US 50 North Vernon Corridor Planning and Environmental Assessment Study

Jennings and Jackson Counties and the City of North Vernon, Indiana
Des. No. 0401401, 0401402

Final Report

February, 2008

Prepared for the
Indiana Department of Transportation
Planning Division
Urban and Corridor Planning Office
100 North Senate Avenue
IGCN Room N901
Indianapolis, Indiana 46204
Phone (317) 232-5646 • Fax (317)234-1228

Prepared by:
Bernardin Lochmueller and Associates, Inc.
6200 Vogel Road
Evansville, Indiana 47715
Phone (812) 479-6200 • Fax (812) 479-6262

In Association with:
Dyer Environmental Services
5890 Travis Road
Greenwood, Indiana 46143
Phone (317) 422-8805 • Fax (317) 422-9327

Shrewsberry and Associates
7168 Graham Road
Indianapolis, Indiana
Phone (317) 841-4799 • Fax (317) 841-4790

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ADDENDUM

US 50 – North Vernon Corridor Planning and Environmental Study

Jennings and Jackson Counties and the City of North Vernon, Indiana

Des. No. 0401401, 0401402

May 1, 2008

The purpose of this Addendum is to document revisions to the US 50 North Vernon Corridor Planning and Environmental Study Preliminary Alternatives and Screening Report dated February, 2008. The report will not be revised; however, the items contained in this Addendum shall serve as updates to the document. The updates contained in this Addendum are based on public and agency comments received during the report comment period which ended on April 4, 2008. The following updates should be considered part of the US 50 North Vernon Corridor Planning and Environmental Study Preliminary Alternatives and Screening Report.

1. The FHWA transmittal letter dated February 26, 2008 that distributed the US 50 North Vernon Corridor Planning and Environmental Study to the federal resource agencies stated that the Preliminary Alternatives Screening Report has been completed and is enclosed for review and comment. The report cover for this document dated February, 2008 was titled "Final Report." Wherever the title of "Final Report" appears in the document (including cover page) it should be "Preliminary Alternatives Screening Report." The Preliminary Alternatives Screening Report documents the results of the analysis, evaluation and screening of the Preliminary Alternatives considered for the study and presents the findings and recommendations for this phase and subsequent phases of project development. Subsequent phases of the project will build on the recommendations of this Preliminary Report.

2. Preliminary Alternative D has been eliminated from further consideration. This alternative was eliminated from further consideration due to impacts to the natural environment, cost, and public and resource agency comments. Preliminary Alternative D had the highest total right-of-way (718 acres), the highest farmland impacts (451 acres), the highest forest impacts (216 acres), the highest wetland impacts (9.9 acres), the highest number of streams crossed (21), and the highest floodplain impacts (14 acres). It was also the most expensive alternative at $212.1 million dollars. Resource agency comments were generally in favor of eliminating Preliminary Alternative D because of its impacts to the natural environment. Public comments also favored eliminating Preliminary Alternative D because of farmland impacts and fragmentation.

3. An additional Western Alternative similar to Alternative W has been added to the range of Western Section Preliminary Alternatives for further study in the EIS. It includes improvements to existing US 50 in combination with the Transportation Management System (TSM) Alternative. This alternative was added to the other preliminary alternatives (Preliminary Alternatives W1, W2 and W3) as alternatives recommended to be carried forward for additional NEPA analysis due to financial concerns and impacts to the natural environment related to the project.

4. In discussions regarding Preliminary Alternative W2 and wetland and forest impacts, on pages 6-21 and 6-53 of the report, the reference to reducing these impacts at the US 50 crossing of Sixmile Creek should be the US 50 crossing of Storm Creek.

5. On page 6-51 of the report in the Conclusion discussion regarding Preliminary Alternative E, the fifth sentence, "It was the lowest of this grouping and only higher than Preliminary Alternative C in truck traffic diversion" should be removed. The sixth sentence, "This is largely due to the industrial areas being located north of North Vernon" should be moved so that it follows the second sentence. The beginning of the paragraph should now read:

> "A comparative analysis of impacts of other Eastern Section Preliminary Alternatives as summarized in Table 6.2 was completed. While this alternative is a good traffic performer related to total traffic and truck traffic diversion and has relatively low impacts to the natural

environment, it has high impacts to the human environment, potential Section 4(f) impacts and traffic-related concerns related to significant adverse impact on other roadways drawing additional traffic down SR 3 and SR 7 from the north side of North Vernon to existing US 50 and southward to the alternative. This is largely due to the industrial areas being located north of North Vernon. Regarding traffic performance, this alternative will require further improvements to the signalized intersection of SR 3/SR 7 to improve the LOS of the intersection. When compared to the other North Vernon bypass preliminary alternatives, this alternative was grouped with the highest performers related to diversion of total traffic and was grouped with the highest performers related to diversion of truck traffic from existing US 50. This alternative was also grouped with the middle range of alternatives related to average daily traffic volumes……."

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1. PROJECT INTRODUCTION

The Indiana Department of Transportation (INDOT), in cooperation with the Federal Highway Administration (FHWA) is preparing a Corridor Planning/Environmental Assessment (EA) to evaluate the US 50 corridor from US 31 in Jennings County eastward to near the Jennings/Ripley County line. This Corridor Planning/Environmental Assessment builds upon the previous Task 1 Report – Identification of Existing and Future Conditions and Issues (Revised June 2007) and the Task 2 Report – Definition of Purpose and Need and Identification of Preliminary Alternatives (June 2007). The Task 1 Report set forth existing and future transportation conditions, growth assumptions and documented the need for transportation improvements in the year 2030 based on the Study Area's anticipated growth. The information contained in the previous versions of the Task 1 Report has again been updated as necessary and has been incorporated in it's entirety in Chapters 1 – Project Introduction, and Chapter 2 – Existing and Future Traffic Conditions, of this Report. The Task 2 Report set forth the purpose and need for the project and also identified a range of reasonable potential solutions to the transportation needs in the Study Area. The information contained in the previous version of the Task 2 Report has been updated as necessary and has been incorporated in it's entirety in Chapters 3 – Purpose and Need, and Chapter 4 – Definition of Alternatives, of this Report. Chapter 5 – Analysis of Alternatives, discusses the traffic, social, economic and environmental impacts of the Preliminary Alternatives developed for this study. Chapter 6 – Evaluation of Alternatives, discusses the methodology of the two-phase evaluation of alternatives utilized to narrow the number of preliminary alternatives under consideration for further analysis and also discusses the process by which the preliminary alternatives were evaluated and screened to a range of potential alternatives to be carried forward in subsequent NEPA studies. Chapter 7 – Public Outreach, Comments and Coordination, discusses the public and agency involvement process that this study followed throughout its duration.

1.1 Project Study Area

As shown in Figure 1.1, the US 50 North Vernon improvement corridor is approximately 18 miles long. It extends through a small portion of eastern Jackson County and through Jennings County to near the Jennings/Ripley County line. The Study Area encompasses approximately 138 square miles, both north and south along US 50, beginning near the eastern corporate limits of Seymour in Jackson County and includes the City of North Vernon and the surrounding area in Jennings County.

Seymour is located in Jackson County, and according to 2005 US Census Bureau data, has a population of approximately 19,000 residents. In addition to US 50, it is served by I-65, US 31, SR 11 and SR 258. In recent years, there has been an increase in commercial and industrial development in Seymour and use of US 50 has continued to increase. A large distribution center (Wal-Mart) is located east of Seymour, near the I-65 and US 50 interchange, as well as other developing industrial parks near the interchange. Jackson County Industrial Development Corporation is currently advertising for several large parcels near US 50 in this area that are available for large industrial operations or distribution centers. The City of Seymour is referred to as the "Crossroads of Southern Indiana" due to its location and access to major highways.

Jennings County (28,427 persons in the year 2005) is surrounded by Ripley County to the east, Jackson County to the west, Bartholomew County and Decatur County to the north and Scott County and Jefferson County to the south. North Vernon is located in the center of the Study Area with a population of approximately 6,500; it is the only incorporated city in Jennings County. North Vernon is served by US 50, SR 7 and SR 3. US 50 currently runs through the center of the city creating problems for through traffic that must negotiate bends in the roadway, reduced traffic speeds, and cross at-grade railroad tracks. With trucks comprising roughly 20% of the vehicular traffic along US 50, congestion is not uncommon. The Jennings County seat is the town of Vernon, located just south of North Vernon, with a population of approximately 300 people. Vernon is the only incorporated town in Jennings County.

Much of the growth in North Vernon is occurring north of the city along SR 3 and SR 7 (Figure 1.2). The North Vernon Municipal Airport and several industrial parks are located directly north of town on the east side of SR 3. The North Vernon Industrial Park along SR 3 includes several large industries including a large distribution center (Lowe's Home Improvement). The Jennings County Economic Development Corporation is currently advertising several large parcels in this area that are available for large industrial operations or distribution centers.

The Study Area has an abundance of recreational and natural areas including National Wildlife Refuges, county and city parks, a State Nature Preserve, a State Fish and Wildlife Refuge and a State Forest. North of US 50 near Butlerville is the Muscatatuck Urban Training Center (MUTC), an area encompassing approximately 1,000 acres and is operated by the Office of Homeland Security. This site was once a State hospital, but is currently being redeveloped as an urban training center facility for the Indiana National Guard. In its first year of operation, MUTC has been utilized by over 16,000 people from military, government and private agencies. It is continually expanding training capabilities for future needs and improvements to US 50 that would improve access to the MUTC would be very beneficial to this development.

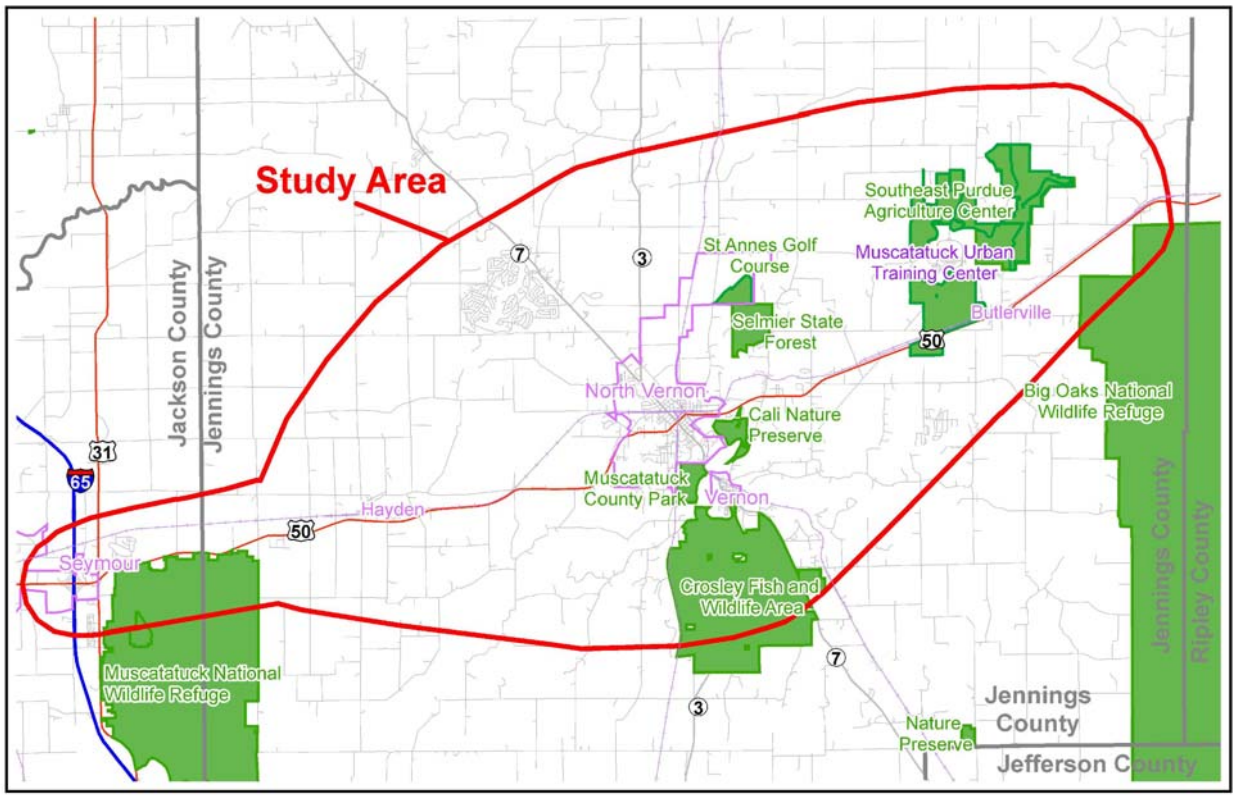

Figure 1.1: US 50 – North Vernon Study Area

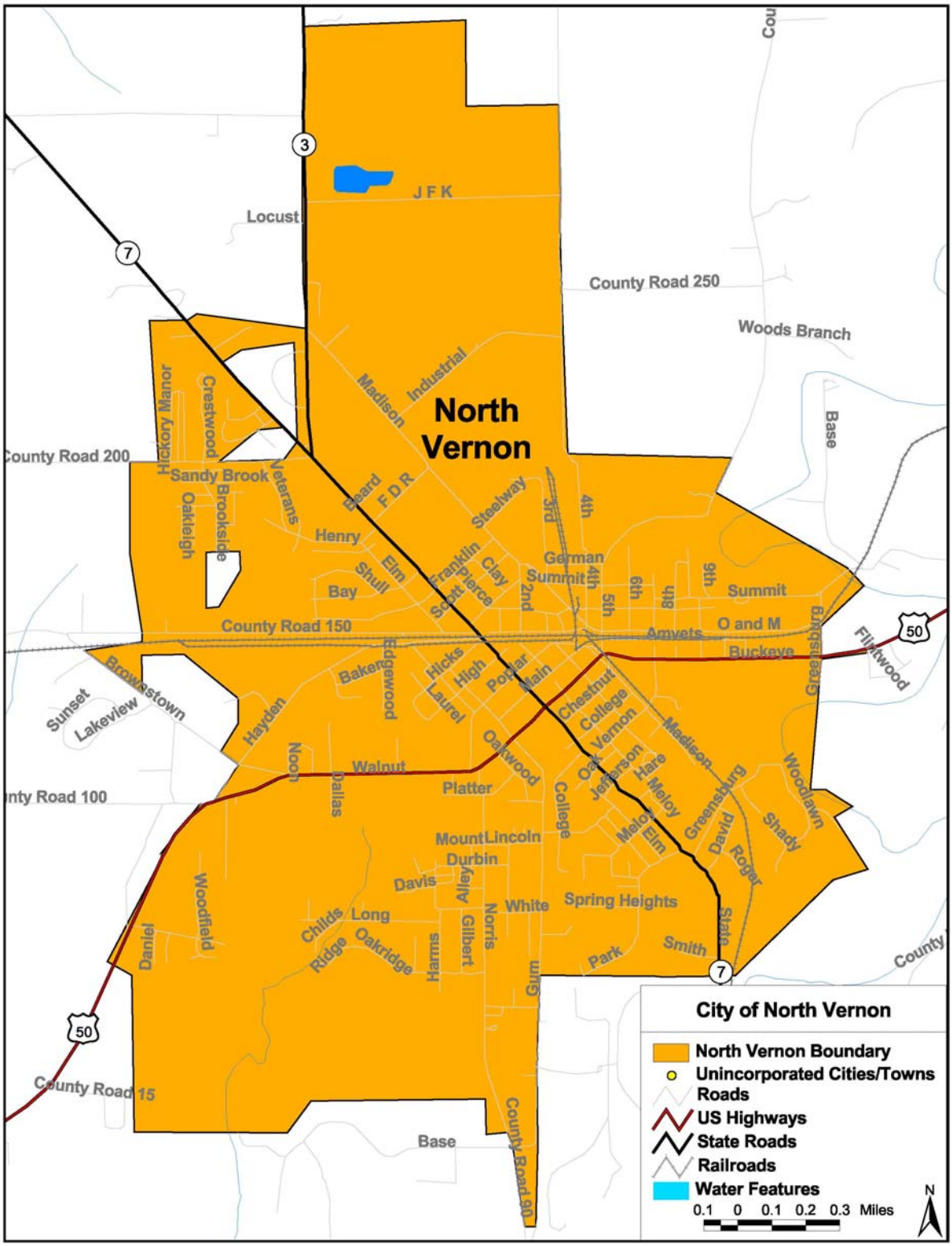

Figure 1.2: City of North Vernon

1.2 Study Purpose

The purpose and objectives of the study are to determine the feasibility of transportation needs/improvements of the US 50 corridor in the Study Area; assess the feasibility of improvements; and seek other alternatives for improving mobility and alleviating congestion in the general project vicinity (with a particular emphasis inside the urban area boundary of North Vernon).

In general, a feasibility study should answer three basic questions:

- The degree to which a preferred alternative, traffic management strategy or roadway design is economically justified
- The degree to which an alternative is considered preferable from an environmental and a social perspective
- The degree to which eventual construction and operation of the preferred alternative can be financed and managed [1]

Another goal of this study is to involve key decision-makers in the study process, provide information to build consensus and to "buy in" to the best solution. The major steps of this feasibility study are to:

- Establish a steering committee and public outreach program
- Inventory existing conditions (traffic conditions, accident analysis and land use trends analysis)
- Initiate environmental streamlining activities (alert resource agencies to the project, define project "purpose and need", and develop and screen alternatives for resource agency review)
- Evaluate the alternatives to identify the most viable (prudent and feasible) alternative(s) based on achievement of project "purpose and need", traffic impacts, economic development impacts, environmental impacts, and public input
- Document the results of the study

It should be noted that the results of this study will recommend Alternative(s) that will be carried forward for subsequent National Environmental Policy Act of 1969 (NEPA) studies. This recommendation may consist of projects of independent utility and may consist of short-term and long-term solutions. Regardless of the study recommendations, additional environmental studies will be required prior to design and construction activities.

The traffic considerations prompting this corridor planning and environmental assessment study include:

- High through traffic volumes (especially trucks) on US 50 through downtown North Vernon
- High crash frequency along US 50 from US 31 to the east urban boundary of North Vernon
- Access to existing and potential commercial and industrial economic growth areas
- Statewide and regional transportation system mobility
- Development of Muscatatuck Urban Training Center (MUTC) east of North Vernon near Butlerville

[1] *Procedural Guidelines for Highway Feasibility Studies*; U.S. Department of Transportation, Federal Highway Administration; September 1998.

The US 50 North Vernon Corridor Planning and Environmental Assessment Project will analyze the No-Build Alternative as well as a full range of build alternatives ranging from transportation system management improvements to major capital investments on existing and new alignment. Each alternative will be evaluated as both short-term and long-term solutions. Possible alternatives will include the No-Build (Do Nothing) Alternative which is represented by the existing roadway network plus programmed major roadway improvements in the study area. This alternative serves as the baseline for comparing any "build" alternatives.

An essential aspect of defining alternatives is a preliminary environmental analysis that identifies "must avoid" resources. Information on sensitive environmental areas (i.e., parks, managed forests, wetlands, floodplains, historic structures and districts, etc.) from an environmental resource map and the location of community facilities will help to determine the corridors for any new alignment bypass alternatives north and south of North Vernon and may influence the nature of the major widening on the existing US 50 alignment or one-way pair alternatives through North Vernon. A review of existing environmental conditions in North Vernon and Jennings County leads to the following concerns/issues:

- East of US 31, US 50 transverses the north boundary of the Muscatatuck National Wildlife Refuge
- The CSX railroad parallels the north side of US 50 through much of Jennings County
- Numerous archaeological sites and potential historic structures are scattered throughout Jennings County
- Historic districts in Vernon and North Vernon with scattered sites along US 50 throughout the corridor and within the Study Area
- Numerous managed lands, wetlands, lakes, rivers and streams within Study Area
- All alternatives involve a major crossing of the Muscatatuck River and its floodplain
- The Muscatatuck County Park, Crosley Fish and Wildlife Area and Cali State Nature Preserve are located south of US 50 near North Vernon
- Industrial parks, the North Vernon Airport and Selmier State Forest are located north of US 50 near North Vernon
- Residential homes, commercial businesses, schools, churches, and cemeteries along US 50 and throughout Jackson County and Jennings County in the vicinity of the Study Area

In conclusion, significant human and natural environmental features will be considered in the development of improvement alternatives for US 50. To the extent possible these features will be avoided in the development of improvement alternatives. If any feature cannot be avoided, a concerted effort will be made to minimize the impacts and mitigate adverse impacts as required. Chapter 5 – Analysis of Alternatives, identifies and discusses many of the natural and socio-economic resources within the Study Area.

1.3 Project History

A prior US 50 Corridor Analysis was completed in 1992 that investigated the feasibility of improvements to US 50 from US 31, eastward through North Vernon to the eastern city limits. This study concluded that there were no existing "serious safety or capacity problems at this time on the corridor". "Therefore, INDOT will periodically monitor the number of accidents and the level-of-service on this US 50 corridor to conclude whether the existing road system will need to be revised to better handle future traffic".

The INDOT 2030 Long Range Transportation Plan (LRP) lays out a strategy for the future of the state highway system. This extended planning period provides a long range vision of how the state jurisdictional highway system will develop in the future. Because US 50 is identified as a Statewide Mobility Corridor, there is a greater goal to be achieved in the improvement of US 50 (more than just addressing local traffic concerns). Statewide Mobility Corridors serve as the connection between urban areas of 25,000 persons or greater in Indiana and neighboring states, provide macro-level accessibility to cities and regions around the state, and play a vital role in economic development. These roadways carry long distance trips, heavier commercial vehicle flows and warrant high-type design standards, such as multiple travel lanes, railroad and highway grade separations, and bypasses of congested areas.

Within the limits of the Study Area for this project, the INDOT Major Moves highway plan identifies added travel lanes in Jackson County for the portion of US 50 from US 31 to the west side North Vernon's urban area boundary in the fiscal year 2014 (Des. No. 0401401). Also identified as a part of the INDOT Major Moves highway plan is added travel lanes in Jennings County for the portion of US 50 from the west side of North Vernon's urban area boundary to the east side of North Vernon's urban area boundary in the fiscal year 2015 (Des. No. 0401402).

The INDOT also has previously programmed projects along the US 50 corridor within the Study Area, including the replacement of the US 50 Bridge over Indian Creek and intersection improvements in North Vernon on US 50 at Hayden Pike, Poplar Street and Norris Avenue, on SR 3 at North Madison Street, and on SR 7 at Franklin Street, Washington Street/O & M Avenue and Hayden Pike.

The INDOT initiated this Corridor Planning/EA in 2006. This US 50 – North Vernon Corridor Planning/EA Study will adhere to all applicable environmental laws, regulations, and guidelines including, but not limited to, the following:

- NEPA
- SAFETEA-LU Section 6002 requirements – Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA-LU is the Federal Surface Transportation Act that authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009
- FHWA Technical Advisory T6640.8A, "Guidance for Preparing and Processing Environmental and Section
- 4(f) Documents" (1987)
- FHWA regulations
- Council of Environmental Quality (CEQ) regulations
- INDOT's Procedural Manual for Preparing Environmental Studies (2003)
- Indiana's Streamlined EIS Procedures (July 2001)

An Early Coordination Letter was sent to resource agencies on January 31, 2007. The Task 1 Report – Identification of Existing and Future Conditions and Issues, was made available for review and comment on February 8, 2007, and a Public Open House to discuss the Task 1 Report was held on the same day. A second Early Coordination letter inviting various agencies to become Participating Agencies for the project was sent on June 8, 2007. The Task 2 Report – Definition of Purpose and Need and Identification of Preliminary Alternatives, was made available for review and comment on July 26, 2007, and a Public Open House to discuss the Task 2 Report was held on the same day. The Notice of Intent (NOI) to prepare a Corridor Planning/EA Study was published in the *Federal Register* on June 29, 2007. Chapter 7 of this document further describes the agency and public involvement efforts related to the project.

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2. EXISTING AND FUTURE TRAFFIC CONDITIONS

2.1 Existing Facilities

2.1.1 Functional Class

See Figures 2.1 through 2.3 for functional classification maps of the Study Area.

2.1.1.1 Interstates/Freeways/Expressways

Freeways and expressways are the highest category of arterial streets and serve the major portion of the through-traffic entering and leaving a metropolitan area (i.e., inter-urban traffic). They carry the longest trips at the highest speeds, and are designed to carry the highest volumes. In metropolitan areas, intra-urban traffic (such as between the central business district and outlying residential areas and between major inner-city communities or major urban centers) may also be served by streets of this class. Freeways are facilities characterized by full control of access, divided facilities with multi-lanes that are grade-separated from all intersecting transportation facilities including other roadways and railroads. Freeways include the nation's Interstate Highway System (consisting of approximately 45,000 miles) and any other route with full control of access. Interstate 65 is the only freeway (Interstate or otherwise) within the Study Area. Expressways are partially-controlled access facilities that may have occasional at-grade intersections. There are no Interstates/freeways/expressways in Jennings County.

2.1.1.2 Principal Arterials

Principal Arterials (sometimes termed Other Principal Arterials under the federal functional classification system) are the highest category of arterial streets without grade separation. This functional class complements the freeway/expressway system in serving through-traffic entering and leaving the metropolitan area. Within the metropolitan area, major intra-urban trips are served between the central business district and suburbs, and between major suburban activity centers. Although Principal Arterials may lack access control, some level of access control is highly desirable such as the minimum spacing of intersections with public roads and the control of driveway entrances. For Principal Arterials, maintaining traffic carrying capacity for through-traffic is more important than providing access to abutting properties. Examples of Urban Principal Arterials in Jennings County include State Road (SR) 3, SR 7 and US 50. The only Rural Principal Arterial in Jennings County is US 50 (see Figures 2.1 through 2.3).

- US 50**.** US 50 is a two-lane Rural Principal Arterial that runs east-west through Jackson County and the middle of Jennings County from the Jackson County line to the Ripley County line. US 50 is an Urban Principal Arterial through the North Vernon Urban Area Boundary (UAB).

- SR 3. SR 3 is a two-lane/four-lane Urban Principal Arterial that runs north-south through the North Vernon UAB.

- SR 7. SR 7 is a two-lane/four-lane Urban Principal Arterial that runs from northwest of North Vernon to SR 3. From this intersection, SR 7 follows SR 3 to just south of Vernon.

2.1.1.3 Minor Arterials

Minor Arterials, the lowest category of arterial streets, serve trips of moderate length and offer a lower level of mobility than Principal Arterials. This class augments the Principal Arterials by distributing traffic to smaller geographic areas and linking cities and towns to form an integrated network providing interstate highway and inter-county service. Minor Arterials provide urban connections to rural collectors. Examples of Rural Minor Arterials in Jennings County include SR 3 (north of North Vernon) and SR 7. Examples of Urban Minor Arterials in North Vernon include Madison Avenue, 5th Street and Norris Avenue (see Figure 2.1 through Figure 2.3).

2.1.1.4 Collector Streets

Collector streets serve as the link between local streets and the arterial system. These streets provide both access and traffic circulation within residential, commercial and industrial areas. Moderate to low traffic volumes are characteristic of these streets. In rural areas, the Major Collectors provide service to county seats, larger towns (2,500 or more persons) and other major traffic generators that are not served by arterials. These roads serve the most important intra-county corridors. Rural Minor Collectors link local roads in rural areas and serve the smallest rural communities (fewer than 2,500 persons). Examples of Rural Major Collectors in Jennings County include SR 3 (south of Vernon), SR 250 and CR 500 E. Examples of Rural Minor Collectors include CR 350 N, CR 500 S and CR 275 W. Urban Collectors include such streets as Hayden Pike, 4th Street, Brownstown Road and CR 150 in North Vernon (see Figure 2.1 through Figure 2.3).

2.1.1.5 Local Streets

Local streets are composed of all streets not designated as collectors or arterials. Primarily serving abutting properties, local streets provide the lowest level of mobility and, therefore, exhibit the lowest traffic volumes. Through-traffic on local streets is deliberately discouraged. This class of street is not part of any town or county thoroughfare network, and is not eligible for federal aid with the exception of bridges and bikeway/walkway facilities.

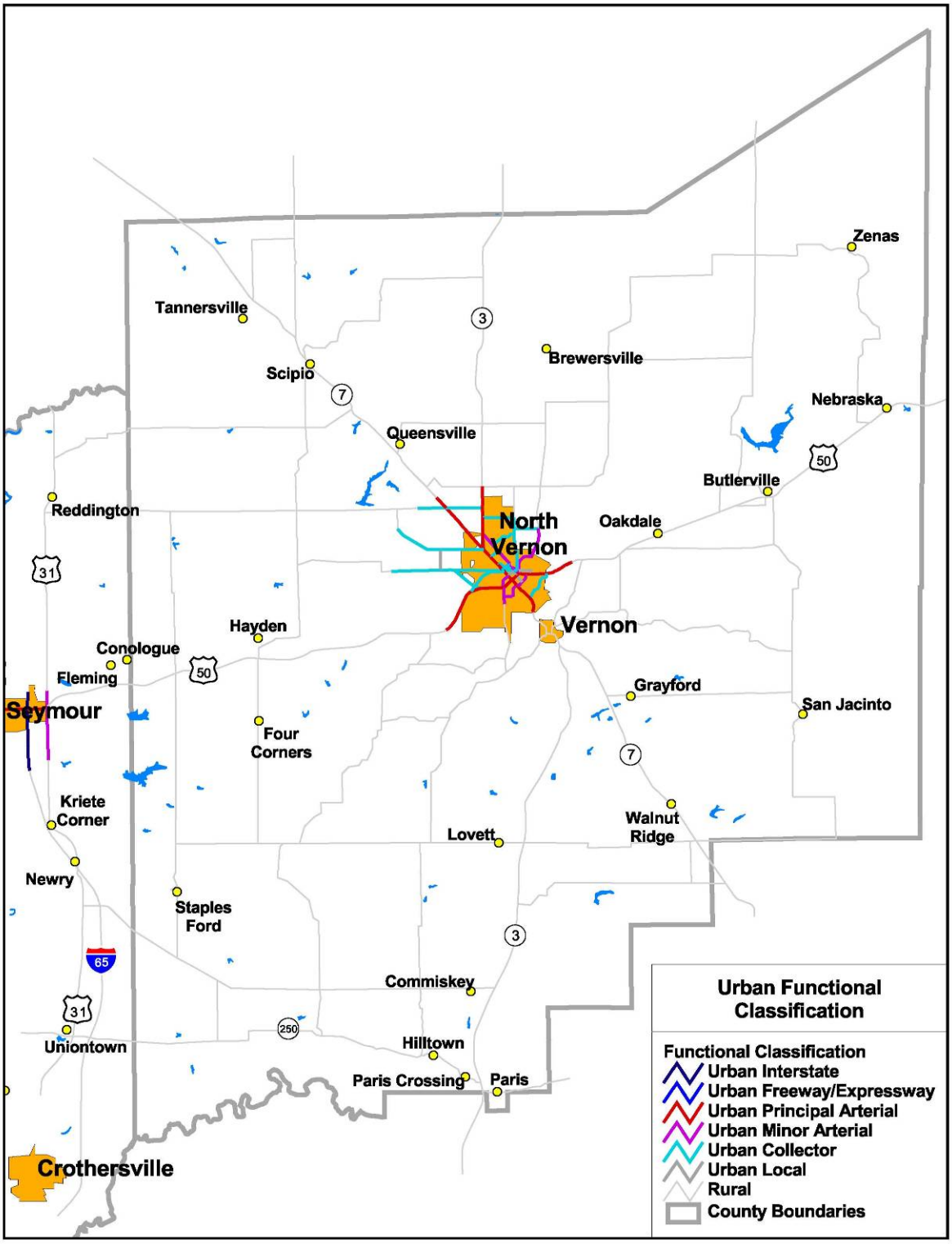

Figure 2.1: Study Area Urban Functional Classification

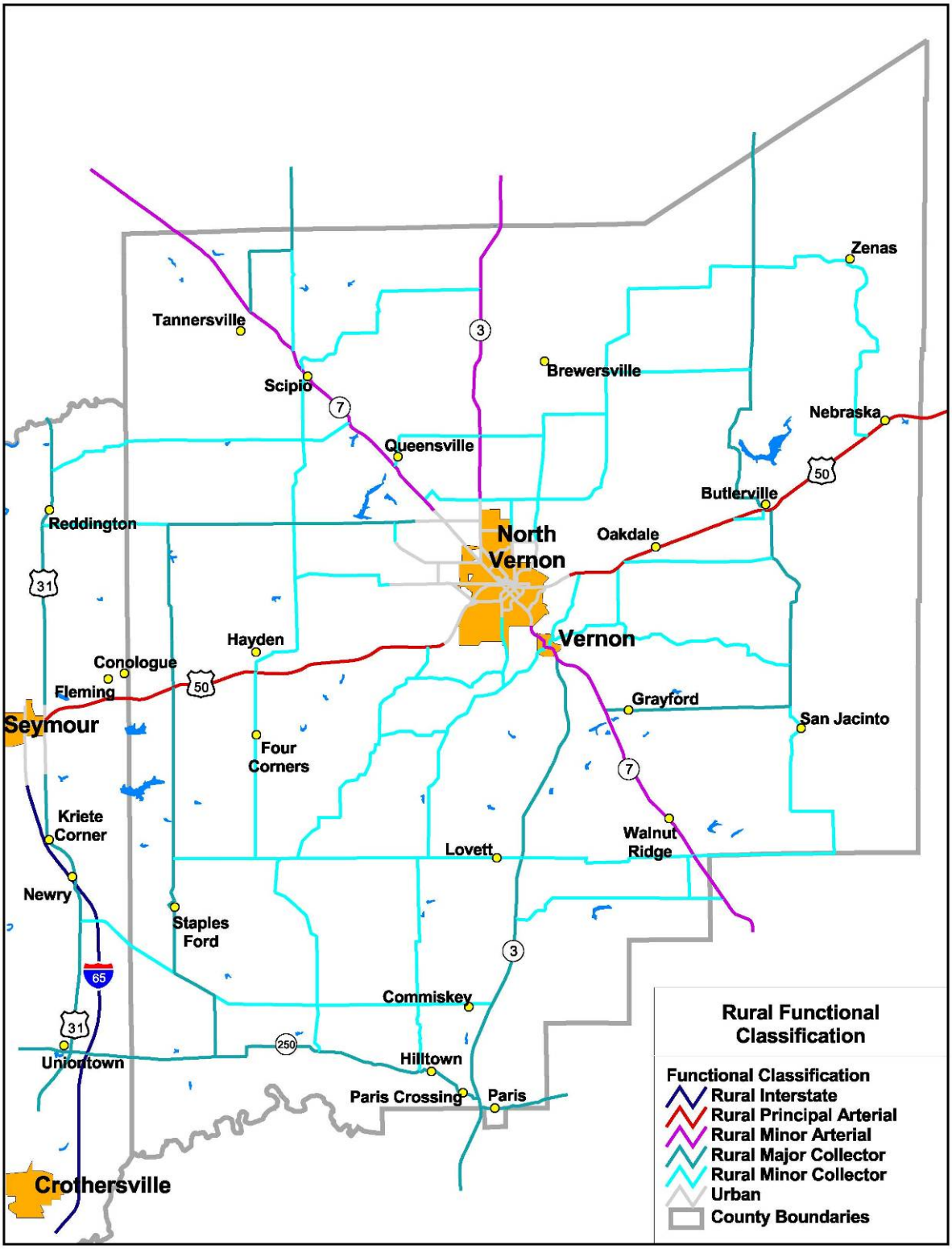

Figure 2.2: Study Area Rural Functional Classification

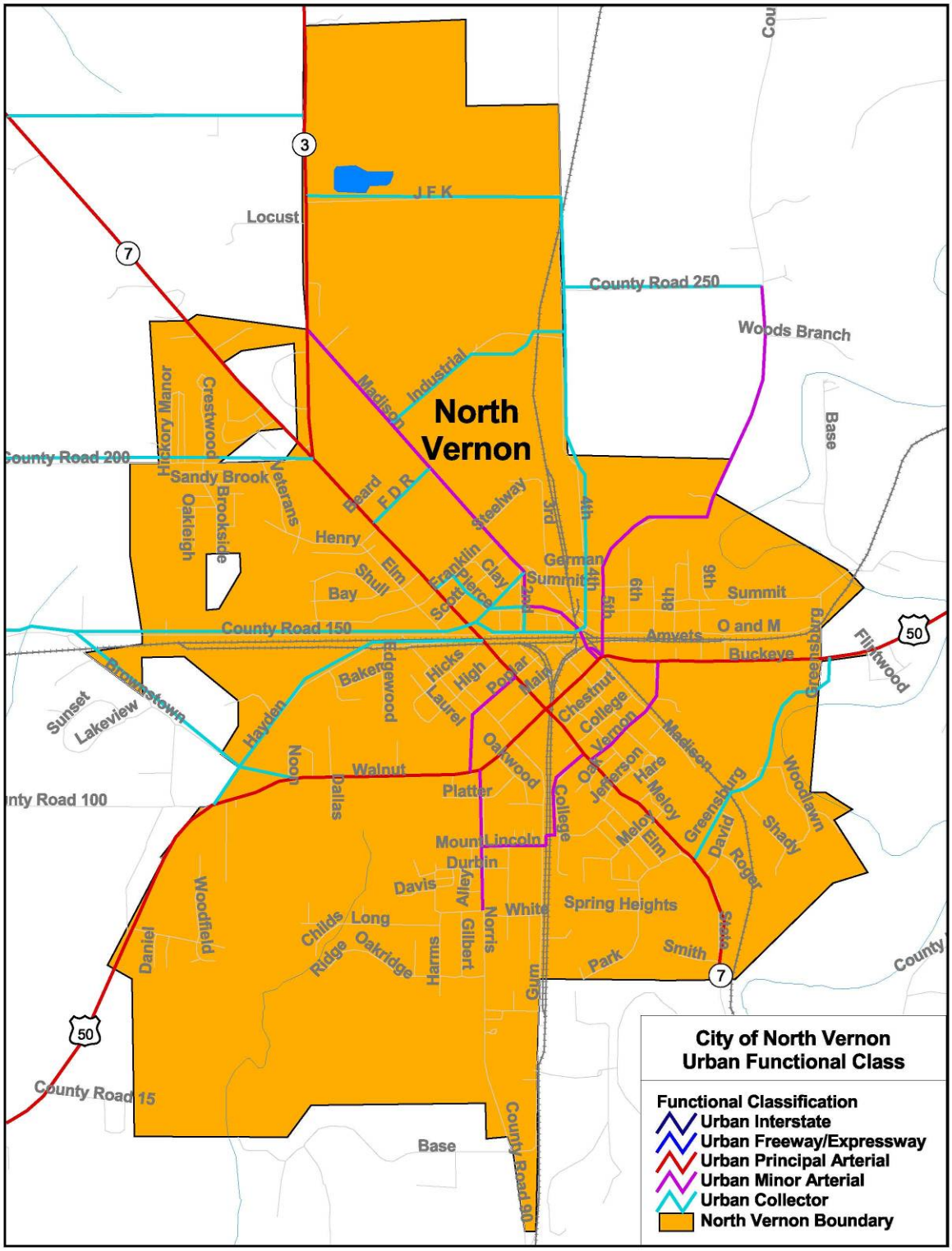

Figure 2.3: North Vernon Functional Classification

2.1.2 Mobility Class

The *INDOT 25-Year Transportation Plan* established a planning-level corridor hierarchy for State-maintained roadways of three mobility categories. The highest category is Statewide Mobility Corridors, which connect major metropolitan areas in Indiana and neighboring states, provide macro-level accessibility to cities and regions around the state, and play a vital role in the economic development of the state. The Statewide Mobility Corridors encompass facilities in the Interstate System and the National Highway System plus a few additional Principal Arterials. In the Study Area, US 50 is classified as a Statewide Mobility Corridor (see Figure 2.4).

The second category is Regional Mobility Corridors, which connect smaller cities and regions, feed traffic to Statewide Mobility Corridors and provide regional accessibility. This category includes the balance of the Principal Arterials and most Minor Arterials. State Road 7 in Jennings County is classified as a Regional Mobility Corridor (see Figure 2.4). The characteristics of a Regional Mobility Corridor are:

Mid-level design standards

- High to moderate speed.
- Free-flow to the extent practicable in rural areas.
- Serves medium distance trips.
- Carry medium distance commuter traffic.
- Moderate through volumes of traffic.
- Moderate commercial vehicle flows.
- Potential for heavy local traffic volumes.
- Typically, at-grade intersections with highways and railroads, with consideration for railroad grade separation.
- High-level two-lane or multi-lane.
- Partial access control desirable.
- Conventionally routed through cities and towns.
- Moderate interaction with non-motorized vehicles and pedestrians.[1]

The lowest category in the corridor hierarchy are Local Access (Sub-Regional Mobility) Corridors, which serve intra-county and inter-county short distance trips, provide access to local residences and businesses, and provide access to rural areas and small towns. This category includes the balance of the state-maintained roadways and includes SR 3 in Jennings County and US 31 in Jackson County (see Figure 2.4). The characteristics of a Sub-Regional Mobility Corridor are:

Lower-level design standards

- Moderate to low speed.
- At-grade intersections with highways and railroads.
- Minimal access control.
- Short distance trips.
- Low through traffic volumes.
- Moderate local traffic volumes.
- Typically two-lane with multi-lane exceptions.
- Frequent interaction with non-motorized vehicles and pedestrians.
- Routed through cites and towns. [1]

[1] INDOT Twenty Five Year Plan, November 2003, page 101.

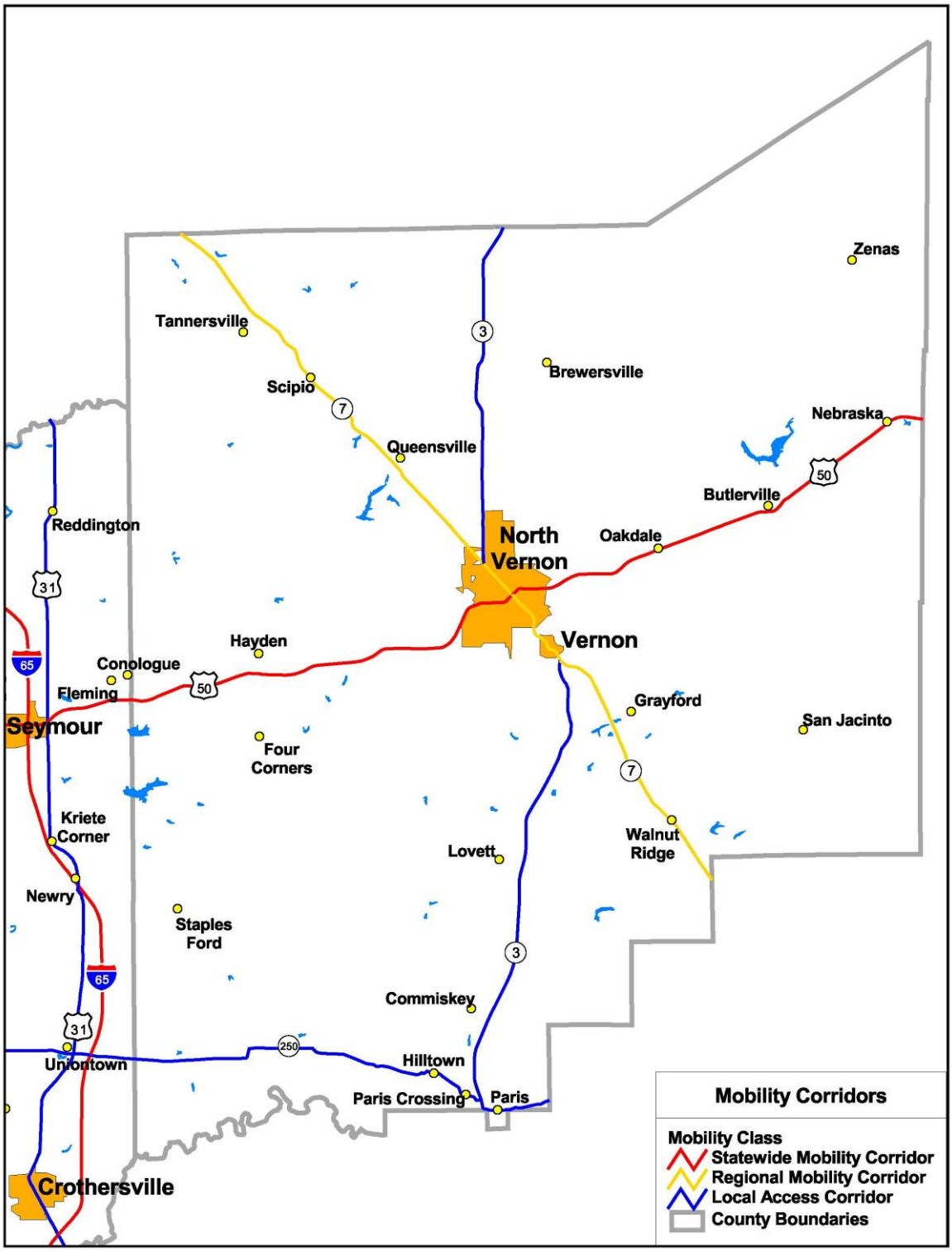

Figure 2.4: Study Area Mobility Corridors

2.1.3 Existing US 50 Geometric Characteristics

Table 2.1 below summarizes the general geometric characteristics of US 50 through Jennings County.

Through all of Jennings County, including North Vernon, US 50 is a two-lane undivided highway. In the rural areas of Jennings County, beyond the North Vernon Urban Area Boundary, US 50 has twelve-foot lanes with three-foot paved shoulders, and total right-of-way widths ranging from 70 to 90 feet. From Hayden Pike to Poplar Street, US 50 has twelve foot lanes with a 53 foot total right-of-way width. From Poplar Street to SR 3/SR 7 (State Street), US 50 has twelve foot lanes with a 53 foot total right-of-way and a center two-way left-turn lane. From State Street to Madison Avenue, the total right-of-way is 78 feet with a center two-way left-turn lane and parking on both sides of the street. From Madison Avenue to 11th Street, US 50 has twelve foot lanes with a 54 foot total right-of-way and a center left-turn lane near the US 50/Madison Avenue intersection. Between 11th Street and the Ripley County Line, US 50 has twelve foot lanes. The total right-of-way is 54 feet from 11th Street and Greensburg Road, 62 feet from Greensburg Road to Deer Creek Road, 90 feet from Deer Creek Road to Brush Creek Road and 70 feet from Brush Creek Road to the Ripley County Line.

Table 2.1: US 50 Geometric Characteristics

Route	Termini	Number of Lanes	Lane Width (ft.)	Right-of-Way Width (ft.)	Median Treatment
US 50	Jackson Co. Line to Hayden Pike	2	12	80	None
	Hayden Pike to Poplar Street	2	12	53	None
	Poplar Street to SR 3/SR 7(State St.)	2	12	53	LT Lane*
	SR 3/SR 7 (State St.) to Madison Ave.	2	12	78	LT Lane*/ Parking**
	Madison Ave. to 11th St.	2	12	54	LT Lane*
	11th St. to Greensburg Rd.	2	12	54	None
	Greensburg Rd. to Deer Creek Rd.	2	12	62	None
	Deer Creek Rd. to Brush Creek Rd.	2	12	90	None
	Brush Creek Rd. to Ripley Co. Line	2	12	70	None

Source: INDOT Roadway Information System
Notes: * LT Lane = center left-turn lane. ** Parking = parking on both sides.

2.1.4 Other Transportation Considerations

2.1.4.1 Traffic Control

Figure 2.5 shows traffic control signals within Jennings County. With the exception of the traffic signal located at US 31 and US 50 in Jackson County, all are located in North Vernon. Within the City of North Vernon (Table 2.2), traffic signals are concentrated in downtown North Vernon on the principal arterials of SR 3, SR 7 and US 50.

Table 2.2: North Vernon Traffic Control Signal Summary

SR 3	Madison Avenue
	SR 7
SR 3/SR 7 (State St.)	Franklin Street
	Poplar Street
US 50	Norris Avenue
	SR 3/SR 7 (State Street)
	Jackson Street
	Madison Avenue

Source: Bernardin, Lochmueller & Associates, Inc.

2.1.4.2 Access Control

There is no access control anywhere along US 50 in Jennings County. Partial access control on US 50 begins at US 31 and runs westward to I-65.

2.1.4.3 On-Street Parking

The only location along US 50 in North Vernon with on-street parking is between SR 3/SR 7 (State Street) and Madison Avenue.

2.1.4.4 Bicycle/Pedestrian Facilities

Muscatatuck County Park, managed by the Jennings County Parks and Recreation Department, in North Vernon, is home to an eight mile hiking trail and mountain biking trails. The River Trail is 2.5 miles with a scenic view of the river and gentle hills. The Ridge Trail is 2.6 miles including a bridge, switchbacks, bluff trails, a waterfall and a marsh. The Dogwood Trail is a flat one-mile trail bordering the forest. The History Trail is a half-mile trail that passes the Vinegar Mill Site, Canyon Creek Ridge Stone Shelter and the Walnut Grove Schoolhouse. Muscatatuck County Park works with DINO (Do Indiana Off-Road) and modifies and upgrades the bicycle trails accordingly. Selmier State Forest, the former estate of business man Frank Selmier, has self-guided trails.

2.1.4.5 Public Transportation

A public transportation system, *Catch-A-Ride*, began operation in Jennings County in the Vernon and North Vernon area on May 14, 2007. It is a shared ride service providing regular pick up and drop off points in designated areas, as well as individually scheduled service. *Catch-A-Ride's* system of regular routes combined with individually scheduled service is specifically designed to serve small towns and rural counties. For the Jennings County and Vernon and North Vernon area, *Catch-A-Ride* offers a Point Deviation Service. A Point deviation route operates within the more highly populated area of Vernon and North Vernon on an established directional route pattern with four (4) designated check points for pick up and drop off. Scheduled pick ups along the point deviation route can be requested. The rider will be picked up at the requested location and taken to their destination along the route. Riders can also board the vehicle at any of the check points without reservations and be transported to any destination along the route. The regularly scheduled route in Vernon and North Vernon operates Monday through Friday, 8:00am – 4:00pm with a single vehicle traveling counterclockwise with stops at the top of the hour at JC Plaza & Wal-Mart (North SR 3), at 15 minutes past the hour at St. Vincent Jennings Hospital (Henry Street), at 30 minutes past the hour at the Courthouse (Vernon on SR 7) and at 45 minutes past the hour at the Senior Center (Buckeye Street). Transportation is also available for Jennings County areas not listed on the Vernon and North Vernon route by calling the *Catch-A-Ride* office and scheduling an individual pick up.

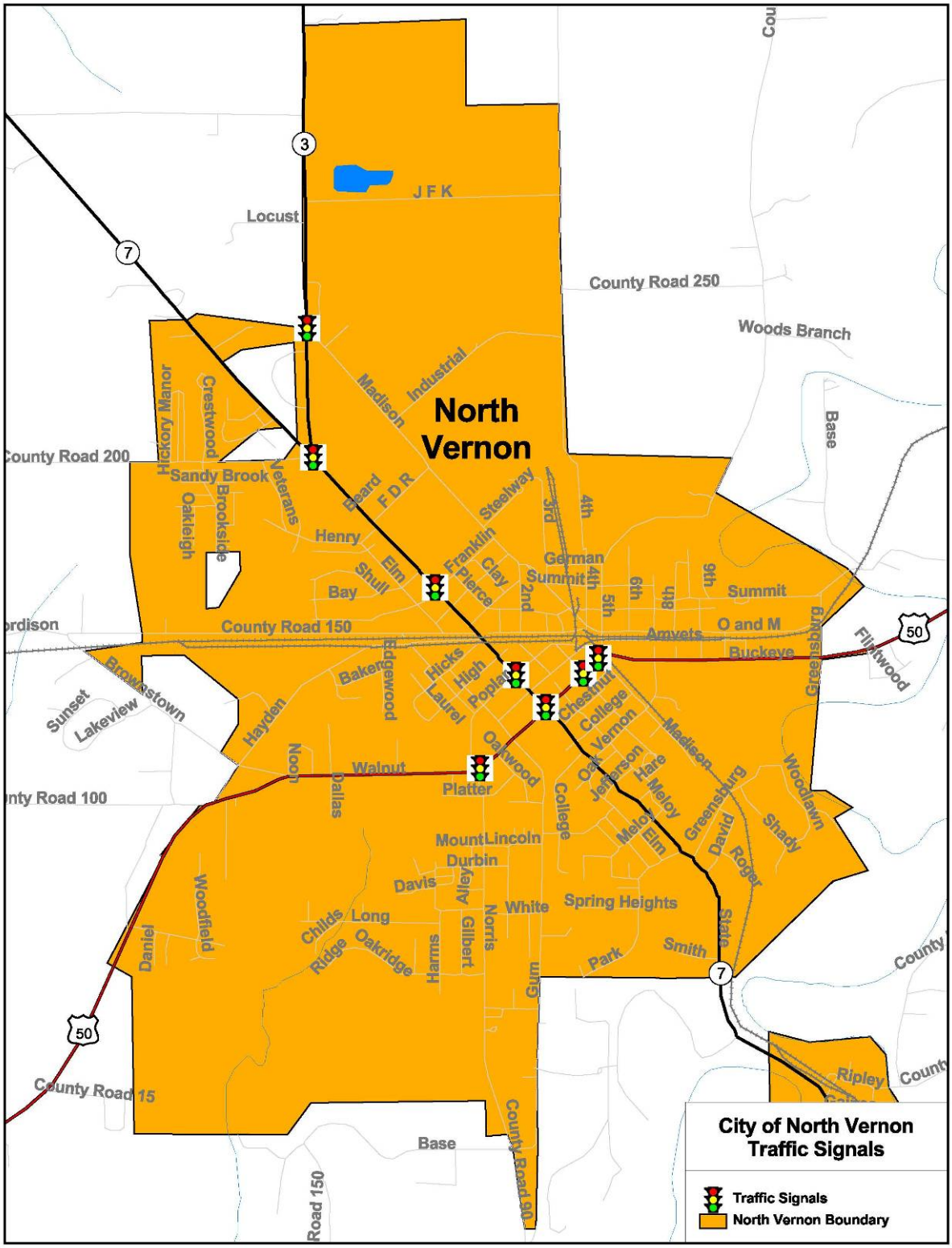

Figure 2.5: North Vernon Traffic Signals

2.2 Existing Traffic Patterns and Conditions

2.2.1 Average Daily Traffic

Daily vehicle counts were gathered from a number of sources, including the Indiana Department of Transportation (INDOT) and the Southern Indiana Regional Planning Commission (SIRPC). Whenever possible, 48-hour vehicle classification counts were used for this study. These counts are completed during weekdays, and then averaged for a daily vehicle count. When more than one count was available at the same general location, the most recent count was used.

For a vehicle classification count, all vehicles that cross the counting location are separated into thirteen categories, as defined by the Federal Highway Administration (FHWA). There are three classifications of personal automobile (including cars, pick-up trucks, and motorcycles), four classifications of single-unit trucks, and six classifications of combination trucks. Combination trucks are those trucks, like semi-tractor trailers, in which the vehicle is made up of separate components, such as a cab and a trailer. Single-unit trucks are trucks, such as local delivery trucks, that cannot be disconnected into separate pieces.

A variety of data sources have been utilized for this project to determine the daily traffic volumes inside the Study Area. These sources include:

- 1998 INDOT County flow maps
- 2000 INDOT actual counts (including truck volumes) (see Figures 2.7 & 2.8)
- 2001 INDOT County flow maps. (see Figure 2.6)
- 2006 Bernardin, Lochmueller and Associates, Inc. actual traffic counts (including truck volumes)

A summary of the traffic counts can be found in Table 2.3.

The magnitude of daily traffic volumes correlates to the functional class of the roadways. Interstate 65, just west of the Jennings/Jackson County line, carries daily traffic volumes (year 2000) ranging from 28,700 ADT to 34,500 ADT and daily truck volumes ranging from 8,900 ADT to 12,000 ADT. The following urban principal arterials handle the next level of daily traffic volumes:

- US 50 within the North Vernon Urban Area Boundary (UAB) ranging from 11,700 ADT to 19,000 ADT in 2000 and 8,900 ADT to 13,100 ADT in 2006 with trucks volumes around 1,600 ADT in 2000 and ranging from 900 ADT to 2,200 ADT in 2006.
- SR 3 from the North Vernon southern boundary to CR 350 North ranging from 12,400 ADT to 29,000 ADT and around 500 trucks per day in year 2000. Counts taken in year 2004 range from 13,900 ADT to 29,000 ADT.
- SR 7 north of SR 3 through the North Vernon urban area ranging from 15,600 ADT to 17,700 ADT with truck volumes around 400 ADT. Counts taken in 2004 range from 14,200 ADT to 15,700 ADT.

Rural principal arterials and rural minor arterials handle the next level of daily traffic volumes:

- US 50 ranging from 3,400 ADT to 10,600 ADT with truck volumes ranging from 900 ADT to 2,100 ADT in year 2000 and 3,500 ADT to 10,700 ADT in 2006.

- SR 3 ranging from 2,400 ADT to 14,700 ADT with truck volumes around 500 ADT. Counts taken in 2004 range from 3,300 ADT to 9,900 ADT with truck volumes between 700 ADT and 800 ADT.

- SR 7 ranging from 3,300 ADT to 14,900 ADT with truck volumes ranging from 300 ADT to 1,800 ADT. Counts taken in 2004 range from 3,900 ADT and 10,600 ADT with truck volumes between 400 ADT and 1,200 ADT.

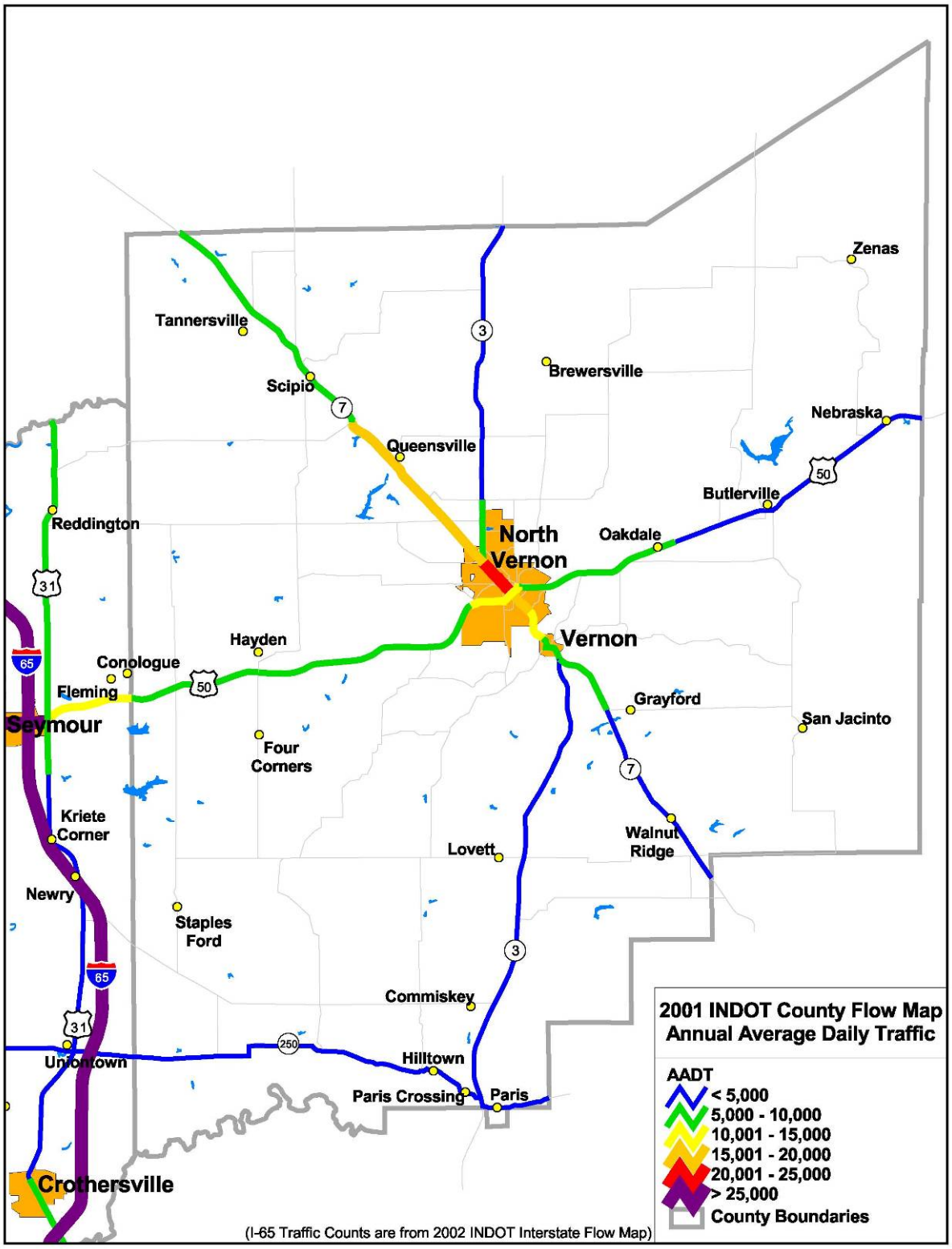

Figure 2.6: Year 2001 INDOT Traffic Flows

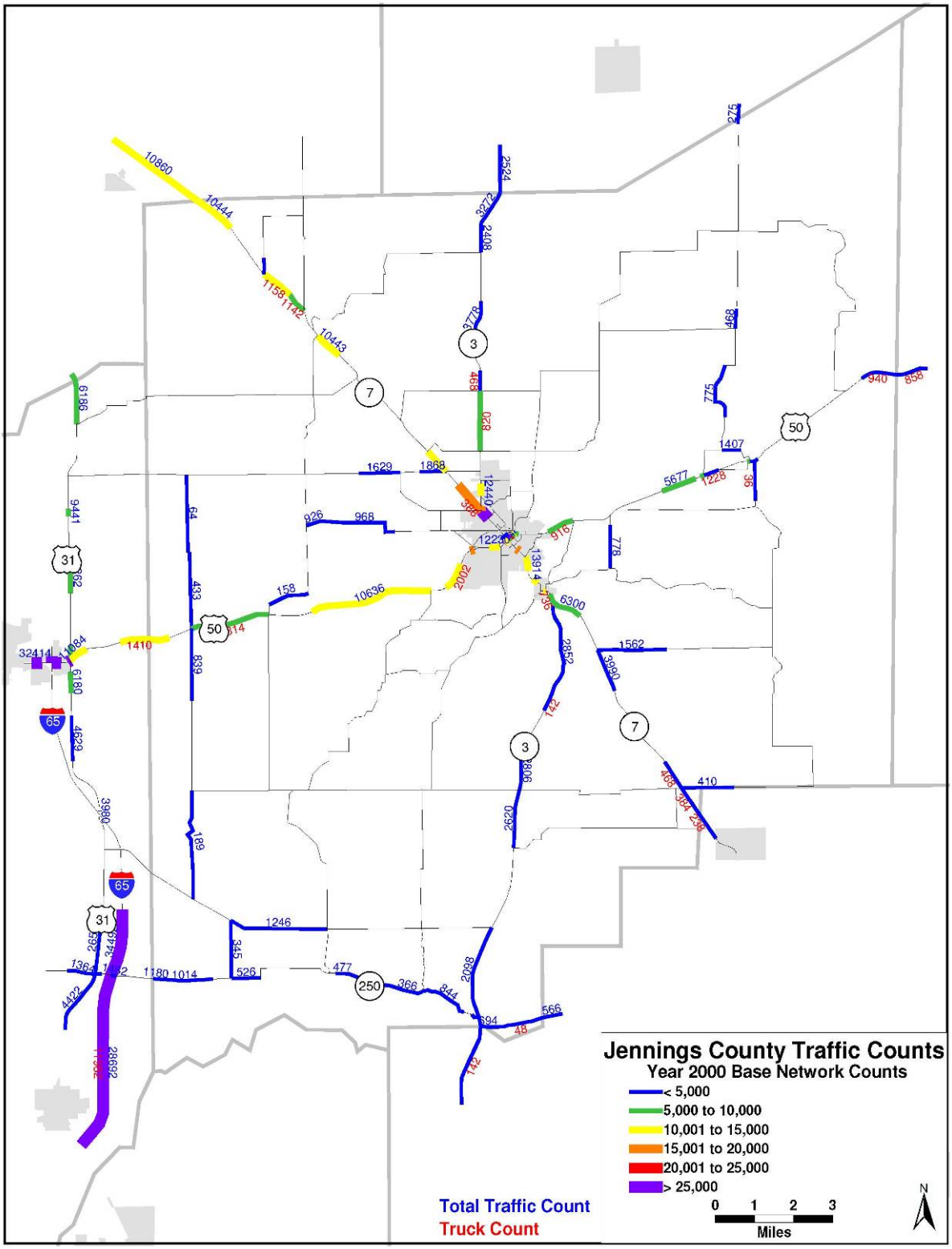

Figure 2.7: Jennings County Traffic Counts Used in Base Year Network

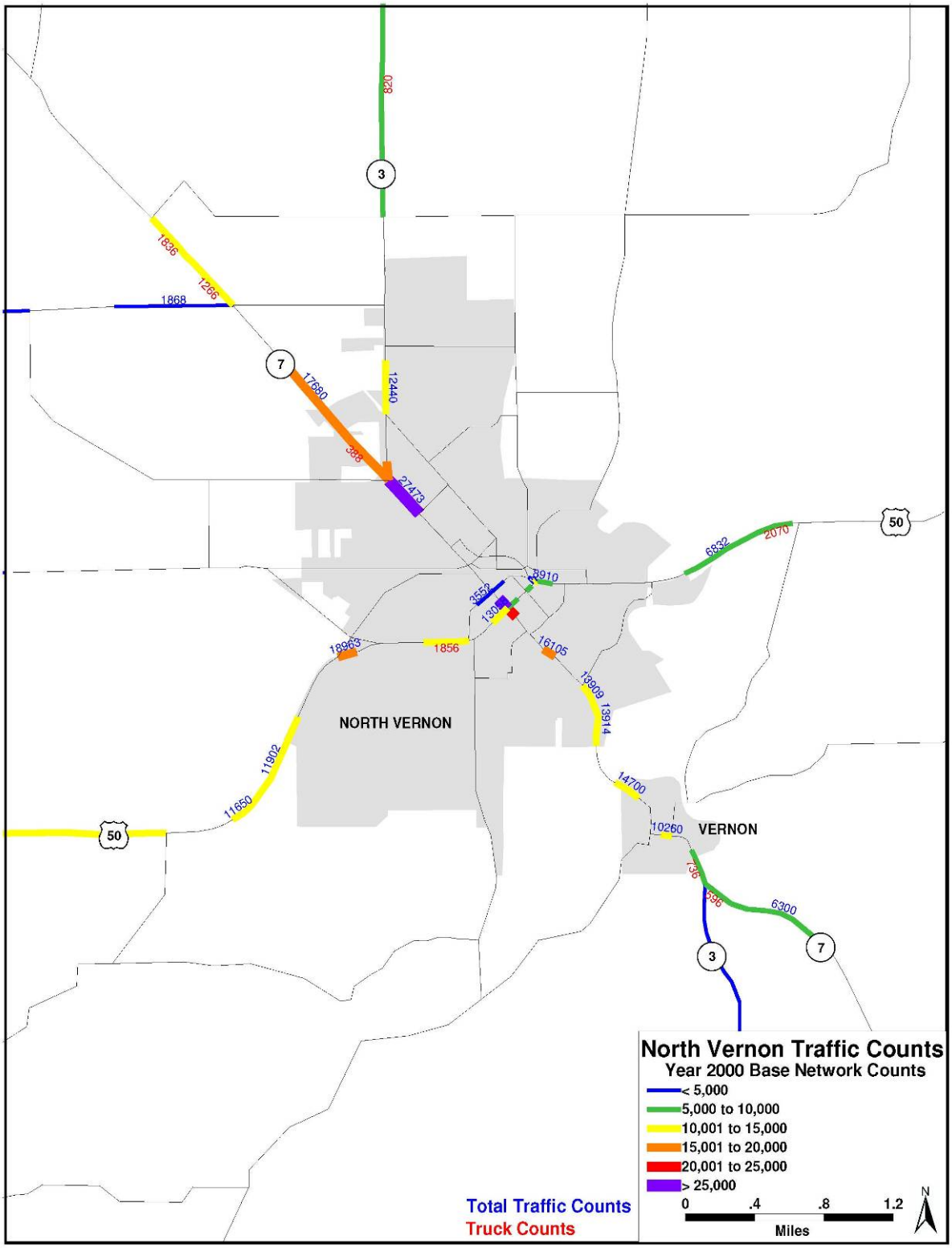

Figure 2.8: North Vernon Traffic Counts Used in Base Year Network

Table 2.3 presents the daily traffic volumes on US 50 through Jennings County. INDOT counts are included from the year 2000 along with counts taken by Bernardin, Lochmueller and Associates, Inc. INDOT County Flow Map traffic counts are also listed for 1998 and 2001. The table shows a total vehicle count and a truck count. Trucks include both single-unit trucks (including buses) and combination-unit (semi-tractor trailer) trucks. Single-unit trucks are used for short-distance trips for freight distribution; whereas, combination-unit trucks are used for long-distance trips to move freight between metropolitan areas.

In the year 2000, the statewide percent of truck traffic was 17.9% for rural principal arterials and 8.6% for urban principal arterials. While the percent of truck traffic on the rural portion of US 50 west of North Vernon is comparable to other rural principal arterials, **the percent of truck traffic through North Vernon and east of North Vernon to Ripley County exceeds that statewide for urban and rural principal arterials.**

Table 2.3: Jennings County Existing Daily Traffic Volumes on US 50

Route	Termini	2000 INDOT Actual Counts			2006 BLA Counts			INDOT Flow Map	
								1998	2001
		Trucks	Percent Trucks	All Vehicles	Trucks	Percent Trucks	All Vehicles	All Vehicles	All Vehicles
US 50	Jackson Co. Line to CR 900 W	1942	19.1%	10148	1823	17.1%	10673	11090	9500
	CR 900 W to CR 700 W	1813	18.9%	9582				11090	9500
	CR 575 W to CR 265 W	1169	11.0%	10634				11090	9500
	CR 265 W to Middle School Dr.	1620	13.9%	11650	1613	17.6%	9174	11090	9500
	Brownstown Rd. to Poplar St.				1856	15.2%	12230	18050	14050
	Poplar St. to SR 3/SR 7 (State St.)				2193	16.8%	13056	18050	14050
	SR 3/SR 7 to Jennings St.				1272	15.1%	8422	16640	12920
	Jennings St. to Short St.				1526	18.4%	8276	13780	11200
	Short St. to Vernon St.				1120	12.6%	8909	9730	8140
	Greensburg St. to CR 75 E.	2069	25.2%	8206	916	13.4%	6832	9730	8140
	CR 280 E to CR 425 E				1293	24.4%	5295	5920	4770
	CR 425 E to CR 300 N	1228	25.5%	4808				5920	4770
	CR 540 N to Ripley Co. Line	940	27.6%	3405	906	26.0%	3482	4040	3380

Source: INDOT Roadway Information System, INDOT Traffic Flow Maps and Bernardin, Lochmueller & Associates.

2.2.2 Level of Service

2.2.2.1 Intersections

A capacity analysis was performed for fourteen intersections along US 50 in the Study Area beginning at US 31 east of Seymour and ending at Main Street in Butlerville and encompassing all the signalized and other major unsignalized intersections. The intersection capacity analysis results in an evaluation of level of service (LOS). The LOS is an estimation of the delay experienced by drivers using transportation facilities, such as intersections and roadways. The LOS is defined using the letters A through F. LOS A represents the best level of service and generally describes free flow traffic operation with very low delay. LOS F represents the worst operating conditions in which there is considerable congestion and delay. More complete descriptions of the different LOS designations follow in Table 2.4 and Table 2.5, respectively for signalized and unsignalized intersections. The INDOT Roadway Design Manual guidelines state that LOS B is desirable and LOS C is the minimum acceptable in rural and suburban areas, while LOS C is desirable and LOS D is the minimum in intermediate and built-up urban environments.

All signalized intersections along US 50 within the Study Area have an acceptable LOS in the 2006 base year under the existing conditions. The intersection at US 50 and Norris Avenue has an overall LOS B. The intersections of US 50 with US 31, SR 3/SR 7, and Madison Street all have an overall LOS C. Table 2.6 shows the overall LOS of these four intersections and the LOS of each approach. However, the blocks approaching the Madison Street intersection experience a LOS E due to the density of traffic associated with the short blocks and proximity of adjacent traffic signals.

There are ten unsignalized intersections along US 50 through Jennings County. These intersections are free-flow for US 50 traffic and stop conditions for the intersecting roadway traffic. At two-way stop-controlled intersections such as these, it is common for the traffic on intersecting roadway to have difficulty finding gaps to pull-out onto the free-flow roadway, increasing average delay for the intersecting roadway. For all ten of these unsignalized intersections the left-turn movements off of US 50 onto the intersecting roadway operate at LOS A. Three of the ten intersections have intersecting roadways with an approach LOS that is deficient. Table 2.7 shows the LOS of approaches to these intersections.

The first of these three intersections experiencing deficient LOS is the US 50 and CR 900 W intersection. The northbound approach at this intersection operates at a LOS D. The other approaches operate at an acceptable LOS with the southbound approach operating at LOS C and the eastbound and westbound approaches operating at LOS A.

The second of these three intersections experiencing deficient LOS is the US 50 and CR 700 W intersection. The northbound approach at this intersection operates at LOS D. The other approaches operate at an acceptable LOS with the southbound approach operating at LOS C and the US 50 approaches operating with very little delay and a LOS A.

The third of these three intersections experiencing deficient LOS is the US 50 and Brownstown Road intersection on the west side of North Vernon. The southbound approach at this intersection is the only unsignalized intersection approach within the Study Area that currently operates at LOS E. The other approaches at this intersection operate at an acceptable LOS with the eastbound approach operating at LOS A.

Table 2.4: Level of Service Definition for Signalized Intersections

Level of Service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. LOS is defined by the average stopped delay per vehicle measured in seconds, and graded as follows:

Level of Service	Stopped Delay per Vehicle (seconds)	Characterization
A	< or = 10.0	very low delay
B	> 10.0 and < or = 20.0	low delay
C	> 20.0 and < or = 35.0	moderate delay
D	> 35.0 and < or = 55.0	significant delay
E	> 55.0 and < or = 80.0	limit of acceptable delay
F	> 80.0	unacceptable delay

The definition for the vehicle delay grades are:

- **LOS A** describes operations with very low delay, up to 10 seconds per vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
- **LOS B** describes operations with delay greater than 10 seconds and up to 20 seconds per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.
- **LOS C** describes operations with delay greater than 20 seconds and up to 35 seconds per vehicle. These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures *(i.e., not all vehicles waiting at the intersection are able to get through on a cycle)* may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
- **LOS D** describes operations with delay greater than 35 seconds and up to 55 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c *(i.e., volume-to-capacity)* ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures *(i.e., not all vehicles waiting at the intersection are able to get through on a cycle)* are noticeable.
- **LOS E** describes operations with delay greater than 55 seconds and up to 80 seconds per vehicle. This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c *(i.e., volume-to-capacity)* ratios. Individual cycle failures *(i.e., not all vehicles waiting at the intersection are able to get through on a cycle)* are frequent occurrences.
- **LOS F** describes operations with delay in excess of 80 seconds per vehicle. This level, considered unacceptable by most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c *(i.e., volume-to-capacity)* ratios below 1.0 with many individual cycle failures *(i.e., not all vehicles waiting at the intersection are able to get through on a cycle)*. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Sources: *Highway Capacity Manual* (Special Report 209, 4th Edition); Transportation Research Board, National Research Board; Washington, D.C.; 2000; pg.16-2. *Signal 94/TEAPAC: Signalized Intersection Analysis and Design*; Strong Concepts; Northbrook, IL. (LOS "+" grading)

Table 2.5: Level of Service Definition for Unsignalized Intersections

Level of Service (LOS) for unsignalized intersections is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. LOS is based on gap acceptance theory, is defined by the average total delay per vehicle measured in seconds, and graded as follows for two-way or all-way stop intersections:

Level of Service	Stopped Delay per Vehicle (seconds)	Characterization
A	< or = 10.0	very low delay
B	> 10.0 and < or = 15.0	low delay
C	> 15.0 and < or = 25.0	moderate delay
D	> 25.0 and < or = 35.0	significant delay
E	> 35.0 and < or = 50.0	limit of acceptable delay
F	> 50.0	unacceptable delay

Source: *Highway Capacity Manual* (Special Report 209, 4th Edition); Transportation Research Board, National Research Board; Washington, D.C.; 2000; pg.17-2.

Table 2.6: Level of Service for Signalized Intersections

Turning Movement Count Location Number	Intersection/Approach		Existing Year (2006) PM Peak Hour Delay	LOS
TM 1	US 50/US 31	Overall	25.5	C
		Northbound	31.6	C
		Southbound	31.7	C
		Eastbound	26.6	C
		Westbound	15.7	B
TM 8	US 50/Norris Ave	Overall	18.9	B
		Northbound	27.7	C
		Eastbound	18.2	B
		Westbound	16.0	B
TM 9	US 50/SR 3/7	Overall	25.0	C
		Northbound	27.0	C
		Southbound	30.3	C
		Eastbound	21.6	C
		Westbound	18.8	B
TM 10	US 50/Madison St/Short St/5th St	Overall	22.0	C
		Northbound	22.6	C
		Southbound	20.6	C
		Eastbound	22.6	C
		Westbound	21.0	C

Source: Bernardin, Lochmueller & Associates, Inc.

Table 2.7: Level of Service for Unsignalized Intersections

Turning Movement Count Location Number	Intersection/Approach	Existing Year (2006) PM Peak Hour Delay	LOS
TM 2	US 50/CR 900W		
	Northbound	29.3	D
	Southbound	21.2	C
	Eastbound	8.3	A
	Westbound	9.0	A
TM 3	US 50/CR 700W		
	Northbound	27.3	D
	Southbound	22.0	C
	Eastbound	8.4	A
	Westbound	8.6	A
TM 4	US 50/Hayden Pk		
	Southbound	16.6	C
	Eastbound	9.2	A
TM 5	US 50/Middle School/High School Rd		
	Northbound Left	20.1	C
	Northbound Right	11.3	B
	Westbound Left	8.2	A
TM 6	US 50/Brownstown Rd		
	Southbound	36.8	E
	Eastbound	8.4	A
TM 7	US 50/Poplar St		
	Southbound	14.3	B
	Eastbound Left	9.3	A
TM 11	US 50/7th St		
	Northbound	17.5	C
	Southbound	17.9	C
	Eastbound	8.2	A
	Westbound	8.6	A
TM 12	US 50/Greensburg St		
	Northbound	15.8	C
	Southbound	15.7	C
	Eastbound	8.2	A
	Westbound	8.3	A
TM 13	US 50/Deer Creek Rd		
	Northbound	13.1	B
	Southbound	11.5	B
	Eastbound	7.9	A
	Westbound	7.9	A
TM 14	US 50/Main Street		
	Northbound	11.3	B
	Southbound	10.4	B
	Eastbound	7.7	A
	Westbound	7.7	A

Source: Bernardin, Lochmueller & Associates, Inc.

2.2.2.2 Roadway Segments

The LOS for roadway segments was calculated using assigned daily volumes (trucks versus autos) from the Base Year (year 2000) Conditions in the Jennings County Sub-area Travel Demand Model (TDM). The Jennings County Sub-area Model was developed by extracting Jennings County (Indiana) from the Indiana Statewide Travel Demand Model (ISTDM) – version 4.0. Roadway network was added to the ISTDM network in Jennings County to include all Rural Minor Collectors and high volume Rural Local Roads, and in and around the City of North Vernon to include all Urban Collectors. The ISTDM travel analysis zones (TAZs) in Jennings County were also disaggregated to support the more extensively modeled roadway network. Thus, the TAZ demographic database from the 2000 US Census and address-specific employment database from the Indiana Department of Workforce Development "Employment Securities" (ES 202) were re-aggregated for the more extensive TAZ system of the Sub-area Model. Additional vehicle classification counts were added in Jennings County from INDOT and the Southern Indiana Regional Planning Commission (SIRPC). Next, external trip tables were extracted for trucks and autos from the ISTDM for the Jennings County Sub-area TDM, and the Origin-Destination Matrix Estimation (ODME) technique was used to adjust assigned daily truck and auto volumes to vehicle classification counts. Adjustments were made to the speeds on some roadway segments and the location of centroid connectors to improve the Sub-area model performance. Finally, a comparison of assigned daily traffic volumes from the Sub-area model was made to vehicle classification counts to validate the Sub-area TDM as a traffic-forecasting tool.

LOS conditions from the Jennings County Sub-area TDM are presented in Figure 2.9 and Figure 2.10. The Jennings County Subarea TDM reports LOS using two methods -- the Highway Capacity Manual 2000 (HCM) traffic density technique and the Highway Capacity Manual 1997 Volume-to-Capacity (V/C) ratio technique. The former produces more accurate LOS results for rural roadways; whereas, the V/C ratio technique produces more accurate LOS results for urban roadways. Thus, the LOS results from HCM traffic density are used for the Jennings County map, and the LOS results from the V/C ratio technique are used for the City of North Vernon map.

For the purposes of roadway segment LOS evaluation, the INDOT Roadway Design Manual guidelines state that LOS B is desirable and LOS C is the minimum acceptable in rural and suburban areas, while LOS C is desirable and LOS D is the minimum in intermediate and built-up urban environments. Based on the INDOT standard, the rural roadways with LOS deficiencies (below LOS C) in the year 2000 (referring to Figure 2.9) are:

- US 50 from US 31 to East County Avenue in Jackson County.
- US 50 from East County Avenue in Jackson County to CR 900 West in Jennings County.
- US 50 from CR 700 West to CR 15 North in Jennings County.
- SR 7 from CR 575 West to CR 600 North.
- SR 7 from CR 350 West to just north of CR 300 North.

Referring to Figures 2.9 and 2.10, there are a few urban roadways with LOS concerns (below LOS C) in the year 2000 for the City of North Vernon. The Volume-to-Capacity Ratio method used to determine LOS in Figure 2.10 shows only small segments of US 50, SR 3 and SR 7 that even have a LOS C. SR 7 from just north of CR 200 North to Country Squire Boulevard is the longest stretch of urban roadway with a LOS C. In order to check the LOS results in the urban area, the alternate Highway Capacity Manual (HCM) Density method was used. This evaluation (see Figure 2.10) resulted in a substandard LOS E on US 50 (Walnut Street) from Jackson Street to east of 5th Street and LOS F on the Madison Street/Short Street one-way pair from Walnut Street to Poplar Street due to the high concentration traffic and proximity of traffic signals. Thus, there is congestion in the vicinity of the intersection of US 50 (Walnut Street) at Monroe Street/Short Street/5th Street (see photo insert on Figure 2.10) due the concentration of traffic in the blocks approaching this intersection. Portions of SR 7 to the northwest of North Vernon and US 50 to the east are experiencing congestion with LOS D. There are no roadways with LOS E in Jennings County; however, US 50 east of US 31 in Jackson County is at a LOS E.

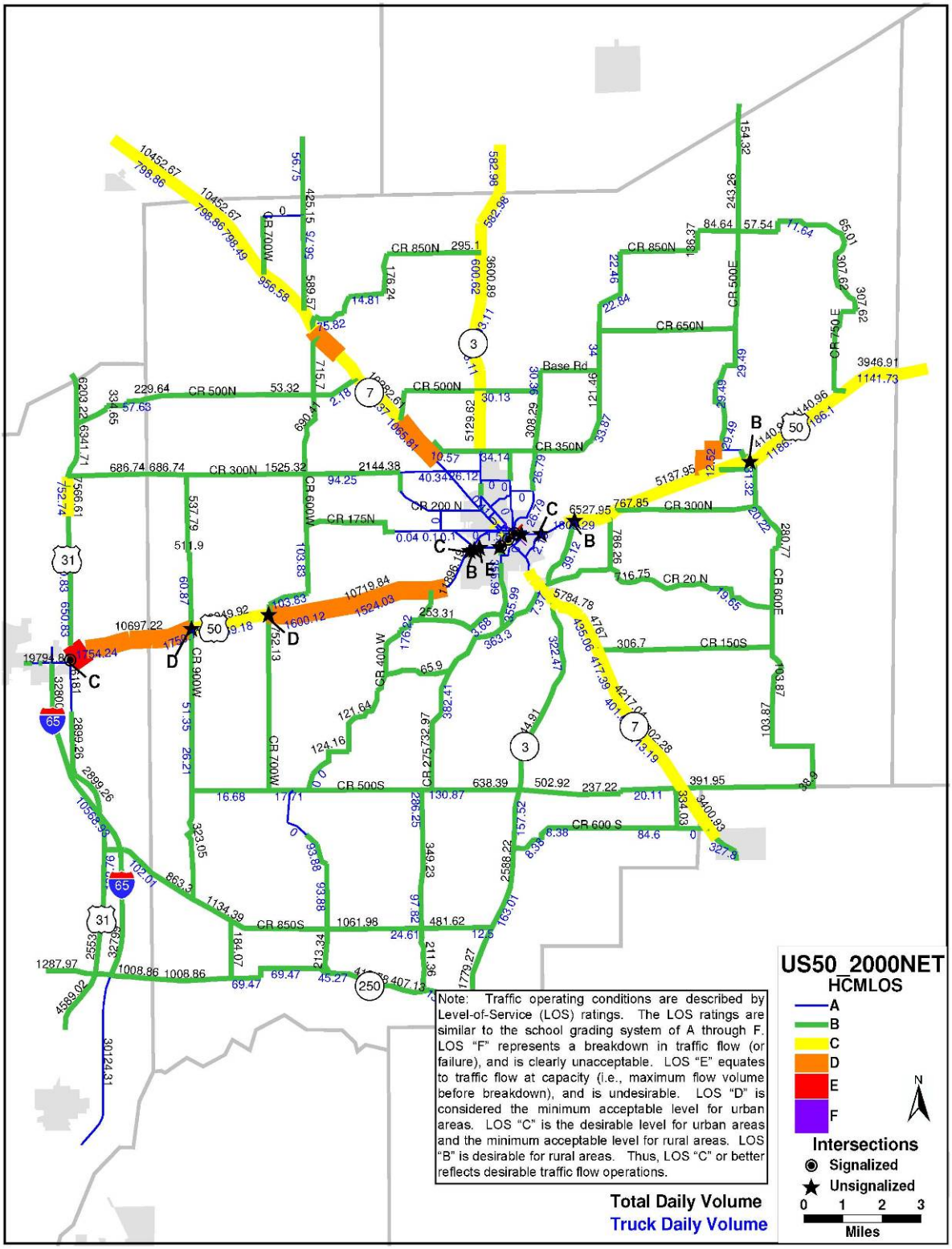

Figure 2.9: Jennings County Base Year 2000 Roadway and 2006 Intersection LOS

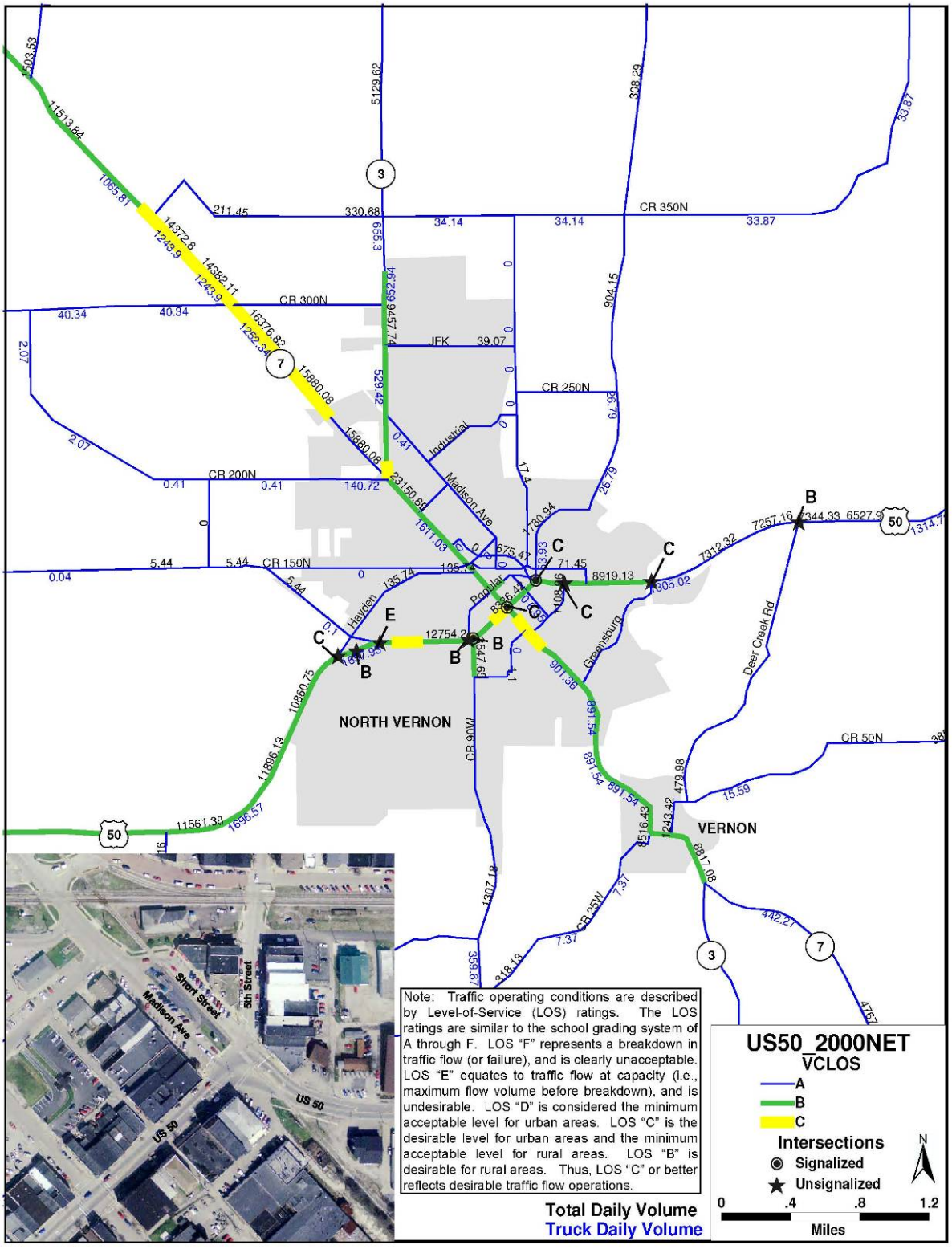

Figure 2.10: North Vernon Base Year 2000 Roadway and 2006 Intersection LOS

2.2.2.3 Traffic Flow Impediments

Traffic flow impediments are anything that can be considered a hindrance to the free-flow of through traffic. This can include but is not limited to vehicles entering and exiting a facility at driveways and intersecting street approaches, traffic signals, no passing zones on a two-lane roadway, steep roadway grades, roadway geometry (sharp curves that may be difficult to maneuver), etc. Along with traffic entering and exiting US 50 at numerous private drives and intersecting streets and roadway geometric conditions, numerous traffic signals also hinder the movement of traffic, particularly trucks, on principal arterials in the City of North Vernon, including (see Figure 2.5 for traffic signal locations):

- At SR 3 and Madison Avenue
- At SR 3 and SR 7
- At SR 3/SR 7 (State Street) and Franklin Street
- At SR 3/SR 7 (State Street) and Poplar Street
- At US 50 and Norris Avenue
- At US 50 and SR 3/SR 7 (State Street)
- At US 50 and Jackson Street
- At US 50 and Madison Avenue

2.2.3 Crash Analysis

The Highway Crash Data by County for Indiana report was released in September 2006 by the Indiana Department of Transportation (INDOT). The report contains crash data summaries for all 92 counties in Indiana. The data is from 2003 through 2005 and focuses on fatality and injury rates. The report ranks all counties in Indiana based on four different rates and a combined ranking. The rates are:

- FRvmt – fatality rate per vehicle miles traveled.
- FRpop – fatality rate per population.
- IRvmt – injury rate per vehicle miles traveled.
- IRpop – injury rate per population.
- CR – combined ranking

Jennings County ranked in the bottom fourth quartile (least safe end of the spectrum) for all five rates. Jackson County also ranked in the bottom fourth quartile for the combined ranking, but was in the lower middle (one ranking above the bottom fourth quartile) in the other four rates. Rankings for Jackson and Jennings County are shown in Table 2.8.

Table 2.8: Highway Crash Data Report Rankings

Rate	Jennings Rank (out of 92)	Jackson Rank (out of 92)
FRvmt	87	55
FRpop	74	65
IRvmt	84	51
IRpop	82	66
CR	91	70

Note: Ranking of 1 is safest; ranking of 92 is least safe.

INDOT also released the Highway Safety Improvement Program Indiana "5 Percent Report". This report describes at least five percent of Indiana's highway locations exhibiting the most severe safety needs. One roadway segment in Jennings County was listed in the report. SR 7 from 0.04 miles south to 0.69 miles north of CR 330 S was identified as one of the most severe safety needs in the state. This segment is not included within the Study Area.

INDOT provided a Microsoft Access database file for crash analysis that provided detailed crash data for both Jennings and Jackson counties for years 2003 through 2005. The data included latitude and longitude fields which were used to create an ArcView point layer. Due to discrepancies in latitude and longitude numbers within the Access database file, not all points could be located. Out of 3,145 crashes within the database for Jennings County, 2,054 could be located in ArcView. For Jackson County, 3,376 crashes could be located out of 4,286 in the database. Some of the missing records included crashes along US 50 in the Study Area (US 31 in Jackson County to the Ripley/Jennings County boundary). Some of these records were located in ArcView based on the location descriptions found in the database.

The point layer was used to analyze the number of crashes at several intersections and road segments in the Study Area. The intersections and segments are listed in Table 2.9. The total number of crashes at these locations were tabulated for 2003, 2004 and 2005. The intersections with the most crashes along US 50 in the Study Area are at US 31, with as many as 30 crashes in 2004, and at SR 3/SR 7, with as many as 24 crashes in 2005.

The average number of crashes over the three-year period and the traffic volumes entering the intersections (based on year 2000 and 2004 traffic volumes) were used to calculate the number of crashes per million vehicles at the fifteen intersections. Rates of 2.00 or higher are considered high crash locations. The calculations revealed that the US 50 intersections with US 31 and CR 900 W both had rates above 2.00 crashes per million vehicles. Other intersections of note are Brownstown Road and SR 3/SR 7 (see Table 2.9).

The average crashes and traffic volumes, along with the roadway length, were used to calculate crashes per 100 million vehicle-miles traveled (VMT) along four segments. This calculation revealed that the segment of US 50 through North Vernon was less safe than the segments east and west of North Vernon or between US 31 and the Jennings/Jackson County line (see Table 2.9). The average number of crashes per 100 million VMT for the state of Indiana between 2003 and 2005 were:

- Statewide – 281.48 crashes per 100 million VMT.
- Interstates – 76.04 crashes per 100 million VMT.
- US Highways – 185.48 crashes per 100 million VMT.
- SR Highways – 264.11 crashes per 100 million VMT.
- Local Roadways – 404.50 crashes per 100 million VMT.

The index of crash frequency (*Icf*) equation from the Guidelines for Roadway Safety Improvements[2] report was used to calculate *Icf* rates for intersections and segments in the Study Area. The *Icf* equation takes into consideration the traffic controls at intersections (signalized, two-way stops, or all way stops) and the roadway type (urban or rural; two-lane, multilane or interstate). An *Icf* value greater than 2.00 standard deviations indicates a high crash location where the crashes are not merely associated with random probabilities. Using this calculation, the intersection of US 50 and US 31 is again revealed as a high crash location. The next highest *Icf* is at the intersection of US 50 and SR 3/SR 7, but it is below 2.00 (see Table 2.9 and Figures 2.11 and 2.12).

The *Icf* calculation also revealed that the segment of US 50 through North Vernon is a high crash segment. The segment of US 50 between US 31 and the Jennings/Jackson County line was also near the 2.00 rate.

[2] *Guidelines for Roadway Safety Improvements*, Tarko, Andrew P., et al. 2006, Purdue University.

Table 2.9: US 50 Crash Rates

		Crashes				Based on Yr 2000 Counts		Based on Yr 2004 Counts	
US 50 Intersections		**2003**	**2004**	**2005**	**3-yr Tot**	**Crashes per Million Vehicles**	**Icf**	**Crashes per Million Vehicles**	**Icf**
US 31[s]		19	30	16	65	2.29	2.20	2.31	2.22
CR 1250 E (Jackson)		5	9	5	19	1.63	-0.29	1.53	-0.38
CR 1300 E (Jackson)		6	10	8	24	2.11	0.10	1.97	-0.02
CR 900 W		6	12	8	26	2.42	0.35	2.32	0.27
CR 700 W		4	5	6	15	1.29	-0.57	1.20	-0.64
Hayden Rd		4	8	5	17	1.12	-0.73	1.44	-0.44
Brownstown Rd		6	7	7	20	1.06	-0.80	1.78	-0.16
Poplar St		2	7	2	11	0.78	-1.00	0.59	-1.18
Norris Ave[s]		0	5	3	8	0.54	-0.39	0.41	-0.58
SR 3/SR 7[s]		17	21	24	62	1.68	1.39	1.64	1.34
Madison / 5th / Short[s]		5	8	3	16	1.15	0.49	1.15	0.48
7th St		1	0	2	3	0.27	-1.43	0.22	-1.47
Greensburg St		0	2	1	3	0.37	-1.33	0.34	-1.35
Deer Creek Rd		4	5	2	11	1.27	-0.55	1.19	-0.62
Main St (Butlerville)		1	1	0	2	0.34	-1.33	0.28	-1.40
US 50 Segments	**Miles**	**2003**	**2004**	**2005**	**3-yr Tot**	**Crashes per 100 Million VMT**	**Icf**	**Crashes per 100 Million VMT**	**Icf**
US 31 to Jennings/Jackson Co Line[r]	2.13	18	22	19	59	255.83	1.93	235.52	1.78
Jennings/Jackson Co Line to CR 15[r]	7.99	47	48	51	146	175.73	0.93	166.36	0.85
CR 15 to Muscatatuck River[u]	3.17	61	113	81	255	630.53	2.04	628.16	2.03
Muscatatuck River to Ripley/Jennings Co Line[r]	10.02	29	29	22	80	166.28	0.18	146.71	0.06

s - signalized intersection (all others are two way stops)

r - rural two-lane road segment

u - urban two-lane road segment

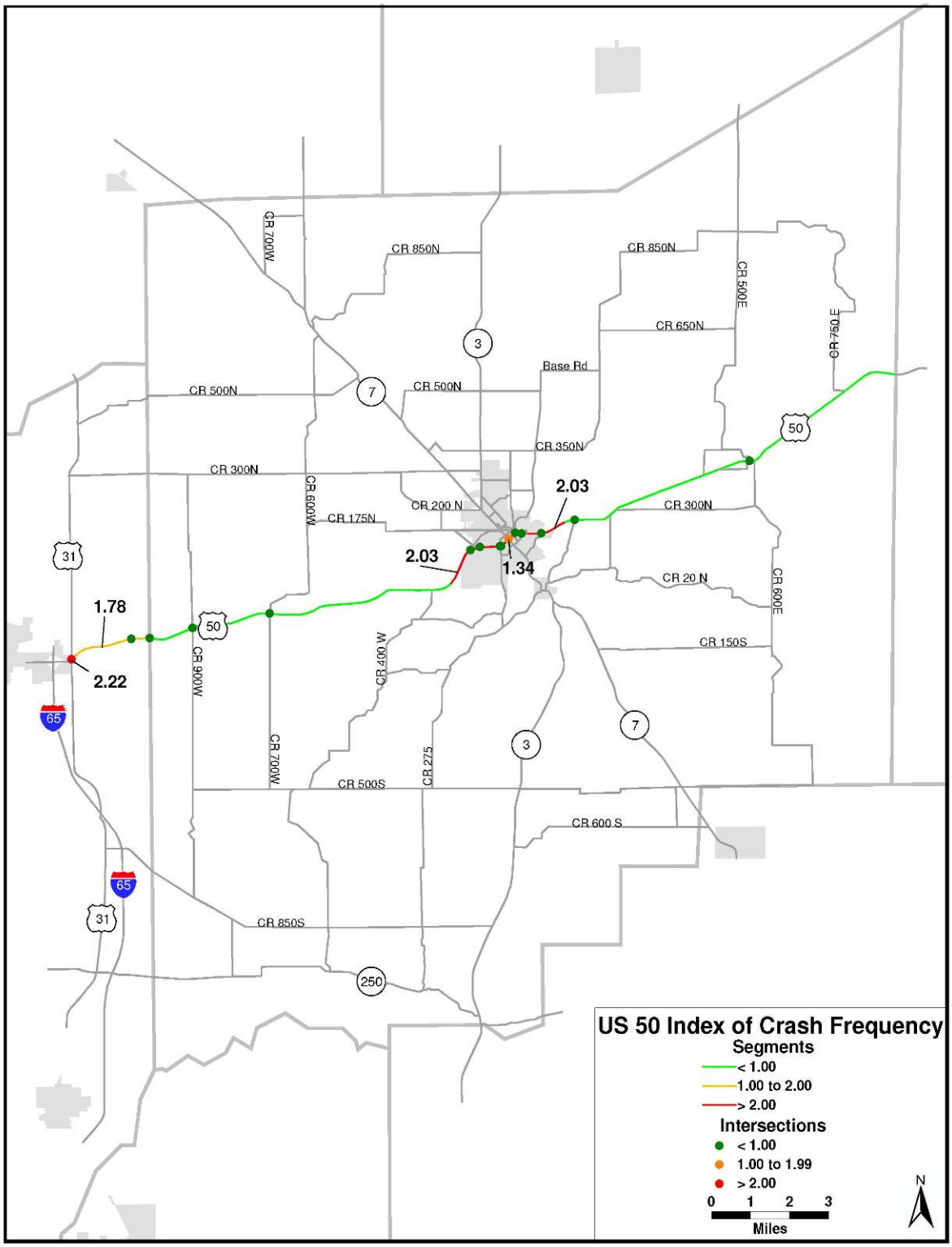

Figure 2.11: Study Area US 50 Crash Frequencies

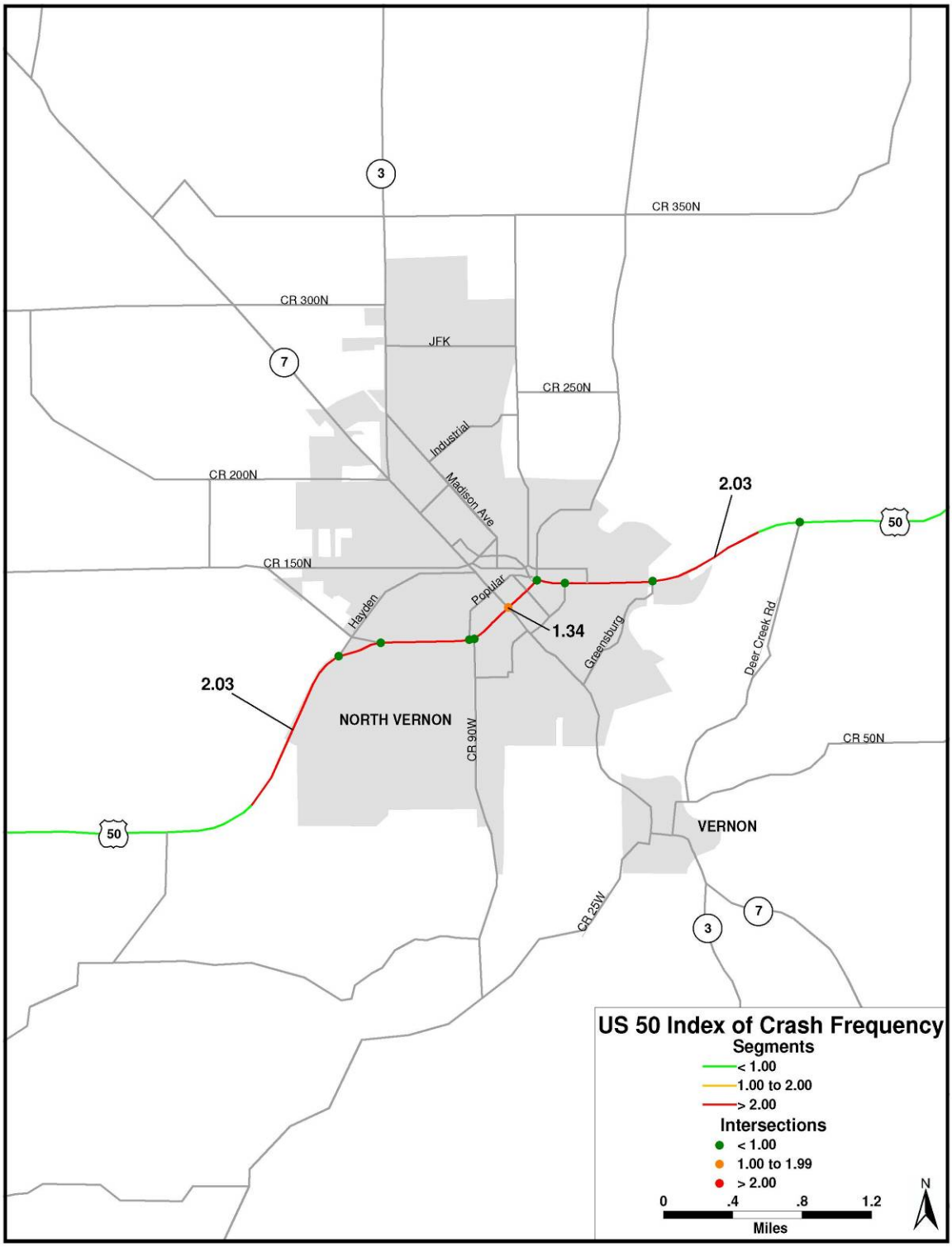

Figure 2.12: North Vernon US 50 Crash Frequencies

2.3 Committed Projects

2.3.1 State Projects

The *Indiana Department of Transportation (INDOT) Major Moves Program* and the *Statewide Transportation Improvement Program for FY 2006 - FY 2008* were examined for any current or future roadway projects in Jennings County. These documents describe the project, list the funding period, the length of the project in miles, and the anticipated cost of the project.

The 10-year Major Moves highway plan was finalized in May 2006. Referring to Table 2.10, this 10-year highway improvement program lists new construction ("capacity expansion'), major preservation ("capacity preservation") and resurfacing projects for each county in Indiana. Two new construction projects are listed for Jennings County. These two projects involve added travel lanes on US 50 from US 31 in Jackson County to the west UAB (urban area boundary) of North Vernon and from the west UAB to the east UAB of North Vernon. There are no major preservation or resurfacing projects listed for Jennings County.

The Indiana Statewide Transportation Improvement Program (INSTIP) lists different projects for each county over a three-year period. The INSTIP for FY 2006 – FY 2008 includes 19 projects in Jennings County. The projects are located throughout Jennings County and include bridge replacement or rehabilitation, pavement replacement, intersection improvements, road rehabilitation and added travel lanes.

Table 2.11 gives a short description and the phase and cost of each project in the INSTIP for Jennings County. In addition to the added travel lanes on US 50 from US 31 to the west UAB of North Vernon, there are several intersection safety improvements in North Vernon, including US 50 at Hayden Pike, US 50 at Norris Avenue, SR 3 from the Muscatatuck County Park to US 50, SR 3 at Madison Street, SR 7 at Franklin Street, SR 7 at Hayden Pike, and SR 7 at Washington Street/O & M Avenue. The rehabilitation of SR 7 from SR 3 to US 31 is also programmed for year 2007.

Table 2.10: "Major Moves" Projects

Project Type	Route Description	Start	Estimated Cost
New Construction	US 50 From West UAB of North Vernon to East UAB of North Vernon	2015	$27,216,073
New Construction	US 50 From US 31 to the West UAB of North Vernon	2014	$20,759,781
		Sub-Total:	**$47,975,854**
		Total:	**$47,975,854**

Source: Indiana Department of Transportation

Table 2.11: INSTIP Projects

Project #	Sponsor	Project Description/Location	Phase	Program/Cost
0088490	Jennings County	County Road, Bridge Replacement Bridge #25 over Sand Creek on CR 575W, at N edge of Scipio	PE	Local Bridge/$75,000
0088870	North Vernon	City Street, Pavement Replacement Hayden Pike from US 50 to SR 3/7, to Jennings to Main St	PE	Group III/$177,000
0400049	North Vernon	City Street, Pavement Replacement Greensburg St, from SR 3/7 to Woodlawn Dr (phase 1)	PE	Group III/$36,000
0400023	North Vernon	City Street, Pavement Replacement Greensburg St, from Woodlawn Drive to US 50 (phase 2)	PE	Group III/$35,000
9786870	Jennings County	County Road, Bridge Replacement Bridge #51 over N fork of Vernon Fork of Muscatatuck River on CR 1220N	PE CN	Local Bridge/$754,000
9786880	Jennings County	County Road, Bridge Replacement Bridge #76 over Big Graham Creek on CR 800S	PE CN	Local Bridge/$715,000
0201343	INDOT	SR 3, Intersection Improvement From Muscatatuck County Park to US 50	PE RW	Safety Improvements/$40,000
0201360	INDOT	SR 3, Intersection Improvement At Madison Street in North Vernon	PE RW	Safety Improvements/$20,000
0400325	INDOT	SR 3, Bridge Rehabilitation Bridge over CSX RR, 0.30 miles N of US 30	PE	Bridge Preservation/ $35,000
0100753	INDOT	SR 7, Intersection Improvement At Franklin Street in North Vernon	PE RW	Safety Improvements/$60,000
0100754	INDOT	SR 7, Intersection Improvement At State Rd/Hayden Pike in North Vernon	PE RW	Safety Improvements/$60,000
0100755	INDOT	SR 7, Intersection Improvement At Washington Street/O&M Ave in North Vernon	PE RW	Safety Improvements/$60,000
0014810	INDOT	SR 7, Road Rehabilitation From SR 3 to US 31	PE RW	Non-Interstate Preservation/$6,270,000
0401401	INDOT	US 50, Added Travel Lanes From US 31 to W UAB of North Vernon	PE RW	Expansion/Major Improvements/$3,900,000
0014590	INDOT	US 50, Intersection Improvement At Hayden Pike	PE RW	Safety Improvements/$100,000
0201184	INDOT	US 50, Bridge Replacement Bridge over Indian Creek, 3.01 miles W of SR 3	PE RW	Bridge Preservation/$63,000
0201308	INDOT	US 50, Intersection Improvement At Norris Ave in North Vernon	PE RW	Safety Improvements/$25,000
0200011	INDOT	SR 250, Bridge Replacement Bridge over Crooked Creek, 5.28 miles W of SR 3	PE RW	Bridge Preservation/ $7,000
011880	INDOT	County Road, Pavement Replacement CR 300S from SR 3 to SR 7	RW	Co-op Recreational Access Roads/ $50,000

Source: Indiana Department of Transportation

2.3.2 Local Projects

Included among the 19 INSTIP projects in Jennings County are four local projects. The City of North Vernon has three pavement replacement projects listed. The first is on Hayden Pike from US 50 to SR 3/SR 7. The second and third pavement replacement projects are on Greensburg Street from SR 3/SR 7 to Woodlawn Drive (phase 1) and from Woodlawn Drive to US 50 (phase 2). The fourth local project is a bridge replacement on CR 575 W at the north edge of Scipio.

2.4 Projected Growth

2.4.1 Summary of Socio-Economic Information

In the year 2000, the City of North Vernon had a population of 6,515, which made up 23.6 percent of the Jennings County's total population. In the year 2005, the City of North Vernon's estimated population decreased to 6,433 persons, making up 22.6 percent of the county's total population. Population estimates for North Vernon have remained relatively constant from 2000 to 2005. The population in Jennings County has also remained relatively constant from 2000 to 2005, growing from 27,697 persons in 2000 to an estimated 28,427 persons in 2005.

In the year 2000, 3,579 more people commuted out of Jennings County than into the county, and in 2004, the number of people commuting out of the county was 3,632 more than those commuting into the county.

2.4.1.1 Population Characteristics of North Vernon and Jennings County

The population in Jennings County and the City of North Vernon has been increasing over the past 100 years. The county's population decreased from 15,757 persons in the year 1900 to 11,800 persons in 1930; however, since 1930, the population has been increasing and was at an estimated 27,554 persons in 2000. The city's population grew from 2,823 persons in 1900 to 3,084 persons in the year 1920 and decreased to 2,989 persons in the year 1930; however, the population increased from 1930 to 1980 (5,768 persons). From 1980 to 1990, the population decreased, but rose to 6,515 in 2000. While the State of Indiana grew 9.7% between the year 1990 and 2000, Jennings County grew 16.4% and the City of North Vernon grew 22.7%.

The U.S. Census Bureau's 2005 estimate was 28,427 persons for Jennings County and 6,433 persons for North Vernon. Between the year 2000 and 2005, the population grew 3.15% in the State of Indiana and 3.17% in Jennings County; however, North Vernon lost 1.58% of its population. Jennings County ranked 74th in per capita personal income at $24,342 in 2004 (about 80.6% of the statewide average of $30,204) and 54th in median household income at $41,330 in 2004 (about 95.6% of the statewide average of $43,217). For the year 2005, the unemployment rate at 6.7% in Jennings County exceeded the statewide rate of 5.4%.

Population forecasts from the Indiana Business Research Center (IBRC) and the Complete Economic and Demographic Data Source (CEDDS) by Woods and Poole Economics, Inc. were reviewed. Both sources provide data for Jennings County; however, Woods and Poole do not provide data for North Vernon. The IBRC forecasts to the year 2040 are based on a regression analysis of historical population counts; whereas, Woods and Poole forecasts to 2030 are based on economic forecasts of the U.S. Bureau of Economic Analysis. The IBRC estimates a slower increase in population through 2040 than Woods and Poole, estimating 34,457 persons for the year 2030. Woods and Poole estimates a faster increase in population to 37,999 persons in the year 2030. While the Indiana Statewide Travel Demand Model (ISTDM) used an estimate of 34,552 (comparable to the IBRC forecast) for Jennings County, the Jennings County Subarea Travel Demand Model uses a higher forecast of 39,665. This higher population forecast reflects the increased population that would reside in Jennings County as a result of the development of the Muscatatuck Urban Training Center (MUTC) and the Honda Plant in Greensburg in the immediate future. This higher growth rate is comparable to that experienced in Jennings County in the decade of the 1990's.

Based on information provided by the Indiana National Guard, the MUTC is expected to have 4,000 to 5,000 permanent employees at the base. Based on the commuting travel times in Jennings County, about 30% of these employees would reside in Jennings County. This translates to an additional 1,500 households in Jennings County, and generates another 797 household-supportive jobs and another 797 households. These 2,297 additional households result in another 5,113 people residing in Jennings County compared to the ISTDM forecast.

2.4.1.2 Household Characteristics of North Vernon and Jennings County

Jennings County had 11,469 housing units in the year 2000, 574 of which were for seasonal, recreational or occasional use. There were 10,134 households in the county according to the 2000 U.S. Census. Jennings County had a 7.0 percent vacancy rate in 2000 (if the seasonal, recreational and occasional use housing units were excluded). This rate is slightly higher than the 5.4 percent rate reported in the 1990 U.S. Census in Jennings County.

The City of North Vernon had 2,909 housing units in 2000, 28 of which were for seasonal, recreational or occasional use. There were 2,686 households in North Vernon in 2000. If the seasonal, recreational and occasional use housing units were excluded, the city had a 6.8 percent vacancy rate in 2000. This rate is also higher than the 4.8 percent rate reported in the 1990 U.S. Census for North Vernon.

From 1990 to 2000, there was an increase of 2,340 housing units and 1,783 households in Jennings County; however, there were only 1,326 new housing permits issued in Jennings County, excluding mobile homes. Thus, 43% of the change in housing units is attributable to mobile homes in the past decade.

2.4.1.3 Employment Characteristics of North Vernon and Jennings County

Census data from the year 2000 showed that Jennings County attracted 1,659 employees from surrounding counties. Most of these workers were coming in from Jefferson County (428 employees) and Jackson County (305 employees). Just over 5,300 Jennings County residents commuted to other counties for work, the majority of which traveled into Bartholomew County (2,947 employees) and Jackson County (1,413 employees).

Data was used from the U.S. Bureau of Economic Analysis (BEA) to calculate the total number of employees for Jennings County in the year 2000, about 11,120 non-farm jobs. For travel analysis zones, the Jennings County Subarea Travel Demand Model uses the address specific Indiana Department of Workforce Development employment securities database (ES 202) for the year 2000 that was used in the development of the ISTDM; this yielded 11,260 non-farm jobs comparable to the BEA data.

The Jennings County Economic Development website has an industry directory listing major employers in the county (see Table 2.12). The largest employer in Jennings County is the Lowe's Distribution Center, located in North Vernon, with 800 employees. Nac, Inc., Mataldyne, and Martinrea Industry Group, all located in North Vernon, are the second through fourth largest employers, respectively. Nac, Inc. employs 350 people, Metaldyne employs 312 people and Martinrea Industry Group employs 300 people. Other major employers include Dave O'Mara Contractor, Inc. and Sonoco Products Company that employ 250 and 240 people respectively.

Table 2.12: Major Employers

Name	Location	Number of Employees
Lowe's Distribution Center	North Vernon	800
Nac, Inc.	North Vernon	350
Metaldyne	North Vernon	312
Martinrea Industry Group	North Vernon	300
Dave O'Mara Contractor, Inc.	North Vernon	250
Sonoco Products Company	North Vernon	240

Source: Jennings County Economic Development

2.4.2 Countywide Historical and Forecasted Household and Employment

Referring to Table 2.13, the 2000 U.S. Census reports a population of 27,554 for Jennings County and estimates for 2005 from the U.S. Census show a 3.2 percent increase to 28,427 persons. The Woods & Poole population forecast for the year 2030 is 37,999 people in contrast the ISTDM forecast of 34,552 persons and the IBRC forecast of 34,457. The Woods & Poole employment forecast for the year 2030 is 17,130 non-farm jobs compared to ISTDM forecast of 14,100 non-farm jobs.

The socio-economic forecasts from the Jennings County Subarea TDM appear in Table 2.14. These forecasts add to the ISTDM forecasts 5,000 permanent employees at MUTC with 797 generated jobs (272 retail, 52 finance/insurance/real estate, 230 services and 242 public administration jobs) and 2,297 generated households in Jennings County. Thus, the resulting population is 39,665 persons, 15,689 households, 15,016 non-farm jobs, and 20,780 total jobs (5,095 military and 669 farm jobs). The Subarea TDM locates 5,000 permanent military jobs at the MUTC to generate home-to-work trips within Jennings County and to surrounding counties.

