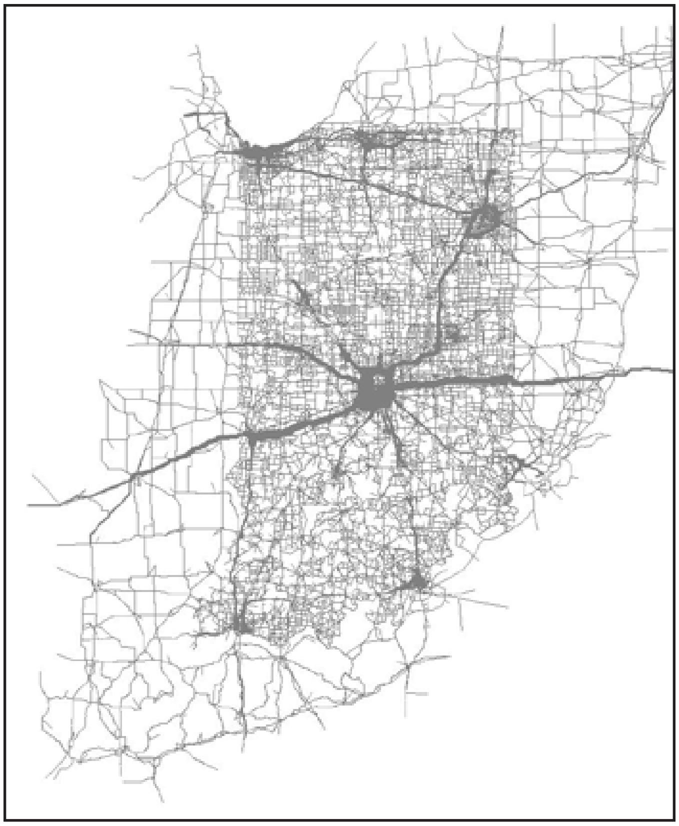

Figure 1. Non-Freight Truck Loadings

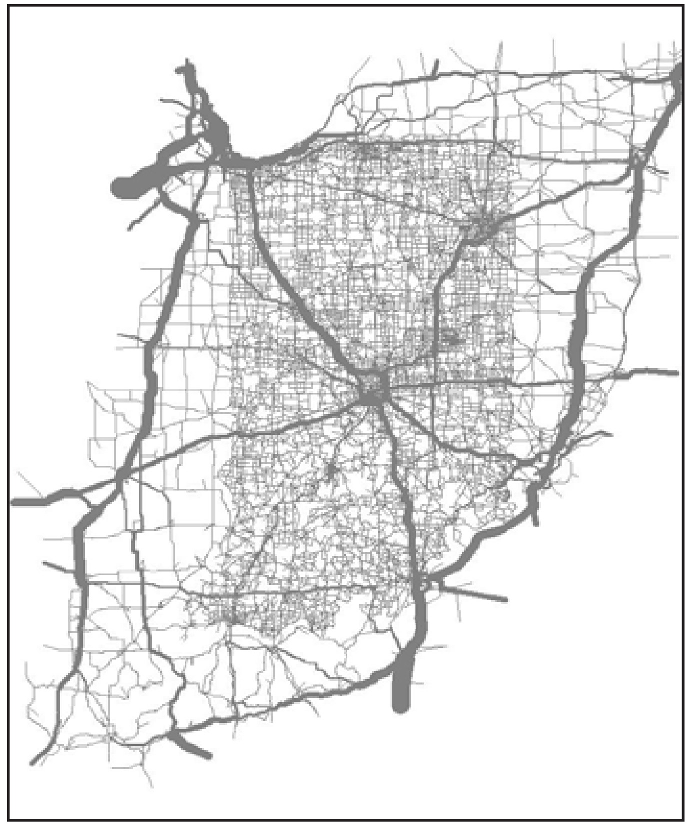

Figure 2. Freight Truck Loadings

Note: Band widths do not have same scale

- ***Computation of transportation-related performance measures required extensive modifications of post-processors used to calculate performance measures.*** The ISTDM does not compute transportation performance measures directly. Separate programs known as "post-processors" analyze model output to compute performance measures. The post-processors used with the Tier 1 model had to be modified (sometimes extensively) or completely rewritten in order to provide performance measures from ISTDM Version 4. Post-processors were rewritten to recompute most transportation performance measures. In one case, a transportation performance post-processor was not rewritten because it was used to compute only one performance measure (Percent Change in Intermodal Accessibility). In another case, significant technical difficulties were encountered in updating the software to produce one of the six congestion measures (Percentage of VHT Operated in Delayed Conditions), and it is not included in this Reevaluation. Five other congestion measures are computed.