Table 2.13: Socio-Economic Summary from Census and Woods & Poole

Variable	1990 (a)				2000 (a)				2005 (a)				2030 (b)			
	Vernon	North Vernon	Balance	Jennings County	Vernon	North Vernon	Balance	Jennings County	Vernon	North Vernon	Balance	Jennings County	Vernon	North Vernon	Balance	Jennings County
Population	370	5311	17980	23661	330	6515	20709	27554	324	6433	21670	28427				37999
Group Quarters Population	18	120	592	730	49	147	334	530								474
Household Population	352	5191	17388	22931	281	6368	20375	27024								37525
Housing Units	170	2262	6697	9129	132	2909	8428	11469				12556				16404
Vacancy Rate	8.8%	5.1%	5.4%	8.5%	14.5%	6.8%	6.3%	7.0%								8.5%
Households	155	2147	6049	8351	113	2686	7335	10134								15010
Household Size	2.38	2.42	2.97	2.75	2.40	2.39	2.82	2.67								2.50
New Housing Units by Permit (c)								1326				824				4950
Agricultural Services				60				90				130				190
Mining				60				30				40				40
Construction				540				1070				1150				2630
Manufacturing				1740				2650				2430				3190
Transportation/Communications/Utilities				310				400				460				490
Wholesale				150				280				290				460
Retail				1240				2180				2180				3650
Finance/Insurance/Real Estate				280				410				420				470
Services				1460				1920				2340				3790
Government				2120				2090				1870				2220
Total Non-Farm				7960				11120				11310				17130
Farm and Federal Military				950				880				790				760
All Employment				8910				12000				12100				17890

Notes: (a) US Bureau of Census for demographics and Woods & Poole (2006) for economics
(b) Woods & Poole (2006) for economics
(c) Excludes mobile homes
(d) Data not available shaded

Table 2.14: Jennings County Travel Model Forecasts

	2000				2030			
Variable (a)	Vernon	North Vernon	Balance	Jennings County	Vernon	North Vernon	Balance	Jennings County
Population	363	6920	20271	27554	802	11384	27479	39665
Group Quarters Population	49	147	334	530	49	147	334	530
Household Population	314	6773	19937	27024	753	11237	27145	39135
Housing Units	152	3047	8270	11469	343	5233	11988	17564
Vacancy Rate	14.5%	7.7%	13.0%	11.6%	19.8%	6.7%	12.4%	10.8%
Households	130	2811	7193	10134	275	4885	10499	15659
Household Size	2.42	2.41	2.77	2.67	2.74	2.30	2.59	2.50
New Housing Units by Permit (b,c)								4950
Agricultural Services	0	47	66	113	0	68	96	164
Mining	0	2	36	38	0	89	156	245
Construction	6	920	172	1098	6	1035	357	1398
Manufacturing	0	2622	25	2647	0	2715	506	3221
Transportation/Communications/Utilities	0	164	256	420	0	279	256	535
Wholesale	0	263	10	273	0	313	10	323
Retail	30	1887	261	2178	30	2585	401	3016
Finance/Insurance/Real Estate	19	374	54	447	19	510	79	608
Services	0	1803	156	1959	0	2427	241	2668
Government (d)	0	2015	76	2091	327	2310	201	2838
Total Non-Farm	55	10093	1112	11260	382	12331	2303	15016
Farm and Federal Military (d)	0	0	873	873	0	0	5764	5764
All Employment	55	10093	1985	12133	382	12331	8067	20780

Notes: (a) Based on travel analysis zones generally corresponding to these jurisdictions
(b) Forecast of permits to be issued from 2000 to 2030 based on past five years, excludes mobile homes.
(c) Data not available shaded
(d) Year 2000 assigned Jennings County Government to wrong travel analysis zone.
(e) Assumes MUTC has 5,000 permanent employees by 2030

2.4.3 Household and Employment Change by TAZ

Travel Analysis Zones (TAZs) were created for Jennings County for the purpose of modeling travel patterns. The TAZ database included socio-economic data for the County from the year 2000 US Census and address-specific employment information from the Indiana Department of Workforce Development ES 202 database for year 2000. After creating the year 2000 TAZ database, the same TAZ boundaries were used for the future year with 2030 socio-economic data.

2.4.3.1 Methodology

The first step was to create the year 2000 Travel Analysis Zones (TAZs) for Jennings County. The TAZs started from the Indiana Statewide Travel Demand Model (ISTDM) year 2000 TAZ system. The ISTDM TAZs were used along with a statewide road network to create a model for the entire State of Indiana. For the purpose of this study, more detail was needed than that of the ISTDM TAZs. Thus, the ISTDM TAZs were split into smaller zones to support the more detailed roadway network of the Jennings County Sub-area Travel Demand Model (that added Rural Minor Collectors in Jennings County and Urban Collectors in the City of North Vernon to the ISTDM roadway network) and to better reflect natural features of the County including streams and lakes that affect travel paths.

After the more detailed Sub-area Travel Demand Model TAZ system was created, demographic information was reported for these zones. Year 2000 US Census data at the Block and Block Group levels was aggregated by TAZ geography. Block level data included population, households and group

quarter population. Household population and average household size for each TAZ could then be calculated from this data. Block Group data included aggregate workers, aggregate household income and aggregate vehicles. Workers per household, mean household income and vehicles per household were then calculated from this data.

Employment information was also aggregated by TAZ for the Sub-area Travel Demand Model. Address-specific employment data from the Indiana Employment Security Agency (commonly referred to as ES202 data) was matched by geocoding to the TAZs. Geocoding creates a point within the TAZ based on the business address from the ES202 data. Total employment was generated for each TAZ, as well as an employment breakdown into the ten major business sectors (industries): agricultural services, mining, construction, manufacturing, transportation/communication/public utilities, wholesale, retail, finance/insurance/real estate, services and government. The employment by geo-coded point was factored so that the total for each business sector was equal to the countywide control total from the ISTDM.

The next step was to create the year 2030 TAZ database. The TAZ system has the same geography in the year 2030 as the year 2000. Forecasted numbers for population, households, income and employment were calculated for the year 2030 to create the 2030 TAZ database using the countywide control totals for the Jennings County Travel Model (Table 2.15), that reflect the ISTDM plus growth associated with 5,000 jobs at MUTC. The demographic component of the year 2030 TAZ database included population, households, group quarters, aggregate vehicles and aggregate household income. Household population, average household size, vehicles per household and mean household income was then calculated from this information for the year 2030.

Households were first forecasted on the basis of historic US Census trends and the availability of vacant land by TAZ from the review of 2005 aerial photography. For TAZs that lost households between 1990 and 2000, the ten-year household loss was limited to not more than one more decade over the 30-year period between 2000 and 2030. For TAZs that gained households between 1990 and 2000, the ten-year pace was assumed to continue over the next three decades between 2000 and 2030 for urbanizing areas. The countywide household total by TAZ was then adjusted by TAZ to match the Jennings County Subarea TDM countywide control total in Table 2.15. The 30-year change in households is depicted in Figure 2.13 for Jennings County and Figure 2.14 for the City of North Vernon.

The employment component of the 2030 TAZ database included total employment and employment by each of the 10 business sectors. The increase in employment for Jennings County between the years 2000 and 2030 was the change in employment over the 30-year period from the ISTDM plus growth associated with 5,000 jobs at MUTC. Commercial employment was placed in regional commercial areas. The industrial employment was disaggregated to the TAZs in Jennings County based on the identification of the inventory of industrial parks and commercial properties of the Jennings (County) Economic Development Corporation (found at www.jenningsedc.com). The 30-year change in employment is depicted in Figure 2.15 for Jennings County and in Figure 2.16 for the City of North Vernon.

2.4.3.2 Results

The results of the household and employment forecasts are summarized in Table 2.14, and the forecasts by TAZ appear in Table 2.15. Figures 2.13 through 2.16 show both Jennings County and North Vernon TAZ 30-Year household and employment changes.

Table 2.15: TAZ Household and Employment for Years 2000 and 2030

	Households					Total Employment		
TAZ	1990	1990 to 2000	2000	2000 to 2030	2030	2000	2000 to 2030	2030
3600901	30	-2	28	-6	22	0	0	0
3600902	356	67	445	160	605	63	2	65
3600903	65	15	84	15	99	3	0	3
3602101	52	156	208	524	732	490	142	632
3602901	92	-15	85	0	85	0	18	18
3603701	30	3	37	13	50	4	8	12
3603702	19	3	22	13	35	0	0	0
3603901	34	3	38	48	86	0	33	33
3604401	0	0	0	0	0	0	0	0
3604501	0	0	0	0	0	0	0	0
Jackson part	678	230	947	767	1714	560	203	763
4000101	130	13	148	13	161	20	0	20
4000102	17	14	31	14	45	4	0	4
4000103	76	-3	74	0	74	0	0	0
4000104	717	639	1498	639	2137	70	0	70
4000105	98	28	135	28	163	4	0	4
4000106	264	37	319	37	356	16	2	18
4000201	312	97	421	291	712	544	433	977
4000202	188	1	195	903	1098	40	244	284
4000203	14	25	41	25	66	10	0	10
4000204	18	2	20	186	206	1	0	1
4000205	244	49	304	49	353	1315	-567	748
4000206	80	-9	77		77	1475	-490	985
4000207	91	-2	91	594	685	12	240	252
4000301	131	-7	129	0	129	10	5	15
4000302	11	0	11	0	11	0	0	0
4000303	71	5	76	165	241	0	0	0
4000304	63	-7	64	204	268	3	0	3
4000305	17	-3	15	66	81	0	0	0
4000306	293	72	382	516	898	197	1327	1524
4000307	370	5	393	5	398	972	60	1032
4000401	3	25	28	0	28	308	208	516
4000402	5	0	5	0	5	1181	65	1246
4000403	10	2	12	6	18	0	80	80
4000404	48	3	56	0	56	33	0	33
4000405	36	-5	33	-15	18	146	87	233
4000406	16	-3	13	-9	4	0	0	0
4000407	7	-4	4	-4	0	85	70	155
4000408	8	-2	7	-6	1	0	0	0
4000409	11	8	19	24	43	240	6	246
4000410	26	-1	27	-3	24	47	0	47
4000411	16	0	17	0	17	9	0	9
4000412	6	22	29	66	95	883	355	1238
4000413	11	-1	11	-3	8	408	100	508
4000414	95	-32	67	0	67	230	80	310
4000415	41	-5	41	-15	26	73	10	83
4000416	10	2	15	2	17	2	0	2
4000417	11	-3	8	-8	0	0	420	420
4000418	90	-7	92	-7	85	15	8	23
4000419	150	-15	147	0	147	22	0	22
4000420	29	17	54	0	54	0	0	0
4000421	131	-15	128	68	196	8	144	152
4000422	18	-5	13	35	48	0	0	0
4000423	84	9	101	227	328	1	125	126
4000424	28	-3	26	15	41	331	10	341
4000501	29	8	38	8	46	0	0	0
4000502	77	6	98	6	104	1	0	1
4000503	30	8	41	8	49	0	0	0
4000504	47	10	60	10	70	0	0	0
4000505	98	12	115	12	127	0	0	0
4000506	44	14	61	14	75	9	0	9
4000507	82	1	94	1	95	0	0	0
4000508	93	10	110	10	120	0	0	0
4000601	40	-11	68	0	68	1	0	1
4000602	44	4	50	12	62	0	0	0

	Households					Total Employment		
TAZ	1990	1990 to 2000	2000	2000 to 2030	2030	2000	2000 to 2030	2030
4000603	4	1	5	3	8	0	0	0
4000604	54	-31	29	0	29	30	302	332
4000605	202	47	263	141	404	1	0	1
4000606	71	7	79	21	100	1	0	1
4000607	24	-2	25	-2	23	0	0	0
4000701	60	-48	20	0	20	0	0	0
4000702	86	-6	83	32	115	0	0	0
4000703	93	13	110	39	149	0	0	0
4000704	107	-6	109	-6	103	14	0	14
4000705	104	6	117	138	255	129	0	129
4000706	71	5	82	5	87	20	0	20
4000801	44	9	71	9	80	0	0	0
4000802	66	-24	47	-24	23	1	0	1
4000803	0	0	0	0	0	0	5000	5000
4000804	180	-42	161	-42	119	0	0	0
4000805	92	-48	67	-48	19	145	0	145
4000901	126	-21	113	0	113	0	0	0
4000902	201	-6	201	0	201	61	137	198
4000903	40	25	68	0	68	7	0	7
4001001	19	42	62	126	188	207	20	227
4001002	31	-11	21	-21	1	1	0	1
4001003	16	5	21	15	36	0	0	0
4001004	47	-12	38	-36	2	75	50	125
4001005	17	1	21	3	24	1	0	1
4001006	39	-23	22	6	28	0	0	0
4001007	2	30	32	30	62	216	10	226
4001008	80	39	127	117	244	785	15	800
4001009	111	-37	80	0	80	34	10	44
4001101	56	12	76	12	88	9	0	9
4001102	103	4	115	4	119	4	0	4
4001103	42	-2	45	-2	43	1	0	1
4001104	28	4	35	4	39	1	0	1
4001201	97	17	119	51	170	10	0	10
4001202	114	4	123	12	135	23	0	23
4001301	15	1	17	1	18	0	0	0
4001302	27	3	34	3	37	133	0	133
4001303	51	-3	50	-3	47	6	0	6
4001304	34	-11	26	150	176	19	25	44
4001305	79	6	86	18	104	25	5	30
4001306	27	6	35	18	53	0	0	0
4001401	9	15	25	15	40	0	0	0
4001402	48	10	63	10	73	13	0	13
4001403	137	-7	147	-7	140	38	20	58
4001501	46	-7	43	150	193	1	0	1
4001502	22	-3	22	30	52	0	0	0
4001503	83	13	133	13	146	1	0	1
4001601	135	-2	158	-2	156	3	0	3
4001701	13	9	24	9	33	0	0	0
4001702	75	11	93	11	104	203	0	203
4001801	17	-3	15	-15	0	0	0	0
4001802	23	0	26	0	26	0	0	0
4001803	41	-1	43	-1	42	1	0	1
4001804	12	-1	11	-11	0	0	0	0
4001805	12	2	15	2	17	0	0	0
4001901	21	0	22	150	172	0	0	0
4001902	55	-17	41	-17	24	290	140	430
4001903	12	-2	11	50	61	0	0	0
4001904	8	-3	6	-3	3	0	0	0
4001905	9	2	12	100	112	0	0	0
4001906	13	7	22	7	29	17	0	17
4002001	12	1	14	1	15	0	0	0
4002002	68	7	78	7	85	1	0	1
4002101	86	-8	82	-8	74	3	0	3
4002201	40	24	65	72	137	2	0	2
4002301	15	-1	16	-1	15	2	0	2
Jennings Total	8351	1005	10134	5525	15659	11260	8756	20016

Note: North Vernon shaded yellow

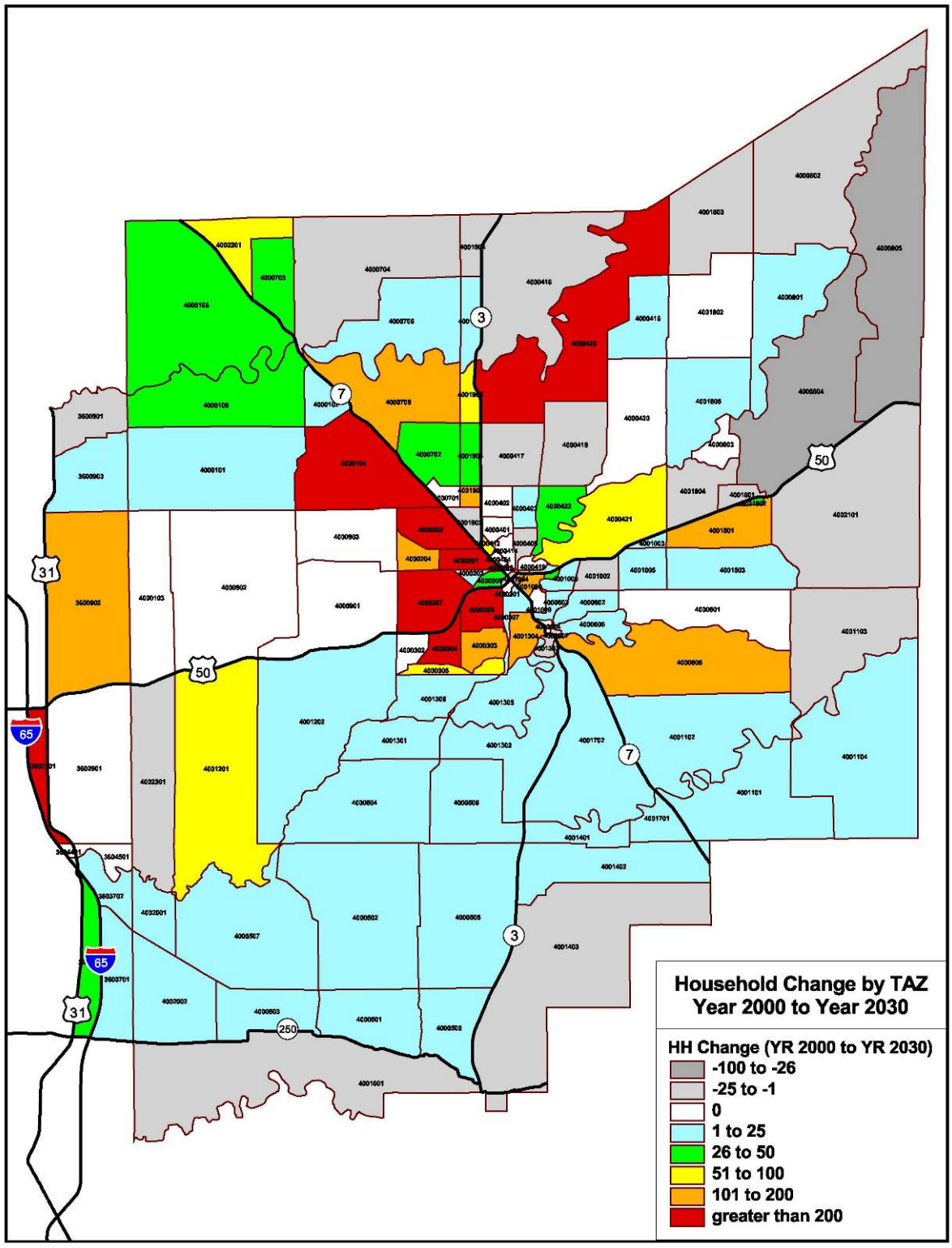

Figure 2.13: Jennings County TAZ 30-Year Household Change

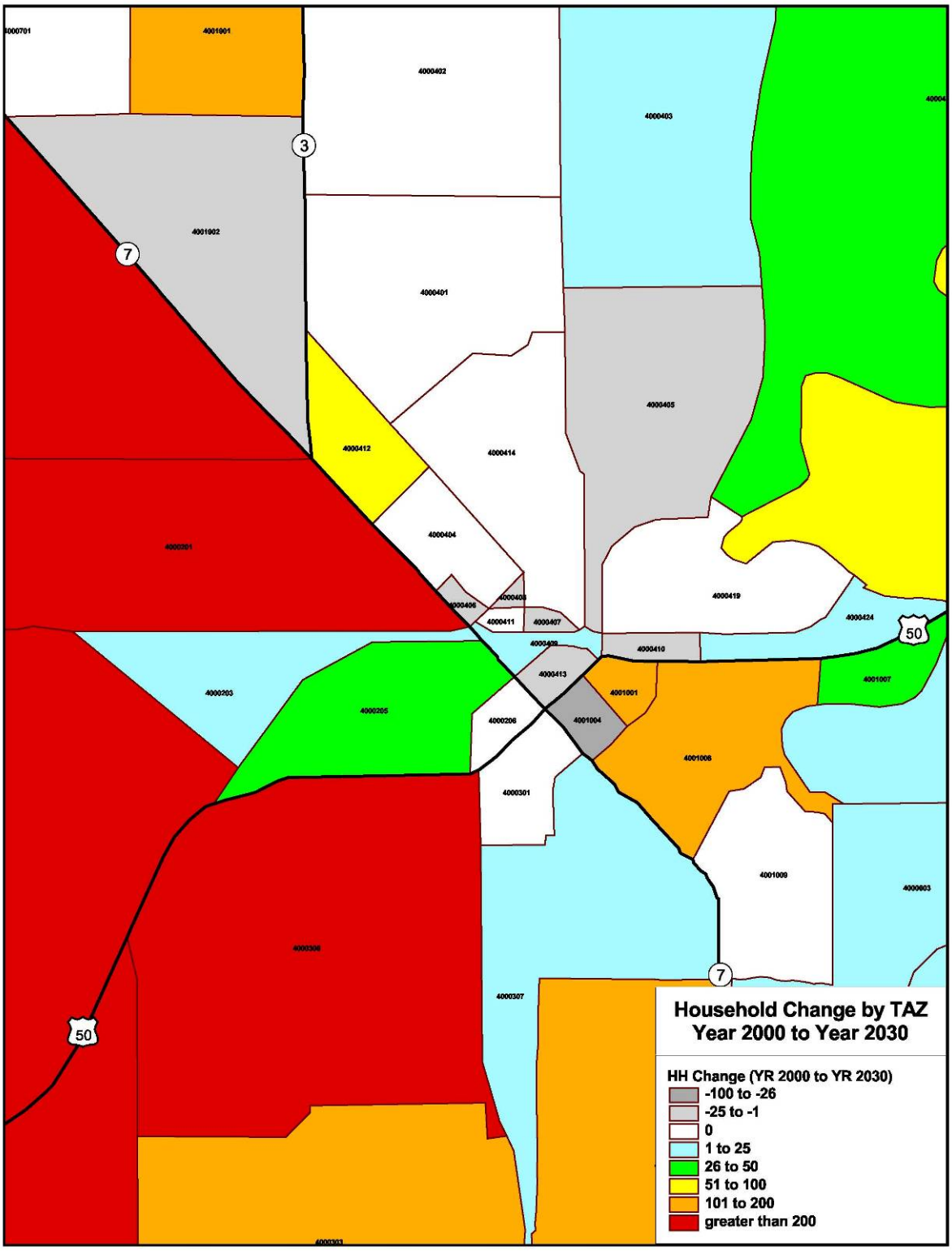

Figure 2.14: North Vernon TAZ 30-Year Household Change

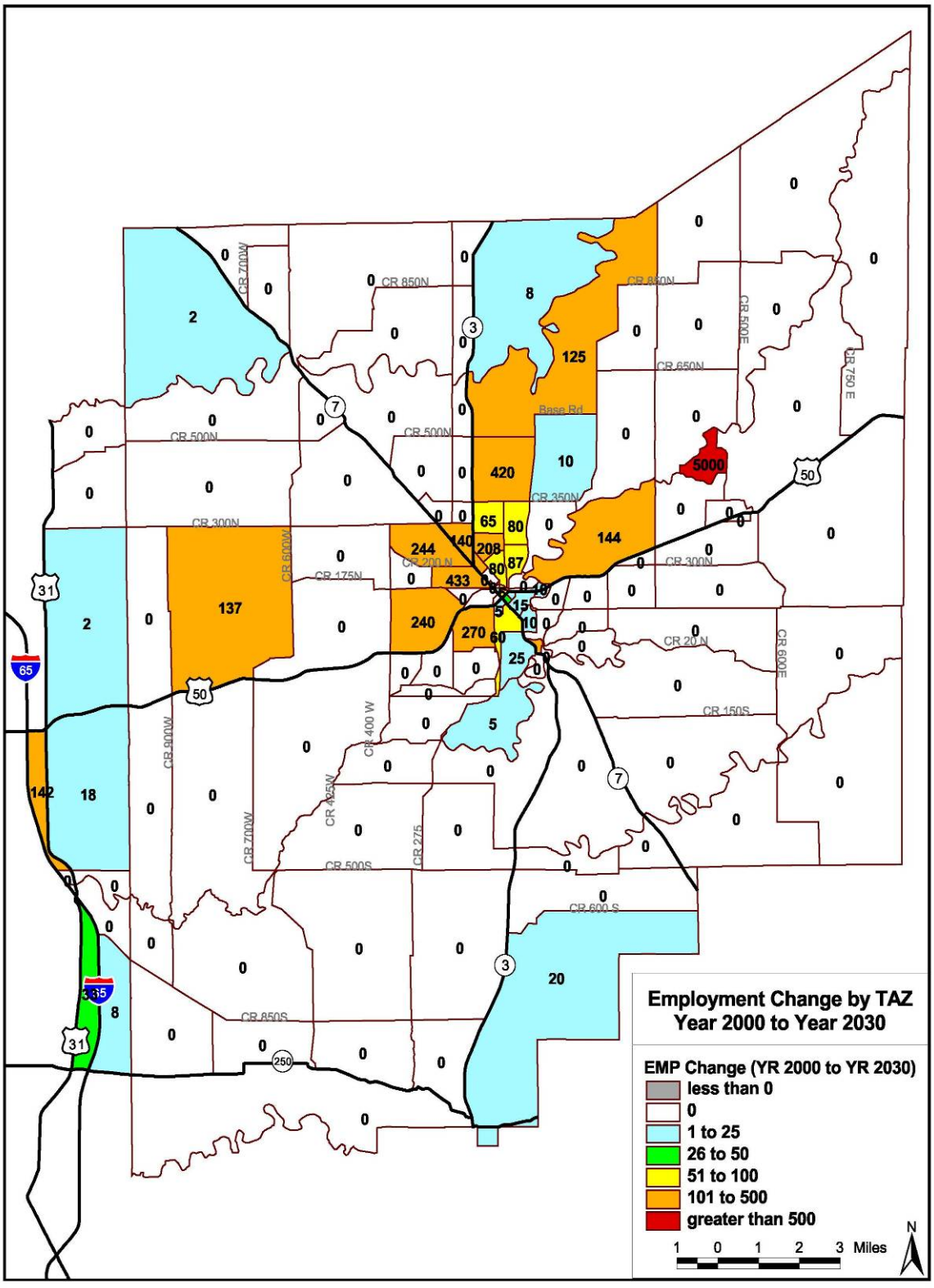

Figure 2.15: Jennings County TAZ 30-Year Employment Change

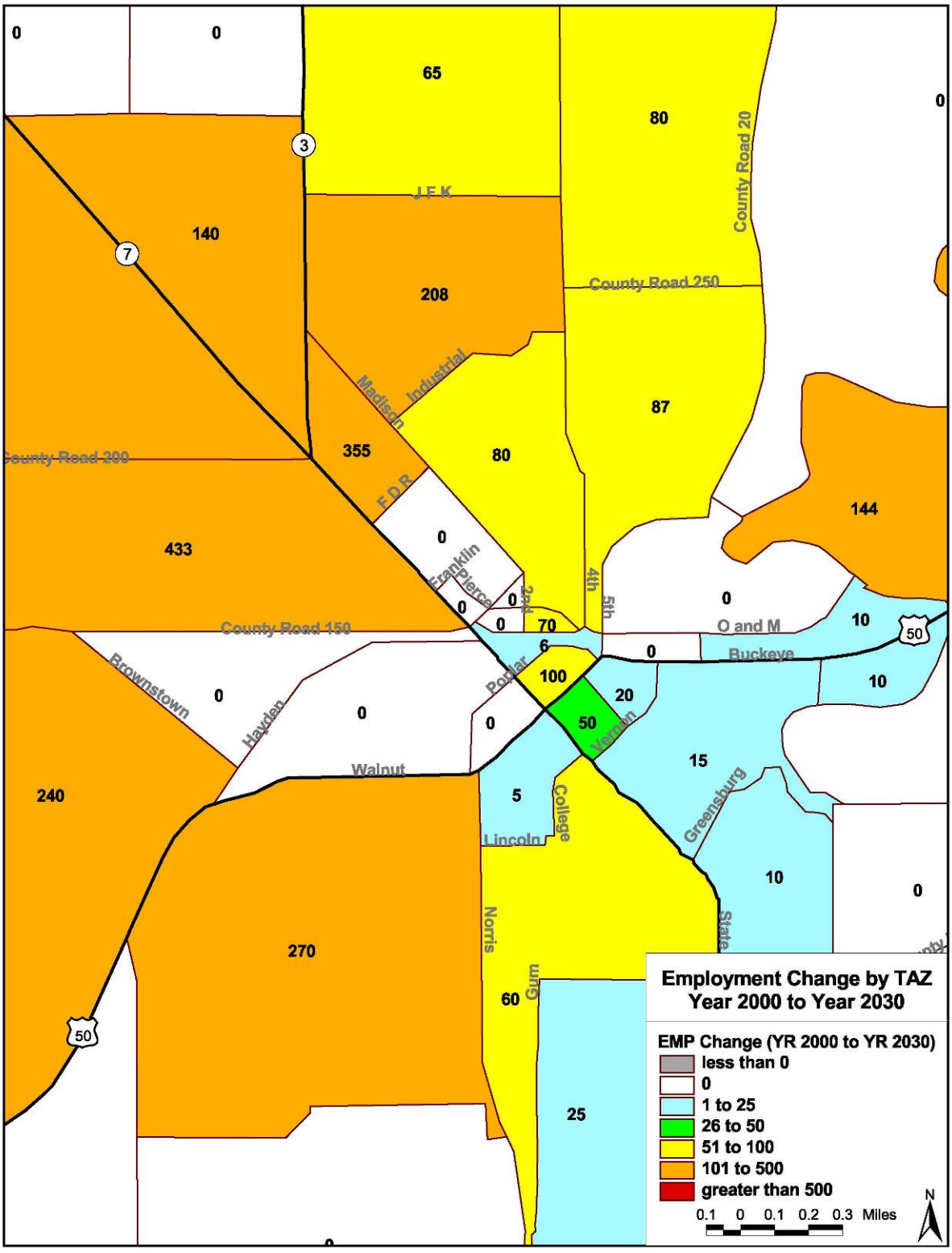

Figure 2.16: North Vernon TAZ 30-Year Employment Change

2.5 Future Traffic Patterns and Conditions

2.5.1 US 50 Sub-area Travel Demand Model

The US 50 Sub-area Travel Demand Model (TDM) was created from the Indiana Statewide Travel Demand Model (ISTDM version 4) with a base year of 2000 and future year of 2030. The ISTDM includes all of the State of Indiana and portions of surrounding States extending to I-57 in Illinois, I-94 in Michigan, I-75 in Ohio, and the Western Parkway and I-71 in Kentucky. The ISTDM network encompasses most urban and rural arterials and Rural Major Collectors. The Sub-area TDM covers all of Jennings County and the portion of Jackson County east of US 31 and I-65. In Jennings County, the ISTDM network was expanded to include all Rural Minor Collectors throughout the county and Urban Collectors in the City of North Vernon. In eastern Jackson County, the roadways added the ISTDM network in Jennings County were extended to US 31 and the I-65 interchanges. The ISTDM Travel Analysis Zone (TAZ) system was disaggregated to support the additional roadway network and to better reflect the influence of major geographic barriers (such as lakes) on traffic patterns. (The TAZ geography contains the socio-economic databases that generate trips loaded unto the surrounding roadway network that is being modeled.) Truck traffic counts were added to the ISTDM network. Next, the Sub-area TDM was extracted from the ISTDM by clipping out the expanded roadway network and TAZ system, and by extracting trip tables for trucks and automobiles to create the external trip matrices for the Sub-area TDM. The Sub-area TDM external trip matrices were adjusted to match truck counts in the Sub-area. Finally, the Sub-area TDM daily auto and truck assignments for the year 2000 were compared to actual traffic counts and minor adjustments were made to validate the Sub-area TDM.

As previously described, the future growth pattern reflected in the disaggregated ISTDM TAZ socio-economic database for the year 2030 was updated to reflect the most recent population and employment forecasts for Jennings County with the addition of anticipated employment at the Muscatatuck Urban Training Center. Within these new countywide population and employment forecasts for the year 2030, the household and employment forecasts for individual TAZs were generated on the basis of historic housing growth, new housing permits, new residential subdivisions, and the Jennings County Economic Development agency's industrial directory of major employers and business sites actively being marked and being development.

Finally, to better reflect anticipated truck traffic in the year 2030, special truck traffic generators were added to the ISTDM and the Jennings County Sub-Area TDM for:

- The Wal-Mart Distribution Center located at the I-65 and US 50 Interchange in Jackson County,
- The Lowe's Distribution Center located on SR 3 on the north side of North Vernon,
- The Honda Plant located approximately 25 miles north of North Vernon near Greensburg in Decatur County,

The generation of future traffic forecasts for the No-Build and Build Alternatives, the ISTDM is first run to reflect potential shifts of travel patterns outside the Sub-area. Then, the Jennings County Sub-area TDM is run to generate sub-area traffic forecasts with the unique external trip tables from the ISTDM associated with each alternative.

2.5.2 2030 No-Build Level of Service

The Jennings County Sub-area TDM was used to calculate traffic conditions in 2030. For the 2030 No-Build Condition, the traffic flow conditions were examined for the year 2030 socio-economic forecasts by TAZ assuming no "capacity expansion" (through lane additions) improvements were made in the County. The Existing Roadway Network and No Build Roadway Network are the same for travel modeling purposes because the proposed "capacity expansion" projects involve the improvement of US 50 from US 31 to east of North Vernon that are the subject of this study. While intersection improvements are proposed at some intersections, the nature of these improvements is not known and cannot be reflected in the Subarea TDM.

2.5.2.1 Future Intersection Level of Service

Using the annual compound growth of the Sub-Area TDM traffic assignments between years 2000 and 2030, year 2006 turning movements were factored up to the year 2030 at the major signalized and unsignalized intersections being examined along US 50. Evening peak-hour intersection capacity analyses were then performed again for the year 2030 for these intersections. The 24-year traffic growth along US 50 was 73% at US 31, 50% to 61% between CR 900 W and Hayden Pike, 63% at the Middle School/High School Entrance and Brownstown Road, 57% at Poplar Street, 51% to 55% between Poplar Street and SR 7, 63% at the Monroe/Short/5th Street intersection, 59% to 90% from 7th Street to Deer Creek Road, and 106% in Butlerville.

Table 2.16 and Table 2.17 records the future LOS for key intersections along US 50. Three of the ten unsignalized intersections had intersecting roadway approaches with unacceptable conditions (LOS D or E) in the year 2006. In the year 2030 this is projected to increase to eight of the ten unsignalized intersections experiencing unacceptable conditions with five of these intersections having LOS F). In the year 2006, all four signalized intersections on US 50 had an acceptable LOS; however, all four intersections on US 50 experienced LOS E or F conditions in the year 2030. The HCM Traffic Density LOS also shows that the signalized intersections along SR 3/SR 7 (at US 50, Poplar Street, Franklin Street and the SR 3/SR 7 split in the north end of North Vernon) all experience LOS D and E in the year 2030.

Table 2.16: Future Level of Service for Signalized Intersections

Turning Movement Count Location Number	Intersection/Approach		Existing Year (2006) PM Peak Hour Delay	Existing Year (2006) PM Peak Hour LOS	No Build Alternative Future Year (2030) PM Peak Hour Delay	No Build Alternative Future Year (2030) PM Peak Hour LOS
TM 1	US 50/US 31		25.5	C	168.5	F
		Northbound	31.6	C	194.8	F
		Southbound	31.7	C	228.2	F
		Eastbound	26.6	C	209.5	F
		Westbound	15.7	B	25.1	C
TM 8	US 50/Norris Ave		18.9	B	62.1	E
		Northbound	27.7	C	29.6	C
		Eastbound	18.2	B	36.2	D
		Westbound	16.0	B	115.4	F
TM 9	US 50/SR 3/7		25.0	C	129.1	F
		Northbound	27.0	C	223.1	F
		Southbound	30.3	C	118.4	F
		Eastbound	21.6	C	113.1	F
		Westbound	18.8	B	72.4	F
TM 10	US 50/Madison St/Short St/5th St		22.0	C	71.7	E
		Northbound	22.6	C	160.3	F
		Southbound	20.6	C	24.5	C
		Eastbound	22.6	C	26	C
		Westbound	21.0	C	22.1	C

Source: Bernardin, Lochmueller & Associates, Inc.

Table 2.17: Future Level of Service for Unsignalized Intersections

Turning Movement Count Location Number	Intersection/Approach	Existing Year (2006) PM Peak Hour Delay	Existing Year (2006) PM Peak Hour LOS	No Build Alternative Future Year (2030) PM Peak Hour Delay	No Build Alternative Future Year (2030) PM Peak Hour LOS
TM 2	US 50/CR 900W				
	Northbound	29.3	D	184.2	F
	Southbound	21.2	C	67.7	F
	Eastbound Left	8.3	A	9.6	A
	Westbound Left	9.0	A	11.1	B
TM 3	US 50/CR 700W				
	Northbound	27.3	D	140.8	F
	Southbound	22.0	C	86.4	F
	Eastbound Left	8.4	A	9.6	A
	Westbound Left	8.6	A	10	A
TM 4	US 50/Hayden Pk				
	Southbound	16.6	C	116.8	F
	Eastbound Left	9.2	A	12.4	B
TM 5	US 50/Middle School/High School Rd				
	Northbound Left	20.1	C	57.7	F
	Northbound Right	11.3	B	16.0	C
	Westbound Left	8.2	A	9.3	A
TM 6	US 50/Brownstown Rd				
	Southbound	36.8	E	287.4	F
	Eastbound Left	8.4	A	9.6	A
TM 7	US 50/Poplar St				
	Southbound	14.3	B	41.3	E
	Eastbound Left	9.3	A	13.0	B
TM 11	US 50/7th St				
	Northbound	17.5	C	46.6	E
	Southbound	17.9	C	49.1	E
	Eastbound Left	8.2	A	9.1	A
	Westbound Left	8.6	A	10.1	B
TM 12	US 50/Greensburg St				
	Northbound	15.8	C	33.8	D
	Southbound	15.7	C	26.9	D
	Eastbound Left	8.2	A	9.1	A
	Westbound Left	8.3	A	9.4	A
TM 13	US 50/Deer Creek Rd				
	Northbound	13.1	B	23.2	C
	Southbound	11.5	B	14.8	B
	Eastbound Left	7.9	A	8.9	A
	Westbound Left	7.9	A	8.7	A
TM 14	US 50/Main Street				
	Northbound	11.3	B	16.9	C
	Southbound	10.4	B	12.4	B
	Eastbound Left	7.7	A	8.6	A
	Westbound Left	7.7	A	8.5	A

Source: Bernardin, Lochmueller & Associates, Inc.

2.5.2.2 Future Segment Level of Service

The roadway LOS is based on the assigned daily traffic of the Jennings County Sub-area TDM, the traffic volume density for rural roadways and the volume-to-capacity ratio for urban roadways. The rural roadways with LOS deficiencies (below LOS C) in the year 2030 (referring to Figure 2.17):

- US 50 from US 31 to the west UAB of North Vernon (about CR 15N), experiencing LOS E from US 31 to CR 700W and a LOS D from CR 700W to CR 15N.
- US 50 from the east UAB of North Vernon (Muscatatuck River) to CR 500N near Butlerville with a LOS D.
- SR 3/SR 7 through Vernon with a LOS D.
- SR 3 from SR 7 to CR 500N with LOS D.
- SR 7 from CR 300N to the Jennings/Bartholomew County Line with LOS D.

Referring to Figure 2.18, the City of North Vernon urban roadways with LOS concerns (below LOS C) in the year 2030 Baseline Growth Forecast are:

- Two-lane US 50 from CR 15N to 7th Street with LOS D and some segments near the Middle School/High School Entrance and Monore/Short/5th Street intersection with LOS E.
- Two-lane SR 3/SR 7 from Greenburg Street to south of US 50 with LOS D.
- Four-lane SR 3/SR 7 from Poplar Street to Franklin Street with LOS D.
- Two-lane SR 7 north of SR 3 to north of CR 300N with LOS D.

In addition to the congestion problems in North Vernon shown in Figure 2.17 and Figure 2.18, the HCM Traffic Density map (Figure 2.17) and the Volume-to-Capacity (V/C) Ratio map (Figure 2.18) show major problems at traffic signals throughout the city, including US 50 at Poplar Street and Norris Avenue with LOS E, US 50 from Norris Avenue to 7th Street with LOS D, SR 3/SR 7 at Poplar Street with LOS D, SR 3/SR 7 at Franklin Street with LOS E, the SR 3/SR 7 split on the north side with LOS E. This confirms the LOS E and F evening peak-hour capacity analyses at signalized intersections along US 50 in North Vernon.

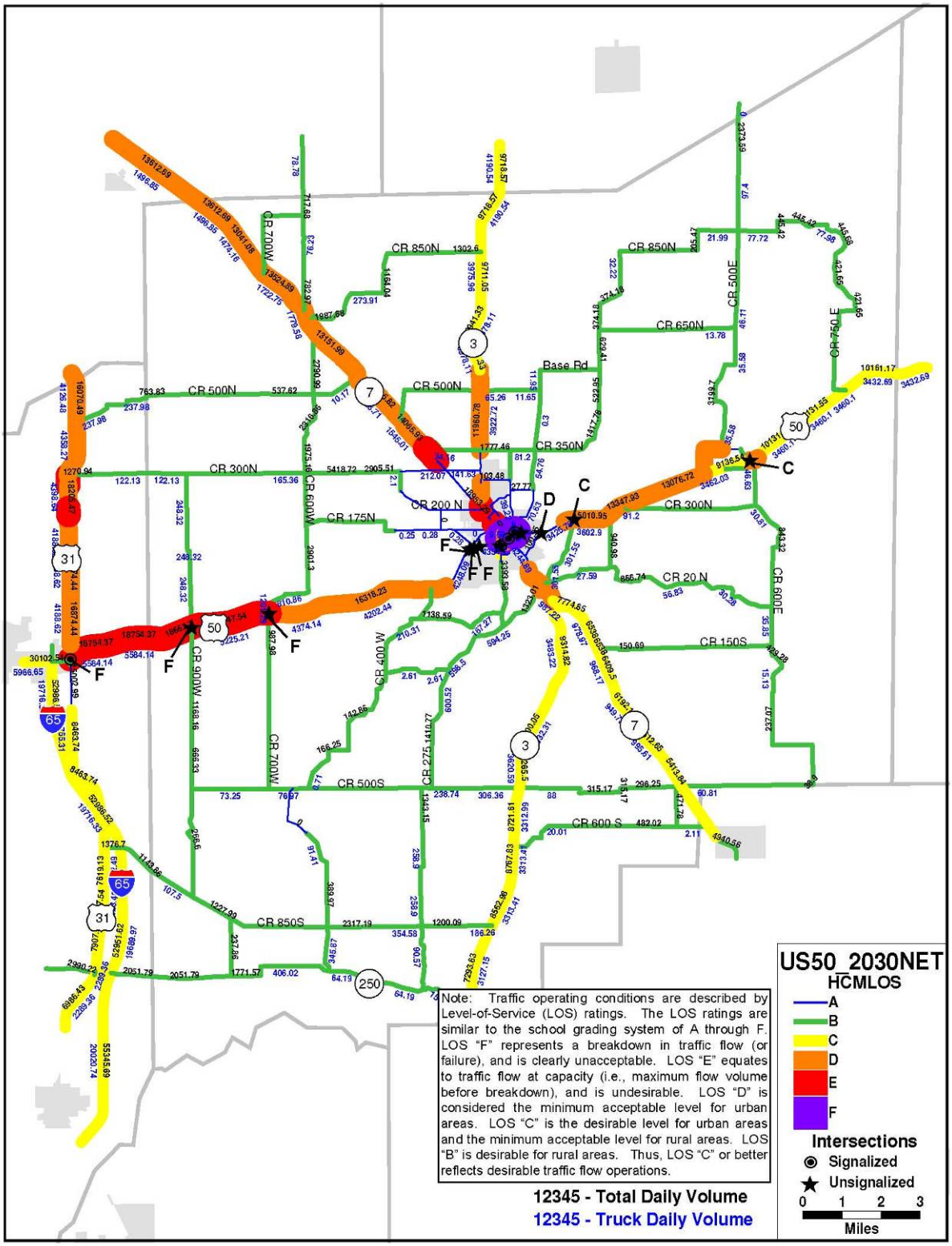

Figure 2.17: Study Area Year 2030 Roadway and Intersection LOS

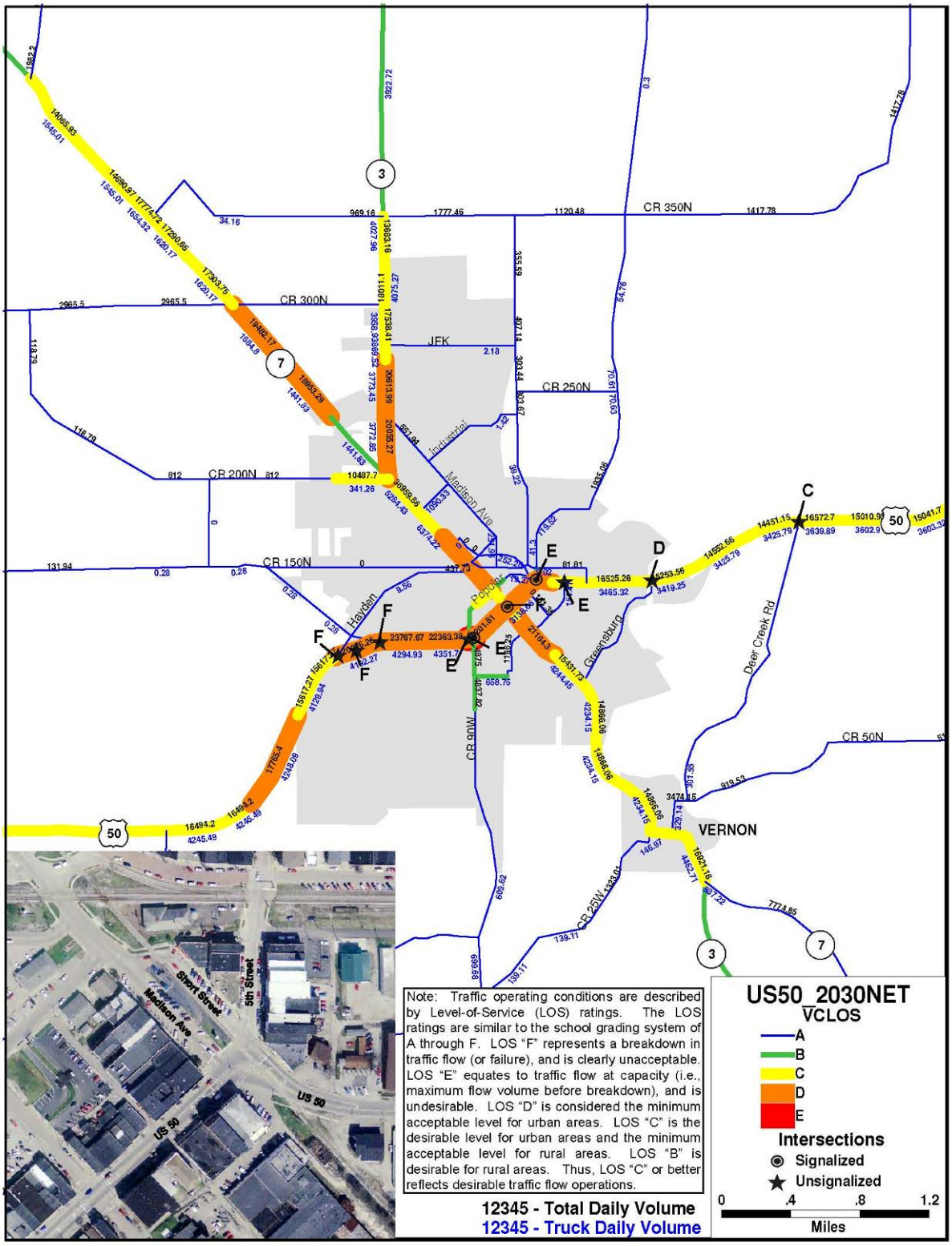

Figure 2.18: North Vernon Year 2030 Roadway and Intersection LOS

2.5.2.3 Future Truck Traffic

Table 2.18 summarizes the daily truck traffic volumes from the Jennings County Sub-area TDM for key intersections along US 50 in Jennings County. Consistent with national and statewide trends, truck traffic is growing faster than auto traffic in Jennings County. While total traffic increases 66% to 147% between years 2000 and 2030, truck traffic is forecasted to grow 111% to 300%. Thus, the percent of truck traffic on US 50 through Jennings County and the City of North Vernon significantly exceeds that of a typical statewide rural or urban principal arterial in the year 2030. Between years 2000 and 2030, daily truck volumes on US 50 increase from a high of 1,754 trucks to a high of 5,584 trucks between US 31 to the west edge of North Vernon, from a high of 2,109 trucks to 4,352 trucks through North Vernon, and from a high of 1,303 trucks to 3,471 trucks east of North Vernon to the Jennings/Ripley County Line.

Table 2.18: Future Daily Truck Traffic (Sub-Area TDM)

	Leg	2000 All	2000 Trucks	2030 All	2030 Trucks	30-year Percent Growth All	30-year % Growth Trucks	24-Year Percent Growth All	2030 Percent Trucks
US 50 @ US 31	West (Eastbound)	22333	2412	38468	8407				21.9%
	East (Westbound)	10697	1754	18754	5584				29.8%
	South (Northbound)	6181	219	15003	2031				13.5%
	North (Southbound)	6680	696	18829	4292				22.8%
	Total	45891	5081	91054	20314	98.4%	299.8%	73.0%	22.3%
US 50 @ CR 900W	West (Eastbound)	10638	1754	18663	5550				29.7%
	East (Westbound)	9950	1669	17348	5225				30.1%
	South (Northbound)	1012	51	1168	145				12.4%
	North (Southbound)	512	61	848	248				29.2%
	Total	22112	3535	38027	11168	72.0%	215.9%	54.3%	29.4%
US 50 @ CR 700W	West (Eastbound)	9950	1669	17348	5225				30.1%
	East (Westbound)	10608	1600	16294	4374				26.8%
	South (Northbound)	752	37	988	54				5.5%
	North (Southbound)	2601	334	4922	1201				24.4%
	Total	23911	3640	39552	10854	65.4%	198.2%	49.6%	27.4%
US 50 @ Hayden Pike	West (Eastbound)	11301	1659	20444	4199				20.5%
	East (Westbound)	11237	1658	20076	4192				20.9%
	South (Northbound)								
	North (Southbound)	65	1	367	7				1.9%
	Total	22603	3318	40887	8398	80.9%	153.1%	60.7%	20.5%
US 50 @ Middle School/High School Road	West (Eastbound)	11237	1658	20076	4192				20.9%
	East (Westbound)	12951	1753	23453	4292				18.3%
	South (Northbound)	1714	96	4429	104				2.3%
	North (Southbound)								
	Total	25902	3507	47958	8588	85.2%	144.9%	63.7%	17.9%
US 50 @ Brownstown Road	West (Eastbound)	12951	1753	23453	4292				18.3%
	East (Westbound)	13065	1758	23768	4295				18.1%
	South (Northbound)								
	North (Southbound)	114	5	315	3				1.0%
	Total	26130	3516	47536	8590	81.9%	144.3%	61.4%	18.1%
US 50 @ Poplar Street	West (Eastbound)	12754	1843	22363	4352				19.5%
	East (Westbound)	11056	1771	17946	3716				20.7%
	South (Northbound)								
	North (Southbound)	1698	72	4533	657				14.5%
	Total	25508	3686	44842	8725	75.8%	136.7%	57.0%	19.5%
US 50 @ Norris Avenue	West (Eastbound)	11056	1771	17946	3716				20.7%
	East (Westbound)	10028	1522	18202	3642				20.0%
	South (Northbound)	3457	708	4875	1065				21.8%
	North (Southbound)								
	Total	24541	4001	41023	8423	67.2%	110.5%	50.8%	20.5%
US 50 @ SR 3/SR 7	West (Eastbound)	12869	2109	18906	3766				19.9%
	East (Westbound)	8336	1317	17197	3139				18.3%
	South (Northbound)	14008	1557	20091	4788				23.8%
	North (Southbound)	14644	1512	30200	6133				20.3%
	Total	49857	6495	86394	17826	73.3%	174.5%	55.2%	20.6%
US 50 @ Monroe/Short Street	West (Walnut EB)	8165	1268	16501	3071				18.6%
	East (5th WB)	1738	49	3464	124				3.6%
	South (Buckeye NB)	8833	1265	16279	3289				20.2%
	North (Monroe/Short SB)	2725	80	3345	344				10.3%
	Total	21461	2662	39589	6828	84.5%	156.5%	63.2%	17.2%
US 50 @ 7th Street	West (Eastbound)	9009	1287	16557	3331				20.1%
	East (Westbound)	8848	1362	16443	3463				21.1%
	South (Northbound)	1109	89	1274	154				12.1%
	North (Southbound)	580	13	600	19				3.2%
	Total	19546	2751	34874	6967	78.4%	153.3%	58.9%	20.0%
US 50 @ Greenburg Street	West (Eastbound)	7589	1303	15163	3414				22.5%
	East (Westbound)	7673	1305	15254	3419				22.4%
	South (Northbound)	84	2	101	6				5.9%
	North (Southbound)								
	Total	15346	2610	30518	6839	98.9%	162.0%	73.3%	22.4%
US 50 @ Deer Creek Road	West (Eastbound)	7257	1303	14451	3426				23.7%
	East (Westbound)	7344	1316	16573	3640				22.0%
	South (Northbound)	457	39	2551	302				11.8%
	North (Southbound)								
	Total	15058	2658	33575	7368	123.0%	177.2%	89.9%	21.9%
US 50 @ Main St (Butlerville)	West (Eastbound)	4547	1196	9362	3456				36.9%
	East (Westbound)	4738	1208	11497	3471				30.2%
	South (Northbound)								
	North (Southbound)	218	17	2656	22				0.8%
	Total	9503	2421	23515	6949	147.4%	187.0%	106.4%	29.6%

Source: Bernardin, Lochmueller & Associates, Inc.

2.6 Traffic Issues

2.6.1 Traffic Concerns

A review of existing traffic and future traffic conditions in North Vernon and Jennings County leads to the following conclusions:

1) While the signalized intersections on US 50 and SR 3/SR 7 through North Vernon function at an acceptable LOS as individual intersections in the year 2006, the HCM Traffic Density LOS shows (Figure 2.9) that the intersection of US 50 at Monroe/Short/5th Street is experiencing LOS E due to heavy traffic concentrations and short distance between signals.

2) While three of the ten unsignalized intersections along US 50 experienced unacceptable conditions (LOS D or E) in the year 2006 (due to the difficulty of entering onto US 50), seven of the ten unsignalized intersections are forecasted to experience unacceptable conditions in the year 2030, five having LOS F.

3) While the four signalized intersection along US 50 operate at an acceptable LOS as individual intersections in the year 2006, all four signalized intersections experience LOS E or F conditions in the year 2030.

4) The HCM Traffic Density LOS shows (Figure 2.17) that signalized intersections along SR 3/SR 7 (at US 50, Poplar Street, Franklin Street and the SR 3/SR 7 split in the north end of North Vernon) all experience LOS E and F in the year 2030.

5) In the year 2000, several segments of US 50 show unacceptable conditions (below LOS C) – US 31 to East County Avenue (LOS E), East County Avenue to CR 900W (LOS D) and CR 700W to CR 15N (LOS D).

6) In the year 2000, SR 7 from CR 350W to CR 300N and CR 575W to CR 600N experiences a LOS D.

7) In the year 2030, much of US 50 through Jennings County has an unacceptable LOS (Figure 2.17 and 2.18): US 31 to CR 700W (LOS E), CR 700W to CR 15N (LOS D), CR 15N through North Vernon to 7th Street (LOS D – minimum acceptable) with segments through the intersections at the Middle School/High School Entrance and at Monroe/Short/5th Street experiencing LOS E, and the Muscatatuck River to CR 500N near Butlerville (LOS D).

8) In the year 2030, several segments of SR 3/SR 7 show deficiencies: through Vernon to south of US 50 (LOS D), and Poplar Street to Franklin Street (LOS D).

9) In the year 2030, SR 3 also shows deficiencies from SR 7 to CR 500N with LOS D.

10) In the year 2030, SR 7 from north of SR 3 to the Jennings/Bartholomew County Line shows LOS D and E.

11) In the years 2000 and 2006, the percent of truck traffic on US 50 through North Vernon and from North Vernon to the Jennings/Ripley County Line exceeded statewide averages for urban and rural principal arterials.

12) Between the years 2000 and 2030, truck traffic on US 50 is forecasted to grow 111% to 300% increasing the percentage of trucks. Between years 2000 and 2030, daily truck traffic increases from 1,754 trucks to 5,584 trucks west of North Vernon, 2,109 to 4,352 trucks through North Vernon, and 1,303 trucks to 3,471 trucks east of North Vernon.

13) The proposed Muscatatuck Urban Training Center (MUTC) will add up to 5,000 permanent employees at the facility, adding 5,797 jobs, 2,297 households and 5,113 residents to previous socio-economic forecasts of the Indiana Statewide Travel Demand Model (ISTDM). Yet, this forecast is only 4% (1,666 persons) higher than forecasts by Woods & Poole Economic, Inc., and is comparable to the growth rate experienced in Jennings County in the 1990's.

14) Finally, the MUTC will train an additional 3,000 to 4,000 military personnel on a continual basis. While these personnel will be temporarily housed at the base and will not leave the base during training, they will arrive in convoys one weekday of each week. During an eight-hour period of one weekday, convoys of 11 to 20 vehicles with heavy equipment will arrive and depart the base on 5 to 10 minute intervals. This equates to between 500 and 2,000 convoy vehicles one-day per week. There is a high probability that traffic signals will be pre-empted as convoys pass through North Vernon during this eight-hour period. During this weekday, traffic flow through North Vernon will experience ever increasing unacceptable traffic conditions as convoy traffic begins in the year 2007 and increases through the year 2013. In view of the fact that signalized intersections on US 50 and SR 3/SR 7 will operate at LOS E and F in the year 2030 without the imposition of further delays associated with convoy traffic, the accommodation of convoy traffic appears to be impractical with the existing roadway system unless the convoys are dispersed throughout the week during night hours.

3. PURPOSE AND NEED

3.1 Overview

Setting the foundation for this corridor planning and environmental assessment study are traffic concerns in and around the City of North Vernon and along the US 50 corridor from US 31 in Jackson County to Butlerville in Jennings County. These concerns include:

- High through traffic volumes (especially trucks) on US 50 through downtown North Vernon.
- High crash frequency along US 50 from US 31 to the east urban boundary of North Vernon.
- Access to existing and potential commercial and industrial economic growth areas.
- Statewide and regional transportation system mobility.
- Development of Muscatatuck Urban Training Center (MUTC) east of North Vernon near Butlerville.

Based on examination of existing and future traffic conditions and on the community and environmental setting (refer to Chapter 2 – Existing and Future Traffic Conditions), these traffic concerns were translated into five preliminary "purpose and need statements" (project goals):

- **Reduce traffic congestion** on US 50 in Jennings County and through the City of North Vernon, especially by facilitating the movement of trucks.
- **Improve safety** on US 50, particularly at elevated crash frequency locations at intersections and along roadway segments.
- **Facilitate access** to existing and potential **employment concentrations** in the City of North Vernon and Jennings County.
- **Ensure consistency** with statewide and regional **transportation plans.**
- **Enhance national security** objectives.

As the study progresses, these five "purpose and need" statements are subject to refinement on the basis of public and resource agency comment. These statements are elaborated in the following sections.

3.2 Purpose 1 – Reduce Traffic Congestion

US 50 is a two-lane principal arterial through rural eastern Jackson County, Jennings County and through urban North Vernon. While the travel lanes are 12-foot in width, the shoulders are only 3-foot in width in rural areas, and do not exist in the curb-and-gutter section of the urban area of North Vernon. The facility has exclusive left-turn lanes only at a few major intersections -- US 31, CR 700W, Norris Avenue, SR 3/SR 7, and Madison Avenue/Short Street/5th Street. Only the segment of US 50 between Poplar Street and Madison Avenue through downtown North Vernon has as an auxiliary lane – a center two-way left-turn lane. In the rural section of US 50 from US 31 to CR 15W (at the west edge of North Vernon urban area), the curves and hills along US 50 limit opportunities for passing vehicles.

All traffic on US 50, SR 3 and SR 7 passes through one intersection near downtown North Vernon – US 50 (Walnut Street) at SR 3/SR 7 (State Street). This is because SR 3/SR 7 is the only facility with an overpass of the busy mainline of the CSX Railroad (running between St. Louis and Cincinnati).

The Jennings County Sub-area Travel Demand Model (TDM) was created from the Indiana Statewide Travel Demand Model (ISTDM Version 4, March 2005) with a base year of 2000 and future year of 2030. The ISTDM includes all of the State of Indiana and portions of surrounding States extending to I-57 in Illinois, I-94 in Michigan, I-75 in Ohio, and the Western Parkway and I-71 in Kentucky. The ISTDM includes most Rural Major Collectors and Rural and Urban Minor and Principal Arterials in Indiana, and the travel analysis zones (4,720 in total) approximate Census Tracts. The Sub-area TDM encompasses all of Jennings County and the portion of Jackson County east of US 31 and I-65. In Jennings County, the ISTDM network was expanded to include all Rural Minor Collectors throughout the county and Urban Collectors in the City of North Vernon. In eastern Jackson County, roadways added to the ISTDM network in Jennings County were extended to US 31 and interchanges with I-65. The ISTDM Travel Analysis Zone (TAZ) system was disaggregated to support the additional roadway network and to better reflect the influence of major geographic barriers (such as lakes) on traffic patterns. (The TAZ geography contains the socio-economic databases that generate trips loaded onto the surrounding roadway network that is being modeled). Truck traffic counts were added to the ISTDM network. Next, the Sub-area TDM was extracted from the ISTDM by clipping out the expanded roadway network and TAZ system, and by extracting trip tables for trucks and automobiles to create the external trip matrices for the Sub-area TDM. The Sub-area TDM external trip matrices were adjusted to match truck counts in the Sub-area. Finally, the Sub-area TDM daily auto and truck assignments for the year 2000 were compared to actual traffic counts, and minor adjustments were made to validate the TDM.

Next, the future growth pattern reflected in the disaggregated ISTDM TAZ socio-economic database for the year 2030 was updated to reflect the most recent population and employment forecasts for Jennings County with the addition of anticipated employment at the MUTC. Within these new countywide population and employment forecasts for the year 2030, the household and employment forecasts for individual TAZs were generated on the basis of historic housing growth, new housing permits, new residential subdivisions, and the Jennings County Economic Development agency's industrial directory of major employers and business sites actively being marked and being development.

Finally, to better reflect anticipated truck traffic in the year 2030, special truck traffic generators were added to the ISTDM and the Jennings County Sub-Area TDM for:

- The Wal-Mart Distribution Center located at the I-65 and US 50 Interchange in Jackson County,
- The Lowe's Distribution Center located on SR 3 on the north side of North Vernon,
- The Honda Plant located approximately 25 miles north of North Vernon near Greensburg in Decatur County,

In brief, modeling more roadway network with a higher number of smaller travel analysis zones results in a more accurate travel demand model that can provide data on a much smaller scale. This expanded travel demand model was developed to provide more accurate traffic assignments for eastern Jackson and Jennings Counties while maintaining the balance of the ISTDM outside of these two counties. The performance and accuracy of the US 50 Corridor Travel Demand Model was checked against actual traffic counts within the US 50 study area and its accuracy in replicating auto and truck counts met or exceeded the ISTDM.

To establish the No-Build condition, the 2030 Long Range Transportation Plan and transportation improvement program for INDOT was reviewed to identify both the major roadway improvement projects completed since the year 2000 as well as those projects currently programmed for future completion, excluding major improvements to US 50. The addition of both the major roadway improvement projects completed since the Year 2000 as well as those projects currently programmed for future completion to the roadway network of the Year 2000 creates the existing-plus-committed roadway network. This existing-plus-committed roadway network represents the No-Build Alternative for the future year 2030 that will serve as the baseline when comparing the effectiveness and potential impacts of other alternatives throughout the study.

In generating traffic forecasts for the No Build and Build Alternatives, the ISTDM is first run to reflect potential shifts in travel patterns outside the Sub-Area. Next, the Jennings County Sub-area TDM is run to generate sub-area traffic forecasts with the unique external trip tables from the ISTDM associated for each alternative. In this way, changes in travel time resulting from roadway improvements inside the sub-area not only influence travel patterns with the sub-area, but only may influence travel patterns outside the sub-area. In light of the fact that US 50 is the highest functional class facility between I-70 and I-74 to the north and I-64 to the south, major improvements to US 50 have the potential to alter travel patterns on these interstates as well as other major State roadways outside the sub-area.

Traffic operating conditions are described by Level-of-Service (LOS) ratings. The LOS rating scale is a qualitative method for describing traffic conditions that is similar to the school grading system of A through F. LOS F (or failure) represents a breakdown in traffic flow and is clearly unacceptable. LOS E (i.e. unstable flow) equates to traffic flow at capacity, and is undesirable. LOS D (i.e. approaching unstable flow) is considered the minimum acceptable level for urban areas. LOS C (i.e. stable flow) is the desirable level for urban areas and the minimum acceptable level for rural areas. LOS B (i.e. reasonable free flow) is desirable for rural areas. LOS A is free flow.

The United States Census Bureau has established a definition of urban and rural that is used uniformly through the nation and has been utilized for this project. An Urbanized Area (UA) or Urban Cluster (UC) consists of core Census Block Groups or Census Blocks with at least 1,000 persons per square mile and surrounding Census Blocks that have an overall density of at least 500 persons per square mile. All territory located outside UAs or UCs is classified as rural. This definition may be found on the US Census Bureau website under “Census 2000 Urban and Rural Classification”. Except for the segment thru North Vernon, from CR 15 N to the Muscatatuck River, the US 50 corridor is considered rural, where a LOS “C” is the minimum acceptable and any level below that is unacceptable. Within the Urban Area boundary of North Vernon and Vernon, the minimum acceptable traffic flow condition is LOS “D”.

3.2.1 Congested Intersections

As a result of the growth in daily traffic volumes to the year 2030, traffic congestion on US 50 from US 31 to the west side of North Vernon in the year 2000 becomes traffic congestion on US 50 from US 31 through North Vernon to Butlerville in the year 2030. With an increase in daily traffic volumes of around 80% by the year 2030, a few intersections along US 50 with operational problems in year 2006 become many intersections with operational problems in the year 2030 (Tables 3.1-3.2 and Figures 3.1-3.4):

- While the four signalized intersections along US 50 operate at an acceptable LOS as individual intersections in the year 2006, the approaches to the intersection of US 50 at Madison Avenue/Short Street/5th Street are experiencing LOS E due to heavy traffic concentrations on short blocks and the short distance between traffic signals.

- All four signalized intersections experience unacceptable conditions (LOS E or F) in the year 2030.

- Traffic densities and delays show the approaches of all signalized intersections along SR 3/SR 7 (at US 50, Poplar Street, Franklin Street and the SR 3/SR 7 split in the north end of North Vernon) experience LOS E and F in the year 2030.

- While three of the ten major unsignalized intersections along US 50 experienced unacceptable conditions (LOS D or E) in the year 2006 (due to the difficulty of entering onto US 50), seven of the ten unsignalized intersections are forecasted to experience unacceptable conditions in the year 2030, five having LOS F.

Table 3.1: Existing and Future Level of Service for Signalized Intersections

Turning Movement Count Location Number	Intersection/Approach	Existing Year (2006) PM Peak Hour Delay	Existing Year (2006) PM Peak Hour LOS	Future Year (2030) PM Peak Hour Delay	Future Year (2030) PM Peak Hour LOS
TM 1	US 50/US 31	25.5	C	168.5	F
	Northbound	31.6	C	194.8	F
	Southbound	31.7	C	228.2	F
	Eastbound	26.6	C	209.5	F
	Westbound	15.7	B	25.1	C
TM 8	US 50/Norris Ave	18.9	B	62.1	E
	Northbound	27.7	C	29.6	C
	Eastbound	18.2	B	36.2	D
	Westbound	16.0	B	115.4	F
TM 9	US 50/SR 3/7	25.0	C	129.1	F
	Northbound	27.0	C	223.1	F
	Southbound	30.3	C	118.4	F
	Eastbound	21.6	C	113.1	F
	Westbound	18.8	B	72.4	F
TM 10	US 50/Madison Ave/Short St/5th St	22.0	C	71.7	E
	Northbound	22.6	C	160.3	F
	Southbound	20.6	C	24.5	C
	Eastbound	22.6	C	26.0	C
	Westbound	21.0	C	22.1	C

Note: Delay is shown as seconds/vehicle. Source: Bernardin, Lochmueller & Associates, Inc.

Table 3.2: Existing and Future Level of Service for Unsignalized Intersections

Turning Movement Count Location Number	Intersection/Approach	Existing Year (2006) PM Peak Hour Delay	Existing Year (2006) PM Peak Hour LOS	Future Year (2030) PM Peak Hour Delay	Future Year (2030) PM Peak Hour LOS
TM 2	US 50/CR 900W				
	Northbound	29.3	D	184.2	F
	Southbound	21.2	C	67.7	F
	Eastbound	8.3	A	9.6	A
	Westbound	9.0	A	11.1	B
TM 3	US 50/CR 700W				
	Northbound	27.3	D	140.8	F
	Southbound	22.0	C	86.4	F
	Eastbound	8.4	A	9.6	A
	Westbound	8.6	A	10.0	A
TM 4	US 50/Hayden Pk				
	Southbound	16.6	C	116.4	F
	Eastbound	9.2	A	12.4	B
TM 5	US 50/Middle School/High School Rd	20.1	C	57.7	F
	Northbound	11.3	B	16.0	C
	Westbound Left	8.2	A	9.3	A
TM 6	US 50/Brownstown Rd				
	Southbound	36.8	E	287.4	F
	Eastbound	8.4	A	9.6	A
TM 7	US 50/Poplar St				
	Southbound	14.3	B	41.3	E
	Eastbound Left	9.3	A	13.0	B
TM 11	US 50/7th St				
	Northbound	17.5	C	46.6	E
	Southbound	17.9	C	49.1	E
	Eastbound	8.2	A	9.4	A
	Westbound	8.6	A	10.1	B
TM 12	US 50/Greensburg St				
	Northbound	15.8	C	33.8	D
	Southbound	15.7	C	26.9	D
	Eastbound	8.2	A	9.1	A
	Westbound	8.3	A	9.4	A
TM 13	US 50/Deer Creek Rd				
	Northbound	13.1	B	23.2	C
	Southbound	11.5	B	14.8	B
	Eastbound	7.9	A	8.9	A
	Westbound	7.9	A	8.7	A
TM 14	US 50/Main Street				
	Northbound	11.3	B	16.9	C
	Southbound	10.4	B	12.4	B
	Eastbound	7.7	A	8.6	A
	Westbound	7.7	A	8.5	A

Source: Bernardin, Lochmueller & Associates, Inc.

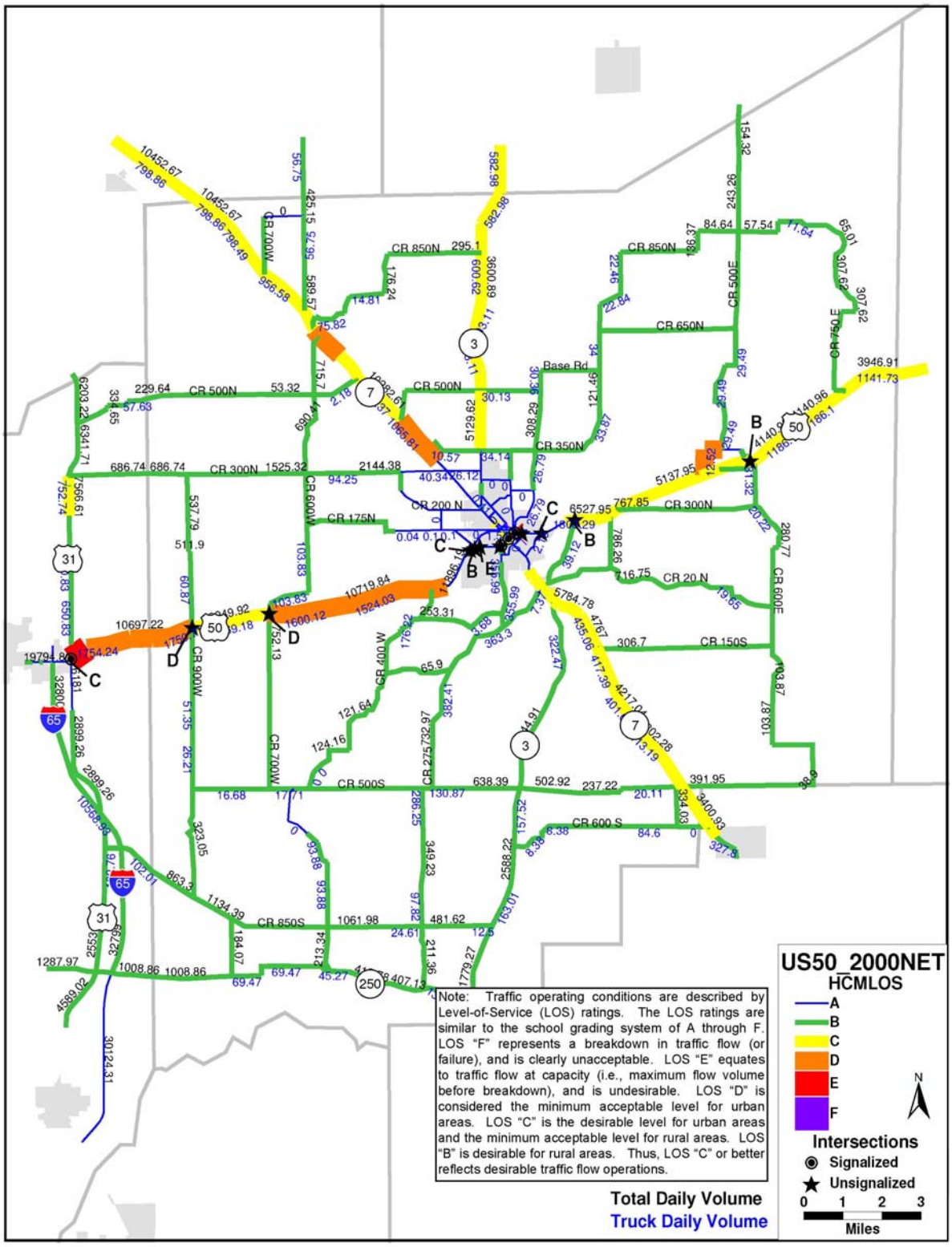

Figure 3.1: Study Area Base Year 2000 Roadway and 2006 Intersection LOS

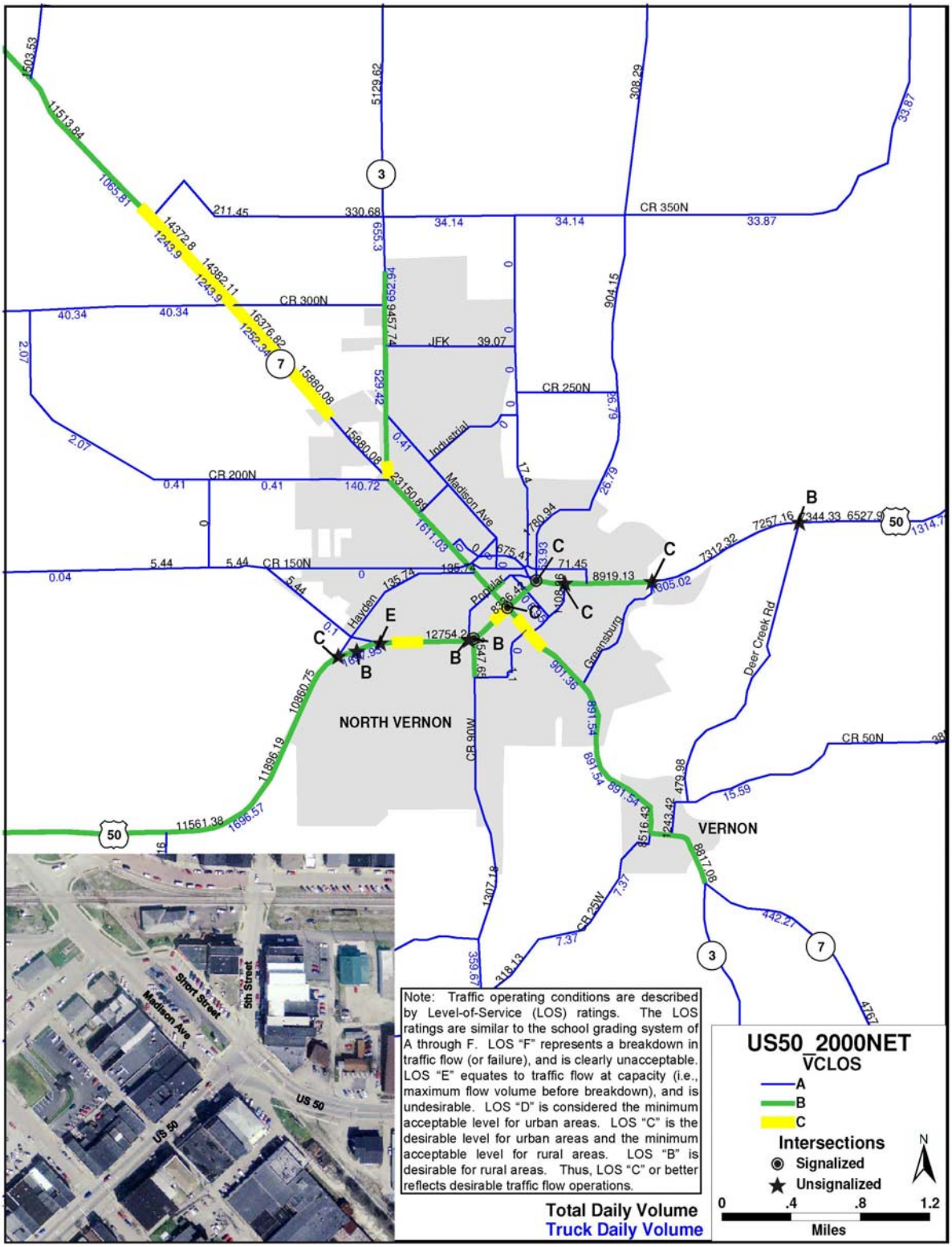

Figure 3.2: North Vernon Base Year 2000 Roadway and 2006 Intersection LOS

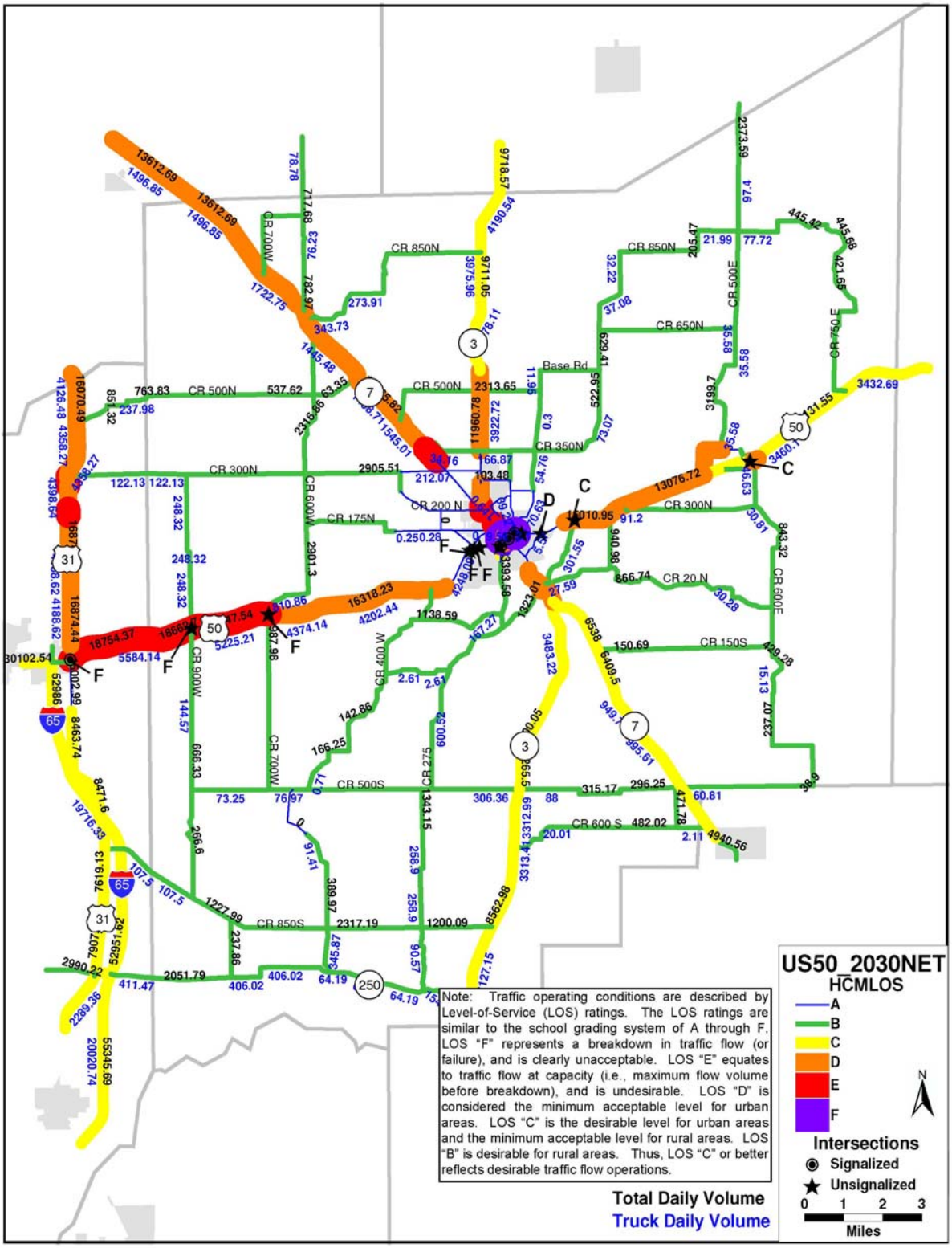

Figure 3.3: Study Area Year 2030 Roadway and Intersection LOS

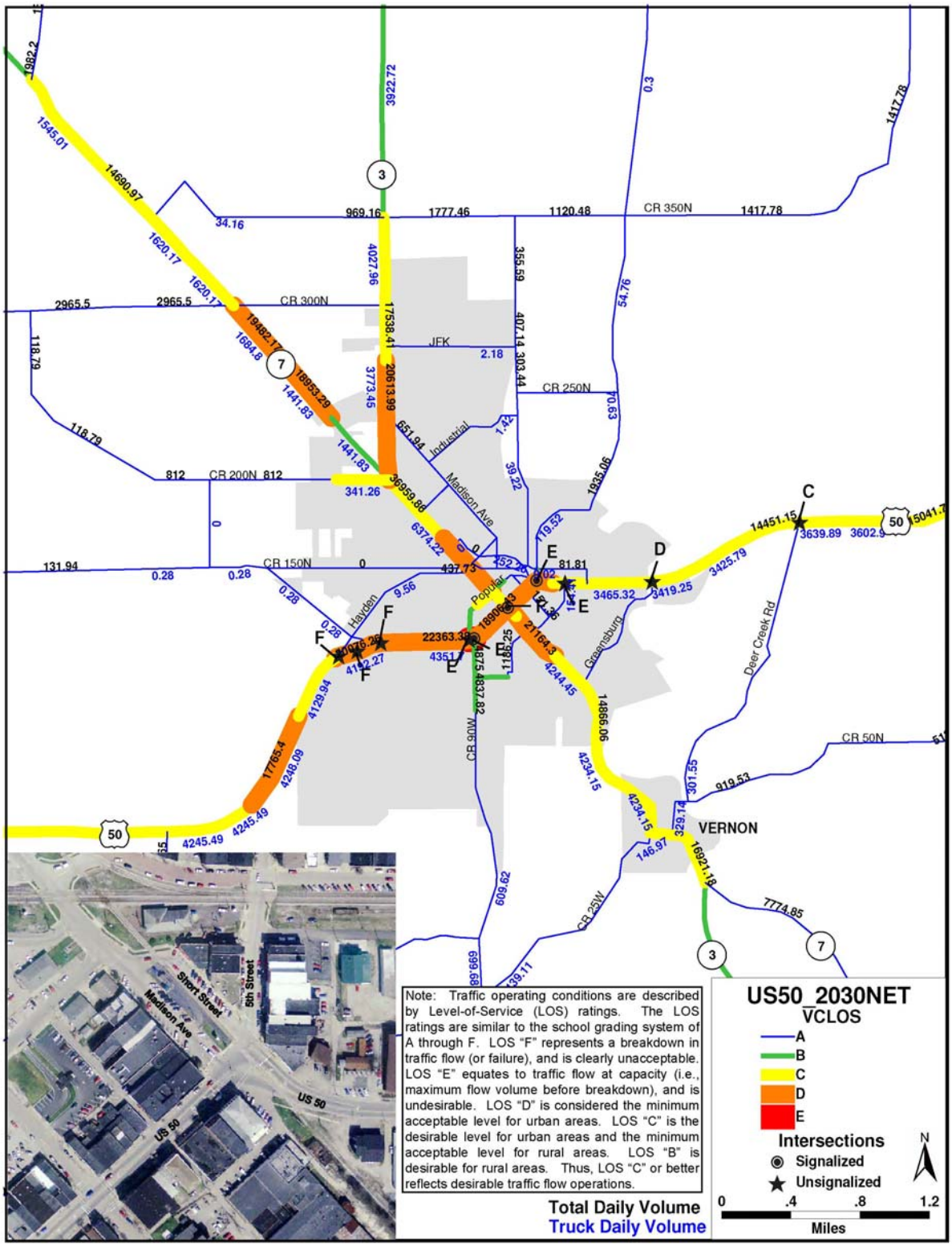

Figure 3.4: North Vernon Base Year 2030 Roadway and Intersection LOS

3.2.2 Congested Roadway Segments

As a result of the growth in daily traffic volumes to the year 2030, traffic congestion on US 50 from US 31 to the west side of North Vernon in the year 2000 becomes traffic congestion on US 50 from US 31 through North Vernon to Butlerville in the year 2030. In the year 2030, SR 7 has congestion problems from SR 3 into Bartholomew County, and SR 3 has congestion problems from SR 7 to CR 500N (Figures 3.1-3.4):

- In the year 2000, several segments of US 50 show unacceptable conditions (below LOS C) – US 31 to East County Avenue (LOS E), East County Avenue to CR 900W (LOS D) and CR 700W to CR 15N (LOS D).
- In the year 2000, SR 7 from CR 350W to CR 300N and CR 575W to CR 600N experiences a LOS D.
- In the year 2030, much of US 50 through Jennings County has an unacceptable LOS: US 31 to CR 700W (LOS E), CR 700W to CR 15N (LOS D), CR 15N through North Vernon to 7th Street (LOS D) with segments through the intersections at the Middle School/High School Entrance and at Madison Avenue/Short Street/5th Street experiencing LOS E, and the Muscatatuck River to CR 500N near Butlerville (LOS D).
- In the year 2030, several segments of SR 3/SR 7 show deficiencies: through Vernon to south of US 50 (LOS D), and Poplar Street to Franklin Street (LOS D) (Figure 3.3).
- In the year 2030, SR 3 also shows deficiencies from SR 7 to CR 500N with LOS D.
- In the year 2030, SR 7 from north of SR 3 to the Jennings/Bartholomew County Line shows LOS D and E.

3.2.3 Heavy Truck Traffic in North Vernon and Jennings County

The percent of truck traffic on US 50 exceeds statewide rates for urban and rural principal arterials because US 50 is the only rural principal arterial across Indiana between I-64 and I-70. The Wal-Mart Regional Distribution Center on the southwest quadrant of I-65 and US 50 and the Lowe's Home Supply Regional Distribution Center off SR 3 on the north side of North Vernon contribute to this heavy truck traffic. The anticipated development of the new Honda Plant in Greensburg (IN), the industrial parks on the north side of North Vernon and the MUTC near Butlerville will contribute to the growth in truck traffic in Jennings County and through downtown North Vernon.

- In the years 2000 and 2006, the percent of truck traffic on US 50 through North Vernon and from North Vernon to the Jennings/Ripley County Line exceeded that statewide for urban and rural principal arterials. The statewide percent of truck traffic was 17.9% for rural principal arterial and 8.6% for urban principal arterials in the year 2000 (Table 3.3).
- Between the years 2000 and 2030, truck traffic on US 50 is forecasted to grow 111% to 300%. Between years 2000 and 2030, daily truck traffic increases from 1,754 trucks to 5,584 trucks west of North Vernon, 2,109 to 4,352 trucks through North Vernon, and 1,303 trucks to 3,471 trucks east of North Vernon (Table 3.4).
- Through trucks on US 50 (from US 31 to the Jennings/Ripley County Line) amounted to about 600 trucks per day in the year 2000 (ranging from 34% of the trucks near the Jackson/Jennings County Line to 33% of the trucks through North Vernon and 52% of the trucks near the Jennings/Ripley County Line) and increased to about 1,930 trucks per day in the year 2030 (ranging from 35% of the trucks near the near the Jackson/Jennings County Line to 61% of the trucks through North Vernon and 56% of the trucks near the Jennings/Ripley County Line)[1].

[1] Based on a select link analysis with the sub area travel model

- In the year 2000 for all State routes crossing the Jennings County Line, through trucks on US 50 amounted to 630 trucks per day west of SR 3/SR 7 and 660 trucks per day each of SR 3/SR 7 (ranging from 39% of the trucks near the Jackson/Jennings County Line to 34% of the trucks through North Vernon and 58% of the trucks near the Jennings/Ripley County Line). Of the through trucks on US 50 from other State routes, 60 trucks per day came via SR 7 from Bartholomew County, 20 trucks per day came via SR 3 from Decatur County, 13 trucks per day came via SR 7 from Jefferson County and 2 trucks per day came via SR 3 from Jefferson County[2].
- In the year 2030 for all State routes crossing the Jennings County Line, through trucks on US 50 (from) amounted to 2,140 trucks per day west of SR 3/SR 7 and 2,065 trucks per day east of SR 3/SR 7 (ranging from 38% of the trucks near the Jackson/Jennings County Line to 65% of the trucks through North Vernon and 60% of the trucks near the Jennings/Ripley County Line). Of the through trucks on US 50 from other State routes, 106 trucks per day came via SR 7 from Bartholomew County, 191 trucks per day came via SR 3 from Decatur County, 39 trucks per day came via SR 7 from Jefferson County and 7 trucks per day came via SR 3 from Jefferson County. **This reveals the most dramatic growth in truck traffic is on SR 3 from Decatur County through North Vernon via US 50 to I-65 near Seymour** [2].
- An examination of the intersection of US 50 (Walnut Street and Buckeye Street) at Madison Avenue/Short Street/Fifth Street reveals that trucks must travel at a very slow rate of speed through the intersection because of the tight turn on US 50 (Walnut Street and Buckeye Street). The curve of US 50 (Walnut Street/Brownstown Road) at Norris Avenue also slows truck flow.

Table 3.3: Existing Daily Traffic and Truck Volumes on US 50

Route	Termini	2000 INDOT Actual Counts			2006 BLA Counts			INDOT Flow Map	
								1998	2001
		Trucks	Percent Trucks	All Vehicles	Trucks	Percent Trucks	All Vehicles	All Vehicles	All Vehicles
US 50	Jackson Co. Line to CR 900 W	1942	19.1%	10148	1823	17.1%	10673	11090	9500
	CR 900 W to CR 700 W	1813	18.9%	9582				11090	9500
	CR 575 W to CR 265 W	1169	11.0%	10634				11090	9500
	CR 265 W to Middle School Dr.	1620	13.9%	11650	1613	17.6%	9174	11090	9500
	Brownstown Rd. to Poplar St.				1856	15.2%	12230	18050	14050
	Poplar St. to SR 3/SR 7 (State St.)				2193	16.8%	13056	18050	14050
	SR 3/SR 7 to Jennings St.				1272	15.1%	8422	16640	12920
	Jennings St. to Short St.				1526	18.4%	8276	13780	11200
	Short St. to Vernon St.				1120	12.6%	8909	9730	8140
	Greensburg St. to CR 75 E.	2069	25.2%	8206	916	13.4%	6832	9730	8140
	CR 280 E to CR 425 E				1293	24.4%	5295	5920	4770
	CR 425 E to CR 300 N	1228	25.5%	4808				5920	4770
	CR 540 N to Ripley Co. Line	940	27.6%	3405	906	26.0%	3482	4040	3380

Source: INDOT Roadway Information System, INDOT Traffic Flow Maps and Bernardin, Lochmueller & Associates.

[2] Based on a select link analysis for all state routes entering county

Table 3.4: Future Daily Truck Traffic (Sub-Area TDM)

	Leg	2000 All	2000 Trucks	2030 All	2030 Trucks	30-year Percent Growth All	30-year % Growth Trucks	24-Year Percent Growth All	2030 Percent Trucks
US 50 @ US 31	West (Eastbound)	22333	2412	38468	8407				21.9%
	East (Westbound)	10697	1754	18754	5584				29.8%
	South (Northbound)	6181	219	15003	2031				13.5%
	North (Southbound)	6680	696	18829	4292				22.8%
	Total	45891	5081	91054	20314	98.4%	299.8%	73.0%	22.3%
US 50 @ CR 900W	West (Eastbound)	10638	1754	18663	5550				29.7%
	East (Westbound)	9950	1669	17348	5225				30.1%
	South (Northbound)	1012	51	1168	145				12.4%
	North (Southbound)	512	61	848	248				29.2%
	Total	22112	3535	38027	11168	72.0%	215.9%	54.3%	29.4%
US 50 @ CR 700W	West (Eastbound)	9950	1669	17348	5225				30.1%
	East (Westbound)	10608	1600	16294	4374				26.8%
	South (Northbound)	752	37	988	54				5.5%
	North (Southbound)	2601	334	4922	1201				24.4%
	Total	23911	3640	39552	10854	65.4%	198.2%	49.6%	27.4%
US 50 @ Hayden Pike	West (Eastbound)	11301	1659	20444	4199				20.5%
	East (Westbound)	11237	1658	20076	4192				20.9%
	South (Northbound)								
	North (Southbound)	65	1	367	7				1.9%
	Total	22603	3318	40887	8398	80.9%	153.1%	60.7%	20.5%
US 50 @ Middle School/High School Road	West (Eastbound)	11237	1658	20076	4192				20.9%
	East (Westbound)	12951	1753	23453	4292				18.3%
	South (Northbound)	1714	96	4429	104				2.3%
	North (Southbound)								
	Total	25902	3507	47958	8588	85.2%	144.9%	63.7%	17.9%
US 50 @ Brownstown Road	West (Eastbound)	12951	1753	23453	4292				18.3%
	East (Westbound)	13065	1758	23768	4295				18.1%
	South (Northbound)								
	North (Southbound)	114	5	315	3				1.0%
	Total	26130	3516	47536	8590	81.9%	144.3%	61.4%	18.1%
US 50 @ Poplar Street	West (Eastbound)	12754	1843	22363	4352				19.5%
	East (Westbound)	11056	1771	17946	3716				20.7%
	South (Northbound)								
	North (Southbound)	1698	72	4533	657				14.5%
	Total	25508	3686	44842	8725	75.8%	136.7%	57.0%	19.5%
US 50 @ Norris Avenue	West (Eastbound)	11056	1771	17946	3716				20.7%
	East (Westbound)	10028	1522	18202	3642				20.0%
	South (Northbound)	3457	708	4875	1065				21.8%
	North (Southbound)								
	Total	24541	4001	41023	8423	67.2%	110.5%	50.8%	20.5%
US 50 @ SR 3/SR 7	West (Eastbound)	12869	2109	18906	3766				19.9%
	East (Westbound)	8336	1317	17197	3139				18.3%
	South (Northbound)	14008	1557	20091	4788				23.8%
	North (Southbound)	14644	1512	30200	6139				20.3%
	Total	49857	6495	86394	17826	73.3%	174.5%	55.2%	20.6%
US 50 @ Monroe/Short Street	West (Walnut EB)	8165	1268	16501	3071				18.6%
	East (5th WB)	1738	49	3464	124				3.6%
	South (Buckeye NB)	8833	1265	16279	3289				20.2%
	North (Monroe/Short SB)	2725	80	3345	344				10.3%
	Total	21461	2662	39589	6828	84.5%	156.5%	63.2%	17.2%
US 50 @ 7th Street	West (Eastbound)	9009	1287	16557	3331				20.1%
	East (Westbound)	8848	1362	16443	3463				21.1%
	South (Northbound)	1109	89	1274	154				12.1%
	North (Southbound)	580	13	600	19				3.2%
	Total	19546	2751	34874	6967	78.4%	153.3%	58.9%	20.0%
US 50 @ Greenburg Street	West (Eastbound)	7589	1303	15163	3414				22.5%
	East (Westbound)	7673	1305	15254	3419				22.4%
	South (Northbound)	84	2	101	6				5.9%
	North (Southbound)								
	Total	15346	2610	30518	6839	98.9%	162.0%	73.3%	22.4%
US 50 @ Deer Creek Road	West (Eastbound)	7257	1303	14451	3426				23.7%
	East (Westbound)	7344	1316	16573	3640				22.0%
	South (Northbound)	457	39	2551	302				11.8%
	North (Southbound)								
	Total	15058	2658	33575	7368	123.0%	177.2%	89.9%	21.9%
US 50 @ Main St (Butlerville)	West (Eastbound)	4547	1196	9362	3456				36.9%
	East (Westbound)	4738	1208	11497	3471				30.2%
	South (Northbound)								
	North (Southbound)	218	17	2656	22				0.8%
	Total	9503	2421	23515	6949	147.4%	187.0%	106.4%	29.6%

Source: Bernardin, Lochmueller & Associates, Inc.

3.2.4 Traffic Flow Impediments

Traffic flow impediments are anything that hinders the free-flow of traffic. As traffic (particularly truck traffic) grows to the year 2030, impediments to traffic flow have a greater impact on the LOS of traffic operations. The proximity of the Jackson Street and Madison Avenue traffic signals adversely affects the flow of traffic compared to operation as independent traffic signals. The tight curves on US 50 at the Madison Avenue and Norris Avenue intersections also slow truck flow beyond the delay of a signalized intersection. Finally, while there are occasional trains on the City of Madison Port Authority Railroad through the intersection of US 50 at Madison Avenue/Short Street/Fifth Street to serve industries north of O&M Avenue, the potential exists that these activities may increase in future years as businesses grow.

3.3 Purpose 2 -- Improve Safety

For the years 2003 through 2005, Jennings County fell among the highest ten counties with respect to fatalities and injuries per vehicle-mile of travel, and was ranked as the second highest county in Indiana for a composite ranking of fatalities and injuries. One segment of State roadway in Jennings County (i.e., SR 7 north of Grahams Creek) was among the top five percent crash locations in the State; however, this location is outside the US 50 Project Study Area. The US 50 intersections with the greatest number of crashes in the Study Area were US 31 with 30 crashes in 2004 and SR 3/SR 7 with 24 crashes in 2005. Using crash data for years 2003 through 2005, the index for crash frequency (ICF) was calculated for major intersections and roadway segments along US 50 (Table 3.5 and Figures 3.5- 3.6). An ICF value greater than 2.00 standard deviations indicates a high crash location where the crashes are not merely associated with random probabilities. Those locations exceeding an ICF value of 2.00 were:

- The US 50 intersection with US 31 (ICF = 2.22).
- The segment of US 50 from CR 15 through North Vernon to the Muscatatuck River (ICF = 2.03).

Those locations with an ICF value less than 2.00 and greater than 1.00 were:

- The US 50 intersection with SR 3/SR 7 (ICF = 1.34).
- The segment of US 50 from US 31 to the Jackson/Jennings County Line (ICF = 1.78).

The intersection of US 50 with CR 700W at Hayden was recently reconstructed to provide separate left-turn lanes on US 50 to improve traffic flow and safety. INDOT has scheduled intersection improvements in the immediate future on US 50 at Hayden Pike and at Norris Avenue, SR 3 from Muscatatuck Park Road to US 50 and at Madison Avenue, and SR 7 at Hayden Pike and Washington Street/O & M Avenue that should also improve safety at these locations.

Table 3.5: US 50 Crash Rates

		Crashes				Based on Yr 2000 Counts		Based on Yr 2004 Counts	
US 50 Intersections		**2003**	**2004**	**2005**	**3-yr Tot**	**Crashes per Million Vehicles**	**Icf**	**Crashes per Million Vehicles**	**Icf**
US 31[s]		19	30	16	65	2.29	2.20	2.31	2.22
CR 1250 E (Jackson)		5	9	5	19	1.63	-0.29	1.53	-0.38
CR 1300 E (Jackson)		6	10	8	24	2.11	0.10	1.97	-0.02
CR 900 W		6	12	8	26	2.42	0.35	2.32	0.27
CR 700 W		4	5	6	15	1.29	-0.57	1.20	-0.64
Hayden Rd		4	8	5	17	1.12	-0.73	1.44	-0.44
Brownstown Rd		6	7	7	20	1.06	-0.80	1.78	-0.16
Poplar St		2	7	2	11	0.78	-1.00	0.59	-1.18
Norris Ave[s]		0	5	3	8	0.54	-0.39	0.41	-0.58
SR 3/SR 7[s]		17	21	24	62	1.68	1.39	1.64	1.34
Madison / 5th / Short[s]		5	8	3	16	1.15	0.49	1.15	0.48
7th St		1	0	2	3	0.27	-1.43	0.22	-1.47
Greensburg St		0	2	1	3	0.37	-1.33	0.34	-1.35
Deer Creek Rd		4	5	2	11	1.27	-0.55	1.19	-0.62
Main St (Butlerville)		1	1	0	2	0.34	-1.33	0.28	-1.40
US 50 Segments	**Miles**	**2003**	**2004**	**2005**	**3-yr Tot**	**Crashes per 100 Million VMT**	**Icf**	**Crashes per 100 Million VMT**	**Icf**
US 31 to Jennings/Jackson Co Line[r]	2.13	18	22	19	59	255.83	1.93	235.52	1.78
Jennings/Jackson Co Line to CR 15[r]	7.99	47	48	51	146	175.73	0.93	166.36	0.85
CR 15 to Muscatatuck River[u]	3.17	61	113	81	255	630.53	2.04	628.16	2.03
Muscatatuck River to Ripley/Jennings Co Line[r]	10.02	29	29	22	80	166.28	0.18	146.71	0.06

s - signalized intersection (all others are two way stops)

r - rural two-lane road segment

u - urban two-lane road segment

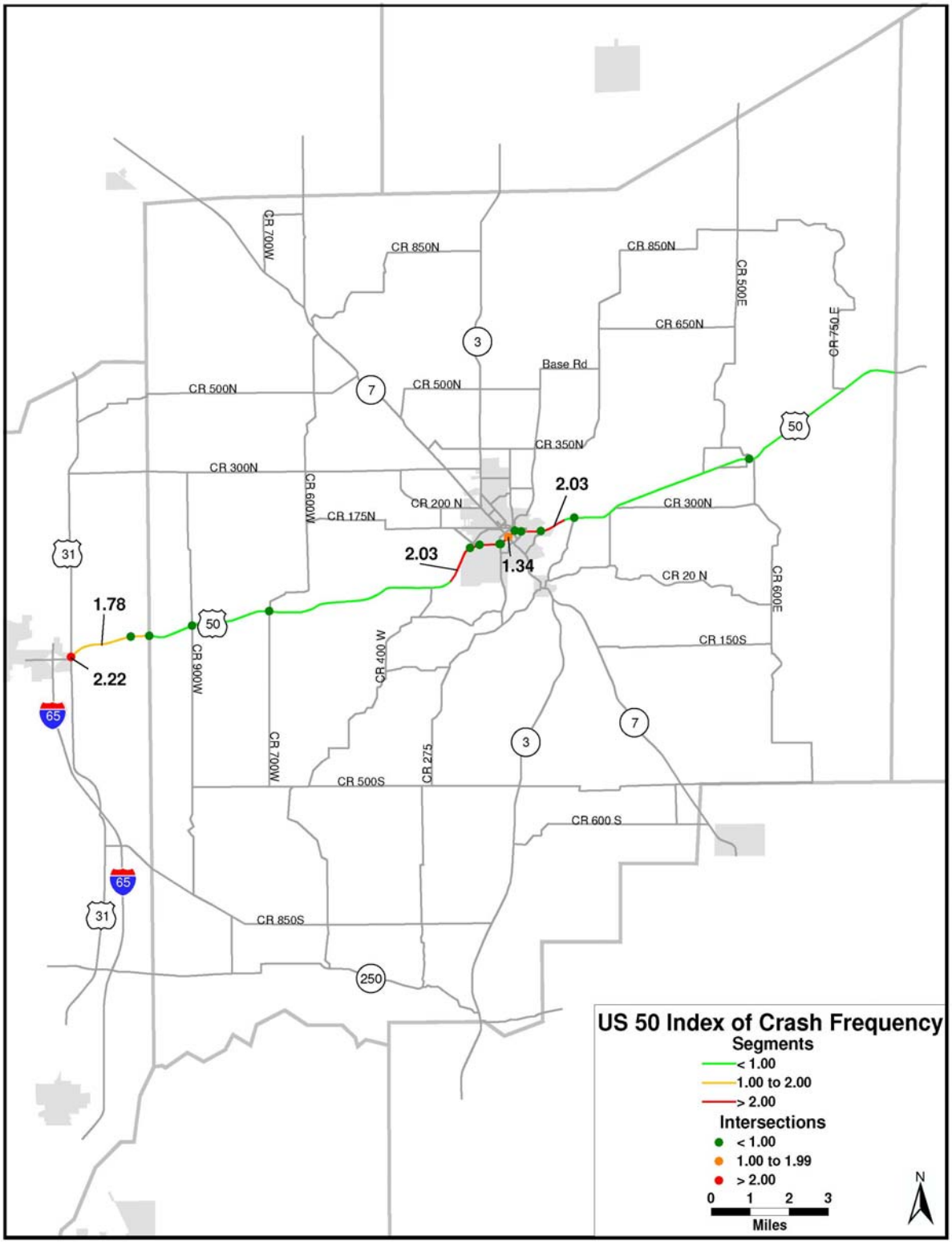

Figure 3.5: Jennings County US 50 Crash Frequencies

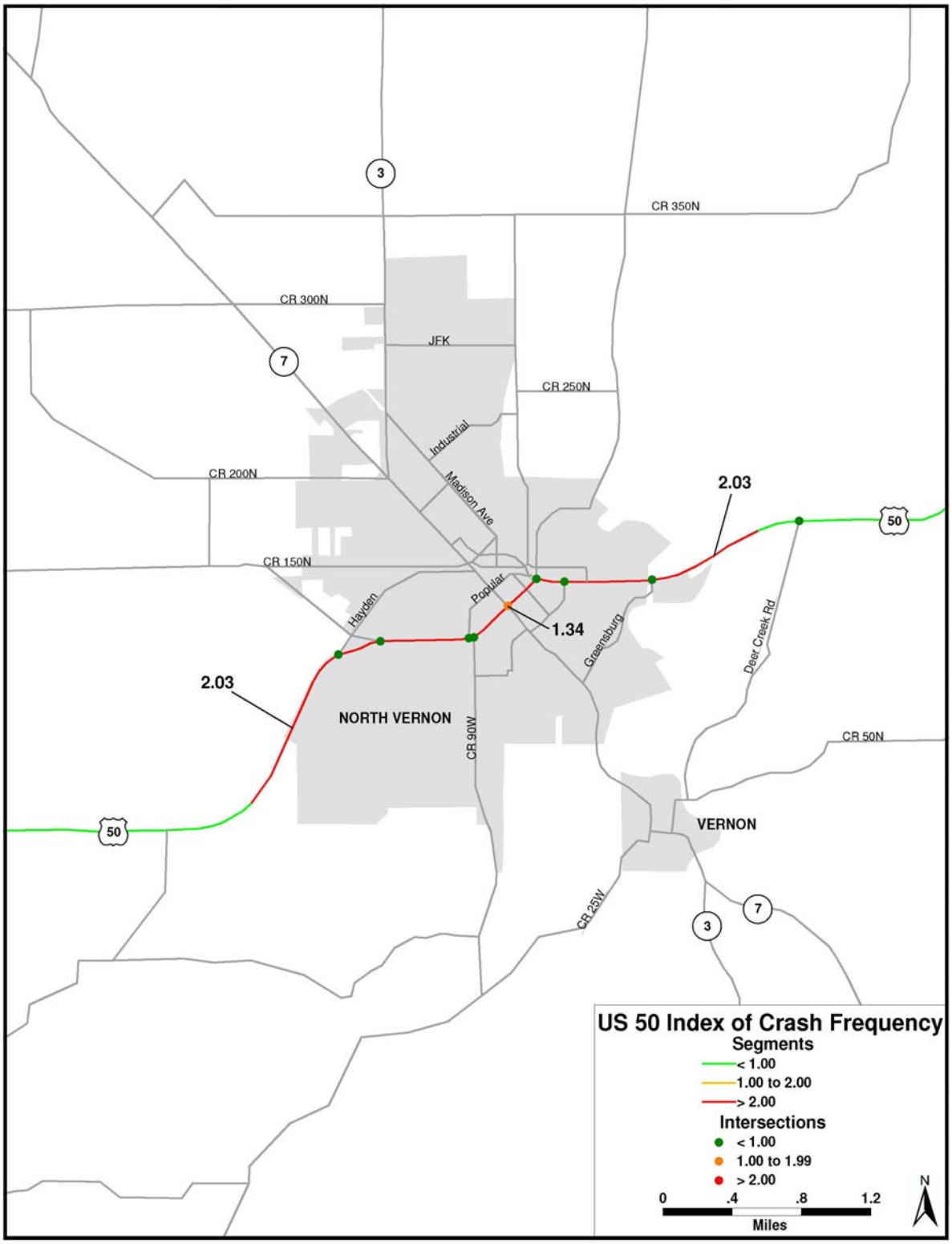

Figure 3.6: North Vernon US 50 Crash Frequencies

3.4 Purpose 3 -- Facilitate Access to Employment Concentrations

While downtown North Vernon remains a viable commercial area, major regional commercial (grocery stores, pharmacies and restaurants) uses are concentrated at the intersection of SR 3 and SR 7 on the northwest side of North Vernon. The Jennings County School Corporation is one of the largest employers, and its greatest employment is concentrated at the Jennings School Complex (Jennings County High School, Jennings County Middle School and North Vernon Elementary School) on the southeast side of US 50 near Hayden Pike. Five of the six largest industrial employers are located on the north side of North Vernon in an area bounded on the west by Madison Avenue and SR 3, on the south by O & M Avenue, on the east by CR 75W and on the north by CR 350N -- Lowe's Distribution Center (800 employees), Nac, Inc. (350 employees making auto door and truck latches), Metaldyne (312 employees in metal forging), Martinrea Industry Group (300 employees making auto and truck fuel tubes),), and Sonoco Products Company (240 employees making plastic gaps). The sixth major employer, Dave O'Mara Contractor, Inc. (250 employees in roadway construction) is located on the east end of O & M Street (north of the CSX Railroad on the east end of the city).

According to the Jennings County Economic Development Corporation website (www.jenningsedec.com), the City of North Vernon and private developers are marketing numerous sites for industrial development in Jennings County: Aspley Site (84 acres), Biehle Site (117 Acres), Burbrink Site (350 acres), City of North Vernon Site (60 acres), Montrow Site (60 acres), North Vernon Industrial Park (only 8 acres available) and North Vernon Municipal Airport Site (200 acres). The Aspley Site is located between US 50 and the CSX Railroad east of the Muscatatuck River, and the Biehle Site is located between US 50 and the CSX Railroad on the east side of CR 900W. The balance of the sites are located on the north side of North Vernon between SR 3 and CR 75W from Industrial Drive to CR 500N. The final major employment growth area is the MUTC located northwest of Butlerville on the north side of US 50 with the possibility of 4,000 to 5,000 permanent employees at full build-out. Figures 3.7 and 3.8 show the forecasted change employment to the year 2030 based on the Jennings County Subarea Travel Demand Model travel analysis zones (TAZs). Table 3.6 reports the change in employment for TAZs in North Vernon. The 30-year change in employment is 8,647 jobs (see to Figure 3.7), including 5,000 jobs at the MUTC, 2,238 jobs in North Vernon and the remaining 1,409 jobs in the balance of Jennings County.

Table 3.6: North Vernon Employment Growth

TAZ	2000	2000- 2030	2030	TAZ	2000	2000- 2030	2030
4000201	544	443	977				
4000202	40	244	284	4000409	240	6	246
4000203	10	0	10	4000410	47	0	47
4000205	748	0	748	4000411	9	0	9
4000206	985	0	985	4000412	883	355	1238
4000301	10	5	15	4000413	408	100	508
4000306	1254	270	1524	4000414	230	80	310
4000307	972	60	1032	4000419	22	0	22
4000401	308	208	516	4000424	331	10	341
4000402	1181	65	1246	4001001	207	20	227
4000404	33	0	33	4001004	75	50	125
4000405	146	87	233	4001007	216	10	226
4000406	0	0	0	4001008	785	15	800
4000407	85	70	155	4001009	34	10	44
4000408	0	0	0	4001902	290	140	430
				Total	10093	2238	12331

Source: Bernardin ▪ Lochmueller & Associates, Inc. from Jennings County Subarea Travel Demand Model.

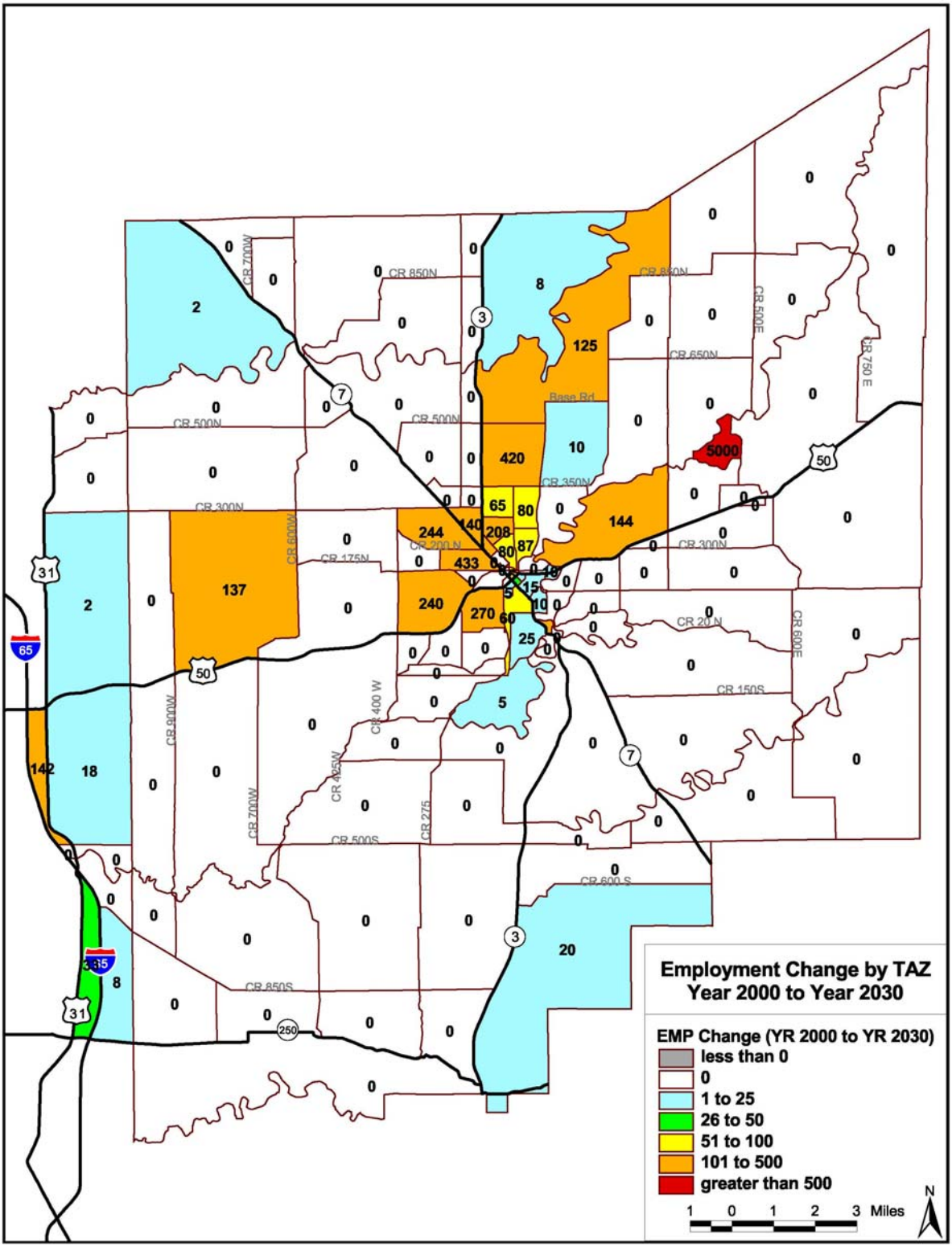

Figure 3.7: Jennings County 30-Year Employment Change by TAZ

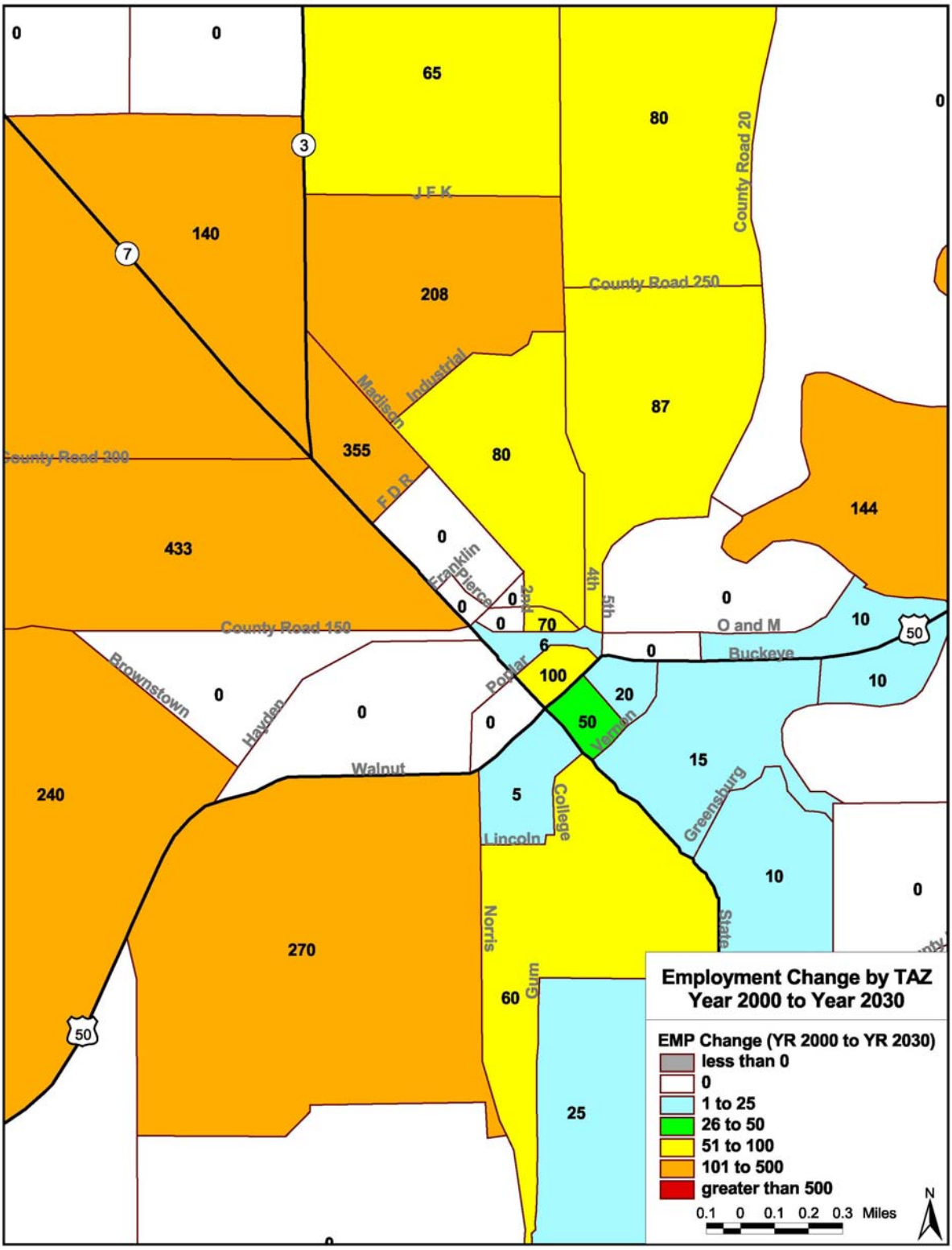

Figure 3.8: North Vernon 30-Year Employment Change by TAZ

3.5 Purpose 4 – Ensure Consistency with Transportation Plans

3.5.1 State Transportation Plan

The *INDOT 2030 Long Range Transportation Plan* (INDOT, 2007) established a planning-level corridor hierarchy for State-maintained roadways of three mobility categories. The highest category is Statewide Mobility Corridors that generally corresponds to the National Highway System and includes US 50. Because Statewide Mobility Corridors connect major metropolitan areas, provide macro-level accessibility to cities and regions around the state and play a vital role in the economic development of the state, these facilities have upper level design standards:

- High speed.
- Free flowing conditions.
- Serving long-distance trips.
- Handling large through volumes of traffic.
- Serving heavy commercial vehicle flows.
- Carrying longer distance commuter traffic.
- Generally multi-lane, divided.
- Full access control desirable, no less than partial access control.
- Railroad and highway grade separations desirable.
- Desirable to by-pass congested areas.
- No non-motorized vehicle/pedestrian interaction.
- Major river crossings.