- ***Economic Performance Indicators*** As documented in Appendix A, performance measures were estimated for changes in employment (total employment, employment in high-growth industries, and employment in high-paying industries) and personal income. These estimates can be made through a statistical analysis of Tier 1 REMI forecasts. Forecasted increases in income and employment have a direct statistical relationship to certain travel model results (accessibility changes and monetized user benefits); these transportation system improvements are directly associated with business growth and new business attraction. Two other economic performance indicators (changes in transfer payments per capita and changes in young working-age population) are not estimated, since there is not a direct statistical relationship between these measures and travel model results. Rather, the relationship of these indicators to travel model forecasts is indirect; transportation system improvements lead to business growth and expansion. Business growth and expansion then result in greater labor force participation and/or greater population retention. In addition, the access to labor and consumer markets, as well as the access to buyer and supplier markets, were not computed since these were determined as part of the REMI model analysis.

- ***Uniquely-determined performance measures.*** Most Tier 1 performance measures were determined using tools which estimated multiple performance measures. Three performance measures were estimated using software or analytical techniques which were used only for one performance measure. One of these (Percent Change in Intermodal Accessibility) is cited in a point above. The other two such performance measures are Net Change in Farm and Forest Income, and Estimated Change in Roadside Business Sales. Since none of these three performance measures support core goals, they were not recalculated.

Appendix D – Noise Distance Tables

Table 1A – I-69 Tier I Noise Analysis Re-Evaluation Results for Alternate 1 – Non-Toll Route

South End Interchange	North End Interchange	DHV			Maximum distance from working alignment centerline at which Leq equals 66 dBA																									
		Car [1]	Medium Truck [1]	Heavy Truck [1]	150 feet	160 feet	170 feet	180 feet	190 feet	200 feet	210 feet	220 feet	230 feet	240 feet	250 feet	260 feet	270 feet	280 feet	290 feet	300 feet	310 feet	320 feet	330 feet	340 feet	350 feet	360 feet	370 feet	380 feet	390 feet	400 feet
I-64	SR68	1484	261	305																										
SR68	CR800S	1504	241	305																										
CR800S	SR168	1252	232	305																										
SR168	CR550S	1518	241	305																										
CR550S	CR300S	1279	239	304																										
CR300S	CR150S	1022	188	303																										
CR150S	SR64	1014	178	303																										
SR64	Old US41	967	249	319																										
Old US41	SR56	924	260	319																										
SR56	Mays Rd	943	275	319																										
Mays Rd/SR241	SR441	957	286	318																										
SR441	Hart St	800	270	315																										
Hart St	US50	1123	264	316																										
US50	6th St	1149	260	325																										
6th St	SR67	1209	236	313																										
SR67	SR550	832	226	314																										
SR550	CR1100NE	867	244	321																										
CR1100NE	US41	802	241	321																										
US41	SR58	816	244	321																										
SR58	CR400S	777	189	321																										
CR400S	SR 54	891	206	321																										
SR 54	SR154	862	173	321																										
SR154	CR300N	855	180	323																										
CR300N	SR48	942	203	324																										
SR48	CR1100N	971	224	325																										
CR1100N	SR246	1067	266	325																										
SR246	Cotton Dr	1087	262	325																										
Cotton Dr	Harlan Dr	1106	263	325																										
Harlan Dr	SR641	1274	283	325																										

1 DHV traffic volumes listed are for a single-direction (northbound or southbound). Total DHV volume is twice that listed.