In 2003, the State Transportation Plan called for added travel lanes or new construction to establish a high-design standard facility for traffic on US 50 across the State of Indiana. Between I-65 and I-275 around Cincinnati, US 50 is currently a four-lane divided facility from SR 101 (east of Versailles) to Lawrenceburg. As part of INDOT's Major Moves (the State's 10-year roadway construction program), new roadway construction is proposed on US 50 from US 31 to the east urban area boundary of North Vernon. An environmental and engineering assessment study is currently underway to investigate the improvement of US 50 through Lawrenceburg.

3.5.2 Jennings County Thoroughfare Plan

The Jennings County Thoroughfare Plan was adopted as part of the *Jennings County Comprehensive Plan* (November 1, 1994). The Thoroughfare Plan recommends the relocation of US 50 as a four-lane, limited-access facility around the north side of North Vernon. Three alternative routes were shown in the Thoroughfare Plan (*Jennings County Comprehensive Plan,* Appendix D):

- Far North -- Leaving US 50 in the vicinity of CR 450W, angling northeast to cross SR 7 near CR 300N, following CR 350N from SR 3 along the north side of the Selmier State Forest to the Muscatatuck River, and angling southeast to US 50 near CR 300E.

- Near North – Leaving US 50 in the vicinity of CR 450W, angling northeast to cross SR 7 near CR 300N, following the alignment of CR 250N from SR 7 along the south side of the Selmier State Forest to the Muscatatuck River, and southeast to US 50 near Deer Creek Road.

- South -- Leaving US 50 just north of CR 15N, passing eastward through the north edge of the Muscatatuck County Park to cross SR 3/SR 7 and Muscatatuck River, and angling northeast along the east side of the Deer Creek Road to US 50.

Consideration was given to these three alternatives in the development of preliminary alternatives for this corridor study.

Because SR 3 is expected to continue to function as the primary industrial corridor for the area, a northern route linking SR 3 and SR 7 to US 50 is favored because it will reduce traffic in downtown North Vernon and provide access to industrial development on the north side of North Vernon.

3.6 Purpose 5 – Enhance National Security

Improving access to the MUTC has national security implications because of its potential as a regional training center for urban warfare (Figure 3.9). The proposed MUTC development will add up to 5,000 permanent employees at the facility. It will also augment 5,797 jobs, 2,297 households and 5,113 residents to previous socio-economic forecasts of the Indiana Statewide Travel Demand Model (ISTDM) for Jennings County. [This forecast is only 4% (1,666 persons) higher than forecasts by Woods & Poole Economic, Inc., and is comparable to the growth rate experienced in Jennings County in the 1990's.]

At full build-out, the MUTC will train an additional 3,000 to 4,000 military personnel on a continual basis. While these personnel will be temporarily housed at the base and will not leave the base during training, they will arrive in convoys one weekday of each week. During an eight-hour period of one weekday, convoys of 11 to 20 vehicles with heavy equipment will arrive and depart the base on 5 to 10 minute intervals. This equates to a total of approximately 500 to 2,000 vehicles per day. There is a high probability that traffic signals will be pre-empted as convoys pass through North Vernon during an eight-hour period. During this weekday, traffic flow through North Vernon will experience increasing traffic conditions. Because signalized intersections on US 50 and SR 3/SR 7 will operate at LOS E and F in the year 2030, the accommodation of convoy traffic appears to be impractical with the existing roadway system unless the convoys are dispersed throughout the week during night hours. The US 50 Project Management Team, consisting of representatives of INDOT, the Federal Highway Administration and the consulting engineering firm of Bernardin, Lochmueller & Associates, Inc., will coordinate with the Indiana National Guard, the United States Department of Defense and the United States Department of Homeland Security to ensure that national security is enhanced and to maximize accessibility to the MUTC site.

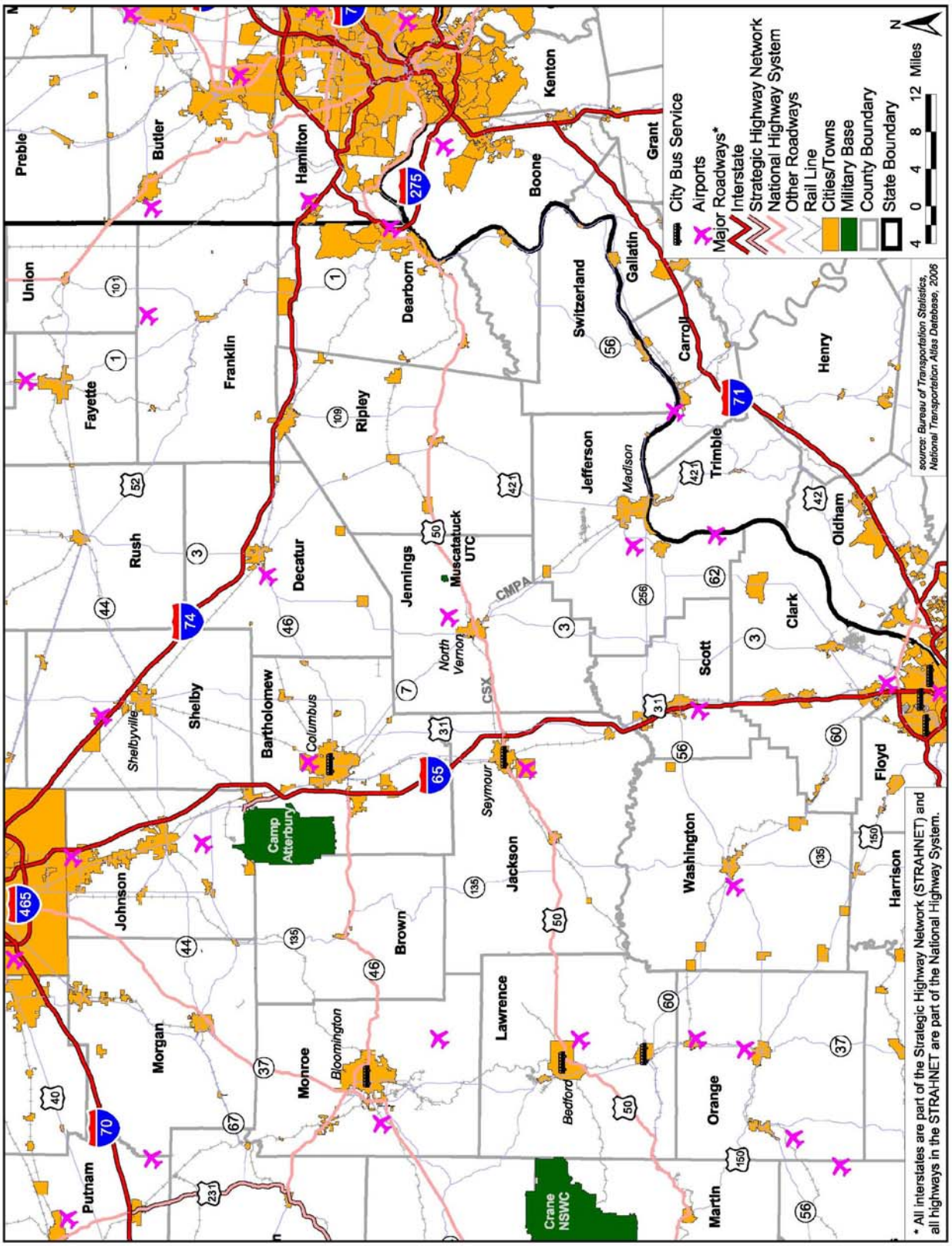

Figure 3.9: National Security

3.7 Performance Evaluation

The performance of any proposed transportation improvements to US 50 from US 31 to the Jennings/Ripley County Line (i.e., Build Alternatives) is evaluated on the basis of achieving the predefined project goals (i.e., purpose and need statements), traffic considerations, community and environmental impacts, agency considerations, and public input. Accordingly, these five evaluation categories are used in the screening of Alternatives to arrive at the preferred improvement option.

3.7.1 Achievement of Purpose and Need

The extent to which any transportation improvement alternative achieves project goals (i.e., purpose and need statements) is crucial in the evaluation and screening of improvement options. To remain a viable transportation improvement option, alternatives will be evaluated, or screened, with respect to the Purpose and Need Statement for this project. Build Alternatives must achieve Purpose 1 (Reduce Traffic Congestion) and Purpose 2 (Improve Safety), and must partially achieve Purpose 3 (Facilitate Access to Employment Concentrations), Purpose 4 (Ensure Consistency with Transportation Plans) and Purpose 5 (Enhance National Security). Alternatives that fail to meet the project's Purpose and Need are dismissed in the initial screening process and their performance is not examined in the other evaluation categories – traffic considerations, community and environmental impacts, agency considerations, and public input.

Alternatives will not be eliminated solely on their ability to meet the fourth (Ensure Consistency with Transportation Plans) and fifth (Enhance National Security) purpose and need items. As previously discussed, US 50 has been designated a Statewide Mobility Corridor by INDOT's 2030 Long Range Transportation Plan. Statewide Mobility Corridors connect major metropolitan areas in Indiana and neighboring states, provide macro-level accessibility to cities and regions around the state, and play a vital role in the economic development of the state. As such, the objectives of the US 50 alternatives are to provide safe, free-flowing, high-speed connections with characteristics consistent with the Statewide Mobility Corridor designation.

Specific objectives and performance measures have been developed for each of the identified "purpose and need" statements to measure achievement for the Build Alternatives compared to the No-Build Alternative. These performance measures are identified as primary consideration (necessary to satisfy the project goal) or secondary consideration (desirable but not necessary to satisfy this project goal). The five purposes of the project and the performance measures for each are listed below:

Purpose 1 (Congestion): Reduce traffic congestion on US 50 in Jennings County and through the City of North Vernon, especially by facilitating the movement of trucks.

Performance Measures:

- Achievement of a minimum acceptable LOS D in the year 2030 for the fourteen key intersections (four signalized and ten unsignalized intersections) along the US 50 corridor is a primary consideration. An improvement of the LOS at signalized intersections along SR 3 and SR 7 through North Vernon is of secondary consideration.

- Achievement of a minimum acceptable LOS C on rural segments and LOS D on urban segments in the year 2030 for US 50 from US 31 to the Jennings/Riley County Line is a primary consideration. An improvement of the LOS along SR 3 and SR 7 and through North Vernon is of secondary consideration.

- Reduction in "through" (without an origin or destination in Jennings County) truck traffic in the year 2030 on US 50 through North Vernon is of secondary consideration. The reduction of "through" truck traffic on SR 3 and SR 7 through North Vernon may be considered a benefit, but is not necessary to satisfy this project goal.

- The elimination of traffic flow impediments along US 50 (such as driveway entrances, traffic signals and at-grade railroad crossings) is of secondary consideration.

Purpose 2 (Safety): Improve Safety on US 50, particularly at elevated crash frequency locations at intersections and along roadway segments.

Performance Measures:

- The extent to which vehicle-miles of travel shift from lower functional class facilities with higher crash rates to high functional class facilities with lower crash rates (using the NET_BC travel model post-processor) is a primary consideration.

- The reduction in crashes of the improvement option over the No Build for US 50 Subarea Travel Demand Model Area (using the NET_BC travel model post-processor) is a primary consideration.

- The reduction in total truck traffic in downtown North Vernon on US 50 as an indication of the associated reduction in hazardous materials deliveries through downtown, may be considered a benefit, but is not necessary to satisfy this project goal.

Purpose 3 (Facilitate Access): Facilitate access to existing and potential employment concentrations in the City of North Vernon and Jennings County.

Performance Measures:

- Improvement of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon is a primary consideration.

- Improvement of the LOS in the year 2030 on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50 (including the MUTC) is a primary consideration.

Purpose 4 (Consistency with Transportation Plans): Ensure consistency with statewide and regional transportation plans.

Performance Measures:

- The extent to which the improvement option achieves the design standards for a "statewide mobility corridor" (as set forth in the *INDOT 2030 Long Range Transportation Plan*) is a primary consideration.

- The extent to which the improvement option contributes to improvement of US 50 across the State of Indiana (as set forth in the *INDOT 2030 Long Range Transportation Plan*) is a secondary consideration.

- The extent to which the improvement option achieves the recommendation of a four-lane, limited access facility around North Vernon (as set forth in the Thoroughfare Plan component of the Jennings County Comprehensive Plan) is a secondary consideration.

Project alternatives will not be required to meet these items in order to satisfy purpose and need.

Purpose 5 (Enhance National Security): Enhance national security objectives.

Performance Measures:

- The reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC is a primary consideration.
- Achievement of a minimum acceptable LOS D in the year 2030 for the fourteen key intersections (four signalized and ten unsignalized intersections) along the US 50 corridor is a primary consideration.
- Achievement of a minimum acceptable LOS C on rural segments and LOS D on urban segments in the year 2030 for US 50 from US 31 to the Jennings/Riley County Line is a primary consideration.
- The elimination of traffic flow impediments along US 50 (such as driveway entrances, traffic signals and at-grade railroad crossings) is of secondary consideration.
- The provision of opportunities for multiple access routes to the MUTC is a secondary consideration.

3.7.2 Traffic Considerations

Traffic considerations address the impacts of the improvement options (Build Alternatives) in improving traffic flow for the existing and proposed roadway network. Many of the traffic considerations are common to the performance evaluation measures of the project goals (purpose and need statements); however, traffic considerations may be broader in geographic area and scope. Typical traffic considerations may include:

- Improving the LOS for all major intersections on arterial routes entering and passing through the City of North Vernon, in addition to achieving an acceptable LOS for fourteen key intersections along the US 50 corridor.
- Improving the LOS on all arterial roadways in Jennings County, not just those entering and passing through the City of North Vernon.
- Assessing the amount of daily auto and truck traffic attracted to the improvement options. The greater the amount of traffic attracted, the better the performance of the option.
- Determining the affect on local circulation resulting from the improvement options – avoiding unintended traffic increases on lower functional class facilities and minimizing adverse travel crossing the proposed improvement.

3.7.3 Community and Environmental Impacts

Community and environmental impacts are always a consideration in the evaluation of improvement options (Build Alternatives). Improvement options that avoid/minimize adverse impacts are preferable to those that have impacts and require mitigation actions.

Typical community impacts are relative to achieving community economic and development goals as expressed in adopted economic development strategies and adopted comprehensive plans and land use zoning. Depending upon the nature of the improvement projects, community concerns may range from

community facilities and services affected through community cohesion to economic impacts on existing businesses.

Environmental impacts cover effects on the socio-economic and natural environment. Socio-economic impacts, impacts on the human environment, typically involve the number of residences and businesses that may be potentially taken for right-of-way, and the potential affect on historic structures and archeological sites. Impacts on the natural environment may include affects on water resources (lakes, rivers, streams, floodplains and groundwater), wetlands, prime agricultural lands, wildlife habitats, managed lands and forests, and hazardous material sites.

3.7.4 Agency Considerations

Agency considerations are those of transportation implementing agencies. Typical concerns are the cost-effectiveness of the investment, maintenance of traffic during construction, constructability and long-term maintenance costs. The NET_BC travel model post-processing tool will be used to identify travel user benefits (reduction in travel time, vehicle-operation costs and crashes) compared to the total cost of the project over time. This will be an important measure in determining the feasibility of the project. The ability to maintain traffic during construction is a consideration when improvement options utilize existing roadway alignments or cross existing roadways. Constructability is the ability to construct the proposed facilities to current INDOT Design Standards relative to curves, grades, interchange and intersection spacing, etc. Long-term maintenance costs are of concern to INDOT due to the statutory limitation on the number of roadway miles that can be maintained by INDOT. Transportation improvements on new alignment may require INDOT to relinquish (pass on) the existing alignment maintenance responsibility to local jurisdictions.

As a part of this study, information will be generated so that INDOT can compare this project to other major transportation investments in the State of Indiana. There are five INDOT Planning Oversight Committee (IPOC) policies that may have relevance to any major transportation improvement -- transportation efficiency, safety, economic development, bypass and urban revitalization.

The IPOC “transportation efficiency” criterion includes five components:

- Cost-Effectiveness Index – This index is derived from calculating measures of direct economic value to the users, including the benefit-cost ratio.

- Corridor Completion – This criterion evaluates how much an individual project contributes to finishing the overall planning corridor.

- Road Classification – This factor is based on the importance of the roadway in providing connectivity and in serving particular functions.

- Mobility – This factor measures the extent the project will reduce traffic congestion and improve travel reliability considering the average daily truck traffic in year 2000, the average daily auto traffic in the year 2000, the existing volume-to-capacity ratio in the year 2000, and the improvement in the LOS with the project in the year 2030.

- Intergovernmental Agreement – Projects with executed intergovernmental agreements for project funding and for acceptance of relinquished roadway receive higher scores.

The IPOC “safety” criterion is based on the potential to reduce crashes based on the existing crash density, severity index and fatality rate ratio.

To measure a roadway improvement project’s influence on future economic development, the project is scored by IPOC on the basis of job creation, job retention, level of investment, cost-effectiveness (project

cost compared to the number of jobs created), and economic distress. Any economic development or job creation must be certain and documented, and cannot be based on speculation according to IPOC protocols. In fact, IPOC requires documentation on the intent of businesses to locate, invest, or create employment contingent upon the construction of the proposed roadway improvement. This feasibility study will provide an assessment of economic impact based on the improvement of accessibility to existing and marketed economic development areas. Relative to economic distress, Jennings County's unemployment rate of 6.7% was 24% above the statewide rate of 5.4% in the year 2005. [3]

The IPOC bypass project selection criterion includes:

- The amount of daily traffic diverted from the existing route.

- Impediments – The number of impediments is the number of recurring congestion points on the current facility that would be avoided by traveling on the proposed bypass. Impediments include congested signalized and unsignalized intersections, reductions in roadway or shoulder width below standard such as at bridges, a drawbridge or a non-grade separated railroad crossing with high train traffic.

- Volume to Capacity Ratio – This is the volume-to-capacity ratio averaged over the length of the existing facility.

- Community Size – The larger the population of the incorporated area being bypassed, the higher the score. Communities with 25,000 or more persons receive the highest score. Population is based on the most recent Decennial Census.

The IPOC scoring system awards additional points for projects that support reinvestment in an urban core by attracting economic development into the city or helping a city to retain existing jobs. Currently, US 50 passes through downtown North Vernon which has an active downtown commercial area, and through the Walnut Street Historic District and the North Vernon Downtown Commercial Historic District.

3.7.5 Public and Agency Input

The input of the public and resource agencies is always important in the development of a possible improvement project. Accordingly, public and agency input is necessary to determine the degree to which an alternative is considered preferable from an environmental and social perspective. The study conformed to INDOT's Streamlined EIS Procedures and the new SAFETEA-LU Section 6002 requirements. These outreach efforts are described in Chapter 7 of this report.

[3] www.stats.indiana.edu

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4. DEFINITION OF ALTERNATIVES

4.1 Development of Preliminary Alternatives

The development of the alternatives for the US 50 – North Vernon Corridor Planning and Environmental Assessment Study began with a broad examination of potential solutions to the transportation needs in the US 50 corridor. The current transportation system, existing and projected traffic conditions, and the mobility needs for the State of Indiana and the Project Study Area were examined in determining the purpose and need for the project. The major concerns were high through traffic volumes (especially trucks) on US 50 through downtown North Vernon, high crash frequency along US 50 from US 31 to the east urban boundary of North Vernon, access to existing and potential commercial and industrial economic growth areas, poor statewide and regional transportation system mobility, and development of Muscatatuck Urban Training Center (MUTC) east of North Vernon near Butlerville. The Indiana Department of Transportation (INDOT) 2030 Long Range Transportation Plan was reviewed to ensure consistency of the proposed improvements to US 50.

The potential solutions to the transportation needs in the US 50 corridor that were initially developed for this project and are further discussed in this document include:

- No-Build Alternative
- Travel Demand Management (TDM) Alternatives
- Transportation System Management (TSM) Alternatives
- Intelligent Transportation System (ITS) Applications
- Mass Transit Alternatives
- Highway Build Alternatives

Following the publication of the Task 1 Report – Identification of Existing and Future Conditions and Issues in March 2007, and the Task 2 Report – Definition of Purpose and Need and Identification of Preliminary Alternatives in June 2007, there were several meetings held to discuss the Preliminary Alternatives. These meetings are further detailed in Section 6.2, Project Milestones and Associated Public Outreach Program, and included the following:

- Community Advisory Committee (CAC) – March 22, 2007
- Section 106 Consulting Parties – March 22, 2007
- Elected Officials Briefing – June 26, 2007
- Public Information Meeting in North Vernon – June 26, 2007
- Resource Agency – June 29, 2007

In addition to information and comments received at the meetings, numerous written comments and comments from the project's website were received. The study team continued to collect and analyze data related to social and environmental impacts for each of the preliminary alternatives. A team of engineers developed proposed lane configurations, intersecting roadway access locations and configurations, more accurate proposed right-of-way limits and preliminary construction cost estimates for each of the alternatives. As the data and comments were analyzed and preliminary engineering and

environmental analysis further developed, a more accurate measure of social and environmental impacts of each of the alternatives was determined. A review of these social and environmental impacts raised concerns within the Project Management Team. Concerns focused around both socioeconomic and environmental impacts.

The Project Management Team made a commitment to respond to comments received from the public, elected officials, involved resource agencies, and consulting parties. This was exhibited during the course of the study as new alternatives and modifications to alternatives were continually investigated. The goal of the development of new alternatives and alternative modifications was to avoid and/or minimize impacts to the environment, residents, businesses and historic properties. The following sections provide a general description of the new and modified alternatives that were developed. Additionally, the socioeconomic and environmental impacts of each of the modified alternatives have been compared with the impacts of the original alternatives. Lastly, a recommendation regarding utilization of the original alternative or modified alternative for the remainder of the study is provided.

4.2 Description of Preliminary Alternatives

4.2.1 No-Build Alternative

The No-Build (No Action or Do Nothing) Alternative is represented by the existing roadway network plus programmed major roadway improvements in the Project Study Area. By definition, the "No-Build" Alternative excludes any major investment in US 50. This alternative is the baseline for comparing "build" alternatives; its inclusion as an alternative is required by the National Environmental Policy Act of 1969 (NEPA).

4.2.2 Travel Demand Management (TDM) Alternatives

Travel Demand Management (TDM) strategies involve actions to spread the peak hours of travel or to encourage the shift to alternative modes of travel to the single-occupancy vehicle. Actions to encourage motorists to shift trips to non-peak hour periods include flexible work hours, flexible workdays, subsidy of alternative modes of transportation and road pricing (toll collection). Actions to encourage shift to alternative modes of travel include trip-reduction ordinances, employer-based trip reduction programs, vanpooling/carpooling, improved transit services and improved bicycle and pedestrian facilities. A trip-reduction ordinance is a legal mechanism that requires the developer of non-residential uses to reduce the typical trips generated by the proposed development through actions to increase vehicle occupancy and to facilitate alternative modes. Employer-based trip reduction programs include:

- Parking management strategies to restrict the number of on-site parking spaces available to employees or charging employees for the use of on-site parking spaces.
- Financial incentives to use alternative modes through the subsidy of vanpooling or carpooling or transit fare subsidies.
- Flexible work schedules (flexible hours, four-day workweek) and flexible work locations (telecommunicating or dispersal to the work site from remote assembly sites).

4.2.3 Transportation System Management (TSM) Alternatives

Transportation System Management (TSM) strategies involve low-cost capital investments to reduce congestion, improve traffic flow, and measures to optimize performance of the existing transportation infrastructure. These strategies involve intersection improvements, signal coordination and timing, lane control (reversible lanes) and one-way pair separating the eastbound and westbound US 50 traffic on parallel streets through North Vernon.

4.2.4 Intelligent Transportation System (ITS) Applications

Intelligent Transportation System (ITS) options include a variety of technology-based programs to actively manage the roadway system. The most common systems provide travel information on roadway conditions to daily commuters via message boards. This enables commuters to adjust travel routes to changing travel conditions. Incident management programs are also part of the ITS toolbox to reduce the effect of accidents and vehicle breakdowns on traffic flow.

4.2.5 Mass Transit Alternatives

Mass transit alternatives include rail, both passenger and freight, or bus service along the US 50 corridor and in North Vernon.

4.2.6 Highway Build Alternatives

Highway "build" alternatives were examined on existing and new alignments:

- US 50 Upgrade Options Utilizing Existing Alignment.
- US 50 Upgrade Options Utilizing Existing and/or New Alignments with New Alignments around North Vernon.

In the development of preliminary alternatives for this project, the Study Area was divided into two sections, a Western Section from US 31 eastward to CR 575 W, and an Eastern Section from CR 575 W to the eastern terminus of the project near the Jennings and Ripley County Line. As preliminary alternatives were developed, CR 575 W became a logical section dividing line as CR 575 W is the location where the western limits of preliminary bypass alternatives around North Vernon began. This division of the Study Area into western and eastern sections is consistent with the INDOT Major Moves Program (see Chapter 2.3 – Committed Projects) that also divides the US 50 corridor within the Study Area into two projects.

4.2.6.1 Western Section Preliminary Alternatives

The Western Section of the Study Area is the portion beginning at the western terminus of the project at US 31 and continuing eastward to CR 575 W, where the Eastern Section begins. This section is considered a rural section as shown in the rural typical section in Figure 4.1. In this segment, the rural typical section will consist of a four-lane limited access facility with two-lanes in each direction. It will have an 84-foot wide depressed median consisting of 76 feet of grass and 4-foot paved inside shoulders on each side, 11-foot outside shoulders (10-foot paved), on a total of approximately 300 feet of limited access right-of-way, with a design speed of 70 mph and posted speed limit of 60 mph or less. In areas within this segment exhibiting more rolling terrain this limited access right-of-way was increased as necessary up to a maximum width of 500 feet. Separate left and right-turn lanes would be provided at intersections, as required.

For the rural Western Section Preliminary Alternatives, access for properties adjacent to US 50 would be purchased where necessary or alternative access utilizing frontage/service roads and joint-use driveways would be provided where possible and practicable. Based on access design criteria for Statewide Mobility Corridors like US 50, intersecting roadways would have full-movement access with at-grade intersections unless the intersecting roadway is located within 730 feet of an intersection presently or anticipated to be signalized. If within 730 feet of a signalized intersection, the intersecting roadway would be restricted to right-in/right-out traffic movements only. The desired spacing for signalized intersections for intersecting roadways is not less than ½ mile. If intersecting roadways fall within the ½ mile spacing, they would not be signalized and traffic movements would be restricted to avoid the need for signalization. These restrictions could include measures such as no left-turns from US 50 to the intersecting roadway, restricted cross movements across US 50 from the intersecting roadway, or permitting right-in/right-out only traffic movements at the intersecting roadway. For Major Commercial Developments, driveways would be allowed if the property owner has no reasonable alternative access and joint-use driveways and frontage roads are infeasible. For all other driveways where alternative access, joint-use driveway or frontage roadway are infeasible, access would be restricted to right-in/right-out only (although left-turn access into driveways may be conditionally approved). For the rural sections of the Western Section Preliminary Alternatives that would be new terrain (away from the existing US 50 corridor), the facility would be limited access with access restricted to full-movement intersecting roadways. Full-movement intersecting roadways would generally not be spaced closer than ½-mile and may be signalized when warranted. Intersecting roadways spaced at less than ½-mile would be restricted and permit right-in/right-out only traffic movements with possible left-turn access from US 50 to the intersecting roadway on a ¼-mile spacing. Where alternative access, joint-use driveways or frontage road are infeasible, property access would be restricted to right-in/right-out only (although left-turn access into driveways may be conditionally approved).

In this Western Section of the Study Area, two preliminary alternatives were initially developed. Referring to Figure 4.2, the first preliminary alternative, Preliminary Alternative W, consists of the addition of travel lanes to existing US 50 with minor realignment of existing US 50 to correct for substandard horizontal and vertical curves where required. The second preliminary alternative, Preliminary Alternative W1, consists of the addition of travel lanes to existing US 50 in the section west of CR 800 W and a new terrain alternative either north or south of existing US 50 in the section east of CR 800 W. In response to comments received from the public, elected officials, involved resource agencies, and consulting parties, two additional preliminary alternatives, Preliminary Alternatives W2 and W3, were added to the range of preliminary alternatives in this section resulting in a total of four including Preliminary Alternatives W, W1, W2 and W3 (see Figure 4.2). Preliminary Alternatives W2 and W3 are similar to Preliminary Alternative W1 in that they consist of the addition of travel lanes to existing US 50 in sections and a new terrain alternative either north or south of existing US 50 in other sections. For Preliminary Alternative W2, the addition of travel lanes to existing US 50 would be in the section from US 31 to east of Mutton Creek, approximately 1-mile east of US 31, and the new terrain section would be in the section from east of Mutton Creek, approximately 1-mile east of US 31, to CR 575 W. For Preliminary Alternative W3, the addition of travel lanes to existing US 50 would be in the section west of CR 900 W and the new terrain section would be in the section east of CR 900 W.

A fifth Western Section preliminary alternative was suggested in comments from the public and involved agencies. These comments focused on an alternative that would be north of and parallel to existing US 50. It would begin at a new interchange location at I-65 and continue eastward to North Vernon where it would connect to any of the northern North Vernon bypass alternatives. This alternative would also be a rural, new terrain facility as shown in Figure 4.1. INDOT policy regarding interchange spacing in rural areas requires a minimum of 3 miles between interchanges making this alternative a minimum of 3 miles north of existing US 50. This fifth western section preliminary alternative was evaluated and it was found that this alternative did not provide connectivity to US 50 west of I-65 as it would relocate US 50 approximately 3 miles north of the existing US 50 continuing west of I-65. It would also have significantly higher environmental impacts and associated construction and maintenance costs as it would be the only alternative under consideration that would include a new interchange location at I-65. For these reasons, this alternative was not added to the range of alternatives being considered for this project.

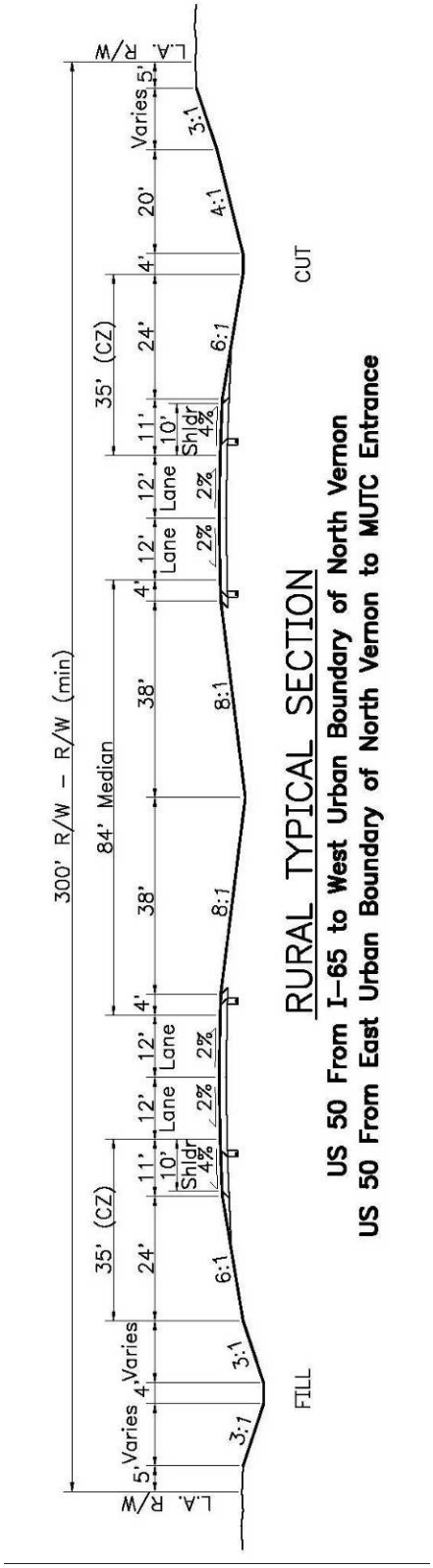


Figure 4.1: Rural Typical Section

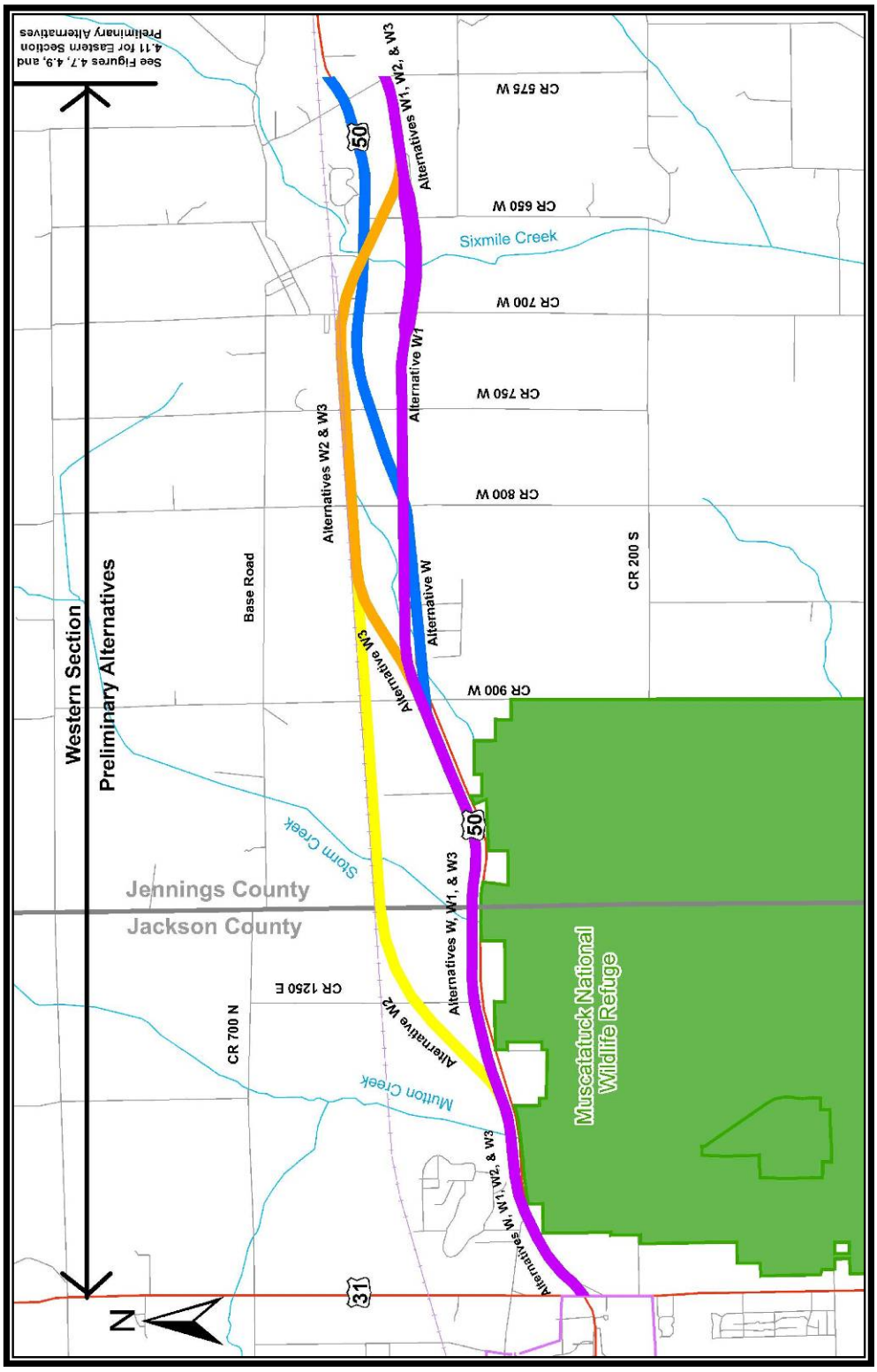


Figure 4.2: Western Section Preliminary Alternatives W, W1, W2 and W3

Western Section Preliminary Alternative W

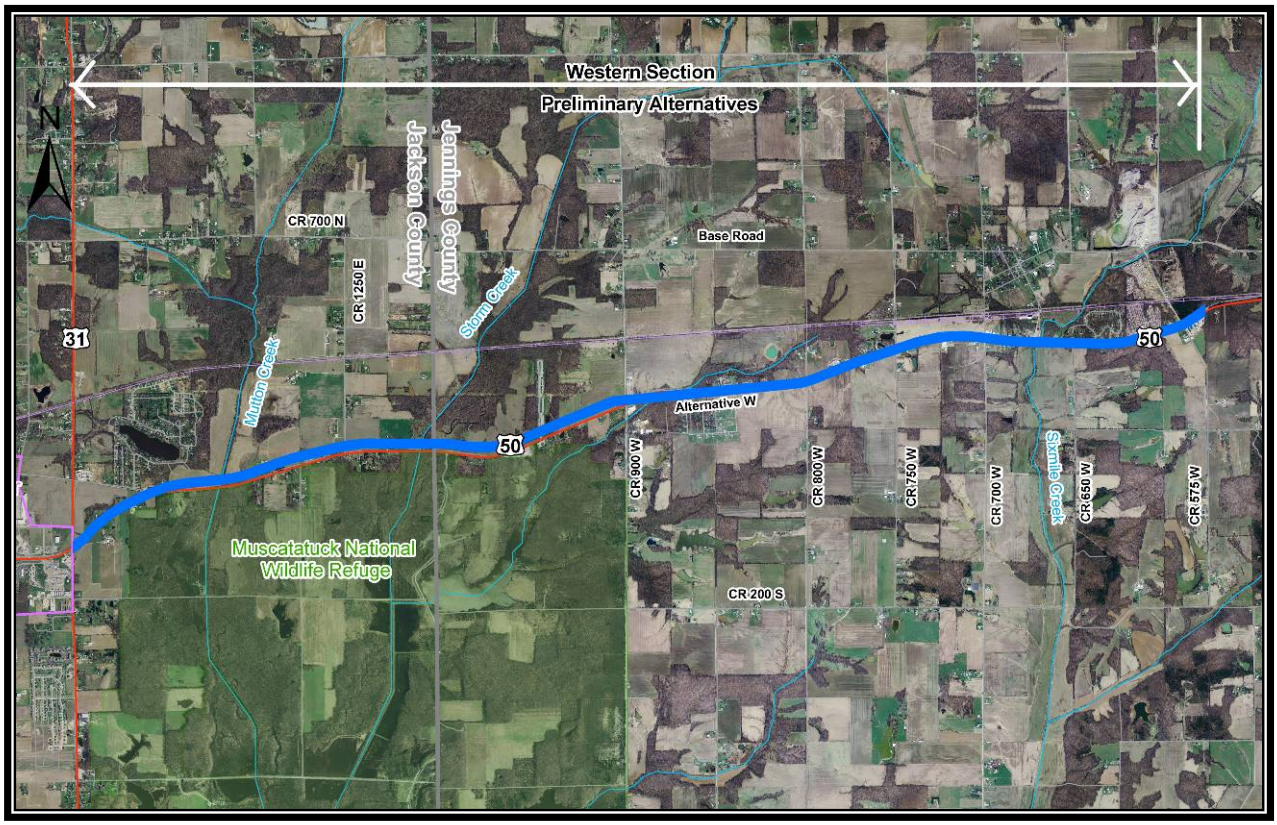


Figure 4.3: Western Section Preliminary Alternative W

Preliminary Alternative W consists of the addition of travel lanes along existing US 50. In general, this alternative would utilize the location of existing US 50 as future eastbound lanes and future westbound lanes for the alternative would be constructed north of the existing roadway. A majority of the new right-of-way required for this alternative would be along the north side of existing US 50; however, some sections of this alternative would require additional new right-of-way along both the north and south sides of existing US 50.

The alternative begins on the east approach to the existing US 50 and US 31 intersection in Jackson County and follows the existing US 50 alignment eastward. As it approaches the Muscatatuck National Wildlife Refuge property boundary, approximately 0.5 miles east of US 31, it shifts slightly northward so that the existing US 50 south right-of-way line is maintained in front of the wildlife refuge and all widening associated with the added travel lanes is north of and adjacent to existing US 50. Continuing eastward, this northern shift of the corridor would be maintained to a point approximately 0.5 miles east of the Jackson and Jennings County Line where the alternative would shift southward to the existing US 50 location. The alternative continues eastward generally following the existing US 50 alignment and terminates at CR 575 W where it would connect to any of the Eastern Section Preliminary Alternatives discussed below. This alternative would be a rural facility as shown in Figure 4.1. It would include new bridges over Mutton Creek at the existing US 50 bridge location, new bridges over Storm Creek at the Jackson and Jennings County Line at the existing US 50 bridge location and new bridges over Sixmile Creek the existing US 50 bridge location. The alternative is approximately 6.4 miles in length.

Western Section Preliminary Alternative W1

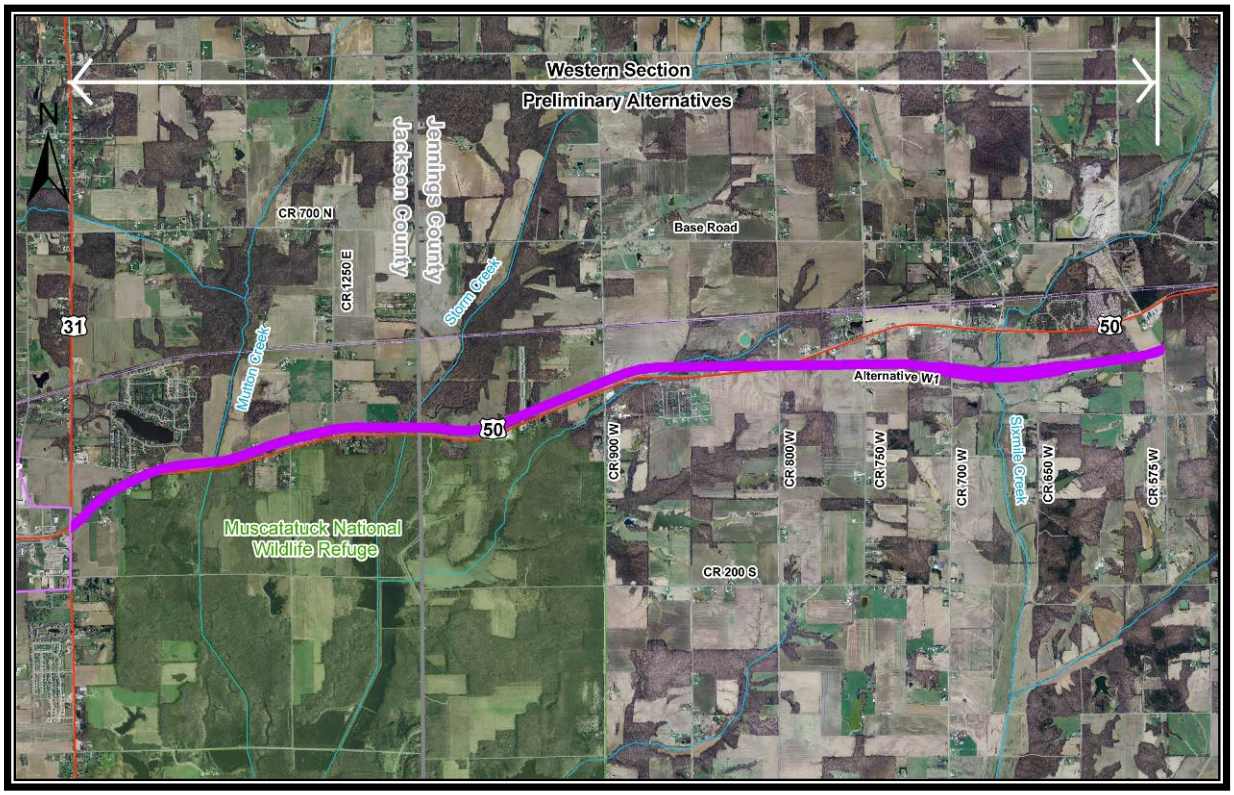


Figure 4.4: Western Section Preliminary Alternative W1

Preliminary Alternative W1 consists of the addition of travel lanes to existing US 50 in the section east of CR 800 W and a new terrain alternative either north or south of existing US 50 in the section west of CR 800 W. In sections, this alternative would utilize the location of existing US 50 as future eastbound lanes and future westbound lanes for the alternative would be constructed north of the existing roadway. Other sections would depart the existing US 50 corridor and become a new terrain corridor. When following the alignment of existing US 50, a majority of the new right-of-way required for this alternative would be along the north side of existing US 50; however, some sections of this alternative would require additional new right-of-way along both the north and south sides of existing US 50.

The alternative begins on the east approach to the existing US 50 and US 31 intersection in Jackson County and follows the existing US 50 alignment eastward. As it approaches the Muscatatuck National Wildlife Refuge property boundary, approximately 0.5 miles east of US 31, it shifts slightly northward so that the existing US 50 south right-of-way line is maintained in front of the wildlife refuge and all widening associated with the added travel lanes is north of and adjacent to existing US 50. Continuing eastward, this northern shift of the corridor is maintained to CR 800 W where the alternative would shift southward, leaving the existing US 50 corridor and become a new terrain facility. As the alternative continues eastward, it parallels and is located approximately ¼ mile south of the existing US 50 corridor, and terminates at CR 575 W where it would connect to any of the Eastern Section Preliminary Alternatives discussed below. This alternative would be a rural facility as shown in Figure 4.1. It would include new bridges over Mutton Creek at the existing US 50 bridge location, new bridges over Storm Creek at the Jackson and Jennings County Line at the existing US 50 bridge location and new bridges over Sixmile Creek at a location approximately ¼ mile south of the existing US 50 bridge location. The alternative is approximately 7.0 miles in length.

Western Section Preliminary Alternative W2

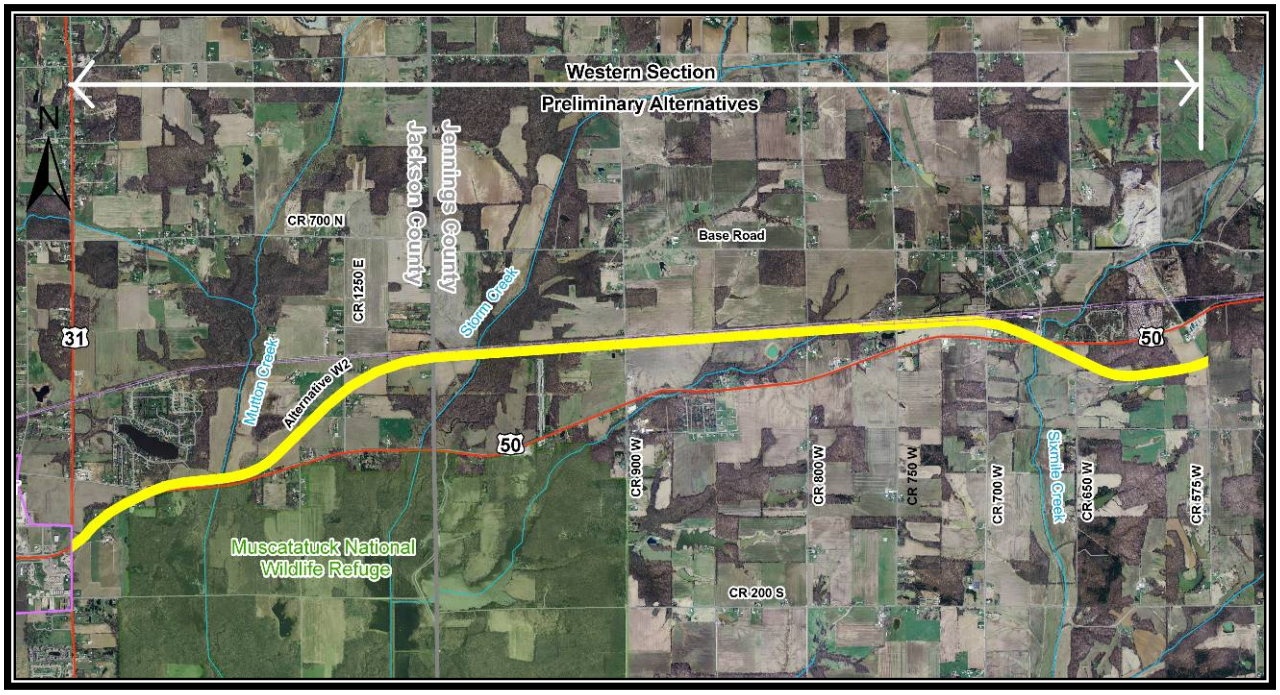


Figure 4.5: Western Section Preliminary Alternative W2

Preliminary Alternative W2 consists of the addition of travel lanes to existing US 50 in the section west of Mutton Creek and a new terrain alternative either north or south of existing US 50 in the section east of Mutton Creek. In sections, this alternative would utilize the location of existing US 50 as future eastbound lanes and future westbound lanes for the alternative would be constructed north of the existing roadway. Other sections would depart the existing US 50 corridor and become a new terrain corridor. When following the alignment of existing US 50, a majority of the new right-of-way required for this alternative would be along the north side of existing US 50; however, some sections of this alternative would require additional new right-of-way along both the north and south sides of existing US 50.

The alternative begins on the east approach to the existing US 50 and US 31 intersection in Jackson County and follows the existing US 50 alignment eastward. As it approaches the Muscatatuck National Wildlife Refuge property boundary, approximately 0.5 miles east of US 31, it shifts slightly northward so that the existing US 50 south right-of-way line is maintained in front of the wildlife refuge and all widening associated with the added travel lanes is north of and adjacent to existing US 50. Continuing eastward, this northern shift of the corridor is maintained to east of the Mutton Creek crossing (approximately 1 mile east of US 31), where it takes a northeasterly turn and departs the existing US 50 corridor becoming a new terrain facility. The alternative continues northeasterly to near the Jackson and Jennings County Line where it makes an easterly turn and parallels the south right-of-way line for the CSX railroad. The alternative continues eastward, paralleling the south right-of-way for the CSX railroad, to a point approximately ½ mile west of CR 700 W, near Hayden, where the alternative makes a southeasterly turn. It continues southeasterly, crossing existing US 50 at the existing US 50 crossing of Sixmile Creek and then makes an easterly turn and continues eastward, paralleling existing US 50 and located approximately ¼ mile south of the existing US 50 corridor. The alternative terminates at CR 575 W where it would connect to any of the Eastern Section Preliminary Alternatives discussed below. This alternative would be a rural facility as shown in Figure 4.1. It would include new bridges over Mutton Creek at the existing US 50 bridge location, new bridges over Storm Creek at the Jackson and Jennings County Line at a location approximately ¾ mile north of the existing US 50 bridge location and new bridges over Sixmile Creek at the existing US 50 bridge location. The alternative is approximately 7.2 miles in length.

Western Section Preliminary Alternative W3

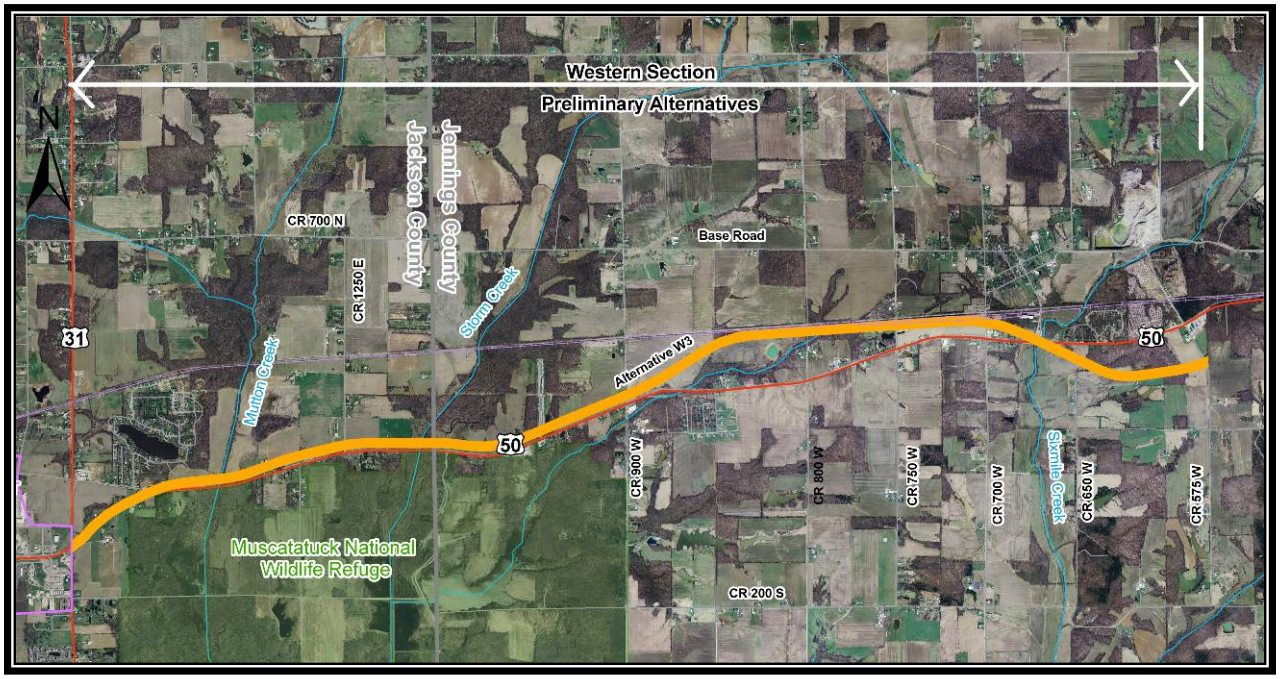


Figure 4.6: Western Section Preliminary Alternative W3

Preliminary Alternative W3 consists of the addition of travel lanes to existing US 50 in the section east of CR 900 W and a new terrain alternative either north or south of existing US 50 in the section east of CR 900 W. In sections, this alternative would utilize the location of existing US 50 as future eastbound lanes and future westbound lanes for the alternative would be constructed north of the existing roadway. Other sections would depart the existing US 50 corridor and become a new terrain corridor. When following the alignment of existing US 50, a majority of the new right-of-way required for this alternative would be along the north side of existing US 50; however, some sections of this alternative would require additional new right-of-way along both the north and south sides of existing US 50.

The alternative begins on the east approach to the existing US 50 and US 31 intersection in Jackson County and follows the existing US 50 alignment eastward. As it approaches the Muscatatuck National Wildlife Refuge property boundary, approximately 0.5 miles east of US 31, it shifts slightly northward so that the existing US 50 south right-of-way line is maintained in front of the wildlife refuge and all widening associated with the added travel lanes is north of and adjacent to existing US 50. Continuing eastward, this northern shift of the corridor is maintained to near CR 900 W where it takes a northeasterly turn and departs the existing US 50 corridor becoming a new terrain facility. The alternative continues northeasterly to approximately ½ mile west of CR 800 W where it makes an easterly turn and parallels the south right-of-way line for the CSX railroad. The alternative continues eastward, paralleling the south right-of-way for the CSX railroad, to a point approximately ½ mile west of CR 700 W, near Hayden, where the alternative makes a southeasterly turn. It continues southeasterly, crossing existing US 50 at the existing US 50 crossing of Sixmile Creek and then makes an easterly turn and continues eastward, paralleling existing US 50 and located approximately ¼ mile south of the existing US 50 corridor. The alternative terminates at CR 575 W where it would connect to any of the Eastern Section Preliminary Alternatives discussed below. This alternative would be a rural facility as shown in Figure 4.1. It would include new bridges over Mutton Creek at the existing US 50 bridge location, new bridges over Storm Creek at the Jackson and Jennings County Line at the existing US 50 bridge location and new bridges over Sixmile Creek at the existing US 50 bridge location. The alternative is approximately 7.2 miles in length.

4.2.6.2 Eastern Section Preliminary Alternatives

The Eastern Section of the Study Area begins at the eastern terminus of the Western Section of the Study Area at CR 575 W and continues eastward either through or around the North Vernon area to the eastern terminus of the project near the Jennings and Ripley County Line. Portions of this Eastern Section are considered rural and a portion is considered urban. The portion of this Eastern Section from CR 575 W, eastward to the West Urban Boundary of North Vernon at CR 15 N, as well as the portion from the East Urban Boundary of North Vernon at the Muscatatuck River eastward to the Jennings and Ripley County Line, are considered a rural section as shown in the rural typical section in Figure 4.1. In these segments, the rural typical section will consist of a four-lane limited access facility with two-lanes in each direction. It will have an 84-foot wide depressed median consisting of 76 feet of grass and 4-foot paved inside shoulders on each side, 11-foot outside shoulders (10-foot paved), on a total of approximately 300 feet of limited access right-of-way, with a design speed of 70 mph and posted speed limit of 60 mph or less. In areas within this segment exhibiting more rolling terrain this limited access right-of-way was increased as necessary up to a maximum width of 500 feet. Separate left and right-turn lanes would be provided at intersections, as required.

For the portions of the rural Eastern Section Preliminary Alternatives that are along the existing US 50 corridor, access for properties adjacent to US 50 would be purchased where necessary or alternative access utilizing frontage/service roads and joint-use driveways would be provided where possible and practicable. Based on access design criteria for Statewide Mobility Corridors like US 50, intersecting roadways would have full-movement access with at-grade intersections unless the intersecting roadway is located within 730 feet of an intersection presently or anticipated to be signalized. If within 730 feet of a signalized intersection, the intersecting roadway would be restricted to right-in/right-out traffic movements only. The desired spacing for signalized intersections for intersecting roadways is not less than ½ mile. If intersecting roadways fall within the ½ mile spacing, they would not be signalized and traffic movements would be restricted to avoid the need for signalization. These restrictions could include measures such as no left-turns from US 50 to the intersecting roadway, restricted cross movements across US 50 from the intersecting roadway, or permitting right-in/right-out only traffic movements at the intersecting roadway. For Major Commercial Developments, driveways not less than ½ mile from existing crossroads would be allowed if the property owner has no reasonable alternative access and joint-use driveways and frontage roads are infeasible. For all other driveways where alternative access, joint-use driveway or frontage roadway are infeasible, access would be restricted to right-in/right-out only (although left-turn access into driveways may be conditionally approved). For rural sections of the Eastern Section Preliminary Alternatives that would be new terrain (away from the existing US 50 corridor), the facility would be limited access with access restricted to full-movement intersecting roadways. Full-movement intersecting roadways would generally not be spaced closer than ½-mile and may be signalized when warranted. Intersecting roadways spaced at less than ½-mile would be restricted and permit right-in/right-out only traffic movements with possible left-turn access from US 50 to the intersecting roadway on a ¼-mile spacing. Where alternative access, joint-use driveways or frontage roads are infeasible, property access would be restricted to right-in/right-out only (although left-turn access into driveways may be conditionally approved).

For the segment thru North Vernon, from the Western Urban Boundary at CR 15 N to the East Urban Boundary at the Muscatatuck River, the US 50 corridor is considered urban. Two preliminary alternatives were developed that utilize the existing US 50 corridor through North Vernon. These included the Added Travel Lanes Through North Vernon Alternative and the One-Way Pair Through North Vernon Alternative. Five North Vernon "bypass" alternatives were also developed for the Eastern Section of the Study Area consisting of four northern bypass alternatives, Preliminary Alternatives A, B, C and D, and one southern bypass alternative, Preliminary Alternative E.

The Added Travel Lanes Through North Vernon Alternative (see Figure 4.7) consists of adding travel lanes (major widening) along existing US 50 through the urban area of North Vernon. In this segment, the urban typical section, as shown in Figure 4.8, consists of a four-lane facility with two-lanes in each direction. It will have a 14-foot paved median that will be utilized as a two-way left turn-lane, concrete

curb and gutter along the outside edges of pavement, a 4-foot grass utility strip separating the curb from the 6-foot concrete sidewalk, on a total of approximately 110 feet right-of-way, with a design speed of 35 mph. For this alternative, there would be no change in driveway access control in the section of existing US 50 through the urban area of North Vernon.

The One-Way Pair Through North Vernon Alternative (see Figure 4.9) consists of separating the existing US 50 eastbound and westbound traffic onto separate parallel streets through the urban area of North Vernon. The system of one-way pair roadways would begin on the west side of greater downtown North Vernon area near the US 50 (Walnut Street) and Poplar Street intersection. The system of one-way pair roadways would terminate on the east side of the greater downtown North Vernon area near the existing US 50 (Walnut/Buckeye Street) and Short/Madison Street intersection. The eastbound US 50 travel lanes would be maintained along the existing US 50 (Walnut Street) alignment and the existing roadway would likely be utilized with minor modifications to pavement markings, signing and traffic signals to accommodate the one-way traffic. For this alternative, the westbound US 50 travel lanes would be relocated north to Poplar Street and the urban typical section, as shown in Figure 4.11, would be utilized. It will consist of a two-lane one-way facility with additional lanes for parking on both sides. It will have concrete curb and gutter along the outside edges of pavement, a 4-foot grass utility strip separating the curb from the 6-foot concrete sidewalk, on a total of approximately 80 feet right-of-way, with a design speed of 35 mph. For this alternative, in the section of existing US 50 through the urban area of North Vernon, there will be no change in driveway access control except where new right-of-way is required for the transitions from Poplar Street back to US 50 which would be limited access.

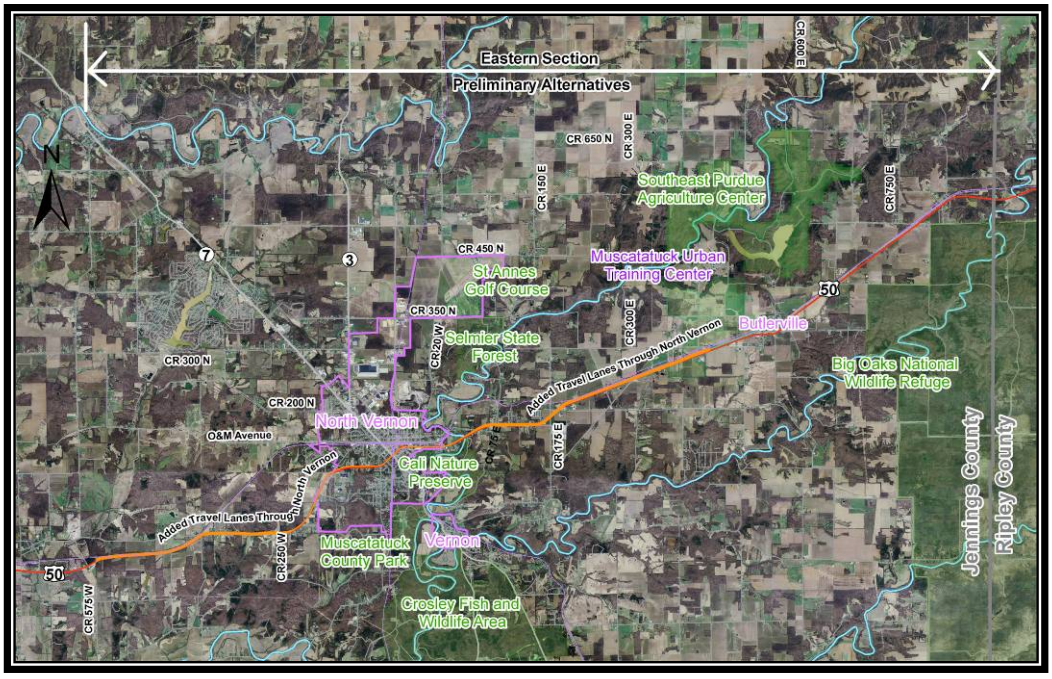
In addition to these two through-town preliminary alternatives, five preliminary bypass alternatives around North Vernon (Alternatives A through E) were identified (see Figure 4.11). The five preliminary limited-access alternatives that were evaluated in the Eastern Section include:

- Four northern alternatives (Alternatives A, B, C, and D)
- One southern alternative (Alternative E)

It should be noted that the Jennings County Thoroughfare Plan was adopted as part of the *Jennings County Comprehensive Plan* (November 1, 1994) and identified three alternative North Vernon bypass routes. Consideration was given to these three alternatives in the development of preliminary alternatives for this corridor study. Preliminary Alternative A closely represents the Far North bypass alternative identified in the Jennings County Thoroughfare Plan. Preliminary Alternative B closely represents the Near North bypass alternative identified in the Jennings County Thoroughfare Plan. Preliminary Alternative E closely represents the South bypass alternative identified in the Jennings County Thoroughfare Plan.

For the sections of the Eastern Section Preliminary Alternatives that would be new terrain (away from the existing US 50 corridor), the facility would be limited access with access restricted to full-movement intersecting roadways. Full-movement intersecting roadways would generally not be spaced closer than ½-mile and may be signalized when warranted. Intersecting roadways spaced at less than ½-mile would be restricted and permit right-in/right-out only traffic movements with possible left-turn access from US 50 to the intersecting roadway on a ¼-mile spacing. Where alternative access, joint-use driveways or frontage roads are infeasible, property access would be restricted to right-in/right-out only (although left-turn access into driveways may be conditionally approved).

Eastern Section Added Travel Lanes Through North Vernon Alternative



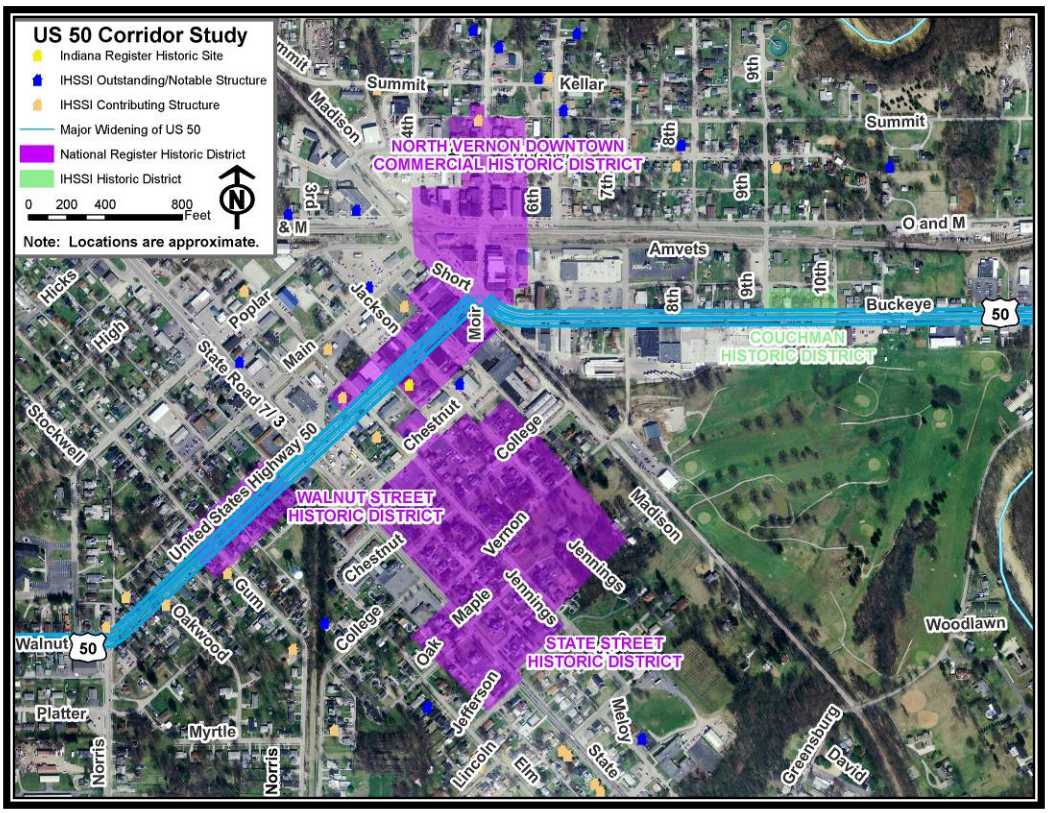


Figure 4.7: Eastern Section Added Travel Lanes Through North Vernon

The **Added Travel Lanes Through North Vernon Alternative** consists of adding travel lanes (major widening) along existing US 50 through the urban area of North Vernon. The alternative would begin as a rural four-lane facility (see Figure 4.1) at CR 575 W, where it would connect to any of the Western Section Preliminary Alternatives discussed above. It would follow the existing US 50 alignment eastward to the West Urban Boundary for North Vernon at CR 15 N. This rural section of the alternative would utilize the location of the existing US 50 corridor and would include widening on both the north and south sides of the existing roadway. It will have an 84-foot wide depressed median consisting of 76 feet of grass and 4-foot paved inside shoulders on each side, 11-foot outside shoulders (10-foot paved), on a total of approximately 300 feet of right-of-way, with a design speed of 70 mph and posted speed limit of 60 mph or less. In areas within this segment exhibiting more rolling terrain this right-of-way was increased as necessary up to a maximum width of 500 feet. Separate left and right-turn lanes would be provided at intersections, as required. New right-of-way would be required in this section along both the north and south sides of existing US 50. Access for properties adjacent to US 50 would be purchased where necessary or alternative access utilizing frontage/service roads and joint-use driveways would be provided where possible and practicable.

The section from the West Urban Boundary for North Vernon at CR 15 N to the East Urban Boundary for North Vernon at the Muscatatuck River would be considered an urban five-lane facility (see Figure 4.8). In this urban section, the alternative would follow the existing US 50 corridor and would include widening on both the north and south sides of the existing roadway. New right-of-way would be required in this section along both the north and south sides of existing US 50. There would be no change in driveway access control in the section of existing US 50 through the urban area of North Vernon, from the US 50 (Walnut Street) and Poplar Street intersection to the US 50 (Walnut/Buckeye Street) and Short/Madison Street intersection. Access for properties adjacent to US 50 outside of the urban area of North Vernon would be purchased where necessary or alternative access utilizing frontage/service roads and joint-use driveways would be provided where possible and practicable.

The section from the East Urban Boundary of North Vernon at the Muscatatuck River eastward to just east of the MUTC entrance at US 50 will also be a rural, four-lane facility as shown in Figure 4.1. In the section west of CR 175 E, the alternative would utilize the location of the existing US 50 corridor and would include widening on both the north and south sides of the existing roadway. In the section east of CR 175 E, the alternative would be parallel and adjacent to the CSX railroad right-of-way. It would utilize the location of existing US 50 as future westbound lanes and future eastbound lanes for the alternative would be constructed south of the existing roadway. A majority of the new right-of-way required in this section of the alternative would be along the south side of existing US 50, parallel and adjacent to the CSX railroad southern right-of-way; however, some areas would require additional new right-of-way along both the north and south sides of existing US 50. Access for properties adjacent to US 50 would be purchased where necessary or alternative access utilizing frontage/service roads and joint-use driveways would be provided where possible and practicable.

This alternative would include improvements to numerous unsignalized and signalized intersections, new bridges over the Muscatatuck River at the existing US 50 bridge location and would retain the at-grade crossing of the railroad at the US 50 and Madison Avenue/Short Street/5th Street intersection. The alternative is approximately 11.6 miles in length.

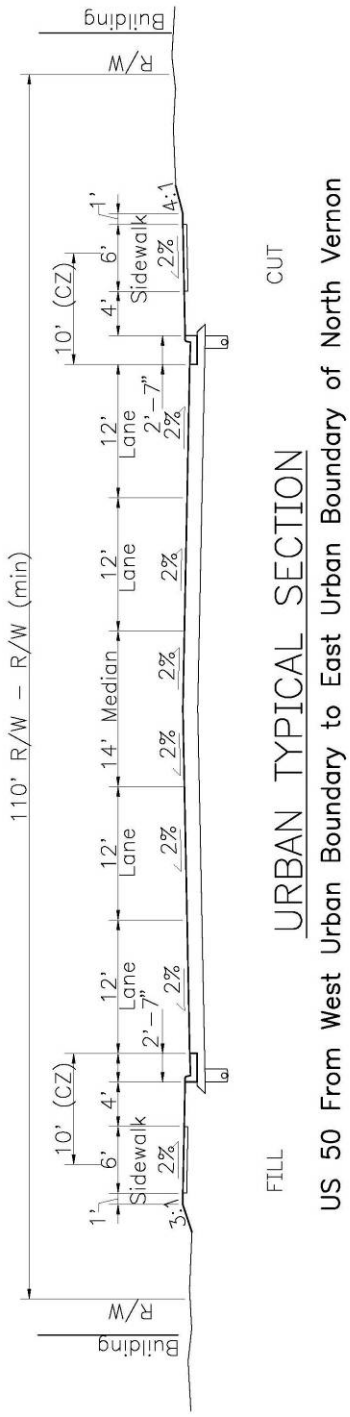


Figure 4.8: Urban Typical Section, Eastern Section Added Travel Lanes Through North Vernon

Eastern Section One-Way Pair Through North Vernon Alternative

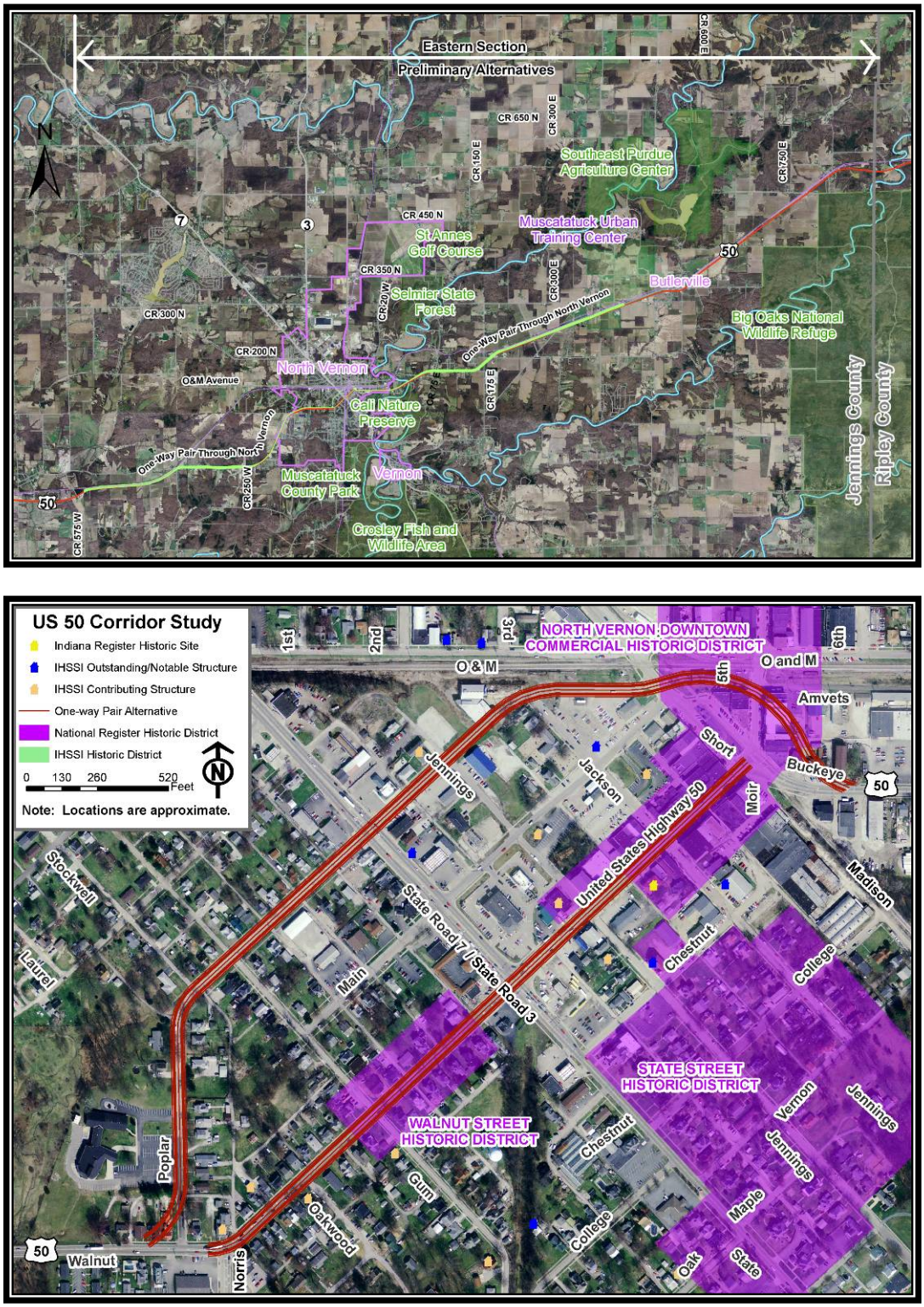


Figure 4.9: Eastern Section One-Way Pair Through North Vernon

The **One-Way Pair Through North Vernon Alternative** consists of separating the existing US 50 eastbound and westbound traffic onto separate parallel streets through the urban area of North Vernon. The alternative would begin as a rural four-lane facility (see Figure 4.1) at CR 575 W, where it would connect to any of the Western Section Preliminary Alternatives discussed above. It would follow the existing US 50 alignment eastward to the West Urban Boundary for North Vernon at CR 15 N. This rural section of the alternative would utilize the location of the existing US 50 corridor and would include widening on both the north and south sides of the existing roadway. Separate left and right-turn lanes would be provided at intersections, as required. New right-of-way would be required in this section along both the north and south sides of existing US 50. Access for properties adjacent to US 50 would be purchased where necessary or alternative access utilizing frontage/service roads and joint-use driveways would be provided where possible and practicable.

The section from the West Urban Boundary for North Vernon at CR 15 N to the beginning of the one-way pair at the US 50 (Walnut Street) and Poplar Street intersection would be considered an urban five-lane facility (see Figure 4.8). In this urban section, the alternative would follow the existing US 50 corridor and would include widening on both the north and south sides of the existing roadway. New right-of-way would be required in this section along both the north and south sides of existing US 50. Access for properties adjacent to US 50 would be purchased where necessary or alternative access utilizing frontage/service roads and joint-use driveways would be provided where possible and practicable.

The system of one-way pair roadways would begin on the west side of the greater downtown North Vernon area near the US 50 (Walnut Street) and Poplar Street intersection. The system of one-way pair roadways would terminate on the east side of the greater downtown North Vernon area near the existing US 50 (Walnut/Buckeye Street) and Short/Madison Street intersection. The eastbound US 50 travel lanes would be maintained along the existing US 50 (Walnut Street) alignment beginning at Norris Avenue, following US 50 (Walnut Street) through the greater downtown North Vernon area, and terminate at Short/Madison Street. The existing roadway would likely be utilized with minor modifications to pavement markings, signing and traffic signals to accommodate the one-way traffic. New right-of-way would likely not be required and on-street parking along Walnut Street (existing US 50), which exists today between State Street and Madison Street, will remain unchanged. For the existing three-lane section of Walnut Street from Norris Avenue to State Street, on-street parking may be added on one side. The westbound US 50 travel lanes would be redirected northward to Poplar Street. This redirection would begin just east of the US 50 (Walnut/Buckeye Street) intersection with Short/Madison Street and would require the realignment of westbound US 50 in this area to provide a better angle of intersection with westbound US 50 and the Madison Railroad grade crossing. Westbound US 50 would then follow Poplar Street through the greater downtown North Vernon area and would terminate at the existing US 50 (Walnut Street) and Poplar Street intersection, just west of Norris Avenue. For the westbound lanes, Poplar Street would likely require reconstruction so that the pavement would be able to withstand the increased traffic volumes and additional truck loadings. For Poplar Street, the urban typical section, as shown in Figure 4.11, will consist of a two-lane one-way facility with additional lanes for parking on both sides. It will have concrete curb and gutter along the outside edges of pavement, a 4-foot grass utility strip separating the curb from the 6-foot concrete sidewalk, on a total of approximately 80 feet of right-of-way, with a design speed of 35 mph. There would be no change in driveway access control in the section of existing US 50 through the urban area of North Vernon, from the US 50 (Walnut Street) and Poplar Street intersection to the US 50 (Walnut/Buckeye Street) and Short/Madison Street intersection. The existing right-of-way may be adequate in many portions of Poplar Street to accommodate the new roadway; however, new right-of-way would be required in the realignment sections and in other locations.

The section from the East Urban Boundary of North Vernon at the Muscatatuck River eastward to just east of the MUTC entrance at US 50 will also be a rural, four-lane facility as shown in Figure 4.1. In the section west of CR 175 E, the alternative would utilize the location of the existing US 50 corridor and would include widening on both the north and south sides of the existing roadway. In the section east of CR 175 E, the alternative would be parallel and adjacent to the CSX railroad right-of-way. It would utilize the location of existing US 50 as future westbound lanes and future eastbound lanes for the alternative would be constructed south of the existing roadway. A majority of the new right-of-way required in this

section of the alternative would be along the south side of existing US 50, parallel and adjacent to the CSX railroad southern right-of-way; however, some areas would require additional new right-of-way along both the north and south sides of existing US 50. Access for properties adjacent to US 50 would be purchased where necessary or alternative access utilizing frontage/service roads and joint-use driveways would be provided where possible and practicable.

This alternative would include improvements to numerous unsignalized and signalized intersections, new bridges over the Muscatatuck River at the existing US 50 bridge location and would retain the at-grade crossing of the railroad at the Walnut Street and Madison Avenue/Short Street/5th Street intersection for eastbound US 50 traffic and would have an additional at-grade crossing of the railroad at the Walnut Street and Madison Avenue/Short Street/5th Street intersection for westbound US 50 traffic. The alternative is approximately 12.2 miles in length.

During the development of this alternative, the Project Management Team investigated the possibility of utilizing other parallel roadways through North Vernon as potential one-way pair systems. In general, a system of one-way pair roadways will function more effectively and has better connectivity if the parallel roadways are in close proximity to each other, typically separated by no more than a block or two. The Madison Railroad that runs north and south along Short Street; the CSX railroad that runs east and west, paralleling existing US 50, O&M Avenue and a portion of Hayden Pike; as well as the presence of National Register Historic Districts (NR) in the downtown area introduced difficulties with the development of many of the potential one-way pair facilities. In general, the other one-way pair options that were investigated tended to be farther away from existing US 50 (Walnut Street) than is desired.

A one-way pair option was considered that consisted of a combination of Hayden Pike and O&M Avenue for westbound US 50 traffic and existing US 50 (Walnut/Buckeye Street) for eastbound traffic that would begin at the US 50 and Hayden Pike intersection on the west side of North Vernon. From this point eastward, eastbound US 50 traffic would follow existing US 50 (Walnut/Buckeye Street) and westbound traffic would follow Hayden Pike. As Hayden Pike approaches the CSX railroad, the westbound lanes would depart Hayden Pike and cross the CSX railroad with an at-grade crossing and follow O&M Avenue eastward and cross the CSX railroad with an at-grade crossing near the intersection of O&M Avenue and North Greensburg Street. It would then terminate at existing US 50 (Buckeye Street). (See Figure 4.10) For this one-way pair option, the location of the CSX railroad separating the potential one-way pair roadways not only added to the difficulties of connectivity between the eastbound and westbound lanes, but also introduced two additional at-grade railroad crossings to westbound traffic. O&M Avenue is located in very close proximity to the CSX railroad. Due to this, the at-grade railroad crossings would be at an angle of intersection that would provide poor sight distance for drivers looking down the railroad and would introduce safety issues at the crossings. To correct this sight distance problem, a major relocation of O&M Avenue at both crossing locations would be required. The addition of at-grade railroad crossings would also introduce additional delays in westbound traffic flow when trains were moving through town. There are also difficulties with access to SR 3/SR 7 (State Street) related to the railroad overpass and significant impacts to the NR North Vernon Downtown Commercial Historic District associated with this option. Due to these reasons, the one-way pair system consisting of existing US 50 (Walnut/Buckeye Street) for eastbound traffic and Hayden Pike and O&M Avenue for westbound traffic was not considered.

Another one-way pair option that was considered consisted of a combination of Hayden Pike and Short Street for westbound traffic and existing US 50 (Walnut Street) for eastbound traffic that would begin at the US 50 and Hayden Pike intersection on the west side of North Vernon. From this point eastward, eastbound US 50 traffic would follow existing US 50 (Walnut Street) and westbound traffic would follow Hayden Pike to Short Street where it would turn south and terminate at the US 50 (Walnut Street) intersection with Madison Street/Short Street/ 5th Street. While this option would eliminate the at-grade crossings of the CSX railroad associated with the O&M Avenue option, it would retain the existing at-grade railroad crossing at Madison Street/Short Street/5th Street, would be separated by several blocks and lack connectivity and would have significant impacts to the NR North Vernon Downtown Commercial Historic District. Due to these reasons, the one-way pair system consisting of existing US 50 (Walnut Street) for eastbound traffic and Hayden Pike and Short Street for westbound traffic was not considered.

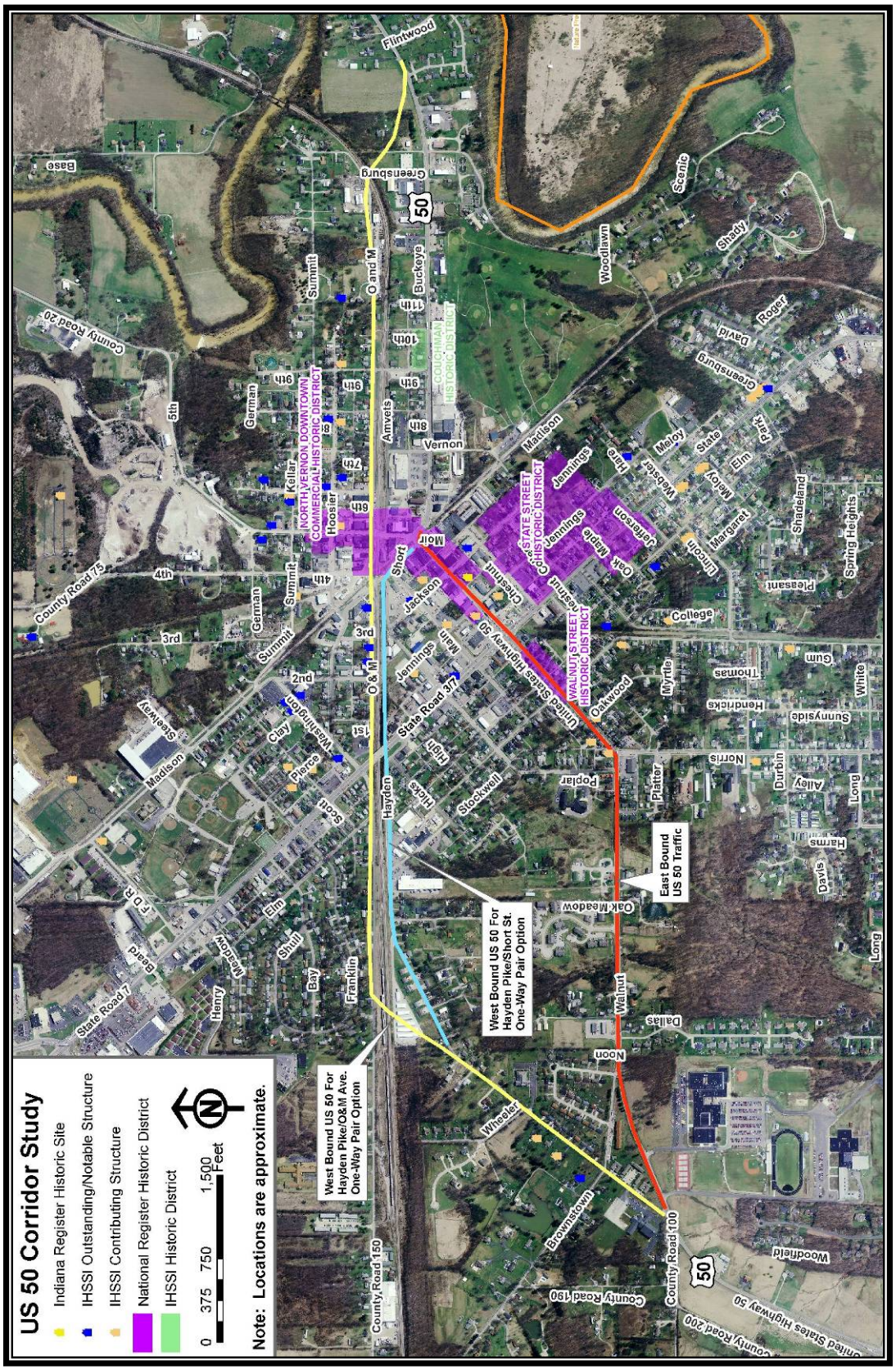


Figure 4.10: Additional One-Way Pair Options Considered

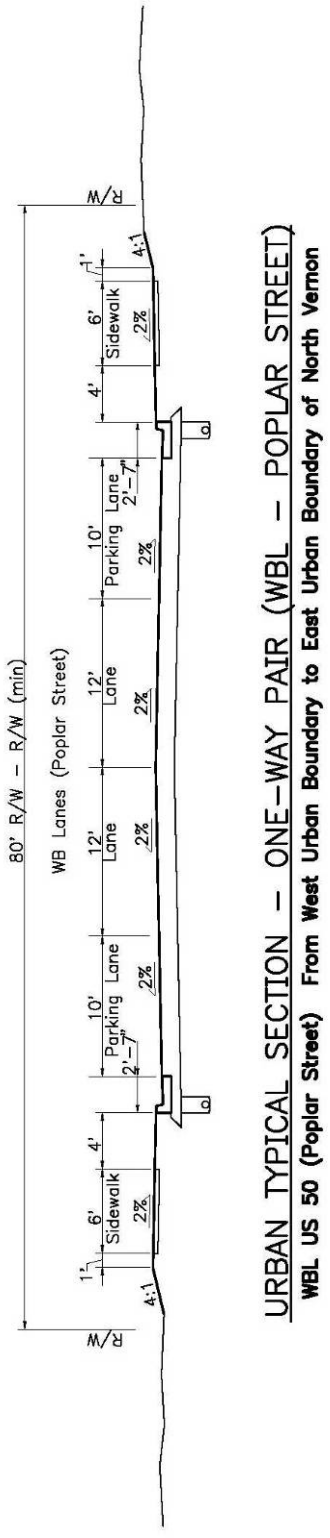


Figure 4.11: Urban Typical Section, Eastern Section One-Way Pair through North Vernon (Poplar Street (WB US 50))

Eastern Section Preliminary Bypass Alternative Around North Vernon

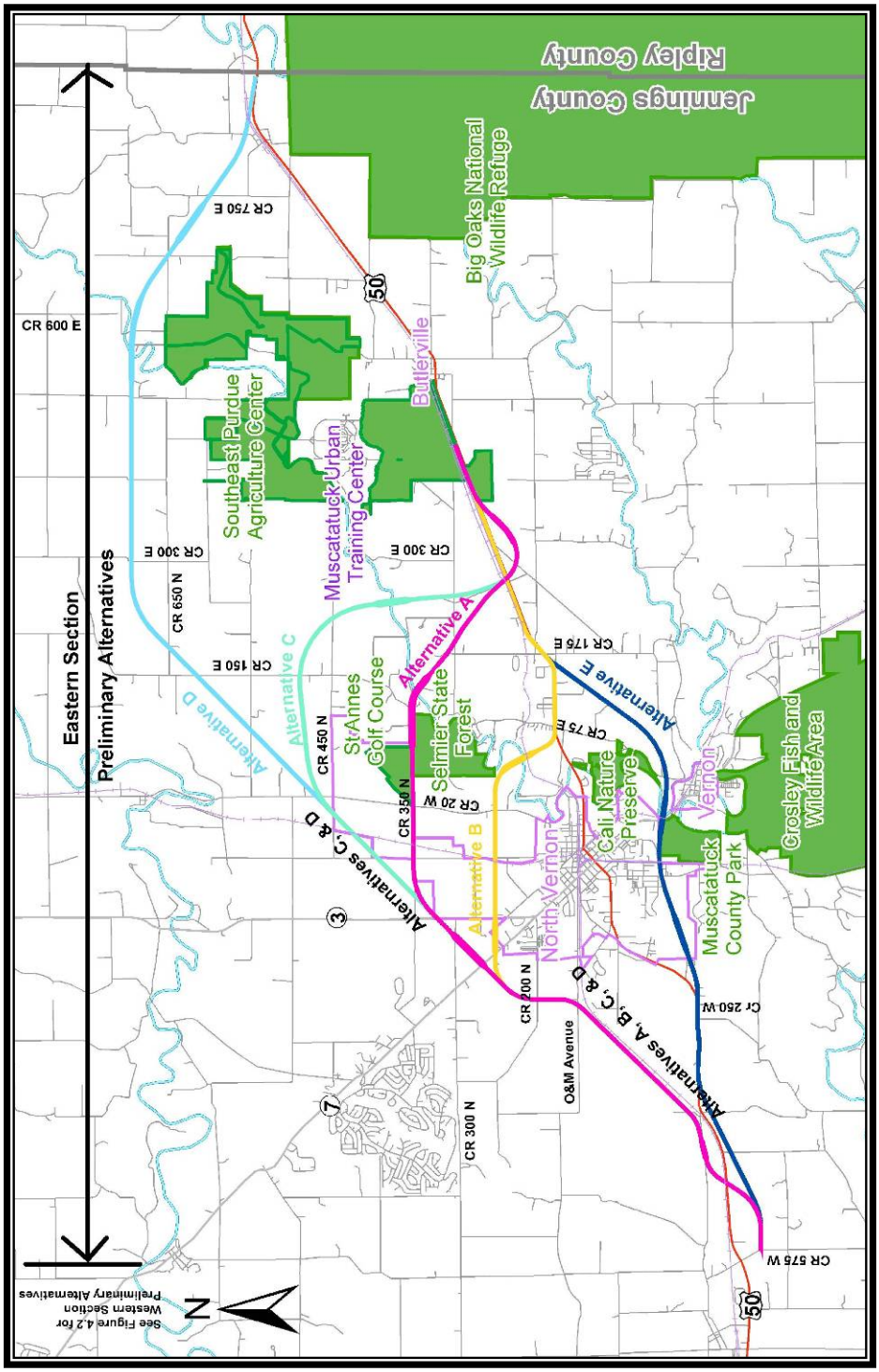


Figure 4.12: Eastern Section Preliminary Bypass Alternatives Around North Vernon (Preliminary Alternatives A, B, C, D and E)

Eastern Section Preliminary Alternative A, Options 1 and 2

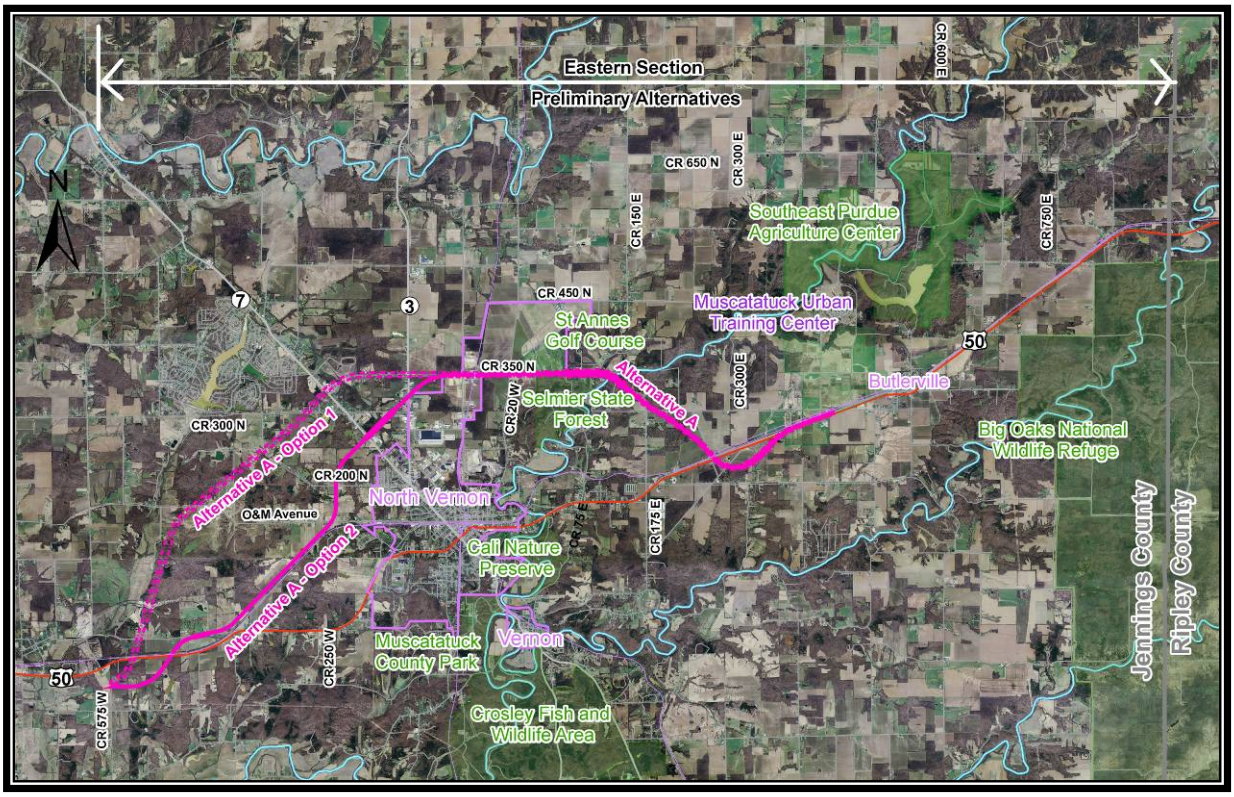


Figure 4.13: Eastern Section Preliminary Alternative A, Options 1 and 2

Preliminary Alternative A is a northern bypass alternative that was initially developed as shown in Figure 4.13 as Option 1. In response to comments received from the public, elected officials, involved resource agencies, and consulting parties, Option 2 (see Figure 4.13) was developed. For Preliminary Alternative A, Option 2 was only different from Option 1 in the section between CR 575 W and SR 3. In this section, Option 2 essentially consists of the alignment for Preliminary Alternatives B, C and D connecting to Preliminary Alternative A, Option 1. An initial comparison of Options 1 and 2 for Preliminary Alternative A was completed early in the development and modification of alternatives. This comparison only involved the section of Preliminary Alternative A between CR 575 W and SR 3 where the options were on different alignments. The goal of this initial comparison was to modify the alternative as necessary in an attempt to avoid and/or minimize impacts to the environment, residents, businesses and historic properties.

Option 1 is approximately 6.5 miles in length and begins at CR 575 W where it would connect to any of the Western Section Preliminary Alternatives discussed above. At CR 575 W, it would make a northeasterly turn and bridge over the existing US 50 pavement and the CSX Railroad. It continues in a northeasterly direction to SR 7 where the alternative transitions to an urban section (see Figure 4.8). The alternative crosses SR 7 between CR 300 N and CR 350 N, makes an easterly turn, and follows existing CR 350 N across SR 3 to a point where it would connect to Option 2.

Option 2 is approximately 6.3 miles in length and also begins at CR 575 W where it would connect to any of the Western Section Preliminary Alternatives discussed above. At CR 575 W, it would make a northeasterly turn and bridge over the existing US 50 pavement and the CSX Railroad. It continues in a northeasterly direction, paralleling the north right-of-way for the CSX railroad, to O&M Avenue where it

makes a northerly turn. It continues north to a point north of CR 200 N where it makes a northeasterly turn and transitions to an urban section (see Figure 4.8). It continues northeasterly crossing SR 7 just south of CR 300 N and crossing SR 3 just south of CR 350 N. It then makes an easterly turn and follows existing CR 350 N to a point where it would connect to Option 1.

Since the location of Options 1 and 2 for Preliminary Alternative A were in relative close proximity (see Figure 4.14), differences in traffic performance and safety improvements for each option were determined to be negligible, although with its closer proximity to North Vernon, Option 2 would better serve North Vernon. An analysis and evaluation of socio-economic and environmental impacts associated with each option was completed and the results are summarized in Table 4.1.

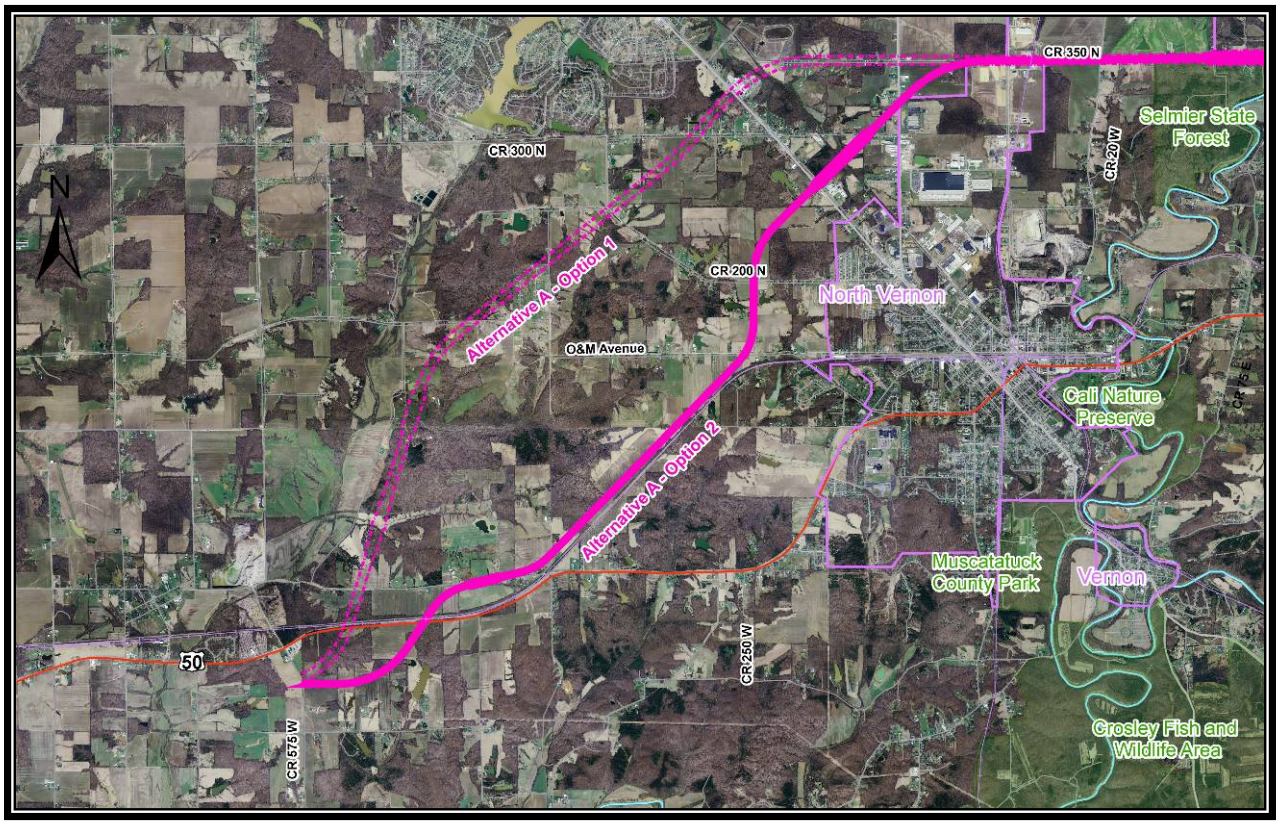


Figure 4.14: Option 1 and Option 2 for Preliminary Alternative A

Table 4.1: Socio-Economic/Environmental Impact Summary Table for Preliminary Alternative A, Option 1 and Option 2

Socio-Economic/Environmental Measure	Preliminary Alternative A	
	Option 1	Option 2
Construction Costs (Mil. Of $) (2015 Dollars)	$54.6	$52.9
New ROW (acres)	270.0	267.0
Relocations		
Residences Acquired	64	9
Residences Loss of Access	5	1
Businesses Acquired	3	1
Businesses Loss of Access	0	0
Farmland (acres)	110	173
Forests (acres)	126	56
Wetlands Total (NWI) (acres)	1.5	4.4
Floodplains (acres)	6	0
Historic Properties *	0	0

* Indiana Historic Sites & Structures Inventory (IHSSI) Contributing, Notable and Outstanding Sites and bridges from Dr. Cooper's books

Option 1

Advantages:

- This option impacts approximately 63 acres less of farmland than Option 2
- It impacts approximately 2.9 acres less of NWI wetlands than Option 2

Disadvantages:

- It has associated estimated construction costs that are approximately $1.7 million **more** than Option 2
- It would require 55 **more** residential relocations than Option 2
- It would require 4 **more** residential losses of access than Option 2
- It would require 2 **more** business relocations than Option 2
- It impacts approximately 71 acres **more** forests than Option 2
- It impacts approximately 6 acres **more** floodplains than Option 2

Option 2

Advantages:

- This option has associated estimated construction costs that are approximately $1.7 million **less** than Option 1
- It would require 55 **less** residential relocations than Option 1
- It would require 4 **less** residential losses of access than Option 1
- It would require 2 **less** business relocations than Option 1
- It impacts approximately 71 acres **less** forests than Option 1
- It impacts approximately 6 acres **less** floodplains than Option 1

Disadvantages:

- It impacts approximately 63 acres more of farmland than Option 1
- It impacts approximately 2.9 acres more of NWI wetlands than Option 1

Given the higher construction costs, residential relocations and loss of access, business relocations, forest impacts and floodplain impacts, **Option 1 was not recommended to be utilized in this section of Preliminary Alternative A. All subsequent reference to Preliminary Alternative A will include Option 2.**

Eastern Section Preliminary Alternative A

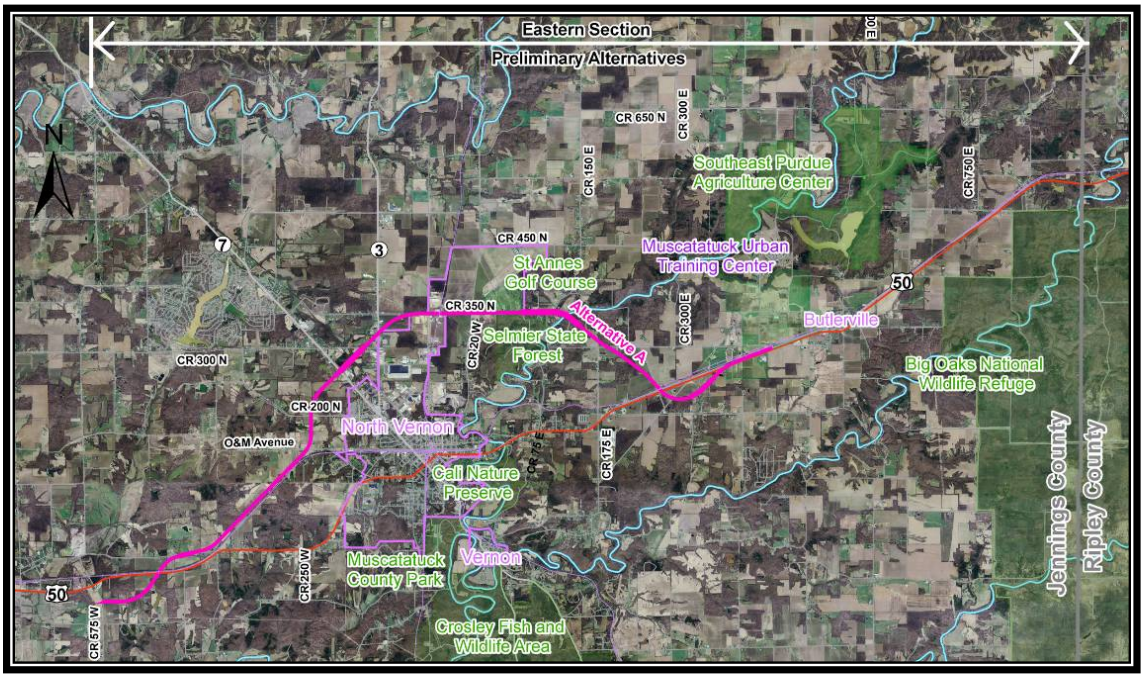


Figure 4.15: Eastern Section Preliminary Alternative A

Preliminary Alternative A is a northern alternative that begins as a rural four-lane limited access facility (see Figure 4.1) at CR 575 W where it would connect to any of the Western Section Preliminary Alternatives discussed above. At CR 575 W, it would make a northeasterly turn and bridge over the existing US 50 roadway and the CSX Railroad. It continues in a northeasterly direction, paralleling the north right-of-way for the CSX railroad, to O&M Avenue where it makes a northerly turn. It continues north to a point north of CR 200 N where it makes a northeasterly turn and transitions to an urban five-lane, limited access facility (see Figure 4.8). It continues northeasterly crossing SR 7 just south of CR 300 N and crossing SR 3 just south of CR 350 N. It then makes an easterly turn and follows existing CR 350 N easterly to CR 75 W where it transitions to a rural four-lane, limited access facility. The alternative continues eastward to the eastern edge of Selmier State Forest where it makes a southeasterly turn and crosses the Vernon Fork of the Muscatatuck River. It continues in a southeasterly direction, and bridges the CSX Railroad and existing US 50 pavement just west of CR 300 E. The alternative then makes a northeasterly turn and rejoins the existing US 50 alignment approximately ¼ mile west of the MUTC entrance where it remains a rural four-lane, limited access facility (see Figure 4.1). It continues northeastward as a rural four-lane, limited access facility along existing US 50 to just east of the MUTC entrance at US 50 where it transitions to a two-lane facility to match existing US 50. In the eastern section of the alternative, after it rejoins existing US 50, the alternative would be parallel and adjacent to the CSX railroad right-of-way. It would utilize the location of existing US 50 as future westbound lanes and future eastbound lanes for the alternative would be constructed south of the existing roadway. A majority of the new right-of-way required in this section of the alternative would be along the south side of existing US 50. The alternative would include new bridges over the Muscatatuck River and new bridges over existing US 50 and the CSX railroad at two separate locations, one west of North Vernon near CR 450 W and the other east of North Vernon near CR 300 E. The alternative is approximately 14.0 miles in length.

It should be noted that the Jennings County Thoroughfare Plan was adopted as part of the *Jennings County Comprehensive Plan* (November 1, 1994) and identified three alternative North Vernon bypass routes. Preliminary Alternative A closely represents the Far North bypass alternative identified in the Jennings County Thoroughfare Plan.

Eastern Section Preliminary Alternative B

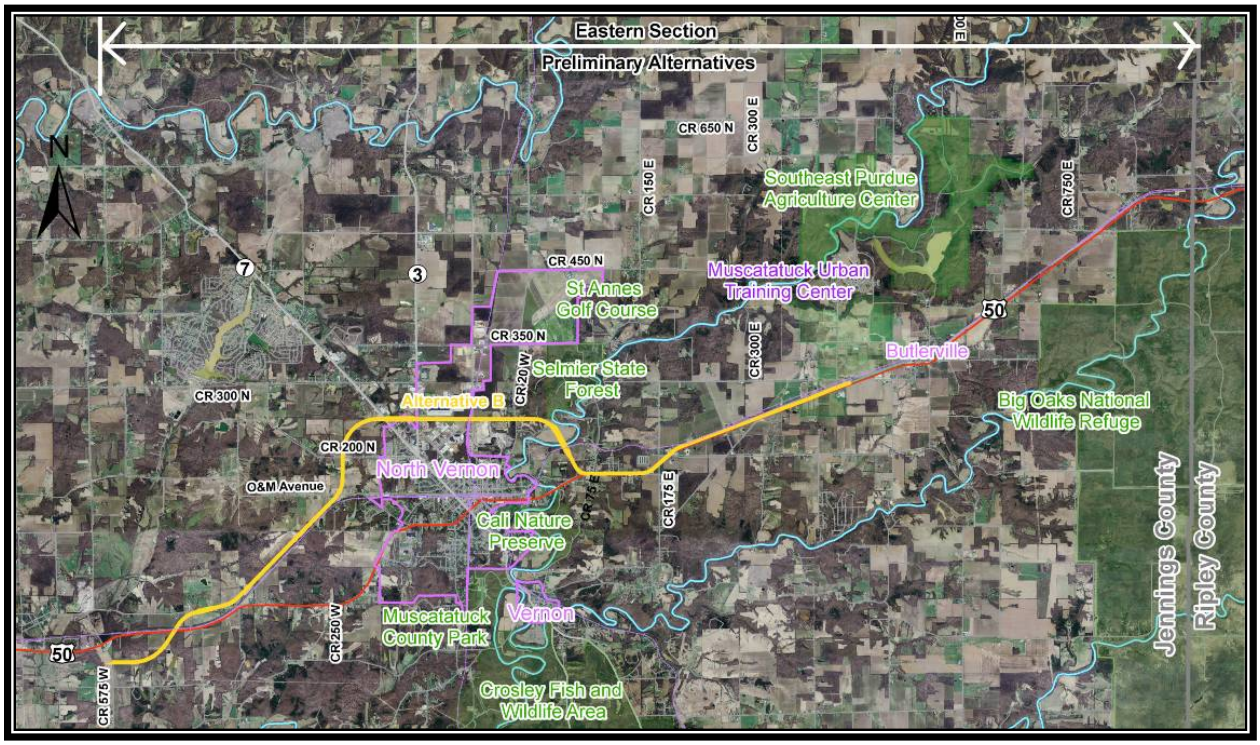


Figure 4.16: Eastern Section Preliminary Alternative B

Preliminary Alternative B is a northern alternative that begins as a rural four-lane limited access facility (see Figure 4.1) at CR 575 W where it would connect to any of the Western Section Preliminary Alternatives discussed above. At CR 575 W, it would make a northeasterly turn and bridge over the existing US 50 roadway and the CSX Railroad. It continues in a northeasterly direction, paralleling the north right-of-way for the CSX railroad. It makes a northerly turn at O&M Avenue, and continues north to approximately 0.5 mile north of CR 200 N where it makes an easterly turn and transitions to an urban five-lane, limited access facility (see Figure 4.8). It continues east crossing SR 7 and then SR 3 approximately 0.5 mile north of CR 200 N. East of SR 3 the alternative transitions to a rural four-lane, limited access facility. It continues eastward to just east of CR 20 W (N. Base Road) where it makes a southeasterly turn, and bridges the Vernon Fork of the Muscatatuck River and the CSX Railroad. The alternative makes an easterly turn and bridges the CSX Railroad and existing US 50 pavement and joins existing US 50 just east of Deer Creek Road where it remains a rural four-lane, limited access facility (see Figure 4.1). It continues northeastward as a rural four-lane, limited access facility along existing US 50 to just east of the MUTC entrance at US 50 where it transitions to a two-lane facility to match existing US 50. In the eastern section of the alternative, after it rejoins existing US 50, the alternative would be parallel and adjacent to the CSX railroad right-of-way. It would utilize the location of existing US 50 as future westbound lanes and future eastbound lanes for the alternative would be constructed south of the existing roadway. A majority of the new right-of-way required in this section of the alternative would be along the south side of existing US 50. The alternative would include new bridges over the Muscatatuck River and new bridges over existing US 50 and the CSX railroad at two separate locations, one west of North Vernon near CR 450 W and the other east of North Vernon near Deer Creek Road. The alternative is approximately 12.6 miles in length.

It should be noted that the Jennings County Thoroughfare Plan was adopted as part of the *Jennings County Comprehensive Plan* (November 1, 1994) and identified three alternative North Vernon bypass routes. Preliminary Alternative B closely represents the Near North bypass alternative identified in the Jennings County Thoroughfare Plan.

Eastern Section Preliminary Alternative C

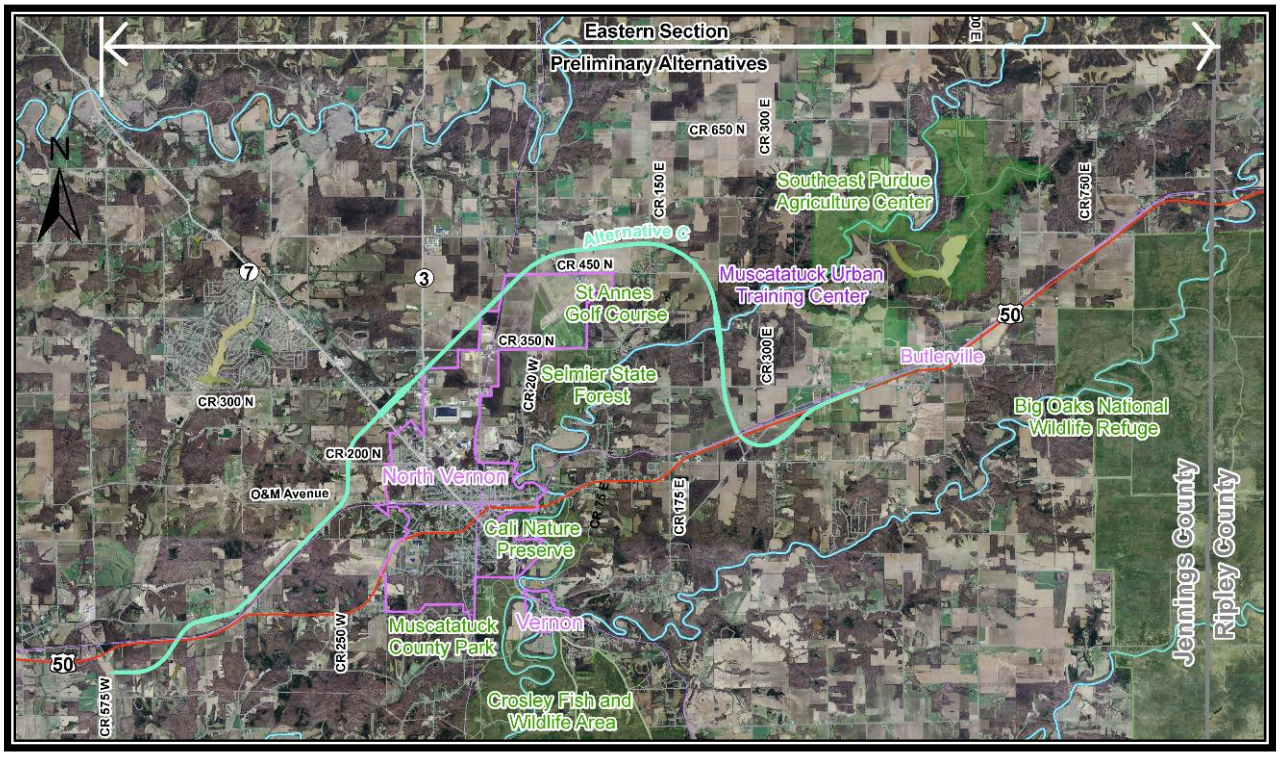


Figure 4.17: Eastern Section Preliminary Alternative C

Preliminary Alternative C is a northern alternative that begins as a rural four-lane limited access facility (see Figure 4.1) at CR 575 W where it would connect to any of the Western Section Preliminary Alternatives discussed above. At CR 575 W, it would make a northeasterly turn and bridge over the existing US 50 roadway and the CSX Railroad. It continues in a northeasterly direction, paralleling the north right-of-way for the CSX railroad. It makes a northerly turn at O&M Avenue, and continues north to approximately 0.5 mile north of CR 200 N where it makes a northeasterly turn and transitions to an urban five-lane, limited access facility (see Figure 4.8). It continues northeast crossing SR 7 approximately 0.5 mile north of CR 200 N then crosses SR 3 just south of CR 350 N where it transitions to a rural four-lane, limited access facility. It continues northeasterly, crossing CR 450 N, and then turns in an easterly direction just north of the North Vernon Airport. It continues easterly to just east of CR 150 E where it makes a southerly turn and crosses the Vernon Fork of the Muscatatuck River. It continues southerly bridging the CSX Railroad and existing US 50 just west of CR 300 E. The alternative then makes a northeasterly turn and rejoins the existing US 50 alignment approximately ¼ mile west of the MUTC entrance where it remains a rural four-lane, limited access facility (see Figure 4.1). It continues northeastward as a rural four-lane, limited access facility along existing US 50 to just east of the MUTC entrance at US 50 where it transitions to a two-lane facility to match existing US 50. In the eastern section of the alternative, after it rejoins existing US 50, the alternative would be parallel and adjacent to the CSX railroad right-of-way. It would utilize the location of existing US 50 as future westbound lanes and future eastbound lanes for the alternative would be constructed south of the existing roadway. A majority of the new right-of-way required in this section of the alternative would be along the south side of existing US 50. The alternative would include new bridges over the Muscatatuck River and new bridges over existing US 50 and the CSX railroad at two separate locations, one west of North Vernon near CR 450 W and the other east of North Vernon just west of CR 300 E. The alternative is approximately 15.0 miles in length.

Eastern Section Preliminary Alternative D

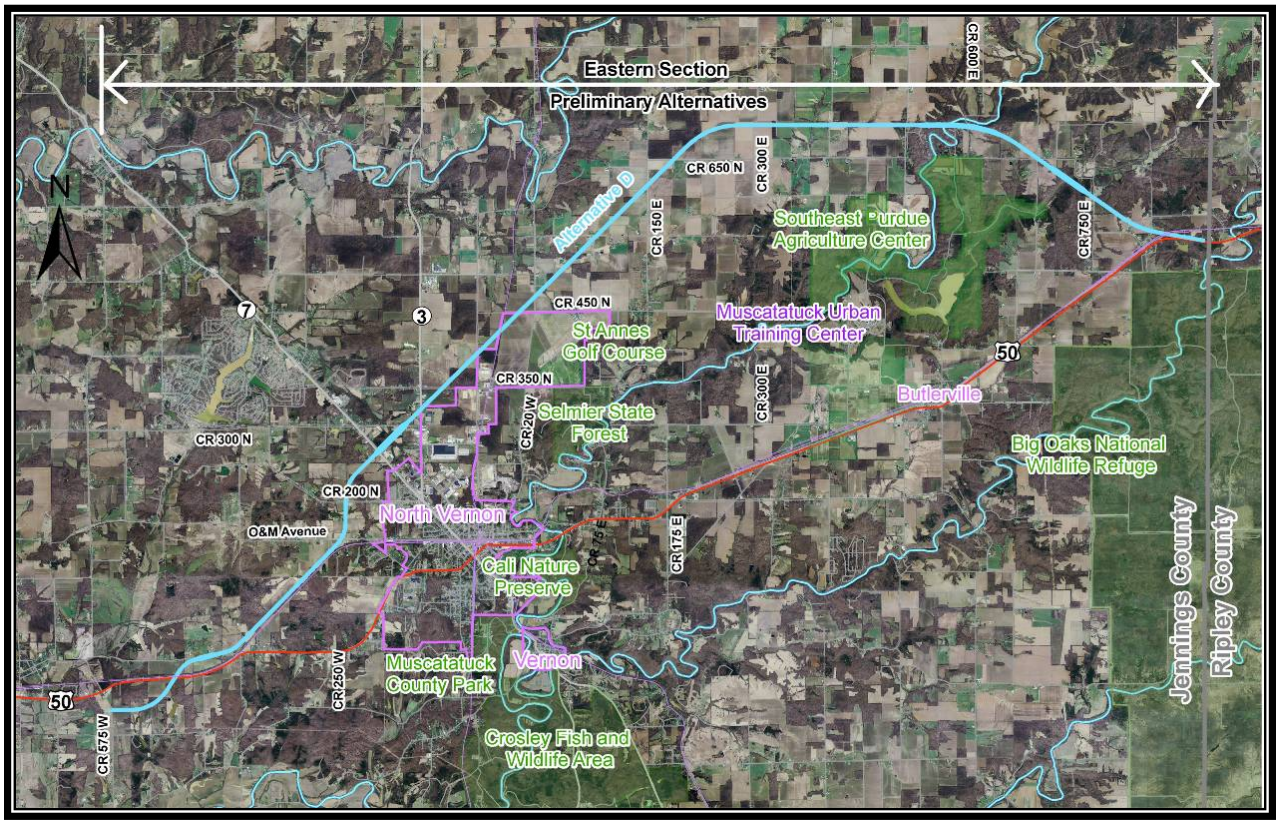


Figure 4.18: Eastern Section Preliminary Alternative D

Preliminary Alternative D is a northern alternative that begins as a rural four-lane limited access facility (see Figure 4.1) at CR 575 W where it would connect to any of the Western Section Preliminary Alternatives discussed above. At CR 575 W, it would make a northeasterly turn and bridge over the existing US 50 roadway and the CSX Railroad. It continues in a northeasterly direction, paralleling the north right-of-way for the CSX railroad. It makes a northerly turn at O&M Avenue, and continues north to approximately 0.5 mile north of CR 200 N where it makes a northeasterly turn and transitions to an urban five-lane, limited access facility (see Figure 4.8). It continues northeast crossing SR 7 approximately 0.5 mile north of CR 200 N then crosses SR 3 just south of CR 350 N where it transitions to a rural four-lane, limited access facility. It continues northeasterly to a point approximately 0.5 mile north of CR 650 N and approximately 0.5 mile west of CR 300 E where it turns in an easterly direction. It continues easterly just north of the Southeast Purdue Agricultural Center (SEPAC) and the MUTC, crosses the Vernon Fork of the Muscatatuck River just west of CR 600 E, and then makes a southeasterly turn just east of CR 600 E. It continues southeasterly again crossing the Vernon Fork of the Muscatatuck River near CR 750 E and bridging the CSX Railroad and existing US 50 just west of CR 830 E. The alternative then makes an easterly turn, rejoins existing US 50 approximately ½ mile west of the Ripley/Jennings County Line and terminates at the Jennings/Ripley County Line. The alternative would include new bridges over the Muscatatuck River at two separate locations, one just west of CR 600 E and the other near CR 750 E. It would also include new bridges over existing US 50 and the CSX railroad at two separate locations, one west of North Vernon near CR 450 W and the other east of North Vernon just west of CR 830 E. The alternative is approximately 18.8 miles in length.

Eastern Section Preliminary Alternative E, Options 1 and 2

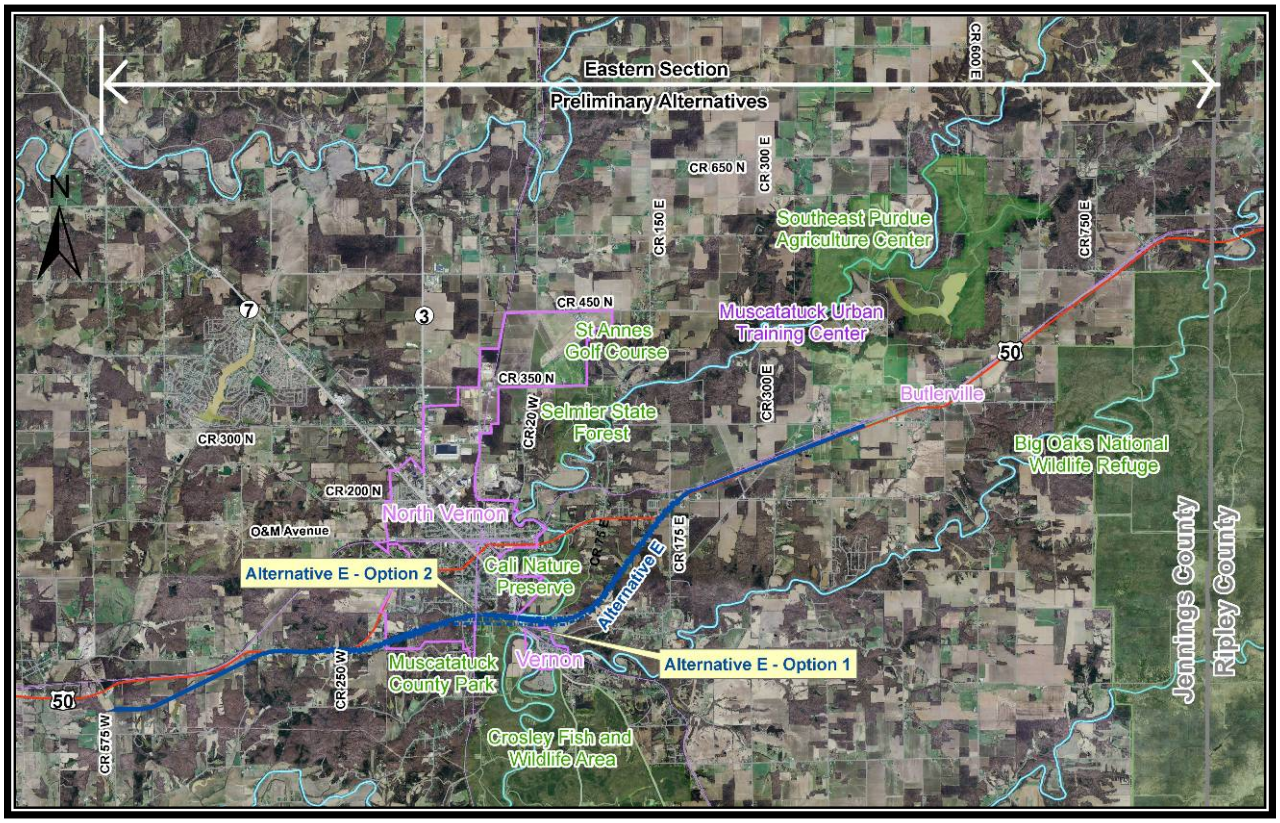


Figure 4.19: Eastern Section Preliminary Alternative E, Options 1 and 2

Preliminary Alternative E is a southern bypass alternative that was initially developed as shown in Figure 4.19 as Option 1. In response to comments received from the public, elected officials, involved resource agencies, and consulting parties, Option 2 (see Figure 4.19) was developed. For Preliminary Alternative E, Option 2 was only different from Option 1 in the section from approximately 1-mile west of SR 3 to approximately 0.5 miles east of SR 3. In this section, Option 2 essentially consists of a slight northward shift in the alignment of Preliminary Alternative E, Option 1, in the vicinity of the Muscatatuck County Park. An initial comparison of Options 1 and 2 for Preliminary Alternative E was completed early in the development and modification of alternatives. This comparison only involved the section of Preliminary Alternative A from approximately 1-mile west of SR 3 to approximately ½ mile east of SR 3 where the options were on different alignments. The goal of this initial comparison was to modify the alternative as necessary in an attempt to avoid and/or minimize impacts to the environment, residents, businesses and historic properties, particularly in the Muscatatuck County Park area.

Since the location of Options 1 and 2 for Preliminary Alternative E were in relative close proximity (see Figure 4.20), differences in length, construction costs, traffic performance and safety improvements for each option were determined to be negligible. An analysis and evaluation of socio-economic and environmental impacts associated with each option was completed and the results are summarized in Table 4.2.

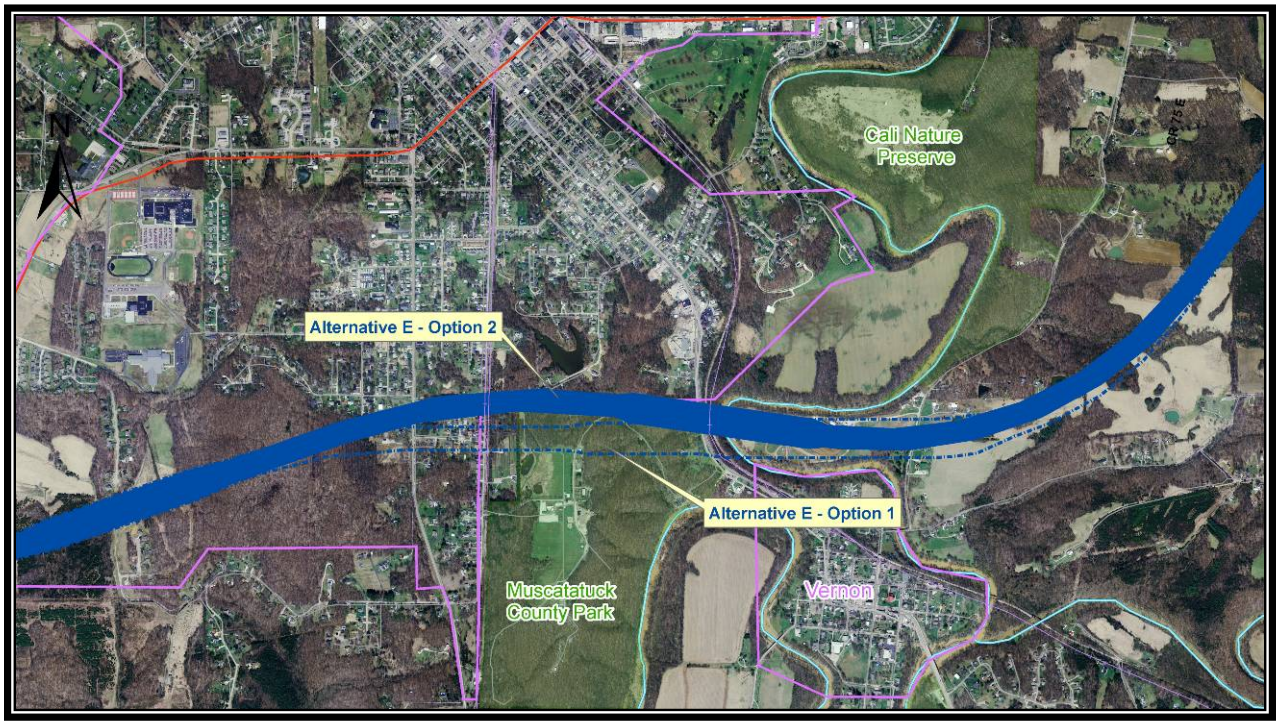


Figure 4.20: Option 1 and Option 2 for Preliminary Alternative E

Table 4.2: Socio-Economic/Environmental Impact Summary Table for Preliminary Alternative E, Option 1 and Option 2

Socio-Economic/Environmental Measure	Preliminary Alternative E	
	Option 1	Option 2
New ROW (acres)	111.0	96.0
Relocations		
Residences Acquired	19	19
Residences Loss of Access	6	0
Businesses Acquired	1	1
Businesses Loss of Access	0	0
Grassland/Herbaceous (acres)	23	14
Floodplains (acres)	10	5
Historic Properties *	2	1
Potential Section 4(f) Properties **	2	1

* Indiana Historic Sites & Structures Inventory (IHSSI) Contributing, Notable and Outstanding Sites and bridges from Dr. Cooper's books
** See Chapter 5 for Discussion of Section 4(f) Properties

Option 1

Disadvantages:

- It would require 6 **more** residential losses of access than Option 2
- It impacts approximately 9 acres **more** grasslands/herbaceous than Option 2
- It impacts approximately 5 acres **more** floodplains than Option 2
- It impacts 1 **more** potentially Historic Property than Option 2
- It impacts 1 **more** Potential Section 4(f) Property than Option 2

Option 2

Advantages:

- It would require 6 **less** residential losses of access than Option 1
- It impacts approximately 9 acres **less** grasslands/herbaceous than Option 1
- It impacts approximately 5 acres **less** floodplains than Option 1
- It impacts 1 **less** potentially Historic Property than Option 1
- It impacts 1 **less** Potential Section 4(f) Property than Option 1

An evaluation of the impacts associated with Option 1 and Option 2 in Table 5.2 and summarized in the advantages and disadvantages above showed that the modifications made to Alternative E in Option 2 were advantageous for socio-economic/environmental impacts. Given the higher number of residential losses of access, grassland/herbaceous impacts, floodplain impacts, potentially Historic Property impacts and Potential Section 4(f) Property impacts, **Option 1 was not recommended to be utilized in this section of Preliminary Alternative E. All subsequent reference to Preliminary Alternative E will include Option 2.**

Eastern Section Preliminary Alternative E

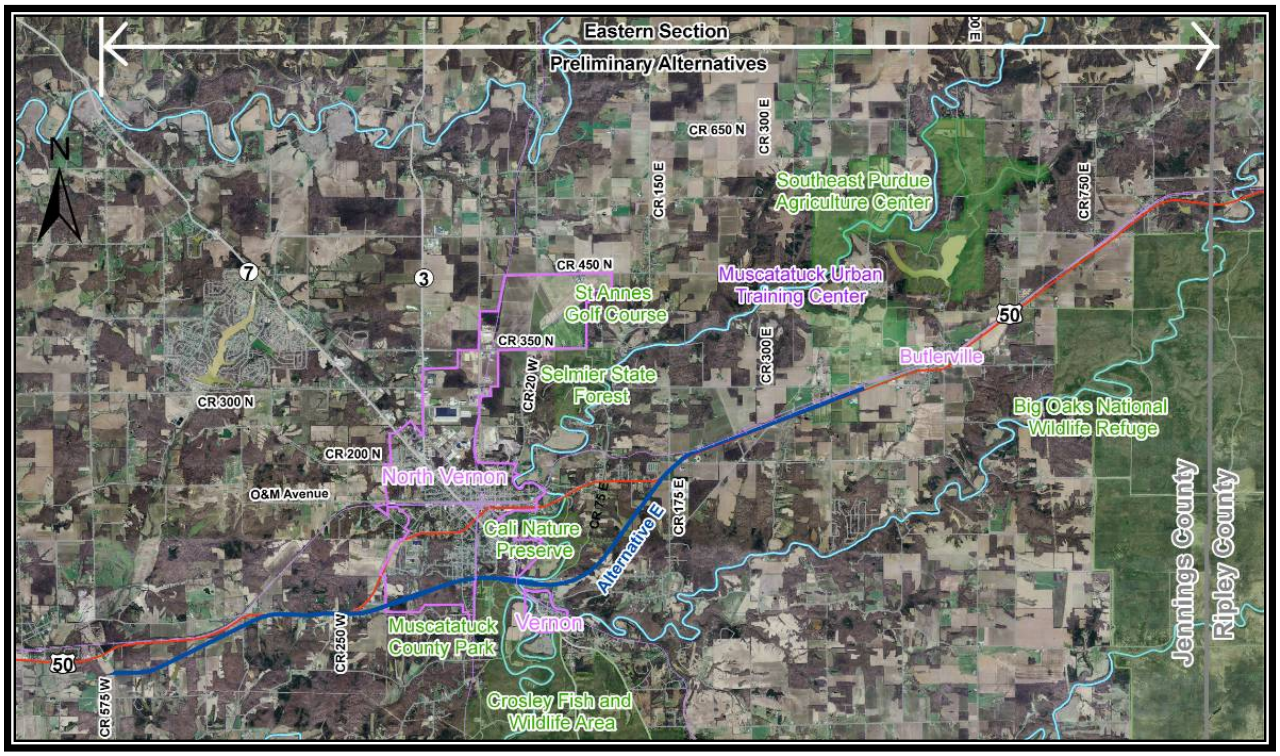


Figure 4.21: Eastern Section Preliminary Alternative E

Preliminary Alternative E is a southern alternative that begins as a rural four-lane limited access facility (see Figure 4.1) at CR 575 W where it would connect to any of the Western Section Preliminary Alternatives discussed above. At CR 575 W it would make a northeasterly turn and continue northeasterly to just east of CR 400 W where it would make an easterly turn and rejoin the existing US 50 alignment. It would follow the existing US 50 alignment eastward to CR 250 W where it departs existing US 50 and makes a slight northeasterly turn, just south of the North Vernon Junior/Senior High School complex. The alternative continues in a northeasterly direction to South Norris Avenue where it makes an easterly turn and continues easterly along the north edge of the Muscatatuck County Park. It crosses SR 7/SR 3 and continues in an easterly direction crossing the Madison Railroad with an at-grade crossing and bridging the Vernon Fork of the Muscatatuck River. It continues easterly for approximately 1-mile and then makes a northeasterly turn. The alternative continues northeasterly and rejoins the existing US 50 alignment near CR 175 E where it remains a rural four-lane, limited access facility (see Figure 4.1). It continues northeastward as a rural four-lane, limited access facility along existing US 50 to just east of the MUTC entrance at US 50 where it transitions to a two-lane facility to match existing US 50. In the eastern section of the alternative, after it rejoins existing US 50, the alternative would be parallel and adjacent to the CSX railroad right-of-way. It would utilize the location of existing US 50 as future westbound lanes and future eastbound lanes for the alternative would be constructed south of the existing roadway. A majority of the new right-of-way required in this section of the alternative would be along the south side of existing US 50. The alternative would include new bridges over the Muscatatuck River, Indian Creek and an unnamed ditch. The alternative is approximately 11.4 miles in length.

It should be noted that the Jennings County Thoroughfare Plan was adopted as part of the *Jennings County Comprehensive Plan* (November 1, 1994) and identified three alternative North Vernon bypass routes. Preliminary Alternative E closely represents the South bypass alternative identified in the Jennings County Thoroughfare Plan.

5. ANALYSIS OF ALTERNATIVES

5.1 Introduction

This chapter discusses the traffic, social, economic and environmental impacts of the Preliminary Alternatives developed for this study as directed by the National Environmental Policy Act of 1969 (NEPA). A detailed description of the alternatives developed for this project can be found in Chapter 4 – Definition of Alternatives. A summary of the Preliminary Alternatives discussed in Chapter 4 includes:

- A **No-Build Alternative** that establishes the benchmark for the evaluation of Build Alternatives and is required by the National Environmental Policy Act of 1969 (NEPA)

- **Travel Demand Management (TDM) Alternatives** which involve actions to spread the peak hours of travel or to encourage the shift to alternative modes of travel to the single-occupancy vehicle

- **Transportation System Management (TSM) Alternatives** which involve low-cost capital investments to reduce congestion, improve traffic flow, and measures to optimize performance of the existing transportation infrastructure

- **Intelligent Transportation System (ITS) Alternatives** which include a variety of technology-based programs to actively manage the roadway system

- **Mass Transit Alternatives** which include rail, both passenger and freight, or bus service along the US 50 corridor and in North Vernon

- **Highway "Build" Alternatives** on existing and new alignments which may include:

    - US 50 Upgrade Options Utilizing Existing Alignment

    - US 50 Upgrade Options Utilizing Existing and/or New Alignments with New Alignments around North Vernon

For analysis and evaluation purposes, the Study Area was divided into two sections, a Western Section from US 31 eastward to CR 575 W, and an Eastern Section from CR 575 W to the eastern terminus of the project. The dividing line of the two sections, CR 575 W, is the area where the preliminary bypass alternatives around North Vernon begin. For the analysis of impacts related to each of the Preliminary Alternatives, each preliminary alternative was analyzed as either a Western Section or an Eastern Section Preliminary Alternative. Chapter 6 – Evaluation of Alternatives, evaluates/screens the impacts of the Western and Eastern Section Preliminary Alternatives and recommends alternative(s) that require additional NEPA studies in both sections. Based on these Western and Eastern Preliminary Alternative(s) recommendations, the impacts of any Western Section Preliminary Alternative can be added to the impacts of any Eastern Section Preliminary Alternative to determine a summary of impacts for the entire corridor for any Western and Eastern Section Preliminary Alternative pair.

Figure 5.1 shows the four different Western Section Preliminary Alternatives, **Preliminary Alternatives W, W1, W2 and W3**, that consist of preliminary alternatives ranging from added travel lanes along existing US 50 to varying combinations of added travel lanes along US 50 and new alignments essentially paralleling US 50. Figures 5.2 through 5.4 show the Eastern Section Preliminary Alternatives consisting of **Added Travel Lanes along existing US 50 Preliminary Alternative** thru North Vernon (see Figure 5.2) and **One-Way Pair Preliminary Alternatives** through North Vernon (see Figure 5.3), four northern bypass alternatives (**Preliminary Alternatives A, B, C and D**) and a southern bypass alternative (**Preliminary Alternative E**) (see Figure 5.4). Refer to Chapter 4 – Definition of Alternatives, for additional information related to the preliminary alternatives.

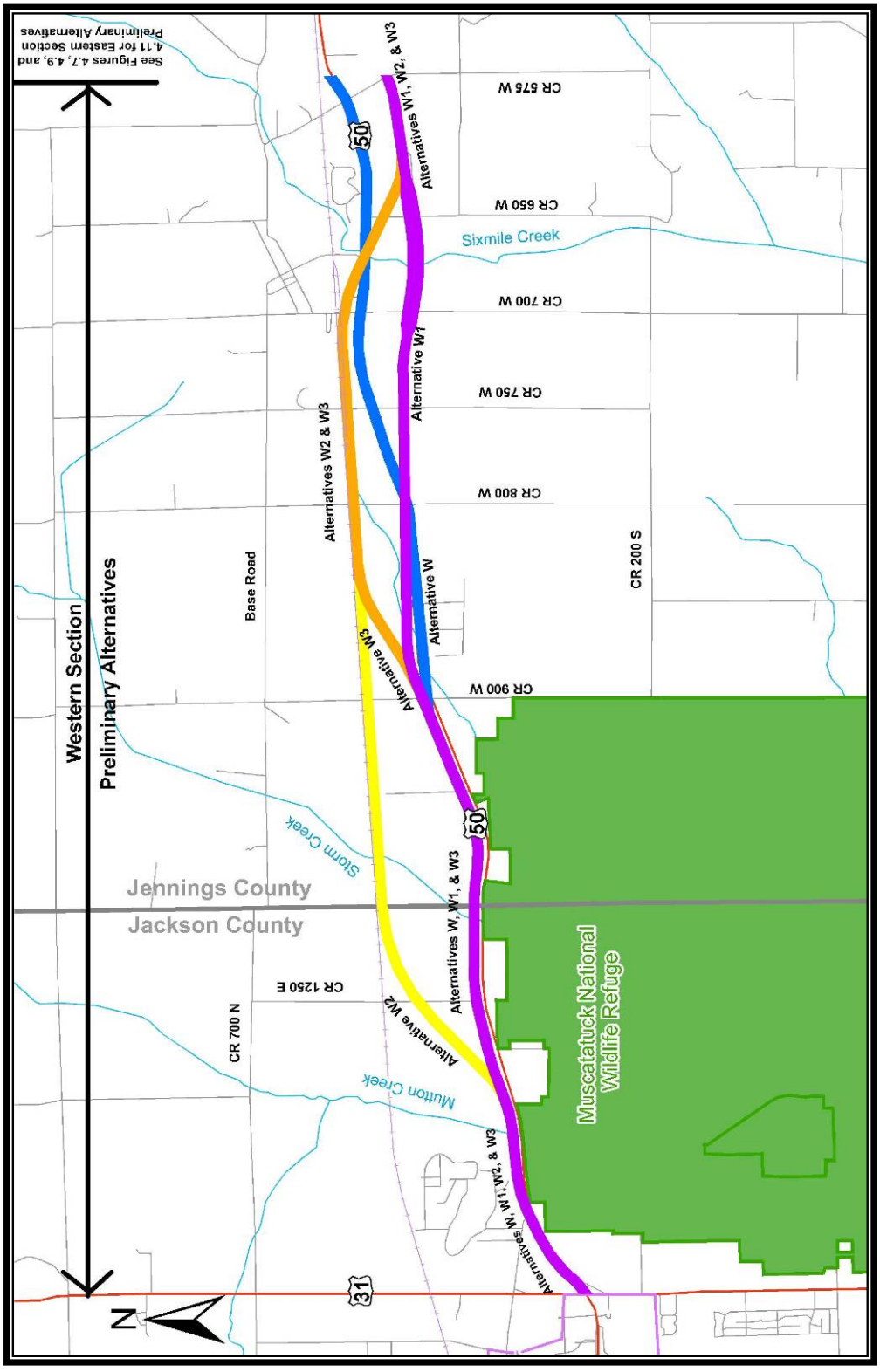
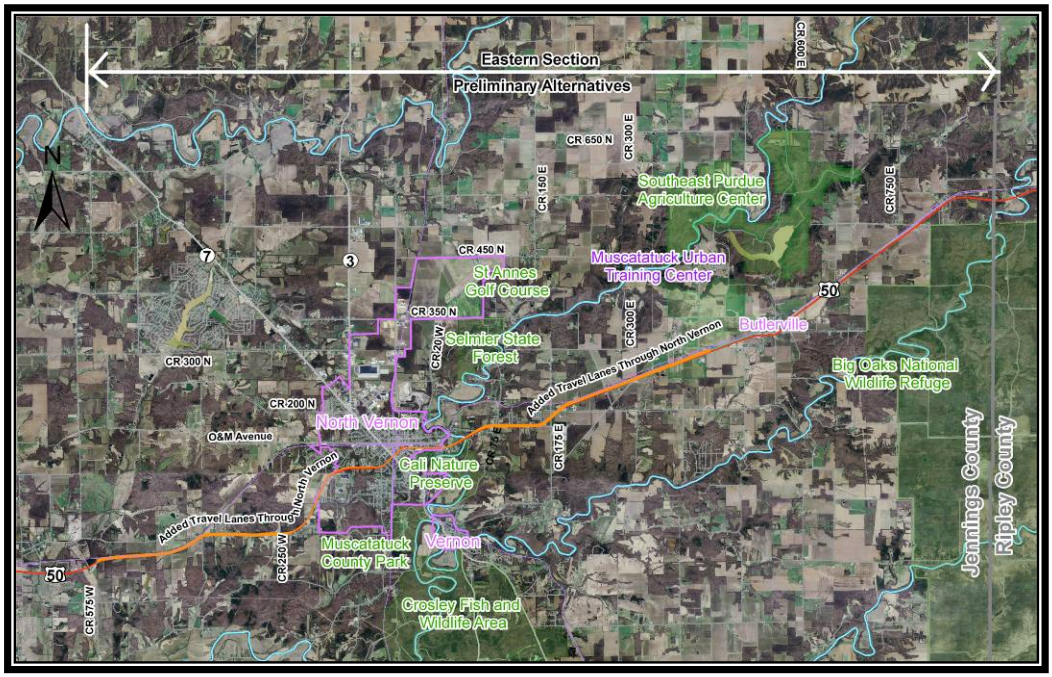


Figure 5.1: Western Section Preliminary Alternatives (Alternatives W, W1, W2 and W3)



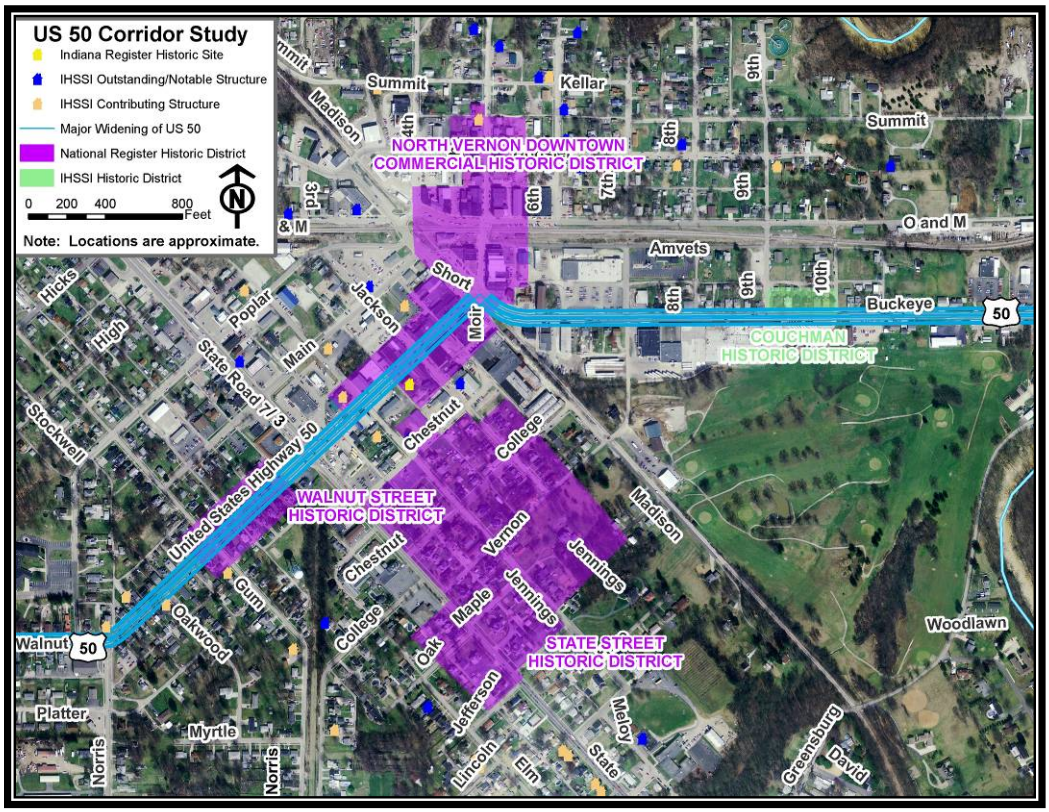
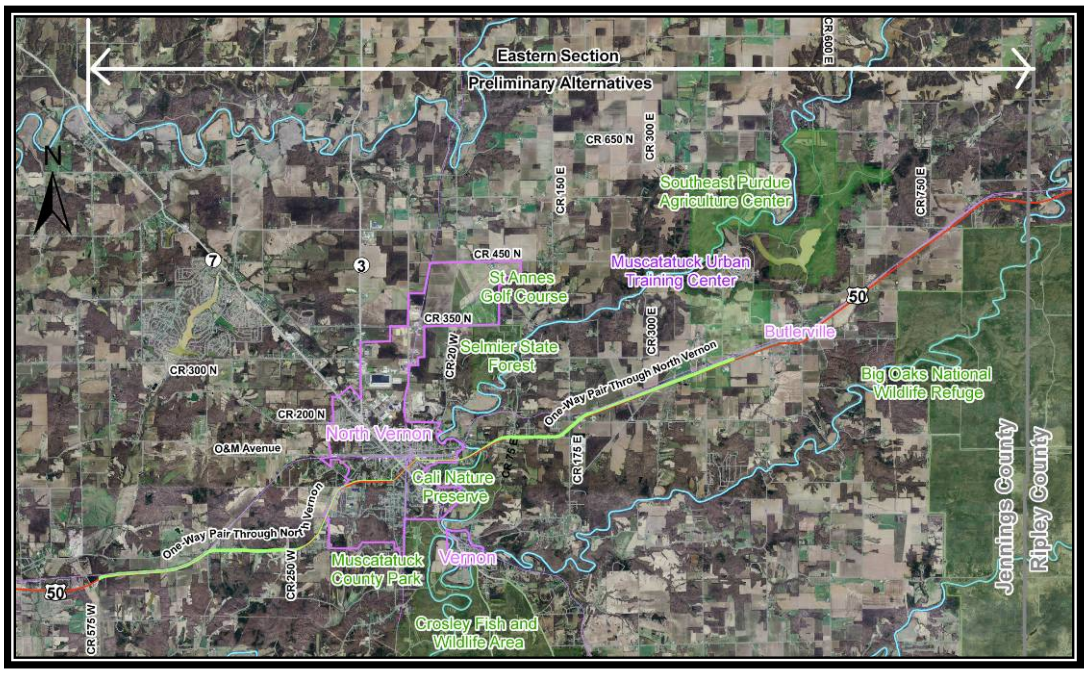


Figure 5.2: Eastern Section Added Travel Lanes Through North Vernon



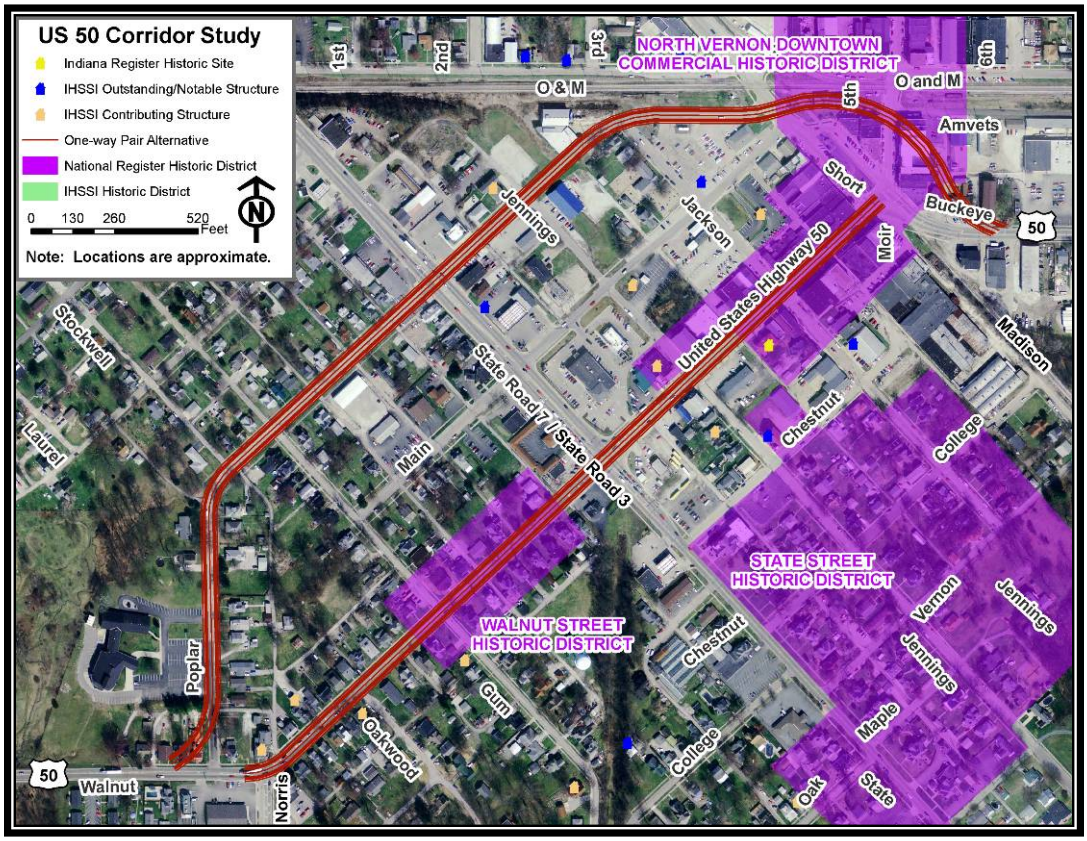


Figure 5.3: Eastern Section One-Way Pair Through North Vernon

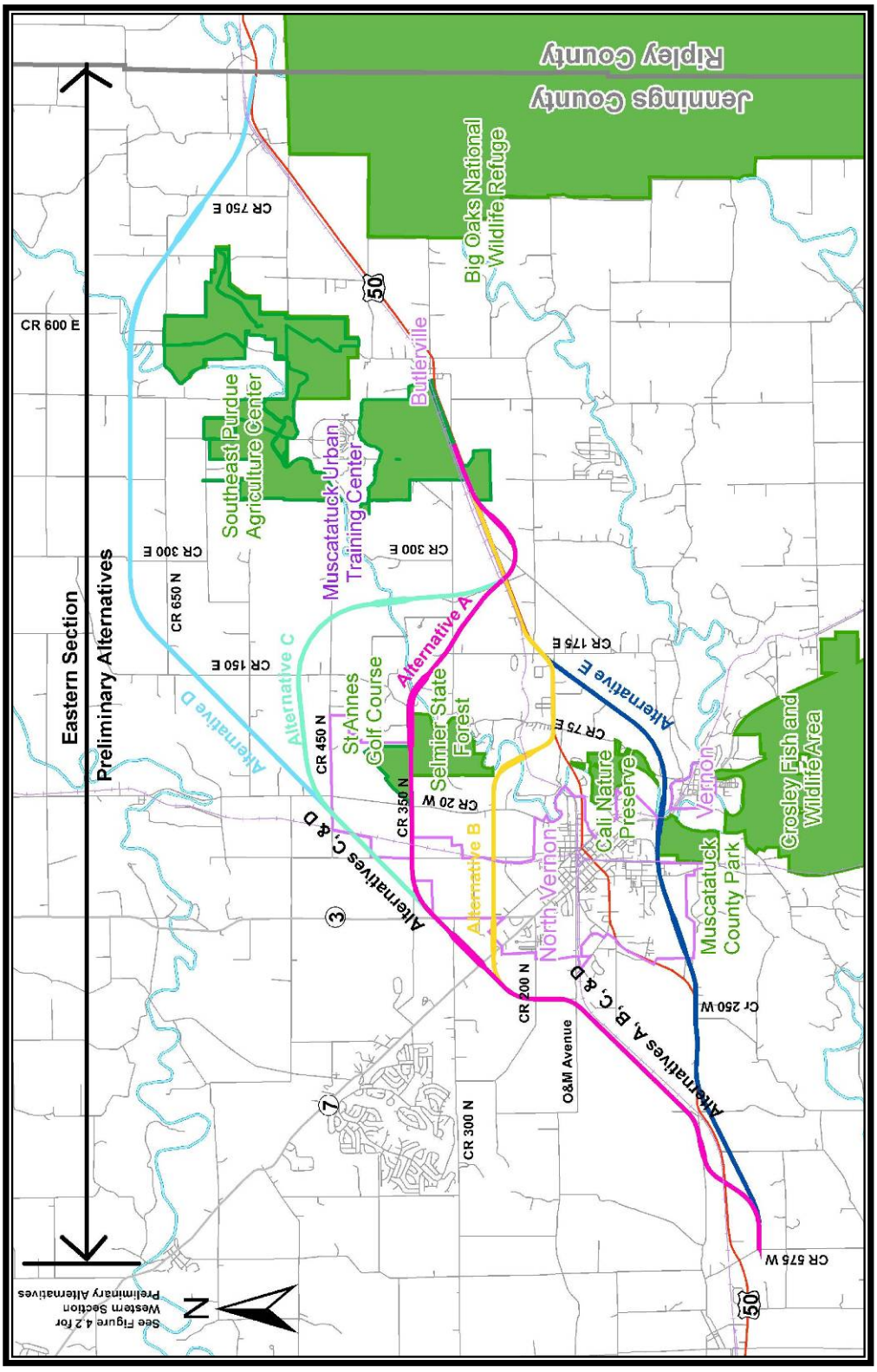


Figure 5.4: Eastern Section Preliminary Bypass Alternatives Around North Vernon (Preliminary Alternatives A, B, C, D and E)

5.2 Transportation Considerations

5.2.1 Summary of Transportation Performance Measures

The Jennings County Sub-area Travel Demand Model (TDM) was used to forecast year 2030 daily traffic for the highway Build Preliminary Alternatives for comparison with the No Build Alternative. Significant changes in travel patterns occur with the Build Preliminary Alternatives:

- While all the Build Preliminary Alternatives result in greater daily traffic volumes in the improved US 50 corridor than the No Build condition, the amount of diversion from other State routes outside Jennings County and other routes within Jennings County varies with the Build Preliminary Alternative. The four northern new terrain options (**Preliminary Alternatives A through D**) attract more traffic than the southern new terrain option (**Preliminary Alternative E**). In turn, the southern new terrain option attracts more traffic than the **Added Travel Lanes (Widening) and One-Way Pair Preliminary Alternatives**.

- Providing additional traffic carrying capacity through downtown North Vernon, the **Added Travel Lanes (Widening) and One-Way Pair Preliminary Alternatives** attract additional traffic on State Street (SR 3/7) both north and south of existing US 50 (Walnut Street) over the No Build condition. Whereas, the four northern new terrain options (**Preliminary Alternatives A through D**) reduce traffic on State Street (SR 3/7) both north and south of existing US 50 (Walnut Street) compared to the No Build condition.

- The southern new terrain option (**Preliminary Alternative E**) results in the greatest increase of traffic on State Street (SR 3/7) from the SR 3/7 junction on the north side of North Vernon to existing US 50 (Walnut Street) and on Norris Avenue from Walnut Street to the new facility.

- Due to its circuitous alignment, **Preliminary Alternative C** draws the least traffic on the new terrain portion, and is the least effective of the new terrain options in diverting traffic from existing US 50 through downtown North Vernon.

The transportation performance aspects of the preliminary alternatives are elaborated below.

5.2.2 Intersection Level of Service

Traffic operating conditions are described by Level-of-Service (LOS) ratings. The LOS ratings are similar to the school grading system of A through F. LOS F represents a breakdown in traffic flow (or failure), and is clearly unacceptable. LOS E equates to traffic flow at capacity (i.e. unstable flow), and is undesirable. LOS D is considered the minimum acceptable level for urban areas (i.e. approaching unstable flow). LOS C is the desirable level for urban areas and the minimum acceptable level for rural areas (i.e. stable flow). LOS B is desirable for rural areas (i.e. reasonable free flow). LOS A is free flow. Thus, LOS C or better reflects desirable traffic flow operations.

The traffic impacts to existing US 50 resulting from the preliminary alternatives on four key signalized intersections and ten key unsignalized intersections were examined. The forecasted daily traffic assignments for the year 2030 were compared to that for the year 2000 to derive an annual compound growth rate for each of the intersections for the No Build and Build Preliminary Alternatives. The annual compound growth rate for each intersection for each of the preliminary alternatives was applied to the 2006 PM peak-hour turning movement counts at each intersection to derive the turning movements for the year 2030. Highway Capacity Manual Software for signalized and unsignalized intersections was used to obtain the LOS for the year 2030 for each of the preliminary alternatives as reported in Table 5.1.

Table 5.1: Intersection LOS (Signalized and Unsignalized)

Signalized Intersections

Count Location Number	Intersection/Approach	No Build Year 2030 PM Peak Hr. Delay	LOS	Widening Year 2030 PM Peak Hr. Delay	LOS	One-Way Pair Year 2030 PM Peak Hr. Delay	LOS	Alternative A Year 2030 PM Peak Hr. Delay	LOS	Alternative B Year 2030 PM Peak Hr. Delay	LOS	Alternative C Year 2030 PM Peak Hr. Delay	LOS	Alternative D Year 2030 PM Peak Hr. Delay	LOS	Alternative E Year 2030 PM Peak Hr. Delay	LOS
TM 1	US 50/US 31	168.5	F	31.6	C	31.6	C	31.6	C	32.0	C	32.2	C	32.2	C	32.0	C
	Northbound	194.8	F	51.7	D	51.7	D	51.7	D	52.3	D	52.6	D	52.6	D	52.3	D
	Southbound	228.2	F	38.5	D	38.5	D	38.5	D	38.8	D	38.9	D	38.9	D	38.8	D
	Eastbound	209.5	F	21.8	C	21.8	C	21.8	C	22.1	C	22.3	C	22.3	C	22.1	C
	Westbound	25.1	C	37.6	D	37.6	D	37.6	D	38.1	D	38.4	D	38.4	D	38.1	D
TM 8	US 50/Norris Ave	62.1	E	44.8	D	25.6	C	21.7	C	21.4	C	23.5	C	22.5	C	23.5	C
	Northbound	29.6	C	60.5	E	27.6	C	28.5	C	28.4	C	28.7	C	28.6	C	28.7	C
	Eastbound	36.2	D	49.8	D	25.2	C	21.1	C	20.8	C	22.4	C	21.7	C	22.4	C
	Westbound	115.4	F	30.2	C			19.6	B	19.0	B	22.8	C	20.9	C	22.8	C
TM 9	US 50/SR 3/7	129.1	F	182.9	F	60.5	E	62.3	E	54.0	D	67.3	E	70.0	E	105.4	F
	Northbound	223.1	F	110.6	F	48.4	D	58.1	E	55.1	E	59.8	E	60.5	E	72.7	E
	Southbound	118.4	F	280.3	F	67.5	E	76.3	E	64.8	E	83.1	F	86.4	F	127.5	F
	Eastbound	113.1	F	144.6	F	62	E	71.5	E	57.6	E	80	E	84.7	F	141.6	F
	Westbound	72.4	F	151.0	F			37.0	D	34.0	C	39.4	D	40.8	D	68.2	E
TM 10	US 50/Madison St/Short St/5th St	71.7	E	51.7	D	33.6	C	44.1	D	38.1	D	47.1	D	43.3	D	43.7	D
	Northbound	160.3	F	51.8	D			45.1	D	39.7	D	47.6	D	44.5	D	44.8	D
	Southbound	24.5	C	50.7	D	34.5	C	49.4	D	39.7	D	54.6	D	47.7	D	48.5	D
	Eastbound	26	C	53.0	D	32.8	C	38.4	D	33.1	D	40.8	D	37.7	D	38.0	D
	Westbound	22.1	C	49.3	D	43.9	D	45.2	D	43.7	D	45.7	D	45.0	D	45.1	D

Unsignalized Intersections

Count Location Number	Intersection/Approach	No Build Year 2030 PM Peak Hr. Delay	LOS	Widening Year 2030 PM Peak Hr. Delay	LOS	One-Way Pair Year 2030 PM Peak Hr. Delay	LOS	Alternative A Year 2030 PM Peak Hr. Delay	LOS	Alternative B Year 2030 PM Peak Hr. Delay	LOS	Alternative C Year 2030 PM Peak Hr. Delay	LOS	Alternative D Year 2030 PM Peak Hr. Delay	LOS	Alternative E Year 2030 PM Peak Hr. Delay	LOS
TM 2	US 50/CR 900W																
	Northbound	184.2	F	44.3	E	43.1	E	85.7	F	82.8	F	117.2	F	116.3	F	54.3	F
	Southbound	67.7	F	24.1	C	23.8	C	32.9	D	32.2	D	36.0	E	35.7	E	20.7	C
	Eastbound Left	9.6	A	10.6	B	10.6	B	11.5	B	11.5	B	11.9	B	11.8	B	10.9	B
	Westbound Left	11.1	B	13.2	B	13.1	B	15.1	C	15.0	B	15.8	C	15.7	C	13.8	B
TM 3	US 50/CR 700W																
	Northbound	140.8	F	30.6	D	30.1	D	48.4	E	48.4	E	61.1	F	59.6	F	35.2	E
	Southbound	86.4	F	25.6	D	25.0	C	41.7	E	35.9	E	44.5	E	43.3	E	28.3	D
	Eastbound Left	9.6	A	10.7	B	10.7	B	11.7	B	111.6	B	12.0	B	11.9	B	11.0	B
	Westbound Left	10	A	11.3	B	11.2	B	12.4	B	12.3	B	12.9	B	12.8	B	11.6	B
TM 4	US 50/Hayden Pk																
	Southbound	116.8	F	52.8	F	48.2	E	16.5	C	15.9	C	23.9	C	27.5	D	16.5	C
	Eastbound Left	12.4	B	18.0	C	17.4	C	9.6	A	9.4	A	10.3	B	9.8	A	8.7	A
TM 5	US 50/Middle-High School Rd																
	Northbound Left	57.7	F	26.9	D	25.5	D	26.5	D	26.0	D	30.9	D	26.5	D	17.5	C
	Northbound Right	16.0	C	13.4	B	13.2	B	12.4	B	12.3	B	10.9	B	10.7	B	10.7	B
	Westbound Left	9.3	A	10.4	B	10.2	B	8.6	A	8.6	A	8.7	A	8.6	A	8.2	A
TM 6	US 50/Brownstown Rd																
	Southbound	287.4	F	31.4	D	32	D	57.6	F	53.4	F	78.6	F	57.6	F	25.8	D
	Eastbound Left	9.6	A	10.5	B	10.8	B	8.9	A	8.8	A	9.0	A	8.9	A	8.4	A
TM 7	US 50/Poplar St																
	Southbound	41.3	E	39.8	E	14.1	B	17.1	C	16.4	C	19.5	C	16.7	C	12.5	B
	Eastbound Left	13.0	B	31.9	D			10.1	B	10.0	A	10.6	B	10.0	B	8.9	A
TM 11	US 50/7th St																
	Northbound	46.6	E	21.4	C	22.7	C	15.6	C	13.5	B	22.1	C	18.0	C	17.1	C
	Southbound	49.1	E	20.2	C	21.1	C	15.7	C	12.5	B	22.0	C	23.1	C	17	C
	Eastbound Left	9.1	A	9.6	A	9.7	A	8.2	A	8.0	A	8.6	A	8.4	A	8.3	A
	Westbound Left	10.1	B	11.0	B	11.2	B	8.6	A	8.3	A	9.1	A	8.8	A	8.7	A
TM 12	US 50/Greensburg St																
	Northbound	33.8	D	20.3	C	19.6	C	13.7	B	11.7	B	19.9	C	16.2	C	15.0	B
	Southbound	26.9	D	19.3	C	15.4	C	13.6	B	11.9	B	19.0	C	15.8	C	14.9	B
	Eastbound Left	9.1	A	10.0	A	9.9	A	8.2	A	8.0	A	8.7	A	8.4	A	8.3	A
	Westbound Left	9.4	A	9.4	A	9.3	A	7.9	A	7.7	A	8.4	A	8.1	A	8.2	A
TM 13	US 50/Deer Creek Rd																
	Northbound	23.2	C	15.4	C	15.2	C	13.1	B	11.7	B	16.2	C	14.0	B	12.2	B
	Southbound	14.8	B	11.4	B	11.3	B	10.7	B	10.7	B	12.5	B	11.5	B	10.9	B
	Eastbound Left	8.9	A	9.2	A	9.2	A	8.1	A	7.9	A	8.4	A	8.2	A	8.0	A
	Westbound Left	8.7	A	9.3	A	9.2	A	8.1	A	7.9	A	8.4	A	8.2	A	8.0	A
TM 14	US 50/Main Street																
	Northbound	16.9	C	17.5	C	18.1	C	16.2	C	17.4	C	17.1	C	10.4	B	19.6	C
	Southbound	12.4	B	12.4	B	12.7	B	13.5	B	12.5	B	12.4	B	9.9	A	13.1	B
	Eastbound Left	8.6	A	8.6	A	8.7	A	8.6	A	8.6	A	8.6	A	7.9	A	8.8	A
	Westbound Left	8.5	A	8.6	A	8.6	A	8.5	A	8.6	A	8.5	A	7.8	A	8.7	A

Focusing on the overall LOS (the composite LOS for all approaches) for each of the four signalized intersections along existing US 50, the following observations are made:

- **Preliminary Alternative B** is the only build preliminary alternative that diverts sufficient traffic from US 50 to achieve an acceptable LOS at all four signalized intersections.
- The remaining build preliminary alternatives (**Added Travel Lanes (Widening), One-Way Pair, Preliminary Alternatives A, C, D and E**) achieve an acceptable LOS for three of the four signalized intersections including US 50 at US 31, Norris Avenue and Madison Street/Short Street/5th Street. They have one signalized intersection with a substandard LOS: US 50 at SR 3/SR 7. In order to bring this intersection's LOS to an acceptable level, intersection improvements would be required that may include signal timings, added southbound through lanes, added left-turn lanes would be required. Many of these intersection improvements would require right-of-way from all four quadrants.
- The **No-Build Alterative** does not add through traffic-carrying capacity and therefore fails to address the existing signalized intersections. Traffic operating conditions will continue to deteriorate in the future to where the **No-Build Alternative** will have a failing LOS at all four intersections.

Unsignalized intersection LOS analysis does not produce an overall LOS rating like the signalized intersection analysis discussed above. Since all ten unsignalized intersections are two-way stop control with US 50 being the through movement and the intersecting roadway being a stop condition, a LOS was calculated for the US 50 left-turn movement as well as the northbound and southbound intersecting roadway approaches. For the ten unsignalized intersections along existing US 50, the following observations are made:

- The build preliminary alternatives add through travel lanes along US 50. The US 50 median in rural areas and the two-way center left-turn lane in urban areas will enable left-turn movements from north-south intersecting roadways to be accomplished in two steps. This would be accomplished by providing adequate median width to store a vehicle so that it can cross one direction of US 50 traffic, temporarily stop in the median, and then cross the other direction of US 50 traffic. Without this median width, intersecting roadways would be required to cross US 50 in one step where gaps in the US 50 traffic would have to exist both eastbound and westbound on US 50 at the same time.
- The eastbound and westbound left-turn movements from existing US 50 to the intersecting roadway at all ten unsignalized intersections will operate at acceptable LOS for all build preliminary alternatives.
- Where the preliminary alternatives have different alignments, the difference in LOS for the unsignalized intersections depends on the effectiveness in diverting traffic from the existing US 50 corridor.
    - The **No-Build Alterative** does not add through traffic-carrying capacity and therefore fails to address the existing unsignalized intersections. Traffic operating conditions will continue to deteriorate in the future to where the **No-Build Alternative** will have seven of the ten unsignalized intersections where at least one of the intersecting roadway approaches will have a substandard LOS.
    - The US 50 intersections at CR 900 W and CR 700 W have a substandard approach for **all build Preliminary Alternatives** and the **No-Build Alternative**. Additional intersection analysis at these locations would be required to determine specific improvements necessary to improve the intersection LOS.
    - The **Added Travel Lanes (Widening) Preliminary Alternative** has four intersections where at least one of the intersecting roadway approaches has a substandard LOS, including CR 900 W, CR 700 W, Hayden Pike and Poplar Street. The US 50 and Hayden Pike intersection results in an unacceptable LOS F despite a significant reduction in delay.

- The **One-Way Pair Preliminary Alternative** has three intersections where at least one of the intersecting roadway approaches has a substandard LOS including CR 900 W, CR 700 W and Hayden Pike.
- **Preliminary Alternatives A, B, C and D** have three intersections where at least one of the intersecting roadway approaches has a substandard LOS including CR 900 W, CR 700 W and Brownstown Road.
- **Preliminary Alternative E** has two intersections where at least one of the intersecting roadway approaches has a substandard LOS including CR 900 W and CR 700 W.

Only the **One-Way Pair Preliminary Alternative** with the lowest through traffic volumes achieves a LOS E or better at all 10 unsignalized intersections. The **Added Travel Lanes (Widening) Preliminary Alternative** and **Preliminary Alternative E** achieve a LOS E or better at 9 of 10 unsignalized intersections. The northern new terrain preliminary alternatives achieve a LOS E or better at 8 of the 10 unsignalized intersections. Additional intersection analysis at the intersection locations with substandard LOS would be required to determine specific improvements necessary to improve the intersection LOS.

5.2.3 Segment Level of Service

Table 5.2 summarizes the LOS for major roadway segments for the No Build and Build Preliminary Alternatives in the Study Area. When a traffic signal exists within or at the end of a particular roadway segment, traffic flow conditions are dedicated by the LOS of the traffic signal, and the LOS analysis for traffic signals should be consulted to assess the impacts of the preliminary alternatives. Existing US 50 was broken into 18 segments. Other significant roadways in the project area were analyzed as well including the segment of SR 3/7 from Vernon to the SR3 and SR 7 intersection on the north side of North Vernon, a segment along SR 3 north of North Vernon, a segment along SR 7 north of North Vernon, the segment of Norris Avenue south of existing US 50 and two segments of Poplar Street from Brownstown Road to Madison Street/Short Street/5th Street. The following observations are made:

- The **No-Build Alterative** does not add through traffic-carrying capacity and therefore fails to address a majority of the segments that have an unacceptable LOS in the year 2006. Traffic operating conditions will continue to deteriorate in the future to where the **No-Build Alternative** will have seven segments of US 50 with substandard LOS. Four of these segments are located in the western portion of the project area, from US 31 to Hayden Pike. One segment is within North Vernon, between Poplar Street and Norris Avenue. Two segments are located east of North Vernon between Greensburg Street and CR 425 E. Additionally, in the year 2030, many segments of SR 3 and SR 7 will experience substandard LOS. This includes the segment of SR 3/SR 7 through North Vernon from Franklin Street to the SR 3/SR 7 split on the north side of North Vernon. It also includes segments of SR 7 north of North Vernon from north of SR 3 to the Jennings/Bartholomew County line and segments of SR 3 from SR 7 to CR 500 N.

- **Preliminary Alternative D** is the only alternative where all 18 segments of existing US 50 operate at acceptable LOS.

- **Preliminary Alternatives A, B, C and E** have one segment of US 50 with substandard LOS: Main Street in Butlerville to the Ripley County Line (approximately 4.5 miles). This is a result of these alternatives transitioning from a four-lane to a two-lane facility and terminating west of Butlerville. While the 2030 daily traffic is estimated to be higher when compared to the No-Build Alternative, the alternatives retain the existing alignment, do not add through traffic-carrying capacity and therefore do not divert any traffic off of existing US 50 in this segment.

- The **One-Way Pair Preliminary Alternative**, Added **Travel Lanes (Widening) Preliminary Alternative**, and **Preliminary Alternative E** each have two segments of US 50 with substandard LOS: CR 425E to Main Street in Butlerville (approximately 1.2 miles) and Main Street to the

Ripley County Line (approximately 4.5 miles). This is a result of these alternatives transitioning from a four-lane to a two-lane facility and terminating west of Butlerville. While the 2030 daily traffic is estimated to be higher when compared to the No-Build Alternative, the alternatives retain the existing alignment, do not add through traffic-carrying capacity or divert any traffic off of existing US 50 in this segment.

- For the segments of SR 3/SR 7 (State Street) analyzed, the **Added Travel Lanes (Widening) Preliminary Alternative**, **One-Way Pair Preliminary Alternative** and **Preliminary Alternative E** draw more traffic down SR 7 than the other alternatives. This additional traffic results in substandard LOS for two segments including the segment from Poplar Street northward to Franklin Street and from Franklin Street northward to SR 3.

- For SR 3 from SR 7 (State Street) to Madison Street, the **Added Travel Lanes (Widening) Preliminary Alternative**, **One-Way Pair Preliminary Alternative** and **Preliminary Alternative E** draw more traffic down SR 3 than the No-Build condition and result in a substandard LOS in this segment of SR 3. **Preliminary Alternatives A, B, C and D** reduce traffic on this segment of SR 3 and have an acceptable LOS.

- For the segment of Norris Avenue and the two segments of Poplar Street analyzed, all alternatives have an acceptable LOS. **Preliminary Alternative E** is the only preliminary alternative that has an adverse affect along Norris Avenue from Walnut Street (existing US 50) southward to Gum Street that results in a 74% increase in traffic in this segment of Norris Street over the No-Build condition. This is a result of traffic accessing the north side of North Vernon being drawn southward down SR 3/SR 7 (State Street) to existing US 50, following existing US 50 from State Street to Norris Avenue and continuing southward down Norris Avenue to the south new terrain preliminary alternative location.

In conclusion, the **Added Travel Lanes (Widening) Preliminary Alternative**, **One-Way Pair Preliminary Alternative** and **Preliminary Alternative E** options have the most significant adverse impact on other roadways drawing additional traffic down SR 3 and SR 7 from the north side of North Vernon to existing US 50. In the case of **Preliminary Alternative E**, traffic also increases by 74% on Norris Avenue from existing US 50 to the new terrain facility location.

Preliminary Alternative E is the only Build Preliminary Alternative that has the potential to affect traffic patterns in historic Vernon. Creating a new crossing of the Muscatatuck River north of Vernon, traffic on SR 3/7 has the potential to shift from the existing route entering the northwest side of Vernon to the northeast side of Vernon via Deer Creek Road and Pike Street. It is anticipated that approximately 30% of the traffic (approximately 4,000 vehicles per day) would shift from SR 3/7 to Deer Creek Road and Pike Street between the new terrain facility and Jackson Street. This shift in traffic may pose concerns relative to the physical and functional condition of Deer Creek Road and Pike Street as well as the Deer Creek Road Bridge over the Muscatatuck River. However, due to physical limitations on Deer Creek Road and the Deer Creek Road Muscatatuck River Bridge, this diversion may not occur. Nevertheless, through auto and truck traffic may have to be discouraged from using Deer Creek Road and Pike Street as a short cut.

Table 5.2: Segment LOS

Route	Termini		No Build	Widening	One-Way	Alt A	Alt B	Alt C	Alt D	Alt E
US 50	US 31 to CR 900W	Daily Traffic	18754	22507	22258	26296	25913	27613	27375	23709
		% Change from No Build		20%	19%	40%	38%	47%	46%	26%
		LOS	E	A	A	A	A	A	A	A
	CR 900W to CR 700W	Daily Traffic	17348	21307	21052	25199	24852	26487	26287	22623
		% Change from No Build		23%	21%	45%	43%	53%	52%	30%
		LOS	E	A	A	A	A	A	A	A
	CR 700W to CR 575W	Daily Traffic	16294	21072	20869	26584	24894	26492	26343	22474
		% Change from No Build		29%	28%	63%	53%	63%	62%	38%
		LOS	D	A	A	A	A	A	A	A
	CR 575W to Hayden Pike	Daily Traffic	20444	25616	25071	12942	12555	15608	13622	9299
		% Change from No Build		25%	23%	-37%	-39%	-24%	-33%	-55%
		LOS	D	B	B	B	B	B	B	A
	Hayden Pike to Brownstown Rd.	Daily Traffic	23453	30096	28901	17339	16941	18642	17139	12460
		% Change from No Build		28%	23%	-26%	-28%	-21%	-27%	-47%
		LOS	D	C	B	B	B	C	B	B
	Brownstown Road to Poplar St.	Daily Traffic	23768	30436	29190	17700	17213	18985	17527	12798
		% Change from No Build		28%	23%	-26%	-28%	-20%	-26%	-46%
		LOS	D	C	B	C	C	D	C	B
	Poplar St. to Norris Ave.	Daily Traffic	17946	29397	15990	13918	13665	14497	14160	9320
		% Change from No Build		64%	-11%	-22%	-24%	-19%	-21%	-48%
		LOS	E	C	C	D	D	D	D	C
	Norris Ave. to Gum St.	Daily Traffic	18202	29176	15519	13335	13161	14221	13644	15467
		% Change from No Build		60%	-15%	-27%	-28%	-22%	-25%	-15%
		LOS	D	C	B	C	C	C	C	C
	Gum St. to State St.	Daily Traffic	18906	30775	17009	15726	15498	15747	16047	18077
		% Change from No Build		63%	-10%	-17%	-18%	-17%	-15%	-4%
		LOS	D	C	C	C	C	D	D	D
	State St. to Jackson St.	Daily Traffic	17197	19748	10808	11123	7896	12970	11484	10852
		% Change from No Build		15%	-37%	-35%	-54%	-25%	-33%	-37%
		LOS	D	B	B	C	B	C	C	C
	Jackson St. to Madison St.	Daily Traffic	16501	18736	10532	10456	7090	12112	10608	10089
		% Change from No Build		14%	-36%	-37%	-57%	-27%	-36%	-39%
		LOS	D	B	A	B	B	C	C	B
	Madison St. to 7th St.	Daily Traffic	16279	18311	9752	8518	6504	11763	10185	9595
		% Change from No Build		12%	-40%	-48%	-60%	-28%	-37%	-41%
		LOS	D	B	A	B	B	C	C	B
	7th St. to 11th St.	Daily Traffic	16443	18530	18338	8719	6752	12100	10452	9621
		% Change from No Build		13%	12%	-47%	-59%	-26%	-36%	-41%
		LOS	C	B	B	B	A	C	B	B
	11th St. to Greensburg St.	Daily Traffic	15163	17126	16900	7338	5562	10699	9074	8321
		% Change from No Build		13%	11%	-52%	-63%	-29%	-40%	-45%
		LOS	C	A	A	A	A	B	B	B
	Greensburg St. to Deer Creek Rd.	Daily Traffic	15254	17220	16994	7433	5654	10798	9165	8336
		% Change from No Build		13%	11%	-51%	-63%	-29%	-40%	-45%
		LOS	D	A	A	A	A	C	C	C
	Deer Creek Rd. to CR 425E	Daily Traffic	16573	18083	17846	8318	6781	11817	9744	7543
		% Change from No Build		9%	8%	-50%	-59%	-29%	-41%	-54%
		LOS	D	A	A	A	A	C	C	C
	CR 425E to Main St.	Daily Traffic	9362	10336	10037	9576	9821	9515	2350	11050
		% Change from No Build		10%	7%	2%	5%	2%	-75%	18%
		LOS	C	D	D	C	C	C	A	D
	Main St. to Co. Line	Daily Traffic	11497	12488	12169	11670	11912	11672	4271	13106
		% Change from No Build		9%	6%	2%	4%	2%	-63%	14%
		LOS	C	D	D	D	D	D	A	D
SR 3	Madison St. to State St. (SR 7)	Daily Traffic	20411	21888	21855	14528	15715	18932	18992	21916
		% Change from No Build		7%	7%	-29%	-23%	-7%	-7%	7%
		LOS	D	E	E	C	C	D	D	E
SR 7	CR 300N to SR 3	Daily Traffic	18953	18753	18868	21307	16633	17564	17492	18673
		% Change from No Build		-1%	0%	12%	-12%	-7%	-8%	-1%
		LOS	B	B	B	B	A	B	B	B
	SR 3 to Franklin St.	Daily Traffic	42346	43726	43733	33324	33680	35762	36032	43570
		% Change from No Build		3%	3%	-21%	-20%	-16%	-15%	3%
		LOS	E	E	E	C	C	C	C	E
	Franklin St. to Poplar St.	Daily Traffic	42320	43701	43704	33303	33648	35729	36001	43545
		% Change from No Build		3%	3%	-21%	-20%	-16%	-15%	3%
		LOS	D	E	E	C	C	C	C	E
	Poplar St. to Walnut St. (US 50)	Daily Traffic	33007	38686	28682	26475	26680	27428	29087	36557
		% Change from No Build		17%	-13%	-20%	-19%	-17%	-12%	11%
		LOS	C	D	C	C	C	C	C	C
	Walnut St. to 7th St.	Daily Traffic	20091	21282	20952	20238	20301	19582	20491	19478
		% Change from No Build		6%	4%	1%	1%	-3%	2%	-3%
		LOS	C	C	C	C	C	C	C	C
	7th St. to Greenburg St.	Daily Traffic	21164	21514	21593	20213	20275	19751	20474	19279
		% Change from No Build		2%	2%	-4%	-4%	-7%	-3%	-9%
		LOS	D	D	D	D	D	D	D	D
	Greenburg St. to Jackson St.	Daily Traffic	15440	15828	15750	14263	14234	14097	14471	14336
		% Change from No Build		3%	2%	-8%	-8%	-9%	-6%	-7%
		LOS	C	C	C	C	C	C	C	C
Norris Ave.	Walnut St. (US 50) to Gum St.	Daily Traffic	4875	4788	3585	4376	4445	4635	4435	8503
		% Change from No Build		-2%	-26%	-10%	-9%	-5%	-9%	74%
		LOS	B	B	B	B	B	B	B	D
Poplar St.	Brownstown Road to State St.	Daily Traffic	4533	1698	13914	2350	2204	2027	2027	2178
		% Change from No Build		-63%	207%	-48%	-51%	-55%	-55%	-52%
		LOS	B	A	B	A	A	B	A	A
	State St. to Madison St.	Daily Traffic	2871	2872	12638	2825	2883	3033	3033	2887
		% Change from No Build		0%	340%	-2%	0%	6%	6%	1%
		LOS	B	B	B	B	B	B	B	B

5.2.4 Traffic Diversion

The traffic patterns in and around North Vernon will change differently depending on the preliminary alternative being considered. New terrain alternates will divert a certain portion of vehicles from the existing facility to the new facility. For this study, the diversion of total traffic and the diversion of truck traffic from existing US 50 related to each of the preliminary alternatives was analyzed and is described below.

5.2.4.1 Total Traffic Diversion

Table 5.3 shows the percent of change of total year 2030 traffic volumes along existing US 50 compared to the No-Build condition assuming construction of a particular preliminary alternative. It also shows the projected 2030 traffic along existing US 50 for the No-Build condition as well as assuming construction of a particular preliminary alternative. This table reveals the following related to total traffic diversion from existing US 50:

- The **One-Way Pair** and **Added Travel Lanes (Widening) Preliminary Alternatives** retain the existing alignment through town and therefore do not divert any traffic off existing US 50. Since these alternatives increase the traffic capacity of the existing corridor, the 2030 daily traffic is estimated to be higher when compared to the No-Build Alternative.
- While the **One-Way Pair Preliminary Alternative** reduces traffic (autos and trucks) on existing US 50 (Walnut Street) through North Vernon between Poplar Street and 7th Street, the combination of traffic for both directions – Walnut Street for eastbound and Poplar Street for westbound US 50 traffic – for the **One-Way Pair Preliminary Alternative** results in more traffic through downtown North Vernon than the No-Build condition.
- All Build Preliminary Alternatives attract additional traffic to the US 50 Corridor over the No Build Condition. However, the **Added Travel Lanes (Widening) Preliminary Alternative**, **One-Way Pair Preliminary Alternative** and **Preliminary Alternative E** draw less additional traffic throughout the area than the north new terrain preliminary alternatives through the corridor.

For the new terrain preliminary alternatives, the effectiveness in diverting total traffic from existing US 50 varies. Based on the percent diversion of daily traffic from existing US 50 from CR 265 W to Norris Avenue, the following was observed:

- **Preliminary Alternative E** was the best performer related to total traffic diversion with reductions in each of the individual segments ranging between 45% and 55% diversion.
- **Preliminary Alternatives A, B and D** performed similarly in their effectiveness in diverting total traffic in each of the individual segments and had reductions that averaged approximately 25% less traffic diverted than **Preliminary Alternative E**.
- **Preliminary Alternative C** consistently performed worst related to its effectiveness in diverting total traffic in each of the individual segments and had reductions that averaged approximately 10% less traffic diverted than the grouping of **Preliminary Alternatives A, B and D**.

Based on the percent diversion of daily traffic from existing US 50 through North Vernon from Norris Avenue to CR 425 E, the following was observed:

- **Preliminary Alternative B** was the best performer related to total traffic diversion with reductions in each of the individual segments averaging between 50% and 60% diversion.
- **Preliminary Alternatives A, D and E** performed similarly in their effectiveness in diverting total traffic in each of the individual segments and had reductions that averaged approximately 15% less traffic diverted than **Preliminary Alternative B**.
- **Preliminary Alternative C** consistently performed worst related to its effectiveness in diverting total traffic in each of the individual segments and had reductions that averaged approximately

10% to 15% less traffic diverted than the grouping of **Preliminary Alternatives A, D and E.** This is due to the circuitous route of **Preliminary Alternative C** around North Vernon.

When the percent diversion of daily traffic from existing US 50 through North Vernon from CR 265 W to CR 425 E is weighted by vehicle-miles of travel, the following was observed:

- **Preliminary Alternative E** (-46%) and **Preliminary Alternative B** (-42%) were the best performers related to total traffic diversion.
- **Preliminary Alternative A** (-38%) and **Preliminary Alternative D** (-34%) performed similarly in their effectiveness in diverting total traffic in each of the individual segments and had reductions that averaged approximately 8% less traffic diverted that **Preliminary Alternatives E and B**.
- **Preliminary Alternative C** (-24%) performed the worst related to its effectiveness in diverting total traffic in each of the individual segments and had reductions that averaged approximately 12% less traffic diverted than the grouping of **Preliminary Alternatives A and D**. This is due to the circuitous route of **Preliminary Alternative C** around North Vernon.

Based on the percent diversion of daily traffic from existing US 50 from CR 425 E to the Jennings/Ripley County line, the following was observed:

- **Preliminary Alternatives A, B, C and E** transition from a four-lane to a two-lane facility and terminate west of Butlerville. While the 2030 daily traffic is estimated to be higher when compared to the No-Build Alternative, the alternatives retain the existing alignment, do not add through traffic-carrying capacity and therefore do not divert any traffic off of existing US 50 in this segment.
- Only **Preliminary Alternative D** is effective in reducing traffic on existing US 50 through Butlerville with total traffic reductions ranging between 60% and 75%. This is due to the route of **Preliminary Alternative D** on new terrain around the north side of Butlerville.

5.2.4.2 Truck Traffic Diversion

Table 5.4 shows the percent of change of year 2030 truck traffic volumes along existing US 50 compared to the No-Build condition assuming construction of a particular preliminary alternative. It also shows the projected 2030 truck traffic along existing US 50 for the No-Build condition as well as assuming construction of a particular preliminary alternative. This table reveals the following related to truck traffic diversion from existing US 50:

- Existing truck traffic along US 50 through North Vernon and from North Vernon to the Jennings/Ripley County Line exceeds statewide averages for similar urban and principal arterials (17.9% in rural and 8.6% in urban areas). For the **No-Build Alternative** in the year 2030, truck traffic on US 50 is forecasted to grow between 111% and 300%, increasing the percentage of trucks on the corridor.
- The **One-Way Pair** and **Added Travel Lanes (Widening) Preliminary Alternatives** retain the existing alignment through town and therefore do not divert any truck traffic off existing US 50.

For the new terrain preliminary alternatives, the effectiveness in diverting truck traffic from existing US 50 varies. Based on the percent diversion of daily truck traffic from existing US 50 from CR 265 W to Norris Avenue, the following was observed:

- **Preliminary Alternative E** was the best performer related to truck traffic diversion with reductions in each of the individual segments ranging between 75% and 80% diversion.
- **Preliminary Alternatives A, B and D** performed similarly in their effectiveness in diverting truck traffic in each of the individual segments and had reductions that averaged approximately 10% less truck traffic diverted than **Preliminary Alternative E**.

- **Preliminary Alternative C** consistently performed worst related to its effectiveness in diverting truck traffic in each of the individual segments and had reductions that averaged approximately 20% less truck traffic diverted than the grouping of **Preliminary Alternatives A, B and D**.

Based on the percent diversion of daily truck from existing US 50 through North Vernon from Norris Avenue to CR 425 E, the following was observed:

- **Preliminary Alternatives A, B and D** performed similarly and were the best performers related to truck traffic diversion in each of the individual segments with reductions in each of the individual segments averaging between 60% and 80% diversion.
- **Preliminary Alternative E** performed slightly worse in its effectiveness in diverting truck traffic in each of the individual segments and had reductions that averaged approximately 30% less truck traffic diverted than the grouping of **Preliminary Alternatives A, B and D**. This indicates that three of the four northern new terrain preliminary alternatives are more effective than the southern new terrain preliminary alternative in serving truck traffic to the industrial and regional commercial areas on the north side of North Vernon.
- **Preliminary Alternative C** consistently performed worst related to its effectiveness in diverting truck traffic in each of the individual segments and had reductions that averaged approximately 20% less truck traffic diverted than **Preliminary Alternative E.** This is due to the circuitous route of **Preliminary Alternative C** around North Vernon.

When the percent diversion of daily truck from existing US 50 through North Vernon from CR 265 W to CR 425 E is weighted by vehicle-miles of travel, the following was observed:

- **Preliminary Alternative B** (-73%), **Preliminary Alternative D** (-72%), **Preliminary Alternative A** (-70%) and **Preliminary Alternative E** (-69%) performed similarly and were the best performers related to truck traffic diversion. **Preliminary Alternative E** is the least effective of these at 69%, due to its distance from the industrial and regional commercial areas on the north side of North Vernon. This indicates that three of the four northern new terrain preliminary alternatives are more effective than the southern new terrain preliminary alternative in serving truck traffic to the industrial and regional commercial areas on the north side of North Vernon.
- **Preliminary Alternative C** (-45%) performed the worst related to its effectiveness in diverting truck traffic in each of the individual segments. This is due to the circuitous route of **Preliminary Alternative C** around North Vernon.

Based on the percent diversion of daily truck from existing US 50 from CR 425 E to the Jennings/Ripley County line, the following was observed:

- **Preliminary Alternatives A, B, C and E** transition from a four-lane to a two-lane facility and terminate west of Butlerville. While the 2030 truck traffic is estimated to be essentially the same as or slightly higher when compared to the No-Build Alternative, the alternatives retain the existing alignment, do not add through traffic-carrying capacity and therefore have a negligible effect related to diversion of truck traffic off of existing US 50 in this segment.
- Only **Preliminary Alternative D** is effective in reducing truck traffic on existing US 50 through Butlerville with total traffic reductions of approximately 80%. This is due to the route of **Preliminary Alternative D** on new terrain around the north side of Butlerville.

5.2.4.3 Traffic Diversion Summary

The **One-Way Pair** and **Added Travel Lanes (Widening) Preliminary Alternatives** retain the existing alignment through town and therefore do not divert any traffic off existing US 50. Since these alternatives increase the traffic capacity of the existing corridor, the 2030 daily traffic is estimated to be higher when compared to the No-Build Alternative. **Preliminary Alternatives B and E** perform slightly better than but very similar to **Preliminary Alternatives A and D** when considering total traffic diversion. When considering truck traffic diversion, **Preliminary Alternatives A, B, D and E** perform similarly. It should be noted that **Preliminary Alternative E** is not as effective as **Preliminary Alternatives A and B** in diverting

traffic on existing US 50 between Norris Avenue and State Street (SR 7) because **Preliminary Alternative E** draws increased traffic from the north side of North Vernon through downtown to the south new terrain preliminary alternative location. Preliminary **Alternative C** clearly performs the worst and diverts the least amount of total traffic and truck traffic when compared to the other new terrain preliminary alternatives.

Table 5.3: Daily Traffic on Existing US 50

	No Build	Widening		One-Way Pair		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
Leg	2030 All	2030 All	% Change from No Build	2030 All	% Change from No Build	2030 All	% Change from No Build	2030 All	% Change from No Build	2030 All	% Change from No Build	2030 All	% Change from No Build	2030 All	% Change from No Build
US 50 @ US 31															
West (Eastbound)	38468	39745	3.3%	39610	3.0%	38914	1.2%	39817	3.5%	40663	5.7%	40560	5.4%	40842	6.2%
East (Westbound)	18754	22507	20.0%	22258	18.7%	26296	40.2%	25913	38.2%	27613	47.2%	27375	46.0%	23709	26.4%
US 50 @ CR 900W															
West (Eastbound)	18663	22418	20.1%	22171	18.8%	26211	40.4%	25825	38.4%	27526	47.5%	27289	46.2%	23625	26.6%
East (Westbound)	17348	21307	22.8%	21052	21.4%	25199	45.3%	24852	43.3%	26487	52.7%	26287	51.5%	22623	30.4%
US 50 @ CR 700W															
West (Eastbound)	17348	21307	22.8%	21052	21.4%	25199	45.3%	24852	43.3%	26487	52.7%	26287	51.5%	22623	30.4%
East (Westbound)	16294	21072	29.3%	20869	28.1%	26584	63.2%	24894	52.8%	26492	62.6%	26343	61.7%	22474	37.9%
US 50 @ Hayden Pike															
West (Eastbound)	20444	25616	25.3%	25071	22.6%	12942	-36.7%	12555	-38.6%	15608	-23.7%	13622	-33.4%	9299	-54.5%
East (Westbound)	20076	25355	26.3%	24810	23.6%	12684	-36.8%	12300	-38.7%	14549	-27.5%	12684	-36.8%	9036	-55.0%
US 50 @ Middle School/High School Road															
West (Eastbound)	20076	25355	26.3%	24810	23.6%	12684	-36.8%	12300	-38.7%	14549	-27.5%	12684	-36.8%	9036	-55.0%
East (Westbound)	23453	30096	28.3%	28901	23.2%	17339	-26.1%	16941	-27.8%	18642	-20.5%	17139	-26.9%	12460	-46.9%
US 50 @ Brownstown Road															
West (Eastbound)	23453	29756	26.9%	28901	23.2%	17339	-26.1%	16941	-27.8%	18642	-20.5%	17139	-26.9%	12460	-46.9%
East (Westbound)	23768	30096	26.6%	29190	22.8%	17700	-25.5%	17213	-27.6%	18985	-20.1%	17527	-26.3%	12798	-46.2%
US 50 @ Poplar Street															
West (Eastbound)	22363	29397	31.5%	28008	25.2%	16268	-27.3%	15869	-29.0%	17629	-21.2%	16187	-27.6%	11498	-48.6%
East (Westbound)	17946	29397	63.8%	15990	-10.9%	13918	-22.4%	13865	-23.9%	14497	-19.2%	14160	-21.1%	9320	-48.1%
US 50 @ Norris Avenue															
West (Eastbound)	17946	29397	63.8%	15990	-10.9%	13918	-22.4%	13865	-23.9%	14497	-19.2%	14160	-21.1%	9320	-48.1%
East (Westbound)	18202	29176	60.3%	15519	-14.7%	13335	-26.7%	13161	-27.7%	14221	-21.9%	13644	-25.0%	15467	-15.0%
US 50 (Walnut St.) @ SR 3 (State St.)															
West (Eastbound)	18906	30775	62.8%	17009	-10.0%	15726	-16.8%	15498	-18.0%	15747	-16.7%	16047	-15.1%	18077	-4.4%
East (Westbound)	17197	19748	14.8%	10808	-37.2%	11123	-35.3%	7896	-54.1%	12970	-24.6%	11484	-33.2%	10852	-36.9%
US 50 (Walnut St.)/5th St. @ Monroe-Short St./US 50 (Buckeye St.)															
West (Walnut EB)	16501	18736	13.5%	10532	-36.2%	10456	-36.6%	7090	-57.0%	12112	-26.6%	10608	-35.7%	10089	-38.9%
South (Buckeye NB)	16279	18311	12.5%	9752	-40.1%	8518	-47.7%	6504	-60.0%	11763	-27.7%	10185	-37.4%	9595	-41.1%
US 50 @ 7th Street/Vernon Street															
West (Eastbound)	16557	18594	12.3%	19236	16.2%	8804	-46.8%	6772	-59.1%	12050	-27.2%	10455	-36.9%	9870	-40.4%
East (Westbound)	16443	18530	12.7%	18338	11.5%	8719	-47.0%	6752	-58.9%	12100	-26.4%	10452	-36.4%	9621	-41.5%
US 50 @ Greensburg Street															
West (Eastbound)	15163	17126	12.9%	16900	11.5%	7338	-51.6%	5562	-63.3%	10699	-29.4%	9074	-40.2%	8321	-45.1%
East (Westbound)	15254	17220	12.9%	16994	11.4%	7433	-51.3%	5654	-62.9%	10798	-29.2%	9165	-39.9%	8336	-45.4%
US 50 @ Dear Creek Road															
West (Eastbound)	14451	16380	13.3%	16156	11.8%	6627	-54.1%	4931	-65.9%	10017	-30.7%	8362	-42.1%	7566	-47.6%
East (Westbound)	16573	18083	9.1%	17846	7.7%	8318	-49.8%	6781	-59.1%	11817	-28.7%	9744	-41.2%	7543	-54.5%
US 50 @ Main St. (Butlerville)															
West (Eastbound)	9362	10336	10.4%	10037	7.2%	9576	2.3%	9821	4.9%	9515	1.6%	2350	-74.9%	11050	18.0%
East (Westbound)	11497	12488	8.6%	12169	5.8%	11670	1.5%	11912	3.6%	11672	1.5%	4271	-62.9%	13106	14.0%

Table 5.4: Trucks on Existing US 50

Leg	No Build	Widening		One_Way		Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	2030 Trucks	2030 Trucks	% Change from No Build	2030 Trucks	% Change from No Build	2030 Trucks	% Change from No Build	2030 Trucks	% Change from No Build	2030 Trucks	% Change from No Build	2030 Trucks	% Change from No Build	2030 Trucks	% Change from No Build
US 50 @ US 31															
West (Eastbound)	8407	8756	4.2%	8634	2.7%	7710	-8.3%	8539	1.6%	8826	5.0%	8710	3.6%	8951	6.5%
East (Westbound)	5584	6552	17.3%	6397	14.6%	6690	19.8%	7376	32.1%	7798	39.6%	7627	36.6%	6771	21.3%
US 50 @ CR 900W															
West (Eastbound)	5550	6517	17.4%	6362	14.6%	6657	19.9%	7343	32.3%	7765	39.9%	7594	36.8%	6736	21.4%
East (Westbound)	5225	6247	19.6%	6091	16.6%	6391	22.3%	7073	35.4%	7482	43.2%	7317	40.0%	6468	23.8%
US 50 @ CR 700W															
West (Eastbound)	5225	6247	19.6%	6091	16.6%	6391	22.3%	7073	35.4%	7482	43.2%	7317	40.0%	6468	23.8%
East (Westbound)	4374	5557	27.0%	5401	23.5%	6236	42.6%	6399	46.3%	6811	55.7%	6646	51.9%	5779	32.1%
US 50 @ Hayden Pike															
West (Eastbound)	4199	5532	31.7%	5304	26.3%	1263	-69.9%	1201	-71.4%	2232	-46.8%	1237	-70.5%	763	-81.8%
East (Westbound)	4192	5530	31.9%	5303	26.5%	1262	-69.9%	1200	-71.4%	2211	-47.3%	1221	-70.9%	762	-81.8%
US 50 @ Middle School/High School Road															
West (Eastbound)	4192	5530	31.9%	5303	26.5%	1262	-69.9%	1200	-71.4%	2211	-47.3%	1221	-70.9%	762	-81.8%
East (Westbound)	4292	5679	32.3%	5428	26.5%	1413	-67.1%	1351	-68.5%	2343	-45.4%	1367	-68.2%	851	-80.2%
US 50 @ Brownstown Road															
West (Eastbound)	4292	5679	32.3%	5428	26.5%	1413	-67.1%	1351	-68.5%	2343	-45.4%	1367	-68.2%	851	-80.2%
East (Westbound)	4295	5684	32.3%	5431	26.4%	1418	-67.0%	1356	-68.4%	2349	-45.3%	1374	-68.0%	856	-80.1%
US 50 @ Poplar Street															
West (Eastbound)	4352	5812	33.5%	5470	25.7%	1471	-66.2%	1409	-67.6%	2402	-44.8%	1428	-67.2%	926	-78.7%
East (Westbound)	3716	5812	56.4%	3037	-18.3%	1438	-61.3%	1372	-63.1%	2353	-36.7%	1395	-62.5%	899	-75.8%
US 50 @ Norris Avenue															
West (Eastbound)	3716	5812	56.4%	3037	-18.3%	1438	-61.3%	1372	-63.1%	2353	-36.7%	1395	-62.5%	899	-75.8%
East (Westbound)	3642	5574	53.0%	2904	-20.3%	1103	-69.7%	1046	-71.3%	2095	-42.5%	1067	-70.7%	2516	-30.9%
US 50 (Walnut St.) @ SR 3 (State St.)															
West (Eastbound)	3766	5876	56.0%	3106	-17.5%	1606	-57.4%	1531	-59.3%	2424	-35.6%	1558	-58.6%	3066	-18.6%
East (Westbound)	3139	3634	15.8%	1875	-40.3%	1487	-52.6%	600	-80.9%	1872	-40.4%	750	-76.1%	1074	-65.8%
US 50 (Walnut St.)/5th St. @ Monroe-Short St./US 50 (Buckeye St.)															
West (Walnut EB)	3071	3547	15.5%	1868	-39.2%	1426	-53.6%	526	-82.9%	1802	-41.3%	675	-78.0%	1001	-67.4%
South (Buckeye NB)	3289	3770	14.6%	1934	-41.2%	679	-79.4%	495	-84.9%	1831	-44.3%	638	-80.6%	1220	-62.9%
US 50 @ 7th Street/Vernon Street															
West (Eastbound)	3331	3813	14.5%	3762	12.9%	725	-78.2%	537	-83.9%	1877	-43.7%	681	-79.6%	1263	-62.1%
East (Westbound)	3463	3954	14.2%	3826	10.5%	871	-74.8%	678	-80.4%	2025	-41.5%	818	-76.4%	1371	-60.4%
US 50 @ Greensburg Street															
West (Eastbound)	3414	3887	13.9%	3758	10.1%	807	-76.4%	614	-82.0%	1957	-42.7%	749	-78.1%	1321	-61.3%
East (Westbound)	3419	3893	13.9%	3764	10.1%	813	-76.2%	619	-81.9%	1962	-42.6%	754	-77.9%	1321	-61.4%
US 50 @ Dear Creek Road															
West (Eastbound)	3426	3895	13.7%	3765	9.9%	823	-76.0%	625	-81.8%	1971	-42.5%	762	-77.8%	1325	-61.3%
East (Westbound)	3640	3974	9.2%	3843	5.6%	907	-75.1%	746	-79.5%	2061	-43.4%	842	-76.9%	1302	-64.2%
US 50 @ Main St. (Butlerville)															
West (Eastbound)	3456	3762	8.9%	3628	5.0%	3243	-6.2%	3499	1.2%	3424	-0.9%	666	-80.7%	3892	12.6%
East (Westbound)	3471	3777	8.8%	3643	5.0%	3256	-6.2%	3512	1.2%	3437	-1.0%	679	-80.4%	3907	12.6%

5.2.5 Traffic Flow Impediments

Traffic flow impediments are anything that hinders the free-flow of traffic such as traffic signals, tight curves, steep grades and at-grade railroad crossings. For the **No-Build Alternative**, traffic flow impediments will not be reduced or eliminated and will include:

- Delays at traffic signals on US 50 at US 31, Norris Avenue, State Street (SR 3/7), Jackson Street and Madison/Short/5th Street.
- Delays at traffic signals on SR 3 at Madison Street for traffic accessing the existing and actively marketed industrial areas on the north side of North Vernon.
- Delays at traffic signals on SR 7 at SR 3, Franklin Street, and Poplar Street for traffic accessing regional retail and industrial employment concentrations on the north side of North Vernon.
- Reduced operating speeds below the posted speed limits on US 50 at the hill east of Sixmile Creek, near CR 600 W, and curves along US 50 at Norris Avenue and Madison Street.
- Occasional delays from trains on the Madison Railroad at the US 50 and Madison/Short/5th Street intersection.

The **Added Travel Lanes (Widening) and One-Way Pair Preliminary Alternatives** will have a slight impact on traffic flow impediments. They will address reduced operating speeds associated with hills and curves; however, they will not address impediments associated with traffic signals or an at-grade railroad crossing (approximately 2 trains per day).

Modest improvements related to traffic flow impediments are shown for the southern new terrain preliminary alternative, **Preliminary Alternative E**. While traffic signals located at the US 31, Norris Avenue and SR 3/7 intersections will still be present, two existing traffic signals will be eliminated. There will be one at-grade railroad crossing (approximately 2 trains per day) located on the east approach of the US 50 and SR 7/SR 3 intersection for traffic diverted from existing US 50. Additionally, increased traffic from the north side of North Vernon along SR 3/7 from Madison Street to existing US 50 (Walnut Street), along existing US 50 from State Street to Norris Avenue and along Norris Avenue from existing US 50 (Walnut Street) to the new terrain preliminary alternative will result in greater delays.

The northern new terrain preliminary alternatives, **Preliminary Alternatives A through D**, will have the greatest improvement to traffic flow impediments. For these preliminary alternatives, traffic signals located at the US 31, SR 7 and SR 3 intersections will still be present; however, two existing traffic signals will be eliminated and there will be no at-grade railroad crossings for traffic diverted from existing US 50 to the alternatives. The diversion of SR 3 and SR 7 traffic to the new terrain preliminary alternatives from north of the alternatives will also reduce the magnitude of delay to traffic on SR 3 and SR 7 north of existing US 50.

5.2.6 Average Daily Traffic Volumes

The average daily traffic volumes for the No Build and Build Preliminary Alternatives appear in Table 5.5. In the case of the **One-Way Pair Preliminary Alternative**, the eastbound daily traffic volumes on Walnut Street and the westbound daily traffic volumes on Poplar Street have been combined (highlighted in green). For the new terrain preliminary alternatives, the new alignment components are shaded in yellow. Through North Vernon, the daily traffic volumes on the **Added Travel Lanes (Widening) and One-Way Pair Preliminary Alternatives** exceed that of the No Build condition. **Preliminary Alternative C** carries the lowest daily traffic volumes, shows the weakest traffic attraction of the new terrain preliminary alternatives from SR 3 to US 50 on the east side of North Vernon, and drops under 5,000 vehicles per day as it crosses the Muscatatuck River. The other new terrain preliminary alternatives perform similarly with **Preliminary Alternative B** appearing to carry slightly higher average daily volumes, followed by **Preliminary Alternatives E, A and D**. From US 50 on the west side of North Vernon to SR 3, **Preliminary Alternative A** carries greater traffic than the other new terrain preliminary alternatives.

Table 5.5: Preliminary Alternative Daily Traffic Volumes

(green = total for pair; yellow = new alignment)

Termini	No Build		Widening		One-Way Pair	
	2030 All	2030 Trucks	2030 All	2030 Trucks	2030 All	2030 Trucks
US 31 to CR 900W	18754	5584	22507	6552	22258	6397
CR 900W to CR 700W	17348	5225	21307	6247	21052	6091
CR 700W to CR 575W	16294	4374	21072	5557	20869	5401
CR 575W to Hayden Pike	20444	4199	25616	5532	25071	5304
Hayden Pike to Brownstown Rd.	23453	4292	30096	5679	28901	5428
Brownstown Rd. to Poplar St.	23768	4295	30436	5684	29190	5431
Poplar St. to Norris Ave.	17946	3716	29397	5812	29904	5683
Norris Ave. to Gum St.	18202	3642	29176	5574	29433	5550
Gum St. to State St.	18906	3766	30775	5876	31879	5774
State St. to Jackson St.	17197	3139	19748	3634	23446	3641
Jackson St. to Madison St.	16501	3071	18736	3547	22032	3618
Madison St. to 7th St.	16279	3289	18311	3770	19976	3766
7th St. to 11th St.	16443	3463	18530	3954	18338	3826
11th St. to Greensburg St.	15163	3414	17126	3887	16900	3758
Greensburg St. to Deer Creek Rd.	15254	3419	17220	3893	16994	3764
Deer Creek Rd. to CR 425E	16573	3640	18083	3974	17846	3843
CR 425E to Main St.	9362	3456	10336	3762	10037	3628
Main St. to Co. Line	11497	3471	12488	3777	12169	3643

Termini	Alternative A		Alternative B		Alternative C		Alternative D	
	2030 All	2030 Trucks	2030 All	2030 Trucks	2030 All	2030 Trucks	2030 All	2030 Trucks
US 31 to CR 900W	26296	6690	25913	7376	27613	7798	27375	7627
CR 900W to CR 700W	25199	6391	24852	7073	26487	7482	26287	7317
CR 700W to CR 575W	26584	6236	24894	6399	26492	6811	26343	6646
CR 575W to O & M Avenue	18086	4935	16762	5155	15091	4483	17044	5345
O & M Avenue to SR 7	18854	4941	16988	5155	16242	4504	18091	5363
SR 7 to SR 3	19410	5118	18588	5212	12930	4252	15115	5161
SR 3 to CR 75W	13415	3437	12165	2644	8167	1472	10960	2648
CR 75W to Base Rd.	11918	2621	13154	2988	8787	1591	11643	2828
Base Rd. to CR 150E	10313	2596	12249	3037	6401	1653	9231	2890
CR 150E to US 50	8970	2531	12249	3037	4990	1552	8729	2830
US 50 to CR 425E	14232	3310	16679	3671	13842	3486		
CR 425E to Main St.	9576	3243	9821	3499	9515	3424		
Main St. to Co. Line	11670	3256	11912	3512	11672	3437	10415	3362

Termini	Alternative E	
	2030 All	2030 Trucks
US 31 to CR 900W	23709	6771
CR 900W to CR 700W	22623	6468
CR 700W to CR 575W	22474	5779
CR 575W to CR 265W	23451	5818
CR 265W to Norris Ave.	18246	5003
Norris Ave. to SR 3/7	12651	3099
SR 3/7 to Deer Creek Rd.	14893	4175
Deer Creek Rd. to US 50	11108	2785
US 50 to CR 425E	15969	3965
CR 425E to Main St.	11050	3892
Main St. to Co. Line	13106	3907

5.2.7 Safety

Because all build preliminary alternatives result in limited access facilities with lower crash rates on all or a portion of the route, crash rate frequencies are lower for Build Preliminary Alternatives than the No Build condition. In the case of the **Added Travel Lanes (Widening) and One-Way Pair Preliminary Alternatives**, the portion of the preliminary alternatives from Hayden Pike to Greensburg Street will not be subject to limited access control. On the other hand, the new terrain preliminary alternatives are anticipated to have limited access control throughout, and attract greater traffic volumes than the **Added Travel Lanes (Widening) and One-Way Pair Preliminary Alternatives** from lower functional class facilities with higher crash rates or the same functional class without access control. The Build Preliminary Alternatives all attract 3 to 4 percent vehicle-miles of travel from lower functional class facilities compared to the No Build Condition. **Preliminary Alternative A** attracts the greatest vehicle-miles of travel from lower functional class facilities, followed by **Preliminary Alternative D**, **Preliminary Alternative C**, **Preliminary Alternative E**, **Preliminary Alternative B**, **Added Travel Lanes (Widening) and One-Way Pair Preliminary Alternatives**.

Based on the Net Benefit-Cost Analysis tool (Net_BC) used in conjunction with the US 50 Sub-area Travel Demand Model (holding the total trips in the Sub-area constant for comparison to the No Build), the ranking of the Build Preliminary Alternatives in reducing crashes for a 30 year period after the opening of the facility over the No-Build Condition (1,055 crashes) is **Preliminary Alternative E** (964 crashes), **Added Travel Lanes (Widening) Preliminary Alternative** (981 crashes), **Preliminary Alternative D** (987 crashes), **One-Way Pair Preliminary Alternative** (988 crashes), **Preliminary Alternative B** (991 crashes), **Preliminary Alternative C** (991 crashes), and **Preliminary Alternative A** (1,001) crashes. **Preliminary Alternative E** is clearly the most effective Build Preliminary Alternative, and the other build preliminary alternatives differ one percent or less between each other in crash reduction. If crash rates are considered (crashes divided by annual vehicle miles of travel), the **Added Travel Lanes (Widening) Preliminary Alternative** has the lowest crash rate followed by **Preliminary Alternative E**, **Preliminary Alternative D**, **One-Way Pair Preliminary Alternative**, **Preliminary Alternative C**, **Preliminary Alternative A** and **Preliminary Alternative B**. However, when traffic diverted into the US 50 Sub-area is considered, the lowest crash rate shifts to **Preliminary Alternative E** followed by **Preliminary Alternative D**, **Preliminary Alternative C**, **Added Travel Lanes (Widening) Preliminary Alternative**, **Preliminary Alternative A**, **One-Way Pair Preliminary Alternative** and **Preliminary Alternative B**.

Referring to Tables 5.4 and 5.5, all Build Preliminary Alternatives attract additional truck traffic to the US 50 corridor. However, the **Added Travel Lanes (Widening) and One-Way Pair Preliminary Alternatives** attract the additional truck traffic to existing US 50 through downtown North Vernon. Thus, the **Added Travel Lanes (Widening) and One-Way Pair Preliminary Alternatives** not only fail to reduce hazardous material deliveries through downtown North Vernon; they increase such deliveries through downtown. On the other hand, the new terrain preliminary alternatives all reduce hazardous material deliveries through downtown North Vernon. From Hayden Pike to Greensburg Street, **Preliminary Alternative B** is the most effective in diverting truck traffic, followed by **Preliminary Alternative D** and **Preliminary Alternative A**. **Preliminary Alternative E** is less effective than **Preliminary Alternatives A, B and D** because the greater truck traffic diversion west of Norris Avenue is offset by lesser truck traffic diversion east of Norris Avenue. Further, **Preliminary Alternative E** draws additional truck traffic down the SR 3/7 corridor from the north side of North Vernon to the southern new terrain route. **Preliminary Alternative C** is the least effective of the new terrain preliminary alternatives in diverting hazardous material delivers through downtown North Vernon.

5.3 Community and Environmental Considerations

This section provides information on community and environmental features of the Study Area as well as estimated construction cost estimates, potential human impacts and potential natural environment impacts that may result from transportation options developed for the project. The evaluation of the community and environmental impacts of the transportation options is an important part of the ultimate selection of alternative(s) recommend for further NEPA Studies. Table 5.6 summarizes the construction cost estimates, socio-economic and environmental impacts for each the preliminary alternatives under study.

5.3.1 Preliminary Cost Estimates

For preliminary construction cost estimates for the preliminary alternatives in this phase of the project, the roadway typical section for each section of each preliminary alternative was utilized as described in Chapter 4 – Definition of Alternatives. The assumed typical sections were used and incorporated into the INDOT Project Costing Tool appropriately. Minor revisions were then made to the INDOT Project Costing Tool to better represent the field conditions in the Study Area. Factors for utility relocation, maintenance of traffic, and mobilization were included. The INDOT Project Costing Tool estimates construction costs in year 2002 dollars so costs were inflated by approximately 43%, based on historical construction cost data, to determine current year 2007 costs. The current year 2007 construction costs were then inflated by 3.5% per year, as directed by INDOT, to determine construction year 2015 costs utilized for comparison of preliminary alternatives in this study.

For the Western Section Preliminary Alternatives the construction cost estimates for Preliminary **Alternatives W1, W2 and W3** were essentially the same (within 2% of each other) while **Preliminary Alternative W** was approximately 10% less. When ranking the construction cost estimates for the preliminary alternatives, **Preliminary Alternative W2** has the highest associated estimated construction costs (2015 dollars) at $59.7 million, followed by **Preliminary Alternative W3** at $59.3 million, **Preliminary Alternative W1** at $58.2 million and **Preliminary Alternative W** at $53.7 million. For the Eastern Section Preliminary Alternatives, construction cost estimates for **the Added Travel Lanes (Widening) Preliminary Alternative, One-Way Pair Preliminary Alternative and Preliminary Alternatives E** were within 12% of each other and had the lowest estimated construction cost. **Preliminary Alternatives A and B** were essentially the same (within 4% of each other) while **Preliminary Alternatives C and D** were within 17% of each other and had the highest estimated construction cost estimates. The lowest estimated construction cost grouping of preliminary alternatives was approximately 17% lower than the mid-range preliminary alternatives which were in turn approximately 22% lower than the highest estimated construction cost grouping of preliminary alternatives. All preliminary alternatives had construction cost estimates that fell within a 64% range from lowest to highest. When ranking the construction cost estimates for the preliminary alternatives, **Preliminary Alternative D** has the highest associated estimated construction costs (2015 dollars) at $169.5 million, followed by **Preliminary Alternative C** at $145.1 million, **Preliminary Alternative A** at $131.6 million, **Preliminary Alternative B** at $126.9 million, the **One-Way Pair Preliminary Alternative** at $115.5 million, **Preliminary Alternative E** at $113.8 million and the **Added Travel Lanes (Widening) Preliminary Alternative** at $103.9 million.

For preliminary right-of-way cost estimates for the preliminary alternatives in this phase of the project, the roadway typical section for each section of each preliminary alternative was utilized as described in Chapter 4 – Definition of Alternatives. The assumed typical sections were used and incorporated into the INDOT Right-of-Way and Utility Cost Estimating Guide appropriately. Minor revisions were then made to the INDOT Right-of-Way and Utility Cost Estimating Guide to better represent the field conditions in the Study Area. The INDOT Right-of-Way and Utility Cost Estimating Guide estimates right-of-way costs as a cost per mile in year 2006 dollars using representative costs from actual INDOT projects completed within a three year period. It recommends costs to be inflated by 3.0% per year to determine construction year 2015 costs utilized for comparison of preliminary alternatives in this study. It should be noted that the estimated preliminary right-of-way costs utilized for this project are not based on actual field data.

For the Western Section Preliminary Alternatives the right-of-way cost estimates for **Preliminary Alternatives W1, W2 and W3** were essentially the same (within 3% of each other) while **Preliminary Alternative W** was approximately 80% higher. When ranking the right-of-way cost estimates for the preliminary alternatives, **Preliminary Alternative W1** has the lowest associated estimated right-of-way costs (2015 dollars) at $9.1 million, followed by **Preliminary Alternatives W2 and W3** at $9.4 million and **Preliminary Alternative W** at $16.7 million.

For the Eastern Section Preliminary Alternatives, right-of-way cost estimates for **Preliminary Alternatives A, B and C** were within 20% of each other and had the lowest estimated right-of-way cost. **Preliminary Alternatives D and E** were within 15% of each other while **Added Travel Lanes (Widening) Preliminary Alternative** and the **One-Way Pair Preliminary Alternative** were within 10% of each other and had the highest estimated right-of-way cost estimates. The lowest estimated right-of-way cost grouping of preliminary alternatives was approximately 27% lower than the mid-range preliminary alternatives which were in turn approximately 25% lower than the highest estimated right-of-way cost grouping of preliminary alternatives. All preliminary alternatives had right-of-way cost estimates that fell within an 80% range from lowest to highest. When ranking the right-of-way cost estimates for the preliminary alternatives, the **One-Way Pair Preliminary Alternative** has the highest associated estimated right-of-way costs (2015 dollars) at $31.1 million, followed by the **Added Travel Lanes (Widening) Preliminary Alternative** at $28.5 million, **Preliminary Alternative D** at $25.6, **Preliminary Alternative E** at $22.3 million, **Preliminary Alternative C** at $20.6 million, **Preliminary Alternative A** at $18.9 million and **Preliminary Alternative B** at $17.1 million.

Preliminary Engineering (design) cost estimates were developed for this study as being 10.0% of the construction cost estimate for each associated preliminary alternative.

Total Costs were calculated by summing the estimated construction cost, right-of-way costs and Preliminary Engineering (design) costs for each of the preliminary alternatives. **It should be noted that the Total Costs associated with each preliminary alternative do not include costs associated with local and/or State roadway improvements associated with the preliminary alternatives or any mitigation measures associated with the project**. Costs associated with these items will be developed as the project moves to the next phase and more detailed information becomes available.

Table 5.6 summarizes the cost estimates for each the preliminary alternatives under study. For the Western Section Preliminary Alternatives the estimated Total Costs associated with the preliminary alternatives fell within a 4% range from lowest to highest. **Preliminary Alternative W** has the highest associated Total Costs (2015 dollars) at $75.8 million, followed by **Preliminary Alternative W2** at $75.1 million, **Preliminary Alternative W3** at $74.6 million and **Preliminary Alternative W1** at $73.1 million. For the Eastern Section Preliminary Alternatives, Total Cost estimates for the **Added Travel Lanes (Widening) Preliminary Alternative** and **Preliminary Alternative E** were essentially the same (within 4% of each other) and had the lowest estimated Total Cost. The **One-Way Pair Preliminary Alternative, Preliminary Alternatives A and B** were essentially the same (within 5% of each other) while **Preliminary Alternatives C and D** had the highest estimated Total Cost estimates. The lowest estimated Total Cost grouping of preliminary alternatives was approximately 10% lower than the mid-range preliminary alternatives which were in turn approximately 23% lower than the highest estimated Total Cost preliminary alternative. All preliminary alternatives had Total Cost estimates that fell within a 49% range from lowest to highest. When ranking the Total Cost estimates for the preliminary alternatives, the **Preliminary Alternative D** has the highest associated Total Costs (2015 dollars) at $212.1 million, followed by **Preliminary Alternative C** at $180.2 million, **Preliminary Alternative A** at $163.7 million, the **One-Way Pair Preliminary Alternative** at $158.2 million, **Preliminary Alternative B** at $156.7 million, **Preliminary Alternative E** at $147.5 million and the **Added Travel Lanes (Widening) Preliminary Alternative** at $142.8 million.

Table 5.6: Transportation Considerations, Socio-Economic and Environmental Impact Summary

Socio-Economic/ Environmental Measure	Western Section Preliminary Alternatives				Eastern Section Preliminary Alternatives						
	Western Alternatives				Through Town Alternatives		Bypass Alternatives				
	W	W1	W2	W3	One-Way Pair	Added Travel Lanes	A	B	C	D	E
TOTAL COSTS[1] (Mil. of $)	**75.8**	**73.1**	**75.1**	**74.6**	**158.2**	**142.8**	**163.7**	**156.7**	**180.2**	**212.1**	**147.5**
Construction Costs (Mil. of $)	53.7	58.2	59.7	59.3	115.5	103.9	131.6	126.9	145.1	169.5	113.8
Prelim. Engineering Costs[2] (Mil. of $)	5.4	5.8	6.0	5.9	11.6	10.4	13.2	12.7	14.5	17.0	11.4
Right-of-Way Costs (Mil. of $)	16.7	9.1	9.4	9.4	31.1	28.5	18.9	17.1	20.6	25.6	22.3
Length (miles)	6.4	7.0	7.2	7.2	12.2	11.6	14.0	12.6	15.0	18.8	11.4
TRANSPORTATION CONSIDERATIONS[3]											
Meets Purpose and Need	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Total Traffic Diversion Thru North Vernon	L	M	H	H	N/A	N/A	M	H	L	M	H
Truck Traffic Diversion Thru North Vernon	L	M	H	H	N/A	N/A	H	H	L	H	H
Daily Traffic Volume	M	M	M	M	H	H	M	M	L	M	M
Crash Reduction	L	M	H	H	M	M	M	M	M	M	H
RELOCATIONS											
Residences Acquired	42	14	11	17	67	63	43	66	33	41	52
Apartment Units Acquired	0	0	0	0	10	0	0	0	0	0	0
Residences Lost Access	4	1	1	1	20	20	9	6	1	2	17
Farms Acquired	1	2	2	3	0	0	1	1	1	3	0
Businesses Acquired	11	7	5	7	59	47	6	16	5	0	5
Businesses Lost Access	1	0	0	0	3	3	0	2	0	0	1
NEW ROW (acres)	240	252	244	242	300	296	492	448	552	718	401
DEVELOPED LAND (acres)	30	11	8	10	111	105	27	64	12	8	50
DEVELOPED LAND, OPEN SPACE[4] (acres)	119	65	36	55	112	111	55	81	47	42	62
FARMLAND (acres)	62	148	150	144	25	28	251	215	357	451	156
GRASSLAND/ HERBACEOUS (acres)	1	0	0	0	1	1	5	0	0	0	17
FOREST (acres)	28	28	50	33	51	51	153	87	136	216	156
OPEN WATER (acres)	0	0	0	0	0	0	1	1	0	1	2
WETLANDS TOTAL (NWI) (acres)	**5**	**4.2**	**14.8**	**5.6**	**0**	**0**	**5.5**	**0.8**	**7.4**	**9.9**	**0**
Emergent (acres)	0	0	0	0	0	0	0.6	0	0.7	0.3	0
Scrub/Shrub(acres)	0.2	0.2	0	0.2	0	0	0	0	0.6	0.8	0
Forested (acres)	4.8	4	14.8	5.4	0	0	4.9	0.8	6.1	8.8	0

Socio-Economic/ Environmental Measure	Western Section Preliminary Alternatives				Eastern Section Preliminary Alternatives						
	Western Alternatives				Through Town Alternatives		Bypass Alternatives				
	W	W1	W2	W3	One-Way Pair	Added Travel Lanes	A	B	C	D	E
STREAMS CROSSED (USGS)	5	7	10	9	11	11	12	13	16	21	12
FLOODPLAINS (IDNR DFIRM) (acres)	20	23	16	20	4	4	10	3	6	14	8
TES RECORDED AREA[5]	0	0	0	0	2	2	2	2	2	0	4
KARST FEATURES (acres)	0	0	0	0	0	0	0	0	0	4	0
HISTORIC PROPERTIES[6]	3	2	1	1	6	4	1	3	1	4	1
HISTORIC DISTRICTS[7]	0	0	0	0	3	3	0	0	0	0	0
RECORDED ARCHAEOLOGICAL SITES	NO	NO	NO	NO	NO	NO	NO	YES	NO	YES	NO
CEMETERIES (USGS)	0	0	0	0	0	0	0	0	0	1	0
FEDERAL REFUGE LANDS	0	0	0	0	0	0	0	0	0	0	0
STATE FOREST LANDS	0	0	0	0	0	0	1	0	0	0	0
NATURE PRESERVES	0	0	0	0	0	0	0	0	0	0	0
CITY/COUNTY PARKS	0	0	0	0	0	0	0	0	0	0	1
OTHER PUBLIC LANDS	0	0	0	0	1	1	2	1	1	0	1
CLASSIFIED FORESTS & WILDLANDS	0	0	2	1	1	1	3	0	4	6	1
CONSERVATION RESERVE PROGRAM (CRP) LANDS	0	0	0	0	3	3	2	1	2	4	2
WILDLIFE HABITAT INCENTIVE PROGRAM (WHIP) LANDS	0	0	0	0	1	1	0	0	0	0	1
PARTNERS FOR FISH & WILDLIFE LANDS	0	0	0	0	0	0	1	0	0	0	0
POTENTIAL SECTION 4F PROPERTIES[8]	1	0	0	0	2	3	2	0	0	0	1
HAZARDOUS MATERIAL SITES	3	1	0	1	19	16	0	0	0	0	0

1 All costs are in Year 2015 dollars. See Section 5.3.1 – Preliminary Cost Estimates – for project cost development information. Total Costs were calculated by summing the estimated construction cost, Preliminary Engineering (design) costs and right-of-way costs for each of the preliminary alternatives. Total Costs associated with each preliminary alternative do not include costs associated with local and/or State roadway improvements associated with the preliminary alternatives or any mitigation measures associated with the project.
2 Preliminary Engineering (design) cost estimates estimated as being 10.0% of the construction cost estimate
3 Transportation Consideration evaluations (H-High, M-Medium, L-Low) indicate the performance of the alternatives relative to each other
4 Includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes
5 Indiana Natural Heritage Database Records
6 Indiana Historic Sites & Structures Inventory (IHSSI) Contributing, Notable, & Outstanding Sites and bridges from Dr. Cooper's books
7 Includes National Register (NR) and IHSSI Historic Districts
8 Includes publicly owned recreation areas, NR listed sites/candidate, and IHSSI Notable and Outstanding sites

5.3.2 Social/Economic Impacts

The US 50 Corridor Study Area encompasses approximately 138 square miles, both north and south along US 50. Portions of northeastern Jackson County and central Jennings County are included in the Study Area. In Jackson County the city of Seymour is the western terminus of the project corridor. Seymour has a population of approximately 20,000 residents. In addition to US 50, the City is served by Interstate 65, US 31, SR 11 and SR 258. There has been much recent commercial and industrial development in the Seymour area along US 50 in the area west of I-65 and US 31. A large Wal-Mart Distribution Center is located at I-65 and US 50. Seymour also has two developing industrial parks. The City of Seymour is referred to as the "Crossroads of Southern Indiana" due to its location and access to major highways.

Traveling east from Seymour along US 50, the area becomes primarily rural as the highway traverses the northern boundary of Muscatatuck National Wildlife Refuge, and crosses into Jennings County. The CSX Railroad parallels US 50 in this area running just north of the highway. US 50 crosses through the small Town of Hayden and then passes through the middle of the City of North Vernon. US 50 then crosses through the small town of Butlerville. The eastern corridor terminus is located at the Jennings and Ripley county line located just east of Butlerville.

North Vernon has a population of approximately 6,500 and is the only incorporated city in Jennings County. The Jennings county seat is located in the town of Vernon, located just south of North Vernon. Vernon is the only incorporated town in Jennings County with a population of around 300 people. It is a historical river town located on the banks of the Muscatatuck River. The City of North Vernon is served by US 50, SR 7 and SR 3. US 50 currently runs through the center of the city creating problems for through traffic which must negotiate several jogs in the roadway and observe reduced traffic speeds.

Much of the growth in the North Vernon area is occurring north of the city along SR 3 and SR 7. The North Vernon Municipal Airport and several industrial parks are located directly north of town on the east side of SR 3. The North Vernon Industrial Park along SR 3 includes several large industries including a Lowe's Distribution Center. The Jennings County Economic Development Corporation is currently advertising several large parcels in this area that are available for large industrial operations or distribution centers.

The highest density residential areas along the corridor are primarily within the cities of North Vernon and Seymour. The smaller towns generally have a cluster of homes, churches, cemeteries and small businesses. There are scattered rural residences and farming operations throughout the study area. There are also some residential developments and subdivisions surrounding the reservoirs in the study area. Mutton Creek subdivision is located just north of US 50 and east of US 31. This subdivision has permanent single family homes which surround an impounded lake along Mutton Creek. There is a large lake community know as Country Squire Lakes located northwest of North Vernon along the west side of SR 7. This large development has approximately 6,000 residents with 63 miles of roadways within the development. There are approximately 4,000 lots within the community that are utilized primarily by mobile homes or modular homes. Country Squire Lakes has six impounded lakes and provides amenities such as playgrounds, clubhouse, beaches, swimming pool and bathhouse.

All build preliminary alternatives will result in impacts to residences and businesses. These impacts are discussed in more detail in the following sections.

5.3.2.1 Residential and Business Relocations

The improvement of US 50 either on new alignment or existing alignment would have both negative and positive social impacts to communities in Jennings County. This section discusses residential, commercial, and institutional displacements.

For any large highway project, one of the main impacts is the relocation of homes and businesses. The process of land acquisition may be difficult for the people affected by it. The relocation of households, businesses, and community facilities can negatively impact the normal functions of a community. Relocating households from a neighborhood can reduce the amount of social support and neighbor-to-neighbor interaction. This in turn reduces the cohesiveness of the community or neighborhood. The removal of businesses and institutions can result in the loss of local facilities on which neighborhood residents rely for essential services and can reduce the sense of community in the subject area.