Table 1B – I-69 Tier I Noise Analysis Re-Evaluation Results for Alternate 1 – 50%, 75% and 100% Toll Option

South End Interchange	North End Interchange	DHV [2]			Maximum distance from working alignment centerline at which Leq equals 66 dBA[3]																									
		Car [1]	Medium Truck [1]	Heavy Truck [1]	150 feet	160 feet	170 feet	180 feet	190 feet	200 feet	210 feet	220 feet	230 feet	240 feet	250 feet	260 feet	270 feet	280 feet	290 feet	300 feet	310 feet	320 feet	330 feet	340 feet	350 feet	360 feet	370 feet	380 feet	390 feet	400 feet
I-64	SR68	809	145	58																										
SR68	CR800S	818	136	58																										
CR800S	SR168	657	131	58																										
SR168	CR550S	799	135	58																										
CR550S	CR300S	669	134	57																										
CR300S	CR150S	526	108	57																										
CR150S	SR64	520	103	57																										
SR64	Old US41	479	127	60																										
Old US41	SR56	454	134	60																										
SR56	Mays Rd	461	142	60																										
Mays Rd/SR241	SR441	467	148	60																										
SR441	Hart St	429	154	59																										
Hart St	US50	492	127	59																										
US50	6th St	658	133	63																										
6th St	SR67	521	116	58																										
SR67	SR550	399	110	59																										
SR550	CR1100NE	417	119	62																										
CR1100NE	US41	372	118	62																										
US41	SR58	380	119	62																										
SR58	CR400S	356	88	61																										
CR400S	SR 54	433	98	61																										

Table 1B – I-69 Tier I Noise Analysis Re-Evaluation Results for Alternate 1 – 50%, 75% and 100% Toll Option- Continued

South End Interchange	North End Interchange	DHV [2]			Maximum distance from working alignment centerline at which Leq equals 66 dBA[3]																									
		Car [1]	Medium Truck [1]	Heavy Truck [1]	150 feet	160 feet	170 feet	180 feet	190 feet	200 feet	210 feet	220 feet	230 feet	240 feet	250 feet	260 feet	270 feet	280 feet	290 feet	300 feet	310 feet	320 feet	330 feet	340 feet	350 feet	360 feet	370 feet	380 feet	390 feet	400 feet
SR 54	SR154	402	79	62																										
SR154	CR300N	394	82	63																										
CR300N	SR48	455	96	63																										
SR48	CR1100N	478	107	63																										
CR1100N	SR246	551	131	64																										
SR246	Cotton Dr	558	128	64																										
Cotton Dr	Harlan Dr	568	129	64																										
Harlan Dr	SR641	663	139	64																										

1 DHV traffic volumes listed are for a single-direction (northbound or southbound). Total DHV volume is twice that listed.
2 DHV traffic volumes listed are for 75% toll option
3 Green indicates the maximum distance for the 75% and 100% scenarios. Blue indicates the maximum distance for the 50% scenario.

Table 2A – I-69 Tier I Noise Analysis Re-Evaluation Results for Alternate 2C – Non-Toll Route

South End Interchange	North End Interchange	DHV			Maximum distance from working alignment centerline at which Leq equals 66 dBA																									
		Car [1]	Medium Truck [1]	Heavy Truck [1]	150 feet	160 feet	170 feet	180 feet	190 feet	200 feet	210 feet	220 feet	230 feet	240 feet	250 feet	260 feet	270 feet	280 feet	290 feet	300 feet	310 feet	320 feet	330 feet	340 feet	350 feet	360 feet	370 feet	380 feet	390 feet	400 feet
I-64	SR 68	1561	263	243																										
SR 68	CR800S	1589	243	243																										
CR800S	SR168	1314	233	243																										
SR168	CR550S	1565	242	243																										
CR550S	CR300S	1321	240	242																										
CR300S	CR150S	1063	189	241																										
CR150S	SR64	1055	179	241																										
SR64	Old US41	1023	229	261																										
Old US41	SR56	975	239	260																										
SR56	Mays Rd	993	255	260																										
Mays Rd	SR441	1005	266	260																										
SR441	Hart St	848	252	256																										
Hart St	US50	1199	245	257																										
US50	6th St	1178	237	265																										
6th St	SR67	1246	211	242																										
SR67	US41	1094	225	248																										
US41	SR550	786	79	139																										
SR550	SR159	733	74	140																										
SR159	SR58	668	67	140																										
SR58	SR59	595	63	139																										
SR59	SR54	553	55	139																										
SR54	SR157	534	64	135																										
SR157	SR46	613	60	139																										
SR46	US231	595	52	139																										
US231	SR67	537	64	115																										
SR67	SR37	589	82	114																										
SR37	SR39	1559	211	153																										
SR39	Mahalasville Rd	1423	186	153																										
Mahalasville Rd	SR252	1613	175	155																										
SR252	Egbert Rd	1578	197	153																										
Egbert Rd	SR144	1527	204	154																										
Big Bend Rd	Smith Valley	2199	325	160																										
Smith Valley	County Line Rd	2268	340	161																										
County Line Rd	Southport Rd	3065	602	177																										
Southport Rd	SR37	3650	909	199																										
SR37	I-465	3497	903	199																										

1 DHV traffic volumes listed are for a single-direction (northbound or southbound). Total DHV volume is twice that listed.

Table 2B – I-69 Tier I Noise Analysis Re-Evaluation Results for Alternate 2C – 50%, 75% and 100% Toll Options

South End Interchange	North End Interchange	DHV [2]			Maximum distance from working alignment centerline at which Leq equals 66 dBA[3]																								
		Car [1]	Medium Truck [1]	Heavy Truck [1]	150 feet	160 feet	170 feet	180 feet	190 feet	200 feet	210 feet	220 feet	230 feet	240 feet	250 feet	260 feet	270 feet	280 feet	290 feet	300 feet	310 feet	320 feet	330 feet	340 feet	350 feet	360 feet	370 feet	380 feet	390 feet	400 feet
I-64	SR 68	855	145	62																									
SR 68	CR800S	871	135	62																									
CR800S	SR168	695	130	62																									
SR168	CR550S	828	134	61																									
CR550S	CR300S	693	133	61																									
CR300S	CR150S	549	107	61																									
CR150S	SR64	544	102	61																									
SR64	Old US41	523	129	68																									
Old US41	SR56	494	136	67																									
SR56	Mays Rd	501	144	67																									
Mays Rd	SR441	505	151	67																									
SR441	Hart St	451	151	66																									
Hart St	US50	558	130	66																									
US50	6th St	673	133	69																									
6th St	SR67	602	114	62																									
SR67	US41	646	130	65																									
US41	SR550	473	50	49																									
SR550	SR159	326	40	49																									
SR159	SR58	297	36	49																									
SR58	SR59	259	33	49																									
SR59	SR54	225	29	49																									
SR54	SR157	226	34	48																									
SR157	SR46	272	33	49																									
SR46	US231	261	28	49																									
US231	SR67	283	36	47																									
SR67	SR37	322	47	47																									
SR37	SR39	937	121	63																									
SR39	Mahalasville Rd	877	107	63																									
Mahalasville Rd	SR252	967	98	63																									
SR252	Egbert Rd	936	109	64																									
Egbert Rd	SR144	897	112	64																									
SR144	Smith Valley	1264	168	67																									
Smith Valley	County Line Rd	1293	176	68																									
County Line Rd	Southport Rd	1793	310	76																									
Southport Rd	SR37	2107	473	87																									
SR37	I-465	2007	470	87																									

1 DHV traffic volumes listed are for a single-direction (northbound or southbound). Total DHV volume is twice that listed.
2 DHV traffic volumes listed are for 75% toll option.
3 Green indicates the maximum distance for the 75% and 100% scenarios. Blue indicates the maximum distance for the 50% scenario.

Table 3A – I-69 Tier I Noise Analysis Re-Evaluation Results for Alternate 3C – Non-Toll Route

South End Interchange	North End Interchange	DHV			Maximum distance from working alignment centerline at which Leq equals 66 dBA																								
		Car [1]	Medium Truck [1]	Heavy Truck [1]	150 feet	160 feet	170 feet	180 feet	190 feet	200 feet	210 feet	220 feet	230 feet	240 feet	250 feet	260 feet	270 feet	280 feet	290 feet	300 feet	310 feet	320 feet	330 feet	340 feet	350 feet	360 feet	370 feet	380 feet	390 feet	400 feet
I-64	SR 68	934	105	189																									
SR 68	SR168	791	78	188																									
SR168	SR 64	835	84	188																									
SR 64	CR125S	792	81	192																									
CR125S	SR61	773	82	192																									
SR61	SR356	708	68	192																									
SR356	US50	632	52	191																									
US50	SR58	603	44	142																									
SR58	US231	564	39	144																									
US231	SR45	723	52	166																									
SR45	SR54	796	63	166																									
SR54	SR37	757	55	166																									
SR37	Fullerton Rd	1529	120	203																									
Fullerton Rd	SR45	1934	146	203																									
SR45	SR48	2257	162	196																									
SR48	SR46	2327	158	174																									
SR46	Kinser Pike	1279	135	168																									
Kinser Pike	North Walnut St	1265	138	169																									
North Walnut St	Sample Rd	1680	182	171																									
Sample Rd	Old SR37	1558	168	171																									
Old SR37	SR39	1631	180	171																									