Significant community outreach will continue during the development of this project. The needs of North Vernon and Jennings County for improved mobility, safer travel, jobs and economic vitality must be evaluated in light of the potential direct impacts to individual property owners and the local communities.

The typical sections for the proposed US 50 corridor in rural areas is a 4-lane divided facility with an 84-foot median and left and right-turn lanes where appropriate. In urban areas, the typical section will be 4-lanes separated by a 14' paved median. The facility is expected to have partial access control with full movement intersections at one-half mile minimum spacing along the new terrain portions. Residential and business drives will generally not have access to the new facility in the rural sections. Generally a 300-foot right-of-way width in rural areas and 110-foot in urban areas was used for assessing impacts along the new terrain portions; however, the segment of existing US 50 through downtown North Vernon has a narrower right-of-way width for both the 2-way alignment on existing US 50 and the One-Way Pair Preliminary Alternative. The urban section will have a right-of-way width that varies between 80 feet for the one-way cross section to 110 feet for the two-way cross section in downtown North Vernon.

The relocation estimates are based on the preliminary right-of-way limits depicted on year-2005 aerial photos. The actual right-of-way width would vary depending on terrain, stream crossings, and placement of frontage/service roads. Homes and businesses were located on aerial photos but at this point in the project study they have not been field checked for accuracy. The number of business displacements is also subject to change since there will be situations where multiple businesses are located in a single commercial structure. It is also possible that a few of the business relocations may actually be church buildings. The relocation numbers depicted are for comparison purposes only. These numbers would be refined once a detailed field check is completed, and more complete right-of-way requirements are available.

Final decisions regarding access control along the proposed facility will also impact the number of acquisitions and the need for possible frontage roads. Residences, businesses and neighborhoods that could lose direct access to an existing roadway will need to be further evaluated to determine whether it is feasible to provide local access or frontage roads to maintain access.

The preliminary alternatives being evaluated have generally been split between four Western Section Preliminary Alternatives and seven Eastern Section Preliminary Alternatives. Various combinations of the preliminary alternatives are possible. The alternative of improving and widening existing US 50 is among the preliminary alternatives being evaluated, with two possible preliminary alternatives in the downtown area of North Vernon.

The Western Section Preliminary Alternatives as shown in Table 5.7 generally include the portion of the corridor between the western terminus and CR 575 West. Much of the western portion of the project area is undeveloped farmland and forest. **Preliminary Alternative W**, which involves widening US 50 on the existing alignment, has the highest number of relocations with 42 potential residential relocations and 11 business relocations. Any scenario that involves widening on the existing US 50 alignment would be expected to require more displacements due to the development that has occurred along the highway. The other three Western Section Preliminary Alternatives utilize a portion of US 50 near the western terminus and then run along new alignments north of the existing highway. Of these three preliminary alternatives, generally **Preliminary Alternative W3** has the highest number of residential and business relocations, while **Preliminary Alternative W2** has the lowest number with 11 residences, 5 businesses and 2 farm businesses.

The Eastern Section Preliminary Alternatives have much greater differences between alignments. The Eastern Section Preliminary Alternatives consist of a wide variety of alignments between CR 575 West and the eastern terminus. As can be seen in Table 5.8, **Preliminary Alternative B** has the highest number of residential relocations for the bypass preliminary alternatives at 66 and also has a high number of business displacements at 17. **Preliminary Alternative A** impacts an electrical substation and requires the acquisition of land from St. Anne's Golf Course, and Selmier State Forest.

Table 5.7: Summary of Western Section Alternative Relocations

Preliminary Alternative	Residences Acquired	Residences with possible Lost Access	Businesses Acquired	Farm Businesses Acquired	Businesses with possible Lost Access
W	42	4	11	1	1
W1	14	1	7	2	0
W2	11	1	5	2	0
W3	17	1	7	3	0

Preliminary Alternative E, which is the only alignment that runs south of existing US 50, takes approximately 52 residences, cuts access to 17 homes and requires the acquisition of land from Muscatatuck County Park. **Preliminary Alternative E** also acquires Twin Cities Raceway Park, a popular dirt track racing facility in Vernon. This park hosts approximately 20 events a year, drawing around 20,000 participants and spectators from outside the region. Revenue generated from this park helps promote the local economy through food and gasoline purchases[1]. The three Eastern Section Preliminary Alternatives with the fewest relocation impacts include **Preliminary Alternatives A, C** and **D**.

The preliminary alternative of reconstructing US 50 completely along the existing alignment, **Added Travel Lanes Through North Vernon Preliminary Alternative**, has been evaluated as shown in the Table 5.8. This preliminary alternative option includes an improved and widened two-way, divided roadway along the existing US 50 route through North Vernon. In addition, the **One-Way Pair Through North Vernon Preliminary Alternative** calls for the use of two one-way routes through town, utilizing the existing US 50 route for eastbound traffic and Poplar Street to the north, for westbound traffic.

Small refinements in right-of-way requirements along a highly developed corridor such as US 50 in the North Vernon area can have large implications in the number of residential and business displacements. Decisions as to whether right-of-way should be acquired equally from both sides of the road or whether right-of-way acquisition will be primarily from one side of an existing roadway are decisions that would be finalized at a later date. The relocation numbers are an estimate and would be subject to change depending on design refinements.

[1] Personal Communication. Tawnya Fleetwood. Twin Cities Raceway Park. 2007

Both of the US 50 preliminary alternatives in the Eastern Section of the corridor would have major ramifications to existing residential and commercial development along US 50. The residential displacements, including homes and apartments, totals approximately 63 residential displacements for the **Added Travel Lanes Through North Vernon Preliminary Alternative** and 77 for the **One-Way Pair Through North Vernon Preliminary Alternative**. Business acquisitions are high for either scenario with 47 business relocations for the **Added Travel Lanes Through North Vernon Preliminary Alternative** and 59 business relocations for the **One-Way Pair Through North Vernon Preliminary Alternative**. When compared to any combination of Western Section and Eastern Section Preliminary Alternatives on primarily new alignment, the upgrade of existing US 50 would have a higher number of relocation impacts, especially to existing businesses. The reconstruction of existing US 50 would also create a number of access problems for individual residences, businesses, adjacent subdivisions and apartment complexes.

Table 5.8: Summary of Bypass and Through Town Preliminary Alternative Relocations

Preliminary Alternative	Residences Acquired	Residences with possible Lost Access	Businesses Acquired	Farm Businesses Acquired	Businesses with possible Lost Access
A	43	9	6	1	0
B	66	6	16	1	2
C	33	1	5	1	0
D	41	2	0	3	0
E	52	17	5	0	1
Added Travel Lanes Through North Vernon (Widening)	63	20	47	0	3
One-Way Pair Through North Vernon	67 Res. 10 apartments	20	59	0	3

If a build preliminary alternative is pursued for this project, all acquisitions and relocations required by this project would be completed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended, 49 CFR 24, and Title VI of the Civil Rights Act of 1968. No person displaced by this project would be required to move from a displaced dwelling unless comparable replacement housing is available to that person. INDOT would take required actions

to ensure fair and equitable treatment of persons displaced as a result of this project up to and including providing replacement housing of last resort as defined in 49 CFR 24.404. Relocation resources for this project would be available to residential and business relocatees without discrimination. At the time right-of-way is acquired, a relocation agent would be assigned to this project to ascertain the needs and desires of the potentially displaced persons to provide information, answer questions, give help in finding replacement property, and issue last resort housing payments, if needed. Advisory services would be made available to farms and businesses, with the aim of minimizing the economic harm to those businesses and farm establishments.

5.3.2.2 Short-Term Local Business Sales Impacts

Each of the preliminary alternatives has the potential to impact businesses during construction or reconstruction periods. The **Added Travel Lanes Through North Vernon** and **One-Way Pair Through North Vernon Preliminary Alternatives** will likely have greater impacts to businesses because of their use of existing US 50. There are currently businesses and manufacturing buildings scattered along US 50 in the rural portions and concentrated in downtown North Vernon.

5.3.2.3 Long-Term Local Business Sales Impacts

Long-term local business sales impacts associated with roadway improvements depend on the extent to which a business is dependent on pass-by traffic and the change in traffic volumes on the roadway. Gasoline stations are most dependent on traffic passing by the site, followed by fast-food restaurants and motels. General retail businesses are least affected by changes in traffic volumes on the roadway.

Because the **Added Travel Lanes Through North Vernon Preliminary Alternative** does not alter traffic patterns, it has no impact on auto-oriented businesses (gas stations, fast-food restaurants and motels) that will not be directly taken. However, the removal of on-street parking along US 50/Walnut Street has a major adverse impact on retail and business uses abutting US 50/Walnut Street through downtown North Vernon.

While the **One-Way Pair Through North Vernon Preliminary Alternative** does not strip on-street parking from Poplar Street or US 50/Walnut Street, it does result in circuitous travel to get to businesses in downtown. While daily traffic volumes drop 10% on Walnut Street between Poplar Street and State Street and 37% on Walnut Street between State Street and Madison Street, the combination of the daily traffic volumes on Popular Street and Walnut Street are greater than the No Build condition due to circuitous travel and the attraction of traffic to the corridor. While pedestrian movement and on-street parking will be easier on Walnut Street due to lower volumes, pedestrian movement and on-street parking will be difficult on Poplar Street due to a five fold increase in daily traffic.

For the new terrain preliminary alternatives, the effectiveness of a preliminary alternative in diverting traffic from existing US 50 determines the extent of adverse impact on the sales of auto-oriented businesses. Considering vehicle-miles of travel, **Preliminary Alternative E** diverts the most traffic and has the greatest adverse impact on the sales of auto-oriented businesses, followed by **Preliminary Alternatives B, A, D** and **C**. West of Norris Avenue, 2030 daily volumes for **Preliminary Alternative E** are lower than the year 2000 daily volumes; but east of Norris Avenue, the 2030 daily volumes of **Preliminary Alternative E** remain higher than year 2000 daily volumes despite traffic diversion. In the case of the other four new terrain options, the 2030 daily traffic volumes remain higher than year 2000 daily traffic volumes despite diversion. Thus, only auto-oriented business on existing US 50 west of Norris Avenue will experience a loss in sales compared to year 2000 for **Preliminary Alternative E**. Otherwise, the impact of the new terrain preliminary alternatives is not a loss in sales, but a slower growth in sales than would be experienced without the traffic diversion.

On the other hand, the degree of reduction in traffic congestion in downtown North Vernon can also be associated with improved accessibility to general businesses in downtown over the No Build condition. With the reduction in total traffic and the diversion of external traffic, local traffic will find it easier to get to

downtown, to park downtown and to walk downtown to shop. With the reduction in congestion downtown offered by the new terrain preliminary alternatives, the market area for downtown businesses will also be greater than the No Build condition. Thus, **Preliminary Alternative E** results in the greatest benefit to general business sales, and **Preliminary Alternative C** results in the least benefit to general business sales. **Preliminary Alternatives B, A** and **D** fall between the other two new terrain options.

5.3.2.4 Highway User Benefits

Highway user benefits include reductions in travel time, vehicle operating costs and accident costs. Vehicle-miles of travel (VMT) and vehicle-hours of travel (VHT) are other typical performance measures for the evaluation of the effectiveness of the Build Preliminary Alternatives compared to the No Build Alternative. Holding the trip table constant within the US 50 Sub-area, VMT gauges the directness in serving trips. The more direct is a route in serving trips; the shorter is the VMT. Because the Build Preliminary Alternatives all attract traffic taking advantage of shorter travel times at the expense of longer trips, the VMT of the Build Preliminary Alternatives is greater than the No Build Alternative. However, referring to Table 5.9, **Preliminary Alternative E** results in the least increase in VMT, followed by **Preliminary Alternative B**, **One-Way Pair Preliminary Alternative**, **Preliminary Alternative D**, **Preliminary Alternative C**, **Preliminary Alternative A** and **Added Travel Lanes (Widening) Preliminary Alternative**. On the other hand, if only truck traffic is considered, the **Added Travel Lanes (Widening) Preliminary Alternative** results in the least increase in truck VMT followed by **Preliminary Alternative B**. Thus, **Preliminary Alternative E** is less effective in serving truck traffic than when all traffic is considered.

VHT measures the effectiveness of the Build Preliminary Alternatives in reducing travel time over the No Build Condition. Referring to Table 5.9, **Preliminary Alternative B** is the most effective in reducing travel time for all vehicles in the US 50 Sub-area, followed by **Preliminary Alternative E**, **Preliminary Alternative D**, **Preliminary Alternative C**, **Added Travel Lanes (Widening) Preliminary Alternative**, **One-Way Pair Preliminary Alternative** and **Preliminary Alternative A**. If only truck travel is considered, **Preliminary Alternative B** remains the most effective, but **Preliminary Alternative D** moves ahead of **Preliminary Alternative E**.

Table 5.9: Highway User Benefits

Preliminary Alternative	Total Daily Vehicle-Miles of Travel (VMT)	Total Daily Vehicle-Hours of Travel (VHT)	Truck Daily VMT	Truck Daily VHT
No Build	2,113,363.80	42,693.97	585,598.88	11,491.55
Added Travel Lanes (Widening)	2,154,549.69	41,091.54	585,918.53	11,043.48
Change over No Build	41,185.89	-1,602.43	319.65	-448.07
% change over No Build	1.95%	-3.75%	0.05%	-3.90%
Rank	7	5	1	5
One-Way Pair	2,117,093.95	41,157.67	586,111.79	11,054.08
Change over No Build	3,730.15	-1,536.30	512.91	-437.47
% change over No Build	0.18%	-3.60%	0.09%	-3.81%
Rank	3	6	3	6
Alternative A	2,138,760.74	41,600.01	592,222.35	11,128.21
Change over No Build	25,396.94	-1,093.96	6,623.47	-363.34
% change over No Build	1.20%	-2.56%	1.13%	-3.16%
Rank	6	7	7	7
Alternative B	2,116,582.10	40,802.55	585,953.81	10,930.40
Change over No Build	3,218.30	-1,891.42	354.93	-561.15
% change over No Build	0.15%	-4.43%	0.06%	-4.88%
Rank	2	1	2	1
Alternative C	2,121,749.71	41,031.94	588,550.56	11,011.27
Change over No Build	8,385.91	-1,662.03	2,951.68	-480.28
% change over No Build	0.40%	-3.89%	0.50%	-4.18%
Rank	5	4	6	4
Alternative D	2,118,367.84	40,851.37	587,844.14	10,945.53
Change over No Build	5,004.04	-1,842.60	2,245.26	-546.02
% change over No Build	0.24%	-4.32%	0.38%	-4.75%
Rank	4	3	5	2
Alternative E	2,115,745.44	40,849.10	586,302.44	10,978.37
Change over No Build	2,381.64	-1,844.87	703.56	-513.18
% change over No Build	0.11%	-4.32%	0.12%	-4.47%
Rank	1	2	4	3

5.3.2.5 Community Cohesion

All of the preliminary alternatives under consideration will have varying degrees of impacts to local neighborhoods and community cohesion. Community cohesion is the degree to which local residents have a sense of belonging to their community or neighborhood. The city of North Vernon is split by the existing US 50 corridor. Any upgrade to existing US 50 that limits access to the roadway may be seen by residents as splitting the community. Lost access to entire neighborhoods or apartment complexes that currently have US 50 as their only point of access will have to be further considered during project development in order to reduce these impacts.

Specific impacts to community cohesion resulting from the various preliminary alternatives include **Preliminary Alternative B** and both US 50 upgrade scenarios which would take 7 homes and cut access to a subdivision located on the north side of US 50 just east of CR 75E. **Preliminary Alternative E** cuts through the middle of a small subdivision located on the south side of US 50 just east of CR 250 W, taking approximately 9 of 30 homes.

Preliminary alternatives that follow and utilize existing county roads will split some of the rural communities surrounding North Vernon. This is the case for **Preliminary Alternative A**, which is proposed to follow the alignment of CR 350 N to the east of SR 7. The function of CR 350 N as a local rural road would change to a 4-lane divided, partial access facility, with heavy traffic volumes. This will reduce the cohesion of this rural community.

5.3.2.6 Environmental Justice

All federal agencies must comply with Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The Executive Order 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 and environmental effects, including social and economic effects, on Minority Populations and Low-Income Populations." Pursuant to Executive Order 12898, FHWA has adopted FHWA Order 6640.23, FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, December 2, 1998. In terms of transportation policy, environmental justice contains three fundamental principles:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations;
- To ensure the full and fair participation by all potentially affected minority and low-income communities in the transportation decision making process; and
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits to minority and low-income populations.

Under FHWA Order 6640.23, a minority is a person who is Black, Hispanic, Asian, American Indian or Alaskan Native, Native Hawaiian or Other Pacific Islander. Low-income means a household income at or below the Department of Health and Human Services poverty guidelines.

Compliance with environmental justice requirements was assessed by identifying and analyzing minority and low-income populations within the US 50 corridor. The study area is contained within six census tracts (9602, 9603, 9604, 9605 and 9606 in Jennings County and 9675 in Jackson County). The following table shows the minority status of these six census tracts.

As can be seen from Table 5.10, the census tracts within the study area have populations that are over 96% white. The largest minority populations live in census tract 9605, which is located on the east side of North Vernon, where 1.5% of the population is black or African-American and 1.3% of the population is Hispanic. Census Tract 9675, located in Jackson County near the western terminus also has a Hispanic population of 1.8%. These are still very low minority populations when compared to the State of Indiana

or the U.S. as a whole. It is extremely unlikely that any of the preliminary alternatives under consideration will disproportionately impact any minority populations.

Table 5.10: Summary of Minority Status Within Study Area Census Tracts

Race	Census Tract 9602	Census Tract 9603	Census Tract 9604	Census Tract 9605	Census Tract 9606	Census Tract 9675	State of Indiana	United States
Black or African-American	1%	0.5%	1.0%	1.5%	0.2%	0.4%	8.4%	12.3%
Hispanic*	0.5%	0.7%	0.8%	1.3%	0.6%	1.8%	3.5%	12.5%
Asian	0.3%	0.2%	0.4%	0.4%	0.1%	1.2%	1.0%	3.6%
American Indian or Alaskan Native	0.2%	0.4%	0.1%	0.2%	0.0%	0.2%	0.3%	0.9%
Native Hawaiian or Other Pacific Islander	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
White	97.5%	97.5%	97.3%	96.1%	98.4%	96.3%	87.5%	75.1%

* Hispanic or Latino of any race
Source: US Census Bureau Profile of General Demographic Characteristics: 2000

Table 5.11 shows the percent of individuals living below the poverty level within the census tracts along the US 50 Corridor, and shows a comparison with the State of Indiana and the United States as a whole.

The census tract with the highest poverty level is tract number 9604, which has approximately 12.1% of individuals living below the poverty level. US 50 crosses through the center of this census tract from the Jackson County line east to the center of North Vernon. This percentage is still below the national poverty rate of 12.4%. The more detailed block group data that might pinpoint specific areas of low-income residents is not available for poverty data.

Table 5.11: Summary of Poverty Level Percentages Within Study Area Census Tracts

	Census Tract 9602	Census Tract 9603	Census Tract 9604	Census Tract 9605	Census Tract 9606	Census Tract 9675	State of Indiana	United States
Percent Below Poverty Level*	9.2%	8.1%	12.1%	9.0%	7.6%	8.3%	9.5%	12.4%

* All individuals for whom poverty status is determined
Source: US Census Bureau – Poverty Status in 1999 of Individuals: 2000

At this point in project development, there does not appear to be clear cut differences between the preliminary alternatives from an environmental justice standpoint based upon census tract information. There are no census tracts that include higher percentages of minority or low-income populations than the national average. At this time, it does not appear that any of the preliminary alternatives would disproportionately impact any minority or low-income residents.

5.3.2.7 Existing Land Use, Zoning and Comprehensive Plans

The Comprehensive Plan for Jennings County was approved on November 1, 1994. The plan is a county-wide comprehensive plan which includes the City of North Vernon and the Town of Vernon, the only incorporated areas within Jennings County. In addition to the county-wide Comprehensive Plan, the county also completed a county-wide Zoning Ordinance and Subdivision Control Ordinance each approved on September 1, 2006.

Table 5.6 summarizes the existing land use along the five new alignment preliminary alternatives. Land use impacts were determined using Multi-Resolution Land Characteristics (MRLC) Consortium Land Cover Geographic Information Systems (GIS) data. This data is a subset of the National Land Cover Data (NLCD). The NLCD was developed and produced through a cooperative project conducted by the MRLC Consortium. The MRLC Consortium is a partnership of federal agencies and the primary goal of the project is to generate a current, consistent, seamless, and accurate land cover data for the United States at medium spatial resolution. This land cover data is current through the year 2001. Land use categories include: Developed Land, Developed Land-Open Space, Farmland, Grassland-Herbaceous, Forest, and Open Water.

In the case of the **Added Travel Lanes Through North Vernon** and **One-Way Pair Through North Vernon Preliminary Alternatives**, the abutting uses are primarily residential and commercial through town thus the primary land cover impacted is Developed Land and Developed Land-Open Space. The predominate land use for **Preliminary Alternative W** was Developed Land-Open Space. This preliminary alternative involves the widening of existing US 50, thus much of this is likely existing roadway, ditches and mowed residential lawns. The predominate land use for **Preliminary Alternatives W1, W2**, and **W3** is farmland since they move away from existing US 50. The predominate land use for all five Bypass Preliminary Alternatives in the east is farmland followed by forest. **Preliminary Alternative B** crosses through an industrial area in the northern portion of North Vernon, thus its impacts to Developed Land and Developed Land-Open Space are relatively high.

The INDOT 10-year Major Moves highway plan included two projects along US 50 within the Study Area. The new construction of US 50 from the West Urban Area Boundary to the East Urban Area Boundary of North Vernon is estimated to start in 2015 and has an estimated cost of $27,216,073. The new construction of US 50 from the US 31 to the West Urban Area Boundary of North Vernon is estimated to

start in 2014 and has an estimated cost of $20,759,781.

The draft Indiana Statewide Transportation Improvement Program (STIP) for FY 2008-2011 includes nine INDOT projects, two Federal Aid Group III Road Program projects and three Federal Aid County Bridge Program projects for Jennings County. The projects include:

- INDOT Projects
    - Pavement replacement on CR 300S from SR 3 to SR 7
    - Bridge replacement on SR 250 over Crooked Creek, 5.28 miles west of SR 3
    - Bridge replacement on SR 3 over Sand Creek, 4.56 miles north of SR 7
    - Intersection improvement on SR 7 at State Road (Hayden Pike)
    - Intersection improvement on US 50 at Deer Creek Road (CR 75E)
    - Preventative maintenance on US 50 from US 31 to Hayden Pike
    - Hot mix asphalt (HMA) overlay on US 50 from Hayden Pike to SR 3/7
    - Preventative maintenance on US 50 from SR3/7 to Greensburg Street
    - Auxiliary passing lanes at various locations on US 50
- Federal Aid Group III Road Program Projects
    - Pavement replacement on Greensburg Street from SR 3/7 to Woodlawn Dr (Phase 1)
    - Pavement replacement on Greensburg Street from Woodlawn Dr to US 50 (Phase 2)
- Federal Aid County Bridge Program Projects
    - Scipio covered bridge rehabilitation on CR 575W over Sand Creek
    - James covered bridge rehabilitation on CR625S over Big Graham Creek
    - Bridge replacement on CR 800S over Big Graham Creek

The Comprehensive Plan for Jennings County, completed in 1994, stated “Within 10 years, it is projected that growth in the local economy will consume the available capacity of major transportation arteries, especially US 50.” It also specifically mentioned US 50 and SR 3 as needing major upgrading over the next 10 to 20 years. The Plan discussed the number of narrow and unpaved rural roads in the county as an issue and that roads in urbanized areas should be 24 feet wide with curb and guttering. The Plan referred to the 1994 Jennings County bridge re-inspection report prepared by R.W. Armstrong & Associates, Inc. The report listed 49 bridges which must be replaced by 2014, ten of which needed to be done by 1999. It also mentioned 25 bridges which were in need of rehabilitation and repair by 1999. The plan brought up a US 50 Bypass around the north side North Vernon. It claims this bypass should be part of a long term planning project for Jennings County.

5.3.2.8 Major Utilities

According to United States Geological Survey (USGS) 7.5’ topographic maps and year-2005 color aerial photographs, **Preliminary Alternative W** crosses one (1) high voltage transmission line easement and will require the relocation of seven (7) towers. **Preliminary Alternative W1** crosses one (1) high voltage transmission line easement and will require the relocation of two (2) towers, **Preliminary Alternative W2** crosses one (1) high voltage transmission line easement and will require the relocation of one (1) tower, and **Preliminary Alternative W3** crosses one (1) high voltage transmission line easement and will require the relocation of two (2) towers. The Bypass **Preliminary Alternatives A** and **B** both cross one (1) minor transmission line and Bypass **Preliminary Alternatives C**, **D**, and **E** do not cross any high

voltage transmission lines. The **Added Travel Lanes Through North Vernon Preliminary Alternative** and the **One-Way Pair Through North Vernon Preliminary Alternative** will cross one (1) minor transmission line and will require the relocation of one (1) tower. Both preliminary alternatives will also cross one (1) mapped sewage disposal line.

5.3.2.9 Air, Noise and Vibration

Any route that carries heavy trucks and other commercial vehicles will create noise, air, and vibration for businesses and neighborhoods around it. The key is to divert this traffic away from sensitive and/or public areas, such as schools, churches, nursing homes, hospitals, and residences. Some of the preliminary alternatives are more effective than others in diverting commercial vehicles away from sensitive areas.

The **Added Travel Lanes Through North Vernon Preliminary Alternative** does not change existing travel patterns. Thus, noise, air pollution and vibration increase along US 50 as traffic volumes increase through downtown including the National Register (NR) listed Walnut Street Historic District and North Vernon Downtown Commercial Historic District.

The **One-Way Pair Through North Vernon Preliminary Alternative** results in the most increases in noise and vibration through downtown North Vernon. This preliminary alternative results in a total increase in vehicle-miles of travel in downtown due to circuitous travel. The daily traffic volumes along US 50/Walnut Street decline by only 10% between Poplar and State Streets and by 37% between State and Madison Streets. Daily traffic volumes on Poplar Street from Walnut Street to State Street triple over the No Build and from State Street to Madison Street increase six times over the No Build. Both US 50/Walnut Street and Poplar Street pass through the North Vernon Downtown Commercial National Register Historic District. The residential area along Poplar Street will experience an increase in noise and vibration from the three to six-fold increase in traffic (particularly truck traffic).

For the four western preliminary alternatives, noise, air and vibration impacts will vary to the degree the alternative is on new terrain away from existing residential and commercial uses along the existing alignment of US 50. Thus, **Preliminary Alternative W** will result in the greatest increase in noise, air pollution and vibration to residential and commercial uses and **Preliminary Alternative W2** will result in the least. **Preliminary Alternatives W1 and W3** will fall between the other two western alternatives relative to these impacts.

For the five bypass preliminary alternatives, the effectiveness in diverting traffic from downtown North Vernon is an indicator of the effectiveness in reducing noise and vibration downtown. When the percent diversion of daily traffic from existing US 50 through North Vernon from CR 265 W to CR 425 E is weighted by vehicle-miles of travel, the following was observed:

- **Preliminary Alternative E** (-46%) and **Preliminary Alternative B** (-42%) were the best performers related to total traffic diversion.
- **Preliminary Alternative A** (-38%) and **Preliminary Alternative D** (-34%) performed similarly in their effectiveness in diverting total traffic in each of the individual segments and had reductions that averaged approximately 8% less traffic diverted that **Preliminary Alternatives E & B**.
- **Preliminary Alternative C** (-24%) performed the worst related to its effectiveness in diverting total traffic in each of the individual segments and had reductions that averaged approximately 12% less traffic diverted than the grouping of **Preliminary Alternatives A and D**. This is due to the circuitous route of **Preliminary Alternative C** around North Vernon.

When daily truck traffic diversion is considered, the performance of the alternatives change as trucks create more noise, air quality concerns and vibration. When the percent diversion of daily truck from existing US 50 through North Vernon from CR 265 W to CR 425 E is weighted by vehicle-miles of travel, the following was observed:

- **Preliminary Alternative B** (-73%), **Preliminary Alternative D** (-72%), **Preliminary Alternative A** (-70%) and **Preliminary Alternative E** (-69%) performed similarly and were the best performers related to truck traffic diversion. **Preliminary Alternative E** is the least effective of these at 69%, due to its distance from the industrial and regional commercial areas on the north side of North Vernon. This indicates that three of the four northern new terrain preliminary alternatives are more effective than the southern new terrain preliminary alternative in reducing noise and vibration downtown.
- **Preliminary Alternative C** (-45%) performed the worst related to its effectiveness in diverting truck traffic in each of the individual segments. This is due to the circuitous route of **Preliminary Alternative C** around North Vernon.

The bypass preliminary alternatives primarily pass through rural areas, and noise and vibration impacts may be introduced to areas where they once did not exist. **Preliminary Alternative E** cuts through the middle of a small subdivision located on the south side of US 50 just east of CR 250W. This area of concentrated homes will experience an increase in noise and vibration.

In 2005, the Environmental Protection Agency (EPA) made determinations that Jackson County ozone non-attainment areas had attained the 8-hour ozone National Ambient Air Quality Standard (NAAQS). These determinations were based on three years of ambient air quality monitoring data for the 2002-2004 seasons that demonstrated that the 8-hour ozone NAAQS has been attained in Jackson County areas. Later that year, EPA approved requests from the State of Indiana to re-designate Jackson County areas to “attainment” of the 8-hour ozone NAAQS. These requests were submitted by the Indiana Department of Environmental Management (IDEM) on July 15, 2005 and supplemented on September 6, 2005, September 7, 2005, October 6, 2005 and October 20, 2005. In approving these requests, EPA also approved the State's plans for maintaining the 8-hour ozone NAAQS through 2015 in these areas as a revision to the Indiana State Implementation Plan (SIP). EPA has made an adequacy finding and has approved the State's 2015 Motor Vehicle Emission Budgets (MVEBs) for these areas.

Jackson County’s non-attainment status has changed, but the requirement to demonstrate conformity to the SIP (air quality conformity process) for regionally significant transportation projects will remain in force for a 20 year period after the re-designation.

The US 50 project is currently listed in the INDOT 2030 Long Range Transportation Plan. If this project proceeds to an Environmental Impact Statement (EIS), it will likely be necessary to re-demonstrate air quality conformity for the Jackson County 8-hour ozone standard.

5.3.3 Community Facilities

Community facilities within the Study Area include schools, parks, hospitals, cemeteries, airports, public water supply facilities and wastewater facilities.

In addition, the project area has an abundance of recreational and natural areas including Muscatatuck National Wildlife Refuge (south of US 50), Muscatatuck County Park (south of US 50), North Vernon City Park, Big Oaks National Wildlife Refuge (formerly Jefferson Proving Grounds), Violet and Louis J. Cali State Nature Preserve (south of US 50), Crosley State Fish and Wildlife Refuge (south of Vernon), and Selmier State Forest (north of US 50). There are also several golf courses within the project area.

North of US 50 near the Town of Butlerville is the Muscatatuck Urban Training Center (MUTC), which is operated by the Office of Homeland Security. This site was once a state hospital, but is currently being redeveloped as an urban training center for the Indiana National Guard. The site is located along the banks of the Vernon Fork of the Muscatatuck River, and is surrounded on the north and east by the Southeast Purdue Agricultural Center (SEPAC). SEPAC also owns land just south of the Muscatatuck Urban Training Center to some areas south of US 50.

Overall, the Study Area has many public and private facilities that present design constraints in the development of preliminary alternatives for US 50.

None of the preliminary alternatives will directly impact schools; however, two schools are near preliminary alternatives. The Jennings County High School, Middle School and the North Vernon Elementary School are all located on Walnut Street just west of downtown North Vernon. The **Added Travel Lanes Through North Vernon** and **One-Way Pair through North Vernon Preliminary Alternatives** travel just north of the school complex along US 50. Strip right-of-way may be required for these two preliminary alternatives, but school facilities should not be impacted. Brush Creek Elementary School is located in the eastern portion of the Study Area on US 50. All bypass and through town preliminary alternatives end approximately 0.4 miles from this school which should not be directly impacted by the project.

There are several churches located along US 50 within the study area. **Preliminary Alternatives W, W1**, **W2**, and **W3** will directly impact the Living World Baptist Church located north of existing US 50 in Jackson County. **Preliminary Alternatives A, C**, and **E** will directly impact the Highway Holiness Church of God located south of US 50 near CR 275 E. The **Added Travel Lanes Though North Vernon Preliminary Alternative** will directly impact five churches: Trinity Full Gospel, First Christian Church, Harvest Baptist Church, Apostolic Church, and the Highway Holiness Church of God. Most of these churches are located in downtown North Vernon along US 50. The **One-Way Pair Through North Vernon Preliminary Alternative** will impact three churches: Trinity Full Gospel, Apostolic Church, and the Highway Holiness Church of God.

None of the proposed preliminary alternatives go directly through any airports; however there is one airport within two miles of several preliminary alternatives. The North Vernon Municipal Airport is located near CR 350 and Base Road, just northeast of North Vernon. This public airport is within two miles of **Preliminary Alternatives A, B, C and D**. If these preliminary alternatives are chosen for more detailed study, coordination with the Indiana Department of Transportation (INDOT) Office of Aviation should continue to occur. It is also worth mentioning a private heliport (associated with St. Vincent Jennings Hospital) in North Vernon is close to **Preliminary Alternatives A, B, C, D, E, Added Travel Lanes Through North Vernon and One-Way Pair Through North Vernon Preliminary Alternatives.**

One **Preliminary Alternative** will impact cemeteries. **Preliminary Alternative D** will go through a corner of Otter Creek Cemetery on the eastern side of the Study Area. The cemetery is north of US 50, off CR 750. **Preliminary Alternatives W3** and **W2** are approximately 320 feet north of an un-named cemetery near the junction of CR 700 and Hickory Hill. **Preliminary Alternatives W, W1,** and **W3** are about 200 feet north of Hunt Cemetery which is on US 50, just east of CR 1300.

Preliminary Alternative A will take approximately 12 acres of the southern portion of Saint Anne's Golf Course, including portions of the greens. Saint Anne's is a publicly-owned, privately managed golf course located at Base Road and CR 350. It opened in 1998 and is an 18-hole course featuring 6,323 yards of golf in North Vernon.

Preliminary Alternative E will directly impact the Twin Cites Raceway Park. This racing park (located in Vernon) offers racing for stock cars, sprint cars and midget cars.

Preliminary Alternative E will go through the northern portion of the Muscatatuck County Park, just south of North Vernon; and **Preliminary Alternative A** will impact the Selmier State Forest. These impacts are discussed in further detail in Chapter 5.3.4.5, *Managed Lands and Forest*.

Figure 5.5 shows the location of community facilities within the Study Area.

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(See Previous Sheet for Figure 5.5)

Figure 5.5: Community Facilities

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5.3.4 Historic and Archeological Resources

5.3.4.1 Historic Structures

Historic structures listed on the National Register of Historic Places (NRHP) and the Indiana State Register are shown in Figure 5.6. The NRHP is the Nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the NRHP is part of a national program to coordinate and support public and private efforts to identify, evaluate and protect our historic and archeological resources. Properties listed in the Register include districts, sites, buildings, structures and objects that are significant in American history, architecture, archeology, engineering and culture.

There are no single structures within the US 50 Study Area currently listed on the NRHP. Correspondence with the Indiana Department of Natural Resources (IDNR) State Historic Preservation Officer (SHPO) (dated 3/30/07 in Appendix A) indicates one structure on Hayden Pike (Survey 026 in Center Township) that was determined to be eligible for the NRHP under criterion A for its association with settlement in Center Township.

There four districts listed in the NRHP. The Vernon Historic District encompasses the town of Vernon which is just southeast of North Vernon. It was listed on August 27, 1976; its historic significance is architecture and engineering. There are three NRHP districts within the town of North Vernon. The Walnut Street Historic District is located on both sides of US 50/Walnut Street including a residential area from roughly State Street to Gum Streets. It was listed on July 27, 2006 and its areas of historic significance are architecture and community planning. The North Vernon Downtown Historic District is bound by Sixth and Chestnut Streets on the east and south, Keller Street on the north, Fourth and Main Streets on the west and Jennings on the south. This district was listed in the NRHP on January 30, 2006 its areas of historic significance are architecture, commerce, and transportation. The State Street Historic District is roughly bounded by Chestnut, Jackson, Jefferson, and State Streets in North Vernon. The State Street District was listed in the NRHP on January 25, 2007 with areas of historic significance of architecture, community planning, and social history.

There are two structures listed on the Indiana State Register. The Jennings County Carnegie Library, constructed in 1920, is in downtown North Vernon on East Walnut Street. This structure was listed on the Indiana State Register on May 5, 1998. The other structure, the Butlerville Elementary School, was constructed in 1904 and is in Butlerville. It is on US 50 between Main Street and CR 550. This structure was listed on the Indiana State Register on September 14, 1999.

The Indiana Historic Sites and Structures Inventory (IHSSI) for both Jennings[2] and Jackson[3] County Interim Reports show numerous structures within the Study Area. Many of these sites are within North Vernon. It is possible some of these sites are eligible for listing in the national or state registers. In addition to the districts listed in the NRHP, there are two additional districts within the Study Area shown in the Jennings County Interim Report. The Couchman Historic District is in downtown North Vernon. This District runs along the north side of US 50/Buckeye Street from Ninth Street to Tenth Street. The Muscatatuck Developmental Center Historic District is located at what is now the Muscatatuck Urban Training Center.

The book Iron Monuments to Distant Posterity Indiana's Metal Bridges, 1870-1930[4] by Dr. James Cooper was reviewed in order to determine if any potential historic iron bridges are present within the Study Area.

[2] Indiana Historic Sites and Structures Inventory Jennings County Interim Report. 1989. Historic Landmarks Foundation of Indiana. 92 pp.
[3] Indiana Historic Sites and Structures Inventory Jackson County Interim Report. 1988. Historic Landmarks Foundation of Indiana. 92 pp.
[4] Cooper. J.L. 1987. Iron Monuments to Distant Posterity Indiana's Metal Bridges, 1870-1930. 212 pp.

Only one iron bridge was identified, a Pratt thru carrying CR 400 W over the Vernon Fork of the Muscatatuck, just south of US 50 in between Hayden and North Vernon. It was built circa 1900.

Dr. Cooper's Artistry and Ingenuity in Artificial Stone Indiana's Concrete Bridges, 1900-1942[5] was reviewed in order to determine if any potential historic concrete bridges are present within the Study Area. Six concrete bridges are present within the Study Area. These include: (1) a continuous slab carrying CR 75 W over Fish Creek built circa 1903; (2) a slab carrying CR 450 N over Fish Creek built circa 1912; (3) a T-beam carrying CR 610 W over Sixmile Creek built circa 1910; (4) a filled-spandrel arch carrying CR 150 N over Storm Creek built circa 1910; (5) a filled-spandrel arch carrying US 50 over Indian Creek built in 1932; and (6) an open-spandrel arch carrying US 50 (east bound lane) over the Vernon Fork of the Muscatatuck River built in 1930. The bridge carrying US 50 (east bound lane) over the Vernon Fork is listed as a NRHP Candidate.

Figure 5.6 shows the location of NRHP listed sites and districts, state listed sites and districts, "Outstanding," "Notable" and "Contributing" rated structures in the county Interim Reports and iron and concrete bridges listed in Dr. Cooper's books.

Section 106 of the National Historic Preservation Act requires the Federal Highway Administration (FHWA) and other federal agencies to define and document the Area of Potential Effects (APE) in consultation with the State Historic Preservation Office (SHPO). This requirement applies to all federal undertakings and should occur as early in the process, as possible. The reason for defining the APE is to determine the area in which historic properties must be identified, so that eligibility and an affects finding can be completed.

The APE is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The APE is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking [36 CFR 800.16(d)].

For this project, it is suggested that the APE include a distance of one-mile on each side of the preliminary alternatives (2-mile band), with the understanding that the APE may need to be wider than 2 miles in some places and narrower in others, and that the APE is subject to revision during the Section 106 process.

The **Preliminary Alternative W** will impact one Outstanding structure. This is the Josiah Cobbs Farm (Survey 033 in Spencer Township) that was built in 1868. There are two outbuildings (a summer kitchen and a Midwest Three-Portal barn) associated with this structure. The main house has an I-house and Greek Revival style. The areas of significance include Agriculture, Architecture and Vernacular/Construction. The farm buildings will not be directly taken, but lose access from US 50. Also within the alignment are two Contributing structures. The first structure is the Doud Service Station (Survey 031 in Spencer Township), located on US 50 and east of CR 700. It was built in 1926 and is an example of Twentieth Century Functional style. The areas of significance include Commerce and Vernacular/Construction. Second is the A.L. Newby Barn, (Survey 065 in Spencer Township) on US 50, just west of CR 800. It was built in 1928 and the areas of significance are Agriculture and Vernacular/Construction.

Within one mile of this alignment are two more Outstanding, 11 Notable and 26 additional Contributing structures. One of the concrete bridges found in Cooper's book is also found.

There are two Contributing sites within **Preliminary Alternative W1**. The first is the A.L. Newby Barn, (Survey 065 in Spencer Township) on US 50, just west of CR 800. It was built in 1928 and the areas of

[5] Cooper J.L. 1997. Artistry and Ingenuity in Artificial Stone Indiana's Concrete Bridges, 1900-1942. 280 pp.

significance are Agriculture and Vernacular/Construction. The second site, the Nick Megel Farm (Survey 048 in Spencer Township), is just south of US 50, on CR 650 W. The house was built in 1922 and is an American Four-Square. The outbuildings are an English barn, silo, granary and chicken house. The areas of significance include Agriculture, Architecture and Vernacular/Construction. Within one mile of the alignment, there are 10 Notable, three Outstanding and 26 more Contributing structures. Also within one mile is one of the concrete bridges found in Cooper's book.

There is one Contributing site that will be directly impacted by **Preliminary Alternative W2.** This is the Nick Megal Farm which is described above. Three Outstanding, 10 Notable and 27 additional Contributing structures are within one mile of this preliminary alternative. Also within one mile is one of the concrete bridges found in Cooper's book.

Within **Preliminary Alternative W3**, there is only one Contributing site (the Nick Megal Farm) as mentioned above). Within one mile of the preliminary alternative, there are three Outstanding, 10 Notable and 26 additional Contributing structures. Also within one mile is one of the concrete bridges found in Cooper's book.

There is one Contributing structure within **Preliminary Alternative A**. It is the William H. Haines Farm (Survey 022 in Spencer Township) and was built in 1892. The house is an example of the I-house style and has three outbuildings (summer kitchen, chicken house and smoke house). The areas of significance for this farm are Agriculture and Vernacular/Construction. There is one Outstanding, nine Notable and 24 additional Contributing Structures within one mile of this alignment. Also within one mile are two concrete bridges found in Cooper's book.

Also worthy of mention are two sites located inside Selmier State Forest. One site is the former First Baptist Church of North Vernon which was used from 1848-1866. The only thing left at the site is a set of steps. The other site is the location where a preacher was buried; the tombstone is still visible. This preliminary alternative goes through the northern portion of Selmier State Forest and would likely impact these sites (See correspondence dated 4/3/07 from Selmier State Forest Property Manager). If this preliminary alternative is chosen for further study, these sites will need to be investigated further.

For **Preliminary Alternative B**, there are three Contributing structures within the alignment consisting of two farms and one house. One farm (Survey 015 in Center Township) is on CR 20 W, north of US 50. It was built circa 1850 and has a Hall-and-Parlor style house. The outbuilding is a Transverse-Frame barn and the areas of significance are Agriculture and Vernacular/Construction. Another Contributing site is just north of US 50 on Base Road (Survey 022 in Spencer Township) and is the William H. Haines Farm as described above. The third structure within the alignment is a house (Survey 011 in Center Township) and was built circa 1915. It is on CR 75 W, north of US 50. The house has a Pyramidal roof; the area of significance for this house is Vernacular/Construction. Within one mile of the alignment, there is one IHSSI listed district (Couchman) and one NRHP listed district (North Vernon Downtown Commercial). Also within one mile of this alignment are five Outstanding, 19 Notable and 36 additional Contributing structures; these are primarily north of North Vernon and Hayden. Also within one mile are three concrete bridges found in Cooper's book.

In **Preliminary Alternative C**, one Contributing structure is found. It is the William H. Haines Farm as mentioned above (Survey 022 in Spencer Township). Three Outstanding, nine Notable and 28 additional Contributing structures can be found within one mile of this preliminary alternative. Most of the Notable and Contributing structures are located around Hayden. Also within one mile are three concrete bridges found in Cooper's book.

Within **Preliminary Alternative D**, four Contributing sites are found. These consist of one house, one cemetery, and two farms. The house is the Hiram Elliott House, located just north of US 50 on Clay Street (Survey 002 in Campbell Township). This structure was built circa 1870; it has both Cruciform and Italianate styles. The areas of significance include Architecture and Vernacular/Construction. The second is the Otter Creek Cemetery located on CR 750 E. The areas of significance for the cemetery include

Exploration/Settlement and Religion. The third site, a farm (Survey 039 in Sand Creek Township), was built in 1903. It is on 550 N, north of US 50 and has a Gabled-ell style house. The areas of significance include Agriculture and Vernacular/Construction. This farm has three outbuildings (Transverse-Frame barn, garage and corn crib). The forth site is the William H. Haines Farm as mentioned above (Survey 022 in Spencer Township). There is one Outstanding, six Notable and 34 additional Contributing structures found within one mile of the alignment; most of these are near Hayden. Also within one mile are three concrete bridges found in Cooper's book.

Within **Preliminary Alternative E**, only one structure is found; it is a concrete bridge found in Cooper's book. The bridge is the filled-spandrel arch carrying US 50 over Indian Creek built in 1932 referenced above. Within one mile of this alignment, there is one IHSSI district (Couchman). There are also four NRHP listed districts including Vernon, State Street, North Vernon Downtown Commercial and Walnut Street. **Preliminary Alternative E** is approximately 0.2 mile north of the northern border of the Vernon Historic District. Within one mile of the alignment, there are four Outstanding, 17 Notable and 58 Contributing structures; most of these are near Hayden and North Vernon. Also within one mile are two additional concrete bridges found in Cooper's book.

The **Added Travel Lanes Through North Vernon Preliminary Alternative** impacts one structure listed on the Indiana State Register (the Jennings County Carnegie Library built in 1920 as mentioned above and within the North Vernon Downtown Historic District). This preliminary alternative passes through two NRHP historic districts, the Walnut Street Historic District and the North Vernon Downtown Historic District. This preliminary alternative would directly take the majority of the houses within the Walnut Street Historic District. This preliminary alternative would also directly take several commercial buildings within the North Vernon Downtown Historic District. This preliminary alternative would also take all six houses from the Couchman Historic District.

In addition to individual structures with the above mentioned districts, four Contributing structures may be taken by the right-of-way for this preliminary alternative. These structures include: (1) The Haines Curve Railroad Trestle (Survey 023 in Spencer Township) on Base Road and built circa 1900; the areas of significance include Engineering and Transportation, (2) One house that is on Walnut Street with a T-Plan and Queen Anne style (Survey 040 in North Vernon Scattered Sties), built circa 1890; the areas of significance include Architecture and Vernacular/Construction, (3) Fred Matthew's House which is on Walnut Street (Survey 042 in North Vernon Scattered Sites) and was built in 1928 emphasizing a Colonial Revival style; the area of significance is Architecture, (4) Another house on Walnut Street that was built circa 1925 (Survey 041 in North Vernon Scattered Sites) that elicits a Craftsman Bungalow style; the area of significance is Architecture.

Also within the preliminary alternative are two of the concrete bridges found in Cooper's book. One filled spandrel arch bridge carries US 50 over Indian Creek and was built in 1932. The other open spandrel arch bridge carries US 50 over the Muscatatuck River and was built in 1930. According to Dr. Cooper's book it is an NRHP Candidate.

The **Added Travel Lanes Through North Vernon Preliminary Alternative** is approximately 540 feet from a house on Hayden Pike determined to be eligible for the NRHP by the SHPO (Survey 026 in Center Township). Within one mile of this preliminary alternative are seven Outstanding, 25 Notable and 55 additional Contributing structures. There is one more concrete bridge found in Cooper's book and the State Street Historic District (IHSSI) is also within one mile of this alignment.

The **One-Way Pair Through North Vernon Preliminary Alternative** passes through the Walnut Street Historic District, but will not take any structures within this district. This preliminary alternative also passes through the North Vernon Downtown Historic District and will take several commercial structures within this district. A SHPO representative expressed concern for impacts to this district resulting from this preliminary alternative. In correspondence dated 3/30/07 stated, "such an extensive amount of demolition would have a dramatically adverse effect on the North Vernon Downtown Historic District." This preliminary alternative would also take all six houses from the Couchman Historic District.

In addition to individual structures with the above mentioned districts, two Contributing structures may be taken by the right-of-way for this preliminary alternative. These structures are: (1) The Haines Curve Railroad Trestle (Survey 023 in Spencer Township as described above) and (2) Fred Matthew's House (Survey 042 in North Vernon Scattered Sites as described above).

Also within the alignment are two of the concrete bridges found in Cooper's book. One filled spandrel arch bridge carries US 50 over Indian Creek and was built in 1932. The other open spandrel arch bridge carries US 50 over the Muscatatuck River and was built in 1930; it is also an NR Candidate. The Coachman (IHSSI listed), North Vernon Downtown Commercial and Walnut Street Historic Districts (NR listed) are also within this alignment.

The **One-Way Pair Through North Vernon Preliminary Alternative** is approximately 540 feet from a house on Hayden Pike determined to be eligible for the NRHP by the SHPO (Survey 026 in Center Township). Within one mile of this preliminary alternative are seven Outstanding, 24 more Notable and 58 extra Contributing structures. There is one more concrete bridge found in Cooper's book and the State Street Historic District (IHSSI) is also within one mile of this alignment.

In addition to the sites and structures mentioned above, US 50 is a state-designated scenic byway across the width of Indiana. It was designated as a byway in December 2004 and is also one of "Indiana's Historic Pathways." US 50 was designated because of its unique historic and scenic qualities. This designation offers opportunities for heritage-based tourism and related economic development along the corridor. In a letter dated 3/9/07 in Appendix A, the Historic Landmarks Foundation of Indiana recommends that "any alterations or improvements to the road should utilize context sensitive design solutions to preserve and enhance the character of the byway."

It is important to note that impacts to the historic properties described for the alternates above were only considered for sites that will be directly taken by the preliminary alternatives. Further historic investigation will be necessary for any preliminary alternative recommended for additional study to determine potential indirect adverse effects to historic properties.

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Figure 5.6: Historic Resources

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5.3.4.2 Archaeological Resources

An archaeological records check was conducted for the Study Area. Eight clusters of archaeological sites were discovered, typically clustering around drainage ways. These include (1) sites near Sand Creek; (2) south of the town of Queensville; (3) the Muscatatuck State Hospital grounds (now MUTC); (4) sites within the Muscatatuck National Wildlife Refuge; (5) around Vernon Fork of the Muscatatuck River southwest of North Vernon; (6) along Vernon Fork of the Muscatatuck River northeast of North Vernon; (7) along Otter Creek southeast of Butlerville; and (8) west of MUTC, along Pleasant Run. Cluster #7 was recommended for archaeological testing.

Preliminary Alternative B will go through Cluster #6 and **Preliminary Alternative D** will go through Cluster #8. Even if a preliminary alternative does not directly impact a recorded site, there may be other sites within the vicinity that have not been documented. Because of this, additional archaeological investigations will be performed for the preferred alternative prior to construction.

5.3.5 Natural Environmental Resources

The US 50 Corridor Study Area consists primarily of agricultural and forested land. The cities of Seymour (the eastern edge) and North Vernon, the town of Vernon, and the unincorporated areas of Hayden and Butlerville are within the Study Area. The Study Area has a great deal of natural environmental resources, including a number of federal, state, and privately managed lands. The Vernon Fork of the Muscatatuck River meanders through the Study Area. The topography in this area is rolling to hilly.

5.3.5.1 Water resources (lakes, rivers, streams, floodplains, and groundwater)

The most prominent water resource within the Study Area is the Vernon Fork of the Muscatatuck River which winds from the northeastern portion to the southern portion of the Study Area. This river is designated as an "Outstanding River or Stream" by the Natural Resources Commission. Muscatatuck is a native American word that means "land of the winding waters." Tributaries of the Vernon Fork include: Otter Creek, Pleasant Run, and Long Branch in the eastern portion of the Study Area, as well as Indian Creek, Sixmile Creek, and Mutton Creek west of North Vernon. Both the Vernon Fork of the Muscatatuck and Otter Creek are listed on the Natural Resources Commission "Outstanding Rivers List for Indiana." This list was prepared to help identify the rivers and streams which have particular environmental or aesthetic interest. Portions of Sand and Fish creeks meander through the north central portion of the Study Area. Floodplains are associated with the Vernon Fork as well as its tributaries. The floodplain of the Vernon Fork widens south of US 50 in the southern portion of the Study Area.

Coordination with the Indiana Department of Environmental Management (IDEM) Office of Water Quality indicates that portions of the Vernon Fork of the Muscatatuck, Long Branch, and Sand Creek within the Study Area are listed on Indiana's 303(d) List of Impaired Water bodies. Impaired water bodies are those that do not/or are not expected to meet applicable water quality standards with federal technology based standards alone. The Vernon Fork was listed in 2006 for metals and mercury in some locations and the magnitude of cause is slight for all listed portions of the Vernon Fork. Sand Creek was listed in 1998 for metals and mercury and the magnitude of cause is slight. Long Branch was listed in 2006 for metals and the magnitude of cause is also slight.

The magnitude of cause indicates the magnitude of the pollutants/stressors causing the impairments and their sources. Most of the impaired water bodies are impaired due to a Fish Consumption Advisories for mercury or other metals. The sources of the listed impairments are unknown. No impairments are listed for the other bodies of water within the study area. The results of this review reveal that, in general, the water quality within the study area has a higher quality than average watersheds within Indiana. Several water bodies are listed as impaired due to slightly elevated levels of mercury and/ or other metals.

Preliminary Alternative W crosses five streams. These include: Mutton Creek, Storm Creek, a tributary to Storm Creek, Sixmile Creek and an un-named ditch. These streams are crossed at existing US 50

stream crossings. This preliminary alternative will impact 20 acres of floodplains. These floodplains are associated with Sixmile, Mutton and Storm Creeks.

Preliminary Alternative W1 will cross six streams at seven locations. These streams include: Mutton Creek, a tributary to Mutton Creek, Storm Creek Ditch, two tributaries to Storm Creek and Storm Creek. Impacted floodplains are associated with Sixmile, Mutton and Storm Creeks; these impacts total 23 acres.

Preliminary Alternative W2 will cross a total of ten streams including: five un-named ditches, Mutton Creek, tributary to Mutton Creek, Storm Creek Ditch, a tributary to Storm Creek and Sixmile Creek. Impacted floodplains are associated with Sixmile, Mutton and Storm Creeks; these impacts total 16 acres.

Preliminary Alternative W3 crosses four un-named ditches, Mutton Creek, a tributary to Mutton Creek, Storm Creek Ditch, a tributary to Storm Creek and Sixmile Creek. This preliminary alternative will cross the floodplains associated with Sixmile, Mutton and Storm Creeks. Floodplain impacts for this preliminary alternative total 20 acres.

Preliminary Alterative A will cross 12 streams including: a tributary to Sixmile Creek, eight un-named ditches, Twomile Creek, an un-named tributary to Pleasant Run, and the Vernon Fork of the Muscatatuck River. The floodplain associated with Vernon Fork of Muscatatuck River will also be crossed and result in 10 acres of impact.

Preliminary Alternative B crosses 13 streams. It crosses eleven un-named ditches, an un-named tributary to Pleasant Run, and the Vernon Fork of the Muscatatuck River. The Vernon Fork of Muscatatuck floodplain will also be impacted using this proposed route which will impact 3 acres.

Preliminary Alternative C results in 16 stream crossings. Streams impacted include: Twomile Creek, the Vernon Fork of Muscatatuck River, a tributary to Sixmile Creek, an un-named tributary to Pleasant Run, and 12 un-named ditches. It will impact 6 acres of floodplain which is associated with Vernon Fork of Muscatatuck River.

Preliminary Alternative D will have 21 stream crossings. It will traverse a tributary to Sixmile Creek, Twomile Creek, Fish Creek, two tributaries to Fish Creek, Long Branch, a tributary to Long Branch, Vernon Fork of Muscatatuck River, a tributary to Vernon Fork of Muscatatuck River, Brush Creek, a tributary to Brush Creek and ten un-named ditches. This preliminary alternative will also cross three floodplains including those associated with Fish Creek, Vernon Fork of Muscatatuck River and Brush Creek. This will result in 14 acres of impact to floodplains.

Preliminary Alternative E will cross 12 streams including: a tributary to Sixmile Creek, Indian Creek, a tributary to Indian Creek, two tributaries to Vernon Fork of Muscatatuck River, Vernon Fork of Muscatatuck River, Deer Creek, an un-named tributary to Pleasant Run, and four un-named ditches. This alignment will traverse Indian Creek and Vernon Fork of Muscatatuck River floodplains and will result in 8 acres of impacts.

The **Added Travel Lanes Through North Vernon Preliminary Alternative** will cross 11 streams at existing US 50 crossings. It will cross Indian Creek, Vernon Fork of Muscatatuck River, an un-named tributary to Pleasant Run, and eight un-named ditches. This alignment will cross floodplains associated with Vernon Fork of Muscatatuck River and Indian Creek and will result in 4 acres of impacts.

The **One-way Pair Through North Vernon Preliminary Alternative** will cross 11 streams at existing US 50 crossings. It will cross Indian Creek, Vernon Fork of the Muscatatuck River, an un-named tributary to Pleasant Run, and eight un-named ditches. Impacted floodplains are associated with Vernon Fork of Muscatatuck River and Indian Creek. These floodplain impacts total 4 acres.

Coordination with the IDEM Ground Water Section Drinking Water Branch indicates that there are no known Wellhead Protection Areas located in the Study Area. There was also no public water wells found

within the Study Area. No known aquifer recharge areas are situated within the study area. The city of North Vernon receives its drinking water supply from surface water from the Vernon Fork of the Muscatatuck River. Based on a review of water well records from the Indiana Geographic Information Systems (GIS) Atlas, approximately 600 low capacity residential supply wells are situated in rural (i.e. non-North Vernon) portions of the study area. The exact locations and status (i.e. active/closed) of these wells can not be verified without interviews and field reconnaissance, which was beyond the scope of this investigation.

Figure 5.7 shows the location of lakes, ponds, wetlands, floodplains and streams within the Study Area.

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Figure 5.7: Water Resources

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5.3.5.2 Wetlands

Wetlands, as defined by the US Army Corps of Engineers (USACE) (33 CFR 328.3) and the Environmental Protection Agency (EPA), are "those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands are an important natural resource because they support rich biological communities. Because of their functions and values, there are several federal and state laws that regulate activities that affect wetlands. The major laws protecting wetlands include the Federal Clean Water Act, the River and Harbors Act, and Indiana's Flood Control Act.

The Study Area has over 1,600 acres of wetlands, according to the National Wetlands Inventory (NWI) digital shapefiles. Many are located within the floodplain of the Vernon Fork of the Muscatatuck River and its tributaries.

Most of the wetlands within the Study Area are classified as forested wetlands, consisting of 1,473 acres. Forested wetlands are wetlands that are characterized by woody vegetation that is six meters (20 feet) tall or taller. Forested wetlands are the most common wetland type in Indiana where moisture is abundant particularly along rivers and steams.[6] Forested wetlands normally possess an upper canopy of trees, an understory of young trees and shrubs, and an herbaceous ground layer.[7] Emergent wetlands make up 164 acres and are characterized by erect, rooted, herbaceous hydrophytes (excluding mosses and lichens). Emergent wetlands are also known as marshes. Scrub-shrub wetlands, which consist of shrubs and/or small trees, make up 50 acres of the wetlands in the Study Area.

NWI wetland impacts for the Western Rural New Terrain preliminary alternatives ranged from 14.8 acres for **Preliminary Alternative W2** to 4.2 acres for **Preliminary Alternative W1**. **Preliminary Alternative W** will impact 5.0 acres of wetlands and **Preliminary Alternative W3** will impact 5.6 acres of wetlands. The majority of the wetlands to be impacted by each of these preliminary alternatives are forested.

NWI wetland impacts for the bypass preliminary alternatives ranged from no impacts for **Preliminary Alternative E** to 9.9 acres for **Preliminary Alternative D**. **Preliminary Alternative B** will impact only 0.8 acres and **Preliminary Alternatives A** and **C** will impact 5.5 acres and 7.4 acres, respectively. The majority of the wetlands to be impacted by each of these preliminary alternatives are forested.

The **Added Travel Lanes Through North Vernon** and **One-Way Pair Through North Vernon Preliminary Alternatives** do not impact NWI wetlands.

In a letter dated 7/11/07 in Appendix A, the US Fish and Wildlife Service (USFWS) stated that portions of the study area contain large interfluvial expanses of Cobbsfork soils which typically support perched wetlands. These wetlands sometimes do not appear on the NWI maps, but will be considered when wetland delineations are done as the project progresses.

Figure 5.7 shows the location of wetlands within the Study Area.

[6] Cowardin, L. M., V. Carter, F. C. Golet and E. T. LaRoe. 1979.
Classification of Wetlands and Deepwater Habitats of the United States. United States Fish and Wildlife Service, Office of Biological Services. Government Printing Office, Washington, D.C. FWS/OBS-79/31. 103 pp.
[7] United States Geological Survey. 1998. Classification of Wetlands and Deepwater
Habitats of the United States: Emergent Wetland. United States Geological Survey, Northern Prairie Wildlife Research Center, at http://www.npwrc.usgs.gov/resource/1998/class/emergent.htm

5.3.5.3 Prime Agricultural Lands

Jackson County is one of 10 counties that comprise the South Central Agricultural Statistics District in Indiana. The 2002 census of agriculture data show farmland in this county encompassed 206,855 acres on 806 farms. The average value per acre for land and buildings in 2002 was $2,443 for Jackson County (49th in Indiana). Cash receipts in 2004 for this county totaled $115,043,000 (11th in Indiana).

Typical agricultural commodities produced in Jackson County include corn, soybeans, wheat and hay. Livestock production in this county includes cattle (milk and beef), hogs and sheep. Jackson County ranked 51st in corn production, 42nd in soybean production, 40th in wheat production and 18th in hay production compared with other Indiana counties in 2005. Jackson County ranked 15th for beef cows and 16th for milk cows in Indiana for January 2006. Additionally, it ranked 52nd for hogs and 74th for sheep in 2002.

Jennings County is one of nine counties that comprise the South East Agricultural Statistics District in Indiana. The 2002 census of agriculture data show farmland in this county encompassed 142,609 acres on 669 farms. The average value per acre for land and buildings in 2002 was $2,179 for Jennings County (74th in Indiana). Cash receipts in 2004 for this county totaled $54,073,000 (58th in Indiana).

Typical agricultural commodities produced in Jennings County include corn, soybeans, wheat and hay. Livestock production in this county includes cattle, hogs and sheep. Jennings County ranked 67th in corn production, 61st in soybean production, 59th in wheat production and 25th in hay production compared with other Indiana counties in 2005. Jennings County ranked 29th for beef cows in Indiana for January 2006. Additionally, it ranked 70th for hogs and 65th for sheep in 2002.

The US 50 Corridor Study Area consists of the cities and towns of Seymour, North Vernon, Vernon, Hayden, and Butlerville of as well as surrounding farmland and forest. According to Multi-Resolution Land Characteristics (MRLC) Consortium Land Cover Geographic Information Systems (GIS) data, the Study Area is comprised of 36,007 acres (41% of the study area) of farmland.

Prime farmland is defined by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and that is available for these uses (i.e., land that could be cropland, pastureland, rangeland, forest land or other land, but not urban built-up land or water)." It has the combination of soil properties, growing season, and moisture supply needed to produce sustained high yields of crops in an economic manner if treated and managed according to acceptable farming methods. In general, prime farmland has an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, an acceptable level of acidity or alkalinity, an acceptable content of salt or sodium, and few or no rocks. Its soils are permeable to water and air. Prime farmland is not excessively eroded or saturated with water for long periods of time, and it either does not flood frequently during the growing season or it is protected from flooding. [8]

According to NRCS soil GIS files for Jackson and Jennings counties, 12,221 acres (14%) of the US 50 Corridor Study Area consist of soils in which all areas are prime farmland, 30,755 acres (35%) consist of soils that are prime farmland if drained, 2,816 acres (3%) consist of soils that are prime farmland if drained and either protected from flooding or not frequently flooded during the growing season, and 5,041 acres (6%) consist of soils that are prime farmland if drained and either protected from flooding or not frequently flooded during the growing season. There are no soils within the Study Area that are farmland of statewide importance. Figure 5.8 shows the NRCS soil layer and the different categories.

[8] SSM, USDA Handbook No. 18, October 1993.

Referring to Table 5.6, farmland impacts (including row crop and pasture/hay) are relatively similar for the Western Rural New Terrain preliminary alternatives, with the exception of **Preliminary Alternative W** which will impact 60 acres of farmland. **Preliminary Alternative W1** will impact 148 acres of farmland, **Preliminary Alternative W2** will impact 150 acres, and **Preliminary Alternative W3** will impact 144 acres.

Farmland impacts for the bypass preliminary alternatives range from 156 acres for **Preliminary Alternative E** to 451 acres for **Preliminary Alternative D**. **Preliminary Alternative C** follows with 357 acres of farmland. **Preliminary Alternative A** will impact 251 acres and **Preliminary Alternative B** will impact 215 acres. The **Added Travel Lanes Through North Vernon** and **One-Way Pair Through North Vernon Preliminary Alternatives** had similar farmland impacts with 28 acres and 25 acres, respectively.

All preliminary alternatives will impact soils with some prime farmland designation.

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Figure 5.8: Prime Farmland

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5.3.5.4 Wildlife Habitats

Physiographic regions are areas that have similar elevation, relief and related types of topographic features present. These regions provide a general view of the terrain of an area, and what resources are present. The US 50 Corridor Study Area is located within the Southern Hills and Lowland Region and the Scottsburg Lowland and Muscatatuck Plateau sub regions. The following physiographic region and complex descriptions are from "Physiographic Divisions of Indiana" by Gray (2000).

The **Southern Hills and Lowlands Region** is partly defined by the Wisconsin glacial boundary on the north which separates this region from the Central Till Plain Region. The common element in the region is for the most part, differences in bedrock characters that define the several sections. Nearly three-fifths of the region was covered by one of more of the pre-Wisconsin ice sheets. Major rivers of the region (Wabash, White and its East Fork, and Ohio) carried vast volumes of melt water and their valleys were substantially modified during Wisconsin time.

The northeastern and northern boundaries of the **Scottsburg Lowland** are sharply defined by the limit of the Wisconsin till sheet; the western boundary, at the base of the Knobstone Escarpment is also sharp. The southern boundary is placed at the drainage divide between the Muscatatuck River and Silver Creek. The eastern boundary divides the relatively low and nearly level lands of the Scottsburg Lowland from the equally flat but slightly sloping limestone-based upland surfaces of the Muscatatuck Plateau.

The East Fork of the White River drains the major part of the Scottsburg Lowland axially. Adjacent to this stream is a broad floodplain replete with active meanders and flanking this are low, terraces underlain by Wisconsin outwash sand and gravel. Dunes fringe these areas, most extensively on the east. The Muscatatuck River crosses the southern part of the lowland. This stream carried no melt water during Wisconsin time, and therefore no sand, and so the broad valley flats and terraces in this part of the lowland are underlain mainly by deposits of silt and clay, which in part are of lacustrine origin. Extensive lowland flats similar to those described in the Boonville Hills lie between and adjacent to the major stream tracts, and low hills underlain by pre-Wisconsin till lie against the edges of the section.

Beneath this complex of glacial deposits is shale of Devonian and Mississippian age that is not resistant to erosion. Outcrops of these rocks are few. An anomalous part of the section, the only part that is not low and that has extensive outcrops of bedrock, is the Brownstown Hills, just southeast of the town of that name. This small but rugged area is underlain by an outlier of siltstone of the Borden Group, which is more resistant to erosion than the shale that underlies the lowland, and which thus gives rise to topography much like that of the Norman Upland.

The **Muscatatuck Plateau** is bounded on the east by the Dearborn Upland, on the northwest by the New Castle Till Plains and Drainage ways, and on the west by the Scottsburg Lowland and the Charlestown Hills. Except that is has been glacially modified, in many respects the physiography of this section is similar to that of the Mitchell Plateau. The upland surface slopes westward at a rate somewhat less than the dip of the underlying limestone and dolomite strata of Silurian and Devonian age, so that it transects older and older rocks eastward. In most areas the upland is covered by relatively thin pre-Wisconsin till, and the till is capped by silt that resembles, but is not demonstrably, loess. Mimicking the orientation of streams on adjacent parts of the Central Till Plain, many of the streams flow at a slight angle to the direction of slope of the plateau, and it seems likely that they owe their orientation to one of the pre-Wisconsin glacial events.

> Karst development of the Silurian and Devonian carbonate rocks that underlie the Muscatatuck Plateau is less pervasive than that of the Mitchell Plateau and is largely restricted to narrow areas close to the deeply entrenched streams. Although it may be that karst is extensive beneath the thin drift cover and has simply been re-exposed near the entrenched streams, such has not been proved.

The US 50 Corridor Study Area is within the Bluegrass Natural Region (Scottsburg Lowland and Muscatatuck Flats and Canyons Sections). The following natural region and section descriptions are from "The Natural Regions of Indiana" by Homoya et al. (1985).

A natural region is "a major, generalized unit of the landscape where a distinctive assemblage of natural features is present. It is part of a classification system that integrates several natural features, including climate, soils, glacial history, topography, exposed bedrock, pre-settlement vegetation, species composition, physiography, and plant and animal distribution, to identify a natural region."[9] Natural regions are similar to physiographic regions, but whereas physiographic regions may give information on predominant topography and land use, natural regions give more information about the native plant and animal species of an area.

> The **Bluegrass Natural Region** is identified and named not for predominance of bluegrass (*Poa* spp.) but for similarities of the physiography and natural communities to the Bluegrass Region of Kentucky. Although the entire natural region has been covered by one or more of the pre-Wisconsin ice sheets, today much of it is mantled by only a relatively thin veneer of till. The northern boundary of the region approximates the southern terminus of Wisconsin glaciation. This boundary marks the northern limit in this region for several southern plant species, as well as many herpetofaunal species. Most of the natural region was originally forested, although a few glade, cliff and barrens remnants are known, as well as non-forested aquatic communities.
>
> The **Scottsburg Lowland Section**'s main features are the wide alluvial and lacustrine plains that border the major streams, particularly the Muscatatuck River, the East Fork of the White River, Silver Creek and their tributaries. Major soils are acid to neutral silt loams, particularly of the Stendal, Atkins, Haymond and Wilbur series. A sizable area of eolian sand occurs just east of the East Fork of the White River, but no unique communities or species are known to have been associated with it. Bedrock rarely crops out, the major exception being the Falls of the Ohio near Clarksville. Predominant natural communities are floodplain forest swamp, although areas of upland forest are included that grade into the Muscatatuck Flats and Canyons Section. The swamp community is characterized by the occurrence of swamp cottonwood (*Populus heterophylla*), red maple (*Acer rubrum*), pin oak (*Quercus palustris*), river birch (*Betula nigra*), green ash (*Fraxinus pennsylvanica*) stiff dogwood (*Cornus foemina*) and buttonbush (*Cephalanthus occidentalis*). The slightly better drained floodplain forest has sweetgum (*Liquidambar styraciflua*), swamp chestnut oak (*Quercus michauxii*), swamp white oak (*Quercus bicolor*), American elm (*Ulmus americana*), black gum (*Nyssa sylvatica*) beech (*Fagus grandifolia*), shellbark hickory (*Carya laciniosa*) and rarely, pecan (*Carya illinoensis*). Characteristic herbs include Muskingum Sedge (*Carex muskingumensis)*, Bailey Louisiana sedge (*Carex louisianica)*, Virginia day flower (*Commelina virginica*), lizard's tail (*Saururus cernuus*), and woodreed (*Cinna arundinacea*). The very rare southern pale green orchid (*Platanthera flava var. flava*) is geographically restricted here, as are the northern copperbelly snake (*Nerodia erythrogaster neglecta*) and the eastern ribbon snake (*Thamnophis sauritus sauritus*). The northern studfish (*Fundulus catenatus*) is known in Indiana only from streams in the far northern portion of this section. State restricted plants include the extinct stipuled scurf-pea (*Psoralea stipulata*) and the extirpated Short's goldenrod (*Solidago shortii*). Wetland features in this section

[9] Homoya, M. A., B. Abrell, J. R. Aldrich, and T. W. Post. 1985. Natural Regions of Indiana. In Proceedings of the Indiana Academy of Science For 1984, Vol. 94, edited by Donald R. Winslow, pp. 245-268, Indiana Academy of Science, Indianapolis.

include swamps, acid seep springs and low-gradient, silty-bottom streams, rivers and ponds.

The **Muscatatuck Flats and Canyons Section** consists primarily of a broad, relatively flat west sloping plain with steep walled canyons entrenched by major streams. The plain is characterized by the presence of poorly drained, acidic Cobbsfork and Avonburg silt loam soils and by the occurrence of a southern flatwoods natural community type. These flatwoods typically have beech (*Fagus grandifolia*), red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*), pin oak (*Quercus palustris*), swamp chestnut oak (*Quercus michauxii*) and tulip tree (*Liriodendron tulipfera*). A few species are geographically restricted here including fox grape (*Vitus labrusca*), blunt-lobed grape fern (*Botrychium oneidense*), swamp dewberry (*Rubus hispidus*), dwarf ginseng (*Panax trifolium*) and false lily-of-the-valley (*Maianthemum canadense*). In canyons, cliffs and slopes of Silurian Devonian limestone provide an environment quite unlike the flats. These sites are comparatively rich floristically, and have a predominantly mixed mesophytic forest composition. Canada violet (*Viola canadensis*), Longspur violet (*Viola rostrata*) and crinkleroot (*Dentaria diphylla*) are more common here than elsewhere in southern Indiana. American pennywort (*Hydrocotyle americana*), wideleaf ladies' tresses (*Spiranthes lucida*) and longstalk sedge (*Carex pedunculata*) are geographically restricted here. Sullivantia (*Sullivantia sullivantii*) and golden St. John's-wort (*Hypericum frondosum*) are known in Indiana only from canyons in this section. The dusky salamander (*Desmognathus fuscus*) is a distinctive species of this section and the Bluegrass Natural Region. Non-forested community types include small areas of limestone gravel wash and limestone glade, the latter harboring the only Indiana occurrence of Michaux leavenworthia (*Leavenworthia uniflora*). Minor areas of karst topography occur along valley borders. The major aquatic features include medium-gradient streams with beds of pavement-like limestone, such as Graham Creek, Big Creek and the upper stretches of the Vernon Fork of the Muscatatuck River.

According to the US Fish and Wildlife Service (USFWS) "Endangered Species, County Distribution of Indiana's Federally Listed Threatened, Endangered, Proposed, and Candidate Species", the study area is within the range of two federally listed or candidate species. These species are the federally endangered Indiana bat (*Myotis sodalis*) and the federally protected bald eagle (*Haliaeetus leucocephalus*). The bald eagle was delisted from the federal list on August 8, 2007; however, it is still protected under the Bald and Golden Eagle Protection Act.

In a letter dated 7/11/07 in Appendix A, the USFWS stated that there are numerous recent summer records of Indiana bats from the Muscatatuck River watershed in Jennings, Ripley and Jefferson Counties, including the Muscatatuck and Big Oaks Wildlife Refuges. Some of those records are very near the project area at both Refuges and in the eastern portion of **Preliminary Alternative D**. Informal consultation for the US 50 project will be necessary pursuant to Section 7 of the Endangered Species Act. Site-specific bat surveys may be necessary to determine whether the project may adversely affect the Indiana bat.

The Indiana Natural Heritage Data Center represents a comprehensive attempt to determine the state's most significant natural areas through an intensive statewide inventory. The Heritage database documents occurrences of federal and state threatened and endangered species and high quality natural communities. This database was consulted and numerous records exist for several species within the Study Area. Most of these are associated with the forest and wetland habitats within the Study Area. These habitat types are usually present within managed lands within the area. Riparian corridors, particularly along the Vernon Fork of the Muscatatuck and its tributaries, likely provide travel corridors for many wildlife species.

According to the Heritage database, there are a number of threatened endangered or rare species recorded from the project Study Area. This includes eight (8) bird species (*Accipiter striatus*, sharp-shinned hawk; *Ammodramus henslowii*, Henslow's sparrow; *Ardea herodias*, great blue heron; *Buteo lineatus*, red shouldered hawk; *Cistothorus platensis*, sedge wren; *Tyto alba*, barn owl; and *Wilsonia citrina*, hooded warbler), three (3) species of reptile (*Clonophis kirtlandii*, Kirtland's snake; *Kinosternon*

subrubrum, eastern mud turtle; and *Opheodrys aestivus*, rough green snake), two (2) species of amphibian (*Necturus maculosus*, common mudpuppy and *Rana pipiens*, northern leopard frog), four (4) species of mammal (*Mustela nivalis*, least weasel; *Myotis grisescens*, gray bat; *Myotis sodalis*, Indiana bat; and *Taxidea taxus*, American badger), one (1) fish specie (*Ammocrypta pellucida*, eastern sand darter), five (5) species of mussel (*Lampsilis teres*, yellow sandshell; *Simposonaias ambigua*, salamander mussel; *Toxolasma lividus*, purple lilliput; *Toxolasma parvum*, lilliput; and *Villosa lienosa*, little spectaclecase), 13 species of invertebrate (*Artogeia virginiensis*, West Virginia white; *Caecidotea rotunda*, Northeastern cave isopod; *Cambala minor*, millipede, *Carychium exile*, ice thorn; *Chrhonius virginicus*, pseudoscopion; *Conotyla bollmani*, millipede; *Crangonyx packardi*, Packard's cave amphipod; *Hagenius brevistylus*, dragonhunter; *Porhomma cavernicola*, Appalachian cave spider; *Pseudopolydesmus collinus*, millipede; *Scytonotus granulatus*, granulated millipede; *Sinella alata*, springtail; and *Sinella cavernarum*, springtail), and 13 species of plant (*Carex pedunculata*, longstalk sedge; *Dentaria multifida*, divided toothwort; *Hydrastis canadensis*, golden seal; *Juglans cinerea*, butternut; *Oxalis illinoensis*, Illinois woodsorrel; *Panax quinquefolius*, American ginseng; *Panax trifolius*, dwarf ginseng; *Platanathera flava var. flava*, southern rein orchid; *Sagitarria australis*, longbeak arrowhead; *Spiranthes lucida*, shining lady's tresses; *Stachys clingmanii*, Clingman hedge nettle; *Sullivantia sullvantii*, sullivantia, and *Waldstoinia fragarioides*, barren strawberry). In addition to the species mentioned above, the Heritage database also records several high quality natural communities in the Study Area including: floodplain mesic forest, upland dry forest, upland dry-mesic forest, upland mesic forest, limestone cliffs, and acid seep wetland.

Most species are congregated within managed lands (i.e. Muscatatuck National Wildlife Refuge, Muscatatuck County Park, Crosley Fish and Wildlife Area, Selmier State Forest, Cali Nature Preserve). **Preliminary Alternatives W, W1**, **W2,** and **W3** do not directly go through Muscatatuck National Wildlife Refuge, but skirt the northern boundary; several records exist here for vertebrate animals. The **Added Travel Lanes Through North Vernon** and **One-Way Pair Through North Vernon Preliminary Alternatives** do not go through the Cali Nature Preserve; however, they are just north of the northern boundary of the preserve while on US 50. This is just north of an area in the preserve known to have two state listed vascular plants (barren strawberry and shining lady's tresses). The Cali Nature Preserve also has records for three other vascular plants (butternut, sullvantia, and long stalk sedge). **Preliminary Alternative E** goes through the northern portion of the Muscatatuck County Park where there are records for an invertebrate animal (West Virginia white) and vascular plants (divided toothwort and Clingman hedge nettle). **Preliminary Alternative E** is also immediately north of a high quality natural community, a dry upland forest within the Muscatatuck County Park. **Preliminary Alternatives A, B, C, E, Added Travel Lanes Through North Vernon** and the **One-Way Pair Through North Vernon Preliminary Alternatives** go through two areas known to have two vertebrate animals (Kirtland's snake and least weasel). However, these are on US 50 so it is likely the records were roadkill.

The Muscatatuck National Wildlife Refuge (Refuge) (established in 1966) is located three miles east of Seymour and consists of 7,802 acres. Due to its assortment of forest, wetland and grassland habitats, it has many types of wildlife[10]. Winter attracts a variety of ducks to the refuge, and birds like tundra swans and bald eagles occasionally visit. In the spring, wood ducks, Canada geese and a pair of bald eagles begin nesting, while most other migratory waterfowl depart on their annual spring migration. In April, great blue herons nest in a rookery in the Moss Lake area, and great egrets visit the refuge. Migrating warblers pass through in May. Geese and wood duck broods are common in June. By August, the young birds of summer are flying, and early migrant blue-wing teal arrive to mark the beginning of the fall migration. Ospreys and cormorants appear over the big lakes, sandhill cranes fly over the refuge on their way south, and the winter songbirds return[11].

[10] US Fish and Wildlife Service: Muscatatuck National Wildlife Refuge Project Update: *Comprehensive Conservation Plan*. May 2007. 4 pp.
[11] US Fish and Wildlife Service: Muscatatuck National Wildlife Refuge Web Site: http://www.fws.gov/midwest/muscatatuck/.

The rare copperbelly water snake is common within the Refuge but rare nationwide due to loss of the snake's wetland habitat. This population is protected under a conservation easement. Numerous state listed species occur here including the four-toed salamander, southern rein orchid, Kirtlands snake, red shouldered hawk, sedge wren, Henslow's sparrow, king rail, Virginia rail, common moorhen, northern harrier, black-crowned and yellow-crested night herons and the recently de-listed river otter. River otters were once common in Indiana but then were eliminated by overtrapping and loss of habitat. The Refuge became the first otter reintroduction site in Indiana in 1995. The federally endangered Indiana bat and federally protected bald eagle are known to occur in the Refuge[12] as well.

In May 2007, the Refuge initiated its Comprehensive conservation Plan (CCP) to comply with the Congressional mandate in the National Wildlife Refuge System Improvement Act of 1997. The plan will provide a clear statement of the desired future in terms of management.

In addition to protections provided by the federal and state endangered species legislation, the Migratory Bird Treaty Act (MBTA) makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations (USFWS, 2003). The specific migratory bird species protected by the MBTA can be found in 50 CFR 10.13. Federal agencies taking actions having or likely to have a negative effect on migratory bird populations are directed to work with the USFWS to develop an agreement to conserve migratory birds. Future environmental documents will address impacts to migratory birds that may result from this project.

The Study Area encompasses many acres of various habitat types, many of which are vital for the survival of many types of animals and plants, including state and federally listed species. Even if a preliminary alternative does not directly go through an area where these types of species are known to occur, there could be indirect impacts to the species from other preliminary alternatives placed around them. These areas should be avoided to the greatest extent possible to help ensure the survival of any listed species.

5.3.5.5 Managed Lands and Forests

As part of the Forest Inventory Analysis by the United States Department of Agriculture (USDA) in 1950, Indiana was divided into four forest survey units. These units have remained consistent throughout the years in order to more accurately track changes in forests from survey to survey. The US 50 Corridor Study Area is within the Knobs (Jackson County) and Upland Flats (Jennings County) Units. The Knobs Unit has the state's highest concentration of forestland, consisting of large, continuous tracts of forests that provide some of the best woodland habitat. This unit filters and cleans much of the state's water and air, while providing a sustainable resource for forest projects. This Unit also contains some of the hilliest counties in Indiana; as a result, the area supports trees that prefer very dry sites and ridge tops, as well as those that prefer very wet sites, ravines or "bottomland." Tree types unique to the unit include blackjack oak and swamp tupelo. Part of the unit stands on sandstone bedrock and other areas developed over limestone. This difference accommodates a variety of trees and their associated flowering plants and shrubs. The Knobs Unit contains the highest number of trees in the state.

The Upland Flats Unit has the second highest concentration of forestland (over 1/3 of the area is forested). Most of the unit has rich, moderately moist sites that support many different species of trees along its rolling hills and ravines. Yellow buckeye is endemic to this unit. [13]

[12] US Fish and Wildlife Service: Muscatatuck National Wildlife Refuge: CAP (Contaminants Assessment Process) Information. March 6, 2007. 72 pp.

[13] Tormoehlen, Barbara, Joey Gallion, and Thomas L. Schmidt. 2000. Forests of Indiana: A 1998 Overview. Northeastern Area State and Private Forestry, Forest Service, United States Department of Agriculture. NA-TP-03-00, pp.17.

In 2005, the USDA Forest Service Forest Inventory and Analysis Data Center showed Jackson County as having roughly 118,000 acres of accessible forest (approximately 35% of total land acres). The majority of this forest is privately owned (72%). Most of the forest type in Jackson County is comprised of sugar maple/beech/yellow birch at 25%. White oak/red oak/hickory constitute 23%. All other forest types comprised less than 10%: eastern red cedar/hardwood, Virginia pine/southern red oak, chestnut oak, white oak, yellow poplar/white oak/red oak, sweetgum/ yellow poplar, sweetgum/nuttall oak/willow oak, sweetgum/swamp tupelo/red maple, river birch/sycamore, sycamore/pecan/American elm, sugarberry/hackberry/elm/green ash, cottonwood/willow, sugar maple/beech/yellow birch and cherry/ash/yellow poplar.

In 2005, the USDA Forest Service Forest Inventory and Analysis Data Center showed Jennings County as having roughly 115,000 acres of accessible forest (approximately 47% of total land acres). The majority of this forest is privately owned at 76%. Most of the forest type in Jennings County is comprised of white oak/red oak/hickory (19%). Sweet gum/yellow poplar constitutes 15% while sugar maple/beech/yellow birch is 14% and cherry/ash/yellow poplar is 11%. All other forest types comprise 10% or less: eastern white pine, other pine/hard, white oak, yellow poplar/white oak/red oak, sassafras/persimmon, yellow poplar, red maple/oak, black ash/American elm/red maple and sycamore/pecan/American elm.

According to the Indiana Department of Natural Resources (IDNR) Division of Forestry 2005 Big Tree Register, there is one big tree state champion located in the Study Area. The first Indiana Big Tree Register was developed and published in 1974 with additional editions in 1976, 1980, 1991, and 2000. It is currently maintained on a five-year schedule. A big tree is defined by three measurements: (1) circumference in inches at 4.5 feet above the ground; (2) total height in feet; and (3) ¼ of the average crown spread measured in feet. These three measurements are then added together to give a point index. The tree of each species with the highest point index is considered the champion big tree[14]. The big tree champion in the Study Area is a swamp chestnut oak (*Quercus michauxii*) and is located north of Base Road and west of CR 800 W in the western portion of the Study Area. None of the Preliminary Alternatives will impact this Big Tree.

According to Multi-Resolution Land Characteristics (MRLC) Consortium Land Cover Geographic Information Systems (GIS) data, the US 50 Corridor Study Area is comprised of 42,271 acres (48% of the Study Area) of forest. Forested areas are concentrated in large managed land holdings, in hilly topography, and within the floodplain of the Muscatatuck River and its tributaries. Figure 5.9 shows the location of forested areas based on the MRLC Land Cover GIS data.

Preliminary Alternative W2 will impact the most forest of the three Rural Western New Terrain preliminary alternatives with 50 acres. **Preliminary Alternatives W and W1** will impact 28 acres and **Preliminary Alternative W3** will impact 33 acres of forest.

Forest impacts for the bypass preliminary alternatives ranged from 87 acres for **Preliminary Alternative B** to 216 acres for **Preliminary Alternative D**. **Preliminary Alternative A** will impact 153 acres of forest, **Preliminary Alternative C** will impact 136 acres of forest, and **Preliminary Alternative E** will impact 156 acres of forest. The **Added Travel Lanes Through North Vernon** and **One-way Pair Through North Vernon Preliminary Alternatives** will each impact 51 acres of forest.

In a letter dated 7/13/07 in Appendix A, the Indiana Department of Natural Resources (IDNR) stated concerns regarding forest impacts from the preliminary bypass alternatives. For **Preliminary Alternative A**, IDNR recommends bridging the Vernon Fork of the Muscatatuck River as well as most of the forested habitat located on the southeast side of the river. They recommend a roadway over the forested valley linking elevation 700' on the northwest side of the river to elevation 725' on the southeast side of the river.

[14] Indiana Department of Natural Resources. 2005. Indiana Big Tree Register (IBTR).

This potential mitigation measure should be investigated further if this preliminary alternative is recommended for further study.

For **Preliminary Alternative B**, IDNR states that the segment of Vernon Fork where this preliminary alternative crosses may contain scattered individuals of eastern hemlock. A relict stand of this ecologically significant tree species occurs just upstream of this location. According to the IDNR, if this preliminary alternative is recommended for further study, this area should be carefully surveyed, and if used, should be modified to avoid any disturbances to individuals of eastern hemlock occurring in this stream stretch.

INDR is also concerned about **Preliminary Alternative C** because of the significant forest impacts along both sides of the Muscatatuck River. Also, this section of the Vernon Fork of the Muscatatuck River may contain scattered individuals of eastern hemlock. A relict stand of this ecologically significant tree species may occur near this location. According to the IDNR, if this preliminary alternative is recommended for further study, this area should be carefully surveyed, and if used, should be modified to avoid any disturbances to individuals of eastern hemlock occurring in this stream stretch.

For **Preliminary Alternative D**, IDNR recommends moving the alignment southeast of the river so the proposed road is located between CR 625 N and CR 750 E and generally follows the open areas along CR 750 E and CR 550 N until it rejoins US 50. These shifts would avoid impacts to large forested areas south of the river. This potential mitigation measure should be investigated further if this preliminary alternative is recommended for further study.

The IDNR recommends discarding **Preliminary Alternative E** due to impacts to the Muscatatuck County Park, and as it would act as a barrier separating the Cali Nature Preserve to the north from the County Park and Crosley Fish and Wildlife Area downstream. Further fragmentation of the connectivity of natural habitat along the river corridor of Vernon Fork will negatively impact these areas.

Managed Lands within the Study Area include Muscatatuck National Wildlife Refuge, Muscatatuck County Park, Crosley Fish and Wildlife Area, Violet and Louis J. Cali State Nature Preserve, Selmier State Forest, a small portion of Big Oaks National Wildlife Refuge and lands owned by Southeast Purdue Agricultural Center (SEPAC), including the area formerly known as Brush Creek Fish and Wildlife Area.

The Muscatatuck National Wildlife Refuge borders US 50 just east of Seymour. This refuge was established in 1966 and is approximately 7,802 acres in size. The refuge objectives are to provide resting, nesting and feeding habitat for waterfowl and other migratory birds; provide habitat for resident wildlife; protect endangered and threatened species; provide for biodiversity; and provide public opportunities for outdoor recreation and environmental education.[15]

A meeting was held at the Muscatatuck National Wildlife Refuge on April 20, 2007 between the Refuge and Bernardin, Lochmueller & Associates, Inc. The purpose of the meeting was to discuss the US 50 North Vernon Corridor Planning and Environmental Assessment Study. The Refuge provided BLA with several informational handouts and expressed several concerns about the project. The Refuge is concerned how the US 50 upgrade could affect their entrances (main and otherwise) and visitor use. Public safety along US 50 for visitors due to the projected travel increase, widening, and likely increase (albeit illegal) in vehicle speed was another concern. The Refuge is also concerned about advising the public about using alternative routes to access the refuge during construction.

In addition, Mutton and Storm Creek flow directly into the Refuge and are a significant water source for the managed wetland units. As such, the Refuge is worried about stream water quality during construction (i.e. runoff, silty debris in water) and post-construction (road runoff during operation). As a result, the Refuge is interested in seeing bridge designs that include ways to minimize runoff and hazmat

[15] United State Fish & Wildlife Service website. 2007. http://www.fws.gov/midwest/Muscatatuck/

spills; they would also like to see water crossings as low risk as possible.

Preliminary Alternatives W, W1, **W2,** and **W3** do not directly go through Muscatatuck National Wildlife Refuge, but skirt the northern boundary.

The Muscatatuck County Park is located in the central portion of the Study Area between North Vernon and Vernon. This park was adopted as Indiana's fourth state park in 1921 under the name of Vinegar Mills State Park. The Park was named after the early pioneer stone cutting mill located on the banks of the Muscatatuck River. The name of the park was changed the next year to Muscatatuck State Park. This park is managed by the Jennings County Parks and Recreation Department and offers camping, scenic vistas, the Muscatatuck River, waterfalls, hiking trails, biking trails, fishing, rock climbing wildlife, marshes, picnicking, and shelters for events.[16]

Coordination with the Director of Jennings County Parks and Recreation indicates that usage of the Muscatatuck County Park during an average week day is well over 100 visits per day, with 500 to 700 visits per weekend. During weekends the park shelter is often booked with family reunions, as well as birthday parties, or weddings. Camping is the top income producer for the park and it has been growing. The park trails area very popular with locals as well as runners and hikers throughout the state.[17]

In addition, the park has many historical elements including: Work Projects Administration (WPA) shelters, road work, bridge work; a stone cutting mill dating to 1840 with ruins and a reconfigured two story shelter and overlook area. There is also a homestead dating to 1850 that also served as the inn to the state park, and schoolhouse dating to 1913 that has been moved and renovated[16].

Preliminary Alternative E will take approximately 13 acres from the northern portion of the Muscatatuck County Park. Land use in this area is primarily forested and this impact will likely require the reconfiguration of the main park road and hiking trails. **Preliminary Alternative E** would also cross SR 7 very close to the park entrance. A grade separation at this location could significantly alter the park front entrance. In addition, there is a limestone cavern system near this area that feeds a spring near Vinegar Mill that could be impacted due to construction activities. The Director of Jennings County Parks and Recreation expressed strong concern about impacts to the park and community resulting from this preliminary alternative.

Crosley Fish and Wildlife Area is located in the southern portion of the US 50 Corridor Study Area, south of Vernon. It consists of 4,228 acres of rolling hills, ponds and the Muscatatuck River. Approximately 80% of the property is wooded. Most of the terrain is covered with steep to gently rolling hills with about seven miles of the Muscatatuck River flowing through it. The property also has thirteen ponds, ranging in size from two to14 acres.[18]

None of the Preliminary Alternatives will directly impact Crosley Fish and Wildlife Area. **Preliminary Alternative E** is the closest preliminary alternative and is approximately 0.5 miles from this area.

The Violet and Louis J. Cali State Nature Preserve was given to the Community Foundation of Jennings County by Dr. Jim Cali in tribute to his parents. It is located along the Muscatatuck River and contains several plants and animals listed as threatened or rare by the Indiana Department of Natural Resources. The nature preserve also contains Rock Rest Falls, which is a naturally tranquil location. In the 1800s May Day celebrations were held near the falls.[19]

The **Added Travel Lanes Through North Vernon** and **One-Way Pair Through North Vernon Preliminary Alternatives** do not go through the Cali Nature Preserve; however they are just north the

[16] Muscatatuck County Park website. 2007. http://www.muscatatuckpark.com/
[17] Personal Communication. Greg Martin. Director of Jennings County Parks and Recreation. 2007.
[18] Indiana Department of Natural Resources website. 2007 - http://www.in.gov/dnr/fishwild/publications/crosley.htm
[19] Jennings County website. 2007. http://www.jenningsco.org/new_page_11.htm

northern boundary of the preserve while on US 50. **Preliminary Alternative E** is approximately 350 feet south of the southern boundary of the preserve.

Selmier State Forest is located northeast of North Vernon. It was donated to the state of Indiana by Mrs. Frank Selmier on behalf of her husband. There are three known building sites on the property: A Boy Scout cabin; the Zoar School, which was converted to a church; and an old home site off Walnut Trail. This is a multiuse property and fishing, hunting, and hiking are available.[20]
Preliminary Alternative A would directly impact approximately 16 acres of Selmier State Forest. This would result from the widening of CR 350 along the north side of the property. The majority of this land is forested; however the property entrance, parking area, the beginning of the Self Guided Forest Management Trail, and some drives will likely require reconfiguration. **Preliminary Alternative B** is approximately 150 south of the southwestern corner of the Selmier State Forest.

Big Oaks National Wildlife Refuge is located at the far eastern edge of the Study Area. Only a small portion of the refuge is within the Study Area. Big Oaks NWR is the largest of the three national wildlife refuges in Indiana with approximately 50,000 acres in the counties of Jefferson, Jennings, and Ripley. The refuge overlays the portion of the former Jefferson Proving Ground that lies north of the historic firing line. Big Oaks NWR hosts a variety of different habitat types, providing for a diversity of wildlife species. The refuge is unique in that it contains one of the largest contiguous forest blocks and grassland complexes in southeast Indiana, providing breeding habitat for a variety of rare birds. A landscape mosaic of habitats comprised of grasslands, shrubland, forests, and wetlands provides opportunities for viewing a variety of wildlife species while visiting the refuge. Also offered are a host of other recreational activities, including fishing, hunting, bird watching, field trips, wildlife photography, refuge tours, and hiking.[21]

In a letter dated July 11, 2007 in Appendix A, USFWS stated that water quality issues are of concern for streams that drain into this Refuge. In addition to surface drainage concerns, Big Oaks NWR also has karst groundwater concerns. Impacts to state endangered species such as the 4-toed salamander, northern crawfish frog, Kirtland's snake, barn owl, sedge wren, yellow-crowned night heron, river otter, and bobcat are also of concern. None of the Preliminary Alternatives will directly impact the Big Oaks National Wildlife Refuge. **Preliminary Alternative D** is the closest preliminary alternative and is approximately 0.4 miles north of this Refuge as it ties back into existing US 50.

The Southeast Purdue Agricultural Center (SEPAC), located in Butlerville, Indiana, has approximately 2,500 acres of land management[22]. The land is used for research and demonstration areas to grow corn, soybeans, and wheat. Additional land is used for forestland and tree plantations. A small acreage is also devoted to horticultural crops. Research at SEPAC concentrates on grain crops, forages, forestry, and horticulture. Approximately 50 different research projects are being conducted at SEPAC at any one time. The research projects involve over 30 Purdue professors, graduate students, and technicians.[23]

Preliminary Alternatives A, B, C, E, Added Travel Lanes Through North Vernon and **One-Way Pair Through North Vernon Preliminary Alternatives** will take approximately 14 acres from SEPAC at the far eastern end of the preliminary alternatives. This land use is currently agricultural and forest.

In addition to public managed lands there are also several privately managed lands within the Study Area. There are federal and state interests in many of the privately owned managed lands in the form of cost-sharing agreements, purchased easements, or property tax reductions. Federal and state funds have been or are being expended on many of these properties. Privately owned managed lands investigated

[20] Indiana Department of Natural Resources website. 2007. http://www.in.gov/dnr/forestry/index.html?http://www.in.gov/dnr/forestry/stateforests/selmier.htm&2
[21] United States Fish & Wildlife Service website. 2007. http://www.fws.gov/midwest/BigOaks/bonwrintro.htm
[22] Personal Communication. Donald Biehle, Southeast Purdue Agricultural Center (SEPAC). 2007
[23] Southeast Purdue Agricultural Center website. 2007. http://www.agriculture.purdue.edu/pac/sepac/index.html

for this study include land enrolled in the following government cost-share programs, which generally are geared towards the management of resources for conservation purposes: IDNR Classified Forest and Wildlands Program, US Department of Agriculture (USDA) Farm Services Agency (FSA) Conservation Reserve Program (CRP), USDA Natural Resources Conservation Service (NRCS) Wildlife Habitat Incentive Program (WHIP), and USFWS Partners for Fish and Wildlife (PFW) Program. Table 5.6 shows the number of these properties impacted by the preliminary alternatives.

The IDNR Classified Forest and Wildlands Program was enacted to encourage better woodland and wildlife stewardship, and protection of Indiana watersheds. Incentives for landowners to classify their lands and practice management include property tax reductions, periodic land inspection by a professional forester, "green" certification for forest products, and access to IDNR forest and wildlife management advice and assistance. Classified Forest and Wildlands contain a minimum of 10 contiguous acres supporting a growth of native or planted trees, native or planted grasslands, wetlands or other acceptable types of land cover that have been set aside and managed for the production of timber, wildlife habitat and watershed protection. Impacts to Classified Forest and Wildlands properties range from two (2) for **Preliminary Alternative W2** to zero (0) for **Preliminary Alternatives W** and **W1**. **Preliminary Alternative W3** will impact one (1) property. Impacts for the bypass preliminary alternatives range from six (6) for **Preliminary Alternative D** to zero (0) for **Preliminary Alternative B**. **Preliminary Alternative C** will impact four (4), **Preliminary Alternative A** will impact three (3), and **Preliminary Alternative E** will impact one (1). The **Added Travel Lanes Through North Vernon** and **One-Way Pair Through North Vernon Preliminary Alternatives** each impact one (1) property.

The CRP is a voluntary program for agricultural landowners who can receive cost-share assistance to establish long-term, resource-conserving covers on eligible farmland. Participants enroll in CRP for 10 to 15 years. The program is administered through the FSA, and program support is provided by NRCS, Cooperative State Research and Education Extension Service, state forestry agencies, and local Soil and Water Conservation Districts[24]. None of the western **Preliminary Alternatives** impact properties currently enrolled in the CRP. Of the bypass preliminary alternatives, **Preliminary Alternative D** would impact the most CRP lands with six (6) and **Preliminary Alternative B** would impact the least with one (1). **Preliminary Alternatives A, C,** and **E** each impact two (2) properties. The **Added Travel Lanes Through North Vernon** and **One-Way Pair Through North Vernon Preliminary Alternatives** each impact three (3) properties.

The WHIP is a voluntary program to improve wildlife habitat primarily on private land. Through WHIP, USDA's NRCS provides both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. WHIP agreements between NRCS and the participant generally last from five to 10 years from the date the agreement is signed. WHIP has proven to be a highly effective and widely accepted program across the country. By targeting wildlife habitat projects on all lands and aquatic areas, WHIP provides assistance to conservation minded landowners. Three preliminary alternatives have the potential to go through one of these properties. **Preliminary Alternative E, Added Travel Lanes through North Vernon Preliminary Alternative,** and **One-Way Pair Through North Vernon Preliminary Alternative** each impact a WHIP property south of US 50.

The USFWS PFW Program was established in 1987 for on-the-ground wetland restoration projects on private lands. This program has garnered support through the years and has grown into a larger and more diversified habitat restoration program assisting thousands of private landowners across the country. **Preliminary Alternative A** will impact one (1) PFW property. None of the other preliminary alternatives will impact PFW properties.

Figure 5.9 shows the locations of managed lands within the Study Area.

[24] FSA website. http://www.fsa.usda.gov/dafp/cepd/crp.htm

(See Previous Sheet for Figure 5.9)

Figure 5.9: Forest and Managed Lands

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5.3.6 Potential Section 4(f) Impacts

Section 4(f) of the Department of Transportation Act of 1966, 49 USC §303(c), requires that, prior to the use of any of the land types listed below, it must be determined that there are no prudent and feasible alternatives which avoid such use and that the project includes all possible planning to minimize harm to such resources.

- A publicly owned park
- A publicly owned recreation area
- A publicly owned wildlife or waterfowl refuge
- Land from an historic property that is on or eligible for inclusion in the National Register of Historic Places (NRHP or National Register)
- Archaeological sites that will be preserved in place

According to FHWA regulations, a "use" can be either (1) direct, (2) constructive, or (3) temporary. See 23 C.F.R. § 771.135(p).

- A direct use occurs when land from a Section 4(f) resource is permanently incorporated into a transportation project.

- A constructive use occurs when the proximity impacts of the project are so severe that they substantially impair the protected activities, features, or attributes that qualify the resource for Section 4(f) protection.

- A temporary use occurs when there is a temporary occupancy of the Section 4(f) property that is adverse in terms of the statute's preservation purposes.

In order for a park, recreation area, or wildlife/waterfowl refuge to qualify for protection under Section 4(f), it must be publicly owned and officially designated as a park, recreational area, or wildlife or waterfowl refuge. Historic resources that are listed in, or are eligible for listing in, the NRHP are not required to be publicly owned in order to be protected under Section 4(f). Archaeological sites must also be on or eligible for the National Register and important for 'preservation in place' in order to be considered a Section 4(f) resource.

For this study, potential Section 4(f) impacts included publicly owned parks, recreation areas, wildlife/waterfowl refuges, NRHP designated sites or districts, NRHP Candidate bridges from Dr. Cooper's books, and Outstanding or Notable structures sites from the Jackson and Jennings Counties Interim Reports. The NRHP eligibility of Outstanding and Notable sites has not yet been determined; however, for the purposes of the Section 4(f) discussion of this study these sites will be assumed eligible. It is also assumed that any archaeological sites discovered in future surveys will not be eligible for the NRHP or will not require 'preservation in place.'

Preliminary Alternative W will impact one potential Section 4(f) site, an Outstanding structure. This is the Josiah Cobbs Farm (Survey 033 in Spencer Township) that was built in 1868. There are two outbuildings (a summer kitchen and a Midwest Three-Portal barn) associated with this structure. The main house has an I-house and Greek Revival style. The areas of significance include Agriculture, Architecture and Vernacular/Construction. The farm buildings will not be directly taken, but lose access from US 50.

Preliminary Alternative A will impact two potential Section 4(f) sites. This preliminary alternative will take approximately 12 acres of the southern portion of Saint Anne's Golf Course, including portions of the greens. Saint Anne's is a publicly-owned, privately managed golf course located at Base Road and CR

350. It opened in 1998 and is an 18-hole course featuring 6,323 yards of golf in North Vernon. Because this golf course is publicly owned, but privately managed, the Section 4(f) status of this property should be investigated further if this preliminary alternative is chosen for more detailed study.

Preliminary Alternative A would also directly impact approximately 16 acres of Selmier State Forest. This would result from the widening of CR 350 along the north side of the property. The majority of this land is forested with only dispersed recreational opportunities; however the property entrance, parking area, the beginning of the Self Guided Forest Management Trail will likely require reconfiguration. If this preliminary alternative is chosen for additional study, efforts to avoid or minimize potential Section 4(f) impacts should be investigated.

Preliminary Alternative E will impact one potential Section 4(f) site. **Preliminary Alternative E** will take approximately 13 acres from the northern portion of the Muscatatuck County Park. Land use in this area is primarily forested and this impact will likely require the reconfiguration of the main park road and hiking trails. **Preliminary Alternative E** would also cross SR 7 very close to the park entrance. A grade separation at this location could significantly alter the park front entrance. The Director of Jennings County Parks and Recreation expressed strong concern about impacts to the park and community resulting from this preliminary alternative.

The **Added Travel Lanes Through North Vernon Preliminary Alternative** will impact three potential Section 4(f) sites, two NRHP listed districts and one NRHP candidate bridge. This preliminary alternative passes through two NRHP historic districts, the Walnut Street Historic District and the North Vernon Downtown Historic District. This preliminary alternative would directly take the majority of the houses within the Walnut Street Historic District. This preliminary alternative would also directly take several commercial buildings within the North Vernon Downtown Historic District. The bridge is an open spandrel arch bridge carrying US 50 over the Muscatatuck River and was built in 1930. According to Dr. Cooper's book it is an NRHP Candidate.

A **One-Way Pair Through North Vernon Preliminary Alternative** will directly impact two Section 4(f) sites, one NRHP district and one NRHP Candidate bridge. This preliminary alternative also passes through the North Vernon Downtown Historic District and will take several commercial structures within this district. It will also impact the open spandrel bridge carrying US 50 over the Muscatatuck River described above.

The Muscatatuck National Wildlife Refuge is located south of US 50 in the western portion of the Study Area. All Western Section Preliminary Alternatives were developed to the north of US 50 in order to avoid this resource.

5.3.7 Hazardous Material Sites

According to Indiana Department of Environmental Management (IDEM) digital files, there are approximately 36 underground storage tanks (USTs) located within the Study Area, sixteen (16) of which are leaking underground storage tanks (LUSTs). LUST sites are the main type of hazardous waste site within the Study Area. The majority are located within Seymour and North Vernon.

Preliminary Alternative W will impact one (1) LUST site. The remaining western preliminary alternatives and bypass preliminary alternatives do not impact any UST or LUST sites. The **Added Travel Lanes Through North Vernon Preliminary Alternative** would impact five active (5) USTs and five (5) LUSTs, as well as two (2) former service/filling stations (unregistered historical UST sites). It will also impact one dry cleaner within North Vernon. It is also possible that additional former dry cleaners and service stations are present within the proposed right-of-way. The **One-Way Pair Through North Vernon Preliminary Alternative** is in very close proximity to the five (5) USTs, five (5) LUSTs, two (2) former service/filling stations, and dry cleaner mentioned above. In addition, there area three (3) UST sites (filling stations) located at the corner of SR 7/3 and Poplar Street. These sites are not within the proposed right-of-way for that preliminary alternative, but would require further investigation if the

preliminary alternative was selected for additional study.

The Study Area includes seven industrial waste, or Resource Conservation and Recovery Act (RCRA) sites. RCRA is the law under which US. Environmental Protection Agency regulates all solid and hazardous waste. This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA sites are regulated by the U.S. EPA and the IDEM. The majority of these sites are located within North Vernon. None of the Western Section or Eastern Section bypass preliminary alternatives will impact any known RCRA sites. The **Added Travel Lanes Through North Vernon** and **One-Way Pair Through North Vernon Preliminary Alternatives** would take property from two RCRA sites in North Vernon and they should be investigated further if either preliminary alternative is selected for additional study.

There is one active permitted solid waste site within the Study Area. It is a waste transfer station location south of Seymour. None of the preliminary alternatives will impact this site.

Also included in the Study Area is one Voluntary Remediation Program (VRP) site in North Vernon. The VRP was established to provide any site owner, or prospective owner, a mechanism to cleanup contaminated property. This site is listed as "active" in the IDEM database. The **Added Travel Lanes Through North Vernon** and **One-Way Pair Through North Vernon Preliminary Alternatives** would take property from this site and it should be investigated further if either preliminary alternative is selected for additional study.

A field reconnaissance of the Study Area revealed several salvage yards located along US 50 between Hayden and North Vernon. All sites have junked vehicles on-site. Only one of the sites was listed on the Indiana Bureau of Motor Vehicles (BMV) Auto Salvage Yard registry. **Preliminary Alternative W** will take the edge of an auto salvage yard located north of US 50.

Confined Feeding Operations (CFO) are also present in the Study Area. A CFO is a swine, chicken, turkey, beef or dairy agri-business that has large enough numbers of animals that IDEM regulates for environmental concerns. There are eight (8) CFOs located within the Study Area. **Preliminary Alternatives W, W1,** and **W3** will impact one (1) CFO north of US 50 near the western end of the project.

Figure 5.10 shows the location of potential hazardous material sites within the Study Area.

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(See Previous Sheet for Figure 5.10)

Figure 5.10: Hazardous Materials and Mineral Resources

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5.3.8 Mineral Resources/Karst

There are two active quarries within the Study Area, one in Hayden and one in North Vernon; both produce crushed stone. According to an Indiana Geological Survey database, there are 32 abandoned quarries within the Study Area, mostly in the central portion of the Study Area. **Preliminary Alternative B** will impact the northern edge of the active quarry in North Vernon. None of the other preliminary alternatives will impact active quarries.

There is one petroleum field within the Study Area. The Trenton field is located in the central portion of the Study Area and includes much of the City of North Vernon. There are 26 petroleum wells scattered throughout the Study Area. Twenty-three are considered test wells and three are gas wells. The western preliminary alternatives do not cross this petroleum field. All bypass and through town preliminary alternatives will cross it. Refer to Figure 5.10 for the location of these resources within the Study Area.

The Study Area does not fall within the boundary defined by the Karst Memorandum of Understanding (MOU) signed by INDOT, IDNR, IDEM, and USFWS dated October 13, 1993; however, there are karst features within the Study Area. Two karst Geographic Information Systems (GIS) files entitled Sinkhole Areas and Sinking Stream Basins in Southern Indiana and Number of Mapped Cave Entrances per Square Kilometer in Southern Indiana were reviewed for the project. Both data sources are general and should only be viewed as an indication of presence of such features rather than precise locations of all features that exist. Karst features appear to be concentrated south of existing US 50. Managed lands such as Crosley Fish and Wildlife Area, Muscatatuck County Park, and Selmier State Forest also have concentrations of karst features. Of the preliminary alternatives, only **Preliminary Alternative D** directly impacts any known, mapped karst feature from the data examined. This preliminary alternative crosses approximately four (4) acres of a mapped sinkhole area north of the Southeast Purdue Agricultural Center (SEPAC). It is possible that other preliminary alternatives could impact karst features and this should be investigated for preliminary alternatives that are recommended for further NEPA study.

5.4 Mitigation

The following table lists the various mitigation measures that are being proposed at this very early stage of development in mitigation for the US 50 Corridor Planning and Environmental Assessment Study. Such mitigation is being offered as preliminary, and upon further discussion and review, may remain or be modified as reasonable.

Table 5.12: Potential Mitigation Measures

Impacts	Mitigation
Land Use	Coordination with local officials concerning land use controls along the corridor
Social and Neighborhood	Where reasonable, use frontage roads and access roads to maintain accessibility for neighborhoods
	Minimize right-of-way needs, where reasonable, in urbanized areas through the use of design practices, including retaining walls
	Relocations will be minimized as much as possible, and efforts will be made to avoid disproportionate impacts to low income and minority populations
Managed Lands	Continued coordination with the Muscatatuck Urban Training Center, Southeast Purdue Agricultural Center, Muscatatuck National Wildlife Refuge, Crosley Fish and Wildlife Area, Big Oaks National Wildlife Refuge, Selmier State Forest, Cali Nature Preserve, and Muscatatuck County Park to avoid natural resources, minimize unavoidable impacts; and mitigate
Pedestrian and Bicyclists	If bike or pedestrian trails are impacted, mitigation may include bridging, relocation or enhancement of trails
Air Quality	Conformity of the preferred alternative with the mobile source emission budgets will be demonstrated
Noise	Abatement measures including noise barriers will be analyzed in later studies
	Coordination with local officials will occur to identify areas susceptible to noise impacts for guidance in future land use decisions
Construction	Limitation of working hours will be considered to minimize disturbance
	Fugitive dust emissions shall be controlled through water spraying, chemical dust suppressants and tarping of vehicles
	BMPs shall be implemented for temporary erosion control, possibly including such devices such as silt fencing, check dams, sediment basins, and sodding
Historic Resources	Consideration will be given to mitigation such as plant screenings, earth embankments, and painting and the use of compatible building materials for bridges and overpasses
Archaeological Resources	If archaeological sites are determined to be of National or State Register significance and cannot be avoided, Phase 3 mitigation/ data recovery will be completed
Visual	Mitigation may include vegetative screening or minor shifts to the alignment
	The project will use context sensitive designs to create positive impacts and reduce negative impacts without compromising safety.
Hazardous Waste Sites	Coordination will occur with appropriate agencies to insure proper clean-up of contaminated sites impacted by the project

Floodplain	Impacts to longitudinal and latitudinal floodplain encroachments will be minimized, where reasonable, through design practices such as longer bridges and right-angled (perpendicular) stream crossings
Wetlands	Follow MOU of January 28, 1991
	Wetland Mitigation and Monitoring Plans will be prepared as part of the wetland loss replacement
	One possible method of wetland mitigation is wetland banking
Farmland	Preliminary alternatives should follow existing property lines and minimize dividing or splitting of large tracts of farmland, where reasonable
Water Body Modifications	Best Management Practices (BMP) should be used to avoid and minimize impacts to rivers and streams
	All necessary permits will be acquired prior to construction.

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6. EVALUATION OF ALTERNATIVES

The US 50 – North Vernon Corridor Planning/Environmental Assessment Study has been a dynamic process since its inception. During the course of the study, new alternatives and modifications to alternatives have been suggested in comments by the public, local agencies, resource agencies and consulting parties. These modifications and additions were typically aimed at avoiding and/or minimizing impacts to both the human and natural environments. The study team has continually investigated these suggestions and incorporated them into the study as appropriate and as detailed in Chapter 4 – Definition of Alternatives. Chapter 5 – Analysis of Alternatives, discusses the impacts associated with each of the preliminary alternatives considered and is the basis for the evaluation of the alternatives discussed below. Section 6.1 – Methodology for Screening of Alternatives, discusses the methodology of the two-phase evaluation of alternatives utilized to narrow the number of preliminary alternatives under consideration for further analysis. Section 6.2 – Preliminary Alternatives Analysis and Screening, discusses the process by which the preliminary alternatives were evaluated and screened to a range of potential alternatives to be carried forward in subsequent National Environmental Policy Act of 1969 (NEPA) studies. Section 6.3 – Preliminary Alternatives Recommended for Further NEPA Study, summarizes the preliminary alternatives recommended to be further studied, identifies the type of NEPA study that will be required for each preliminary alternative and recommends measures that should be further investigated to avoid and/or minimize human and natural environmental impacts for the preliminary alternatives.

6.1 Methodology for Screening of Preliminary Alternatives

Screening measures were developed to narrow the number of preliminary alternatives under consideration for further analysis, and for use in evaluating the overall performance and impacts associated with each preliminary alternative. The purpose of these screening measures was to evaluate the alternatives to identify the most viable (prudent and feasible) alternative(s) based on achievement of project "purpose and need", traffic impacts, community and environmental impacts, agency considerations and public input. During this initial screening process, each of the preliminary alternatives developed for the US 50 – North Vernon Study was evaluated to determine if it would be carried forward for evaluation in subsequent NEPA studies. A two-phase process was used to screen each alternative. Phase 1 screened each alternative with respect to purpose and need, while Phase 2 screened alternatives with respect to potential traffic impacts, community and environmental impacts, agency considerations, and public input. Only those alternatives that met the purpose and need of the project in the Phase 1 analysis were advanced to Phase 2 of the screening process. The screening process is further described below.

Phase 1: Purpose and Need Measures

The first phase of the screening process analyzed the alternatives with respect to the Purpose and Need Statement for this project. To meet the purpose and need for this project, Build Alternatives must achieve Purpose 1 (Reduce Traffic Congestion) and Purpose 2 (Improve Safety), and must partially achieve Purpose 3 (Facilitate Access to Employment Concentrations), Purpose 4 (Ensure Consistency with Transportation Plans) and Purpose 5 (Enhance National Security). Alternatives will not be eliminated solely on their ability to meet the fourth (Ensure Consistency with Transportation Plans) and fifth (Enhance National Security) purpose and need items. Specific objectives and performance measures were developed for each of the five identified purposes and needs and are discussed in length in Chapter 3 – Purpose and Need. Alternatives that fail to meet the project's Purpose and Need are dismissed in the initial screening process and their performance is not examined in the other evaluation categories – traffic considerations, community and environmental impacts, agency considerations, and public input.

To satisfy the first purpose and need for this project (Reduce Traffic Congestion), an alternative would have to reduce congestion on existing US50 by providing the capacity to achieve a minimum acceptable intersection level-of-service (LOS) in the year 2030 (C for rural areas and D for urban areas) for the fourteen key intersections (four signalized and ten unsignalized intersections). The mainline LOS along

the US 50 corridor would also need to achieve a minimum acceptable LOS C on rural segments and LOS D on urban segments in the year 2030. The LOS rating scale of traffic operating conditions utilizes six levels, A-F, and is further explained in Section 2.2 – Congested Intersections. Indiana Design Standards state the minimum acceptable LOS for rural and suburban areas is C (B is preferable) and in urban intermediate/built-up areas is no less than D (C is preferable). Discussions related to rural and urban areas are contained in Section 2.1 – Existing Traffic Patterns and Conditions. Secondary measures of comparison related to congestion for an alternative would include improvement of the LOS at signalized intersections along SR 3 and SR 7 through North Vernon and improvement of the mainline LOS along SR 3 and SR 7 and through North Vernon, reduction in "through" (without an origin or destination in Jennings County) truck traffic in the year 2030 on US 50 through North Vernon and elimination of traffic flow impediments along US 50 (such as driveway entrances, traffic signals and at-grade railroad crossings). The reduction of "through" truck traffic on SR 3 and SR 7 through North Vernon may be considered a benefit, but is not necessary to satisfy this project goal.