Table 3A – I-69 Tier I Noise Analysis Re-Evaluation Results for Alternate 3C – Non-Toll Route - Continued

South End Interchange	North End Interchange	DHV			Maximum distance from working alignment centerline at which Leq equals 66 dBA																									
		Car [1]	Medium Truck [1]	Heavy Truck [1]	150 feet	160 feet	170 feet	180 feet	190 feet	200 feet	210 feet	220 feet	230 feet	240 feet	250 feet	260 feet	270 feet	280 feet	290 feet	300 feet	310 feet	320 feet	330 feet	340 feet	350 feet	360 feet	370 feet	380 feet	390 feet	400 feet
SR39	Mahalsville Rd	1427	154	169																										
Mahalsville Rd	SR252	1595	150	170																										
SR252	Egbert Rd	1589	184	172																										
Egbert Rd	SR144	1604	193	173																										
SR144	Smith Valley Rd	2322	320	181																										
Smith Valley Rd	County Line Rd	2381	334	182																										
County Line Rd	Southport Rd	3170	594	197																										
Southport Rd	SR37	3745	902	220																										
SR37	I-465	3577	893	218																										

1 DHV traffic volumes listed are for a single-direction (northbound or southbound). Total DHV volume is twice that listed.

Table 3B – I-69 Tier I Noise Analysis Re-Evaluation Results for Alternate 3C – 50%, 75% and 100% Toll Options

South End Interchange	North End Interchange	DHV [2]			Maximum distance from working alignment centerline at which Leq equals 66 dBA[3]																									
		Car [1]	Medium Truck [1]	Heavy Truck [1]	150 feet	160 feet	170 feet	180 feet	190 feet	200 feet	210 feet	220 feet	230 feet	240 feet	250 feet	260 feet	270 feet	280 feet	290 feet	300 feet	310 feet	320 feet	330 feet	340 feet	350 feet	360 feet	370 feet	380 feet	390 feet	400 feet
I-64	SR 68	400	50	50																										
SR 68	SR168	328	38	49																										
SR168	SR 64	349	41	49																										
SR 64	CR125S	317	38	50																										
CR125S	SR61	306	38	50																										
SR61	SR356	271	31	50																										
SR356	US50	233	24	50																										
US50	SR58	237	20	48																										
SR58	US231	222	18	48																										
US231	SR45	298	25	56																										
SR45	SR54	335	30	56																										
SR54	SR37	318	26	56																										
SR37	Fullerton Rd	742	60	72																										
Fullerton Rd	SR45	928	74	72																										
SR45	SR48	1138	85	73																										
SR48	SR46	1223	83	65																										
SR46	Kinser Pike	678	72	62																										
Kinser Pike	North Walnut St	681	74	62																										
North Walnut St	Sample Rd	1010	102	64																										
Sample Rd	Old SR37	900	93	64																										
Old SR37	SR39	970	103	64																										
SR39	Mahalsville Rd	879	90	64																										
Mahalsville Rd	SR252	980	86	64																										
SR252	Egbert Rd	960	100	65																										
Egbert Rd	SR144	923	104	66																										
SR144	Smith Valley Rd	1288	160	69																										
Smith Valley Rd	County Line Rd	1318	168	69																										
County Line Rd	Southport Rd	1820	303	78																										
Southport Rd	SR37	2129	466	89																										
SR37	I-465	2028	463	88																										

1 DHV traffic volumes listed are for a single-direction (northbound or southbound). Total DHV volume is twice that listed.
2 DHV traffic volumes listed are for 75% toll option.
3 Green indicates the maximum distance for the 75% and 100% scenarios. Blue indicates the maximum distance for the 50% scenario.

Table 4A. I-69 Tier I Noise Analysis Re-Evaluation Results for Alternate 4B – Non-Toll Route

South End Interchange	North End Interchange	DHV			Maximum distance from working alignment centerline at which Leq equals 66 dBA																									
		Car [1]	Medium Truck [1]	Heavy Truck [1]	150 feet	160 feet	170 feet	180 feet	190 feet	200 feet	210 feet	220 feet	230 feet	240 feet	250 feet	260 feet	270 feet	280 feet	290 feet	300 feet	310 feet	320 feet	330 feet	340 feet	350 feet	360 feet	370 feet	380 feet	390 feet	400 feet
I-64	SR 68	909	106	155																										
SR 68	SR168	776	79	154																										
SR168	SR 64	819	85	154																										
SR 64	CR125S	777	79	155																										
CR125S	SR61	758	80	156																										
SR61	SR356	662	56	155																										
SR356	US50	621	52	155																										
US50	SR58	635	46	131																										
SR58	SR57	597	42	131																										
SR57	SR67	569	40	129																										
SR67	SR54	564	48	134																										
SR54	SR157	570	60	134																										
SR157	SR46	608	52	136																										
SR46	US231	605	44	136																										
US 231	SR37 connection	668	61	131																										
SR37 connection	SR67 connection	708	62	134																										
SR67 connection	SR142	683	56	131																										
SR142	SR42	730	74	131																										
SR42	I-70 connection	781	94	131																										

1 DHV traffic volumes listed are for a single-direction (northbound or southbound). Total DHV volume is twice that listed.

Table 4B – I-69 Tier I Noise Analysis Re-Evaluation Results for Alternate 4B – 50%, 75% and 100% Toll Options

South End Interchange	North End Interchange	DHV [2]			Maximum distance from working alignment centerline at which Leq equals 66 dBA[3]																									
		Car [1]	Medium Truck [1]	Heavy Truck [1]	150 feet	160 feet	170 feet	180 feet	190 feet	200 feet	210 feet	220 feet	230 feet	240 feet	250 feet	260 feet	270 feet	280 feet	290 feet	300 feet	310 feet	320 feet	330 feet	340 feet	350 feet	360 feet	370 feet	380 feet	390 feet	400 feet
I-64	SR 68	411	54	49																										
SR 68	SR168	339	42	49																										
SR168	SR 64	360	45	49																										
SR 64	CR125S	333	41	49																										
CR125S	SR61	323	41	49																										
SR61	SR356	272	30	49																										
SR356	US50	249	28	49																										
US50	SR58	276	24	47																										
SR58	SR57	260	22	47																										
SR57	SR67	250	22	46																										
SR67	SR54	241	27	50																										
SR54	SR157	246	33	50																										
SR157	SR46	278	31	51																										
SR46	US231	264	25	51																										
US 231	SR37 connection	294	33	49																										
SR37 connection	SR67 connection	312	34	49																										
SR67 connection	SR142	307	31	48																										
SR142	SR42	330	39	48																										
SR42	I-70 connection	358	50	48																										

1 DHV traffic volumes listed are for a single-direction (northbound or southbound). Total DHV volume is twice that listed.
2 DHV traffic volumes listed are for 75% toll option.
3 Green indicates the maximum distance for the 75% and 100% scenarios. Blue indicates the maximum distance for the 50% scenario.

Table 5A – I-69 Tier I Noise Analysis Re-Evaluation Results for Alternate 4C – Non-Toll Route