To satisfy the second purpose and need for this project (Improve Safety), an alternative would have to reduce accidents on existing US50, particularly at elevated crash frequency locations at intersections and along roadway segments. The extent to which vehicle-miles of travel shift from lower functional class facilities with higher crash rates to high functional class facilities with lower crash rates (using the NET_BC travel model post-processor) and the reduction in crashes of the improvement option over the No-Build for US 50 Subarea Travel Demand Model Area (using the NET_BC travel model post-processor) are primary considerations. A reduction in crash rates (improved safety) is expected by upgrading a roadway facility's level of access control. For example, by improving US 50 from a rural principal arterial with partial and/or no access control to a limited access facility, vehicle conflicts and the potential for accidents to occur at driveways would be reduced by controlling access to at-grade intersections only. In areas along the US 50 corridor in which the new facility is a new-terrain roadway and existing US 50 will remain as a local access roadway, vehicle conflicts and the potential for accidents to occur along existing US 50 and corresponding accident rates would also be reduced. This reduction would be due in large part to the diversion of traffic onto the new US 50 facility and a reduction of residual traffic along existing US 50. This reduction of traffic volumes along existing US 50 would reduce the risk of accidents to crash rate levels at or below average for a rural principal arterial. The reduction in total truck traffic in downtown North Vernon on US 50 as an indication of the associated reduction in hazardous materials deliveries through downtown, may be considered a benefit, but is not necessary to satisfy this project goal.

For the third purpose and need for this project (Facilitate Access to Employment Concentrations), alternatives were evaluated to determine the degree to which alternatives improved the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon and the degree to which alternatives improved the LOS in the year 2030 on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50, including the Muscatatuck Urban Training Center (MUTC).

For the fourth purpose and need for this project (Consistency with Transportation Plans), alternatives were evaluated to determine consistency with the *INDOT 2030 Long Range Transportation Plan* for achievement of design standards for a "statewide mobility corridor". Secondary measures of consideration were the extent to which alternatives contributed to improvement of US 50 across the State of Indiana as set forth in the *INDOT 2030 Long Range Transportation Plan* as well as the extent to which an alternative achieved the recommendation of a four-lane, limited access facility around North Vernon as set forth in the Thoroughfare Plan component of the Jennings County Comprehensive Plan. Alternatives were not required to meet the fourth criterion in order to satisfy the alternatives meeting purpose and need.

For the fifth purpose and need for this project (Enhance National Security), alternatives were evaluated to determine the reduction of travel time between Camp Atterbury and the MUTC and the achievement of a minimum acceptable LOS in the year 2030 at both major intersections and mainline segments. Secondary measures of consideration were the extent to which alternatives eliminated traffic flow

impediments along US 50 (such as driveway entrances, traffic signals and at-grade railroad crossings) as well as the provision of opportunities for multiple access routes to the MUTC).

If an alternative clearly did not satisfy the project's purpose and need, it was not advanced to Phase 2 of the screening process. Alternatives that did meet the project's purpose and need were advanced to Phase 2 of the screening process as described below.

Phase 2: Traffic Considerations, Social and Environmental Measures, Agency Considerations and Public Input

The second phase of the screening process analyzed the traffic considerations, socio-economic and environmental impacts, agency considerations and public input related to the alternatives that were advanced from the purpose and need evaluation in Phase 1 of the screening process. Traffic considerations encompass the effects of the preliminary alternatives on the LOS of all major intersections in the Study Area and on the LOS of all arterial roadways in Jennings. Also considered is the amount of traffic attracted to the improvement options and the effect of the improvement options on local traffic circulation.

Environmental information used in this preliminary phase of the screening process was collected from existing sources and limited preliminary windshield and field surveys. The majority of the initial environmental screening was done using Geographic Information System (GIS) data. In rural areas, a 300-foot wide right-of-way was used to determine potential impacts to social, economic, and environmental resources for each alternative. In rural areas exhibiting more rolling terrain right-of-way was increased as necessary up to a maximum width of 500 feet. In urban areas, a 110-foot wide right-of-way was utilized to determine potential impacts. At potential intersection locations, adjustments in the right-of-way were also made and included in the area studied for potential impacts.

A primary consideration for the preliminary alternatives is project costs, although cost-effectiveness, constructability and relinquishment are also factors considered. Preliminary construction cost estimates were developed for each preliminary alternative utilizing the INDOT Project Costing Tool. Preliminary Engineering (Design) cost estimates were then developed as being 10.0% of the construction cost estimate for each associated preliminary alternative. Preliminary right-of-way cost estimates were also developed for each preliminary alternative utilizing the INDOT Right-of-Way and Utility Cost Estimating Guide. Total Cost estimates were then developed for each preliminary alternative considered by summing the estimated construction cost, right-of-way costs and Preliminary Engineering (design) costs for each of the preliminary alternatives and used as an additional means of evaluation. **It should be noted that the Total Costs associated with each preliminary alternative do not include costs associated with local and/or State roadway improvements associated with the preliminary alternatives or any mitigation measures associated with the project**. Costs associated with these items will be developed as the project moves to the next phase and more detailed information becomes available. It should also be noted that at this stage of the study, all costs are approximate and intended primarily for the relative comparison of alternatives.

A key component in the success of any transportation project depends on many factors, none of which are more essential than the involvement of the local elected and appointed officials, and community members. It is the policy of INDOT to promote public involvement opportunities and information exchange activities in planning, developing, designing, construction, operations, and maintenance of transportation projects. At various key points (milestones) throughout the study process, the Project Management Team made the most current information related to the study available for review and comment. This included a series of project website updates, news releases, elected official briefings, community leader interviews, CAC meetings, and public meetings. Chapter 7 – Public Outreach, Comments and Coordination, provides a brief discussion of the various milestones (deliverables) associated with the project and the involvement of various stakeholders at each of these milestones. Some of the more substantive changes that were made to the project during each of the key points of the

study, as a result of this involvement of the local elected and appointed officials and community members, are also identified.

In summary, the items given consideration in Phase 2 of the screening process included, but were not limited to, the following:

- Traffic impacts of the preliminary alternatives on major intersections and arterial roadways throughout the Study Area
- The attractiveness of any improvement option in terms of total daily traffic
- The affects of the improvements options on local traffic circulation
- Community and Environmental impacts considered in the screening analysis included, but was not limited to, the following:
    - Estimated New Right-of-Way
    - Forest Impacts
    - Wetland Impacts
    - Floodplain Impacts
    - Stream Impacts
    - Potential Section 4 (f) Properties
    - Managed Lands
    - Unique Geological/Ecological Areas
    - Farmland Impacts
    - Notable Wildlife Habitats
    - Residential Relocations
    - Business Relocations
    - Cemeteries
    - Environmental Justice Issues
    - Well-Head Protection Area Impacts
    - Potential Historic Property Impacts
    - Potential Archaeological Impacts
    - Potential Residential Noise Impacts
    - Hazardous Material Impacts
- Preliminary Total Cost Estimates – Construction, right-of-way and Preliminary Engineering
- Cost-Effectiveness, Constructability and Relinquishment Issues associated with the preliminary alternatives
- Agency Comments and Concerns
- Public Comments and Concerns

6.2 Preliminary Alternatives Analysis and Screening

The development of the preliminary alternatives for the US 50 – North Vernon Corridor Planning and Environmental Assessment Study began with a broad examination of potential solutions to the transportation needs in the US 50 corridor. The potential solutions to the transportation needs in the US 50 corridor that were initially developed for this project and are further discussed in Chapter 4 includes:

- A **No-Build Alternative** that establishes the benchmark for the evaluation of Build Alternatives and is required by the National Environmental Policy Act of 1969 (NEPA)
- **Travel Demand Management (TDM) Alternatives** which involve actions to spread the peak hours of travel or to encourage the shift to alternative modes of travel to the single-occupancy vehicle
- **Transportation System Management (TSM) Alternatives** which involve low-cost capital investments to reduce congestion, improve traffic flow, and measures to optimize performance of the existing transportation infrastructure
- **Intelligent Transportation System (ITS) Alternatives** which include a variety of technology-based programs to actively manage the roadway system
- **Mass Transit Alternatives** which include rail, both passenger and freight, or bus service along the US 50 corridor and in North Vernon
- **Highway "Build" Alternatives** on existing and new alignments which may include:
    - US 50 Upgrade Options Utilizing Existing Alignment
    - US 50 Upgrade Options Utilizing Existing and/or New Alignments with New Alignments around North Vernon

The preliminary alternatives were evaluated on the basis of the achievement of project goals (purpose and need statements), transportation performance, transportation considerations, community and environmental considerations, agency considerations and public input. The following sections describe the preliminary alternative evaluation and screening.

6.2.1 No-Build Alternative

The No-Build (No Action or Do Nothing) Alternative is represented by the existing roadway network plus programmed major roadway improvements (capacity expansion projects) in the Project Study Area as reported in the Indiana Statewide Transportation Improvement Program (INSTIP). Capacity expansion projects include major roadway investments such as a major widening that add through traffic lanes, the extension of existing roadways or construction of new roadways, new interchanges and major roadway realignments, or reconstructions that add through traffic carrying capacity. By definition, the "No-Build" Alternative excludes any major investment in US 50. This alternative is the baseline for comparing "build" alternatives; its inclusion as an alternative is required by NEPA.

When capacity expansion projects that are programmed for construction or that have been completed since the year 2000 are added to the existing roadway network, the resulting roadway network constitutes the No-Build Alternative (or Existing-Plus-Committed Network). It is assumed that these programmed improvements are committed, and will be completed independent of any decision regarding the improvement of US 50 within the Project Study Area.

Since the No-Build Alternative fails to add through traffic-carrying capacity, it fails to address a majority of

the segments and existing unsignalized intersections that have an unacceptable LOS in the year 2006. Traffic operating conditions are expected to continue to deteriorate in the future such that US 50 and its unsignalized and signalized intersections will experience unacceptable operating conditions in the year 2030 at seven of the ten unsignalized intersections and at all four signalized intersections throughout the corridor. Several roadway segments of US 50 exhibit unacceptable conditions (below LOS C) in the year 2000 and in the year 2030 much of US 50 through the project corridor, from US 31 eastward through North Vernon to near Butlerville, will experience unacceptable conditions ranging from LOS D to LOS E. Additionally, in the year 2030 many segments of SR 3/SR 7 south of and through North Vernon will experience unacceptable operating conditions including through Vernon to south of US 50 (LOS D) and from Poplar Street to Franklin Street (LOS D). Segments of SR 3 and SR 7 north of North Vernon will also experience unacceptable operating conditions. This includes SR 3 from SR 7 to CR 500N (LOS D) and SR 7 from north of SR 3 to the Jennings/Bartholomew County Line (LOS D and E). Existing truck traffic along US 50 through North Vernon and from North Vernon to the Jennings/Ripley County Line exceeds statewide averages for similar urban and principal arterials (17.9% in rural and 8.6% in urban areas). In the year 2030, truck traffic on US 50 is forecasted to grow between 111% and 300%, increasing the percentage of trucks on the corridor. Finally, the MUTC will train an additional 3,000 to 4,000 military personnel on a continual basis. While these personnel will be temporarily housed at the base and will not leave the base during training, they will arrive in convoys one weekday of each week. During an eight-hour period of one weekday, convoys of 11 to 20 vehicles with heavy equipment will arrive and depart the base on 5 to 10 minute intervals. This equates to between 500 and 2,000 convoy vehicles one-day per week. There is a high probably that traffic signals will be pre-empted as convoys pass through North Vernon during this eight-hour period. During this weekday, traffic flow through North Vernon will experience ever increasing unacceptable traffic conditions as convoy traffic begins in the year 2007 and increases through the year 2013. In view of the fact that signalized intersections on US 50 and SR 3/SR 7 will operate at LOS E and F in the year 2030 without the imposition further delays associated with convoy traffic, the accommodation of convoy traffic appears to be impractical with the existing roadway system unless the convoys are dispersed throughout the week during night hours.

While the No-Build Alternative includes traffic-operational improvements at some intersections, it fails to address fundamental physical characteristics of existing US 50 that contribute to the above average accident rates when compared to similar facilities. These fundamental physical characteristic problems include the lack of left-turn lanes at many of the unsignalized intersections. This corridor has no provisions to accommodate left-turns into and from public roads and driveways (with the exception of signalized intersections and the CR 700 W intersection). Neither does it accommodate frequent private driveways where traffic entering US 50 encounters increasing greater delays, or increasing conflicts with growing through traffic (that is a result of the growing number of driveways and on-street parking). There is no reduction in total truck traffic in downtown North Vernon on US 50 or any associated reduction in hazardous materials deliveries through downtown.

Phase 1: Purpose and Need

***Traffic Congestion*:** The No-Build Alternative would not reduce congestion on US 50. A majority of the segments and existing unsignalized intersections have an unacceptable LOS in the year 2006. Traffic operating conditions are expected to continue to deteriorate in the future such that US 50 and its unsignalized and signalized intersections will experience unacceptable operating conditions in the year 2030 at seven of the ten unsignalized intersections and at all four signalized intersections throughout the corridor. By the year 2030 most of the segments of US 50 through the project corridor, from US 31 eastward through North Vernon to near Butlerville, will experience unacceptable conditions ranging from LOS D to LOS E.

***Traffic Safety*:** The No-Build Alternative would not improve safety on US 50. Present and projected vehicle-miles of travel shift from lower functional class facilities with higher crash rates to high functional class facilities with lower crash rates would not be attained. There is no reduction in total truck traffic in downtown North Vernon on US 50 or any associated reduction in hazardous materials deliveries through downtown.

***Facilitate Access*:** The No-Build Alternative would not facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. There is no improvement of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon. There is no improvement of the LOS in the year 2030 on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50 (including the MUTC).

***Consistency with Transportation Plans*:** The No-Build Alternative is not consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors or the Thoroughfare Plan component of the Jennings County Comprehensive Plan.

***Enhance National Security*:** The No-Build Alternative would not enhance national security. There would be no reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. Achievement of a minimum acceptable LOS D in the year 2030 for the fourteen key intersections (four signalized and ten unsignalized intersections) along the US 50 corridor and the achievement of a minimum acceptable LOS C on rural segments and LOS D on urban segments in the year 2030 for US 50 from US 31 to the Jennings/Riley County Line would not be attained. The elimination of traffic flow impediments along US 50 (such as driveway entrances, traffic signals and at-grade railroad crossings) and the provision of opportunities for multiple access routes to the MUTC would not be attained.

Conclusion

The No-Build Alternative would not address the purpose and need for this project. However, this alternative will be carried forward for evaluation throughout this study and serve as a baseline when comparing the effectiveness and potential impacts of other alternatives.

6.2.2 Travel Demand Management (TDM) Alternatives

Travel Demand Management (TDM) strategies involve actions to spread the peak hours of travel or to encourage the shift to alternative modes of travel to the single-occupancy vehicle. Actions to encourage motorists to shift trips to non-peak hour periods include flexible work hours, flexible workdays, subsidy of alternative modes of transportation and road pricing (toll collection). Actions to encourage shift to alternative modes of travel include trip-reduction ordinances, employer-based trip reduction programs, vanpooling/carpooling, improved transit services and improved bicycle and pedestrian facilities. A trip-reduction ordinance is a legal mechanism that requires the developer of non-residential uses to reduce the typical trips generated by the proposed development through actions to increase vehicle occupancy and to facilitate alternative modes. Employer-based trip reduction programs include:

- Parking management strategies to restrict the number of on-site parking spaces available to employees or charging employees for the use of on-site parking spaces.

- Financial incentives to use alternative modes through the subsidy of vanpooling or carpooling or transit fare subsidies.

- Flexible work schedules (flexible hours, four-day workweek) and flexible work locations (telecommunicating or dispersal to the work site from remote assembly sites).

Employers-based trip-reduction programs and trip-reduction ordinances do not appear to be viable TDM strategies since there are no major employment centers in the western portion of the corridor, limited mid-sized employers in the North Vernon Area, and only the MUTC in the eastern portion of the corridor. Development is predominately residential or supportive retail/service uses. Census data from the year 2000 showed that Jennings County attracted 1,659 employees from surrounding counties while just over 5,300 Jennings County Residents commuted to other counties for work. There is an existing transit

service, *Catch-A-Ride*, that operates on an established directional route pattern with four designated check points for pick up and drop off. These strategies would be insufficient to address the increase in trip-making in the corridor over the next 30 years, even if such strategies were viable or expanded (Institute of Transportation Engineers, Proceedings of ITE's 1987 National Conference).

While walking and bicycling provide non-motorized opportunities to reduce automobile trip-making, these modes are only effective for short trips – generally, one mile for walking and six miles for bicycling in good weather conditions. Except in the Muscatatuck County Park and Selmier State Forest, there are no walkways in the US 50 corridor, and no bicycle facilities presently serve the corridor. Several abandoned railway beds exist in the US 50 Study Area. However, many abandoned railways have reverted to adjoining property owners and no known local or regional plans are underway to convert rails to trails along the US 50 corridor. As most trips in the corridor are longer than six miles and the corridor is low-density in character, walking and bicycling are ineffective in reducing trips along the US 50 corridor.

Phase 1: Purpose and Need

Traffic Congestion: TDM alternatives would not noticeably reduce traffic congestion on US 50. Due to the low-density rural character of the corridor, dispersion of employers and the size of individual employers and a traffic composition involving heavy freight movements and long distance trips, the TDM alternatives considered for this project are expected to only minimally reduce traffic volumes on US 50.

Traffic Safety: TDM alternatives would not improve safety on US 50. Without a reduction in daily traffic volume or a change in facility type, safety would not be improved. There is no reduction in total truck traffic in downtown North Vernon on US 50 or any associated reduction in hazardous materials deliveries through downtown.

Facilitate Access**:** TDM Alternatives would not facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. There is no improvement of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon. There is no improvement of the LOS in the year 2030 on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50 (including the MUTC).

Consistency with Transportation Plans**:** TDM Alternatives are not consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors or the Thoroughfare Plan component of the Jennings County Comprehensive Plan.

Enhance National Security**:** TDM Alternatives would not enhance national security. There would be no reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. Achievement of a minimum acceptable LOS D in the year 2030 for the fourteen key intersections (four signalized and ten unsignalized intersections) along the US 50 corridor and the achievement of a minimum acceptable LOS C on rural segments and LOS D on urban segments in the year 2030 for US 50 from US 31 to the Jennings/Riley County Line would not be attained. The elimination of traffic flow impediments along US 50 (such as driveway entrances, traffic signals and at-grade railroad crossings) and the provision of opportunities for multiple access routes to the MUTC would not be attained.

Conclusion

The TDM alternatives would not address the purpose and need of this project as "stand alone" alternatives because they would not significantly reduce congestion, improve safety, facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County, be consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors or with the Thoroughfare Plan component of the Jennings County Comprehensive Plan, and would not enhance national security. Therefore, they were not advanced to Phase 2 of the screening process.

6.2.3 Transportation System Management (TSM) Alternatives

Transportation System Management (TSM) strategies involve low-cost capital investments to reduce congestion, improve traffic flow, and measures to optimize performance of the existing transportation infrastructure. These strategies involve intersection improvements, signal coordination and timing, lane control (reversible lanes) and one-way pair separating the eastbound and westbound US 50 traffic on parallel streets through North Vernon.

Present signalized intersections in the US 50 corridor have separate left-turn bays. INDOT has already programmed the improvement of the Hayden Pike and the Norris Avenue intersections along US 50. However, all of the four existing signalized intersections operate at an unacceptable LOS before the year 2030. Even with further improvements to the lane configurations and signal timings at these four intersections, the temporary improvements in traffic flow will soon disappear as traffic increases over the next 30 years in the corridor.

Traffic signal spacing between the traffic signals in North Vernon is less than a mile apart, therefore, traffic signal interconnection, real-time traffic flow monitoring at the traffic signals and traffic signal coordination may be viable options, but would provide only a temporary improvement to traffic flow over the next 30 years.

Due to the length of the corridor, existing travel patterns, the low-density rural character of the corridor and existing geometrics of US 50 (a two-lane facility), reversible lanes are not an appropriate option for this rural roadway.

With only two lanes along existing US 50 and a low existing vehicle occupancy rate, the designation of one or two lanes in each direction for high-occupancy vehicles (HOV) (even limited to peak hours) would result in nearly 90% of the vehicles being concentrated in the unrestricted lane during the peak hours. Traffic would likely divert to the limited two-lane parallel facilities in the US 50 Study Area that lack sufficient capacity. Thus, the application of HOV lanes to existing US 50 is not an appropriate application.

Phase 1: Purpose and Need

Traffic Congestion: TSM alternatives would not noticeably reduce recurring traffic congestion on US 50. Due to the low-density rural character of the corridor, TSM strategies provide only temporary relief to increasing traffic congestion in the corridor, or are inappropriate solutions (traffic signal interconnection and reversible or HOV lanes).

Traffic Safety: TSM alternatives would not improve safety on US 50. Without a reduction in daily traffic volume or a change in facility type, safety would not be improved. There is no reduction in total truck traffic in downtown North Vernon on US 50 or any associated reduction in hazardous materials deliveries through downtown.

Facilitate Access**:** TSM Alternatives would not facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. There is no improvement of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon. There is no improvement of the LOS in the year 2030 on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50 (including the MUTC).

Consistency with Transportation Plans**:** TSM Alternatives are not consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors or the Thoroughfare Plan component of the Jennings County Comprehensive Plan that call for improvements to US 50.

Enhance National Security**:** TSM Alternatives would not enhance national security. There would be no reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval

Surface Warfare Center and MUTC. Achievement of a minimum acceptable LOS D in the year 2030 for the fourteen key intersections (four signalized and ten unsignalized intersections) along the US 50 corridor and the achievement of a minimum acceptable LOS C on rural segments and LOS D on urban segments in the year 2030 for US 50 from US 31 to the Jennings/Riley County Line would not be attained. The elimination of traffic flow impediments along US 50 (such as driveway entrances, traffic signals and at-grade railroad crossings) and the provision of opportunities for multiple access routes to the MUTC would not be attained.

Conclusion

The TSM alternatives would not address the purpose and need of this project as "stand alone" alternatives because they would not significantly reduce congestion, improve safety, facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County, be consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors or with the Thoroughfare Plan component of the Jennings County Comprehensive Plan, and would not enhance national security. Therefore, they were not advanced to Phase 2 of the screening process.

6.2.4 Intelligent Transportation System (ITS) Applications

Intelligent Transportation System (ITS) options include a variety of technology-based programs to actively manage the roadway system. The most common systems provide travel information on roadway conditions to daily commuters via message boards. This enables commuters to adjust travel routes to changing travel conditions. Incident management programs are also part of the ITS toolbox to reduce the effect of accidents and vehicle breakdowns on traffic flow. In light of the rural character, length of the corridor, and lack of adequate alternative east-west routes, ITS options cannot be effectively applied in the US 50 corridor to solve to congestion problems.

Phase 1: Purpose and Need

Traffic Congestion: Expansion of ITS applications will not improve levels of service significantly.

Traffic Safety: Expansion of ITS applications would not improve safety on US 50. Without a reduction in daily traffic volume or a change in facility type, safety would not be improved. There is no reduction in total truck traffic in downtown North Vernon on US 50 or any associated reduction in hazardous materials deliveries through downtown.

Facilitate Access**:** Expansion of ITS applications would not facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. There is no improvement of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon. There is no improvement of the LOS in the year 2030 on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50 (including the MUTC).

Consistency with Transportation Plans**:** Expansion of ITS applications is not consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors or the Thoroughfare Plan component of the Jennings County Comprehensive Plan that call for improvements to US 50.

Enhance National Security**:** Expansion of ITS applications would not enhance national security. There would be no reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. Achievement of a minimum acceptable LOS D in the year 2030 for the fourteen key intersections (four signalized and ten unsignalized intersections) along the US 50 corridor and the achievement of a minimum acceptable LOS C on rural segments and LOS D on urban segments in the year 2030 for US 50 from US 31 to the Jennings/Riley County Line would not be attained. The elimination of traffic flow impediments along US 50 (such as driveway entrances, traffic

signals and at-grade railroad crossings) and the provision of opportunities for multiple access routes to the MUTC would not be attained.

Conclusion

The ITS applications would not address the purpose and need of this project as "stand alone" alternatives because they would not significantly reduce congestion, improve safety, facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County, be consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors or with the Thoroughfare Plan component of the Jennings County Comprehensive Plan, and would not enhance national security. Therefore, they were not advanced to Phase 2 of the screening process.

6.2.5 Mass Transit Alternatives

Mass transit alternatives include rail, both passenger and freight, or bus service along the US 50 corridor and in North Vernon. A public transportation system, *Catch-A-Ride*, began operation in Jennings County in the Vernon and North Vernon area on May 14, 2007. It is a shared ride service providing regular pick up and drop off points in designated areas, as well as individually scheduled service. For the Jennings County and Vernon and North Vernon area, *Catch-A-Ride* offers a Point Deviation Service. A Point deviation route operates within the more highly populated area of Vernon and North Vernon on an established directional route pattern with four (4) designated check points for pick up and drop off. Scheduled pick ups along the point deviation route can be requested. The rider will be picked up at the requested location and taken to their destination along the route. Riders can also board the vehicle at any of the check points without reservations and be transported to any destination along the route. The regularly scheduled route in Vernon and North Vernon operates Monday through Friday, 8:00am – 4:00pm with a single vehicle traveling counterclockwise with stops at the top of the hour at JC Plaza & Wal-Mart (North SR 3), at 15 minutes past the hour at St. Vincent Jennings Hospital (Henry Street), at 30 minutes past the hour at the Courthouse (Vernon on SR 7) and at 45 minutes past the hour at the Senior Center (Buckeye Street). Transportation is also available for Jennings County areas not listed on the Vernon and North Vernon route by calling the *Catch-A-Ride* office and scheduling an individual pick up.

Bus ridership is characterized by a transit-dependent population. In the US 50 corridor, significant transit service is not a viable option for the following reasons.

- Trip ends are dispersed rather than concentrated, resulting in insufficient ridership to cover transit-operating costs.

- Existing US 50 falls in Jackson and Jennings Counties, the incorporated area of North Vernon and the small, unincorporated areas of Hayden and Butlerville. Thus, these jurisdictions must provide the transit operating subsidies to extend any transit service along existing US 50.

- In the year 2030, population densities along existing US 50 are expected to be less than 2,000 persons per square mile, except in the greater North Vernon area. Thus, less than 5% of the corridor will have sufficient population densities in the year 2030 to meet the minimum threshold considered necessary for the provision of transit service (Metro Dade County, Florida, Transit Reconfiguration Study; Miami Dade County Transit Authority, 1986).

- According to the Urban Transport Fact Book, mass transit carries only about 2% of the commuters in urban areas.

While there is a significant increase in truck traffic in the corridor, a majority of the truck trips are not long distance truck trips that might shift to rail by the introduction of an intermodal (rail-to-truck) transfer center. Further, the national rail systems are known to be approaching capacity and there is no public knowledge of anticipated rail system capacity improvements because of private ownership of the rail system. It

should also be noted that the growth in traffic congestion in the US 50 corridor is both a combination of auto and truck travel, and a reduction in the magnitude of increase in truck traffic will not alone eliminate congestion in the existing US 50 corridor.

Phase 1: Purpose and Need

Traffic Congestion: The mass transit alternative would not noticeably reduce traffic congestion on US 50. It is not reasonable to assume that enough travelers would divert to transit service or enough freight movement would shift from truck to rail to result in improvements to levels of service on US 50.

Traffic Safety: The mass transit alternative would not improve safety on US 50. Without a reduction in daily traffic volume or a change in facility type, safety would not be improved. There is no reduction in total truck traffic in downtown North Vernon on US 50 or any associated reduction in hazardous materials deliveries through downtown.

Facilitate Access**:** The mass transit alternative would not facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. There is no improvement of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon. There is no improvement of the LOS in the year 2030 on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50 (including the MUTC).

Consistency with Transportation Plans**:** The mass transit alternative is not consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors or the Thoroughfare Plan component of the Jennings County Comprehensive Plan that call for improvements to US 50.

Enhance National Security**:** The mass transit alternative would not enhance national security. There would be no reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. Achievement of a minimum acceptable LOS D in the year 2030 for the fourteen key intersections (four signalized and ten unsignalized intersections) along the US 50 corridor and the achievement of a minimum acceptable LOS C on rural segments and LOS D on urban segments in the year 2030 for US 50 from US 31 to the Jennings/Riley County Line would not be attained. The elimination of traffic flow impediments along US 50 (such as driveway entrances, traffic signals and at-grade railroad crossings) and the provision of opportunities for multiple access routes to the MUTC would not be attained.

Conclusion

The Mass Transit Alternative would not address the purpose and need of this project as “stand alone” alternatives because they would not significantly reduce congestion, improve safety, facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County, be consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors or with the Thoroughfare Plan component of the Jennings County Comprehensive Plan, and would not enhance national security. Therefore, they were not advanced to Phase 2 of the screening process.

It should be noted that the combination of various transportation management alternatives (TDM, TSM, ITS, mass transit, etc.) performs only slightly better than any single transportation management alternative. Due to the low-density rural character of the corridor, the combination of transportation management alternatives considered for this project are expected to only minimally reduce traffic volumes on US 50 and would not result in improvements to levels of service on US 50.

6.2.6 Highway Build Alternatives

Highway "build" alternatives will be examined on existing and new alignments:

- US 50 Upgrade Options Utilizing Existing Alignment.
- US 50 Upgrade Options Utilizing Existing and/or New Alignments with New Alignments around North Vernon.

For analysis and evaluation purposes, the Study Area was divided into two sections, a Western Section from US 31 eastward to CR 575 W, and an Eastern Section from CR 575 W to the eastern terminus of the project. The dividing line of the two sections, CR 575 W, is the area where the preliminary bypass alternatives around North Vernon begin. For the analysis of impacts related to each of the Preliminary Alternatives, each preliminary alternative was analyzed as either a Western Section or an Eastern Section Preliminary Alternative. This Chapter evaluates/screens the impacts of the Western and Eastern Section Preliminary Alternatives and recommends alternative(s) that require additional NEPA studies in both sections. Based on these Western and Eastern Preliminary Alternative(s) recommendations, the impacts of any Western Section Preliminary Alternative can be added to the impacts of any Eastern Section Preliminary Alternative to determine a summary of impacts for the entire corridor for any Western and Eastern Section Preliminary Alternative pair.

6.2.6.1 Western Section Preliminary Alternatives

Figure 6.1 shows the four different Western Section Preliminary Alternatives, **Preliminary Alternatives W, W1, W2 and W3** developed for this project that consist of preliminary alternatives ranging from added travel lanes along existing US 50 to varying combinations of added travel lanes along existing US 50 and new-terrain alignments essentially paralleling US 50. Refer to Chapter 4 – Definition of Alternatives, for additional information related to the preliminary alternatives. Table 6.1 summarizes the socio-economic and environmental impacts associated with the Western Section Preliminary Alternatives.

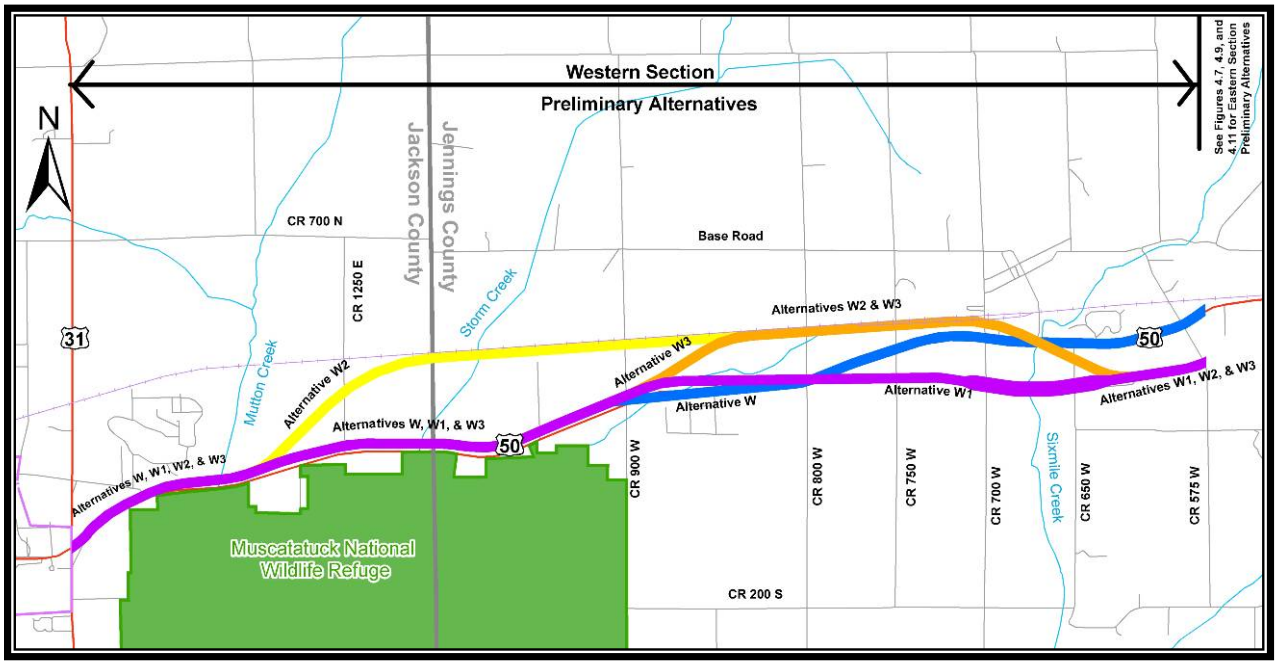

Figure 6.1: Western Section Preliminary Alternatives (Alternatives W, W1, W2 and W3)

Table 6.1: Western Section Transportation Considerations, Socio-Economic and Environmental Impact Summary

Socio-Economic/ Environmental Measure	Western Section Preliminary Alternatives			
	Western Alternatives			
	W	W1	W2	W3
TOTAL COSTS[1] (Mil. of $)	**75.8**	**73.1**	**75.1**	**74.6**
Construction Costs (Mil. of $)	53.7	58.2	59.7	59.3
Prelim. Engineering Costs[2] (Mil. of $)	5.4	5.8	6.0	5.9
Right-of-Way Costs (Mil. of $)	16.7	9.1	9.4	9.4
LENGTH (miles)	6.4	7.0	7.2	7.2
TRANSPORTATION CONSIDERATIONS[3]				
Meets Purpose and Need	YES	YES	YES	YES
Total Traffic Diversion Thru North Vernon	L	M	H	H
Truck Traffic Diversion Thru North Vernon	L	M	H	H
Daily Traffic Volume	M	M	M	M
Crash Reduction	L	M	H	H
RELOCATIONS				
Residences Acquired	42	14	11	17
Apartment Units Acquired	0	0	0	0
Residences Lost Access	4	1	1	1
Farms Acquired	1	2	2	3
Businesses Acquired	11	7	5	7
Businesses Lost Access	1	0	0	0
NEW ROW (acres)	240	252	244	242
DEVELOPED LAND (acres)	30	11	8	10
DEVELOPED LAND, OPEN SPACE[4] (acres)	119	65	36	55
FARMLAND (acres)	62	148	150	144
GRASSLAND/HERBACEOUS (acres)	1	0	0	0
FOREST (acres)	28	28	50	33
OPEN WATER (acres)	0	0	0	0
WETLANDS TOTAL (NWI) (acres)	**5**	**4.2**	**14.8**	**5.6**
Emergent (acres)	0	0	0	0
Scrub/Shrub(acres)	0.2	0.2	0	0.2
Forested (acres)	4.8	4	14.8	5.4

Socio-Economic/ Environmental Measure	Western Section Preliminary Alternatives			
	Western Alternatives			
	W	W1	W2	W3
STREAMS CROSSED (USGS)	5	7	10	9
FLOODPLAINS (IDNR DFIRM) (acres)	20	23	16	20
TES RECORDED AREA[5]	0	0	0	0
KARST FEATURES (acres)	0	0	0	0
HISTORIC PROPERTIES[6]	3	2	1	1
HISTORIC DISTRICTS[7]	0	0	0	0
RECORDED ARCHAEOLOGICAL SITES	NO	NO	NO	NO
CEMETERIES (USGS)	0	0	0	0
FEDERAL REFUGE LANDS	0	0	0	0
STATE FOREST LANDS	0	0	0	0
NATURE PRESERVES	0	0	0	0
CITY/COUNTY PARKS	0	0	0	0
OTHER PUBLIC LANDS	0	0	0	0
CLASSIFIED FORESTS & WILDLANDS	0	0	2	1
CONSERVATION RESERVE PROGRAM (CRP) LANDS	0	0	0	0
WILDLIFE HABITAT INCENTIVE PROGRAM (WHIP) LANDS	0	0	0	0
PARTNERS FOR FISH & WILDLIFE LANDS	0	0	0	0
POTENTIAL SECTION 4F PROPERTIES[8]	1	0	0	0
HAZARDOUS MATERIAL SITES	3	1	0	1

1 All costs are in Year 2015 dollars. See Section 5.3.1 – Preliminary Cost Estimates – for project cost development information. Total Costs were calculated by summing the estimated construction cost, Preliminary Engineering (design) costs and right-of-way costs for each of the preliminary alternatives. Total Costs associated with each preliminary alternative do not include costs associated with local and/or State roadway improvements associated with the preliminary alternatives or any mitigation measures associated with the project.
2 Preliminary Engineering (design) cost estimates estimated as being 10.0% of the construction cost estimate
3 Transportation Consideration evaluations (H-High, M-Medium, L-Low) indicate the performance of the alternatives relative to each other
4 Includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes
5 Indiana Natural Heritage Database Records
6 Indiana Historic Sites & Structures Inventory (IHSSI) Contributing, Notable, & Outstanding Sites and bridges from Dr. Cooper's books
7 Includes National Register (NR) and IHSSI Historic Districts
8 Includes publicly owned recreation areas, NR listed sites/candidate, and IHSSI Notable and Outstanding sites

Western Section Preliminary Alternative W

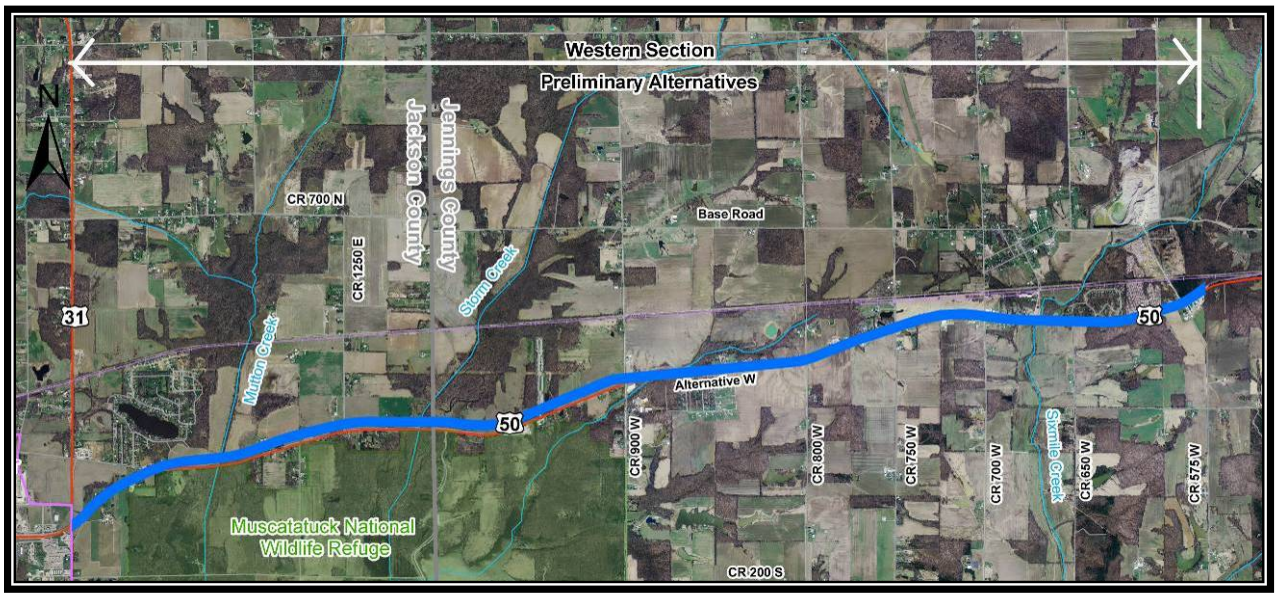

Figure 6.2: Western Section Preliminary Alternative W

Preliminary Alternative W consists of the addition of two travel lanes along existing US 50. In general, this alternative would utilize the location of existing US 50 as future eastbound lanes and future westbound lanes for the alternative would be constructed north of the existing roadway. The alternative begins on the east approach to the existing US 50 and US 31 intersection in Jackson County and follows the existing US 50 alignment eastward. As it approaches the Muscatatuck National Wildlife Refuge property boundary, approximately 0.5 miles east of US 31, it shifts slightly northward so that the existing US 50 south right-of-way line is maintained in front of the wildlife refuge and all widening associated with the added travel lanes is north of and adjacent to existing US 50. Continuing eastward, this northern shift of the corridor would be maintained to a point approximately 0.5 miles east of the Jackson and Jennings County Line where the alternative would shift southward to the existing US 50 location. The alternative continues eastward generally following the existing US 50 alignment and terminates at CR 575 W where it would connect to any of the Eastern Section Preliminary Alternatives discussed below. The alternative is approximately 6.4 miles in length.

Phase 1: Purpose and Need

Traffic Congestion: This alternative would reduce congestion on US 50. It achieves of a minimum acceptable intersection LOS D in the year 2030 at the signalized intersection of US 50 and US 31. The two significant unsignalized intersections along the US 50 corridor in this section at CR 900W and CR 700 have acceptable LOS for the eastbound and westbound US 50 traffic movements (LOS B or C), but have unacceptable LOS (LOS D – E) for the intersecting roadway northbound and southbound traffic movements. Additional intersection analysis at these locations would be required to determine specific improvements necessary to improve the intersection LOS for the intersecting roadway movements. All mainline segments of US 50 in this area operate at LOS A in the year 2030.

Traffic Safety: This alternative would improve safety on existing US 50 by implementing the following crash reduction measures (as recognized by the Indiana Design Manual): adding capacity by improving the facility to a four-lane facility, adding a median and separate left-turn lanes, improving access control through the elimination and consolidation of driveways, realigning the horizontal and vertical geometry to contemporary standards and higher design speed, and reducing the number of traffic impediments.

***Facilitate Access*:** This alternative would facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. It would improve of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon and also improve the LOS on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50.

***Consistency with Transportation Plans*:** This alternative is consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors and achieves the design standards for a "statewide mobility corridor".

***Enhance National Security*:** This alternative would enhance national security. There would be a reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. This is accomplished by improving mobility and reducing traffic congestion as described in the Traffic Congestion section above.

Preliminary Alternative W meets the purposes and needs identified for this project. This alternative was advanced to Phase 2 of the screening process.

Phase 2: Socio-Economic and Environmental Impacts

The potential socio-economic and environmental impacts and total cost estimates associated with Alternative W are listed in Table 6.1. This alternative is approximately 6.4 miles in length. While it has the lowest estimated construction costs of any Western Section Preliminary Alternative at $53.7 million, its associated estimated right-of-way costs at $16.7 million are more than 75% higher. This is due to the alternative essentially following the existing US 50 alignment and an associated high number of residential and business impacts. The associated estimated Total Cost of $75.8 million is consistent with the other Western Section Preliminary Alternatives. It utilizes more of the existing US 50 right-of-way than any other Western Section Preliminary Alternative and would result in no relinquishment of US 50 to the local agency. Regarding property access, it would have more frequent driveways and frontage roads (impediments) and more breaks in limited access than any other Western Section Preliminary Alternative.

This alternative would require an estimated 240 acres of new right-of-way, of which 28 acres are forested, 5 acres are wetlands, 20 acres are floodplains, and 62 acres are farmland. Approximately 5 streams would be crossed by the alternative. It has the greatest number of residential and business relocations at 42 and 11 respectively and would result in one farm relocation. It would also result in four residential and one business loss of property access and would potentially impact three hazardous material sites.

This alternative could potentially impact one Outstanding (Josiah Cobbs Farm (Survey 033 in Spencer Township)) and two Contributing properties (Doud Service Station (Survey 031 in Spencer Township) and the A.L. Newby Barn, (Survey 065 in Spencer Township)) listed in the Indiana Historic Sites & Structures Inventory (IHSSI). Both properties are possible Section 106 impacts. Impacts to the Josiah Cobbs Farm could also potentially be a Section 4(f) impact.

Conclusion

A comparative analysis of impacts of other Western Section Preliminary Alternatives as summarized in Table 6.1 was completed. Given the higher residential relocations and loss of access, higher business relocations and loss of access, and potential historic property and potential Section 4(f) impacts, **Alternative W was eliminated from further consideration**.

Western Section Preliminary Alternative W1

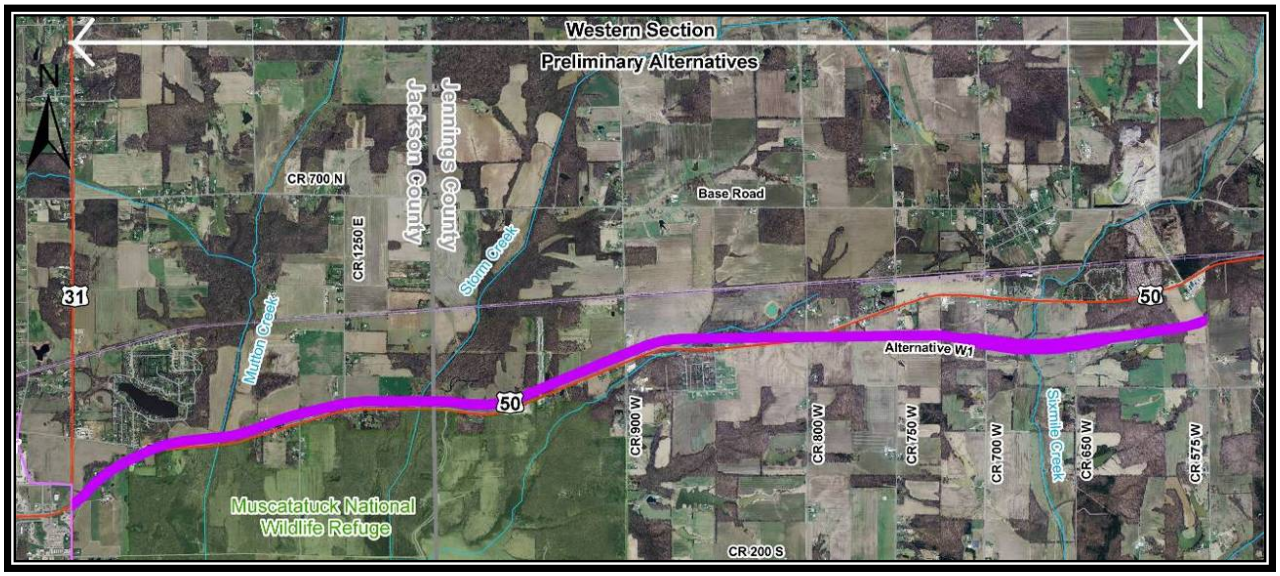

Figure 6.3: Western Section Preliminary Alternative W1

Preliminary Alternative W1 consists of the addition of two travel lanes to existing US 50 in the section west of CR 800 W and a new terrain four-lane facility south of existing US 50 in the section east of CR 800 W. In sections, this alternative would utilize the location of existing US 50 as future eastbound lanes and future westbound lanes for the alternative would be constructed north of the existing roadway. Other sections would depart the existing US 50 corridor and become a new terrain corridor. The alternative begins on the east approach to the existing US 50 and US 31 intersection in Jackson County and follows the existing US 50 alignment eastward. As it approaches the Muscatatuck National Wildlife Refuge property boundary, approximately 0.5 miles east of US 31, it shifts slightly northward so that the existing US 50 south right-of-way line is maintained in front of the wildlife refuge and all widening associated with the added travel lanes is north of and adjacent to existing US 50. Continuing eastward, this northern shift of the corridor is maintained to CR 800 W where the alternative would shift southward, leaving the existing US 50 corridor and become a new terrain facility. As the alternative continues eastward, it parallels and is located approximately ¼ mile south of the existing US 50 corridor, and terminates at CR 575 W where it would connect to any of the Eastern Section Preliminary Alternatives discussed below. The alternative is approximately 7.0 miles in length.

Phase 1: Purpose and Need

Traffic Congestion: This alternative would reduce congestion on US 50. It achieves of a minimum acceptable intersection LOS D in the year 2030 at the signalized intersection of US 50 and US 31. The two significant unsignalized intersections along the US 50 corridor in this section at CR 900W and CR 700 have acceptable LOS for the eastbound and westbound US 50 traffic movements (LOS B or C), but have unacceptable LOS (LOS D – E) for the intersecting roadway northbound and southbound traffic movements. Additional intersection analysis at these locations would be required to determine specific improvements necessary to improve the intersection LOS for the intersecting roadway movements. All mainline segments of US 50 in this area operate at LOS A in the year 2030.

Traffic Safety: This alternative would improve safety on existing US 50. Adding capacity by improving the facility to a four-lane facility, adding a median and separate left-turn lanes, improving access control through the elimination and consolidation of driveways, and reducing the number of traffic impediments would change US 50 from a lower functional class facility with a higher crash rate to a higher functional class facility with a lower crash rate.

***Facilitate Access*:** This alternative would facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. It would improve of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon and also improve the LOS on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50.

***Consistency with Transportation Plans*:** This alternative is consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors and achieves the design standards for a "statewide mobility corridor".

***Enhance National Security*:** This alternative would enhance national security. There would be a reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. This is accomplished by improving mobility and reducing traffic congestion as described in the Traffic Congestion section above.

Preliminary Alternative W1 meets the purposes and needs identified for this project. This alternative was advanced to Phase 2 of the screening process.

Phase 2: Socio-Economic and Environmental Impacts

The potential socio-economic and environmental impacts and total cost estimates associated with Alternative W1 are listed in Table 6.1. This alternative is approximately 7.0 miles in length. It has an associated estimated construction cost of $58.2 million, which is slightly higher that Preliminary Alternative W, but is consistent with the other Western Section Preliminary Alternatives. Its associated estimated right-of-way costs are $9.1 million, which is more that 75% lower than Preliminary Alternative W, but is consistent with the other Western Section Preliminary Alternatives. This is due to a portion of the alternative essentially following the existing US 50 alignment and a portion being new-terrain, resulting in an associated reduced number of residential and business impacts. The associated estimated Total Cost of $73.1 million is consistent with the other Western Section Preliminary Alternatives. It ranks second highest in the use of existing US 50 right-of-way when compared to other Western Section Preliminary Alternatives and would result in the second least amount of relinquishment of US 50 to the local agency. Regarding property access, it would rank second highest in frequency of driveways and frontage roads (impediments) and breaks in limited access would also be second highest when compared to other Western Section Preliminary Alternatives.

This alternative would require an estimated 252 acres of new right-of-way, of which 28 acres are forested, 4.2 acres are wetlands, 23 acres are floodplains, and 148 acres are farmland. Approximately 7 streams would be crossed by the alternative. It would result in a low number of relocations with approximately 14 residential, 7 businesses, and two farm relocations. It would also result in one residential and no business loss of property access and would potentially impact one hazardous material site.

This alternative could potentially impact two Contributing properties, the A.L. Newby Barn (Survey 065 in Spencer Township) and the Nick Megel Farm (Survey 048 in Spencer Township) listed in the Indiana Historic Sites & Structures Inventory (IHSSI). Both properties are possible Section 106 impacts. There are no potential Section 4(f) impacts associated with this alternative.

Conclusion

A comparative analysis of impacts of other Western Section Preliminary Alternatives as summarized in Table 6.1 was completed. Given the lower residential relocations and loss of access, lower business relocations and loss of access, lower forest impacts, lower wetland impacts and reduced potential historic property and potential Section 4(f) impacts and improved access control, **Alternative W1 was recommended to be carried forward for additional NEPA analysis**.

Western Section Preliminary Alternative W2

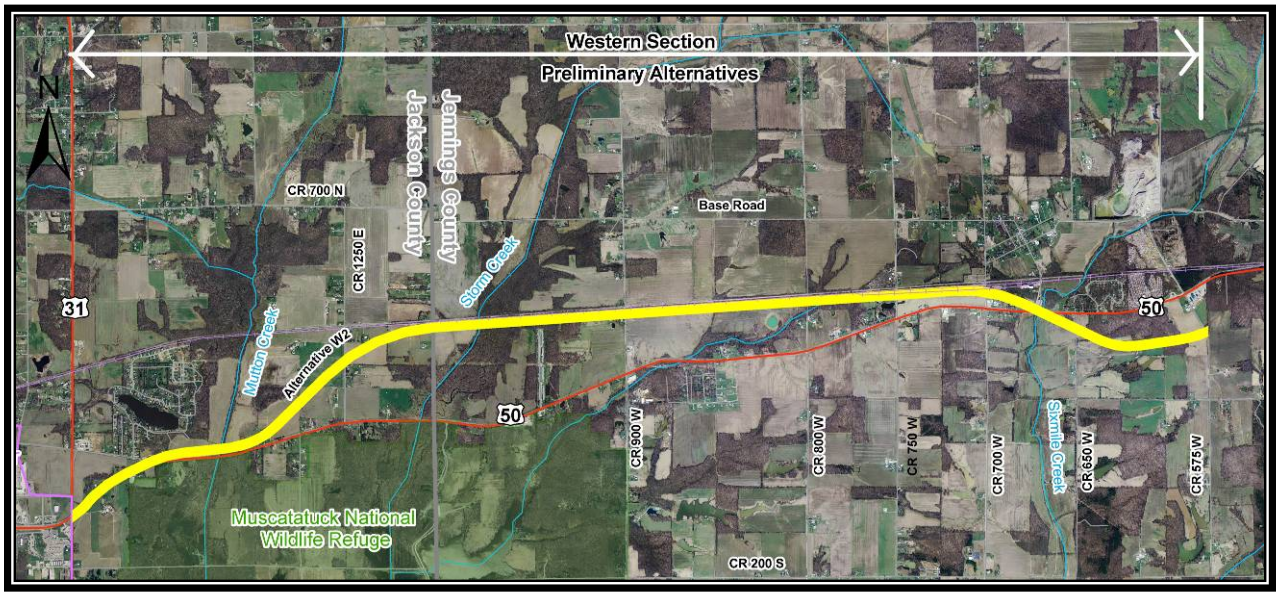

Figure 6.4: Western Section Preliminary Alternative W2

Preliminary Alternative W2 consists of the addition of two travel lanes to existing US 50 in the section west of Mutton Creek and a new terrain four-lane facility east of Mutton Creek. In sections, this alternative would utilize the location of existing US 50 as future eastbound lanes and future westbound lanes for the alternative would be constructed north of the existing roadway. Other sections would depart the existing US 50 corridor and become a new terrain corridor. The alternative begins on the east approach to the existing US 50 and US 31 intersection in Jackson County and follows the existing US 50 alignment eastward. As it approaches the Muscatatuck National Wildlife Refuge property boundary, approximately 0.5 miles east of US 31, it shifts slightly northward so that the existing US 50 south right-of-way line is maintained in front of the wildlife refuge and all widening associated with the added travel lanes is north of and adjacent to existing US 50. Continuing eastward, this northern shift of the corridor is maintained to east of the Mutton Creek crossing (approximately 1 mile east of US 31), where it takes a northeasterly turn and departs the existing US 50 corridor becoming a new terrain facility. The alternative continues northeasterly to near the Jackson and Jennings County Line where it makes an easterly turn and parallels the south right-of-way line for the CSX railroad. The alternative continues eastward, paralleling the south right-of-way for the CSX railroad, to a point approximately ½ mile west of CR 700 W, near Hayden, where the alternative makes a southeasterly turn. It continues southeasterly, crossing existing US 50 at the existing US 50 crossing of Sixmile Creek and then makes an easterly turn and continues eastward, paralleling existing US 50 and located approximately ¼ mile south of the existing US 50 corridor. The alternative terminates at CR 575 W where it would connect to any of the Eastern Section Preliminary Alternatives discussed below. The alternative is approximately 7.2 miles in length.

Phase 1: Purpose and Need

Traffic Congestion: This alternative would reduce congestion on US 50. It achieves of a minimum acceptable intersection LOS D in the year 2030 at the signalized intersection of US 50 and US 31. The two significant unsignalized intersections along the US 50 corridor in this section at CR 900W and CR 700 have acceptable LOS for the eastbound and westbound US 50 traffic movements (LOS B or C), but have unacceptable LOS (LOS D – E) for the intersecting roadway northbound and southbound traffic movements. Additional intersection analysis at these locations would be required to determine specific improvements necessary to improve the intersection LOS for the intersecting roadway movements. All mainline segments of US 50 in this area operate at LOS A in the year 2030.

Traffic Safety: This alternative would improve safety on existing US 50. Adding capacity by improving the facility to a four-lane facility, adding a median and separate left-turn lanes, improving access control through the elimination and consolidation of driveways, and reducing the number of traffic impediments would change US 50 from a lower functional class facility with a higher crash rate to a higher functional class facility with a lower crash rate.

***Facilitate Access*:** This alternative would facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. It would improve of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon and also improve the LOS on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50.

***Consistency with Transportation Plans*:** This alternative is consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors and achieves the design standards for a "statewide mobility corridor".

***Enhance National Security*:** This alternative would enhance national security. There would be a reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. This is accomplished by improving mobility and reducing traffic congestion as described in the Traffic Congestion section above.

Preliminary Alternative W2 meets the purposes and needs identified for this project. This alternative was advanced to Phase 2 of the screening process.

Phase 2: Socio-Economic and Environmental Impacts

The potential socio-economic and environmental impacts and total cost estimates associated with Alternative W2 are listed in Table 6.1. This alternative is approximately 7.2 miles in length. It has an associated estimated construction cost of $59.7 million, which is slightly higher that Preliminary Alternative W, but is consistent with the other Western Section Preliminary Alternatives. Its associated estimated right-of-way costs are $9.4 million, which is more that 75% lower than Preliminary Alternative W, but is consistent with the other Western Section Preliminary Alternatives. This is due to a portion of the alternative essentially following the existing US 50 alignment and a portion being new-terrain, resulting in an associated reduced number of residential and business impacts. The associated estimated Total Cost of $75.1 million is consistent with the other Western Section Preliminary Alternatives. It utilizes the least amount of the existing US 50 right-of-way than any other Western Section Preliminary Alternative and would result in the largest amount of relinquishment of US 50 to the local agency. Regarding property access, it would have less frequent driveways and frontage roads (impediments) and fewer breaks in limited access than any other Western Section Preliminary Alternative.

This alternative would require an estimated 244 acres of new right-of-way, of which 50 acres are forested, 14.8 acres are wetlands, 16 acres are floodplains, and 150 acres are farmland. The increase of impacts to wetlands and forests associated with this alternative is related to the US 50 crossing of Sixmile Creek. For this alternative, the Sixmile Creek crossing is within the limits of the new-terrain portion of the alternative, resulting in a new crossing location and higher wetland and forest impacts. The other Western Section Preliminary Alternatives would cross Sixmile Creek at the existing US 50 crossing location. Approximately 10 streams would be crossed by the alternative. It would result in a low number of relocations with approximately 11 residential, 5 businesses, and two farm relocations. It would also result in one residential and no business loss of property access and would have no impacts to hazardous material sites.

This alternative could potentially impact one Contributing property, the Nick Megel Farm (Survey 048 in Spencer Township) listed in the Indiana Historic Sites & Structures Inventory (IHSSI). This property is a possible Section 106 impact. There are no potential Section 4(f) impacts associated with this alternative.

Conclusion

A comparative analysis of impacts of other Western Section Preliminary Alternatives as summarized in Table 6.1 was completed. Given the lower residential relocations and loss of access, lower business relocations and loss of access, and reduced potential historic property and potential Section 4(f) impacts, and improved access control, **Alternative W2 was recommended to be carried forward for additional NEPA analysis**. **It is also recommended that additional analysis should be completed at the US 50 Bridge over Sixmile Creek with the goal of avoiding and/or minimizing impacts to wetlands and forests.**

Western Section Preliminary Alternative W3

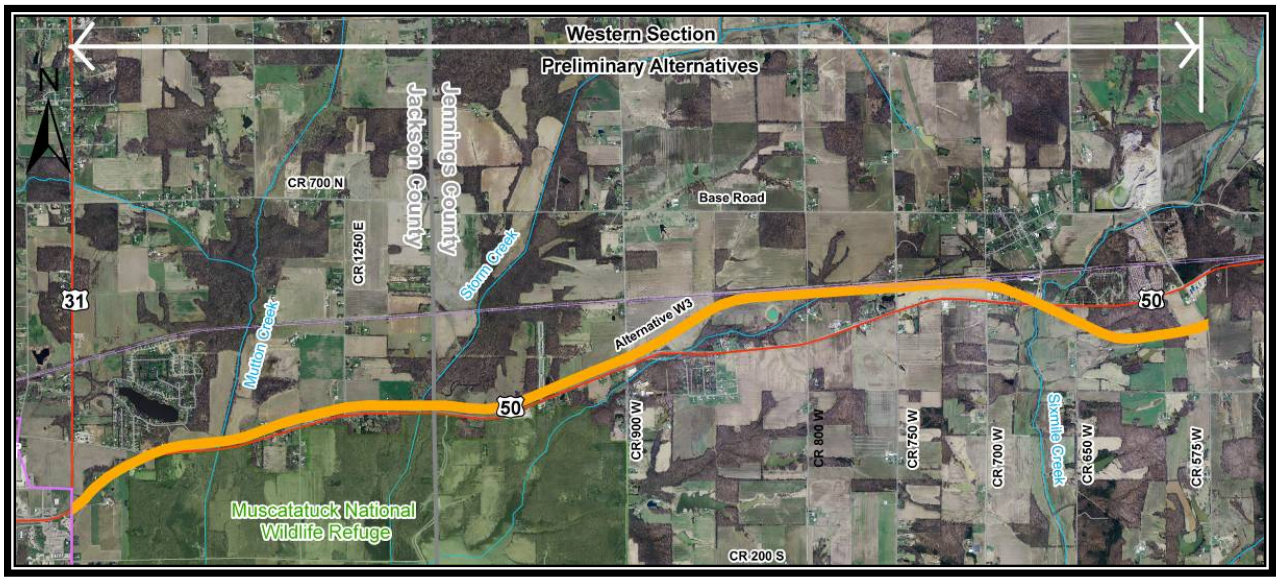

Figure 6.5: Western Section Preliminary Alternative W3

Preliminary Alternative W3 consists of the addition of two travel lanes to existing US 50 in the section west of CR 900 W and a new terrain four-lane facility either north or south of existing US 50 in the section east of CR 900 W. In sections, this alternative would utilize the location of existing US 50 as future eastbound lanes and future westbound lanes for the alternative would be constructed north of the existing roadway. Other sections would depart the existing US 50 corridor and become a new terrain corridor. The alternative begins on the east approach to the existing US 50 and US 31 intersection in Jackson County and follows the existing US 50 alignment eastward. As it approaches the Muscatatuck National Wildlife Refuge property boundary, approximately 0.5 miles east of US 31, it shifts slightly northward so that the existing US 50 south right-of-way line is maintained in front of the wildlife refuge and all widening associated with the added travel lanes is north of and adjacent to existing US 50. Continuing eastward, this northern shift of the corridor is maintained to near CR 900 W where it takes a northeasterly turn and departs the existing US 50 corridor becoming a new terrain facility. The alternative continues northeasterly to approximately ½ mile west of CR 800 W where it makes an easterly turn and parallels the south right-of-way line for the CSX railroad. The alternative continues eastward, paralleling the south right-of-way for the CSX railroad, to a point approximately ½ mile west of CR 700 W, near Hayden, where the alternative makes a southeasterly turn. It continues southeasterly, crossing existing US 50 at the existing US 50 crossing of Sixmile Creek and then makes an easterly turn and continues eastward, paralleling existing US 50 and located approximately ¼ mile south of the existing US 50 corridor. The alternative terminates at CR 575 W where it would connect to any of the Eastern Section Preliminary Alternatives discussed below. The alternative is approximately 7.2 miles in length.

Phase 1: Purpose and Need

Traffic Congestion: This alternative would reduce congestion on US 50. It achieves of a minimum acceptable intersection LOS D in the year 2030 at the signalized intersection of US 50 and US 31. The two significant unsignalized intersections along the US 50 corridor in this section at CR 900W and CR 700 have acceptable LOS for the eastbound and westbound US 50 traffic movements (LOS B or C), but have unacceptable LOS (LOS D – E) for the intersecting roadway northbound and southbound traffic movements. Additional intersection analysis at these locations would be required to determine specific improvements necessary to improve the intersection LOS for the intersecting roadway movements. All mainline segments of US 50 in this area operate at LOS A in the year 2030.

Traffic Safety: This alternative would improve safety on existing US 50. Adding capacity by improving the facility to a four-lane facility, adding a median and separate left-turn lanes, improving access control through the elimination and consolidation of driveways, and reducing the number of traffic impediments would change US 50 from a lower functional class facility with a higher crash rate to a higher functional class facility with a lower crash rate.

***Facilitate Access*:** This alternative would facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. It would improve of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon and also improve the LOS on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50.

***Consistency with Transportation Plans*:** This alternative is consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors and achieves the design standards for a "statewide mobility corridor".

***Enhance National Security*:** This alternative would enhance national security. There would be a reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. This is accomplished by improving mobility and reducing traffic congestion as described in the Traffic Congestion section above.

Preliminary Alternative W3 meets the purposes and needs identified for this project. This alternative was advanced to Phase 2 of the screening process.

Phase 2: Socio-Economic and Environmental Impacts

The potential socio-economic and environmental impacts and total cost estimates associated with Alternative W3 are listed in Table 6.1. This alternative is approximately 7.2 miles in length. It has an associated estimated construction cost of $59.3 million, which is slightly higher that Preliminary Alternative W, but is consistent with the other Western Section Preliminary Alternatives. Its associated estimated right-of-way costs are $9.4 million, which is more that 75% lower than Preliminary Alternative W, but is consistent with the other Western Section Preliminary Alternatives. This is due to a portion of the alternative essentially following the existing US 50 alignment and a portion being new-terrain, resulting in an associated reduced number of residential and business impacts. The associated estimated Total Cost of $74.6 million is consistent with the other Western Section Preliminary Alternatives. It ranks second lowest in the use of existing US 50 right-of-way when compared to other Western Section Preliminary Alternatives and would also result in the second most amount of relinquishment of US 50 to the local agency. Regarding property access, it would rank second lowest in frequency of driveways and frontage roads (impediments) and breaks in limited access would also be second lowest when compared to other Western Section Preliminary Alternatives.

This alternative would require an estimated 242 acres of new right-of-way, of which 33 acres are forested, 5.6 acres are wetlands, 20 acres are floodplains, and 144 acres are farmland. Approximately 9 streams would be crossed by the alternative. It would result in a low number of relocations with approximately 17 residential, 7 businesses, and three farm relocations. It would also result in one residential and no business loss of property access and would potentially impact one hazardous material site.

This alternative could potentially impact one Contributing property, the Nick Megel Farm (Survey 048 in Spencer Township) listed in the Indiana Historic Sites & Structures Inventory (IHSSI). This property is a possible Section 106 impact. There are no potential Section 4(f) impacts associated with this alternative.

Conclusion

A comparative analysis of impacts of other Western Section Preliminary Alternatives as summarized in Table 6.1 was completed. Given the lower residential relocations and loss of access, lower business relocations and loss of access, lower forest impacts, lower wetland impacts, reduced potential historic property and potential Section 4(f) impacts, **Alternative W3 was recommended to be carried forward for additional NEPA analysis**.

6.2.6.2 Eastern Section Preliminary Alternatives

For the Eastern Section of the Study area, five North Vernon "bypass" preliminary alternatives were developed including four northern bypass alternatives (**Preliminary Alternatives A, B, C and D**) and a southern bypass alternative (**Preliminary Alternative E**) (see Figure 6.6). Two preliminary alternatives were also developed that utilize the existing US 50 corridor through North Vernon. These included the **Added Travel Lanes Through North Vernon Preliminary Alternative** (see Figure 6.7) and **One-Way Pair Through North Vernon Preliminary Alternatives** (see Figure 6.8). Refer to Chapter 4 – Definition of Alternatives, for additional information related to the preliminary alternatives. Table 6.2 summarizes the socio-economic and environmental impacts associated with the Eastern Section Preliminary Alternatives.

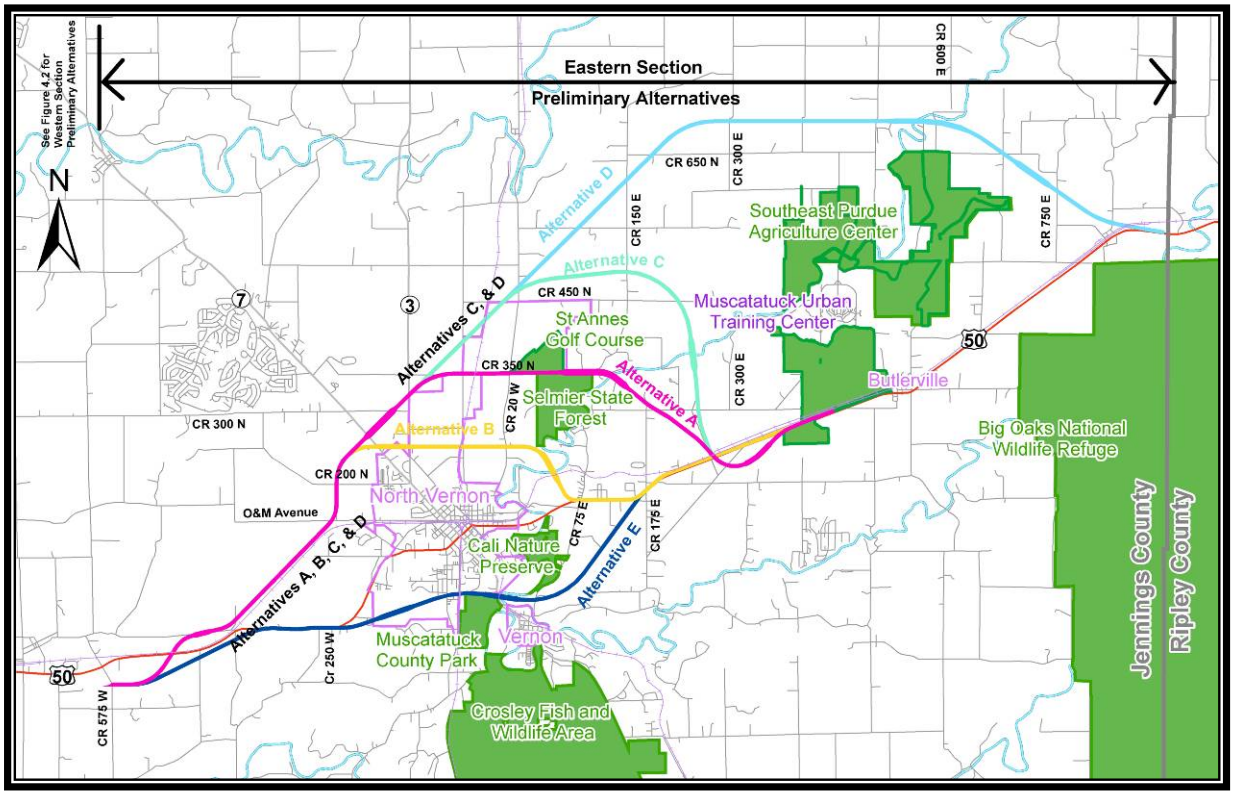

Figure 6.6: Eastern Section Preliminary Bypass Alternatives Around North Vernon (Preliminary Alternatives A, B, C, D and E)

Table 6.2: Eastern Section Transportation Considerations, Socio-Economic and Environmental Impact Summary

Socio-Economic/ Environmental Measure	Eastern Section Preliminary Alternatives						
	Through Town Alternatives		Bypass Alternatives				
	One-Way Pair	Added Travel Lanes	A	B	C	D	E
TOTAL COSTS[1] (Mil. of $)	**158.2**	**142.8**	**163.7**	**156.7**	**180.2**	**212.1**	**147.5**
Construction Costs (Mil. of $)	115.5	103.9	131.6	126.9	145.1	169.5	113.8
Prelim. Engineering Costs[2] (Mil. of $)	11.6	10.4	13.2	12.7	14.5	17.0	11.4
Right-of-Way Costs (Mil. of $)	31.1	28.5	18.9	17.1	20.6	25.6	22.3
LENGTH (miles)	12.2	11.6	14.0	12.6	15.0	18.8	11.4
TRANSPORTATION CONSIDERATIONS[3]							
Meets Purpose and Need	YES	YES	YES	YES	YES	YES	YES
Total Traffic Diversion Thru North Vernon	N/A	N/A	M	H	L	M	H
Truck Traffic Diversion Thru North Vernon	N/A	N/A	H	H	L	H	H
Daily Traffic Volume	H	H	M	M	L	M	M
Crash Reduction	M	M	M	M	M	M	H
RELOCATIONS							
Residences Acquired	67	63	43	66	33	41	52
Apartment Units Acquired	10	0	0	0	0	0	0
Residences Lost Access	20	20	9	6	1	2	17
Farms Acquired	0	0	1	1	1	3	0
Businesses Acquired	59	47	6	16	5	0	5
Businesses Lost Access	3	3	0	2	0	0	1
NEW ROW (acres)	300	296	492	448	552	718	401
DEVELOPED LAND (acres)	111	105	27	64	12	8	50
DEVELOPED LAND, OPEN SPACE[4] (acres)	112	111	55	81	47	42	62
FARMLAND (acres)	25	28	251	215	357	451	156
GRASSLAND/HERBACEOUS (acres)	1	1	5	0	0	0	17
FOREST (acres)	51	51	153	87	136	216	156
OPEN WATER (acres)	0	0	1	1	0	1	2
WETLANDS TOTAL (NWI) (acres)	**0**	**0**	**5.5**	**0.8**	**7.4**	**9.9**	**0**
Emergent (acres)	0	0	0.6	0	0.7	0.3	0
Scrub/Shrub(acres)	0	0	0	0	0.6	0.8	0
Forested (acres)	0	0	4.9	0.8	6.1	8.8	0

Socio-Economic/ Environmental Measure	Eastern Section Preliminary Alternatives						
	Through Town Alternatives		Bypass Alternatives				
	One-Way Pair	Added Travel Lanes	A	B	C	D	E
STREAMS CROSSED (USGS)	11	11	12	13	16	21	12
FLOODPLAINS (IDNR DFIRM) (acres)	4	4	10	3	6	14	8
TES RECORDED AREA[5]	2	2	2	2	2	0	4
KARST FEATURES (acres)	0	0	0	0	0	4	0
HISTORIC PROPERTIES[6]	6	4	1	3	1	4	1
HISTORIC DISTRICTS[7]	3	3	0	0	0	0	0
RECORDED ARCHAEOLOGICAL SITES	NO	NO	NO	YES	NO	YES	NO
CEMETERIES (USGS)	0	0	0	0	0	1	0
FEDERAL REFUGE LANDS	0	0	0	0	0	0	0
STATE FOREST LANDS	0	0	1	0	0	0	0
NATURE PRESERVES	0	0	0	0	0	0	0
CITY/COUNTY PARKS	0	0	0	0	0	0	1
OTHER PUBLIC LANDS	1	1	2	1	1	0	1
CLASSIFIED FORESTS & WILDLANDS	1	1	3	0	4	6	1
CONSERVATION RESERVE PROGRAM (CRP) LANDS	3	3	2	1	2	4	2
WILDLIFE HABITAT INCENTIVE PROGRAM (WHIP) LANDS	1	1	0	0	0	0	1
PARTNERS FOR FISH & WILDLIFE LANDS	0	0	1	0	0	0	0
POTENTIAL SECTION 4F PROPERTIES[8]	2	3	2	0	0	0	1
HAZARDOUS MATERIAL SITES	19	16	0	0	0	0	0

1 All costs are in Year 2015 dollars. See Section 5.3.1 – Preliminary Cost Estimates – for project cost development information. Total Costs were calculated by summing the estimated construction cost, Preliminary Engineering (design) costs and right-of-way costs for each of the preliminary alternatives. Total Costs associated with each preliminary alternative do not include costs associated with local and/or State roadway improvements associated with the preliminary alternatives or any mitigation measures associated with the project.
2 Preliminary Engineering (design) cost estimates estimated as being 10.0% of the construction cost estimate
3 Transportation Consideration evaluations (H-High, M-Medium, L-Low) indicate the performance of the alternatives relative to each other
4 Includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes
5 Indiana Natural Heritage Database Records
6 Indiana Historic Sites & Structures Inventory (IHSSI) Contributing, Notable, & Outstanding Sites and bridges from Dr. Cooper's books
7 Includes National Register (NR) and IHSSI Historic Districts
8 Includes publicly owned recreation areas, NR listed sites/candidate, and IHSSI Notable and Outstanding sites

Eastern Section Added Travel Lanes Through North Vernon Alternative

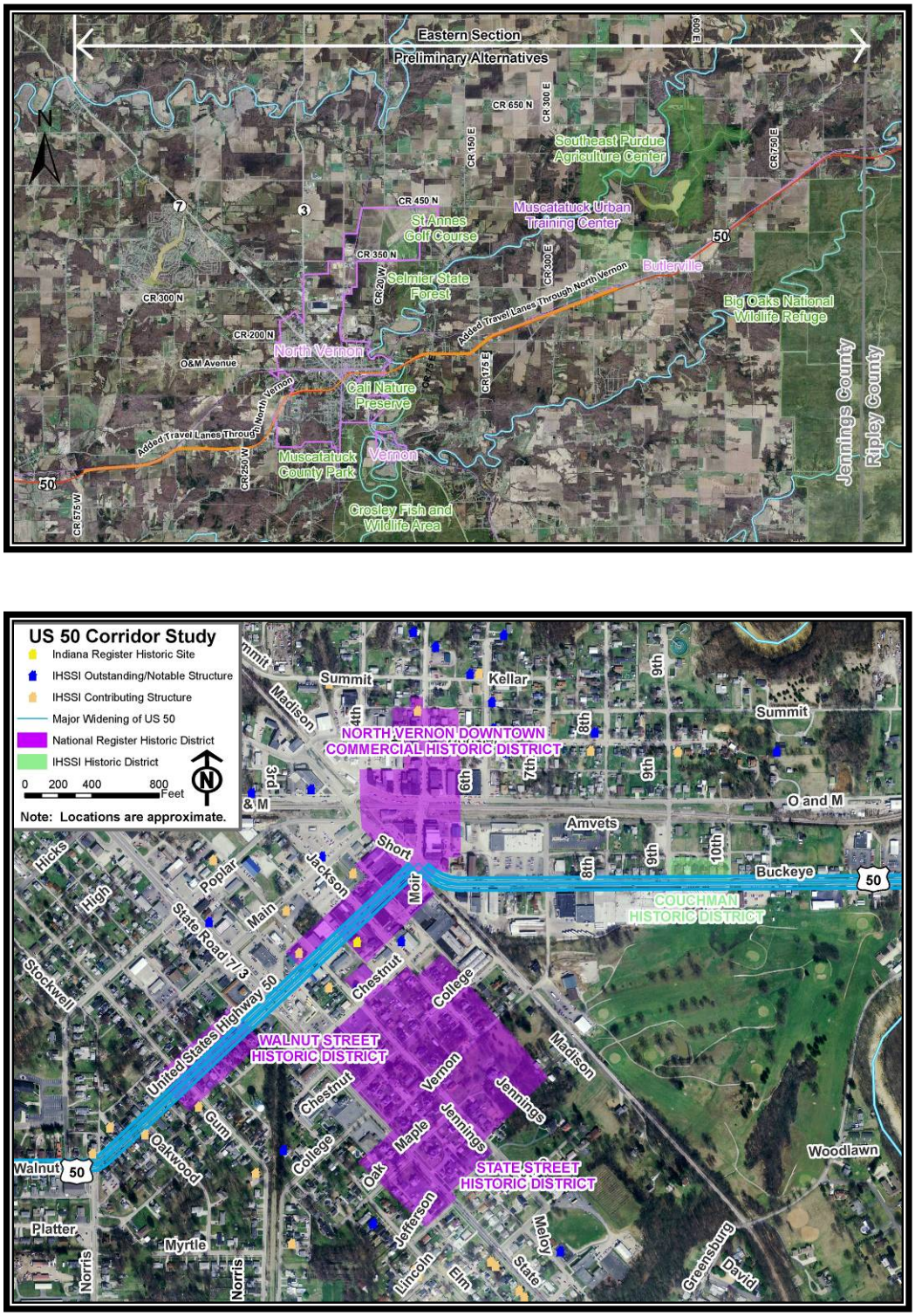

Figure 6.7: Eastern Section Added Travel Lanes Through North Vernon
(Top Map Shows Entire Alternative, Bottom Map Shows Detail Through North Vernon)

The **Added Travel Lanes Through North Vernon Alternative** consists of adding travel lanes (major widening) along existing US 50 through the urban area of North Vernon. The alternative would begin as a rural four-lane facility at CR 575 W, where it would connect to any of the Western Section Preliminary Alternatives discussed above. It would follow the existing US 50 alignment eastward to the West Urban Boundary for North Vernon at CR 15 N. This rural section of the alternative would utilize the location of the existing US 50 corridor and would include widening on both the north and south sides of the existing roadway. Access for properties adjacent to US 50 would be purchased where necessary or alternative access utilizing frontage/service roads and joint-use driveways would be provided where possible and practicable. The section from the West Urban Boundary for North Vernon at CR 15 N to the East Urban Boundary for North Vernon at the Muscatatuck River would be considered an urban five-lane facility. In this urban section, the alternative would follow the existing US 50 corridor and would include widening on both the north and south sides of the existing roadway. The section from the East Urban Boundary of North Vernon at the Muscatatuck River to just east of the MUTC entrance will be a rural, four-lane facility. In the section west of CR 175 E, the alternative would utilize the location of the existing US 50 corridor and would include widening on both the north and south sides of the existing roadway. In the section east of CR 175 E, the alternative would be parallel and adjacent to the CSX railroad right-of-way. It would utilize the location of existing US 50 as future westbound lanes and future eastbound lanes for the alternative would be constructed south of the existing roadway. Access for properties adjacent to US 50 would be purchased where necessary or alternative access utilizing frontage/service roads and joint-use driveways would be provided where possible and practicable. The alternative is approximately 11.6 miles in length.

Phase 1: Purpose and Need

Traffic Congestion: This alternative would reduce congestion on US 50. It achieves a minimum acceptable LOS D for US 50 traffic movements in the year 2030 at the Norris Avenue and the Madison Street/Short Stereet/5th Street signalized intersections. However, the signalized intersection at SR 3/SR 7 (State Street) would operate at a substandard LOS F. All eastbound and westbound US 50 traffic movements and most of the intersecting roadway northbound and southbound traffic movements at the eight significant unsignalized intersections operate at acceptable LOS. The northbound and/or southbound approaches at Hayden Pike and Poplar Street would not achieve a minimum acceptable LOS. Additional intersection analysis would be required at the US 50 intersections with Hayden Pike, SR 3/SR 7 (State Street) and Poplar Street to improve intersection LOS. This alternative achieves a minimum acceptable mainline LOS on most of the segments. The exception is between CR 425E and the Ripley County Line (approximately 5.7 miles), where the LOS in this rural area is a substandard D in the year 2030. The alternative terminates west of this segment and transitions from the proposed four-lane facility to the existing two-lane facility. This alternative will have significant adverse impacts to SR 3 and SR 7, drawing additional traffic down SR 3 and SR 7 from the north side of North Vernon to existing US 50. The projected mainline LOS between the north junction of SR 3/SR 7 and Poplar Street is E. This would require major improvements to the US 50 and SR 3/SR 7 (State Street) intersection that includes, but is not limited to, a 7-lane southbound approach. This alternative also attracts more traffic, especially trucks, by drawing traffic from other surrounding routes. Convoy traffic problems thru North Vernon will only intensify traffic related issues for this alternative. It will also not eliminate the traffic impediments related to the sharp turns in North Vernon and the at-grade railroad crossings at the Madison Street/Short Street/Fifth Street intersection (approximately 2 trains per day).

Traffic Safety: This alternative would improve safety on existing US 50 by implementing the following crash reduction measures (as recognized by the Indiana Design Manual): adding capacity by improving the facility to a four-lane facility, adding a median and separate left-turn lanes, improving access control through the elimination and consolidation of driveways, realigning the horizontal and vertical geometry to contemporary standards and higher design speed, and reducing the number of traffic impediments. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the middle range of alternatives related to reduction of crashes for a 30 year period after the opening of the facility over the No-Build Condition. However, there is no reduction in total truck traffic in downtown North Vernon on US 50 or any associated reduction in hazardous materials deliveries

through downtown. The alternative also retains safety issues related to the Jennings County School Complex such as high traffic volumes, particularly trucks, and potential pedestrian conflicts.

***Facilitate Access*:** This alternative would not perform well related to its ability to facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. Increased traffic congestion along SR 7 and SR 3 north of North Vernon would not be conducive to development in the northern North Vernon area. Important artery and access routes to industrial and commercial employment concentrations, such as SR 3/SR 7 and existing US 50, would not have an improved LOS in the year 2030.

***Consistency with Transportation Plans*:** This alternative is not consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors as it does not achieve the design standards for a "statewide mobility corridor". It is also not consistent with the recommendation of a four-lane, limited access facility around North Vernon (as set forth in the Thoroughfare Plan component of the Jennings County Comprehensive Plan

***Enhance National Security*:** This alternative would enhance national security. There would be a reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. This is accomplished by improving the mobility and reducing traffic congestion as described above.

The Added Travel Lanes Through North Vernon Alternative meets the purposes and needs identified for this project. This alternative was advanced to Phase 2 of the screening process.

Phase 2: Socio-Economic and Environmental Impacts

The potential socio-economic and environmental impacts and total cost estimates associated with the Added Travel Lanes Through North Vernon Alternative are listed in Table 6.2. This alternative is approximately 11.6 miles long and has an associated estimated Total Cost of $142.8 million. It utilizes more of the existing US 50 right-of-way than any other Eastern Section Preliminary Alternative and would result in no relinquishment of US 50 to local agencies. Regarding property access, it would have more frequent driveways and frontage roads (impediments) and more breaks in limited access than any other Eastern Section Preliminary Alternative.

This alternative would require an estimated 296 acres of new right-of-way, of which 51 acres are forested, no wetlands, 4 acres are floodplains, and 28 acres are farmland. Approximately 11 streams would be crossed by the alternative. It would result in approximately 63 residential, 47 businesses, and no farm relocations and would result in 20 residential and three business loss of property access. It would also potentially impact 16 hazardous material sites and would have no impact to State Forest Lands or City/County Parks.

This alternative passes through two NRHP historic districts, the Walnut Street Historic District and the North Vernon Downtown Historic District. It would directly take the majority of the houses within the Walnut Street Historic District and would also directly take several commercial buildings within the North Vernon Downtown Historic District. This alternative also passes thru the Indiana Historic Sites & Structures Inventory (IHSSI) historic district, the Couchman Historic District, potentially taking six houses. It impacts one structure listed on the Indiana State Register (the Jennings County Carnegie Library). In addition to individual structures with the above mentioned districts, four Contributing structures may be taken by the right-of-way for this preliminary alternative including the Haines Curve Railroad Trestle (Survey 023 in Spencer Township), a house that is on Walnut Street with a T-Plan and Queen Anne style (Survey 040 in North Vernon Scattered Sties), Fred Matthew's House (Survey 042 in North Vernon Scattered Sites) and another house on Walnut Street (Survey 041 in North Vernon Scattered Sites). This alternative could potentially impact one Contributing property, the Nick Megel Farm (Survey 048 in Spencer Township) listed in the Indiana Historic Sites & Structures Inventory (IHSSI). Also within the preliminary alternative are two of the concrete bridges found in Cooper's book. One filled spandrel arch

bridge carries US 50 over Indian. The other open spandrel arch bridge carries US 50 over the Muscatatuck River, which, according to Dr. Cooper's book, is an NRHP Candidate. All of these properties are possible Section 106 impacts. This alternative Impacts three potential Section 4(f) sites, two NRHP listed districts and one NRHP candidate bridge.

Conclusion

A comparative analysis of impacts of other Eastern Section Preliminary Alternatives as summarized in Table 6.2 was completed. While this alternative has relatively low impacts to natural environmental resources, it will have significant adverse traffic-related impacts to SR 3 and SR 7, drawing additional traffic down SR 3 and SR 7 from the north side of North Vernon to existing US 50. It also has significantly high impacts associated with the human environment, historic properties and historic districts and potential Section 4(f) impacts. Given that the alternative results in a continuing unacceptable LOS on US 50 at the SR 3/SR 7 signalized intersection (LOS F for all approaches) that would require major improvements to SR 3/7 intersection including a 7-lane southbound approach, requires further improvements at the Hayden Pike and Poplar Street unsignalized intersections, does not eliminate traffic impediments associated with an at-grade railroad crossing (approximately 2 trains per day) and sharp turns in North Vernon, experiences unacceptable LOS associated with SR 7 and SR 3 north of North Vernon, fails to reduce truck traffic and hazardous material deliveries through North Vernon, has traffic/pedestrian conflicts at the Jennings County School Complex, does not facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County, intensifies traffic related issues related to MUTC convoy traffic problems thru North Vernon, has high residential relocations and loss of access, high business relocations and loss of access, has potential historic property and historic district impacts and has potential Section 4(f) impacts, **the Added Travel Lanes Through North Vernon Alternative was eliminated from further consideration**.

Eastern Section One-Way Pair Through North Vernon Alternative

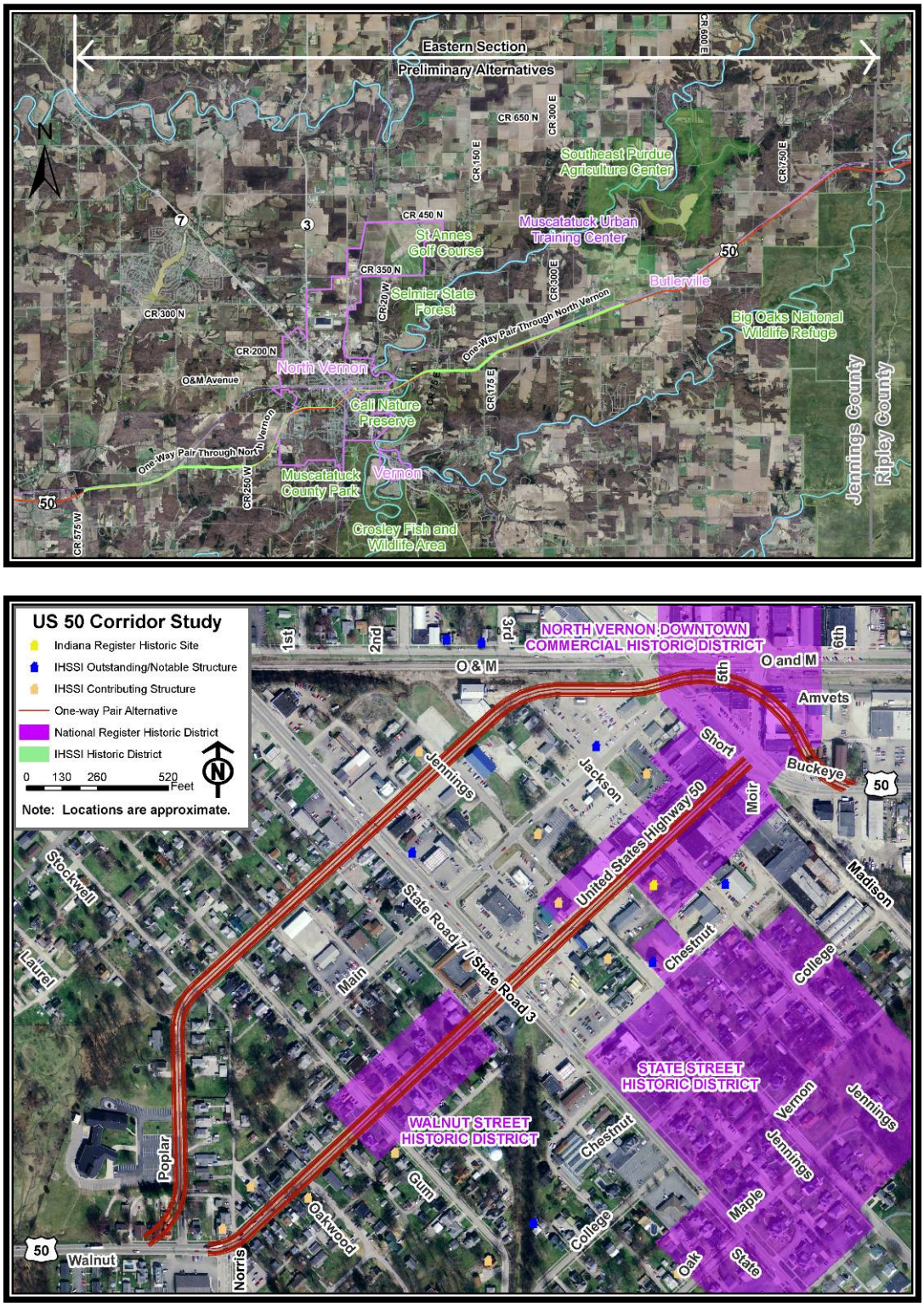

Figure 6.8: Eastern Section One-Way Pair Through North Vernon
(Top Map Shows Entire Alternative, Bottom Map Shows Detail Through North Vernon)

The **One-Way Pair Through North Vernon Alternative** consists of separating the existing US 50 eastbound and westbound traffic onto separate parallel streets through the urban built-up area of North Vernon. From CR 575 W to Poplar Street, this alternative will coincide with the Added Travel Lanes alignment described earlier. The system of one-way pair roadways would begin on the west side of the greater downtown North Vernon area near the US 50 (Walnut Street) and Poplar Street intersection. The system of one-way pair roadways would terminate on the east side of the greater downtown North Vernon area near the existing US 50 (Walnut/Buckeye Street) and Short/Madison Street intersection. The eastbound US 50 travel lanes would be maintained along the existing US 50 (Walnut Street) alignment beginning at Norris Avenue, following US 50 (Walnut Street) through the greater downtown North Vernon area, and terminate at Short/Madison Street. The existing roadway would likely be utilized with minor modifications to pavement markings, signing and traffic signals to accommodate the one-way traffic. New right-of-way would likely not be required and on-street parking along Walnut Street (existing US 50), which exists today between State Street and Madison Street, will remain unchanged. The westbound US 50 travel lanes would be redirected northward to Poplar Street. This redirection would begin just east of the US 50 (Walnut/Buckeye Street) intersection with Short/Madison Street and would require the realignment of westbound US 50 in this area to provide a better angle of intersection with westbound US 50 and the Madison Railroad grade crossing. Westbound US 50 would then follow Poplar Street through the greater downtown North Vernon area and would terminate at the existing US 50 (Walnut Street) and Poplar Street intersection, just west of Norris Avenue. For the westbound lanes, Poplar Street would likely require reconstruction so that the pavement would be able to withstand the increased traffic volumes and additional truck loadings. For Poplar Street, the urban typical section will consist of a two-lane one-way facility with additional lanes for parking on both sides. There would be no change in driveway access control in the section of existing US 50 through the urban area of North Vernon, from the US 50 (Walnut Street) and Poplar Street intersection to the US 50 (Walnut/Buckeye Street) and Short/Madison Street intersection. From just east of the Madison Street/Short Street/5th Street intersection (where the one-way pairs would terminate) to just east of the MUTC entrance, the alignment would coincide to the Added Travel Lanes alignment described earlier. The alternative is approximately 12.2 miles in length.

Phase 1: Purpose and Need

Traffic Congestion: This alternative would reduce congestion on US 50. It achieves a minimum acceptable LOS C for US 50 traffic movements in the year 2030 at the Norris Avenue and the Madison Street/Short Street/5th Street signalized intersections. However, the signalized intersection at SR 3/SR 7 (State Street) would operate at a substandard LOS E. All eastbound and westbound US 50 traffic movements and most of the intersecting roadway northbound and southbound traffic movements at the eight significant unsignalized intersections operate at acceptable LOS. The southbound approach at Hayden Pike would not achieve a minimum acceptable LOS. Additional intersection analysis would be required at the US 50 intersections with Hayden Pike and SR 3/SR 7 (State Street) to improve intersection LOS. This alternative achieves a minimum acceptable mainline LOS on most of the segments. The exception is between CR 425E and the Ripley County Line (approximately 5.7 miles), where the LOS in this rural area is a substandard D in the year 2030. The alternative terminates west of this segment and transitions from the proposed four-lane facility to the existing two-lane facility. This alternative will have significant adverse impacts to SR 3 and SR 7, drawing additional traffic down SR 3 and SR 7 from the north side of North Vernon to existing US 50. The projected mainline LOS between the north junction of SR 3/SR 7 and Poplar Street is E. This would require major improvements to SR 3/SR 7 (State Street) intersection (operating at a LOS E and requiring only a six-second reduction in vehicle delay to achieve a LOS D) that may include an additional southbound through lane and separate right-turn lanes on some of the approaches. This alternative also attracts more traffic, especially trucks, by drawing traffic from other surrounding routes. Convoy traffic problems thru North Vernon will only intensify traffic related issues for this alternative. It will also not eliminate the traffic impediments related to the sharp turns in North Vernon and the at-grade railroad crossings at the Madison Street/Short Street/Fifth Street intersection (approximately 2 trains per day). While the alternative provides better traffic congestion relief than the Added Travel Lanes Through North Vernon Preliminary Alternative, it

does not remove trucks from downtown North Vernon and would significantly change the use and character of Poplar Street due to traffic increases.

Traffic Safety: This alternative would improve safety on existing US 50 by implementing the following crash reduction measures (as recognized by the Indiana Design Manual): adding capacity by improving the facility to a four-lane facility, adding a median and separate left-turn lanes, improving access control through the elimination and consolidation of driveways, realigning the horizontal and vertical geometry to contemporary standards and higher design speed, and reducing the number of traffic impediments. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the middle range of alternatives related to reduction of crashes for a 30 year period after the opening of the facility over the No-Build Condition. However, there is no reduction in total truck traffic in downtown North Vernon on US 50 or any associated reduction in hazardous materials deliveries through downtown. The alternative also retains safety issues related to the Jennings County School Complex such as high traffic volumes, particularly trucks, and potential pedestrian conflicts.

***Facilitate Access*:** This alternative would not perform well related to its ability to facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. Increased traffic congestion along SR 7 and SR 3 north of North Vernon would not be conducive to development in the northern North Vernon area. Important artery and access routes to industrial and commercial employment concentrations, such as SR 3/SR 7 and existing US 50, would not have an improved LOS in the year 2030.

***Consistency with Transportation Plans*:** This alternative is not consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors as it does not achieve the design standards for a "statewide mobility corridor". It is also not consistent with the recommendation of a four-lane, limited access facility around North Vernon (as set forth in the Thoroughfare Plan component of the Jennings County Comprehensive Plan

***Enhance National Security*:** This alternative would enhance national security. There would be a reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. This is accomplished by improving the mobility and reducing traffic congestion as described above.

The One-Way Pair Through North Vernon Alternative meets the purposes and needs identified for this project. This alternative was advanced to Phase 2 of the screening process.

Phase 2: Socio-Economic and Environmental Impacts

The potential socio-economic and environmental impacts and total cost estimates associated with the One-Way Pair Through North Vernon Alternative are listed in Table 6.2. This alternative is approximately 12.2 miles long and has an associated estimated Total Cost of $158.2 million. It utilizes essentially the same amount of the existing US 50 right-of-way as the Added Travel Lanes Through North Vernon Alternative and would result in no relinquishment of US 50 to the local agency. Regarding property access, it would have essentially the same number of driveways and frontage roads (impediments) and more breaks in limited access as the Added Travel Lanes Through North Vernon Alternative.

This alternative would require an estimated 300 acres of new right-of-way, of which 51 acres are forested, no wetlands, 4 acres are floodplains, and 25 acres are farmland. Approximately 11 streams would be crossed by the alternative. It would result in approximately 67 residential, 59 businesses, and no farm relocations and would result in 20 residential and three business loss of property access. It would also potentially impact 19 hazardous material sites and would have no impact to State Forest Lands or City/County Parks.

This alternative passes through two NRHP historic districts, the Walnut Street Historic District and the North Vernon Downtown Historic District. It would not directly take any structures within the Walnut Street

Historic District but would directly take several commercial buildings within the North Vernon Downtown Historic District. A SHPO representative expressed concern for impacts to this district resulting from this preliminary alternative. In correspondence dated 3/30/07 stated, "such an extensive amount of demolition would have a dramatically adverse effect on the North Vernon Downtown Historic District." This alternative also passes thru the IHSSI historic district, the Couchman Historic District, potentially taking six houses. In addition to individual structures with the above mentioned districts, two Contributing structures may be taken by the right-of-way for this preliminary alternative including the Haines Curve Railroad Trestle (Survey 023 in Spencer Township) and the Fred Matthew's House (Survey 042 in North Vernon Scattered Sites). Also within the preliminary alternative are two of the concrete bridges found in Cooper's book. One filled spandrel arch bridge carries US 50 over Indian. The other open spandrel arch bridge carries US 50 over the Muscatatuck River, which, according to Dr. Cooper's book, is an NRHP Candidate. All of these properties are possible Section 106 impacts. This alternative impacts two potential Section 4(f) sites, one NRHP listed districts and one NRHP candidate bridge.

Conclusion

A comparative analysis of impacts of other Eastern Section Preliminary Alternatives as summarized in Table 6.2 was completed. While this alternative has relatively low impacts to natural environmental resources, it will have significant adverse traffic-related impacts SR 3 and SR 7, drawing additional traffic down SR 3 and SR 7 from the north side of North Vernon to existing US 50. It also has significantly high impacts associated with the human environment, historic properties and historic districts and potential Section 4(f) impacts. The alternative provides better traffic congestion relief than the Added Travel Lanes Through North Vernon Preliminary Alternative; however, it would significantly change the use and character of Poplar Street due to traffic increases. Given that the alternative results in a continuing unacceptable LOS on US 50 at the SR 3/SR 7 signalized intersection (operating at a LOS E) that would require major improvements to SR 3/7 intersection that may include an additional southbound through lane and separate right-turn lanes on some of the approaches, requires further improvements at the Hayden Pike unsignalized intersection, does not eliminate traffic impediments associated with an at-grade railroad crossing (approximately 2 trains per day) and sharp turns in North Vernon, experiences unacceptable LOS associated with SR 7 and SR 3 north of North Vernon, fails to reduce truck traffic and hazardous material deliveries through North Vernon, has traffic/pedestrian conflicts at the Jennings County School Complex, does not facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County, intensifies traffic related issues related to MUTC convoy traffic problems thru North Vernon, has high residential relocations and loss of access, high business relocations and loss of access, has potential historic property and historic district impacts and has potential Section 4(f) impacts, **the One-Way Pair Through North Vernon Alternative was eliminated from further consideration**.

Eastern Section Preliminary Alternative A

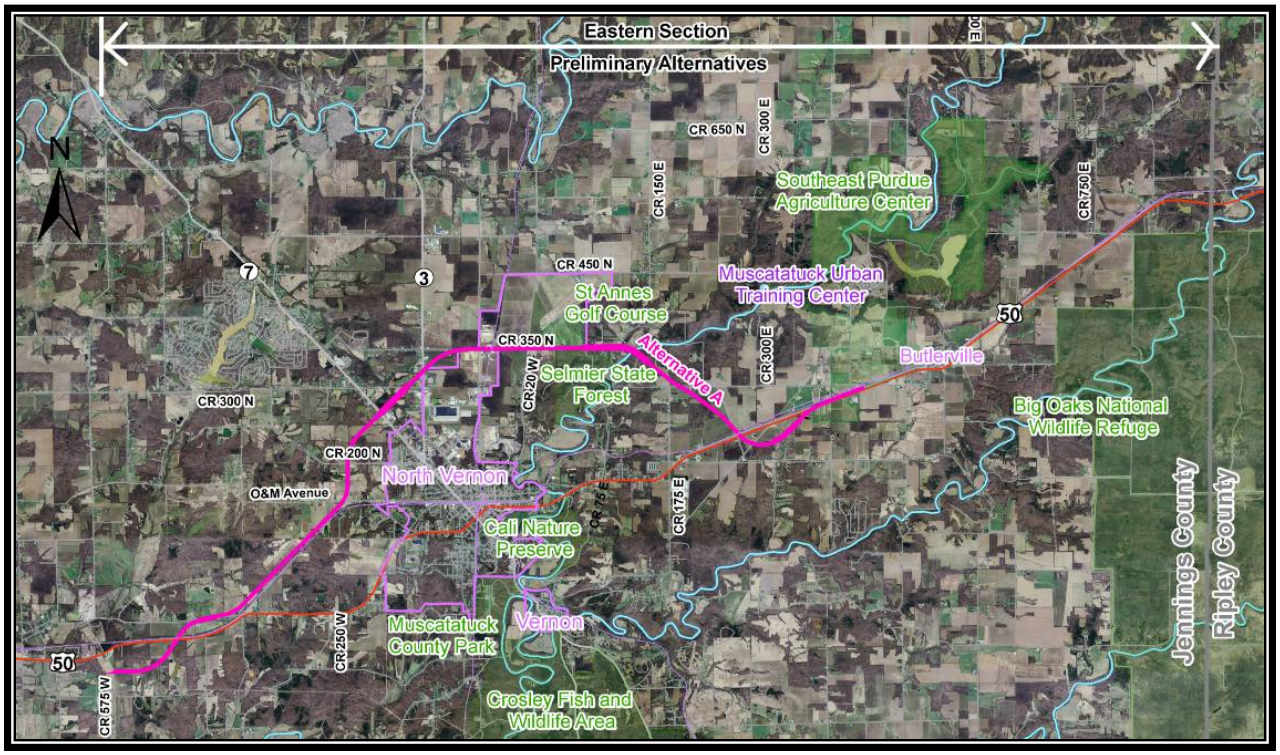

Figure 6.9: Eastern Section Preliminary Alternative A

Preliminary Alternative A is a northern alternative that begins as a rural four-lane limited access facility at CR 575 W where it would connect to any of the Western Section Preliminary Alternatives discussed above. At CR 575 W, it would make a northeasterly turn and bridge over the existing US 50 roadway and the CSX Railroad. It continues in a northeasterly direction, paralleling the north right-of-way for the CSX railroad, to O&M Avenue where it makes a northerly turn. It continues north to a point north of CR 200 N where it makes a northeasterly turn and transitions to an urban five-lane, limited access facility. It continues northeasterly crossing SR 7 just south of CR 300 N and crossing SR 3 just south of CR 350 N. It then makes an easterly turn and follows existing CR 350 N easterly to CR 75 W where it transitions to a rural four-lane, limited access facility. The alternative continues eastward to the eastern edge of Selmier State Forest where it makes a southeasterly turn and crosses the Vernon Fork of the Muscatatuck River. It continues in a southeasterly direction, and bridges the CSX Railroad and existing US 50 pavement just west of CR 300 E. The alternative then makes a northeasterly turn and rejoins the existing US 50 alignment approximately ¼ mile west of the MUTC entrance where it remains a rural four-lane, limited access facility. It continues northeastward as a rural four-lane, limited access facility along existing US 50 to just east of the MUTC entrance at US 50 where it transitions to a two-lane facility to match existing US 50. In the eastern section of the alternative, after it rejoins existing US 50, the alternative would be parallel and adjacent to the CSX railroad right-of-way. It would utilize the location of existing US 50 as future westbound lanes and future eastbound lanes for the alternative would be constructed south of the existing roadway. The alternative is approximately 14.0 miles in length. This alternative closely represents the Far North bypass alternative identified in the Jennings County Thoroughfare Plan.

Phase 1: Purpose and Need

Traffic Congestion: This alternative would reduce congestion on US 50. It achieves a minimum acceptable LOS D for US 50 traffic movements in the year 2030 at the Norris Avenue and Madison Street/Short Street/5th Street signalized intersections. The US 50 at SR 3/SR 7 signalized intersection would operate at a substandard LOS. Some further improvement (reduction of 8 seconds in vehicle

delay) will be needed at the signalized intersection of SR 3/SR 7 to improve the LOS from E to D. The alternative also achieves acceptable LOS in the year 2030 for all eastbound and westbound US 50 traffic movements and all of the intersecting roadway northbound and southbound traffic movements at the eight significant unsignalized intersection approaches with the exception of the southbound Brownstown Road traffic movement. Additional intersection analysis at this location would be required to determine specific improvements necessary to improve the intersection LOS. This alternative achieves a minimum acceptable mainline LOS on most of the segments. The exception is between CR 425E and the Ripley County Line (approximately 5.7 miles), where the LOS in this rural area is a substandard D in the year 2030. The alternative terminates west of this segment and transitions from the proposed four-lane facility to the existing two-lane facility. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the middle range of alternatives related to diversion of total traffic. It also performed well and was grouped with the highest performers related to diversion of truck traffic from existing US 50. The diversion of SR 3 and SR 7 traffic to the new terrain preliminary alternatives north of US 50 will also reduce the magnitude of delay to traffic on SR 3 and SR 7 north of US 50. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the middle range of alternatives related to average daily traffic volumes. Traffic impediments will be reduced with the elimination of two traffic signals and no at-grade railroad crossings will exist for traffic diverted from US 50.

Traffic Safety: This alternative would improve safety on existing US 50. An indicator of improved safety is the extent to which vehicle-miles of travel shift from lower functional class facilities with higher crash rates to high functional class facilities with lower crash rates. This alternative attracts the greatest vehicle-miles of travel from lower functional class facilities when compared to other Eastern Section Preliminary Alternatives. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the middle range of alternatives related to reduction of crashes for a 30 year period after the opening of the facility over the No-Build Condition. Additionally, for this alternative there is a reduction in total truck traffic in downtown North Vernon on US 50 and an associated reduction in hazardous materials deliveries through downtown.

***Facilitate Access*:** This alternative would facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. It would improve of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon and also improve the LOS on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50. The alternative is close enough to North Vernon to have a positive impact on traffic by diverting traffic from existing US 50 but not too close to preclude future economic development to north of North Vernon. It also better serves the industrial park expansion to the north due to its close proximity; however, it may have negative effects relative to expansion of the North Vernon Airport due to its close proximity, although a southward extension of runways is unlikely due existing urban structures.

***Consistency with Transportation Plans*:** This alternative is consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors and achieves the design standards for a "statewide mobility corridor". It is also consistent with the recommendation of a four-lane, limited access facility around North Vernon (as set forth in the Thoroughfare Plan component of the Jennings County Comprehensive Plan.

***Enhance National Security*:** This alternative would enhance national security. There would be a reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. This is accomplished by improving the mobility and reducing traffic congestion as described above.

Preliminary Alternative A meets the purposes and needs identified for this project. This alternative was advanced to Phase 2 of the screening process.

Phase 2: Socio-Economic and Environmental Impacts

The potential socio-economic and environmental impacts and total cost estimates associated with Preliminary Alternative A are listed in Table 6.2. This alternative is approximately 14.0 miles long and has an associated estimated Total Cost of $163.7 million. It would result in a substantial amount of relinquishment of US 50 to local agencies.

This alternative would require an estimated 492 acres of new right-of-way, of which 153 acres are forested, 5.5 acres are wetlands, 10 acres are floodplains, and 251 acres are farmland. Approximately 12 streams would be crossed by the alternative. It would result in approximately 43 residential, 6 businesses, and one farm relocation and would result in 9 residential and no business loss of property access. This alternative would have no impact on hazardous material sites or City/County Parks but would impact one State Forest Lands, the Selmier State Forest.

This alternative could potentially impact one Contributing property, the William H. Haines Farm (Survey 022 in Spencer Township). Also worthy of mention are two sites located inside Selmier State Forest. One site is the former First Baptist Church of North Vernon which was used from 1848-1866. The only thing remaining at the site is a set of steps. The other site is the location where a preacher was buried; the tombstone is still visible. This preliminary alternative goes through the northern portion of Selmier State Forest and would likely impact these sites (See correspondence dated 4/3/07 from Selmier State Forest Property Manager). If this preliminary alternative is chosen for further study, these sites will need to be investigated further. All of these properties are possible Section 106 impacts. This alternative impacts two potential Section 4(f) sites, the Selmier State Forest and the Saint Anne's Golf Course. This preliminary alternative will take property from the southern portion of Saint Anne's Golf Course, including portions of the greens. Saint Anne's is a publicly-owned, privately managed golf course located at Base Road and CR 350. Because this golf course is publicly owned, but privately managed, the Section 4(f) status of this property should be investigated further if this preliminary alternative is chosen for more detailed study.

Conclusion

A comparative analysis of impacts of other Eastern Section Preliminary Alternatives as summarized in Table 6.2 was completed. While this alternative has relatively low impacts to natural environment resources and the human environment, it has higher associated potential historic property and potential Section 4(f) impacts. Regarding traffic performance, this alternative will require further improvements to the signalized intersection of US 50 at SR 3/SR 7 (State Street) and to the southbound traffic movements at Brownstown Road to improve the LOS of the intersections. When compared to the other North Vernon bypass preliminary alternatives, this alternative was grouped with the middle range of alternatives related to diversion of total traffic and was grouped with the highest performers related to diversion of truck traffic from existing US 50. It performed well regarding the diversion of SR 3 and SR 7 traffic north of US 50 and will reduce the magnitude of delay to traffic on SR 3 and SR 7 north of US 50. This alternative was also grouped with the middle range of alternatives related to average daily traffic volumes. Given the high traffic performance, reduction of truck traffic and hazardous material deliveries through North Vernon, reduced traffic/pedestrian conflicts at the Jennings County School Complex, improved access to existing and future employment concentrations north of the City of North Vernon, reduced traffic related issues associated with MUTC convoy traffic thru North Vernon, lower residential relocations and loss of access, lower business relocations and loss of access, lower farmland impacts and lower wetland impacts, **Preliminary Alternative A was recommended to be carried forward for additional NEPA analysis. It is also recommended that measures aimed at reducing the right-of-way width from CR 75 W to the Muscatatuck River Bridge (i.e. reduced median width, urban typical section, etc.) with the goal of avoiding and/or minimizing impacts to the potential Section 4(f) resources should be investigated.**

Eastern Section Preliminary Alternative B

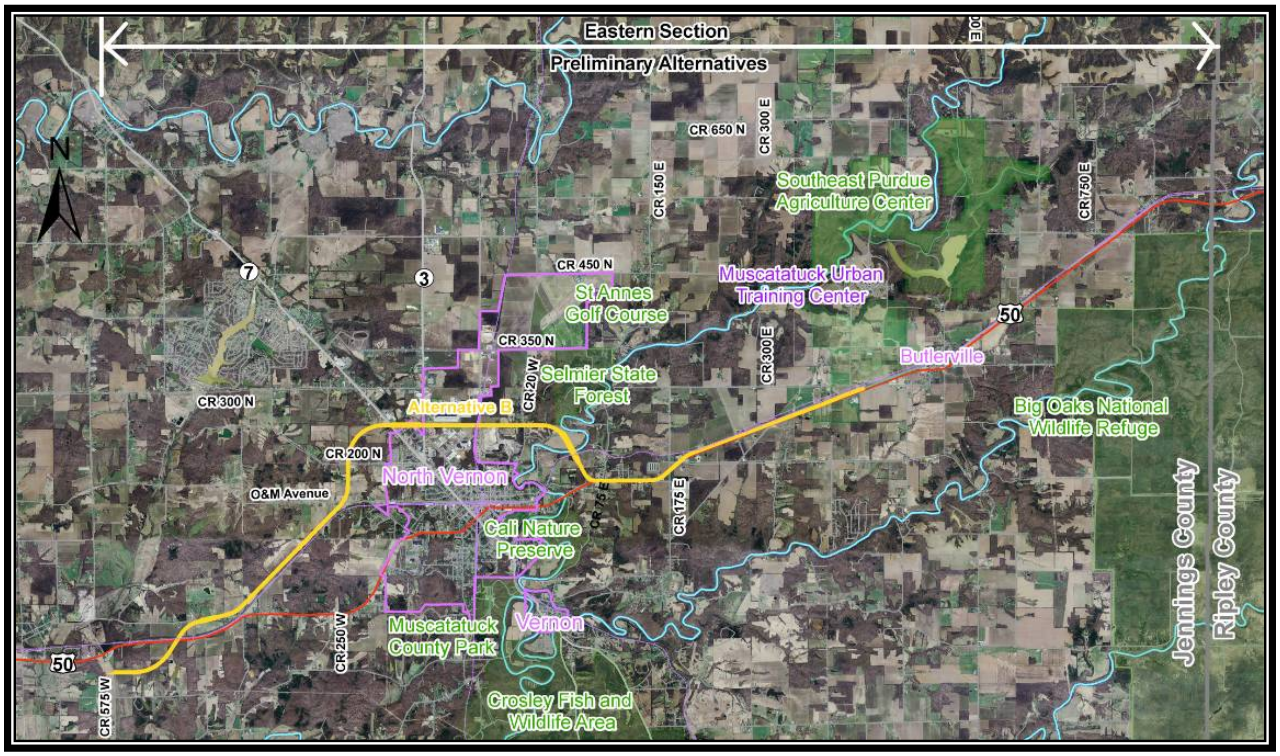

Figure 6.10: Eastern Section Preliminary Alternative B

Preliminary Alternative B is a northern alternative that begins as a rural four-lane limited access facility at CR 575 W where it would connect to any of the Western Section Preliminary Alternatives discussed above. At CR 575 W, it would make a northeasterly turn and bridge over the existing US 50 roadway and the CSX Railroad. It continues in a northeasterly direction, paralleling the north right-of-way for the CSX railroad. It makes a northerly turn at O&M Avenue, and continues north to approximately 0.5 mile north of CR 200 N where it makes an easterly turn and transitions to an urban five-lane, limited access facility. It continues east crossing SR 7 and then SR 3 approximately 0.5 mile north of CR 200 N. East of SR 3 the alternative transitions to a rural four-lane, limited access facility. It continues eastward to just east of CR 20 W (N. Base Road) where it makes a southeasterly turn, and bridges the Vernon Fork of the Muscatatuck River and the CSX Railroad. The alternative makes an easterly turn and bridges the CSX Railroad and existing US 50 pavement and joins existing US 50 just east of Deer Creek Road where it remains a rural four-lane, limited access facility. It continues northeastward as a rural four-lane, limited access facility along existing US 50 to just east of the MUTC entrance at US 50 where it transitions to a two-lane facility to match existing US 50. In the eastern section of the alternative, after it rejoins existing US 50, the alternative would be parallel and adjacent to the CSX railroad right-of-way. It would utilize the location of existing US 50 as future westbound lanes and future eastbound lanes for the alternative would be constructed south of the existing roadway. The alternative is approximately 12.6 miles in length. This alternative closely represents the Near North bypass alternative identified in the Jennings County Thoroughfare Plan

Phase 1: Purpose and Need

Traffic Congestion: This alternative would reduce congestion on US 50. It achieves a minimum acceptable LOS D for US 50 traffic movements in the year 2030 at the Norris Avenue and Madison

Street/Short Street/5th Street signalized intersections. It is the only build alternate which results in an acceptable LOS at the US 50 and SR 3/SR 7 (State Street) signalized intersection. The alternative also achieves acceptable LOS in the year 2030 for all eastbound and westbound US 50 traffic movements and all of the intersecting roadway northbound and southbound traffic movements at the eight significant unsignalized intersection approaches with the exception of the southbound Brownstown Road traffic movement. Additional intersection analysis at this location would be required to determine specific improvements necessary to improve the intersection LOS. This alternative achieves a minimum acceptable mainline LOS on most of the segments. The exception is between Main Street and the Ripley County Line (approximately 5.7 miles), where the LOS in this rural area is a substandard D in the year 2030. The alternative terminates west of this segment and transitions from the proposed four-lane facility to the existing two-lane facility. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the highest performers of alternatives related to diversion of total traffic. It also performed well and was grouped with the highest performers related to diversion of truck traffic from existing US 50. The diversion of SR 3 and SR 7 traffic to the new terrain preliminary alternatives north of US 50 will also reduce the magnitude of delay to traffic on SR 3 and SR 7 north of US 50. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the middle range of alternatives related to average daily traffic volumes. Traffic impediments will be reduced with the elimination of two traffic signals and no at-grade railroad crossings will exist for traffic diverted from US 50.

Traffic Safety: This alternative would improve safety on existing US 50. An indicator of improved safety is the extent to which vehicle-miles of travel shift from lower functional class facilities with higher crash rates to high functional class facilities with lower crash rates. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the middle range of alternatives related to reduction of crashes for a 30 year period after the opening of the facility over the No-Build Condition. Additionally, for this alternative there is a reduction in total truck traffic in downtown North Vernon on US 50 and an associated reduction in hazardous materials deliveries through downtown.

***Facilitate Access*:** This alternative would facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. It would improve of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon and also improve the LOS on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50. The alternative is close enough to North Vernon to have a positive impact on traffic by diverting traffic from existing US 50 but not too close to preclude future economic development to north of North Vernon. It does not serve the industrial park expansion to north as well as the more northern bypass preliminary alternatives (Preliminary Alternatives A, C and D).

***Consistency with Transportation Plans*:** This alternative is consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors and achieves the design standards for a "statewide mobility corridor". It is also consistent with the recommendation of a four-lane, limited access facility around North Vernon (as set forth in the Thoroughfare Plan component of the Jennings County Comprehensive Plan.

***Enhance National Security*:** This alternative would enhance national security. There would be a reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. This is accomplished by improving the mobility and reducing traffic congestion as described above.

Preliminary Alternative B meets the purposes and needs identified for this project. This alternative was advanced to Phase 2 of the screening process.

Phase 2: Socio-Economic and Environmental Impacts

The potential socio-economic and environmental impacts and total cost estimates associated with Preliminary Alternative B are listed in Table 6.2. This alternative is approximately 12.6 miles long and has an associated estimated Total Cost of $156.7 million. It would result in a substantial amount of relinquishment of US 50 to local agencies.

This alternative would require an estimated 448 acres of new right-of-way, of which 87 acres are forested, 0.8 acres are wetlands, 3 acres are floodplains, and 215 acres are farmland. Approximately 13 streams would be crossed by the alternative. It would result in approximately 66 residential, 16 businesses, and one farm relocation and would also result in 6 residential and two business loss of property access. This alternative would have no impact hazardous material sites and would not have impacts to State Forest Lands or to City/County Parks.

This alternative could potentially impact three Contributing properties, one farm (Survey 015 in Center Township) on CR 20 W, north of US 50, the William H. Haines Farm (Survey 022 in Spencer Township), and a house (Survey 011 in Center Township) on CR 75 W, north of US 50. All of these properties are possible Section 106 impacts. There are no potential Section 4(f) impacts associated with this alternative.

Conclusion

A comparative analysis of impacts of other Eastern Section Preliminary Alternatives as summarized in Table 6.2 was completed. While this alternative has relatively low impacts to natural environment resources, it has higher associated human environment impacts related to residential and business relocations and loss of property access and potential historic property impacts. Regarding traffic performance, this alternative will require further improvements to the signalized intersection of SR 3/SR 7 and to the northbound and southbound traffic movements at Brownstown Road improve the LOS of the intersections. When compared to the other North Vernon bypass preliminary alternatives, this alternative was grouped with the highest performers related to diversion of total traffic and was grouped with the highest performers related to diversion of truck traffic from existing US 50. It performed well regarding the diversion of SR 3 and SR 7 traffic north of US 50 and will reduce the magnitude of delay to traffic on SR 3 and SR 7 north of US 50. This alternative was also grouped with the middle range of alternatives related to average daily traffic volumes. Given the high traffic performance, reduction of truck traffic and hazardous material deliveries through North Vernon, reduced traffic/pedestrian conflicts at the Jennings County School Complex, improved access to existing and future employment concentrations north of the City of North Vernon, reduced traffic related issues associated with MUTC convoy traffic thru North Vernon, lower farmland impacts, lower wetland impacts and lower floodplain impacts, **Preliminary Alternative B was recommended to be carried forward for additional NEPA analysis**.

Eastern Section Preliminary Alternative C

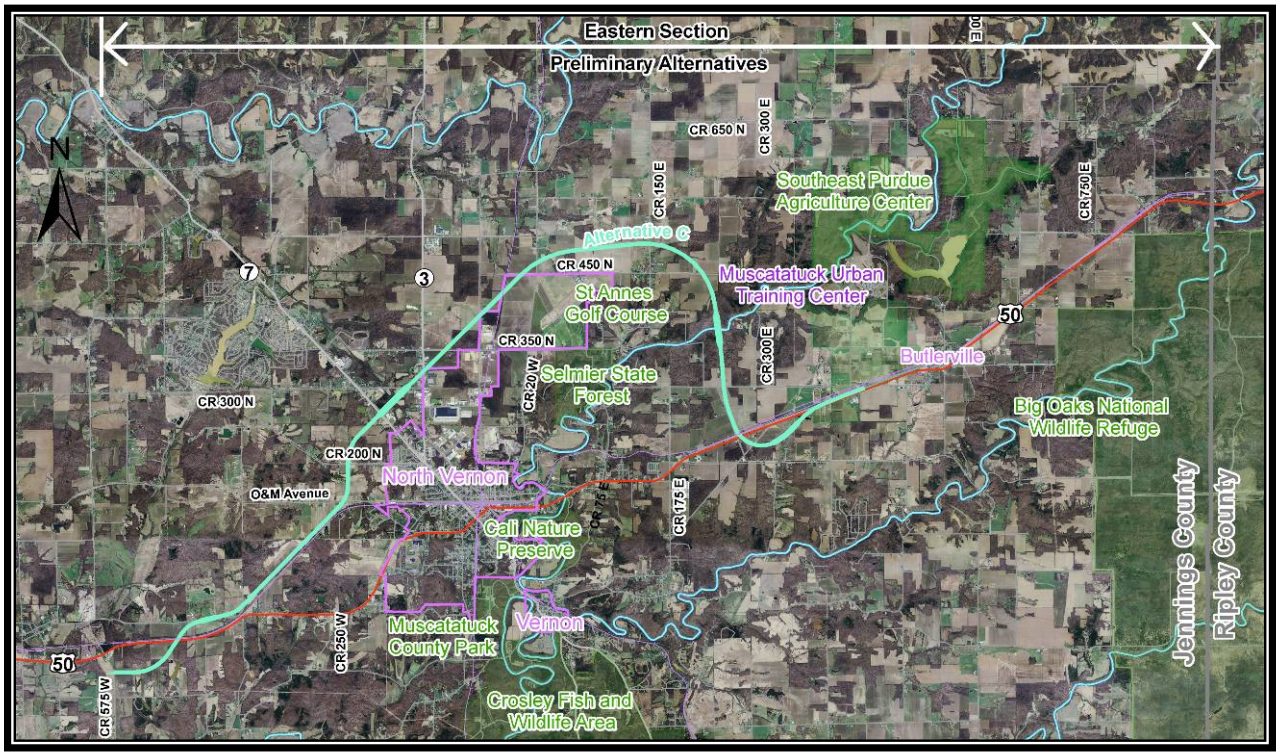

Figure 6.11: Eastern Section Preliminary Alternative C

Preliminary Alternative C is a northern alternative that begins as a rural four-lane limited access facility at CR 575 W where it would connect to any of the Western Section Preliminary Alternatives discussed above. At CR 575 W, it would make a northeasterly turn and bridge over the existing US 50 roadway and the CSX Railroad. It continues in a northeasterly direction, paralleling the north right-of-way for the CSX railroad. It makes a northerly turn at O&M Avenue, and continues north to approximately 0.5 mile north of CR 200 N where it makes a northeasterly turn and transitions to an urban five-lane, limited access facility. It continues northeast crossing SR 7 approximately 0.5 mile north of CR 200 N then crosses SR 3 just south of CR 350 N where it transitions to a rural four-lane, limited access facility. It continues northeasterly, crossing CR 450 N, and then turns in an easterly direction just north of the North Vernon Airport. It continues easterly to just east of CR 150 E where it makes a southerly turn and crosses the Vernon Fork of the Muscatatuck River. It continues southerly bridging the CSX Railroad and existing US 50 just west of CR 300 E. The alternative then makes a northeasterly turn and rejoins the existing US 50 alignment approximately ¼ mile west of the MUTC entrance where it remains a rural four-lane, limited access facility. It continues northeastward as a rural four-lane, limited access facility along existing US 50 to just east of the MUTC entrance at US 50 where it transitions to a two-lane facility to match existing US 50. In the eastern section of the alternative, after it rejoins existing US 50, the alternative would be parallel and adjacent to the CSX railroad right-of-way. It would utilize the location of existing US 50 as future westbound lanes and future eastbound lanes for the alternative would be constructed south of the existing roadway. The alternative is approximately 15.0 miles in length.

Phase 1: Purpose and Need

Traffic Congestion: This alternative would reduce congestion on US 50. It achieves a minimum acceptable LOS D for US 50 traffic movements in the year 2030 at the Norris Avenue and Madison Street/Short Street/5th Street signalized intersections. The US 50 at SR 3/SR 7 (State Street) signalized intersection would operate at a substandard LOS. Some further improvement (reduction of 13 seconds in vehicle delay) will be needed at the signalized intersection of SR 3/SR 7 to improve the LOS from E to D. The alternative also achieves acceptable LOS in the year 2030 for all eastbound and westbound US 50 traffic movements and all of the intersecting roadway northbound and southbound traffic movements at the eight significant unsignalized intersection approaches with the exception of the southbound Brownstown Road traffic movement. Additional intersection analysis at this location would be required to determine specific improvements necessary to improve the intersection LOS. This alternative achieves a minimum acceptable mainline LOS on most of the segments. The exception is between Main Street and the Ripley County Line (approximately 5.7 miles), where the LOS in this rural area is a substandard D in the year 2030. The alternative terminates west of this segment and transitions from the proposed four-lane facility to the existing two-lane facility. When compared to the other North Vernon bypass preliminary alternatives, this alternative is the worst in diversion of total traffic and is the worst at diversion of truck traffic from existing US 50. This is largely due to its circuitous route east of SR 3. However, the diversion of SR 3 and SR 7 traffic to the new terrain preliminary alternative north of US 50 will reduce the magnitude of delay to traffic on SR 3 and SR 7 north of US 50. When compared to the other North Vernon bypass preliminary alternatives, this alternative carries the lowest average traffic volumes and drops under 5,000 vehicles per day as it crosses the Muscatatuck River. Traffic impediments will be reduced with the elimination of two traffic signals and no at-grade railroad crossings will exist for traffic diverted from US 50. Additionally, the route geometry associated with the northeastward alignment of this alternative north of North Vernon would require more extensive local road realignments to improve the angle of intersection than the other bypass alternatives.

Traffic Safety: This alternative would improve safety on existing US 50. An indicator of improved safety is the extent to which vehicle-miles of travel shift from lower functional class facilities with higher crash rates to high functional class facilities with lower crash rates. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the middle range of alternatives related to reduction of crashes for a 30 year period after the opening of the facility over the No-Build Condition. Additionally, for this alternative there is a reduction in total truck traffic in downtown North Vernon on US 50 and an associated reduction in hazardous materials deliveries through downtown.

***Facilitate Access*:** This alternative would facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. It would improve of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon and also improve the LOS on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50. The alternative is close enough to North Vernon to have a positive impact on traffic by diverting traffic from existing US 50 but not too close to preclude future economic development to north of North Vernon. It serves the industrial park expansion to north better than many of the other more southern bypass preliminary alternatives (Preliminary Alternatives A, B and E); however, it may have negative effects relative to expansion of the North Vernon Airport due to its close proximity, although a southward extension of runways is unlikely due existing urban structures. The northeastward alignment of this alternative as it passes through the future industrial area north of North Vernon diagonally divides some of the property and could reduce the usable expansion area.

***Consistency with Transportation Plans*:** This alternative is consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors and achieves the design standards for a "statewide mobility corridor". It is also consistent with the recommendation of a four-lane, limited access facility around North Vernon (as set forth in the Thoroughfare Plan component of the Jennings County Comprehensive Plan.

***Enhance National Security*:** This alternative would enhance national security. There would be a reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. This is accomplished by improving the mobility and reducing traffic congestion as described above.

Preliminary Alternative C meets the purposes and needs identified for this project. This alternative was advanced to Phase 2 of the screening process.

Phase 2: Socio-Economic and Environmental Impacts

The potential socio-economic and environmental impacts and total cost estimates associated with Preliminary Alternative C are listed in Table 6.2. This alternative is approximately 15.0 miles long and has an associated estimated Total Cost of $180.2 million. It would result in a substantial amount of relinquishment of US 50 to local agencies.

This alternative would require an estimated 552 acres of new right-of-way, of which 136 acres are forested, 7.4 acres are wetlands, 6 acres are floodplains, and 357 acres are farmland. Approximately 16 streams would be crossed by the alternative. It would result in approximately 33 residential, 5 businesses, and one farm relocation and would result in 1 residential and no business loss of property access. This alternative would have no impacts to hazardous material sites and would not impact State Forest Lands or City/County Parks.

This alternative could potentially impact one Contributing property, the William H. Haines Farm (Survey 022 in Spencer Township). This property is a possible Section 106 impact. There are no potential Section 4(f) impacts associated with this alternative.

Conclusion

A comparative analysis of impacts of other Eastern Section Preliminary Alternatives as summarized in Table 6.2 was completed. While this alternative has relatively low impacts to the human environment, it is the worst traffic performer of the bypass preliminary alternatives and has higher associated natural environment impacts related to farmland impacts, forest impacts and wetland impacts. Regarding traffic performance, this alternative will require further improvements to the signalized intersection of SR 3/SR 7 (State Street) and to the southbound traffic movement at Brownstown Road to improve the LOS of the intersections. When compared to the other North Vernon bypass preliminary alternatives, this alternative was the worst performer related to diversion of total traffic and the diversion of truck traffic from existing US 50. This is largely due to its circuitous route east of SR 3. The diversion of SR 3 and SR 7 traffic to the new terrain preliminary alternative north of US 50 will reduce the magnitude of delay to traffic on SR 3 and SR 7 north of US 50. When compared to the other North Vernon bypass preliminary alternatives, this alternative carries the lowest average traffic volumes. Additionally, the route geometry associated with the northeastward alignment of this alternative north of North Vernon would require more extensive local road realignments to improve the angle of intersection than the other bypass alternatives. The alternative results in a reduction of truck traffic and hazardous material deliveries through North Vernon, reduced traffic/pedestrian conflicts at the Jennings County School Complex, reduced traffic related issues associated with MUTC convoy traffic thru North Vernon and improved access to existing and future employment concentrations north of the City of North Vernon although the northeastward alignment of this alternative as it passes through the future industrial area north of North Vernon diagonally divides some of the property and could reduce the usable expansion area. Given the poor traffic performance and high natural environment impacts, **Preliminary Alternative C was eliminated from further consideration**.

Eastern Section Preliminary Alternative D

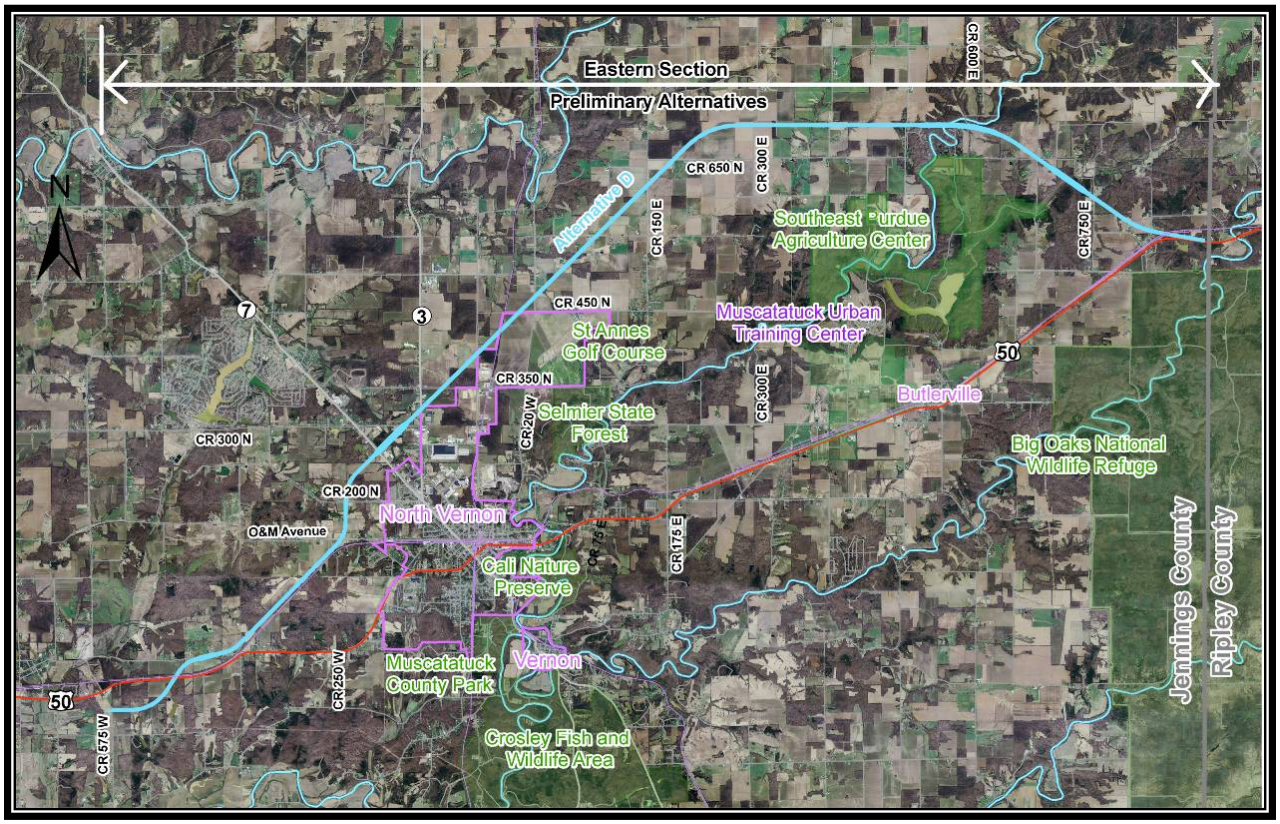

Figure 6.12: Eastern Section Preliminary Alternative D

Preliminary Alternative D is a northern alternative that begins as a rural four-lane limited access facility at CR 575 W where it would connect to any of the Western Section Preliminary Alternatives discussed above. At CR 575 W, it would make a northeasterly turn and bridge over the existing US 50 roadway and the CSX Railroad. It continues in a northeasterly direction, paralleling the north right-of-way for the CSX railroad. It makes a northerly turn at O&M Avenue, and continues north to approximately 0.5 mile north of CR 200 N where it makes a northeasterly turn and transitions to an urban five-lane, limited access facility. It continues northeast crossing SR 7 approximately 0.5 mile north of CR 200 N then crosses SR 3 just south of CR 350 N where it transitions to a rural four-lane, limited access facility. It continues northeasterly to a point approximately 0.5 mile north of CR 650 N and approximately 0.5 mile west of CR 300 E where it turns in an easterly direction. It continues easterly just north of the Southeast Purdue Agricultural Center (SEPAC) and the MUTC, crosses the Vernon Fork of the Muscatatuck River just west of CR 600 E, and then makes a southeasterly turn just east of CR 600 E. It continues southeasterly again crossing the Vernon Fork of the Muscatatuck River near CR 750 E and bridging the CSX Railroad and existing US 50 just west of CR 830 E. The alternative then makes an easterly turn, rejoins existing US 50 approximately ½ mile west of the Ripley/Jennings County Line where it transitions to a two-lane facility to match existing US 50 and terminates at the Jennings/Ripley County Line. The alternative is approximately 18.8 miles in length.

Phase 1: Purpose and Need

Traffic Congestion: This alternative would reduce congestion on US 50. It achieves a minimum acceptable LOS D for US 50 traffic movements in the year 2030 at the Norris Avenue and Madison Street/Short Street/5th Street signalized intersections. The US 50 at SR 3/SR 7 (State Street) signalized

intersection would operate at a substandard LOS. Some further improvement (reduction of 15 seconds in vehicle delay) will be needed at the signalized intersection of SR 3/SR 7 (State Street) to improve the LOS from E to D. The alternative also achieves acceptable LOS in the year 2030 for all eastbound and westbound US 50 traffic movements and all of the intersecting roadway northbound and southbound traffic movements at the eight significant unsignalized intersection approaches with the exception of the southbound Brownstown Road traffic movement. Additional intersection analysis at this location would be required to determine specific improvements necessary to improve the intersection LOS. This alternative is the only to achieve acceptable LOS on all mainline segments. This is due to this alternative being a four-lane facility on new alignment around Butlerville while all other alternatives terminate west of Butlerville and maintain the existing alignment as a two-lane facility through Butlerville. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the middle range of alternatives related to diversion of total traffic. It also performed well and was grouped with the highest performers related to diversion of truck traffic from existing US 50. This is largely due to its distance away from existing US 50. The diversion of SR 3 and SR 7 traffic to the new terrain preliminary alternatives north of US 50 will also reduce the magnitude of delay to traffic on SR 3 and SR 7 north of US 50. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the middle range of alternatives related to average daily traffic volumes. Traffic impediments will be reduced with the elimination of two traffic signals and no at-grade railroad crossings will exist for traffic diverted from US 50.

Traffic Safety: This alternative would improve safety on existing US 50. An indicator of improved safety is the extent to which vehicle-miles of travel shift from lower functional class facilities with higher crash rates to high functional class facilities with lower crash rates. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the middle range of alternatives related to reduction of crashes for a 30 year period after the opening of the facility over the No-Build Condition. Additionally, for this alternative there is a reduction in total truck traffic in downtown North Vernon on US 50 and an associated reduction in hazardous materials deliveries through downtown.

***Facilitate Access*:** This alternative would facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. It would improve of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon and also improve the LOS on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50. The alternative is close enough to North Vernon to have a positive impact on traffic by diverting traffic from existing US 50 but not too close to preclude future economic development to north of North Vernon. It serves the industrial park expansion to north better than many of the other more southern bypass preliminary alternatives (Preliminary Alternatives A, B and E); however, it may have negative effects relative to expansion of the North Vernon Airport due to its close proximity, although a southward extension of runways is unlikely due existing urban structures.

***Consistency with Transportation Plans*:** This alternative is consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors and achieves the design standards for a "statewide mobility corridor". It is also consistent with the recommendation of a four-lane, limited access facility around North Vernon (as set forth in the Thoroughfare Plan component of the Jennings County Comprehensive Plan.

***Enhance National Security*:** This alternative would enhance national security. There would be a reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. This is accomplished by improving the mobility and reducing traffic congestion as described above.

Preliminary Alternative D meets the purposes and needs identified for this project. This alternative was advanced to Phase 2 of the screening process.

Phase 2: Socio-Economic and Environmental Impacts

The potential socio-economic and environmental impacts and total cost estimates associated with Preliminary Alternative D are listed in Table 6.2. This alternative is approximately 18.8 miles long and has an associated estimated Total Cost of $212.1 million. It would result in the greatest length of US 50 relinquished to local agencies.

This alternative would have higher associated natural impacts than any other bypass alternative and would require an estimated 718 acres of new right-of-way, of which 216 acres are forested, 9.9 acres are wetlands, 14 acres are floodplains and 451 acres are farmland. Approximately 21 streams would be crossed by the alternative. It would result in approximately 41 residential, no businesses, and three farm relocations and would result in 2 residential and no business loss of property access. This alternative would have no impacts to hazardous material sites and would not have impacts to State Forest Lands or to City/County Parks.

This alternative could potentially impact four Contributing properties consisting of one house, one cemetery, and two farms. The house is the Hiram Elliott House (Survey 002 in Campbell Township). The second property is the Otter Creek Cemetery located on CR 750 E. The third property is a farm located on 550 N, north of US 50 (Survey 039 in Sand Creek Township). The forth property is the William H. Haines Farm (Survey 022 in Spencer Township). All of these properties are possible Section 106 impacts. There are no potential Section 4(f) impacts associated with this alternative.

Conclusion

A comparative analysis of impacts of other Eastern Section Preliminary Alternatives as summarized in Table 6.2 was completed. While this alternative has relatively low impacts to the human environment, it has higher impacts to potential historic properties, has higher associated natural environment impacts related to farmland impacts, forest impacts, wetland impacts, stream crossings and floodplain impacts. Regarding traffic performance, this alternative will require further improvements to the signalized intersection of SR 3/SR 7 (State Street) and to the southbound traffic movement at Brownstown Road to improve the LOS of the intersections. When compared to the other North Vernon bypass preliminary alternatives, this alternative was grouped with the middle range of alternatives related to diversion of total traffic and was grouped with the highest performers related to diversion of truck traffic from existing US 50. It performed well regarding the diversion of SR 3 and SR 7 traffic north of US 50 and will reduce the magnitude of delay to traffic on SR 3 and SR 7 north of US 50. This alternative was also grouped with the middle range of alternatives related to average daily traffic volumes. The alternative results in a reduction of truck traffic and hazardous material deliveries through North Vernon, reduced traffic/pedestrian conflicts at the Jennings County School Complex, reduced traffic related issues associated with MUTC convoy traffic thru North Vernon and improved access to existing and future employment concentrations north of the City of North Vernon. Given the high traffic performance, reduction of truck traffic and hazardous material deliveries through North Vernon, reduced traffic/pedestrian conflicts at the Jennings County School Complex, improved access to existing and future employment concentrations north of the City of North Vernon, reduced traffic related issues associated with MUTC convoy traffic thru North Vernon, lower residential relocations and loss of access and lower business relocations and loss of access, **Preliminary Alternative D was recommended to be carried forward for additional NEPA analysis.** .

Eastern Section Preliminary Alternative E

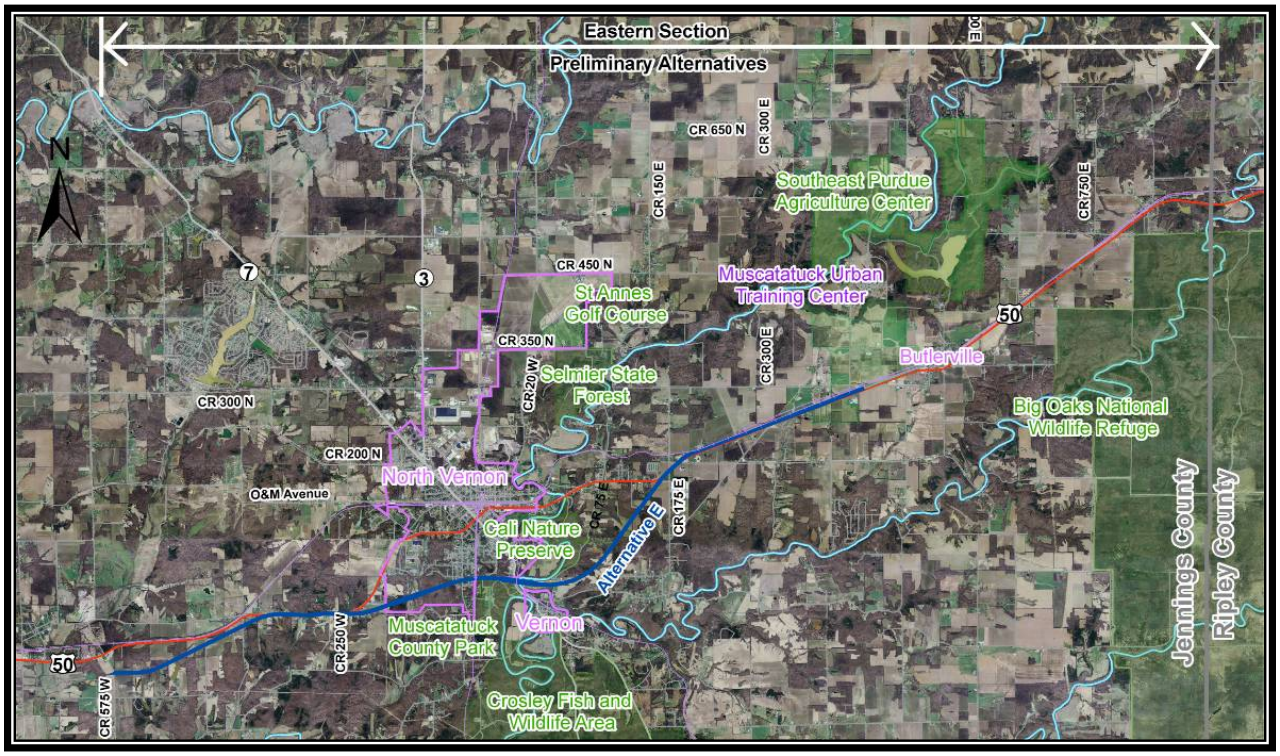

Figure 6.13: Eastern Section Preliminary Alternative E

Preliminary Alternative E is a southern alternative that begins as a rural four-lane limited access facility at CR 575 W where it would connect to any of the Western Section Preliminary Alternatives discussed above. At CR 575 W it would make a northeasterly turn and continue northeasterly to just east of CR 400 W where it would make an easterly turn and rejoin the existing US 50 alignment. It would follow the existing US 50 alignment eastward to CR 250 W where it departs existing US 50 and makes a slight northeasterly turn, just south of the North Vernon Junior/Senior High School complex. The alternative continues in a northeasterly direction to South Norris Avenue where it makes an easterly turn and continues easterly along the north edge of the Muscatatuck County Park. It crosses SR 7/SR 3 and continues in an easterly direction crossing the Madison Railroad with an at-grade crossing and bridging the Vernon Fork of the Muscatatuck River. It continues easterly for approximately 1-mile and then makes a northeasterly turn. The alternative continues northeasterly and rejoins the existing US 50 alignment near CR 175 E where it remains a rural four-lane, limited access facility. It continues northeastward as a rural four-lane, limited access facility along existing US 50 to just east of the MUTC entrance at US 50 where it transitions to a two-lane facility to match existing US 50. In the eastern section of the alternative, after it rejoins existing US 50, the alternative would be parallel and adjacent to the CSX railroad right-of-way. It would utilize the location of existing US 50 as future westbound lanes and future eastbound lanes for the alternative would be constructed south of the existing roadway. The alternative is approximately 11.4 miles in length. This alternative closely represents the South bypass alternative identified in the Jennings County Thoroughfare Plan.

Phase 1: Purpose and Need

Traffic Congestion: This alternative would reduce congestion on US 50. It achieves a minimum acceptable LOS D for US 50 traffic movements in the year 2030 at the Norris Avenue and Madison Street/Short Street/5th Street signalized intersections. The US 50 at SR 3/SR 7 (State Street) signalized intersection would operate at a substandard LOS. Some further improvement (reduction of 51 seconds in

vehicle delay) will be needed at the signalized intersection of SR 3/SR 7 to improve the LOS from F to D. The alternate also achieves acceptable LOS in the year 2030 for all eight significant unsignalized intersection approaches, including Brownstown Road. This alternative achieves a minimum acceptable mainline LOS on most of the segments. The exceptions are between CR 425 W and Main Street and from Main Street the Ripley County Line (approximately 5.7 miles), where the LOS in this rural area is a substandard D in the year 2030. The alternative terminates west of this segment and transitions from the proposed four-lane facility to the existing two-lane facility. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the highest performers related to diversion of total traffic. It also performed relatively well and was grouped with the highest performers related to diversion of truck traffic from existing US 50. It was the lowest of this grouping and only higher that Preliminary Alternative C in truck traffic diversion. This is largely due to the industrial areas being located north of North Vernon. This indicates that three of the four northern new terrain preliminary alternatives are more effective than the southern new terrain preliminary alternative in serving truck traffic to the industrial and regional commercial areas on the north side of North Vernon. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the middle range of alternatives related to average daily traffic volumes. Traffic impediments will be reduced with the elimination of two traffic signals; however, there will be one at-grade railroad crossing (approximately 2 trains per day) located on the east approach of the US 50 and SR3/SR 7 intersection for traffic diverted from US 50. Increased traffic from the north side of North Vernon along SR 3/SR 7 from Madison Street to existing US 50 (Walnut Street), existing US 50 (Walnut Street) from State Street (SR 3/SR 7) to Norris Avenue and Norris Avenue from existing US 50 (Walnut Street) southward to the new terrain preliminary alternative result in greater delays along these roadways. This alternative will have the most significant adverse impact on other roadways drawing additional traffic down SR 3 and SR 7 from the north side of North Vernon to existing US 50. It will also result in traffic increases of more than 70% on Norris Avenue from existing US 50 to the new terrain facility. The alternative is, however, the most effective of the bypass alternatives in removing traffic from US 50 at the Jennings County School Complex.

Traffic Safety: This alternative would improve safety on existing US 50. An indicator of improved safety is the extent to which vehicle-miles of travel shift from lower functional class facilities with higher crash rates to high functional class facilities with lower crash rates. When compared to the other North Vernon bypass preliminary alternatives, this alternative performed well and was grouped with the highest performers related to reduction of crashes for a 30 year period after the opening of the facility over the No-Build Condition. This alternative is the most effective in reducing traffic on the north side of the Jennings County School Complex thereby improving pedestrian and bicycle access as well as vehicular access, and has the potential to provide access to the complex from the south in addition to the current access to the north along existing US 50. Additionally, for this alternative there is a reduction in total truck traffic in downtown North Vernon on US 50 and an associated reduction in hazardous materials deliveries through downtown.

Facilitate Access**:** This alternative would not facilitate access to existing and future employment concentrations in the City of North Vernon and Jennings County. It would not improve of the LOS in the year 2030 for arterial entry routes (US 50, SR 3, and SR 7) to North Vernon or improve the LOS on access routes to industrial and commercial employment concentrations in North Vernon along US 50, SR 3 and SR 7 and in Jennings County along US 50. It fails to serves the industrial park expansion to the north of North Vernon.

Consistency with Transportation Plans**:** This alternative is consistent with the INDOT 2030 Long Range Transportation Plan for Statewide Mobility Corridors and achieves the design standards for a "statewide mobility corridor". It is also consistent with the recommendation of a four-lane, limited access facility around North Vernon (as set forth in the Thoroughfare Plan component of the Jennings County Comprehensive Plan.

***Enhance National Security*:** This alternative would enhance national security. There would be a reduction of travel time between Camp Atterbury and the MUTC and between Crane Division Naval Surface Warfare Center and MUTC. This is accomplished by improving the mobility and reducing traffic congestion as described above.

Preliminary Alternative E meets the purposes and needs identified for this project. This alternative was advanced to Phase 2 of the screening process.

Phase 2: Socio-Economic and Environmental Impacts

The potential socio-economic and environmental impacts and total cost estimates associated with Preliminary Alternative E are listed in Table 6.2. This alternative is approximately 11.4 miles long and has an associated estimated Total Cost of $147.5 million. It would result in a substantial amount of relinquishment of US 50 to local agencies.

This alternative would require an estimated 401 acres of new right-of-way, of which 156 acres are forested, no wetlands, 8 acres are floodplains, and 156 acres are farmland. Approximately 12 streams would be crossed by the alternative. It would result in approximately 52 residential, 5 businesses, and no farm relocations and would result in 17 residential and one business loss of property access. This alternative would have no impact hazardous material sites and would not impact State Forest Lands but would impact one City/County Park, the Muscatatuck County Park.

This alternative could potentially impact one concrete bridge found in Cooper's book. The bridge is the filled-spandrel arch carrying US 50 over Indian Creek. This property is a possible Section 106 impact. This alternative impacts one potential Section 4(f) site, the Muscatatuck County Park. It will take approximately 13 acres from the northern portion of the Muscatatuck County Park. Land use in this area is primarily forested and this impact will likely require the reconfiguration of the main park road and hiking trails.

Conclusion

A comparative analysis of impacts of other Eastern Section Preliminary Alternatives as summarized in Table 6.2 was completed. While this alternative is a good traffic performer related to total traffic and truck traffic diversion and has relatively low impacts to the natural environment, it has high impacts to the human environment, potential Section 4(f) impacts and traffic-related concerns related to significant adverse impact on other roadways drawing additional traffic down SR 3 and SR 7 from the north side of North Vernon to existing US 50 and southward to the alternative. Regarding traffic performance, this alternative will require further improvements to the signalized intersection of SR 3/SR 7 to improve the LOS of the intersection. When compared to the other North Vernon bypass preliminary alternatives, this alternative was grouped with the highest performers related to diversion of total traffic and was grouped with the highest performers related to diversion of truck traffic from existing US 50. It was the lowest of this grouping and only higher that Preliminary Alternative C in truck traffic diversion. This is largely due to the industrial areas being located north of North Vernon. This alternative was also grouped with the middle range of alternatives related to average daily traffic volumes. It results in a reduction of truck traffic and hazardous material deliveries through North Vernon, reduced traffic related issues associated with MUTC convoy traffic thru North Vernon, and is the most effective of the bypass alternatives in removing traffic from US 50 at the Jennings County School Complex. This is the only bypass alternative that has traffic-related concerns related to considerable adverse impact on other roadways that results in significant increases in traffic volumes on SR 3/SR 7 north of existing US 50 (Walnut Street), on existing US 50 (Walnut Street) from State Street (SR 3/SR 7) to Norris Avenue and on Norris Avenue from existing US 50 (Walnut Street) southward to the new terrain preliminary alternative resulting in greater delays along these roadways. It is anticipated that this segment of Norris Avenue will experience traffic increases of more than 70%. This alternative is the only bypass alternative that will have an at-grade railroad crossing (approximately 2 trains per day), located on the east approach of the US 50 and SR7/SR 3 intersection for traffic diverted from US 50. This alternative would not facilitate access to

existing and future employment concentrations in the City of North Vernon and Jennings County as it fails to serves the industrial park expansion to the north of North Vernon. It has potential Section 4(f) impacts to the Muscatatuck County Park, has higher associated residential and business relocations and higher residential and business loss of access.

Given the traffic-related concerns related to considerable adverse impacts on other roadways that results in significant increases in traffic volumes on SR 3/SR 7 north of existing US 50 (Walnut Street) and on Norris Avenue from existing US 50 (Walnut Street) southward to the new terrain preliminary alternative, major roadway improvements (added travel lanes and turn-lanes) necessary along SR 3/SR 7 from the alternative northward to north of existing US 50 (Walnut Street) to accommodate increased traffic volumes, failure to serve the industrial park expansion to the north of North Vernon, the presence of an at-grade railroad crossing (approximately 2 trains per day), potential Section 4(f) impacts, higher residential and business relocations and loss of access, **Preliminary Alternative E was eliminated from further consideration**.

6.3 Summary of Preliminary Alternatives Recommended for Further NEPA Study

For analysis and evaluation purposes, the Study Area was divided into two sections, a Western Section from US 31 eastward to CR 575 W, and an Eastern Section from CR 575 W to the eastern terminus of the project. The dividing line of the two sections, CR 575 W, is the area where the preliminary bypass alternatives around North Vernon begin. For the analysis of impacts related to each of the Preliminary Alternatives, each preliminary alternative was analyzed and evaluated as either a Western Section or an Eastern Section Preliminary Alternative.

6.3.1 Western Section Preliminary Alternatives Recommended for Further NEPA Study

The following Western Section Preliminary Alternatives were recommended for further NEPA study (see Figure 6.14) with the associated additional recommendation. A detailed description of each alternative can be found in Chapter 5.

- **Preliminary Alternative W1**
- **Preliminary Alternative W2**
    - It is also recommended that additional analysis should be completed at the US 50 Bridge over Sixmile Creek with the goal of avoiding and/or minimizing impacts to wetlands and forests.
- **Preliminary Alternative W3**

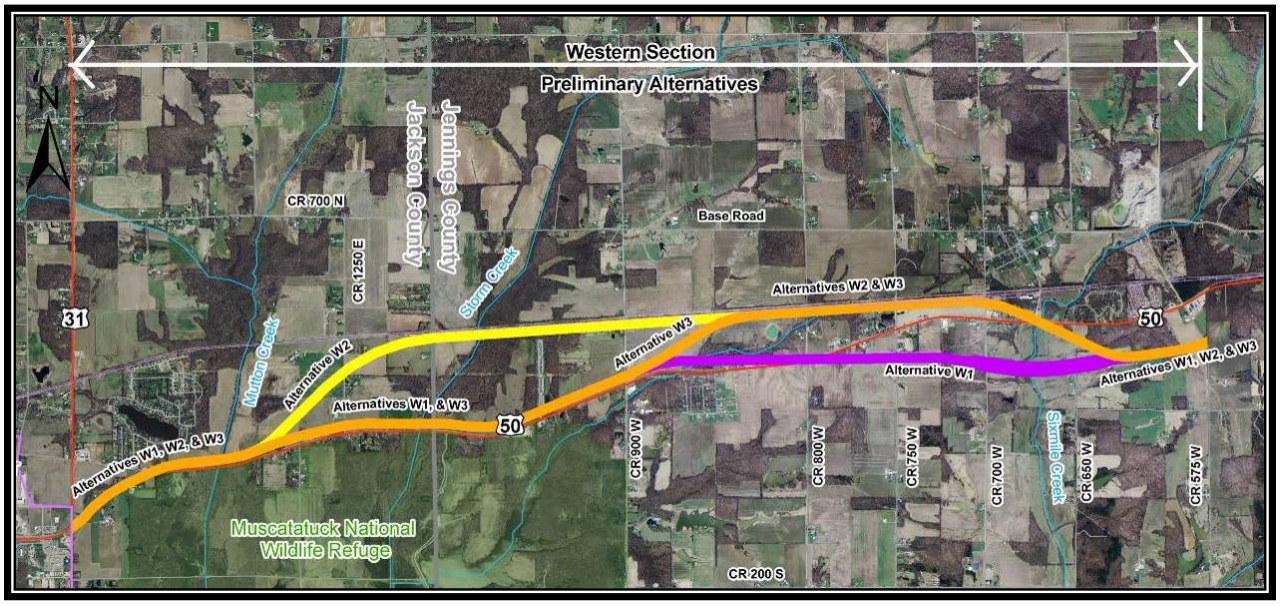

Figure 6.14: Western Section Preliminary Alternatives Recommended for Further NEPA Study (Preliminary Alternatives W1, W2 and W3)

6.3.2 Eastern Section Preliminary Alternatives Recommended for Further NEPA Study

The following Eastern Section Preliminary Alternatives were recommended for further NEPA study (see Figure 6.15) with the associated additional recommendation. A detailed description of each alternative can be found in Chapter 5.

- **Preliminary Alternative A**
    - It is also recommended that measures aimed at reducing the right-of-way width from CR 75 W to the Muscatatuck River Bridge (i.e. reduced median width, urban typical section, etc.) with the goal of avoiding and/or minimizing impacts to the potential Section 4(f) resources should be investigated.
- **Preliminary Alternative B**
- **Preliminary Alternative D**

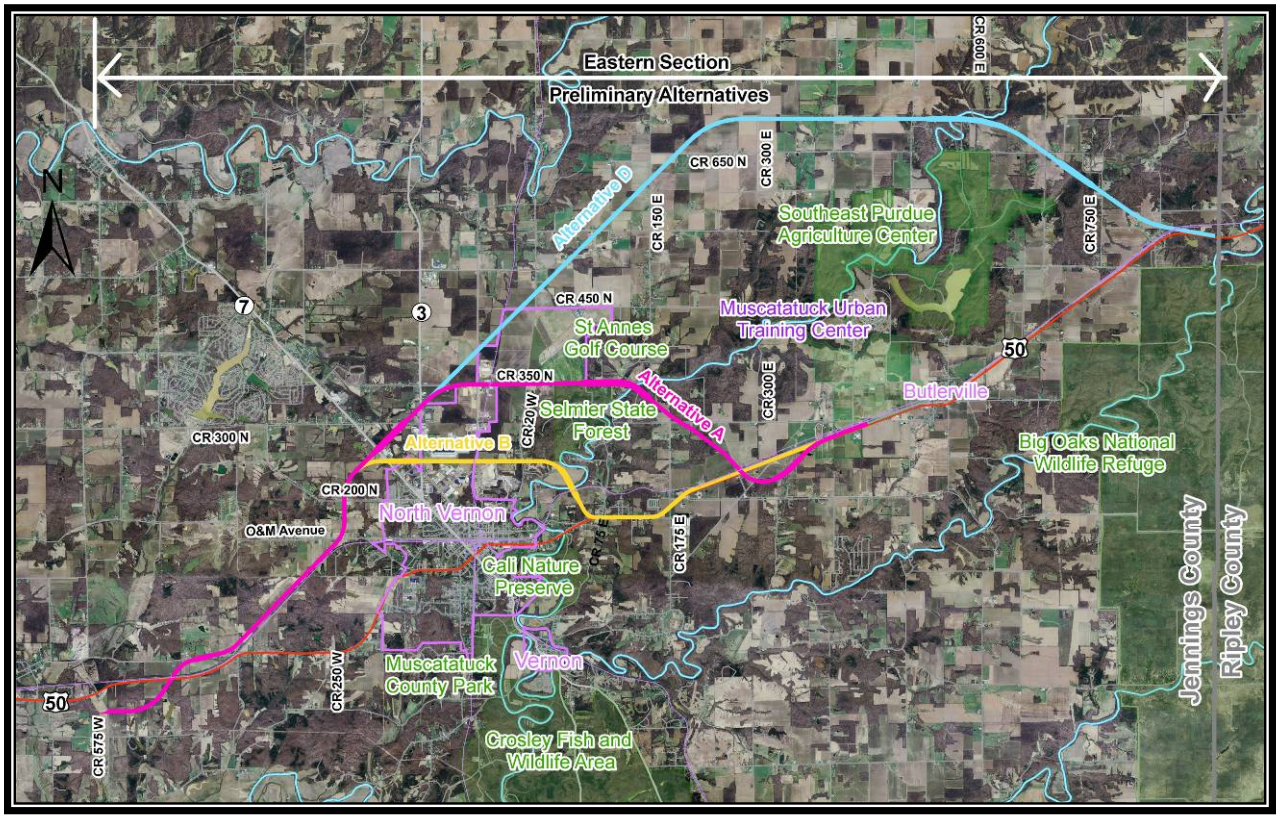

Figure 6.15: Eastern Section Preliminary Alternatives Recommended for Further NEPA Study (Preliminary Alternatives A, B and D)

Based on the Western and Eastern Preliminary Alternative(s) recommendations, the impacts of any Western Section Preliminary Alternative can be added to the impacts of any Eastern Section Preliminary Alternative to determine a summary of impacts for the entire corridor for any Western and Eastern Section Preliminary Alternative pair. Table 6.3 lists the impacts associated with each of the Western and Eastern Section Preliminary Alternatives recommend for further NEPA study. It also lists a minimum and maximum range for each socio-economic/environmental measure. The minimum total was determined by adding the minimum value in the Western Section Preliminary Alternatives columns to the minimum value in the Eastern Section Preliminary Alternative columns for each socio-economic/environmental measure. The maximum total was determined by adding the maximum value in the Western Section Preliminary Alternatives columns to the maximum value in the Eastern Section Preliminary Alternative columns for each socio-economic/environmental measure.

6.3.3 No-Build Alternative

The No-Build (No Action or Do Nothing) Alternative was recommended for further NEPA study. The No-Build Alternative is represented by the existing roadway network plus programmed major roadway improvements in the Project Study Area. While the No-Build Alternative would not address the purpose and need for this project, this alternative will be carried forward for evaluation throughout this study and serve as a baseline when comparing the effectiveness and potential impacts of other alternatives.

6.3.4 US 50 Corridor Recommended Subsequent NEPA Study

Based on the socio-economic and environmental impacts associated with the alternatives, an Environmental Impact Statement (EIS) is recommended for all preliminary alternatives recommended for further NEPA study. For the subsequent EIS, the environmental footprint for each of the recommended preliminary alternatives should accommodate the appropriate rural or urban typical section discussed in Chapter 4 – Definition of Alternatives.

Further communication with the United States Department of Defense and the United States Department of Homeland Security is also recommended to ensure that any necessary coordination activities related to this project and the development of the MUTC are addressed. Finally, it is also recommended that the subsequent EIS should include not only those items required by the NEPA process but should also include an evaluation of:

- Additional available funding sources for the project
- Potential measures aimed at reduction of project costs and at avoidance and minimization of impacts to the human and natural environments
- Potential construction staging or phased project implementation to aid in the determination of which section of the Project Study Area should be improved and/or constructed first
    - Include evaluation of traffic impacts to North Vernon and the rest of the Project Study Area associated with construction staging or phase project implementation
    - Include comments provided by project stakeholders; involved Federal and State agencies; local elected and appointed officials and community members

Table 6.3: Transportation Considerations, Socio-Economic and Environmental Impact Summary

Socio-Economic/ Environmental Measure	Western Section Preliminary Alternatives			Eastern Section Preliminary Alternatives			TOTAL (RANGE)	
	W1	W2	W3	A	B	D	Minimum	Maximum
TOTAL COSTS[1] (Mil. of $)	**73.1**	**75.1**	**74.6**	**163.7**	**156.7**	**212.1**	**229.8**	**287.2**
Construction Costs (Mil. of $)	58.2	59.7	59.3	131.6	126.9	169.5	185.1	229.2
Prelim. Engineering Costs[2] (Mil. of $)	5.8	6.0	5.9	13.2	12.7	17.0	18.5	23.0
Right-of-Way Costs (Mil. of $)	9.1	9.4	9.4	18.9	17.1	25.6	26.2	35.0
LENGTH (miles)	7.0	7.2	7.2	14.0	12.6	18.8	19.6	26.0
TRANSPORTATION CONSIDERATIONS[3]								
Meets Purpose and Need	YES	YES	YES	YES	YES	YES	YES	YES
Total Traffic Diversion Thru North Vernon	M	H	H	M	H	M	M	H
Truck Traffic Diversion Thru North Vernon	M	H	H	H	H	H	M/H	H
Daily Traffic Volume	M	M	M	M	M	M	M	M
Crash Reduction	M	H	H	M	M	M	M	M/H
RELOCATIONS								
Residences Acquired	14	11	17	43	66	41	52	83
Apartment Units Acquired	0	0	0	0	0	0	0	0
Residences Lost Access	1	1	1	9	6	2	3	10
Farms Acquired	2	2	3	1	1	3	3	6
Businesses Acquired	7	5	7	6	16	0	5	23
Businesses Lost Access	0	0	0	0	2	0	0	2
NEW ROW (acres)	252	244	242	492	448	718	690	970
DEVELOPED LAND (acres)	11	8	10	27	64	8	16	75
DEVELOPED LAND, OPEN SPACE[4] (acres)	65	36	55	55	81	42	78	146
FARMLAND (acres)	148	150	144	251	215	451	359	601
GRASSLAND/ HERBACEOUS (acres)	0	0	0	5	0	0	0	5
FOREST (acres)	28	50	33	153	87	216	115	266
OPEN WATER (acres)	0	0	0	1	1	1	1	1
WETLANDS TOTAL (NWI) (acres)	**4.2**	**14.8**	**5.6**	**5.5**	**0.8**	**9.9**	**5.0**	**24.7**
Emergent (acres)	0	0	0	0.6	0	0.3	0	0.6
Scrub/Shrub(acres)	0.2	0	0.2	0	0	0.8	0	1.0
Forested (acres)	4.0	14.8	5.4	4.9	0.8	8.8	4.8	23.6

Socio-Economic/ Environmental Measure	Western Section Preliminary Alternatives			Eastern Section Preliminary Alternatives			TOTAL (RANGE)	
	W1	W2	W3	A	B	D	Minimum	Maximum
STREAMS CROSSED (USGS)	7	10	9	12	13	21	19	31
FLOODPLAINS (IDNR DFIRM) (acres)	23	16	20	10	3	14	19	37
TES RECORDED AREA[5]	0	0	0	2	2	0	0	2
KARST FEATURES (acres)	0	0	0	0	0	4	0	4
HISTORIC PROPERTIES[6]	2	1	1	1	3	4	2	6
HISTORIC DISTRICTS[7]	0	0	0	0	0	0	0	0
RECORDED ARCHAEOLOGICAL SITES	NO	NO	NO	NO	YES	YES	NO	YES
CEMETERIES (USGS)	0	0	0	0	0	1	0	1
FEDERAL REFUGE LANDS	0	0	0	0	0	0	0	0
STATE FOREST LANDS	0	0	0	1	0	0	0	1
NATURE PRESERVES	0	0	0	0	0	0	0	0
CITY/COUNTY PARKS	0	0	0	0	0	0	0	0
OTHER PUBLIC LANDS	0	0	0	2	1	0	0	2
CLASSIFIED FORESTS & WILDLANDS	0	2	1	3	0	6	0	8
CONSERVATION RESERVE PROGRAM (CRP) LANDS	0	0	0	2	1	4	1	4
WILDLIFE HABITAT INCENTIVE PROGRAM (WHIP) LANDS	0	0	0	0	0	0	0	0
PARTNERS FOR FISH & WILDLIFE LANDS	0	0	0	1	0	0	0	1
POTENTIAL SECTION 4F PROPERTIES[8]	0	0	0	2	0	0	0	2
HAZARDOUS MATERIAL SITES	1	0	1	0	0	0	0	1

1 All costs are in Year 2015 dollars. See Section 5.3.1 – Preliminary Cost Estimates – for project cost development information. Total Costs were calculated by summing the estimated construction cost, Preliminary Engineering (design) costs and right-of-way costs for each of the preliminary alternatives. Total Costs associated with each preliminary alternative do not include costs associated with local and/or State roadway improvements associated with the preliminary alternatives or any mitigation measures associated with the project.
2 Preliminary Engineering (design) cost estimates estimated as being 10.0% of the construction cost estimate
3 Transportation Consideration evaluations (H-High, M-Medium, L-Low) indicate the performance of the alternatives relative to each other
4 Includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes
5 Indiana Natural Heritage Database Records
6 Indiana Historic Sites & Structures Inventory (IHSSI) Contributing, Notable, & Outstanding Sites and bridges from Dr. Cooper's books
7 Includes National Register (NR) and IHSSI Historic Districts
8 Includes publicly owned recreation areas, NR listed sites/candidate, and IHSSI Notable and Outstanding sites

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7. PUBLIC OUTREACH, COMMENTS AND COORDINATION

The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT) recognize that a key component in the success of any transportation project depends on many factors, none of which are more essential than the involvement of the local elected and appointed officials, and community members. It is the policy of INDOT to promote public involvement opportunities and information exchange activities in planning, developing, designing, construction, operations, and maintenance of transportation projects. The INDOT public involvement procedures provide opportunities for early and continuing involvement of the public in developing transportation plans, programs, and projects and provide complete public information, timely public notice, and public access to key decisions.

INDOT defines public involvement as two-way communication aimed at providing information to the public and incorporating the views, concerns, and issues of the public in the transportation decision-making process. The public provides input on transportation needs, community concerns, and environmental considerations. INDOT uses this input to help make decisions. An open line of communication between local officials, the public and the Project Management Team is a key component in developing a transportation plan that will best address the concerns of the community. The Project Management Team involved with this project consisted of representatives of INDOT, the FHWA, and the consulting engineering firm of Bernardin, Lochmueller & Associates, Inc. (BLA).

7.1 Public Involvement

The public involvement process begins with the gathering of information from the local officials and community members that will live with the project upon its completion. The process continues by providing information to these same stakeholders and keeping them informed of the project's progress and direction. This exchange of information is a dynamic process that continues throughout the life of the project. The Public Outreach Program utilized for this project is discussed below and more detailed information regarding coordination efforts are summarized in Section 7.2 – Project Milestones and Associated Public Outreach Program. Goals of the Public Involvement Plan include the following:

- Identify potential project stakeholders such as local officials and community members impacted by the project.
- Develop partnering activities that assist with gathering information from stakeholders.
- Foster a positive relationship with stakeholders and keep them informed of the project progress.
- Adequately evaluate potential levels of controversy to address specific concerns and develop context sensitive plans.
- Work together to develop a transportation solution that has broad public support.
- Provide productive forums for members of the public to provide comments.

The US 50 – North Vernon Corridor Planning and Environmental Assessment Study includes an extensive Public Involvement Plan. Elements of the plan consist of:

- Project web site
- News Releases
- Elected Officials Briefings
- Community Leader Interviews

- Community Advisory Committee (CAC) Meetings
- Series of Public Meetings
- Resource Agency Meetings and Coordination
- Section 106 Consulting Party Meetings and Coordination
- Public Involvement Plan (PIP) – Document that describes the process that was utilized for this project to ensure that the public was informed about project-related activities and to elicit the needs and views of the public regarding project-related decisions.
- Coordination Plan – Document that describes the process that was used as the project developed for coordinating public and Federal, State and local agency participation and comments during the environmental review process. The Coordination Plan also included a schedule for the completion of the environmental review process.

7.1.1 Project Website (www.us50northvernon.org)

To provide the public with access to the most current project information available and to provide additional opportunities for public input, the US 50 Project Management Team established and maintained a web site for this project.

This web site provided:

- Project News and Updates
- Specific Project Information Such As:
  - Project Schedules
  - Listings of Project Meetings
  - Copies of Various Project-Related Documents
- Electronic Forms for Comments
- Subscription to a Project Mailing List
- Alignment Information (Maps)
- Links to Other Websites Including INDOT and FHWA

7.1.2 News Releases

The US 50 Project Management Team provided news releases during the study process. The releases were distributed to regional media at key project milestones and were the primary method for informing and involving a wide public audience.

7.1.3 Elected Officials Project Status Briefings

In conjunction with the news releases that were issued during the study process, the Project Management Team held project status briefings for elected officials. These project status briefings were held at a location within the Study Area on the same day that the news releases were distributed. The intent of the

project status briefings was to provide supporting information related to the items presented in the corresponding news release.

7.1.4 Community Leader Interviews

Throughout the project, neighborhood associations, civic organizations, local officials, community and business groups, and any other interested individuals were welcome to meet with members of the US 50 Project Management Team to share information and ideas. Project Management Team members had numerous contacts with stakeholders throughout the project. Additionally, Project Management Team members answered numerous questions and addressed comments throughout the project via e-mail through the project website and by telephone.

7.1.5 Community Advisory Committee Meetings

Early in the development of this project, a Community Advisory Committee (CAC) was formed. The CAC established a method of communication that facilitated distribution of information from the US 50 Project Management Team to the public. The CAC also provided a central location from which the US 50 Project Management Team could gather public input and feedback on possible alternatives. The CAC consisted of approximately 75 members, representing a diverse cross section of the public, elected officials and appointed officials. It was a valuable source of information and direction to the US 50 Project Management Team. As the project progresses to subsequent environmental studies and the areas of impact become more localized, new members representing various groups (i.e. neighborhood or business associations) may be added to the CAC upon their request.

7.1.6 Public Meetings

Open house public meetings were advertised and held at key points in the project's development. The purpose of these meetings was to provide the public with the most current project information available and to provide additional opportunities for public input at various key points (milestones) throughout the study process.

7.1.7 Resource Agency Coordination

The National Environmental Policy Act of 1969 (NEPA) calls for an examination and consideration of impacts of a proposed action on sensitive resources for a project such as the US 50 – North Vernon Corridor Planning and Environmental Assessment Study. These resources include, but are not limited to, floodplains, wetlands, endangered species, historic and archaeological sites and districts, parklands, air quality, wildlife habitat, etc. There also are the transportation needs that must be fulfilled and socio-economic impacts that require consideration. Because of impacts to resources, socio-economic impacts and needed transportation improvements, there is a balanced decision-making process that considers a range of factors of both impacts to the resources and the transportation needs. To produce better environmental decisions, agencies with special expertise or jurisdiction by law were included in the study process. This resource agency involvement began early in the study to identify important issues related to the proposed action and continued throughout the study to avoid conflict later, ensuring full input from the various agencies.

7.1.8 Section 106 Consulting Party Coordination

Congress set forth the importance of historic and archaeological resources upon the fabric of American life as a part of the National Historic Preservation Act (1966) (NHPA), which states that "the historical and cultural foundations of the Nation should be preserved as part of our community life and development in order to give a sense of orientation to the American people." As a result of the NHPA, federal agencies are required to take into account the impact of federal undertakings upon historic properties in the area of the undertaking. Historic properties include buildings, structures, sites, objects, and/or districts within the

Area of Potential Effects. To produce better project decisions, agencies with special expertise or jurisdiction by law were included in the study process. This Section 106 Consulting Party involvement began early in the study to identify important issues related to the proposed action and continued throughout the study to avoid conflict later, ensuring full input from the various agencies.

7.2 Project Milestones and Associated Public Outreach Program

Following the initiation of the project and at various key points (milestones) throughout the study process, the Project Management Team made the most current information related to the study available for review and comment. This included a series of project website updates, news releases, elected official briefings, community leader interviews, CAC meetings, and public meetings. Through the course of the study, Project Management Team members continued to collect and analyze data related to social and environmental impacts for each of the alternatives under consideration. This section will provide a brief discussion of the various milestones (deliverables) associated with the project and the involvement of various stakeholders at each of these milestones. Some of the more substantive changes that were made to the project during each of the key points of the study, as a result of this public outreach program, are also identified. It should be noted that this project followed the SAFETEA-LU Section 6002 requirements so that the steps completed during the EA process would not need to be revisited if the project is elevated to an Environmental Impact Statement (EIS) in the future.

7.2.1 Initiation of Project

INDOT initiated this Corridor Planning and Environmental Assessment Study on October 2, 2006, with the issuance of the Notice to Proceed (NTP). Public outreach activities associated with this phase of the project included opportunities to present an overview of the study process, to present the findings of the Task 1 report – Identification of Existing and Future Conditions and Issues, and to solicit input from local officials and the public. The involvement of various stakeholders during this phase of the project included:

7.2.1.1 News Release

The first news release was distributed on January 29, 2007, and announced the initiation of the US 50 – North Vernon Corridor Planning and Environmental Assessment Study. This initial news release also announced the date, time and location of the first Public Open House for the project.

7.2.1.2 Elected Officials Project Status Briefing

The first elected officials project status briefing was held on February 8, 2007, and provided information related to the plans for the study and the evaluation of existing conditions within the study area. This initial elected officials briefing was held earlier on the same day as the first Public Open House.

7.2.1.3 Community Leader Interviews

Community Leader interviews/meetings associated with this phase of the project included those listed in Table 7.1 below:

Table 7.1: Stakeholder Meetings for Project Initiation

Date	Organization/Group/Individual	Meeting Topic
11/22/06	Elected Officials and Major Traffic Generators	Plans for Study
1/11/07	Indiana National Guard	Plans for Study

7.2.1.4 Community Advisory Committee (CAC) Meeting

The first CAC meeting was held on March 22, 2007. This meeting was conducted as a combined Consulting Party and Community Advisory Committee meeting. Participants were presented with a PowerPoint presentation of a "draft" range of preliminary alternatives that would be included in the study and identified the purposes and needs for the project. Participants were also given informational handouts and viewed display boards featuring maps of the project study area and "draft" preliminary alternatives. Project Management Team members answered questions and addressed comments following the presentation. Table 7.2 identifies those representatives of the CAC that were invited to and those that attended the meeting.

Table 7.2: March 22, 2007 CAC Meeting Attendees (Project Initiation)

Name	Organization	Invited	Attended
Mr. John Hall	Mayor, City of North Vernon	X	X
Mr. Dan Wright	Mayor, Town of Vernon	X	X
Mr. James Bullard	Mayor, City of Seymour	X	X
Mr. David Shaw	North Vernon City Council	X	X
Mr. Thomas Speer	North Vernon City Council		X
Mr. Michael Jordan	Seymour City Council	X	
Mr. Mike Weir	Jackson County Planning Commission	X	
Mr. Charles Murphy	Jackson County Council	X	
Mr. Howard Malcomb	Jennings County Council	X	
Mr. Jim Lamb	Jennings County Council	X	
Mr. Edward Maschino	Jennings County Council	X	X
Mr. Robert Wilhite	Jennings County Board of Commissioners	X	
Mr. Gary Darlage	Jackson County Board of Commissioners	X	
Mr. Wendell Abell	Economic Development Corporation		X
Ms. Kathy Ertel	Economic Development Corporation	X	X
Mr. Albert Jackson	Economic Development Corporation	X	X
Mr. Oscar Elsner	Economic Development Corporation	X	X
Mr. Jim Plump	Jackson County Economic Development Corporation	X	
Mr. Chris Ertel	IC EDC/Home Federal	X	X
Mr. Corey Carr	Columbus Economic Development	X	
Ms. Susan Anderson	Chamber of Commerce	X	
Mr. Bill Bailey	Chamber of Commerce	X	X
Mr. Jeff Morning	Chamber of Commerce	X	
Colonel Michael McGowen	US Army	X	
Mr. Edward Biehle	Biehle, INC.	X	
Mr. Tim Grady	Lowe's Distribution Center	X	
Mr. Tim Schumpe	Wal-Mart Distribution Center (Store #6817)	X	
Mr. Michale Bushong	Jennings County School Corporation	X	
Dr. Robert Schmielau	Seymour Community Schools District	X	
Mr. Randy Kerkhoff	Seymour Community Schools District		X

Name	Organization	Invited	Attended
Ms. Julie Barry	SIRPC	X	
Ms. Cheryl Trisler	Jennings County Area Planning Commission	X	X
Mr. Jeff Fish	Jennings NW Regional Utility	X	
Mr. Max Tuttle	Hayden Utility	X	
Mr. Bill Reichenbach	North Vernon Utilities	X	X
Mr. David McCorvie	North Vernon Utilities		X
Sheriff Steve Hoppock	Jennings County Sheriff's Department	X	
Mr. Dave Gerth	Jennings County 911	X	
Chief James Webster	North Vernon Police	X	
Chief Rick McGill	North Vernon Fire Department	X	
Mr. Dennis Brasher	Jackson County Ambulance Service	X	
Chief Marc Lahrman	Jackson County Sheriff's Department	X	
Lieutenant Mark Davis	Indiana State Police - Seymour District 43	X	
Chief Craig Hayes	Seymour Fire Department	X	
Ms. Janice Campbell	Jennings County Senior Center	X	
Mr. Vorice Fischvogt	Homeless Coordinating Council	X	X
Mr. Dave Maynard	Country Squire Lakes Village	X	
Mr. Tom Moore	Friends of the Muscatatuck River	X	
Ms. Lynn Dennis	Nature Conservancy	X	
Mr. Marc Webber	Muscatatuck National Wildlife Refuge	X	X
Mr. Joe Robb	Big Oaks National Wildlife Refuge	X	X
Mr. Dan Matiatos	Big Oaks National Wildlife Refuge		X
Mr. Larry Alsop	Crosley Fish and Wildlife Area	X	
Mr. Robert McGriff	Selmier State Forest	X	X
Mr. Ken Knouf	US Army – Jefferson Proving Grounds		X
Mr. Paul Cloud	US Army – Jefferson Proving Grounds		X
Mr. Ralph Manlief	Jennings County Farm Bureau	X	
Mr. Steve Marsh	Jennings County Farm Bureau	X	X
Mr. Paul Newkirk	Jackson County Farm Bureau	X	
Mr. Nick McClain	INDOT Aeronautics	X	
Mr. Don Biehle	Southeast Purdue Agricultural Center	X	X
Representative David Cheatham	State of Indiana	X	
Senator Johnny Nugent	State of Indiana	X	
Senator Evan Bayh	State of Indiana	X	
Senator Richard Lugar	State of Indiana	X	
Representative Baron Hill	State of Indiana	X	
Mr. Jerry Hartsell	City of Seymour Engineer	X	X
Mr. Brad Bender	North Vernon City Engineer - FPBH	X	
Mr. Jason Fee	Jackson County Highway Engineer	X	

Name	Organization	Invited	Attended
Mr. Michael Garris	Jackson County Highway Supervisor	X	
Mr. Michael Magner	Jennings County Highway Engineer - FPBH	X	X
Mr. Derik Marshall	Resident	X	
Mr. Howard Malcomb	North Vernon Airport	X	X
Ms. Marie Shepherd	Hayden Water Association	X	
Mr. Robert DeCamp	Resident		X
Mr. Matthew Bauguess	Resident		X

7.2.1.5 Public Meeting

The first public open house was held on February 8, 2007, at the North Vernon Education and Training Center in North Vernon, Indiana. Approximately 100 people were in attendance at the meeting. Participants were presented with a PowerPoint presentation, given informational handouts and viewed display boards featuring maps of the project study area. Project Management Team members answered questions and addressed comments following the presentation.

7.2.1.6 Agency Coordination

A Coordination Plan was developed for this project that described the process that would be utilized as the project developed for coordinating public and Federal, State and local agency participation and comment during the environmental review process. The Coordination Plan also included a schedule for the completion of the environmental review process. An Early Coordination Packet was issued on January 31, 2007. An invitation to be a Participating Agency, the Coordination Plan and the Public Involvement Plan was submitted to the following agencies and organizations on June 8, 2007:

Federal Agencies

- United States Army Corp of Engineers (USACE), Louisville District
- United States Department of Interior
  - National Parks Service
  - Office of Environmental Policy and Compliance
  - Fish and Wildlife Service (USFWS), Bloomington Field Office
- Advisory Council on Historic Preservation (ACHP)
- United States Department of Agriculture (USDA)
  - Natural Resources Conservation Service (NRCS)
  - Natural Resources and Environment
- United States Environmental Protection Agency (USEPA), Region 5
- United States Department of Energy (US DOE)
- United States Department of Commerce (US DOC)
- Federal Emergency Management Agency, Region 5 (FEMA)
- United States Department of Housing and Urban Development (US HUD)

- Center for Disease Control (CDC)
- Federal Aviation Administration (FAA)
- Federal Railroad Administration (FRA)
- United States Department of Defense (US DOD)
- United States Department of Homeland Security (US DHS)
- Wayne-Hoosier National Forest
- Muscatatuck National Wildlife Refuge
- Big Oaks National Wildlife Refuge
- FHWA

State Agencies

- INDOT, Seymour District
- INDOT, Division of Planning and Production, Urban & Corridor Planning Section
- INDOT, Intermodal Transportation Division – Aeronautics Section
- Indiana Department of Natural Resources (IDNR)
  - Division of Fish and Wildlife
  - Division of Historic Preservation and Archaeology
- Indiana Department of Environmental Management (IDEM)
- Indiana Geological Survey, Environmental Geology Section
- Indiana National Guard
- Indiana Office of Attorney General
- Indiana Department of Health
- Crosley Fish and Wildlife Area
- Selmier State Forest

Local Agencies

- Jennings County
- Jackson County
- City of North Vernon
- Town of Vernon
- City of Seymour

7.2.1.7 Section 106 Consulting Parties Coordination

An Early Coordination Notification Letter was submitted on January 31, 2007, and the Coordination Plan and the Public Involvement Plan was submitted to the following agencies and organizations on June 8, 2007:

- Indiana Department of Natural Resources (IDNR), Division of Historic Preservation and Archaeology, State Historic Preservation Officer (SHPO)
- Indiana Department of Transportation (INDOT) Cultural Resources Section
- Historic Landmarks Foundation, Southern Regional Office
- Historic Landmarks Foundation, Central Office
- Jennings County Historian
- Jackson County Historian
- Jennings County Historical Society
- Jackson County Historical Society
- Jennings County Board of Commissioners
- Jackson County Board of Commissioners
- Jennings County Highway Engineer/Director
- Jennings County Highway Supervisor
- Jackson County Highway Engineer
- North Vernon City Engineer
- Seymour City Engineer
- Mayor of North Vernon
- Mayor of Vernon
- Mayor of Seymour

The first Consulting Party Meeting was held on March 22, 2007. This meeting was conducted as a combined Consulting Party and Community Advisory Committee meeting. Participants were presented with a PowerPoint presentation of a “draft” range of preliminary alternatives that would be included in the study and identified the purposes and needs for the project. Participants were also given informational handouts and viewed display boards featuring maps of the project study area and “draft” preliminary alternatives. Project Management Team members answered questions and addressed comments following the presentation. Table 7.3 identifies those representatives of the consulting parties that were invited to and those that attended the meeting.

Table 7.3: March 22, 2007 Consulting Party Meeting Attendees (Project Initiation)

Name	Organization	Invited	Attended
Mr. Bret Caldwell	Jennings County Historian	X	
Ms. Charlotte Sellers	Jackson County Historian	X	
Mr. Chris Asher	Jennings County Historical Society	X	
Ms. Loren Noblitt	Jackson County Historical Society	X	
Mr. Rob Carter Mr. John Carr	Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology, State Historic Preservation Officer (SHPO)	X	X
Ms. Laura Renwick	Historic Landmarks Foundation, Southern Regional Office	X	X
	Historic Landmarks Foundation, Central Office	X	
Mr. Chris Koeppel	Indiana Department of Transportation	X	
Mr. Brad Bender	North Vernon City Engineer - FPBH	X	
Mr. Michael Magner	Jennings Co. Highway Engineer - FPBH	X	X
Mr. Robert Wilhite	Jennings County Board of Commissioners	X	
Mr. Gary Darlage	Jackson County Board of Commissioners	X	
Mr. John Hall	Mayor, City of North Vernon	X	X
Mr. Dan Wright	Mayor, Town of Vernon	X	X
Mr. James Bullard	Mayor, City of Seymour	X	X
Mr. Jason Fee	Jackson County Highway Engineer	X	
Mr. Michael Garris	Jackson County Highway Supervisor	X	
Mr. Jerry Hartsell	City of Seymour Engineer	X	X
Ms. Tina Stark	Jackson County Visitor's Bureau	X	X

7.2.2 Draft Purpose and Need and Identification of Preliminary Alternatives

A draft Purpose and Need Statement for the US 50 Corridor Planning/Environmental Assessment Project was drafted in June of 2007 and was made available for review and comment. This document identified the range of preliminary alternatives that would be included in the study. It also identified the purposes and needs for the project, including the underlying problems or deficiencies (i.e. congestion, safety, etc.), facts and analyses supporting the problems or deficiencies; and the context or perspective of INDOT's mission in relation to the need for the action, including the associated measurable objective specifying an outcome or result to be accomplished. Through the progress of the study, the draft Purpose and Need Statement will be subsequently revised based on comments received and a final version will be developed. Public outreach activities associated with this phase of the project included opportunities to present the findings of the Task 2 report – Definition of Purpose and Need and Identification of Preliminary Alternatives, and to solicit input from local officials and the public. The involvement of various stakeholders during this phase of the project included:

7.2.2.1 News Release

The second news release was distributed on June 12, 2007, and announced that INDOT and the Federal Highway Administration (FHWA) had completed and made available for review the "Draft" Purpose and Need Statement and Identification of Preliminary Alternatives for the project as well as the availability of the Public Involvement Plan and Coordination Plan for the project. This second news release also announced the date, time and location of the second Public Open House for the project.

7.2.2.2 Elected Officials Project Status Briefing

The second elected officials project status briefing was held on June 26, 2007, and provided information related to the draft purposes and needs for the project and the range of preliminary alternatives that would be included in the study. This initial elected officials briefing was held earlier on the same day as the second Public Open House.

7.2.2.3 Community Leader Interviews

Community Leader interviews/meetings associated with this phase of the project included those listed in Table 7.4 below:

Table 7.4: Stakeholder Meetings for Project Initiation

Date	Organization/Group/Individual	Meeting Topic
6/26/07	Selmier State Forest	Plans for Study
6/26/07	Muscatatuck National Wildlife Refuge	Plans for Study

7.2.2.4 Community Advisory Committee (CAC) Meeting

CAC members were notified of the availability of the Draft Purpose and Need Statement and Preliminary Alternatives on June 8, 2007. The first CAC meeting was held on March 22, 2007 and is discussed in Section 7.2.1 of this document. This meeting was conducted as a combined Consulting Party and Community Advisory Committee meeting. Participants were presented with a PowerPoint presentation of a "draft" range of preliminary alternatives that would be included in the study and identified the purposes and needs for the project. Participants were also given informational handouts and viewed display boards featuring maps of the project study area and "draft" preliminary alternatives.

7.2.2.5 Public Meeting

The second public open house was held on June 26, 2007, at the North Vernon Education and Training Center in North Vernon, Indiana. Approximately 150 people were in attendance at the meeting. Participants were presented with a PowerPoint presentation, given informational handouts and viewed display boards featuring maps of the range of preliminary alternatives. Project Management Team members answered questions and addressed comments following the presentation. At this public open house, a majority of the comments were focused on the placement of the preliminary alternatives and potential modifications to these initial preliminary alternatives. As a result of this and similar agency comment, modifications were made to many of the initial preliminary alternatives identified for the project. Also at this public open house, it was suggested that an alternative be considered that parallels existing US 50 to the north and connects northern bypasses around North Vernon westward to a new interchange at I-65. As a result of this and similar agency comment, a northern parallel alternative was investigated. Other general comments at this public open house included most favoring northern alternatives around North Vernon and that thru-town alternatives would not be good long-term solutions, but were favored by some residents. It should also be noted that there were no comments voiced against the project.

7.2.2.6 Agency Coordination

The Draft Purpose and Need Statement and Preliminary Alternatives were submitted to the agencies on June 8, 2007. The first Resource Agency Meeting was conducted on June 29, 2007. Table 7.5 identifies those agencies that were invited to and those that attended the meeting. At this agency meeting, it was suggested that attempts be made during the course of this study that would avoid and/or minimize impacts to the natural environment. These measures should include developing hybrid alternatives utilizing existing and new construction. As a result of this and similar public and other agency comment, modifications were made to many of the initial preliminary alternatives identified for the project. Also at this agency meeting, it was suggested that an alternative that parallels existing US 50 to the north that connects northern bypasses around North Vernon westward to a new interchange at I-65 be considered. As a result of this and similar public and other agency comment, a northern parallel alternative was investigated.

Table 7.5: June 29, 2007 Resource Agency Meeting Attendees (Draft Purpose and Need and Identification of Preliminary Alternatives)

Name	Organization	Invited	Attended
Mr. Ken Westlake	U.S. Environmental Protection Agency, Region V	X	
Ms. Virginia Laszewski	U.S. Environmental Protection Agency, Region V		X
Ms. Pearl Young	U.S. Environmental Protection Agency, Office of Federal Activities	X	
Mr. Ernest Quintana	U.S. Department of Interior, National Parks Service	X	
Mr. Willie Taylor	U.S. Department of Interior, Office of Environmental Policy and Compliance	X	
Mr. Scott Pruitt	U.S. Department of Interior, Fish & Wildlife Service (USFWS)	X	
Mr. Mike Litwin	USFWS		X
Col. Raymond Midkiff	U.S. Army Corp of Engineers, Louisville District	X	
Ms. Carol Legard	Advisory Council on Historic Preservation	X	
Mr. Mark Rey	U.S. Department of Agriculture, Natural Resources and Environment	X	
Ms. Jane Hardesty	U.S. Department of Agriculture, Natural Resources and Conservation Service	X	
Ms. Carol Borgstrom	U.S. Department of Energy, Office of NEPA Policy & Compliance	X	
Director	U.S. Department of Commerce, Office of Policy and Strategic Planning	X	
Mr. Steve Kokkinakis	U.S. Department of Commerce, National Oceanic and Atmospheric Administration	X	
Mr. Edward Buikema	Federal Emergency Management Agency, Region 5	X	
Mr. John Hall	U.S. Department of Housing & Urban Development, Indiana Field Office	X	
Mr. Joseph Galvan	U.S. Department of Housing & Urban Development, Chicago Regional Office	X	
Ms. Julie Gerberding	Center for Disease Control, Center for Environmental Health & Injury Control	X	
Mr. Christopher Blum	Federal Aviation Administration, Great Lakes Region	X	

Name	Organization	Invited	Attended
Mr. Paul Montague	Federal Railroad Administration	X	
Col. Michael McGowen	U.S. Army – Indiana National Guard, Joint Forces Headquarters/U.S. Department of Defense	X	
Mr. Larry Heil	Federal Highway Administration	X	X
Mr. Nick McClain	INDOT – Aviation Division	X	
Mr. John Wright	INDOT – Division of Planning, Roadway Services	X	
Ms. Anne Rearick	INDOT – Division of Planning, Structural Services	X	
Mr. Bob Williams	INDOT – Seymour District	X	
Mr. John McCrary	INDOT – Seymour District	X	
Mr. Eric Levenhagen	Indiana Department of Environmental Management	X	
Mr. Dick Melfi	Indiana Office of Attorney General	X	
Mr. Tim Junk	Indiana Office of Attorney General	X	
Ms. Judith Monroe	Indiana Department of Health	X	
Mr. Kyle Hupfer	Indiana Department of Natural Resources (IDNR)	X	
Ms. Christie Stanifer	IDNR – Division of Fish and Wildlife	X	
Mr. Robert Carter	Indiana State Historic Preservation Officer (SHPO)	X	
Mr. John Carr	IDNR		X
Ms. Karie Brudis	IDNR – Division of Historic Preservation and Archaeology	X	
Ms. Nancy Hasenmueller	Indiana Geological Survey, Environmental Geology Section	X	
Mr. Kenneth Day	Wayne-Hoosier National Forest	X	
Mr. Marc Webber	Muscatatuck National Wildlife Refuge	X	
Ms. Susan Knowles	Muscatatuck National Wildlife Refuge		X
Dr. Joe Robb	Big Oaks National Wildlife Refuge	X	X
Mr. Larry Alsop	Crosley Fish and Wildlife Area	X	
Mr. Robert McGriff	Selmier State Forest	X	

7.2.2.7 Section 106 Consulting Parties Coordination

The Consulting Parties were notified of the availability of the Draft Purpose and Need Statement and Preliminary Alternatives on June 8, 2007. The first Consulting Party Meeting was held on March 22, 2007 and is further discussed in Section 7.2.1 of this document. This meeting was conducted as a combined Consulting Party and Community Advisory Committee meeting. Participants were presented with a PowerPoint presentation of a “draft” range of preliminary alternatives that would be included in the study and identified the purposes and needs for the project. Participants were also given informational handouts and viewed display boards featuring maps of the project study area and “draft” preliminary alternatives.

7.2.3 Final Corridor Planning/Environmental Assessment Report

The Final Report for the US 50 Corridor Planning/Environmental Assessment Project was made available for review and comment in February 2008. This document describes the Study Area, the study process and the project history; identifies the underlying problems or deficiencies (i.e. congestion, safety, etc.), facts and analyses supporting the problems or deficiencies; identifies the purposes and needs for the project; identifies the range of preliminary alternatives that were included in the study; discusses the analysis and evaluation of the preliminary alternatives; identifies the range of Preliminary Alternative(s) that are recommended to be carried forward for subsequent NEPA studies; and discusses the public outreach activities associated with the project. Public outreach activities associated with this phase of the project included opportunities to present the findings of the Final Corridor Planning/Environmental Assessment Report, and to solicit input from local officials and the public. The involvement of various stakeholders during this phase of the project included:

7.2.3.1 News Release

The third news release was distributed on February 26, 2008, and announced that INDOT and the FHWA had completed and made available for review the Final Corridor Planning/Environmental Assessment Report. This third news release also announced the date, time and location of the third Public Open House for the project.

7.2.3.2 Elected Officials Project Status Briefing

The third elected officials project status briefing was held on March 13, 2008, and provided information related to the analysis and evaluation of Preliminary Alternatives for the project and the range of Preliminary Alternative(s) that were recommended to be carried forward for subsequent NEPA studies. This initial elected officials briefing was held earlier on the same day as the third Public Open House.

7.2.3.3 Community Leader Interviews

Community Leader interviews/meetings associated with this phase of the project included those listed in Table 7.6 below:

Table 7.6: Stakeholder Meetings for Final Corridor Planning/Environmental Assessment Report

Date	Organization/Group/Individual	Meeting Topic
1/10/08	Indiana National Guard	Alternative Analysis/Evaluation and range of Preliminary Alternative(s) recommended for further NEPA studies

7.2.3.4 Community Advisory Committee (CAC) Meeting

The second CAC meeting was held on March 13, 2008. This meeting was conducted as a combined Consulting Party and Community Advisory Committee meeting. Participants were presented with a PowerPoint presentation related to the analysis and evaluation of Preliminary Alternatives for the project and the range of Preliminary Alternative(s) that were recommended to be carried forward for subsequent NEPA studies. Participants were also given informational handouts and viewed display boards featuring maps of the recommended Preliminary Alternative(s). Project Management Team members answered questions and addressed comments following the presentation. Table 7.7 identifies those representatives of the CAC that were invited to the meeting.

Table 7.7: March 13, 2008 CAC Meeting Attendees
(Final Corridor Planning/Environmental Assessment Report)

Name	Organization	Invited
Mr. John Hall	Mayor, City of North Vernon	X
Mr. Dan Wright	Mayor, Town of Vernon	X
Mr. James Bullard	Mayor, City of Seymour	X
Mr. David Shaw	North Vernon City Council	X
Mr. Thomas Speer	North Vernon City Council	X
Mr. Michael Jordan	Seymour City Council	X
Mr. Mike Weir	Jackson County Planning Commission	X
Mr. Charles Murphy	Jackson County Council	X
Mr. Howard Malcomb	Jennings County Council	X
Mr. Jim Lamb	Jennings County Council	X
Mr. Edward Maschino	Jennings County Council	X
Mr. Robert Wilhite	Jennings County Board of Commissioners	X
Mr. Gary Darlage	Jackson County Board of Commissioners	X
Mr. Wendell Abell	Economic Development Corporation	X
Ms. Kathy Ertel	Economic Development Corporation	X
Mr. Albert Jackson	Economic Development Corporation	X
Mr. Oscar Elsner	Economic Development Corporation	X
Mr. Jim Plump	Jackson County Economic Development Corporation	X
Mr. Chris Ertel	IC EDC/Home Federal	X
Mr. Corey Carr	Columbus Economic Development	X
Ms. Susan Anderson	Chamber of Commerce	X
Mr. Bill Bailey	Chamber of Commerce	X
Mr. Jeff Morning	Chamber of Commerce	X
Colonel Michael McGowen	US Army	X
Mr. Edward Biehle	Biehle, INC.	X
Mr. Tim Grady	Lowe's Distribution Center	X
Mr. Tim Schumpe	Wal-Mart Distribution Center (Store #6817)	X
Mr. Michale Bushong	Jennings County School Corporation	X
Dr. Robert Schmielau	Seymour Community Schools District	X
Mr. Randy Kerkhoff	Seymour Community Schools District	X
Ms. Julie Barry	SIRPC	X
Ms. Cheryl Trisler	Jennings County Area Planning Commission	X
Mr. Jeff Fish	Jennings NW Regional Utility	X
Mr. Max Tuttle	Hayden Utility	X
Mr. Bill Reichenbach	North Vernon Utilities	X
Mr. David McCorvie	North Vernon Utilities	X
Sheriff Steve Hoppock	Jennings County Sheriff's Department	X
Mr. Dave Gerth	Jennings County 911	X
Ms. Michelle Evans	Jennings County E.M.A.	X
Chief James Webster	North Vernon Police	X

Name	Organization	Invited
Chief Rick McGill	North Vernon Fire Department	X
Chief	Vernon Volunteer Fire Department	X
Mr. Dennis Brasher	Jackson County Ambulance Service	X
Chief Marc Lahrman	Jackson County Sheriff's Department	X
Lieutenant Mark Davis	Indiana State Police - Seymour District 43	X
Chief Fred Hines	Seymour Fire Department	X
Chief Craig Hayes	Seymour Police Department	X
Ms. Janice Campbell	Jennings County Senior Center	X
Mr. Vorice Fischvogt	Homeless Coordinating Council	X
Mr. Dave Maynard	Country Squire Lakes Village	X
Mr. Tom Moore	Friends of the Muscatatuck River	X
Ms. Lynn Dennis	Nature Conservancy	X
Mr. Marc Webber	Muscatatuck National Wildlife Refuge	X
Mr. Joe Robb	Big Oaks National Wildlife Refuge	X
Mr. Dan Matiatos	Big Oaks National Wildlife Refuge	X
Mr. Larry Alsop	Crosley Fish and Wildlife Area	X
Mr. Robert McGriff	Selmier State Forest	X
Mr. Ken Knouf	US Army – Jefferson Proving Grounds	X
Mr. Paul Cloud	US Army – Jefferson Proving Grounds	X
Mr. Ralph Manlief	Jennings County Farm Bureau	X
Mr. Steve Marsh	Jennings County Farm Bureau	X
Mr. Paul Newkirk	Jackson County Farm Bureau	X
Mr. Nick McClain	INDOT Aeronautics	X
Mr. Don Biehle	Southeast Purdue Agricultural Center	X
Representative David Cheatham	State of Indiana	X
Senator Johnny Nugent	State of Indiana	X
Senator Evan Bayh	State of Indiana	X
Senator Richard Lugar	State of Indiana	X
Representative Baron Hill	State of Indiana	X
Mr. Jerry Hartsell	City of Seymour Engineer	X
Mr. Brad Bender	North Vernon City Engineer - FPBH	X
Mr. Jason Fee	Jackson County Highway Engineer	X
Mr. Michael Garris	Jackson County Highway Supervisor	X
Mr. Michael Magner	Jennings County Highway Engineer - FPBH	X
Mr. Derik Marshall	Resident	X
Mr. Howard Malcomb	North Vernon Airport	X
Ms. Marie Shepherd	Hayden Water Association	X
Mr. David McCorvie	North Vernon Utilities	X
Mr. Abell Wehdel	Economic Development Corporation	X
Mr. Robert DeCamp	Resident	X
Mr. Matthew Bauguess	Resident	X

7.2.3.5 Public Meeting

The third public open house was held on March 13, 2008, in the Auditorium of the Jennings County High School in North Vernon, Indiana. Participants were presented with a PowerPoint presentation, given informational handouts and viewed display boards featuring maps of the Preliminary Alternative(s) that were recommended to be carried forward for subsequent NEPA studies. Project Management Team members answered questions and addressed comments following the presentation.

7.2.3.6 Agency Coordination

The Final Corridor Planning/Environmental Assessment Report was submitted to the agencies on February 25, 2008. The second Resource Agency Meeting was conducted on March 20, 2008. Participants were presented with a PowerPoint presentation related to the analysis and evaluation of Preliminary Alternatives for the project and the range of Preliminary Alternative(s) that were recommended to be carried forward for subsequent NEPA studies. Participants were also provided informational handouts and maps of the recommended Preliminary Alternative(s). Project Management Team members answered questions and addressed comments following the presentation. Table 7.8 identifies those agencies that were invited to the meeting.

Table 7.8: March 20, 2008 Resource Agency Meeting Attendees (Final Corridor Planning/Environmental Assessment Report)

Name	Organization	Invited
Mr. Ken Westlake	U.S. Environmental Protection Agency, Region V	X
Ms. Virginia Laszewski	U.S. Environmental Protection Agency, Region V	X
Ms. Pearl Young	U.S. Environmental Protection Agency, Office of Federal Activities	X
Mr. Ernest Quintana	U.S. Department of Interior, National Parks Service	X
Mr. Willie Taylor	U.S. Department of Interior, Office of Environmental Policy and Compliance	X
Mr. Scott Pruitt	U.S. Department of Interior, Fish & Wildlife Service (USFWS)	X
Mr. Mike Litwin	USFWS	X
Col. Raymond Midkiff	U.S. Army Corp of Engineers, Louisville District	X
Ms. Carol Legard	Advisory Council on Historic Preservation	X
Mr. Mark Rey	U.S. Department of Agriculture, Natural Resources and Environment	X
Ms. Jane Hardesty	U.S. Department of Agriculture, Natural Resources and Conservation Service	X
Ms. Carol Borgstrom	U.S. Department of Energy, Office of NEPA Policy & Compliance	X
Director	U.S. Department of Commerce, Office of Policy and Strategic Planning	X
Mr. Steve Kokkinakis	U.S. Department of Commerce, National Oceanic and Atmospheric Administration	X
Mr. Edward Buikema	Federal Emergency Management Agency, Region 5	X
Mr. John Hall	U.S. Department of Housing & Urban Development, Indiana Field Office	X
Mr. Joseph Galvan	U.S. Department of Housing & Urban Development, Chicago Regional Office	X

Name	Organization	Invited
Ms. Julie Gerberding	Center for Disease Control, Center for Environmental Health & Injury Control	X
Mr. Christopher Blum	Federal Aviation Administration, Great Lakes Region	X
Mr. Paul Montague	Federal Railroad Administration	X
Col. Michael McGowen	U.S. Army – Indiana National Guard, Joint Forces Headquarters/U.S. Department of Defense	X
Mr. Larry Heil	Federal Highway Administration	X
Mr. Nick McClain	INDOT – Aviation Division	X
Mr. John Wright	INDOT – Division of Planning, Roadway Services	X
Ms. Anne Rearick	INDOT – Division of Planning, Structural Services	X
Mr. Bob Williams	INDOT – Seymour District	X
Mr. John McCrary	INDOT – Seymour District	X
Mr. Eric Levenhagen	Indiana Department of Environmental Management	X
Mr. Dick Melfi	Indiana Office of Attorney General	X
Mr. Tim Junk	Indiana Office of Attorney General	X
Ms. Judith Monroe	Indiana Department of Health	X
Mr. Kyle Hupfer	Indiana Department of Natural Resources (IDNR)	X
Ms. Christie Stanifer	IDNR – Division of Fish and Wildlife	X
Mr. Robert Carter	Indiana State Historic Preservation Officer (SHPO)	X
Mr. John Carr	IDNR – Division of Historic Preservation and Archaeology	X
Ms. Karie Brudis	IDNR – Division of Historic Preservation and Archaeology	X
Ms. Nancy Hasenmueller	Indiana Geological Survey, Environmental Geology Section	X
Mr. Kenneth Day	Wayne-Hoosier National Forest	X
Mr. Marc Webber	Muscatatuck National Wildlife Refuge	X
Ms. Susan Knowles	Muscatatuck National Wildlife Refuge	X
Dr. Joe Robb	Big Oaks National Wildlife Refuge	X
Mr. Larry Alsop	Crosley Fish and Wildlife Area	X
Mr. Robert McGriff	Selmier State Forest	X

7.2.3.7 Section 106 Consulting Parties Coordination

The Final Corridor Planning/Environmental Assessment Report was submitted to the Consulting Parties on February 25, 2008. The second Consulting Party Meeting was held on March 13, 2008 and was conducted as a combined Consulting Party and Community Advisory Committee meeting. Participants were presented with a PowerPoint presentation related to the analysis and evaluation of Preliminary Alternatives for the project and the range of Preliminary Alternative(s) that were recommended to be carried forward for subsequent NEPA studies. Participants were also given informational handouts and viewed display boards featuring maps of the recommended Preliminary Alternative(s). Project Management Team members answered questions and addressed comments following the presentation. Table 7.9 identifies those representatives of the consulting parties that were invited to the meeting.

Table 7.9: March 13, 2008 Consulting Party Meeting Attendees (Final Corridor Planning/Environmental Assessment Report)

Name	Organization	Invited
Mr. Bret Caldwell	Jennings County Historian	X
Ms. Charlotte Sellers	Jackson County Historian	X
Mr. Chris Asher	Jennings County Historical Society	X
Ms. Loren Noblitt	Jackson County Historical Society	X
Mr. Rob Carter Mr. John Carr	Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology, State Historic Preservation Officer (SHPO)	X
Ms. Laura Renwick	Historic Landmarks Foundation, Southern Regional Office	X
	Historic Landmarks Foundation, Central Office	X
Mr. Chris Koeppel	Indiana Department of Transportation	X
Mr. Brad Bender	North Vernon City Engineer - FPBH	X
Mr. Michael Magner	Jennings Co. Highway Engineer - FPBH	X
Mr. Robert Wilhite	Jennings County Board of Commissioners	X
Mr. Gary Darlage	Jackson County Board of Commissioners	X
Mr. John Hall	Mayor, City of North Vernon	X
Mr. Dan Wright	Mayor, Town of Vernon	X
Mr. James Bullard	Mayor, City of Seymour	X
Mr. Jason Fee	Jackson County Highway Engineer	X
Mr. Michael Garris	Jackson County Highway Supervisor	X
Mr. Jerry Hartsell	City of Seymour Engineer	X
Ms. Tina Stark	Jackson County Visitor's Bureau	X

Appendix A

Coordination

Agency Early-Coordination

Jennings County Schools

34 West Main Street, North Vernon Indiana – 812-346-4483

U.S. 50 By-pass Information Request

To: Jaime Sias
From: John Howard, Support Services, Jennings County Schools
Re: Data Regarding School Use of U.S. Highway 50
Date: July 19, 2006

Ms Sias,

The following data relates to Jennings County Schools' use of U.S. Highway 50 during weekdays between Interstate 65 and approximately 3 miles east of North Vernon. It refers to daily usage from the hours of approximately 6:00 a.m. and 5:00 p.m. It does not, however, include after hours use for extra-curricular and co-curricular programs.

Hayden Elementary School: Seven buses and four shuttle buses twice daily.
North Vernon Elementary School, Jennings County High School, and Jennings County Middle School: Approximately 25 shuttle buses, sixty base routes, and ten special service buses use U.S. 50 to access these three buildings which house approximately 3,300 students. Students cross U.S. 50 to access these buildings at several locations, two of which have stationed crossing guards. Approximately 475 vehicles, of which 350 are students, access these buildings daily on U.S. 50 to work and attend school. Three buses also make round trips to the Vocational Complex at Versailles.
Brush Creek Elementary School: Ten buses use U.S. 50 to access this school of which four use the segment of road that may be affected east of North Vernon. Five shuttle buses also use this piece of road to bring students to the Middle and High Schools.
Sand Creek Elementary School: two buses travel the area east of town and transport students via U.S. 50. Four shuttle buses bring students to school from that elementary school and use this highway.
Scipio Elementary School and Graham Creek Elementary School: Both of these schools send shuttles to Jennings County Middle School and Jennings County High School using U.S. 50 as part of their route.
After school hours, all travel to area schools from Jennings County High School and Jennings County Middle School require travel on U.S. 50 at some point.

There is also a large amount of tractor/trailer traffic due to local industry and those trying to avoid the scales at Seymour. They attempt to by-pass via U.S. 50 and State road 3 & 7 from 65/31 to Columbus from Seymour. This creates an inordinate amount of large truck traffic at various times of the day as well. Between 7:00 a.m. through 8:20 a.m. and between 2:45 p.m. and 3:45 p.m. the traffic on U.S. 50 both east and west of Jennings County High School is very congested to the point of stopping for periods of time and seldom progresses beyond five miles per hour. If I can be of any further assistance or if you need additional information, please contact me at: 812-346-4483.

Affected Bus Route Numbers

Hayden Elementary School:

H-38, H-39, H-41, H-42, H-43, H-44, & H-45
Shuttles H-40, H-46, H-39

Scipio Elementary School:
Shuttles: S-86, S-113, S-83, S-90, & S-82

Sand Creek Elementary School:
Shuttles: SC-100, SC-96, SC-94, C-4, C-9, & C-10

Brush Creek: BC-1, BC-2, BC-3, BC-4, BC-10, BC-11, BC-12, BC-13, BC-14, & BC-15
Shuttles BC-12, BC-10, BC-4, C-1, & C-3

Graham Creek Elementary:
Shuttles: GC-27, GC-23, GC-21, & GC-20

North Vernon Elementary School, Jennings County High School, & Jennings County Middle School: NV-54, NV-55, NV-56, NV-57, NV-58, NV-59, NV-60, NV-61, NV-62, NV-63, NV-64, NV-65, NV-66, NV-67, NV-68, NV-69, NV-74, NV-75, NV-76, NV-77 JC-110, JC-111, JC-112, JC-113, & SC-101

Special Service Buses: SSU-1, SSU-2, C-3, SSU-4, SSU-5, C-6, SSU-8, & SSU-9

Southeastern Career Center at Versailles: S-113, NV-68, & NV-58

ELC shuttle- C-10
St. Mary's Shuttle- NV 60

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State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Water

Early Coordination/Environmental Assessment

DNR #: ER-12612 **Request Received:** February 1, 2007

Requestor: Bernardin Lochmueller & Associates, Inc
Carl Camacho, PE
6125 South East Street
Indianapolis, IN 46227-2128

Project: US 50 Corridor from I-65 to the Jennings/Ripley County Line

County/Site info: Jackson - Jennings Counties

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

Regulatory Assessment: This proposal may require the formal approval of our agency pursuant to the Flood Control Act (IC 14-28-1) for any proposal to construct, excavate, or fill in or on the floodway of a stream or other flowing waterbody which has a drainage area greater than one square mile. Please submit more detailed plans to the Division of Water's Technical Services Section if you are unsure whether or not a permit will be required.

Natural Heritage Database: The Natural Heritage Program's data have been checked.
There are several areas within the project area that are of concern. The following areas should be noted and impacts avoided to the extent possible:

1) (Violet and Louis J. Sr.) Calli Nature Preserve - This is a dedicated State Nature Preserve containing significant natural features, a high quality forest community, and rare species.
2) Crosley Fish and Wildlife Area - Large portions of this IDNR property consist of high natural quality communities containing rare species. Caves are present with rare invertebrate species.
3) Selmier State Forest - This is Indiana's smallest State Forest. There is an Eastern hemlock (Tsuga canadensis) stand on the steep bluffs bordering Vernon Fork just downstream from Selmier State Forest (approximately the W1/2, SE1/4, Section 26).
4) Muscatatuck County Park - This is the former Vinegar Mills State Park, Indiana's fourth state park.
5) Switchbacks along Otter Creek - Although the uplands are now mostly developed, the entrenched meanders of this stream contain rare plant species (NE1/4 of Section 12, NW1/4 of Section 7, SW1/4 of Section 6, SE1/4 of Section 1).
6) Big Oaks National Wildlife Refuge - This area contains large tracts of unfragmented forest and ecologically significant communities containing a number of rare species. High natural quality areas extend into the study area.
7) Muscatatuck Caverns - This is a significant natural cave with rare invertebrate species (SW1/4 and NE1/4 of Section 3, Township 7 North, Range 9 East).
8) Sand Creek - A segment of this stream was previously considered and found worthy of designation as a State Natural and Scenic Stream, but remains undesignated as such. This high quality segment extends into the study area in Section 2, Township 7 North, Range 8 East (just east of Brewersville).
9) Klein Woods - This is a large block of flat woods located in Sections 8, 9, and extending into Section 16, Township 7 North, Range 8 East. The area was formerly known as Klein Woods, and it has not been surveyed and its quality is unknown; however, its large size and unbroken nature is notable.
10) Southeast Purdue Agricultural Center (former Muscatatuck State School including Brush Creek Reservoir) - This property has large blocks of natural forest, but has not been surveyed.

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DEPARTMENT OF NATURAL RESOURCES
Division of Water

Early Coordination/Environmental Assessment

Fish & Wildlife Comments: The US 50 Corridor from Seymour to the Jennings/Ripley County Line is located adjacent to or bordered closely by a large number of high natural quality areas. Those areas are under federal, state, or local jurisdictions with the purpose of preserving their biological integrity and environmental benefits to fish, wildlife, and botanical resources.

A new terrain road corridor south of North Vernon is likely to result in significant environmental harm due to the location within the study area of the Crosley Fish and Wildlife Area, Muscatatuck County Park, the Violet and Louis J. Sr. Calli State Nature Preserve, and several high quality natural areas associated with Vernon Fork Muscatatuck River and Otter Creek as well as significant areas of forested habitat located to the west of Crosley Fish and Wildlife Area.

On the north side of North Vernon, a bypass could result in significant environmental harm due to the presence of Selmier State Forest and several high quality natural areas along the steep forested banks of Vernon Fork Muscatatuck River located south of Selmier State Forest. Large forested tracts are located to the north and west of the airport, north of the City of North Vernon. In addition, large forested tracts are located along Vernon Fork Muscatatuck River and Otter Creek from Selmier State Forest and Crosley Fish and Wildlife Area respectively to the east end of the project area.

Transportation options should focus on low impact alternatives that minimize the need for road widening and avoid the need for new terrain routes.

Impacts to non-wetland forest over 1 acre should be mitigated at a minimum 2:1 ratio. Impacts to wetlands should be mitigated according to the state wetland mitigation guidelines (see http://www.state.in.us/nrc/policy/wetlands.html).

Bridge design plans should include an opening with minimum dimensions of 8' tall by 24' wide that does not include the size of the opening over the channel. This opening under the bridge with unsubmerged dry land is essential for wildlife passage. If riprap is planned under the bridge, only dry land unarmored with riprap is considered in the opening dimensions. Considerations can be made if alternative armoring materials are used.

Fish, wildlife, and botanical resource losses can be expected to occur as a result of this project. These losses can be minimized through implementation of the recommendations above and the following measures.
Revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species as soon as possible upon completion.
Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.
Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.
Do not cut any trees suitable for Indiana bat roosting (greater than 14 inches in diameter, living or dead, with loose hanging bark) from April 15 through September 15.
Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure.
Do not construct any temporary runarounds or causeways.
Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.
Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction.
Post "Do Not Mow or Spray" signs along the right-of-way.
Plant five trees, at least 2 inches in diameter-at-breast height, for each tree which is

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DEPARTMENT OF NATURAL RESOURCES
Division of Water

Early Coordination/Environmental Assessment

removed that is ten inches or greater in diameter-at-breast height.
Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
Seed and protect all disturbed streambanks and slopes that are 3:1 or steeper with erosion control blankets (follow manufacturer's recommendation for installation); seed and apply mulch on all other disturbed areas.

Contact Staff: Christie L. Stanifer, Environ. Coordinator, Environmental Unit
Our agency appreciates this opportunity to be of service. Please do not hesitate to contact the above staff member at (317) 232-4160 or 1-877-928-3755 (toll free) if we can be of further assistance.

Linnea Petercheff **Date:** April 12, 2007

Linnea Petercheff
Operations Staff Specialist
Division of Fish and Wildlife

Indiana Department of Environmental Management

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis , Indiana 46206

(317) 232-8603
800) 451-6027
www.IN.gov/idem

Indiana Department of Transportation
Steve Smith, Project Manager
100 Senate Avenue, Room N955
Indianapolis, IN 46204

Bernardin Lochmeuller & Associates
Carl Camacho, Project Manager
6125 South East Street/US 31South
Indianapolis, IN 46227

Monday, February 19, 2007

To Engineers and Consultants Proposing Roadway Construction Projects:

RE: The Indiana Department of Transportation (INDOT), in cooperation with the Federal Highway Administration (FHWA), have initiated a study of transportation needs/improvements of the US 50 corridor in Jennings and a portion of Jackson County. The US 50 improvement corridor is approximately 18 miles long, running from the western terminus at I-65, near Seymour in Jackson County, to the eastern terminus near the Jennings/Ripley County Line, just east of North Vernon. The objectives of this project are to assess the feasibility of improvements to the US 50 corridor as well as other alternatives for improving mobility and alleviating congestion in the urban area boundary of North Vernon and in the general project vicinity.

This letter from the Indiana Department of Environmental Management (IDEM) serves as a standardized response to enquiries inviting IDEM comments on roadway construction, reconstruction, or other improvement projects within existing roadway corridors when the proposed scope of the project is beneath the threshold requiring a formal National Environmental Policy Act-mandated Environmental Assessment or Environmental Impact Statement. As the letter attempts to address all roadway-related environmental topics of potential concern, it is possible that not every topic addressed in the letter will be applicable to your particular roadway project.

For additional information on specific roadway-related topics of interest, please visit the appropriate Web pages cited below, many of which provide contact information for persons within the various program areas who can answer questions not fully addressed in this letter. Also please be mindful that some environmental requirements may be subject to change and so each person intending to include a copy of this letter in their project documentation packet is advised to download the most recently revised version of the letter; found at: http://www.idem.IN.gov/enviroreview/hwy_earlyenviroreview.html.

To ensure that all environmentally-related issues are adequately addressed, IDEM recommends that you read this letter in its entirety, and consider each of the following issues as you move forward with the planning of your proposed roadway construction, reconstruction, or improvement project:

WATER AND BIOTIC QUALITY

1. Section 404 of the Clean Water Act requires that you obtain a permit from the U.S. Army Corps of Engineers (USACE) before discharging dredged or fill materials into any wetlands or other waters, such as rivers, lakes, streams, and ditches. Other activities regulated include the relocation, channelization, widening, or other such alteration of a stream, and the mechanical clearing (use of heavy construction equipment) of wetlands. Thus, as a project owner or sponsor, it is your responsibility to ensure that no wetlands are disturbed without the proper permit. Although you may initially refer to the U.S. Fish and Wildlife Service National Wetland Inventory maps as a means of identifying potential areas of concern, please be mindful that those maps do not depict jurisdictional

wetlands regulated by the USACE or the Department of Environmental Management. A valid jurisdictional wetlands determination can only be made by the USACE , using the 1987 Wetland Delineation Manual.

The U.S. Army Corps of Engineers (USACE) recommends that you have a consultant check to see whether your project will abut, or lie within, a wetland area. To view a list of consultants that have requested to be included on a list posted by the USACE on their Web site, see USACE Permits and Public Notices (See: http://www.lrl.usace.army.mil/orf /default.asp, and then click on "Information" from the menu on the right-hand side of that page. Their "Consultant List" is the forth entry down on the "Information" page. Please note that the USACE posts all consultants that requested to appear on the list, and that inclusion of any particular consultant on the list is does not represent an endorsement of that consultant by the USACE, or by IDEM.

Much of northern Indiana (All of Newton, Lake, Porter, LaPorte, St. Joseph, Elkhart, LaGrange, Steuben, and Dekalb counties; large portions of Jasper, Starke, Marshall, Noble, Allen, and Adams counties; and lesser portions of Benton, White, Pulaski, Kosciusko, and Wells counties) is served by the USACE District Office in Detroit (313-226-6812). Meanwhile the central and southern portions of the state (Large portions of Benton, White, Pulaski, Kosciosko, and Wells counties; smaller portions of Jasper, Starke, Marshall , Noble, Allen, and Adams counties; and all other Indiana counties located in north-central, central, and southern Indiana) are served by the USACE Louisville District Office (502-315-6733).

Additional information on contacting these U.S. Army Corps of Engineers (USACE) District Offices, and other government agencies with jurisdiction over wetlands, and other water quality issues, can be found at: www.in.gov/idem/water/planbr/401 /reglinks.html. IDEM recommends that, to the extent possible, impacts to wetlands and other water resources simply be avoided.

2. In the event a Section 404 wetlands permit is required from the USACE, you also must obtain a Section 401 Water Quality Certification from the IDEM Office of Water Quality Wetlands Program. To learn more about the Wetlands Program, visit: http://www.in.gov/idem/water/planbr/401/401overview.html.
3. If the USACE determines that a wetland or other water body is isolated and not subject to Clean Water Act regulation, it is still regulated by the state of Indiana . A State Isolated Wetland permit from IDEM's Office of Water Quality (OWQ) is required for any activity that results in the discharge of dredged or fill materials into isolated wetlands. To learn more about isolated wetlands, visit: http://www.in.gov/idem/water/planbr/401 /isowetlands.html. You also may contact the OWQ Wetlands Program at 317-233-8488.
4. If your project will involve over a 0.5 acre of wetland impact, stream relocation, or other large-scale alterations to water bodies such as the creation of a dam or a water diversion, you should seek additional input from the OWQ Wetlands Program staff. Consult the Web at: www.in.gov/idem/water/planbr/401/staff.html for the appropriate staff contact to further discuss your project.
5. Work within the one-hundred year floodway of a given water body is regulated by the Department of Natural Resources, Division of Water. The Division issues permits for activities regulated under the follow statutes:

   IC 14-26-2 Lakes Preservation Act 312 IAC 11
   IC 14-26-5 Lowering of Ten Acre Lakes Act No related code
   IC 14-28-1 Flood Control Act 310 IAC 6-1
   IC 14-29-1 Navigable Waterways Act 312 IAC 6
   IC 14-29-3 Sand and Gravel Permits Act 312 IAC 6
   IC 14-29-4 Construction of Channels Act No related code

   For Internet links to these Indiana (statutory) Code and Indiana Administrative Code citations, see the table "DNR Statutes Addressing Dredging and Fill Placement" on the IDEM Web site at: http://www.in.gov/idem/guides/permit/water/dredgingpermits.html#overviewdredg . Contact the DNR Division of Water at 317-232-4160 for further information.
6. The physical disturbance of the stream and riparian vegetation, especially large trees overhanging any affected water bodies should be limited to only that which is absolutely necessary to complete the project. The shade provided by the large overhanging trees helps maintain proper stream temperatures and dissolved oxygen for aquatic life.
7. For projects involving construction activity (which includes clearing, grading, excavation and other land disturbing activities) that result in the disturbance of one (1), or more, acres of total land area, contact the Office of Water Quality - Permits Branch (317/233-1864) regarding the need for of a Rule 5 Storm Water Runoff Permit. Visit the following Web pages:
   - http://www.in.gov/idem/guides/permit/water/stormwaterconstruction.html
   - http://www.in.gov/idem/water/npdes/permits/wetwthr/storm/rule5.html
   - http://www.in.gov/idem/water/npdes/permits/wetwthr/storm/rule5defs.html#compliance

   To obtain, and operate under, a Rule 5 permit you will first need to develop a Construction Plan (http://www.in.gov/idem/guides/permit/water/ stormwaterconstruction.html#comply), as described in 327 IAC 15-5-6.5 (http://www.ai.org/legislative/iac/T03270/A00150.PDF, pages 16 through 19). Before you may apply for a Rule 5 Permit, or begin construction, you must submit your Construction Plan to your county Soil and Water Conservation District (SWCD) (http://www.in.gov/dnr/soilcons/contacts/map.html). Upon receipt of the construction plan, personnel of the SWCD or Division of Soil Conservation will review the plan to determine if it meets the requirements of 327 IAC 15-5. Plans that are deemed deficient will require re-submittal. If the plan is sufficient you will be notified and instructed to submit the verification to IDEM as part of the Rule 5 Notice of Intent (NOI). Once construction begins, staff of the SWCD or Division of Soil Conservation will perform inspections of activities at the site for compliance with the regulation.

   Please be mindful that approximately 150 Municipal Separate Storm Sewer System (MS4) areas are now being established by various local governmental entities throughout the state as part of the implementation of Phase II federal storm water requirements.

All of these MS4 areas will eventually take responsibility for Construction Plan review and also for storm water construction run-off NOI review, inspection, and enforcement. As these MS4 areas obtain program approval from IDEM, they will be added to a list of MS4 areas posted on the IDEM Website at: http://www.in.gov/idem/water/npdes/permits/ wetwthr/storm/rule5.html. If your project is located in an IDEM-approved MS4 area, please contact that MS4 program about meeting their storm water requirements, rather than seeking to operate under a Rule 5 permit from IDEM, using the process described in the paragraph above.

Regardless of the size of your project, or which agency you work with to meet storm water requirements, IDEM recommends that appropriate structures and techniques be utilized both during the construction phase, and after completion of the project, to minimize soil erosion. The use of straw bale barriers, silt fencing, earthen berms, or other appropriate techniques around disturbed areas are recommended to prevent soil from leaving the construction site. Information and assistance regarding control of construction-related soil erosion are available from the Soil and Water Conservation District (SWCD)offices in each county. (To locate the appropriate SWCD office, visit: http://www.in.gov/dnr/soilcons/contacts/map.html).

8. For projects involving impacts to fish and botanical resources, contact the Department of Natural Resources - Division of Fish and Wildlife (317/232-4080) for addition project input.
9. For projects involving water main construction, water main extensions, and new public water supplies, contact the Office of Water Quality - Drinking Water Branch (317-308-3299) regarding the need for permits. (www.in.gov/idem/guides/permit/water /drinkingwater.html)
10. For projects involving effluent discharges to waters of the State of Indiana , contact the Office of Water Quality - Permits Branch (317-233-0468) regarding the need for a National Pollutant Discharge Elimination System (NPDES) permit.
11. For projects involving the construction of wastewater facilities and sewer lines, contact the Office of Water Quality - Permits Branch (317-232-8675) regarding the need for permits. (www.in.gov/idem/guides/permit/water/wwconstructionpermits.html)

AIR QUALITY

The above-noted project should be designed to minimize any impact on ambient air quality in, or near, the project area. The project must comply with all federal and state air pollution regulations. Consideration should be given to the following:

1. Regarding open burning, and disposing of organic debris generated by land clearing activities; some types of open burning are allowed (www.in.gov/idem/guides/permit/air/ openburning.html#maintenance) under specific conditions (www.in.gov/idem/guides/ permit/air/openburning. html#conditionsallowed). You also can seek an open burning variance from IDEM. See:www.in.gov/idem/guides/permit/air/openburning.html#variances).

   However, IDEM generally recommends that you take vegetative wastes to a registered yard waste composting facility or that the waste be chipped or shredded with composting on site (you must register with IDEM if more than 2,000 pounds is to be composted; contact 317/232-0066). The finished compost can then be used as a mulch or soil amendment. You also may bury any vegetative wastes (such as leaves, twigs, branches, limbs, tree trunks and stumps) onsite, although burying large quantities of such material can lead to subsidence problems, later on.
2. Reasonable precautions must be taken to minimize fugitive dust emissions from construction and demolition activities. For example, wetting the area with water, constructing wind barriers, or treating dusty areas with chemical stabilizers (such as calcium chloride or several other commercial products). Dirt tracked onto paved roads from unpaved areas should be minimized. See: www.in.gov/idem/guides/permit/air/fugitivedust.html.

   Additionally, if construction or demolition is conducted in a wooded area where blackbirds have roosted or abandoned buildings or building sections in which pigeons or bats have roosted for 3-5 years precautionary measures should be taken to avoid an outbreak of histoplasmosis. This disease is caused by the fungus Histoplasma capsulatum, which stems from bird or bat droppings that have accumulated in one area for 3-5 years. The spores from this fungus become airborne when the area is disturbed and can cause infections over an entire community downwind of the site. The area should be wetted down prior to cleanup or demolition of the project site. For more detailed information on histoplasmosis prevention and control, please contact the Acute Disease Control Division of the Indiana State Department of Health at (317) 233-7272.
3. The U.S. EPA and the Surgeon General recommend that people not have long-term exposure to radon at levels above 4 pCi/L. (For a county-by-county map of predicted radon levels in Indiana , visit: http://www.in.gov/idem/radon/health.html.)

   The U.S. EPA further recommends that all homes (and apartments within three stories of ground level) be tested for radon. If in-home radon levels are determined to be 4 pCi/L, or higher, EPA recommends a follow-up test. If the second test confirms that radon levels are 4 pCi/L, or higher, EPA recommends the installation of radon-reduction measures. (For a list of qualified radon testers and radon mitigation (or reduction) specialists visit: http://www. in.gov/isdh/regsvcs/radhealth/pdfs/radon_testers_mitigators_list.pdf.) It also is recommended that radon reduction measures be built into all new homes, particularly in areas like Indiana that have moderate to high predicted radon levels. To learn more about radon, radon risks, and ways to reduce exposure visit: http://www.in.gov/isdh/regsvcs/radhealth/ radon.htm, http://www.in.gov/idem/radon/, or http://www.epa.gov/iaq/radon/index.html.
4. With respect to asbestos removal: all facilities slated for renovation or demolition (except residential buildings that have (4) four or fewer dwelling units and which will not be used for commercial purposes) must be inspected by an Indiana-licensed asbestos inspector prior to the commencement of any renovation or demolition activities. If regulated asbestos-containing material (RACM) that may become airborne is found, any subsequent demolition, renovation, or asbestos removal activities must be performed in accordance with the proper notification and emission control requirements.