South End Interchange	North End Interchange	DHV			Maximum distance from working alignment centerline at which Leq equals 66 dBA																									
		Car [1]	Medium Truck [1]	Heavy Truck [1]	150 feet	160 feet	170 feet	180 feet	190 feet	200 feet	210 feet	220 feet	230 feet	240 feet	250 feet	260 feet	270 feet	280 feet	290 feet	300 feet	310 feet	320 feet	330 feet	340 feet	350 feet	360 feet	370 feet	380 feet	390 feet	400 feet
I-64	SR 68	910	107	154																										
SR 68	SR168	772	79	153																										
SR168	SR64	815	85	154																										
SR64	CR125S	769	80	155																										
CR125S	SR61	750	80	155																										
SR61	SR356	653	55	154																										
SR356	US50	611	52	154																										
US50	SR58	595	44	128																										
SR58	SR57	552	41	128																										
SR57	SR67	540	39	126																										
SR67	SR54	540	50	133																										
SR54	SR157	548	62	133																										
SR157	SR46	589	54	135																										
SR46	US231	571	46	135																										
US231	SR67	526	61	111																										
SR67	SR37	579	79	111																										
SR37	SR39	1544	207	149																										
SR39	Mahalasville Rd	1408	182	148																										
Mahalasville Rd	SR252	1599	171	150																										
SR252	Egbert Rd	1566	194	149																										
Egbert Rd	SR144	1516	200	150																										
SR144	Smith Valley Rd	2191	322	156																										
Smith Valley Rd	County Line Rd	2256	338	157																										
County Line Rd	Southport Rd	3055	600	173																										
Southport Rd	SR37	3644	908	196																										
SR37	I-465	3491	902	195																										

1 DHV traffic volumes listed are for a single-direction (northbound or southbound). Total DHV volume is twice that listed.

Table 5B – I-69 Tier I Noise Analysis Re-Evaluation Results for Alternate 4C – 50%, 75% and 100% Options

South End Interchange	North End Interchange	DHV [2]			Maximum distance from working alignment centerline at which Leq equals 66 dBA[3]																									
		Car [1]	Medium Truck [1]	Heavy Truck [1]	150 feet	160 feet	170 feet	180 feet	190 feet	200 feet	210 feet	220 feet	230 feet	240 feet	250 feet	260 feet	270 feet	280 feet	290 feet	300 feet	310 feet	320 feet	330 feet	340 feet	350 feet	360 feet	370 feet	380 feet	390 feet	400 feet
I-64	SR 68	407	53	50	green	green	green	green	green	blue																				
SR 68	SR168	334	41	49	green	green	green	green	blue																					
SR168	SR64	355	44	49	green	green	green	green	green																					
SR64	CR125S	325	40	50	green	green	green	green	blue																					
CR125S	SR61	315	40	50	green	green	green	green	blue																					
SR61	SR356	264	29	49	green	green	green	green																						
SR356	US50	240	27	50	green	green	green	blue																						
US50	SR58	258	22	46	green	green	green	blue																						
SR58	SR57	238	21	46	green	green	green																							
SR57	SR67	232	20	45	green	green	green																							
SR67	SR54	225	25	48	green	green	green	blue																						
SR54	SR157	232	32	48	green	green	green	blue																						
SR157	SR46	263	29	49	green	green	green	green																						
SR46	US231	253	24	49	green	green	green	blue																						
US231	SR67	272	33	45	green	green	green	green																						
SR67	SR37	311	44	45	green	green	green	green																						
SR37	SR39	923	117	61	green	green	green	green	green	green	green	green	green	blue																
SR39	Mahalasville Rd	863	103	60	green	green	green	green	green	green	green	green	green																	
Mahalasville Rd	SR252	952	95	61	green	green	green	green	green	green	green	green	green																	
SR252	Egbert Rd	922	106	62	green	green	green	green	green	green	green	green	green	blue																
Egbert Rd	SR144	883	108	62	green	green	green	green	green	green	green	green	green																	
SR144	Smith Valley Rd	1251	164	66	green	green	green	green	green	green	green	green	green	green	green	green														
Smith Valley Rd	County Line Rd	1280	172	66	green	green	green	green	green	green	green	green	green	green	green	green														
County Line Rd	Southport Rd	1785	307	74	green	green	green	green	green	green	green	green	green	green	green	green	green	green	green	blue										
Southport Rd	SR37	2101	470	85	green	green	green	green	green	green	green	green	green	green	green	green	green	green	green	green	green	yellow								
SR37	I-465	2000	467	85	green	green	green	green	green	green	green	green	green	green	green	green	green	green	green	green	green									

1 DHV traffic volumes listed are for a single-direction (northbound or southbound). Total DHV volume is twice that listed.
2 DHV traffic volumes listed are for 75% toll option.
3 Green indicates the maximum distance for the 75% and 100% scenarios. Blue indicates the maximum distance for the 50% scenario.