If no asbestos is found where a renovation activity will occur, or if the renovation involves removal of less than 260 linear feet of RACM off of pipes, less than 160 square feet of RACM off of other facility components, or less than 35 cubic feet of RACM off of all facility components, the owner or operator of the project does not need to notify IDEM before beginning the renovation activity.

For questions on asbestos demolition and renovation activities, you can also call IDEM's Lead/Asbestos section at 1-888-574-8150.

However, in all cases where a demolition activity will occur (even if no asbestos is found), the owner or operator must still notify IDEM 10 working days prior to the demolition, using the form found at http://www.in.gov/icpr/webfile/formsdiv/44593.pdf.

Anyone submitting a renovation/demolition notification form will be billed a notification fee based upon the amount of friable asbestos containing material to be removed or demolished. Projects that involve the removal of more than 2,600 linear feet of friable asbestos containing materials on pipes, or 1,600 square feet or 400 cubic feet of friable asbestos containing material on other facility components, will be billed a fee of $150 per project; projects below these amounts will be billed a fee of $50 per project. All notification remitters will be billed on a quarterly basis.

For more information about IDEM policy regarding asbestos removal and disposal, visit: www.in.gov/idem/guides/permit/waste/asbestosremoval.html.

5. With respect to lead-based paint removal: IDEM encourages all efforts to minimize human exposure to lead-based paint chips and dust. IDEM is particularly concerned that young children exposed to lead can suffer from learning disabilities. Although lead-based paint abatement efforts are not mandatory, any abatement that is conducted within housing built before January 1, 1978 , or a child-occupied facility is required to comply with all lead-based paint work practice standards, licensing and notification requirements. For more information about lead-based paint removal visit: http://www.in.gov/idem/guides/permit/waste/leadabatement.html.
6. Ensure that asphalt paving plants are permitted and operate properly. The use of cutback asphalt, or asphalt emulsion containing more than seven percent (7%) oil distillate, is prohibited during the months April through October. See 326 IAC 8-5-2 , Asphalt Paving Rule (http://www.ai.org/legislative/iac/T03260/A00080.PDF).
7. If your project involves the construction of a new source of air emissions or the modification of an existing source of air emissions or air pollution control equipment, it will need to be reviewed by the IDEM Office of Air Quality (OAQ). A registration or permit may be required under 326 IAC 2 (View at: www.ai.org/legislative/iac/t03260/a00020.pdf.) New sources that use or emit hazardous air pollutants may be subject to Section 112 of the Clean Air Act and corresponding state air regulations governing hazardous air pollutants.
8. For more information on air permits visit: www.in.gov/idem/guides/permit/air/index.html, or to initiate the IDEM air permitting process, please contact the Office of Air Quality Permit Reviewer of the Day at (317) 233-0178 or OAMPROD@dem.state.in.us.

LAND QUALITY

In order to maintain compliance with all applicable laws regarding contamination and/or proper waste disposal, IDEM recommends that:

1. If the site is found to contain any areas used to dispose of solid or hazardous waste, you need to contact the Office of Land Quality (OLQ)at 317-308-3103.
2. All solid wastes generated by the project, or removed from the project site, need to be taken to a properly permitted solid waste processing or disposal facility. For more information, visit http://www.in.gov/idem/guides/permit/waste/index.html.
3. If any contaminated soils are discovered during this project, they may be subject to disposal as hazardous waste. Please contact the OLQ at 317-308-3103 to obtain information on proper disposal procedures.
4. If PCBsare found at this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding management of any PCB wastes from this site.
5. If there are any asbestos disposal issues related to this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding the management of asbestos wastes." (Asbestos removal is addressed above, under Air Quality.)
6. If the project involves the installation or removal of an underground storage tank, or involves contamination from an underground storage tank, you must contact the IDEM Underground Storage Tank program at 317/308-3039. See: http://www.in.gov/idem/guides/permit /waste/ust.html .

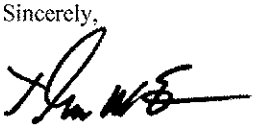
FINAL REMARKS

Should you need to obtain any environmental permits in association with this proposed project, please be mindful that IC 13-15-8 requires that you notify all adjoining property owners and/or occupants within ten days your submittal of each permit application. However, if you are seeking multiple permits, you can still meet the notification requirement with a single notice if all required permit applications are submitted with the same ten day period. For additional information and forms: www.in.gov/idem/guides/permit/landdevelopment/notification.html.

Should the scope of the proposed project be expanded to the extent that a National Environmental Policy Act Environmental Assessment (EA) or Environmental Impact Statement (EIS) is required, IDEM will actively participate in any early interagency coordination review of the project.

Meanwhile, please note that this letter does not constitute a permit, license, endorsement or any other form of approval on the part of the Indiana Department of Environmental Management regarding any project for which a copy of this letter is used. Also note that is it the responsibility of the project engineer or consultant using this letter to ensure that the most current draft of this document, which is located at http://www.idem.IN.gov/enviroreview/hwy_earlyenviroreview.html , is used.

Sincerely,



Thomas W. Easterly
Commissioner

Signature(s) of the Applicant

I acknowledge that the following proposed roadway project will be financed in part, or in whole, by public monies.

Project Description

The Indiana Department of Transportation (INDOT), in cooperation with the Federal Highway Administration (FHWA), have initiated a study of transportation needs/improvements of the US 50 corridor in Jennings and a portion of Jackson County. The US 50 improvement corridor is approximately 18 miles long, running from the western terminus at I-65, near Seymour in Jackson County, to the eastern terminus near the Jennings/Ripley County Line, just east of North Vernon. The objectives of this project are to assess the feasibility of improvements to the US 50 corridor as well as other alternatives for improving mobility and alleviating congestion in the urban area boundary of North Vernon and in the general project vicinity.

With my signature, I do hereby affirm that I have read the letter from the Indiana Department of Environment that appears directly above. In addition, I understand that in order to complete that project in which I am interested, with a minimum of impact to the environment, I must consider all the issues addressed in the aforementioned letter, and further, that I must obtain any required permits.

Date: 4/23/07

Signature of the INDOT
Project Engineer or Other Responsible Agent _____

~~Steve Smith, Project Manager~~
Ben Lowrance, INDOT Environmental Services

Date: 2/21/07

Signature of the
For Hire Consultant _____

Carl Camacho, Project Manager

Representing the Company: Bernardin Lochmeuller & Associates

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE, KENTUCKY 40201-0059
FAX: (502) 315-6677
http://www.lrl.usace.army.mil/

February 27, 2007

Operations Division
Regulatory Branch (North)
ID no. LRL-2007-203-pmh

This is in response to your request for comments concerning:

Description: Early Coordination Letter regarding the US 50 Corridor from I-65 near Seymour, Indiana to near the Jennings/Ripley County line.

Name of Organization requesting early coordination:
Indiana Department of Transportation

We do not have any comments on the general environmental impacts of the proposed project(s). This agency is not funded or authorized to provide general environmental assessments for all federally related development proposals. Our lack of comments on specific potential environmental impacts should not be construed as concurrence that no significant environmental damage would result from the project.

1. The proposed improvement may impact the following waterway(s) under our jurisdiction:

Brush Creek, Pleasant Run, Veron Fork Muscatatuck River, Indian Creek, Sixmile Creek, Storm Creek Ditch, Mutton Creek Ditch, and unnamed tributaries of these waters.

2. Current and/or future plans to develop the waterway(s) include:

None

3. The following Corps of Engineer's projects and/or studies are located within the area:

None

4. The depth or elevation of Ordinary High Water (OHW) is:

____ Feet mean sea level.

____ The OHW elevation is the line on the bank established by the changing water surface and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; and other indications as determined upon inspection of the area. If additional information is needed for the OHW you may contact our Hydrology & Hydraulics Branch by calling (502) 315-6456.

5. The project site is within flood elevations:

____ Flood plain information is available by writing this office directly and requesting a floodplain delineation for a specific area. However, we are required by law to collect a fee for this service. The fee varies with the scope and complexity of the request. If you are interested in receiving this service please re-submit this request to the above address, ATTN: CELRL-PMP or call (502) 315-6892 and we will provide information on the fee schedule. Otherwise you may be able to obtain this information from local agency sources such as planning commissions.

6. Wetlands:

____ are located on the site as indicated on the attached sheet.

__X__ To our knowledge, no wetland mapping of your proposed project site has been done, nor does the Corps of Engineers have any future plans to delineate and map jurisdictional wetlands for public or private use. If you suspect wetlands would be impacted by the discharge of dredged or fill material, a wetland delineation report conforming to the "Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1," would have to be submitted. Members of our regulatory staff having expertise in this area, would evaluate and verify the wetland delineation report as part of our review process. If you need assistance in preparing a wetland delineation, there are several environmental consultants in your geographic area having this expertise.

7. If based on your coordination with the State Historic Preservation Officer, it is determined that the project may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the Department of the Army permit application must include information stating which historic property may be affected by the proposed work and/or a vicinity map indicating the location of the historic property.

8. If your project would impact any "waters of the United States," including jurisdictional wetlands, then you should submit a Department of the Army (DA) permit application for review by this office. Copies of DA permit application forms can be obtained by writing to the above address ATTN: CELRL-OP-FN or by calling (502) 315-6733.

Phyllis Hockett

Phyllis Hockett
Project Manager
Regulatory Branch

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAR 1 2 2007

REPLY TO THE ATTENTION OF:
B-19J

Carl Camacho, P.E.
Bernardin, Lochmueller & Assoc., Inc.
6125 South East Street
Indianapolis, Indiana 46227-2128

Re: Early Coordination Letter – US 50 Corridor from I-65 near Seymour, Indiana to near the Jennings/Ripley County Line.

Dear Mr. Camacho:

The U.S. Environmental Protection Agency (U.S. EPA) has received your January 25, 2007, letter with enclosures. Your letter identifies that the Federal Highway Administration (FHWA) and the Indiana Department of Transportation (InDOT) have initiated a study of the transportation needs/improvements of the US 50 corridor in Jennings and a portion of Jackson County. Your letter invites us to be a "Participating Agency" in this study. Under the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations, and Section 309 of the Clean Air Act, U.S. EPA reviews and comments on major federal actions. Typically, these reviews focus on Environmental Impact Statements, but we also have the discretion to review and comment on other environmental documents prepared under NEPA if interest and resources permit.

After receiving your letter, Ms. Virginia Laszewski of my staff spoke with you on February 7, 2007 in order to get clarification on the proposal and its NEPA status. Based on this conversation, we understand that you are assisting the Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT) in the preparation of an Environmental Assessment (EA)/Corridor Study under FHWA/INDOT's (2001) Streamlined EIS Procedures.

We will participate in the FHWA/INDOT EA/Corridor Study as staff time and resources allow. We understand we will be receiving packages of information for our review and comment and invitations to meetings to discuss and provide comment on the information. Please give us at least a 30-day advance notice of all upcoming information packages and/or meetings so we can make room on our schedule for this work. In order to save time and travel funds, we also recommend FHWA/INDOT provide agencies with the option to participate in the study meetings via conference call.

In the meantime, based on the limited information provided, we offer the following comments for FHWA/INDOT and your consideration. The underlying problem that needs to be solved (purpose and need) will need to be clarified and substantiated, prior to developing preliminary alternatives. There appears to be a variety of resources of concern in the study area, including but not limited to, lakes, streams, floodplains, wetlands, upland forests, karst features and a variety of wildlife habitat. Alternatives should be developed using the concept of first avoiding, and then minimizing impacts to resources of concern that can not be avoided.

If you have any questions concerning these comments, please feel free to contact Ms. Laszewski, at 312/886-7501.

Sincerely,

Kenneth A. Westlake, Chief
NEPA Implementation Section

cc: Larry Heil, FHWA
Steve Smith, INDOT

Questionnaire for the Indiana Department of Transportation,
Office of Aviation

Project No: _____ **Des/Bridge No:** _____

Project Description:

US 50 Corridor from I-65 near Seymour, IN to near the Jennings Ripley County Line

Requested By:

Bernardin Lochmueller & Associates, Inc.

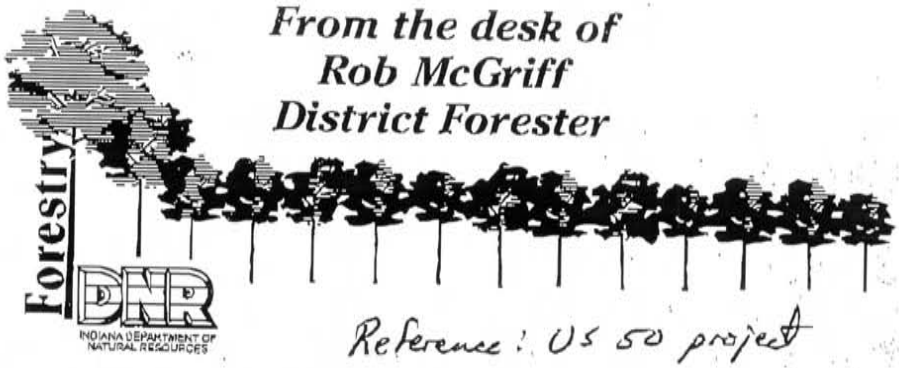
Are there any existing or proposed airports within or near the project limits? Yes

If yes, describe any potential conflicts with air traffic during or after the construction of the project.

Freeman Municipal Airport is a public-use airport and is located approximately 18,000 ft. West of the proposed project site. North Vernon Municipal Airport is a public-use airport and is located approximately 12,000 ft. North of the proposed project site. Please notify this office of any change of routing of the US 50 corridor as this may make it necessary to file FAA paperwork. If no major changes are forseen, this project should have no impact on airspace or air navigation.

This information was furnished by:

Name: Justin Klump
Title: Project Manager, INDOT-Office of Aviation
Date: 03/22/2007



From the desk of
Rob McGriff
District Forester

Reference: US 50 project

I did find a gravestone at Selmier State Forest and have marked it on the map. I have also marked the location of an old foundation.

I can lead you to both of these places if you need to do more research. A large tree has fallen over the gravestone.

Rob

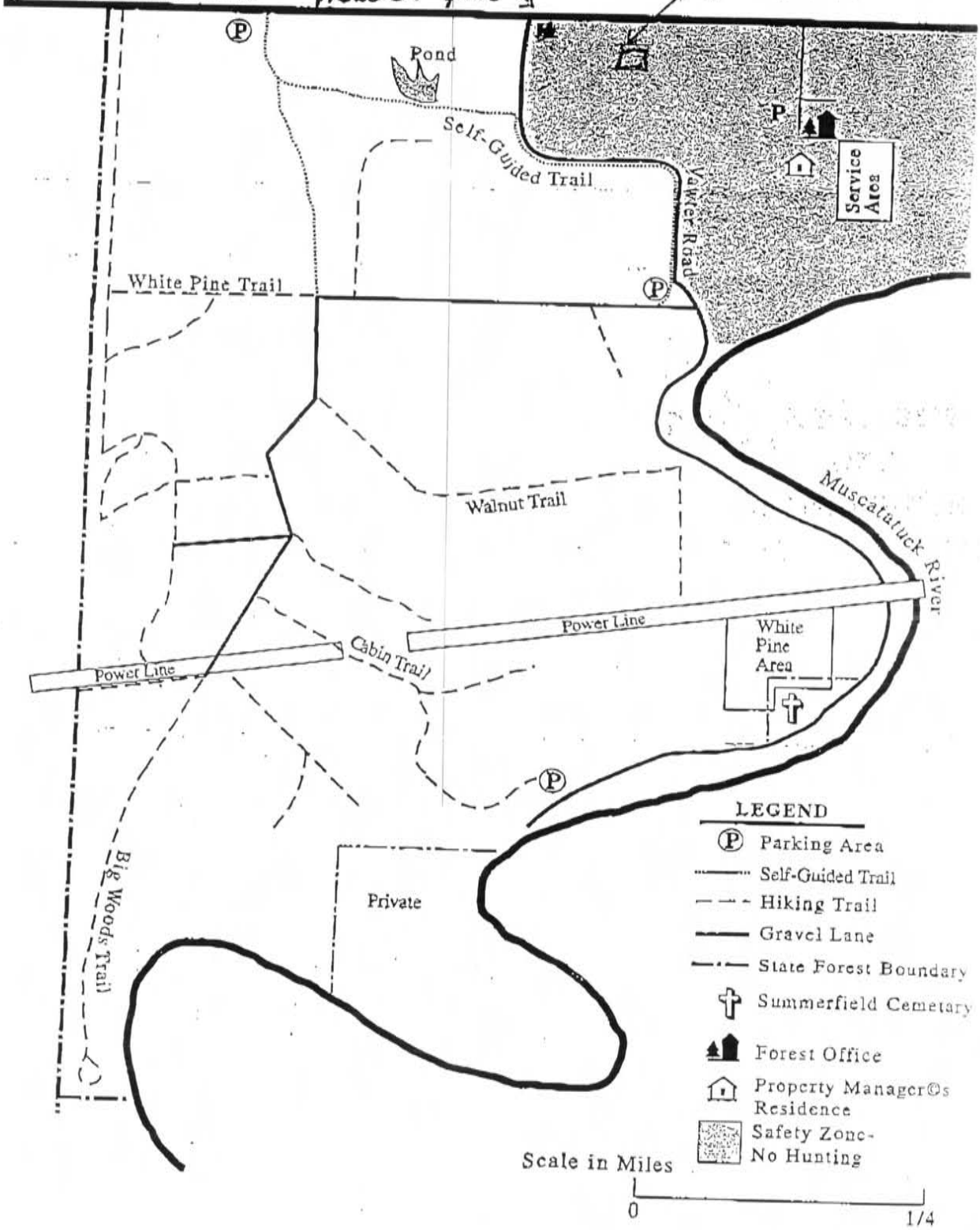
RECEIVED
MAR 28 2007
BLA - EVANSVILLE

To Carl & Kia
From Tom C
4/3/07
2 pages

...es' Division of Forestry promotes and practices ...nal and cultural resources on Indiana's public and private forest lands. This stewardship produces continuing benefits, both tangible and intangible, for present and future generations.

Selmier State Forest

905 E Co. Rd. 350 N
North Vernon, IN
47265
812-346-2286



Carl Camacho

From: McGowen, Michael P COL NGIN [michael.mcgowen@us.army.mil]
Sent: Thursday, June 14, 2007 12:38 PM
To: Carl Camacho
Subject: RE: US 50 - North Vernon

Follow Up Flag: Follow up
Flag Status: Red

Carl,

Sorry for the delay,

We will be the DoD rep for this project.

I have not been able to determine who the Dept. of homeland Security rep would be. Perhaps Eric Dietz can help.

-----Original Message-----
From: Carl Camacho [mailto:CCamacho@blainc.com]
Sent: Tuesday, June 05, 2007 11:34 AM
To: McGowen, Michael P COL NGIN
Cc: Tooley, Omer C BG NGIN; Hines, Steven R LTC NGIN; Larry.Heil@fhwa.dot.gov; ssmith@indot.in.gov; Tom Cervone
Subject: US 50 - North Vernon

Good morning Co. McGowen,

We are developing a list of Participating Agencies for the US 50 - North Vernon Study and are looking for some information. We need contact information for the following to ask for their participation in the project coordination:

1. US Department of Defense

2. US Department of Homeland Security

The information we need is:

Contact Person Name

Contact Person Title

Mailing Address (no P.O. Box) - Street address, city, state, zip code

Phone number

e-mail address

Any assistance you could give us on this would be greatly appreciated. Have a good day.

Carl D. Camacho, P.E.

Manager, Highway Design

Bernardin, Lochmueller & Associates, Inc.

6125 South East Street

Indianapolis, IN 46227

(317) 222-3880 - Office

(317) 222-3881 - Fax

ccamacho@blainc.com <mailto:ccamacho@blainc.com>

SEYMOUR FIRE DEPARTMENT

CHIEF FRED HINES
318 East Street
Seymour, Indiana 47274
Phone 812-522-2598

June 22, 2007

Carl,

I recently received a packet from you concerning the US 50 project. The cover letter said that I had indicated that I would like to become a member of the CAC for the project.

I am currently involved in numerous boards and committees and am stretched to the limit. If you have any questions that would pertain to emergency services, I would be glad to answer them for you, but I do not have the time to be on the committee.

Sincerely,

Fred Hines, Fire Chief
Seymour Fire Department

FH/jb

CITY OF NORTH VERNON

JOHN G. HALL, MAYOR

ANNUAL RAILROAD FESTIVAL

February 1, 2007

Commissioner
Indiana Department of Transportation
Government Center North, Room 755
100 North Senate Avenue
Indianapolis, In 46204

Reference: US Highway 50 Bypass

We are excited about the prospects for the US 50 Corridor Study. US Highway 50 east from I-65 through North Vernon to the Muscatatuck Urban Training Center is heavily traveled. The project is of the utmost importance because of the growth within in our area, including the Lowe's and Wal-Mart Distribution Centers, as well as the MUTC. The Highway 50 Bypass also is vital for this project.

We certainly look forward to seeing the engineering study undertaken. It is extremely important for this portion of US Highway 50 to be upgraded for safety as well as economic development in Southeastern Indiana.

Sincerely,

John G. Hall
Mayor, City of North Vernon

JGH/lj

CELEBRATE 1854 150 2004
City of North Vernon, Indiana
Pride in the Past . . . Faith in the Future

Phone (812) 346-3789 275 Main St., North Vernon, IN 47265 Fax (812) 346-8145

MAJOR HALL'S SUGGESTED ROUTE

US 50 Corridor Study

- Study Area
- Interstate/US or State Highway
- Populated Area
- Managed Land
- IDNR Listed Big Tree
- 100-Year Floodplain
- NRCS Outstanding River
- Stream
- Waterbody
- Wetland (NWI)
- Wetland (NWI)
- Wetland (NWI)
- National Register Historic District
- National Register Historic Site
- Indiana Register Historic Site
- Airport/Heliport
- Cemetery
- Church
- School
- Recreational Facility
- Underground Storage Tank (UST)
- Leaking Underground Storage Tank (LUST)
- Tire Waste Site (IDEM)
- Waste Transfer Station (IDEM)
- Voluntary Remediation Site (IDEM)
- IDEM Commisioner's Bulletin Site
- Industrial Waste Site (IDEM)
- Confined Feeding Operation
- Petroleum Well
- Industrial Mineral Site (IDEM)
- Abandoned Quarry
- Railroad

0 0.5 1 2 Miles

N

BY-PASS 6.5

4-LANES

4-LANES

Country Squire Lakes Subdivision

Lowes Distribution Center

Selmier State Forest

Vernon Fk Muscatatuck River

Southeast Purdue Agricultural Center

Muscatatuck Urban Training Center

Big Oaks National Wildlife Refuge

Nature Preserve

North Vernon

Muskatatuck County Park

Vernon

Otter Creek

Crosley Fish and Wildlife Area

Hayden

Sand Creek

Sawmill Creek

Jennings Creek

Mutton Creek

Mutton Creek Housing Development

Seymour

Walmart Distribution Center

Muscatatuck National Wildlife Refuge

COLUMBIA

SPENCER

JENNINGS

JACKSON

50

31

65

CITY OF NORTH VERNON

JOHN G. HALL, MAYOR

ANNUAL RAILROAD FESTIVAL

February 12, 2007

Commissioner
Indiana Department of Transportation
Government Center North, Room 755
100 North Senate Avenue
Indianapolis, In 46204

Reference: US Highway 50 Bypass

Officials of the City of North Vernon are excited about the prospects for the US 50 Corridor Study and look forward to seeing the engineering study undertaken. US Highway 50 east from I-65 through North Vernon to the Muscatatuck Urban Training Center is heavily traveled. The project is of the utmost importance because of the growth within in our area, including the Lowe's and Wal-Mart Distribution Centers, as well as the MUTC. The Highway 50 Bypass also is vital for this project.

In addition, it is extremely important for this portion of US Highway 50 to be upgraded for safety as well as economic development in Southeastern Indiana.

Sincerely,

John G. Hall
Mayor, City of North Vernon

Dave Shaw, President Pro-tem,
City Council

Allane Colbert, City Councilor

Thomas Speer, City Councilor

Dave Kopitzke, City Councilor

Eugene Leeds, Jr., City Councilor

State of Indiana Senate

Senator Johnny Nugent
920 Pribble Circle
Lawrenceburg, Indiana 47025-1025

Committees:
Agriculture & Small Business, Chair
Natural Resources
Commerce & Transportation, R.M.
Insurance & Financial Institutions
Financial Institutions Subcommittee, Chair

November 17, 2006

Kathryn Ertel
Director of Jennings County Economic Development Commission
P.O. Box 15
North Vernon, IN 47265

Dear Kathryn:

Thank you for the invitation to the November 22nd meeting regarding US Highway 50. I regret that I am unable to attend this meeting due to a previous commitment. I would like to express my support for this project and let you know that I will do all I can to assist in this endeavor. Please keep me informed of the information discussed at this meeting.

I care and want to do all I can. Thanks for all you do.

Warm Regards,

Johnny Nugent
JN/mp

Project No._____ Des. No._____

Project Description US-50 North Vernon Corridor Planning and Environmental Assessment

Jackson and Jenning Counties

Name of Organization requesting early coordination:

Bernardin, Lochmueller & Associates, Inc.

QUESTIONNAIRE FOR THE INDIANA GEOLOGICAL SURVEY

1) Do unusual and/or problem ( ) geographic, (X) geological, (X) geophysical, or ( ) topographic features exist within the project limits? Describe:

SEISMIC ZONE 2A

2) Have existing or potential mineral resources been identified in this area? Describe:

NO

3) Are there any active or abandoned mineral resources extraction sites located nearby?
Describe: NO

This information was furnished by:

Name: Marni D. Karaffa Title: Geologist
Address: 611 N Walnut Grove, Bloomington, IN 47405
Phone/Fax: (812) 855-1366 / (812) 855-2862
Email: mldickso@indiana.edu

Date: July 9, 2007

Consulting Parties

US 50 Corridor Project (Jennings & Jackson Counties)

You are hereby invited to be a consulting party to participate in consultation to identify historic properties, assess effects, and seek ways to avoid, minimize, or mitigate adverse effects on historic properties. Please complete and return this post card and check if you "do" or "do not" agree to be a consulting party. Thank you.

☒ *We "do" wish to be a consulting party*

☐ *We "do not" wish to be a consulting party*

Name: BRADLEY BENDER
Organization: FPBH Inc
Address: PO Box 47
North Vernon IN 47265
Telephone Number: 812-346-2045 x101 Fax: 812-346-8045
E-mail Address: bbender@fpbhonline.com

Consulting Parties

US 50 Corridor Project (Jennings & Jackson Counties)

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☑ *We "do" wish to be a consulting party*

☐ *We "do not" wish to be a consulting party*

Name: Mayor James E. Ballard & City Engineer Jerry Hazell
Organization: City of Seymour
Address: 301/309 N. Chestnut St.
Seymour In. 47274
Telephone Number: (812) 522-4020 Fax:
E-mail Address:

Consulting Parties

US 50 Corridor Project (Jennings & Jackson Counties)

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☒ *We "do" wish to be a consulting party*

☐ *We "do not" wish to be a consulting party*

Name: Laura Renwick (Southern office)
Organization: Historic Landmarks Foundation of IN
Address: 115 West Chestnut Street
Jeffersonville IN 47130
Telephone Number: 812/284-4534 Fax: 812/285-9923
E-mail Address: South@historiclandmarks.org

Consulting Parties

US 50 Corridor Project (Jennings & Jackson Counties)

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☒ *We "do" wish to be a consulting party*

☐ *We "do not" wish to be a consulting party*

Name: Chris Koeppel
Organization: INDOT
Address: 100 N Senate Ave N642
Indpls, IN 46204
Telephone Number: 317-232-5161 Fax: 317-233-4929
E-mail Address: CKoeppel@indot.in.gov

Consulting Parties

US 50 Corridor Project (Jennings & Jackson Counties)

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☒ *We "do" wish to be a consulting party*

☐ *We "do not" wish to be a consulting party*

Name: Tom Rice - County Historian (Jennings)
Organization: Jennings Co Historical Society
Address: P.O. Box 335, Vernon, IN. 47282

Telephone Number: 812-346-8989 Fax:
E-mail Address:

Consulting Parties

US 50 Corridor Project (Jennings & Jackson Counties)

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☒ *We "do" wish to be a consulting party*

☐ *We "do not" wish to be a consulting party*

Name: MICHAEL J. MAGNER
Organization: FPBH, Inc. (JENNINGS Co. ENGINEER)
Address: 72 HENRY ST., P.O. Box 47
NORTH VERNON, IN 47265
Telephone Number: 812-346-2045 Fax: 812-346-8045
E-mail Address: mmagner@fpbhonline.com

Consulting Parties

US 50 Corridor Project (Jennings & Jackson Counties)

You are hereby invited to be a consulting party to participate in consultation to identify historic properties, assess effects, and seek ways to avoid, minimize, or mitigate adverse effects on historic properties. Please complete and return this post card and check if you "do" or "do not" agree to be a consulting party. Thank you.

☑ *We "do" wish to be a consulting party*

☐ *We "do not" wish to be a consulting party*

Name: MAYOR JOHN G HALL
Organization: CITY OF NORTH VERNON
Address: 275 MAIN ST
N.V. IN 47265
Telephone Number: 812-346-3799 Fax: 346-8145
E-mail Address:

46237/6313

Consulting Parties

US 50 Corridor Project (Jennings & Jackson Counties)

You are hereby invited to be a consulting party to participate in consultation to identify historic properties, assess effects, and seek ways to avoid, minimize, or mitigate adverse effects on historic properties. Please complete and return this post card and check if you "do" or "do not" agree to be a consulting party. Thank you.

☑ *We "do" wish to be a consulting party*

☐ *We "do not" wish to be a consulting party*

Name: TINA M. STARK
Organization: Jackson County Visitor Center
Address: 357 Tanger Blvd., Ste. 231
Seymour, IN 47274
Telephone Number: 812-524-1914 Fax: 812-524-1915
E-mail Address: tina@jacksoncounty in.com

Re: US-50 Corridor from I-65 near Seymour to near the Jennings/Ripley County Line

We have received your letter of January 31, 2007 concerning the above referenced project.

☑ We have no comment on your proposed action.

☑ Please address any further correspondence about this project or any project to the following address:

Regional Environmental Coordinator
National Park Service
Midwest Regional Office
601 Riverfront Drive
Omaha, NE 68102

These comments have been provided as early technical assistance and do not necessarily indicate the NPS' or the Department of the Interior's response to future environmental documents prepared in association with the project. Due to limited staff and the number of requests we receive for early coordination, we ask that companies/agencies assume we will have no comments on projects if they have not heard from us within 30 days of our receipt of the request.

Thank you, Regional Environmental Coordinator

SUBJECT: Participating Agency Invitation
US 50 – North Vernon Corridor Planning/
Environmental Assessment Study
INDOT Des. No.: 0401401, 0401402
BLA Project No.: 106-0060-OCS
US 50, Jackson and Jennings Counties

☒ *We "do" wish to be a Participating Agency for the US 50 Study*

☐ *We "do not" wish to be a Participating Agency for the US 50 Study*

Name: Mike Litwin
Organization: USFWS
Address: 620 S. Walker Street
Bloomington, IN 47403
Telephone Number: (812) 334-4261 x205 Fax: 334-4273
E-mail Address: michael_litwin@fws.gov

Please return postcard by July 13, 2007.

SUBJECT: Participating Agency Invitation
US 50 – North Vernon Corridor Planning/
Environmental Assessment Study
INDOT Des. No.: 0401401, 0401402
BLA Project No.: 106-0060-OCS
US 50, Jackson and Jennings Counties

☒ *We "do" wish to be a Participating Agency for the US 50 Study*

☐ *We "do not" wish to be a Participating Agency for the US 50 Study*

Name: ROBERT E. WILLIAMS + JAMES UDE
Organization: INDOT, SEYMOUR DISTRICT
Address: 185 AGRICO LANE
SEYMOUR IN 47274
Telephone Number: 812 524-3702 Fax: 812 522-1062
E-mail Address: bwilliams@indot.in.gov

Please return postcard by July 13, 2007.

SUBJECT: Participating Agency Invitation
US 50 – North Vernon Corridor Planning/
Environmental Assessment Study
INDOT Des. No.: 0401401, 0401402
BLA Project No.: 106-0060-OCS
US 50, Jackson and Jennings Counties

☑ *We "do" wish to be a Participating Agency for the US 50 Study*

☐ *We "do not" wish to be a Participating Agency for the US 50 Study*

Name: Christie Stanifer, Env. Coordinator
Organization: IDNR
Address: 402 W. Washington St, W264
Indpls, IN 46204
Telephone Number: 232-8163 Fax: 233-4579
E-mail Address: CStanifer@dnr.in.gov

Please return postcard by July 13, 2007.

Re: Invitation to Become a Participating Agency, US-50 North Vernon Corridor, Indiana

We have received your letter of June 8, 2007 concerning the above referenced project.

☑ There are properties eligible under Section 4(f) within the project study area.

☑ We do not anticipate becoming a participating agency.

These comments have been provided as early technical assistance and do not necessarily indicate the NPS' or the Department of the Interior's position to future environmental documents prepared in association with the project.

Thank you,

Regional Environmental Coordinator

SUBJECT: Participating Agency Invitation
US 50 – North Vernon Corridor Planning/
Environmental Assessment Study
INDOT Des. No.: 0401401, 0401402
BLA Project No.: 106-0060-OCS
US 50, Jackson and Jennings Counties

☒ *We "do" wish to be a Participating Agency for the US 50 Study*

☐ *We "do not" wish to be a Participating Agency for the US 50 Study*

Name: Susan Knowles / Marc Webber
Organization: Muscatatuck National Wildlife Refuge
Address: 12985 E US Hwy 50
Seymour, IN 47274
Telephone Number: 812-522-4352 Fax: 812-522-6826
E-mail Address: susan_knowles@fws.gov
marc_webber@fws.gov

Please return postcard by July 13, 2007.

SUBJECT: Participating Agency Invitation
US 50 – North Vernon Corridor Planning/
Environmental Assessment Study
INDOT Des. No.: 0401401, 0401402
BLA Project No.: 106-0060-OCS
US 50, Jackson and Jennings Counties

☒ *We "do" wish to be a Participating Agency for the US 50 Study*

☐ *We "do not" wish to be a Participating Agency for the US 50 Study*

Name: James A. Glass, Deputy SHPO, Attn.: John Carr
Organization: Division of Historic Preservation and Archaeology
Address: Indiana Department of Natural Resources, 402 W. Washington St., Rm. W274, Indianapolis, IN 46204-2739
Telephone Number: (317) 233-1949 Fax: (317) 232-0693
E-mail Address: jcarr@dnr.in.gov

Please return postcard by July 13, 2007.

SUBJECT: Participating Agency Invitation
US 50 – North Vernon Corridor Planning/
Environmental Assessment Study
INDOT Des. No.: 0401401, 0401402
BLA Project No.: 106-0060-OCS
US 50, Jackson and Jennings Counties

☑ *We "do" wish to be a Participating Agency for the US 50 Study*

☐ *We "do not" wish to be a Participating Agency for the US 50 Study*

Name: Christie Stanifer
Organization: Department of Natural Resources
Address: 402 W. Washington St., Rm W264
Indianapolis, IN 46204
Telephone Number: 317-232-8163 Fax: 317-233-4579
E-mail Address: CStanifer@dnr.in.gov

Please return postcard by July 13, 2007.

SUBJECT: Participating Agency Invitation
US 50 – North Vernon Corridor Planning/
Environmental Assessment Study
INDOT Des. No.: 0401401, 0401402
BLA Project No.: 106-0060-OCS
US 50, Jackson and Jennings Counties

☒ *We "do" wish to be a Participating Agency for the US 50 Study*

☐ *We "do not" wish to be a Participating Agency for the US 50 Study*

Name: JOE ROBB
Organization: USFWS Big Oaks NWR
Address: 1661 W. JP6 Nibbo Rd, Madison, IN 47250
Telephone Number: 812-273-0783 Fax: 812-273-0786
E-mail Address: Joe_Robb@FWS.gov

Please return postcard by July 13, 2007.

SUBJECT: Participating Agency Invitation
US 50 – North Vernon Corridor Planning/
Environmental Assessment Study
INDOT Des. No.: 0401401, 0401402
BLA Project No.: 106-0060-OCS
US 50, Jackson and Jennings Counties

☒ *We "do" wish to be a Participating Agency for the US 50 Study*

☐ *We "do not" wish to be a Participating Agency for the US 50 Study*

Name: Carol Legard, FHWA Liaisan
Organization: Advisory Council on Historic Preservation
Address: 1100 Pennsylvania Ave., NW #803
Washington, DC 20001
Telephone Number: 202 606 8522 Fax: 202 606 5072
E-mail Address: ~~clg~~ clegard@achp.gov

Please return postcard by July 13, 2007.

Purpose and Need and Preliminary Alternatives Coordination

106-0060-OCS

United States Department of the Interior
Fish and Wildlife Service

Bloomington Field Office (ES)
620 South Walker Street
Bloomington, IN 47403-2121
Phone: (812) 334-4261 Fax: (812) 334-4273

July 11, 2007

Mr. Carl Camacho
Bernardin Lochmueller & Associates, Inc.
6200 Vogel Road
Evansville, Indiana 47715-4006

Project Des.#	0401401, 0401402
Road(s):	US 50
Waterway:	Vernon Fork of Muscatatuck River and numerous tributaries
Work Type:	Highway reconstruction, possible new route
County(ies):	Jennings, Jackson

Dear Mr. Camacho:

This responds to your letter dated July 8, 2007 requesting U.S. Fish and Wildlife Service (FWS) comments on the aforementioned project. The following comments are based on the information provided with that letter and on the discussion at the agency meeting of June 29, 2007, representing the FWS' Bloomington Field Office, Muscatatuck National Wildlife Refuge and Big Oaks National Wildlife Refuge.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et. seq.) and are consistent with the intent of the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, and the U. S. Fish and Wildlife Service's Mitigation Policy.

At this time the project is being considered as an Environmental Assessment for a corridor study, and the primary documents under agency review are the "Draft Identification of Existing and Future Conditions and Issues", and "Draft Definition of Purpose and Need and Identification of

Preliminary Alternatives". We will comment on these 2 documents separately.

Identification of Existing and Future Conditions and Issues

This document discusses project future conditions in North Vernon and Jennings County. At the June 29 meeting a considerable amount of discussion was devoted to development of the Muscatatuck Urban Training Center (MUTC) by the Department of Homeland Security. The site is expected to become a significant traffic generator due to commuter traffic on a daily basis and weekly movements of military convoys, and may therefore influence which route alternative is selected. The MUTC is discussed only briefly in the document; we recommend that it's role in the project analysis be expanded.

The Issues section provides a good preliminary discussion of natural resources in the study area. The evaluation of these resources will need to become more detailed as project development progresses. The discussion of wildlife habitat focuses on plant communities and rare species, but will also need to address the resident native faunal communities of both terrestrial and aquatic habitats. With regard to wetlands it should be noted that portions of the study area contain large interfluvial expanses of Cobbsfork soils which typically support perched wetlands. These wetlands sometimes do not appear on the National Wetland Inventory, but must be considered when conducting wetland delineations in the study area.

Purpose and Need and Preliminary Alternatives

We have no specific comments regarding the purpose and need section. Natural resource issues were discussed briefly at the June 29 meeting. We do not have adequate information to do a thorough analysis of the preliminary alternatives within the current time frame for comments. The issues that should be considered are as follows:

1. Stream Impacts

All route alternatives should be designed to minimize stream/riparian impacts and to avoid the need to realign or relocate stream channels. The FWS would oppose realignments of perennial streams and good-quality intermittent streams. The environmental document should provide fish community information from existing data or, as appropriate, from site-specific stream surveys. Stream impacts for each alternative should be estimated in terms of number of crossings, quality of the stream at each crossing and extent of impacts at each crossing. Stream crossings on new alignments should be located to minimize riparian forest impacts and to avoid areas of high quality aquatic habitats such as rock riffles and mussel beds.

2. Terrestrial Wildlife Habitat

All route alternatives should be designed to minimize forest loss and avoid forest fragmentation. Walk-through bird surveys should be conducted during migration season and nesting season.

3. Wetlands

Extensive wetlands are present in the floodplains of the Muscatatuck River and its tributaries,

and on Cobbsfork soils in interfluvial areas. A preliminary wetland survey should be conducted for all routes, using all available mapping and orthophotography resources. A comprehensive wetland delineation of alternatives carried forward should be conducted as soon as access becomes available. Wetland impacts should be avoided to the extent possible, and unavoidable impacts should be mitigated in accordance with the MOU between INDOT, the FWS and the Indiana DNR.

4. Water Quality

The environmental document should include a discussion of best management practices to be used to avoid erosion and runoff of soil and other pollutants during construction, and to mitigate the effects of polluted road runoff from traffic on new routes.

5. Karst

A portion of the study area is underlain by karst geologic formations. A karst survey should be conducted in accordance with our karst MOU with INDOT. All route alternatives should be designed to avoid adverse physical and water quality/quantity impacts on significant karst resources (e.g. caves, springs, water supply wells).

6. Secondary Impacts

New route alternatives will generate the potential for extensive impacts from secondary development. Secondary impacts should be minimized by not locating new routes near good quality habitats and sensitive areas, and by implementing access control near such areas.

7. Executive Order #13186, issued on January 10, 2001, directs each federal agency taking actions having or likely to have a negative effect on migratory bird populations to work with the FWS to develop an agreement to conserve migratory birds. In addition to avoiding or minimizing impacts to migratory birds populations, agencies are expected to take reasonable steps to restore and enhance habitat and incorporate migratory bird conservation into agency planning processes whenever possible. The Environmental Document you are preparing will need to address this issue.

8. Muscatatuck National Wildlife Refuge and Big Oaks National Wildlife Refuge

These federal properties are managed by the FWS. Some of the above issues related to wildlife habitat, aquatic habitat and water quality may affect one or both Refuges. Additionally, widening of US 50 on the south side may directly impact the Muscatatuck Refuge. Attachment A highlights the most significant wildlife resources at the Muscatatuck Refuge, whose concerns were discussed at the agency meeting of April 20, 2007. In summary, the major issues are as follows:

i. Effects on visitation traffic flow and safety. The Refuge is opposed to the addition of a southern lane to US 50 and would like to see wider shoulders. Major safety issue include visitors exiting the Refuge to US 50 in either direction and those entering the refuge from US 50 from either direction.

ii. Water quality. Mutton Creek and Storm Creek are a significant water source for the Refuge wetland units. Water quality could be adversely affected by construction runoff, increased post-construction runoff of road pollutants, and potential hazmat spills from increased industrial/large carrier traffic.

iii. Aquatic habitat. Increases in pollutant loading or alteration in stream flow regimes could adversely affect the aquatic habitat of the stream faunal communities.

iv. The Refuge supports a reproducing population of the state-endangered copperbelly watesnake. This species is federally listed as threatened in the northern part of its range. Listing was precluded in southern Indiana through a conservation agreement, but the FWS still classifies the species as a Regional Resource Priority. It occupies wetlands and forested riparian areas associated with Storm Creek and Mutton Creek.

The current route alternatives would not directly affect the Big Oaks Refuge, however the aforementioned water quality issues are of concern for streams draining to the Refuge. In addition to surface drainage concerns, Big Oaks also has karst groundwater concerns. The following state-endangered species are known to occur at Big Oaks and may be present in the adjacent portion of the study area: 4-toed salamander, northern crawfish frog, Kirtland's snake, barn owl, sedge wren, yellow-crowned night heron, river otter, and bobcat.

Endangered Species

The proposed project is within the range of the federally endangered Indiana bat (*Myotis sodalis*) and federally threatened bald eagle (*Haliaeetus leucocephalus*). There are currently no bald eagle nests within the study area, however the Muscatatuck River and large reservoirs provide suitable nesting habitat, and bald eagles are rapidly expanding their nesting range in Indiana.

Indiana bats hibernate in caves, then disperse to reproduce and forage in relatively undisturbed forested areas associated with water resources during spring and summer. Recent research has shown that they will inhabit fragmented landscapes with adequate forest for roosting and foraging. Young are raised in nursery colony roosts in trees, typically near drainageways in undeveloped areas. Like all other bat species in Indiana, the Indiana bat diet consists exclusively of insects.

There are no known Indiana bat hibernacula in the project study area, but it and the surrounding area contain extensive suitable summer habitat for this species. There are numerous recent summer records of Indiana bats from the Muscatatuck River watershed in Jennings, Ripley and Jefferson Counties, including both National Wildlife Refuges. Some of those records are very near the project corridor at both Refuges and in the eastern segment of Alternative D. Informal consultation for the US 50 project will be necessary pursuant to Section 7 of the Endangered

Species Act. As the project progresses we will address consultation in more detail. Depending upon the extent of habitat impacts we may recommend site-specific bat surveys for some or all route alternatives to determine whether the project may adversely affect the Indiana bat.

This endangered species information is provided for technical assistance only, and does not fulfill the requirements of Section 7 of the Endangered Species Act. Please coordinate with the Indiana Department of Natural Resources for comprehensive information on species listed as endangered or special concern by the State of Indiana.

For general coordination with the FWS please contact Mike Litwin at (812) 334-4261 ext. 205 (Bloomington Field Office). For Refuge issues please contact Susan Knowles at (812) 522-4352 (Muscatatuck NWR); or Joe Robb (812) 273-0783 .

Sincerely yours,

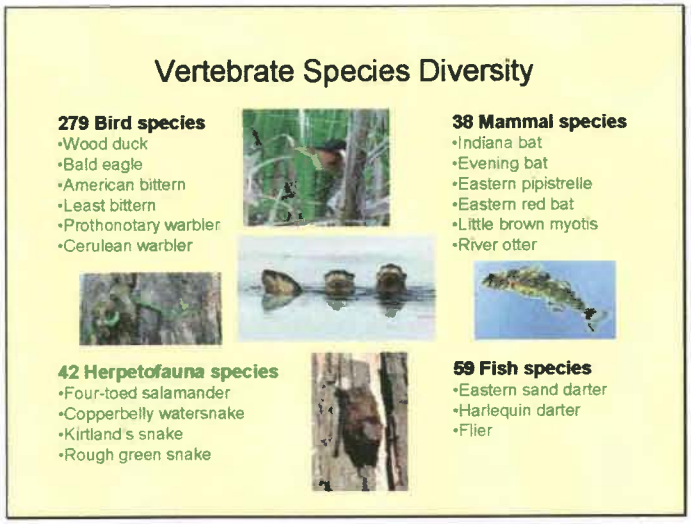
for Scott E. Pruitt
Field Supervisor

cc: IDEM, Water Quality Standards Section, Indianapolis, IN
Christie Stanifer, Indiana Division of Fish and Wildlife, Indianapolis, IN
Federal Highway Administration, Indianapolis, IN
Virginia Laszewski, US EPA, Chicago, IL B-19J
USFWS, Muscatatuck NWR
USFWS, Big Oaks NWR

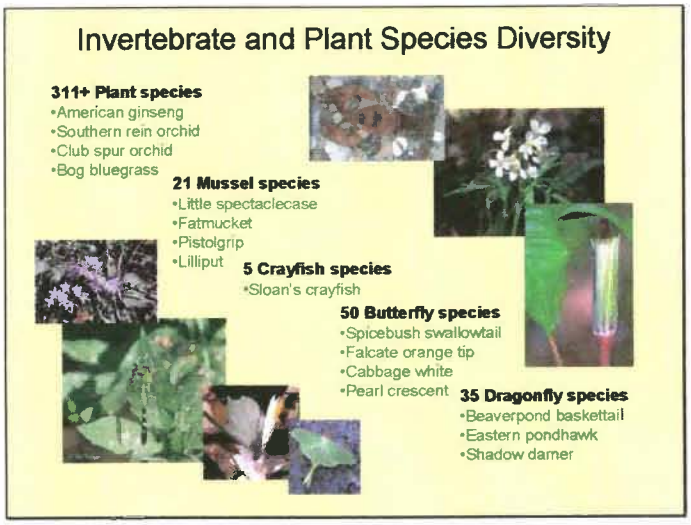
ATTACHMENT A

Muscatatuck National Wildlife Refuge – Important facts:

7/10/07



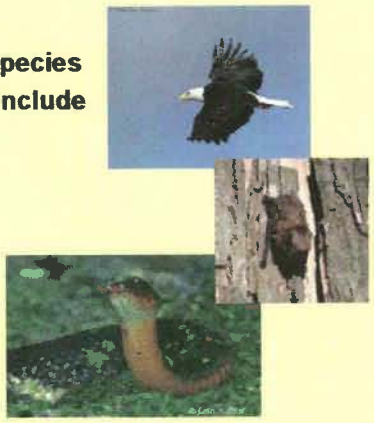
Except for the fishes, all animals listed above are federally endangered/threatened species; state endangered / special concern species; or USFWS region 3 conservation priorities



Plants: the examples given above are all state listed. No complete plant list exists; plant surveys/inventories done on refuge are all partial/narrowly focused. The total of 311 + includes 111 tree species and 200 herbaceous species.

Federally listed species found on refuge include

- Bald eagle
- Copperbelly watersnake
- Indiana bat



State listed species on refuge are numerous:

Endangered
- Kirtland's warbler
- Golden-winged warbler
- Henslow's sparrow
- Bewick's wren
- Sedge wren
- Marsh wren
- Yellow-crowned night heron
- Black-crowned night heron
- Virginia rail
- King rail
- Common moorhen
- Least bittern
- American bittern
- Upland sandpiper
- Black tern
- Loggerhead shrike
- Osprey
- Northern harrier
- Short-eared owl
- Barn owl
- Trumpeter swan
- Four-toed salamander
- Kirtland's snake
- Eastern mud turtle
- Evening bat
- Southern rein orchid

Special Concern
- Cerulean warbler
- Black-and-white warbler
- Worm-eating warbler
- Hooded warbler
- Sharp-shinned hawk
- Red-shouldered hawk
- Great egret
- Sandhill crane
- Broad-winged hawk
- Rough green snake
- Least weasel
- Little spectacle case mussel

Watch List
- American ginseng
- Bog bluegrass
- Walter's St. John's-wort
- Smooth white violet
- Club spur orchid

Dear Editor

Please except this letter to the editor to be published in the North Vernon Plain Dealer, Thank you.

Dear Editor,

With regards to a topic as volatile and potentially controversial as the U.S. 50 bypass; we as readers and a community would hope for accurate and concise reporting on the project and its specifics. The project is just out in the news and already we are misled.

The Plain Dear specifically states: “Southern bypass (around North Vernon between Muscatatuck Park and Crosely State Fish and Wildlife Area)”.

If this was the case, the proposed road would be south of the Muscatatuck Park, and we would like to emphasis the word **BETWEEN**. According to the www.us50northveron.otg website which includes maps and the PowerPoint presentation given at the published meeting, the proposed road would be most near the northern border of the Muscatatuck Park. According to the map for **Alternative E**, the new road splits the eastern border of the park’s interface with highway 3 & 7. This interface puts the middle of the bypass about right at the current front entrance, definitely not **BETWEEN** the Park and Crosely.

Although this alternative is not likely to happen, we need to present the issue clearly so we can make informed judgments. Depending to what degree and manner this alternative would use the steep canyon verses blasting and major topography changes the following areas and structures at the Muscatatuck Park would be eliminated and/or significantly altered:

> “Upper wildlife marsh, shelter one, canyon road, the canyon itself, the falls/spring at the Vinegar Mill, the Walnut Grove school house, the Director’s house, the Park’s front entrance, and the park’s trail system.”

The William Read Home (Jennings County Visitor Center) may be saved, yet it is hard to visualize a functional park entrance in conjunction with a US 50 and state highway 3 & 7 intersection.

I can empathize with the land owners who may have to sell their land to accommodate this project. They will receive just compensation, though. Modifying the entire northern boundary of a park which has served the community for over 80 years and will continue to serve (forever, if we protect it!) should not be an alternative. Changing this facility and its peaceful canyon cannot be compensated for; this park and this canyon are what is best about this county.

Jennings County Parks & Recreation

Carl D. Camacho

Project Manager, US 50 Study

ccamacho@blainc.com

Dear Carl,

I first went to the website and started filling out the contact form and it was sent. I went ahead and copied it to word so I could see it and clean it up. I figured it could not hurt to send it directly to your email. Thanks

Hello, I am director of Jennings County Parks & Recreation. We manage the Muscatatuck Park. We have just become aware that our property is listed as alternative E in a potential bypass upgrade for US 50. It is noted that alternative E is not the most likely alternative to be chosen. It is also noted that this is the shortest alternative, by a good percentage. With that in mind we would like to empress upon the planning team the extent and specifics of what this project would do to this facility and the community that uses it. Although a specific route is vague at this point, your power-point map conveys a general route and we will want to look at this.

Muscatatuck Park is now 86 years old, instated in 1921 as Indiana's fourth state park. There are currently only two significant parks that supply recreation to the community, the county park and the city park. There are two smaller mini-parks, and one Township Park pretty far from the population. Usage from the Muscatatuck Park during an average week day is well over a hundred visits per day, 500 to 750 visits per weekend is common. We cater to annual family reunions. Weekend shelter use is often booked up with these reunions, as well as birthday parties, parties in general and often weddings. Camping is our number one income producer, and has been growing.

The park has many historical elements. WPA shelters, road work, bridge work, etc. 1840 stone cutting mill with ruins and a reconfigured two story shelter at a very picturesque overlook area. The County Visitor Center is an 1850 homestead, which was the inn to the State Park. 1913 school house moved and remodeled to award winning quality.

That is the general back ground. Last week we hosted the DINO (do Indiana off road) racing and running series. Our trails are increasingly popular with locals as well as recreationists throughout the state. This facility is also the only decent advertised place to do rock climbing in the state.

Our local paper printed an article and a survey about his project. They did the community great disservice in informing them that this alternative would travel "**between** the Muscatatuck Park and Crosely SFWA". If this were the case, the road would be south of the Park. The proposed alternative actually runs most near the northern border of the facility.

Without going into great detail on this form to clarify to what extent each element would be effected, here is a list of major park elements that would either be removed or significantly altered if alternative E was enacted. Assuming the proposed road would like to use the topography efficiently, yet not be too steep or curvy, I can generalize a rough potential path.

From west to east following a line as represented by bypass on map:

Upper wildlife marsh (removed)

Shelter one (removed)

Main park road (reconfigured)

Main park canyon (significantly altered)

Walnut grove School house (removed)

Director's Residence (removed)

Visitor center parking lot (significantly altered)

Park front entrance (significantly altered)

Two loop hiking trails (one Mountain bike race loop)

Blasting and excavation for a canyon bridge would most likely disrupt a limestone cavern system that feeds our spring near the Vinegar Mill. Wildlife and habitat would be altered likewise (Most likely removing current limestone dens, was fox, sometimes ground hog, maybe raccoon this year?)

Everyone I have talked to about the project, (including the bikers from Indy this past weekend), state this would simply ruin the facility. Having the entire northern border of the facility with a bypass with most likely a major intersection (underpass?) cannot do any good for the facility, and the community likewise.

I do live at this facility and have been very instrumental in bring this park up to a respectable level. The facility was in great disrepair when I first started in 1991. Slowly but steadily the infrastructure has been cleaned and repaired to compliment the natural beauty of the area. It is only a slight conflict of interest that my place of residence will be eliminated. I petitioned very hard a few years back to the County Council to modify my payment structure so I would be able to move from the Park and buy my own home. I took a pay cut, and lost part of the park budget, yet it went through. We have not moved yet, but the wife and I hope to..... maybe sooner than later?

So....we do not mind moving. I cannot imagine that I would stay working for the department if this was to come into reality. It would essentially undo the last fifteen years of what I worked exceptionally hard at, and create something basically not worth working for.

So there are the facts with regards to the facility, with a bit of perspective thrown in for good measure. I could do a bit better with normal email checking my spelling, and most likely will try this route also.

Have a good day

Greg Martin

Note: I sent this letter via form on website, but have become increasingly dependent on spell check…….so I cleaned it up a bit. More information and pictures can be supplied so feel free to call or email. Visiting the website can show much of the history and uniqueness of the Park. The website is older, yet supplied with lots of pictures and information.

1-800-928-3667

greg@musctatauckpark.com

Thanks

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30333

July 2, 2007

Mr. Carl D. Camacho, P.E., Project Manager
Bernardin, Lochmueller & Associates, Inc. (BLA)
6125 South East Street
Indianapolis, Indiana 46227

Dear Mr. Camacho:

This is in response to your letter of June 8, 2007 to Dr. Julie Gerberding concerning the US 50-North Vernon Corridor Planning and Environmental Assessment Project. We understand that the Federal Highway Administration (FHWA), in cooperation with the Indiana Department of Transportation, is initiating an Environmental Assessment (EA) to determine the need and feasibility of improvements to US 50 in Jackson and Jennings Counties in Indiana. We are responding on behalf of the Department of Health and Human Services (DHHS), U.S. Public Health Service.

As requested, we have reviewed the Public Involvement Plan and the Coordination Plan. It appears that these documents meet their intended purpose. It is evident that much planning has been gone into the preliminary aspects of this project. We believe the process as outlined will provide meaningful dialog between the various governmental units and the citizens of Indiana and result in a project that will greatly improve the health, safety, and well-being of all citizens affected by this project

While we have no project specific comments to offer at this time, we do recommend that the topics listed below be considered during the NEPA process along with other necessary topics, and addressed if appropriate. Mitigation plans which are protective of the environment and public health should be described in the DEIS wherever warranted.

AREAS OF POTENTIAL PUBLIC HEALTH CONCERN:

I. Air Quality
   - dust control measures during project construction, and potential releases of air toxins
   - potential process air emissions after project completion
   - compliance with air quality standards

II. Water Quality/Quantity

special consideration to private and public potable water supply, including ground and surface water resources
compliance with water quality and waste water treatment standards
ground and surface water contamination (e.g. runoff and erosion control)
body contact recreation

III. Wetlands and Flood Plains

potential contamination of underlying aquifers
construction within flood plains which may endanger human health
contamination of the food chain

IV. Hazardous Materials/Wastes

identification and characterization of hazardous/contaminated sites
safety plans/procedures, including use of pesticides/herbicides; worker training
spill prevention, containment, and countermeasures plan

V. Non-Hazardous Solid Waste/Other Materials

any unusual effects associated with solid waste disposal should be considered

VI. Noise

identify projected elevated noise levels and sensitive receptors (i.e. residential, schools, hospitals) and appropriate mitigation plans during and after construction

VII. Occupational Health and Safety

compliance with appropriate criteria and guidelines to ensure worker safety and health

VIII. Land Use and Housing

special consideration and appropriate mitigation for necessary relocation and other potential adverse impacts to residential areas, community cohesion, community services
demographic special considerations (e.g. hospitals, nursing homes, day care centers, schools consideration of beneficial and adverse long-term land use impacts, including the potential influx of people into the area as a result of a project and associated impacts
potential impacts upon vector control should be considered

IX. Environmental Justice

federal requirements emphasize the issue of environmental justice to ensure equitable environmental protection regardless of race, ethnicity, economic status or community, so that no segment of the population bears a disproportionate share of the consequences of environmental pollution attributable to a proposed project. (Executive Order 12898)

While this is not intended to be an exhaustive list of possible impact topics, it provides a guide for typical areas of potential public health concern which may be applicable to this project. Any health related topic which may be associated with the proposed project should receive consideration when developing the draft and final EISs. Please furnish us with one copy of the draft document when it becomes available for review.

Sincerely yours,

Paul Joe

Paul Joe, DO, MPH
Medical Officer
National Center for Environmental Health (F16)
Centers for Disease Control & Prevention

Carl Camacho

From: Bobb.Beauchamp@faa.gov
Sent: Friday, July 13, 2007 2:38 PM
To: Carl Camacho
Cc: Andy_Narwold@faa.gov
Subject: FAA as participating agency
Follow Up Flag: Follow up
Flag Status: Red

Carl, please accept this notice of the Federal Aviation Administration's acceptance of the invitation to become a participating agency for the US 50 North Vernon Corridor Planning and Environmental Assessment Project, INDOT Des. No. 0401401, 0401402, and BLA Project No. 106-0060-OCS, in Jackson and Jennings Counties.

Please note our contact information:

James Keefer, Manager, FAA Chicago Airports District Office
2300 E. Devon Avenue
Des Plaines, IL 60018

847-294-7336 phone, 847 294 7046 fax
jim.keefer@faa.gov

The FAA has concerns with Alternatives A, C, and D, as proposed in the Draft Task 2 Report, dated June 2007. Each of these alternatives as proposed would pass near the North Vernon Municipal Airport. Alternative A appears to pass closest to the south of the airport along the current path of CR 350 N, while Alteratives C and D both pass to the north. Any of these alternatives, if constructed, could pose a physical limitation to any future expansion plans for the North Vernon Airport. Any induced development associated with the road would serve to exacerbate potential encroachments to the airport. IN addition to limiting future growth at the airport, additional development could create numerous potential obstructions and hazards to aviation operations out of North Vernon.

The FAA strongly encourages the use if alternatives E and B, as both of these alternatives appear less likely to limit the future development options of the airport.

Please feel free to call Mr. Keefer, or me at the number below, if you have any questions regarding this. We look forward to receiving updates to the project as they are available.

Bobb A. Beauchamp
Environmental Program Manager
FAA-Chicago Airports District Office
(847) 294-7364

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Field Policy and Management
151 North Delaware Street, Suite 1200
Indianapolis, IN 46204-2526
(317) 226-7606 (317) 226-6317 (FAX)
www.hud.gov

May 12, 2007

Mr. Lawrence M. Heil, PE
Air Quality/Environmental Specialist
FHWA – Indiana Division
575 N. Pennsylvania Street, Room 254
Indianapolis, IN 46204

Dear Mr. Heil:

This is in response to your letter dated June 8, 2007, regarding the US 50 – North Vernon corridor planning and environmental assessment project invitation to become a participating agency and request review of project documents.

Our Chicago Regional Office handles all environmental issues. Your inquiry is being forwarded to the appropriate office for review:

Mr. Steve Vahl
Environmental Officer
Community Planning & Development, 5ADE
U.S. Department of Housing & Urban Development
77 West Jackson Boulevard
Chicago, IL 60604
(312) 353-1696 x2728

Should you or your staff require additional information or assistance in this matter, please contact Mr. Vahl or you may reach me at (317) 226-6303.

Sincerely,

John R. Hall
Field Office Director

cc: Mr. Vahl w/enclosures

DNR Indiana Department of Natural Resources

Mitchell E. Daniels, Jr., Governor
Robert E. Carter, Jr., Director

Environmental Unit
Division of Water
402 W. Washington Street, Rm. W264
Indianapolis, IN 46204-2641

13 July 2007

Mr. Carl D. Camacho, PE, Project Manager
Bernardin, Lochmueller & Associates, Inc
6125 South East Street
Indianapolis, IN 46227

Re: DNR #12826: US 50 North Vernon Corridor Planning and EA; Multi (Jackson and Jennings Counties)

Dear Mr. Camacho:

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

We recommend that transportation options should focus on low impact alternatives that minimize the need for road widening and new-terrain road construction. As the environmental impacts from road construction are typically permanent and irreversible, new terrain road alignments should be laid out with avoidance and minimization of environmental impacts as a priority. The following are comments regarding each proposed alternative:

Alternative A: This alignment is not recommended due to significant impacts to forested habitat (including some large forested habitat areas) throughout the length of the alignment. However, a combination of the west end of alternatives C&D with the eastern end of alternative A (US50 west-end on alignment C, D to the intersection of alt. A and alt. C, D then alt. A to US50 east-end) could be successful with a structure crossing the Vernon Fork Muscatatuck River, hereafter referred to as "the river", and most of the forested habitat located on the southeast side of the river. A roadway over the forested valley linking elevation 700' on the northwest side of the river to elevation 725' on the southeast side of the river could avoid causing significant environmental harm from placing a road through a forested area adjoining the river that is at minimum 1000 feet wide at the proposed roadway corridor.

Alternative B: The segment of Vernon Fork where this alternative crosses may contain scattered individuals of eastern hemlock. A relict stand of this ecologically significant tree species occurs just upstream of this location. This area should be carefully surveyed, and if this alternative is utilized, it should be modified to avoid any disturbances to individuals of eastern hemlock occurring in this stream stretch. This alignment, as proposed, will cause significant environmental harm resulting from impacts to high quality and unusual natural areas at the crossing location of the river (Eastern hemlock stands on steep river bluffs). However, this alternative might possibly be environmentally viable, but only if it is extremely carefully designed to minimize the impacts, particularly in the vicinity of the river crossing.

Alternative C: This alignment is not recommended due to the significant environmental harm resulting from impacts to very large areas of forested habitat connected to the river on both sides. The segment of Vernon Fork where this alternative crosses also may contain scattered individuals of eastern hemlock. A relict stand of this ecologically significant tree species may occur at or

near this location. This area should be carefully surveyed, and if this alternative is utilized, it should be modified to avoid any disturbances to individuals of eastern hemlock occurring in this stream stretch.

Alternative D: With some alignment changes, this alternative has potential to be a relatively low impact alternative. Southeast of the river, we recommend the alignment be moved so the proposed road is located between CR 625N and CR 750E and generally follow the open areas along CR 750E and CR 550N until the alignment can rejoin US 50. These changes southeast of the river would avoid significant environmental harm from impacts to large forested habitat areas occurring on both sides of the river.

Alternative E: This alternative crosses through the northern portion of Muscatatuck County Park (Indiana's 4th state park, originally called Vinegar Mills State Park), and then proceeds to cross the Vernon Fork just to the south of Calli Nature Preserve. This alternative would result in a great deal of disturbance to the County Park and would serve as an additional barrier separating the Nature Preserve to the north from the County Park and Crosley Fish and Wildlife Area downstream. Further fragmentation of the connectivity of natural habitat along the river corridor of Vernon Fork will negatively impact these areas. We recommend discarding this as a possible alternative due to the significance of environmental impacts that would result.

We recommend further study of the possible alternatives seeking to produce alternatives with lower environmental impacts.

Fish, wildlife, and botanical resource losses can be expected to occur as a result of this project. These losses can be minimized through implementation of the following measures, in addition to the above recommendations.

- Impacts to non-wetland forest over one (1) acre should be mitigated at a minimum 2:1 ratio, and impacts to wetlands should be mitigated according to the state wetland mitigation guidelines (see http://www.state.in.us/nrc/policy/wetlands.html).
- Bridge design plans should include an opening with minimum dimensions of 8' tall by 24' wide that does not include the size of the opening over the channel. This opening under the bridge with unsubmerged dry land is essential for wildlife passage. If riprap is planned under the bridge, only dry land unarmored with riprap should be considered in the opening dimensions. Considerations can be made if alternative armoring materials are used.
- Revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species as soon as possible upon completion.
- Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.
- Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.
- Do not cut any trees suitable for Indiana bat roosting (greater than 14 inches in diameter, living or dead, with loose hanging bark) from April 15 through September 15.
- Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure.
- Do not construct any temporary runarounds or causeways.

- Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.
- Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction.
- Post "Do Not Mow or Spray" signs along the right-of-way.
- Plant five trees, at least 2 inches in diameter-at-breast height, for each tree which is removed that is ten inches or greater in diameter-at-breast height.
- Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
- Seed and protect all disturbed streambanks and slopes that are 3:1 or steeper with erosion control blankets (follow manufacturer's recommendations for installation); seed and apply mulch on all other disturbed areas.

Our agency appreciates this opportunity to be of service. Please do not hesitate to contact Christie Stanifer, Environmental Coordinator at (317) 232-4160 or toll free at 1-877-928-3755 if we can be of further assistance.

Sincerely,

J. Matthew Buffington
Environmental Supervisor
Division of Fish and Wildlife

Questionnaire for the Indiana Department of Transportation,
Office of Aviation

Project No: _____ **Des/Bridge No:** _____

Project Description:

US 50-North Vernon Corridor Planning/EA Study

Requested By:

Bernardin Lochmueller & Associates, Inc.

Are there any existing or proposed airports within or near the project limits? Yes

If yes, describe any potential conflicts with air traffic during or after the construction of the project.

It appears that alternative A, C, and D could all have potential impacts on the North Vernon Municipal Airport. Please stay in coordination with this office as there are notifications and permits that will need to be utilized for work near this airport.

This information was furnished by:

Name: Justin Klump
Title: Project Manager, INDOT-Office of Aviation
Date: 07/31/2007

106-0060-OCS

JENNINGS COUNTY ECONOMIC DEVELOPMENT

July 27, 2007

To Whom It May Concern:

We would like to extend our support for the US 50 North Vernon Corridor Project most importantly to relate the importance of this project to our economic growth and stability. The road system currently in place does not meet our needs and certainly cannot meet the needs we anticipate in the future. In fact, we believe that the current road system hampers our ability to market ourselves to new companies and industry who have shipping or transportation expectations. Lowes Distribution Center, North Vernon's largest employer, the Indiana National Guard have already shared information on their anticipated growth and future usage of the system but other factors now are relevant such as the new Honda Assembly Plant in Greensburg, Indiana.

The Jennings County Economic Development Commission has experienced to date a tremendous amount of inquires for our community and the road/transportation system will play a large part in our success of locating them in our community. The Jennings County Economic Development Commission strongly favors the following:

- Widening Highway 50 to four lanes
- Northern Bypass which will be north of Lowes Distribution Center

We do not support any plan which will create a Southern Bypass as it will not directly route semi trailer traffic to our industrial park area. Also, we do not support one way pairs in downtown North Vernon. These again will not address the semi trailer traffic in our downtown area as well as not lessening the traffic congestion on Highway 50 in front of Jennings County Middle School, Jennings County High School and North Vernon Elementary School. Currently, land has been acquired across from the schools and has been identified for development. This site has seen much interest over the last few months, with one new prospect already doing their due diligence for a new manufacturing plant. Without the needed improvements we will not be competitive in the development of this 240 acre tract of land.

Respectfully,

Jennings County Economic Development Commission Board of Directors

Albert Jackson
President

Oscar Elsner
Vice President

Chris Ertel
Secretary

Wendall Azbell
Member

Joe Roche
Member

Post Office Box 15 • North Vernon, Indiana 47265 • 812-346-2388 • Fax 812-346-7992

106-0060-OCS

July 16, 2007

Bernardin,Lochmueller & Associates
6125 South East Street
Indianapolis IN 46227

Dear Sirs:

We write this letter in support of the US 50 Bypass that is being proposed. The extra semi-truck traffic and potential increase in the number of convoys to MUTC are just two of the main reasons for a bypass. In addition, there is a safety factor for reducing that type of truck traffic in a residential or retail area. Furthermore, the success of MUTC will in part depend on its convenient accessibility by military , police and other emergency agency individuals.

We have been supporters of this proposed road project for many years and recommend its construction on an accelerated time frame.

Sincerely,

Members of the North Vernon Redvelopment Commission

Chris Ertel, President Rita Hyden, Vice Pres Dean Jackson, Secretary

Ashley McCreary, Member Keith Stearns, Member

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Field Policy and Management
151 North Delaware Street, Suite 1200
Indianapolis, IN 46204-2526
(317) 226-7606 (317) 226-6317 (FAX)
www.hud.gov

May 12, 2007

Mr. Lawrence M. Heil, PE
Air Quality/Environmental Specialist
FHWA – Indiana Division
575 N. Pennsylvania Street, Room 254
Indianapolis, IN 46204

Dear Mr. Heil:

This is in response to your letter dated June 8, 2007, regarding the US 50 – North Vernon corridor planning and environmental assessment project invitation to become a participating agency and request review of project documents.

Our Chicago Regional Office handles all environmental issues. Your inquiry is being forwarded to the appropriate office for review:

Mr. Steve Vahl
Environmental Officer
Community Planning & Development, 5ADE
U.S. Department of Housing & Urban Development
77 West Jackson Boulevard
Chicago, IL 60604
(312) 353-1696 x2728

Should you or your staff require additional information or assistance in this matter, please contact Mr. Vahl or you may reach me at (317) 226-6303.

Sincerely,

John R. Hall
Field Office Director

cc: Mr. Vahl w/enclosures

US 50/Muscatatuck National Wildlife Refuge
Meeting Minutes (04.20.07)
11:00am-12:00pm
Muscatatuck National Wildlife Refuge
Seymour, Indiana

In Attendance

- Marc Webber (United States Fish and Wildlife Service (USFWS))
- Susan Knowles (USFWS)
- Kia Gillette (Bernardin-Lochmueller & Associates (BLA))
- Jaime Sias (BLA)

The meeting began with Kia giving a brief project description of what the corridor study entails. A potential bypass was discussed along with potential widening of US 50. Aerial maps were used to illustrate where preliminary alternatives are currently located. After the meeting, a tour of the refuge was given to BLA.
During the meeting, the following points were addressed:

General

- Refuge has approximately 140,000 visitors/year
- The Refuge is currently in the process of preparing its first Comprehensive Conservation Plan (CCP).
- On May 22nd from 3-8pm there will be a public scoping meeting concerning the development of the CCP
- There is an ongoing widespread contaminants investigation being conducted by Tom Simon of USFWS, Bloomington Ecological Field Office (because of the CCP) and results should be complete by end of summer 2007
- Two largest Refuge events include the Migratory Bird Festival in May and Log Cabin Day in October
- The Refuge provided BLA with several pamphlets describing the refuge and designated recreational/wildlife management areas
- Theresa Dailey will be providing vegetation and Refuge boundary shapefiles to Kia (sent 4/20/07)
- INDOT with USFWS widened US 50 in front of the refuge (2002/2003) by adding entrance turn lanes to improve safety and due to the high number of car accidents. This work was completed within the existing INDOT right-of-way.
- Susan will be the contact person for the Refuge
- The Refuge provided BLA with Jerry Roach's contact info at the NRCS. He may know the locations of quality natural communities within the Study Area.
- The Refuge will have approval to expand its boundaries by acquiring between 700 and 800 more acres if funding becomes available after completion of the CCP; if funding does become available they would be especially interested in expanding their boundary south of the refuge or land that would be contiguous to existing boundaries
- The Refuge is open to acquiring INDOT wetland mitigation sites, if nearby.

Refuge Concerns

- The Refuge is concerned about how the US 50 upgrade could affect their entrances (main and otherwise) and visitor use
- Also concerned about public safety along US 50 for visitors due to the projected travel increase, widening, and likely increase (albeit illegal) in vehicle speed
- The Refuge opposes the idea of adding a southern lane to US 50, but they are open to discussion about the project. They will do the best thing for the refuge as a whole--perhaps this opportunity could be used to improve public safety at the entrance or acquire more property for the refuge
- Mutton and Storm Creek flow directly into the Refuge and are a significant water source for the managed wetland units. Concerns also include stream water quality during construction (i.e. runoff, silty debris in water) and post-construction (road runoff during operation)
- Would like to see bridge designs that include ways to minimize runoff and hazmat spills; would like to see water crossings as low risk as possible
- Would like to see wider shoulder widths to aid in avoiding accidents
- Concerned how to advise the public about using alternative routes to access the refuge during construction
- The Refuge is particularly concerned about traffic departing the refuge westbound on US 50 if it becomes two lanes

TES

- TES information within the Refuge was updated in 2006 as part of the CAP (Contaminants Assessment Process). The refuge provided BLA with a copy of the CAP
- The refuge does not have any known, reliable records of the eastern massasauga rattlesnake within the Refuge
- The copperbelly watersnake is found throughout the Refuge
- The bald eagle is still listed as a threatened species. A bald eagle nest is present on the Refuge
- The Indiana Bat and maternity colonies are documented on the refuge this species is listed as federally endangered

Other Resources

- There are no karst features in the refuge; however, there are in Crosley, Big Oaks and Selmier. They probably present the same issues as karst along potential I-69
- The refuge is not aware of any limestone glades
- There is a Muscatatuck Seep Springs-Research Natural Area within the Wildlife Refuge that is sensitive habitat
- There are some wetlands that were restored in the Muscatatuck County Park
- Refuge has information about archeological site investigations (especially along ridge system in the Muscatatuck Seep Springs)

- There are two National Register archaeology sites on the property (one south and one in the Muscatatuck Seep Springs), these sites following standard protocol should not be drawn on public maps, there are also several buildings on property that are over 50 years old that might be eligible for listing
- The Refuge does have agricultural run-off, but no significant problems have been attributed to it to date and has pretty good water quality

BERNARDIN ● LOCHMUELLER & ASSOCIATES, INC.

PLANNERS ● ENGINEERS ● SURVEYORS
6125 South East Street (US 31 South)
Indianapolis, IN 46227
TEL. (317) 222-3880 / FAX: (317) 222-3881

July 6, 2007

RE: US 50 – NORTH VERNON CORRIDOR PLANNING/EA STUDY
JUNE 29, 2007, RESOURCE AGENCY MEETING MINUTES
DES. NO.: 0401401 & 0401402
BLA PROJECT NO.: 106-0060-OCS/CS03

A Resource Agency meeting was held for the above referenced project on Friday, June 29, 2007, at the Indiana Government South Building, Conference Room A, located at 402 W. Washington Street, Indianapolis, Indiana. This meeting began at 10:00am and ended at approximately 1:00pm.

A list of those invited to the meeting and those in attendance at the meeting is listed in the table below:

In Attendance	
Name	**Organization**
Carl Camacho	Bernardin, Lochmueller & Associates, Inc. (BLA)
Kia Gillette	BLA
Joe Robb	US Fish and Wildlife Service (USFWS), Big Oaks National Wildlife Refuge
Susan Knowles	USFWS, Muscatatuck National Wildlife Refuge
Virginia Laszewski	US Environmental Protection Agency (USEPA), Region 5
Larry Heil	Federal Highway Administration (FHWA)
David Ripple	BLA
Gary Pence	INDOT – Project Management Section
Mike Litwin	USFWS
Jaime Sias	BLA
Juliet Port	Shrewsberry & Associates
Tom Cervone	BLA
Pankaj Desai	INDOT – Public Hearings
David A. Butts	INDOT – Feasibility Engineering Section
Steve Smith	INDOT – Long-Range Planning Section
Ben Lawrence	INDOT – Environmental Services
John Carr	Indiana Division of Natural Resources (IDNR)
Patti Yount	BLA

Carl Camacho started the meeting with introductions and mentioned that there had been a US 50 Public Meeting earlier that week (June 26). He made mention that the associated newspaper article was attached along with the Notice of Intent (NOI) that had been published. The PowerPoint presentation was then initiated. The PowerPoint presentation contained two slides that summarized public and elected officials comments that were made at the June 26th meetings. The following comments/questions were made during the course of the meeting:

Q: How sure is the Muscatatuck Urban Training Center (MUTC) that there will be roughly 5,000 new employees by year(s) 2009 and 2010?
A: This is what is in MUTC's plan and this is what they have told BLA. They are aiming to be the premier facility of this type in the country.

Q: What types of vehicles are the convoys going to be traveling in?
A: Maybe some jeeps but a large percentage will be semi-type trucks moving troops. These trucks will also carry some heavy equipment but most of the very large, heavy artillery will be transferred by rail. An

exercise was held in May of this year that involved a mock-nuclear disaster. There was a mass movement of troops to MUTC; however, this movement of troops was different that what will typically happen on a weekly basis when the MUTC is fully developed in 2009 or 2010. For the recent exercise (May 2007), the first responders were local, then state (if necessary), then federal (if necessary). This extended the movement of troops over the course of several days. Normal, weekly troop movements will occur one day a week over an 8-hour period.

Q: Do you know what the percentage is for the trucks, buses, personal vehicles, etc.?
A: Most will probably be semi-type trucks of military type. There shouldn't be many personal vehicles or buses. They may come from Terre Haute and Camp Atterbury. This site is of national significance due to the number of people being trained there. MUTC will be similar to a small town—in fact, some State Hospital workers used to live there. It is an all encompassing "city" (i.e. movie theatre, reservoir). To create this type of atmosphere elsewhere would be expensive. There will be mock scenarios where Special Forces come in and train on how to handle them (i.e. similar to the one that happened in May 2007). The facility will probably have a fence around it. Currently a county road passes through it and will likely have to be closed; an alternate way will have to be established to get to the north side. It is very isolated which is an advantage.

Q: Who owns the facility?
A: Purdue (Southeast Purdue Agricultural Center--SEPAC), National Guard and INDNR. Purdue will be working on a high-tech research industrial park near MUTC. Several new businesses will likely locate here.

Q: Has MUTC made any provisions to relocate the County Road?
A: No, but this is in their plan and we have been told that they are working on the environmental study for the fencing and this will likely be done for the road. BLA will check to see what work has been done and if any environmental document has been prepared. There was a section 106 and NEPA study done on the conversion of this facility to new use. This would help in the cumulative impacts analysis of this study.

Q: Has anyone been involved in with this Environmental Assessment (EA) process?
A: No.

Q: Is there an air strip?
A: The North Vernon airport is a few miles west of the training center.

Q: Will they be exploding bombs? There are streams nearby.
A: We believe there will be simulated explosions through buildings but no aerial bombings.

Q: Is the public worried about traffic from this?
A: Yes; we think the public understands there is a traffic problem due to several issues. The airport is a few miles west of MUTC and the railroad follows much of the length of US 50. When you add the Wal-Mart distribution center in Seymour, the Lowes in North Vernon and the new Honda plant, the problem is even more compounded.

Q: Will the Level of Service (LOS) take into account the convoy traffic?
A: The LOS presented today takes into account the growth of MUTC but not the convoy traffic. Convoy traffic will be added to the model as a special generator.

Q: Maybe a larger study should be done in southeastern Indiana?
A: The Southeast Indiana Economic Development Corporation has looked at the area as a region. The INDOT statewide travel demand model is continually updated using socioeconomic data and is used to assess regional traffic. Local Metropolitan Planning Organizations (MPOs) will be consulted.

Q: Is the large amount of trucks on US 50 associated with Wal-Mart and Lowes?
A: Yes; but US 50 is the also the main east-to-west route across this part of the state from Columbus to Cincinnati as it is located between I-70 on the north and I-64 on the south. Because of these, there is also significant thru truck traffic on US 50.

C: There are two projects in the Major Moves; one study is from I-65 to west of North Vernon ($15 million) and the other project is from North Vernon to just west of the Jennings/Ripley County Line ($25 million).

Q: Why wasn't the southern boundary of the Study Area extended further south?
A: There are many environmental and historical issues south of US 50. In addition, it would not address the Purpose and Need (P&N) due to it being too far away to "capture" US 50 thru traffic.

Q: So it isn't just local traffic causing problems?
A: It is a combination of local and thru-traffic.

Q: Maybe some other elements (i.e. Transportation System Management) could be implemented to make a hybrid alternative?
A: We will look at those alternatives.

Q: What is being looked at in terms of improving safety?
A: The elimination of access/conflict points is a big factor.

Q: Wouldn't one-way pairs, adding turn/travel lanes and coordinating signal timing also improve safety? How would you compare safety to a limited access facility?
A: Yes, but it depends on vehicle miles of travel. We will compare to the "No Build." While one-way pairs may reduce congestion, they tend to increase vehicle-miles of travel because of more circuitous travel to get to destinations in the vicinity of the one-way pair. Because vehicle-miles of travel are the primary driver of crash rates, one-way streets may results in a greater number of crashes. Adding turn lanes and improving traffic signal timing may or may not reduce crashes depending upon the particular location and factors contributing to crashes at that location.

Q: It is important to have measurable criteria and a threshold to see if an alternative meets P&N. Do you have the tools to do this?
A: We have corridor type tools to evaluate the reduction in crashes.

Q: Is the primary need for the project to improve congestion in North Vernon?
A: Yes, and to also improve safety.

Q: What about using US 50 to the east, then an alternative going south that connects back up with US 50?
A: This would probably have to be five miles south of existing US 50. At this distance, most people would not use it.

Q: How far is your most northern alternative?
A: It is pretty far from US 50 but we were asked to look at this alternative by MUTC representatives. We have also looked at resources to the south as well. There are managed lands and a registered historic district south and the topography is more complex here.

Q: Is an 80 foot median wide enough to put mass transit though?
A: Typically, curves are too sharp to do this. Plus, the current rail already parallels US 50 and already carries a lot of freight.

Q: How many lanes are you looking at?
A: We are still looking at traffic numbers but it is likely it will be a four-lane. We may recommend initially constructing a two-lane facility with provisions to add two additional lanes at a later date. For this study, our R/W footprint will be adequate enough to accommodate a four-lane facility.

Q: Are you looking at access control over the entire length of the project?
A: Yes.

Q: What about widening?
A: We will need approximately 110 feet of right-of-way for urban sections. Currently, there is between 50 and 80 feet of R/W. In rural sections, we will need approximately 250 feet of R/W and there is currently between 70 and 90 feet.

Q: What about right-of-way for one-way pairs?
A: We will need approximately 80 feet of right-of-way. Currently, there is between 50 and 60 feet on Poplar Street.

Q: There is a concern that the west bound one-way pair would take out most of the buildings. Why couldn't the pair go up Short Street?
A: There was much internal discussion regarding this. Short Street was not chosen due to the fact that Short Street parallels the railroad tracks and would have a very poor angle for vehicles turning to cross the railroad. This would create a very unsafe condition for drivers.

Q: Is this an at-grade crossing?
A: Yes.

Q: How many trains use this rail per day?
A: One to two trains use the Madison Port Authority per day.

Q: Isn't this one of the first trains in Indiana?
A: Yes, there may be historical issues associated with this train.

C: There is a big concern about the one-way pair and added travel lanes through North Vernon and their impacts on historical properties.

C: Yes, there will be historic impacts. The bypass will likely have historic impacts but probably not to this degree.

C: The City has also looked at using Hayden Pike as possibility (the route would go under the bridge and come up to connect with Short or Madison Street).

C: One-way and two-way pairs have to be given a fair look.

Q: Is there only one access point to the school complex?
A: Yes. There are actually two drives to the school complex and both drives are along US 50.

C: Why did you only look at this one-way pair? There are other streets north and south that could maybe perform. You need to discuss why these streets were chosen and why others were not chosen.

Q: What about a hybrid of existing streets and new construction?
A: We need to document out thought process as to why or why not.

Q: Were alternatives drawn to avoid resources?
A: Yes, we had the environmental footprint map developed and tried to avoid resources. We also used public input.

Q: Will you be looking at the alternative that goes north, all the way to I-65?
A: Yes, we will document and discuss this alternative. This was also a comment at the public open house. However, there is no existing interchange at I-65 there.

C: Historically, there has not been any widening along US 50 on the Muscatatuck National Wildlife Refuge. A few years ago, the entrance was updated but no new right-of-way was purchased.

Q: Would MUTC have access using Alternative D? Wouldn't they need a portion of Alterative C or A?
A: No, they would have to have access from somewhere else.

Q: Would this be part of this project?
A: No, but it would require coordination between the two studies. MUTC supports alternatives A, C, and D.

Q: Is there an existing roadway that cuts through the golf course and forest in a portion of Alterative A?
A: Yes, CR 350. However, we would require more right-of-way.

Q: How much right-of-way?
A: 250 feet for rural areas and 110 feet in the urban area near North Vernon and State Roads 3 and 7.

Q: Will there be traffic signals at State Roads 3 and 7?
A: Yes.

Q: Are there a lot of bridges over the Muscatatuck River?
A: US 50 crosses it along with some county roads; however, most roads follow the river.

Q: Understanding that the 30 days starts when the agency receives the package, what comments do you want?
A: We would like comments on P&N and Preliminary Alternatives. The Public Involvement Plan and Agency Coordination Plan are included as part of the new procedures if you'd like to comment on those as well. We appreciate any comments on fundamental flaws in those schedules.

Q: What is the date of the next report?
A: The Task 3 Report will be given out at the end of August/beginning of September, 2007.

Q: Will the final report be given to agencies?
A: Yes, we can do that.

Q: What about closure for the study?
A: Federal Highway Administration will work on providing update letters.

Q: What about multiple projects? Why isn't this an Environmental Impact Statement (EIS)?
A: This could result in multiple projects or could result in an EIS. We have not committed to either yet.

Q: What level of environmental analysis will be used in the next report (Task 3)?
A: Existing data sources, some windshield surveys and public input. This will be a GIS-directed response. We are trying to get down to a handful of alternatives, not a preferred alterative. More detailed analysis will be conducted at that point.

Q: Will wildlife corridors through forested areas be discussed?
A: Yes.

Q: Will core forest be discussed?
A: This issue may be discussed generally, but a detailed analysis would be in an EIS.

C: Existing mapped information may not be good enough to give you that information.
C: There has been a lot of research done in particular areas (i.e. karst) that will be beneficial.

C: You need to seriously look at developing hybrid alternatives using existing and new construction.

Q: Why are you just looking at an EA? Why not a tiered EIS?
A: The EA is looking at possible long-term and short-term solutions. If a one-way pair will work, then an EIS may not be required.

Q: Do you mention "NEPA" in the NOI?
A: It is referred to as an "Environmental Assessment." Yes, we are following NEPA.

Q: Is failure to meet P&N criteria the only factor needed to throw out an alterative? Or will significant environmental impacts be considered?
A: Alternatives must meet P&N then we are looking for flaws in any of the alternatives in terms of environmental, socio-economic, financial, etc. It has to be something that can be carried forward from P&N as well as an environmental perspective. We should not have to revisit these things later on in the process.

C: It is recommended to avoid resources as much as possible (i.e. wetlands, refuges).

Q: Will the study have information on mitigation?
A: Not at this stage. The end report will be similar to a screening report for an EIS. Mitigation would be addressed in the future NEPA studies.

Q: Are the bypass alternatives corridors or right-of-way?
A: For screening, they will be right-of-way but the limits are not set in stone. There will be room for "tweaking" to continue to avoid and minimize resources.

These Meeting Minutes were prepared by:

Carl D. Camacho, P.E. — July 6, 2007
Project Manager — Date

cc: File
Participating Agencies
Project Management Team

Section 106 Coordination

HISTORIC
LANDMARKS
FOUNDATION OF
INDIANA

Southern Regional Office

March 9, 2007

Mr. Carl Camacho, P.E.
Bernardin, Lochmueller and Associates
6125 South East Street
Indianapolis, IN 46227-2128

RE: US 50 Corridor from I-65 near Seymour, Indiana to near the Jennings/Ripley County line

Dear Mr. Camacho:

Thank you for your letter of January 31 and the opportunity for Historic Landmarks Foundation of Indiana to act as a consulting party on this project.

Given the scope of the project and its potential for a tremendous change in the character of the area, there are several items that we would like to be sure you are aware of as early as possible in the planning process. First, there are two historic districts in North Vernon that were recently listed in the National Register of Historic Places that do not seem to be reflected in your maps. The Downtown Historic District was listed in April 2006, and the Walnut Street Historic District – which includes an area along US 50 – was listed in September 2006. Information from the National Register website outlining the general boundaries of the districts is enclosed for your information. A third district, the State Street Historic District, has also been recommended for listing by the Indiana Historic Preservation Review Board and is currently awaiting designation by the National Park Service. In addition to these districts, there are numerous individual sites in the project area that were identified in the *Jennings County Interim Report* as being potentially eligible for listing on the Register.

Also, US 50 is a state-designated scenic byway across the width of the state. Along with US 150 it comprises "Indiana's Historic Pathways," which was designated as a byway in December 2004 because of its unique historic and scenic qualities. This designation offers tremendous opportunities for heritage-based tourism and related economic development along the corridor. Any alterations or improvements to the road should utilize context sensitive design solutions to preserve and enhance the character of the byway.

Please don't hesitate to contact this office should you have any questions about any of this information. We look forward to hearing from you regarding the first consulting parties meeting.

Sincerely,

Laura Renwick
Community Preservation Specialist

Enclosures

Index By State County

National Register Information System 03/08/2007 16:29:20

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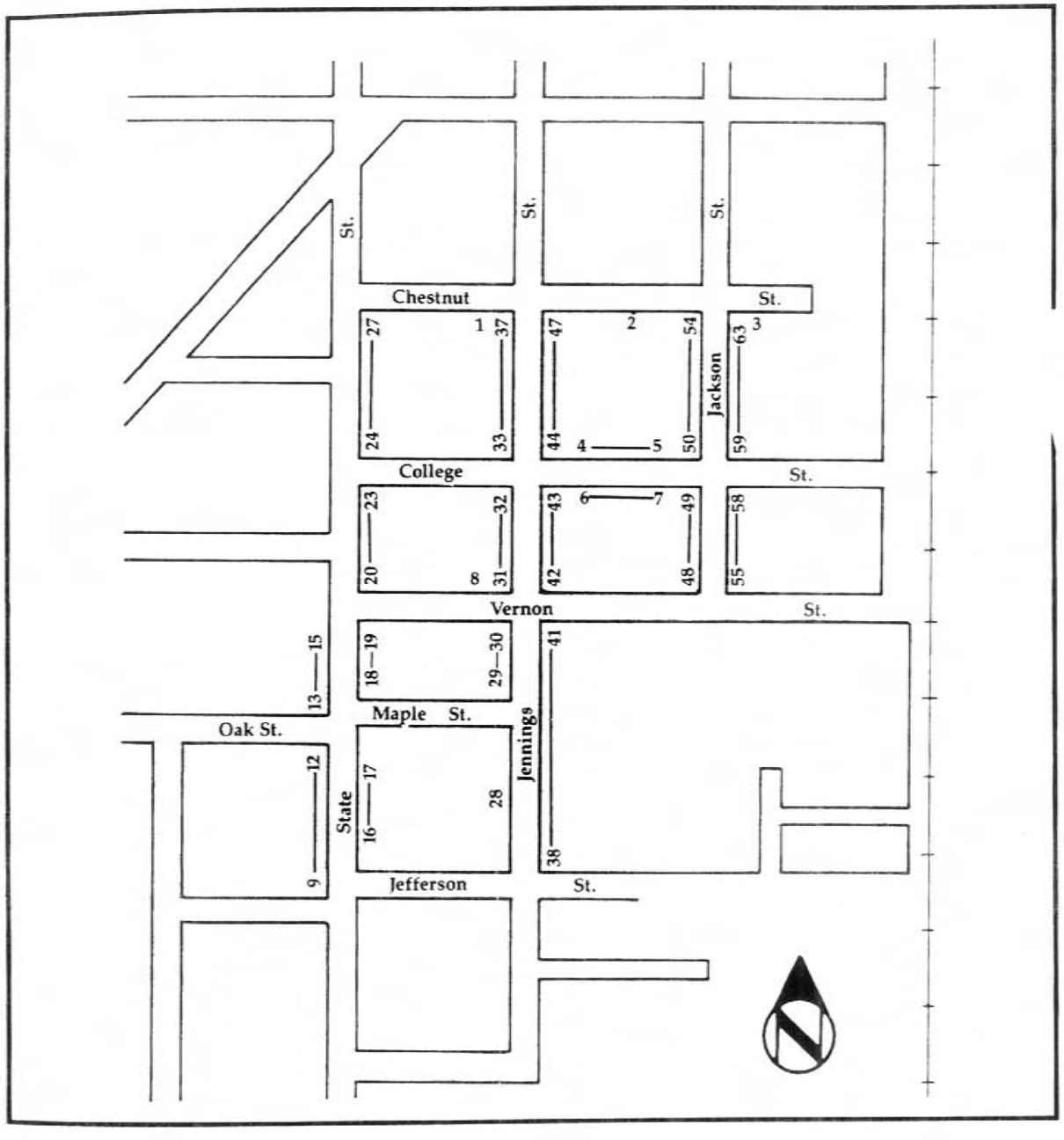
Row	State	County	Resource Name	Address	City	Listed	Multiple
1	IN	Jennings	**Benville Bridge**	US Army Proving Ground, approximately 1 mi. E off Perimeter Rd.	San Jacinto	1996-07-30	
2	IN	Jennings	**Edward's Ford Bridge**	US Army Jefferson Proving Ground, off Northwest Rd.	Nebraska	1996-07-30	
3	IN	Jennings	**North Vernon Downtown Historic District**	Bounded by Sixth and Chestnut Sts., Keller St., Fourth and Main, and Jennings	North Vernon	2006-04-19	
4	IN	Jennings	**Vernon Historic District**	1 mi. S of North Vernon on IN 317	North Vernon	1976-08-27	
5	IN	Jennings	**Walnut Street Historic District**	Roughly including both sides of Walnut St. bet. State and Gum Sts.	North Vernon	2006-09-20	

First Page Next Page Refresh Export

State Street Historic District (079-087-472-22001-063)



The State Street Historic District is located immediately south of North Vernon's business district and contains many of the city's finest and most imposing houses. Because of its proximity to North Vernon's commercial area, many of the city's businessmen built homes there. The land, originally owned by Colonel Hagerman Tripp, North Vernon's founder, was known as Trippton Heights for many years.

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[illegible]ent citizens,
[illegible]ian. He served in the
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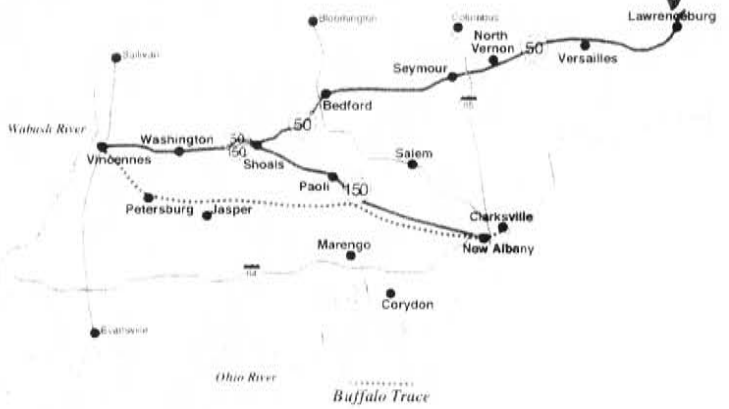
1905-1919 and was chairman of the Democratic Convention in Chicago in 1924. His 16-room residence (22017) retains most of its original features including a wrap-around classical porch, stained-glass windows and second floor balcony.

Other outstanding examples of the Queen Anne style include the McClure House (22023) built in 1897 for E. G. McClure, a prominent banker and owner of a local clothing store, and the house (22030) at 305 Jennings Street. Both of these examples feature original slate roofs, porches with elaborate millwork, and corner turrets.

Indiana's Historic Pathways



Attractions on the Routes

Historic

- Eight National Register Historic Districts
- Three National Historic Landmarks
- 19th century mansions and stagecoach inns
- State Historic Sites and private sites and museums
- George Rogers Clark National Park
- Historic businesses and cemeteries

Natural, Scenic, and Recreational

- Ohio, Wabash, White, and Blue Rivers
- The "Lost River" (National Natural Landmark)
- Hoosier National Forest
- Muscatatuck National Wildlife Refuge
- State parks, forests, and fish and wildlife areas
- Nature preserves and old growth forests
- Camping, hiking, and horseback riding
- Scenic rural countryside
- Rolling hills with spring and fall color
- Quaint small town squares
- Rock outcroppings, waterfalls, gorges, and vistas

Archaeological

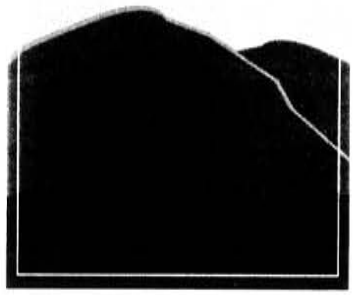
- Buffalo Trace
- Native and African American settlement sites

Cultural

- Annual heritage festivals
- Outdoor concerts
- Interpretative programs
- Amish and Quaker communities
- Museums of art and history

Call 800-489-4474 for more information
http://www.usi.edu/hsi/resources/IHP.asp

Indiana's Historic Pathways



Indiana's Historic Pathways (IHP) tell the story of early settlement and transportation in Indiana and westward migration. It began with the footpaths worn by the now extinct Eastern American bison on their annual trek between Kentucky and the Falls of the Ohio to the prairies of Illinois. These footpaths, known as the Buffalo Trace, were later used by native peoples and European settlers.

The Buffalo Trace and its associated features like buffalo wallows are distinctly visible in places while other stretches have disappeared. The 142.6-mile route originally ran from the Falls of the Ohio to Vincennes.

After the creation of the Indiana Territory in 1800, a road, which was constructed just north of the Buffalo Trace, served as a stagecoach and wagon route and eventually become U.S. 150.

In the 1850s the railroad, along with a parallel road, provided east-west access across the region linking Cincinnati to St. Louis. Constructed in the 1920s and 30s, U.S. 50 linked the Pacific and Atlantic coasts. Today it is still a major east-west federal highway crossing 15 states and the Nation's capitol.

The byway which traverses 16 counties tells the story of the development of Indiana and the nation's westward expansion.

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: www.us50northvernorn.org
- Or mail to:
  US 50 – North Vernon Corridor Planning/EA Project
  Bernardin, Lochmueller & Associates, Inc.
  ATTN: Carl D. Camacho, P.E.
  Project Manager
  6125 South East Street (US 31 South)
  Indianapolis, IN 46227

Fold along this line, tape closed, and mail with proper postage.

Tina Stark
Jackson County Visitor Center
357 Tanger Blvd., Ste 231
Seymour, IN 47274

Place Stamp Here

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US 50 – North Vernon Corridor Planning/EA Project
Bernardin, Lochmueller & Associates, Inc.
ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

RECEIVED
MAR 26 2007
BLA-INDY

US 50 North Vernon
Corridor Planning and
Environmental Assessment Study

Comment Form

Event: CAC/CP Meeting **Date:** March 22, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Tina M. Stark, Exec. Dir. of the Jackson County Visitor Center

Address: 357 Tanger Blvd., Ste 231

Seymour, IN 47274

Comments: As soon as the maps w/ the historical spots is available, I would like to have one so that I could review spots in Jackson County.

° I am against the southern "route". Muscatatuck Park was Indiana's 4th State park. Vernon is listed on the National Register. It's history includes Morgan's Raider and the Underground Railroad. The bypass would destroy the history of the era as well as the historical "feel" of the community. The Route has the potential to go through Cali Nature Preserve. This is a beautiful setting with rolling hills, waterways, and a small water fall. There are also some very historic structures thru this location. This route enders back onto 50 via Co. Rd 175.

° Across Co. Rd 175 on the north side of U.S. 50 is a stone railroad bridge with a creek running beside it. Not much farther north is a camping facility called "Deer Creek Park." The park open April - October is home to 200 campers. The route which enters on Co. Rd. 350 or 300 is just North of the campsite. These campers are left on site year round. Yearly rental is collected.

° The bridge over the Muscatatuck River just east of North Vernon on U.S. 50 is somewhat new construction. I believe [illegible]

- I am also concerned about changes in U.S. 50 along the entrance to the Muscatatuck National Wildlife Refuge. In many spots the refuge is next to U.S. 50. We also have several small businesses thru that portion that could be adversely effected.
- If I were a North Vernon resident I would be concerned about plans wanting to put four lanes or even the two lanes one way through my downtown. I would ask for an economic impact study on downtown businesses. People are creatures of habit. They want close parking. Both of these options reduce directional parking or eliminate them all together.
- As a member of the Indiana Historic Pathways (a state scenic byway) committee I am against removing historic buildings such as the railroad station. At one time North Vernon was the 3rd busiest rail crossing in Indiana.

Indiana's Historic Pathways

Indiana's Historic Pathways is a two-pronged 250-mile historic transportation corridor passing through 16 counties. The historic byway traverses the state from east to west along U.S. 50 from Lawrenceburg to Vincennes, splitting at Shoals in southern Indiana, and proceeding along U.S. 150 to The Falls of the Ohio State Park in Clarksville. The Pathway, which bears significant historical importance in the expansion and development of the state, was known as the "Buffalo Trace," being carved by migrating buffalo herds. Later the path was used by native peoples and settlers. From pathway to stagecoaches to railroads, automobiles, and trucks this historic transportation corridor continues to stimulate community growth and development.

Natural, scenic, and recreational areas as well as historic, cultural, and archaeological sites can be found along the 250 - mile corridor. Counties along the byway include Knox, Daviess, Martin, Lawrence, Jackson, Jennings, Ripley, Dearborn, Clark, Floyd, Harrison, Washington, Orange, Crawford, Dubois, and Pike.

For more information about Indiana's Historic Pathways visit Historic Southern Indiana's website at www.usi.edu/hsi or contact Leslie Townsend, assistant director of Historic Southern Indiana, at 812.465.7061 or 800.489.4474. You can also obtain information from the Jackson County Visitor Center at 812.524.1914 or 888.524.1914 or visit our website at www.jacksoncountyin.com.

Indiana Historic Pathways is one of the few byways to have all six intrinsic qualities- scenic, historical, cultural, recreational, natural, and archaeological. The byway received state status in 2004. An application for federal byway status will be submitted late this fall.

Kia Gillette

From: Carr, John [JCarr@dnr.IN.gov]

Sent: Friday, March 30, 2007 3:29 PM

To: Carl Camacho

Cc: Heil, Larry; Carpenter, Patrick A; Tom Cervone; Kia Gillette; DAu@blainc.inc

Subject: SHPO staff observations on cultural resources within US 50 - North Vernon study area

Carl,

I thought you did a very nice job with your overview presentation on the project at the March 22 meeting in North Vernon. Tom Cervone, Kia Gillette, Dennis Au, and Patti Yount (I hope I have her name right) were very helpful in answering questions and very attentive in listening to comments during the small group discussions that took place after the formal presentation. I would like to offer several observations informally at this early stage of the study.

Laura Renwick of HLFI had said during meeting that she thought State Street Historic District in North Vernon had already been listed in the NR (in addition to the North Vernon Downtown HD and the Walnut St HD in North Vernon---in addition to the Vernon HD and a couple of individually-listed brideges within the former Jefferson Proving Ground). I couldn't verify at that time that Laura's understanding was correct, but our Survey and Registration Section has since confirmed that the State Street HD was listed in the National Register on January 25, 2007.

After the meeting on March 22, I stopped by the US 50 bridge over the Vernon Fork of the Muscatatuck River. By pulling onto the county road immediately east of the bridge, I was able to observe the earlier bridge substructure on the south (eastbound) side that Kia had described during one of the discussions. It's a rather impressive, open spandrel concrete arch bridge with two arch ribs that appear to be in good condition. Then I drove across the bridge, parked on the shoulder on the north (westbound) side, and walked partway down the embankment to get a look at the structure, which carries the eastbound shoulder and probably part of the eastbound travel lane. I'm not sure I can characterize the type of structure correctly, but it reminded me of a huge, trapezoidal box girder, supported by piers. I didn't go all the under the bridge, but it appeared from my vantage point that the box girder and open spandrel arch structures are connected only by the deck--at least, it appeared that the main structural members, other than the deck, still function independently of each other. As Kia had mentioned, the structure carrying the eastbound lanes, built in 1930, is rated "NRC" (i.e., eligible for the National Register) in Jim Cooper's Artistry and Ingenuity, and since Jim specified that he was referring to the structure carrying the eastbound lanes, I'm sure he was aware that the bridge had been widened by the construction of an additional substructure. His survey card for that bridge appears to indicate that it was widened in 1980. I'm guessing he obtained that date from INDOT's biennial bridge inspection report. I'll mail you a copy of Jim's survey card. One of the photographic prints on the card seems to show the box girder beyond the open spandrel arch, but, unfortunately, I can't get our photocopier to lighten the copy enough to show that detail clearly.

I then drove west of North Vernon and crossed that wooden, hump-back bridge (probably *not* the correct, technical term; this is probably Jennings Co Br #167---15023 in the 1989 Jennings Co Interim Rpt), carrying Base Rd (I think) over the CSX line where US 50 takes a southwesterly bend. I didn't have time to get out of the car to make a close observation. Although the wooden plank deck and rails were weathered, my impression was that the substructure (mainly of wood) might not be very old. I would guess that the wood in a structure like this, exposed to the elements as it is, would have to be replaced every few decades, but I could be wrong. The interim rpt estimates (very roughly, I'd guess) that the bridge dates from ca. 1900, but that may have been based on its style, rather than the age of the materials, or perhaps the bridge has been rebuilt since the survey underlying the interim rpt was conducted in 1988. Maybe the biennial county bridge inspection report would shed light on this bridge's age. Its style is somewhat unusual, although I seem to recall another like it in Jennings County, and I think I've seen photos of a few others over RR lines in northern Indiana.

Driving west of the wooden bridge, I looked southward, between the bldgs of the first farmstead, to try to get a look at the cattle bridge (or underpass) on US 50 that Patti had described as being in that vicinity. A couple of

times I thought I had caught a glimpse of it, but, if I had even been looking in the right direction, I didn't see it clearly enough to form an opinion of its significance or integrity. I think the bridge is worth checking out, however, because of its unusual function, but one might have to park along US 50 and walk down the berm in order to get a good look at it.

I found in our records that, in a Section 106 review several years ago, we had expressed the opinion that a house (20026) on Hayden Pike is eligible for the National Register under criterion A for its association with settlement in Center Township.

A few other, rural buildings or structures were also discussed after the formal meeting. As I had mentioned to some of your staff members after the meeting, the one-and-one-half story, wood frame I-house with a saltbox rear addition and some Greek Revival detailing (15033) on the north side of US 50 near CR 750W certainly deserves careful consideration regarding its NR eligibility. Also, that wood frame, former gasoline station (unsurveyed, I think) on the south side of US 50, closer to North Vernon, merits further investigation (Patti and Dennis recall it). The very large barn (possibly 20027) and and wood frame farmhouse just west of North Vernon are interesting, and the barn is especially impressive. The house and barn are worth reviewing further, but the house is partially collapsed, and I recall that Patti's saying that the farm is up for sale for residential development, so I'm not sure how much longer either the house or the barn will still be standing. We typically have not said that a barn, by itself, being an outbuilding, is eligible for the National Register, but there have been a number of exceptions to that general rule of thumb, expeciallyfor unusual types, such as round barns.

I realize that it's very early to be talking about impacts, but I want to emphasize that the one alternative that would take westbound US 50 north to Poplar St in the downtown area of North Vernon is of particular concern. It would not only require the moving or demolition of the former B&O passenger depot, but it also apparently would require the demolition of all of the historic commercial buildings (moving likely being infeasible) on the east side of Fifth Street between the current US 50 and the CSX tracks. Such an extensive amount of demolition would have a dramatically adverse effect on the North Vernon Downtown HD, and I would strongly encourage project planners to focus on other, less damaging alternatives.

John L. Carr
Structures Reviewer - Transportation
DNR Div. of Historic Preservation & Archaeology

HABS/HAER INVENTORY

See "HABS/HAER Inventory Guidelines" before filling out this card.

1. NAME(S) OF STRUCTURE

Indiana State Bridge 50-40-917B

2. LOCATION

on: State Rt. #50 [EBL]

E: 620550
N:4316070 Vernon

over: Muscatatuck River, Vernon Fork

3. DATE(S) OF CONSTRUCTION

c.1930; w.1980

4. USE (ORIGINAL/CURRENT)

Highway Bridge/Highway Bridge

5. RATING

6. CONDITION

Good

The Indiana Department of Highways chose to erect open-spandrel arches only where the distance between the roadway and the stream and the volume of water carried by the watercourse were both considerable. In such circumstances the weight of the fill and the side-to-side width of the structure reduced the economic advantages of the filled-spandrel reinforced concrete arch and sometimes made open-spandrels, which are usually an expensive alternative because of the required amount of framing, the form of choice. The IDH used a pair of ribs for their open-spandrel rings and transferred the loads from the deck through spandrel columns. Beams and slabs carry the concrete floor. The IDH built only a handful of these structures in the 1930s.

The 180' symmetrical center span is flanked by a 47' unsymmetrical one on each end. The center-span ribs are close to segmental, vary in thickness from 2' at the crown to 3' at the skewback, and spring from about 12' up on the piers. Inclined at the abutment and the pier, the outer-span ribs are about 1' deep at the crown and 18" at the substructure. The 44' concrete roadway, bounded by metal replacement rails, extends a few feet beyond the ribs on both sides.

One of the very few open-spandrels which the IDH built in the 1930s, this bridge carries an unusually wide center span with rather flat ribs. Bolted to the structure, the deck is not original. The replacement deck and rails, though, have had a modest impact upon the structure's architectural integrity.

10. NAME(S) OF STRUCTURE

50-40-917B

11. PHOTOS (W/ FILM ROLL & FRAME NO.) AND SKETCH MAP OF LOCATION

12. SOURCES

Inventory of Bridges on State Highway System of Indiana (Indianapolis, 1989)

13. INVENTORIED BY:	**AFFILIATION**	**DATE**
James L. Cooper	HAER-IN Inventory	1989

Carl Camacho

From: Heil, Larry [Larry.Heil@fhwa.dot.gov]
Sent: Monday, August 06, 2007 5:19 PM
To: Carl Camacho
Subject: FW: US-50 North Vernon Corridor Planning EA Study

Follow Up Flag: Follow up
Flag Status: Red

Fyi ... for your Participating Agency response files.

Larry Heil

U.S. Department of Transportation
Federal Highway Administration - Indiana Division
575 North Pennsylvania St., Rm 254
Indianapolis, IN 46204
Land Line: (317) 226-7480
Fax Line: (317) 226-7341
E-mail: Larry.heil@dot.gov

-----Original Message-----
From: Carol Legard [mailto:clegard@achp.gov]
Sent: Friday, August 03, 2007 3:31 PM
To: Heil, Larry
Cc: Charlene Vaughn
Subject: US-50 North Vernon Corridor Planning EA Study

Dear Larry,

On June 28, 2007, the Advisory Council on Historic Preservation (ACHP) received your invitation to participate in the environmental review process for the US-50 North Vernon Corridor Planning /EA project pursuant to Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). I have completed the postcard and will mail it in but wanted also to give you some perspective on our participation. At this time, we do not expect to attend meetings or provide formal comments at environmental review milestones. However, we are available to provide you with technical assistance, if needed, and may later decide to become more actively involved in the environmental review if, based on information provided by you or other consulting parties, we determine that our involvement is warranted.

In order to ensure compliance with Section 106 of the National Historic Preservation Act, the ACHP encourages FHWA to initiate the Section 106 process by notifying, at your earliest convenience, the appropriate State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officer (THPO), Indian tribes, and other consulting parties pursuant to our regulations, "Protection of Historic Properties" (36 CFR Part 800). Through early consultation your agency will be able to determine the appropriate strategy to ensure Section 106 compliance for this undertaking.

The agency should continue consultation with the appropriate SHPO/THPO, Indian tribes, and other consulting parties to identify and evaluate historic properties and to assess any potential adverse effects on those historic properties. If your agency determines through consultation with the consulting parties that the undertaking will adversely affect historic properties, or that the development of a Programmatic Agreement is necessary, the agency must notify the ACHP and provide the documentation detailed at 36 CFR § 800.11(e).

Thank you for inviting our participation in the development of this project. Should you have any questions, please feel free to contact me by telephone at (202) 606-8522 or by e-mail at clegard@achp.gov.

Thanks, Carol

Carol Legard
FHWA Liaison
Advisory Council on Historic Preservation
202-606-8522
clegard@achp.gov

Mitchell E. Daniels, Jr., Governor
Robert E. Carter, Jr., Director

DNR Indiana Department of Natural Resources
Division of Historic Preservation & Archaeology • 402 W. Washington Street, W274 Indianapolis, IN 462042739
Phone 317-232-1646 • Fax 317-232-0693 · dhpa@dnr.IN.gov

July 9, 2007

Carl D. Camacho, P.E.
Project Manager
Bernardin, Lochmueller & Associates, Inc.
6125 South East Street
Indianapolis, Indiana 46227

Federal Agency: Federal Highway Administration ("FHWA")

Re: Request for comments on Public Involvement Plan, Coordination Plan and Project Schedule, Draft Task Report--Identification of Existing and Future Conditions and Issues (June 2007), and Draft Task 2 Report--Definition of Purpose and Need and Identification of Preliminary Alternatives (June 2007) for the US 50 North Vernon Corridor Planning and Environmental Assessment Project (DHPA #1882)

Dear Mr. Camacho:

Representing a participating agency, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated June 8, 2007 and received on June 11, 2007, for the above indicated project in Jennings and Jackson counties in Indiana.

Public Involvement Plan

This plan appears to be appropriately crafted. Although we realize that a full review of the project under Section 106 of the National Historic Preservation Act is not possible at this time, the early involvement of Section 106 consulting parties, which began in March 2007, is commendable.

Coordination Plan and Project Schedule

We do not object to this plan and schedule, although it proposes a rather fast process. Our only request would be that possible alternatives that have relatively low potential to adversely affect historic properties not be discarded before more in-depth efforts to identify historic properties and to assess the project's impacts on them can be made, unless such alternatives clearly would not meet the project's purpose and need.

Task 1 Report—Identification of Existing and Future Conditions and Issues

We are satisfied with the information provided in this document. It should be kept in mind by all planners involved in this study, however, that reliance on current documentation of known, historic or potentially historic buildings, structures, and archaeological sites can provide only a limited picture of where impacts to such properties may occur

Task 2 Report—Definition of Purpose and Need and Identification of Preliminary Alternatives

We have no objection to the proposed purpose and need criteria.

Until field investigations are conducted, it may not be possible to be very specific about the relative numbers and degrees of impacts on historic properties of many of the alternatives currently under consideration. However, our impression, based on what is known at this time, is that the Added Travel Lanes Along Existing US 50 and the One-Way Pair Through North Vernon alternatives are likel y

to have very significant, adverse effects on historic properties, especially within the North Vernon Historic District and the Walnut Street Historic District, both of which are listed in the National Register of Historic Places.

In terms of potential impact on archaeological resources, a review of our records indicates that the proposed alternatives are in environmental settings that are suitable to contain archaeological resources. Once the preferred or chosen alternative is identified, the Indiana SHPO will be able to comment further and more specifically on the archaeology for this project.

Given the aforementioned factors, it is likely that a reconnaissance level archaeological survey will be required to determine the presence or absence of archaeological resources for the chosen alternative. The survey would need to be done in accordance with the Secretary of the Interior's "Standards and Guidelines for Archaeology and Historic Preservation" (48 F.R. 44716). A description of the survey methods and results would need to be submitted to the Division of Historic Preservation and Archaeology for review before we can comment further (list of qualified archaeological contractors enclosed). Once the preferred or chosen alternative is identified, the Indiana SHPO will resume identification and evaluation procedures for the archaeological aspects of this project. Please keep in mind that additional information may be requested in the future.

If you have questions about archaeological issues please contact Dr. Rick Jones at (317) 233-1949 or rjones@dnr.IN.gov. If you have questions about buildings or structures please contact John Carr at (317) 233-1949 or jcarr@dnr.IN.gov. Additionally, in all future correspondence regarding the above indicated project, please refer to DHPA #1882.

Very truly yours,

James A. Glass, PhD
Deputy State Historic Preservation Officer

JAG:JLC:JRJ:jj

cc: Robert F. Tally, Jr., P.E., Federal Highway Administration
Christopher Koeppel, Indiana Department of Transportation

Preliminary Alternatives Screening Coordination

DNR Indiana Department of Natural Resources

Mitchell E. Daniels, Jr., Governor
Robert E. Carter, Jr., Director

Division of Historic Preservation & Archaeology•402 W. Washington Street, W274 · Indianapolis, IN 46204-2739
Phone 317-232-1646•Fax 317-232-0693 · dhpa@dnr.IN.gov

March 26, 2008

Carl D. Camacho, P.E.
Project Manager
Bernardin, Lochmueller & Associates, Inc.
6125 South East Street
Indianapolis, Indiana 46227

Federal Agency: Federal Highway Administration ("FHWA")

Re: The preliminary alternatives screening report titled "US 50 North Vernon Corridor Planning and Environmental Assessment Study . . . Final Report, February, 2008" (Des. Nos. 0401401 and 0401402; DHPA #1882)

Dear Mr. Camacho:

Pursuant to the National Environmental Policy Act of 1969, as amended (42 U.S.C. § 4321, *et seq.*), and Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. § 470f), and implementing regulations at 36 C.F.R. Part 800, the staff of the Indiana State Historic Preservation Officer has conducted an analysis of the materials under cover letter dated February 26, 2008 and received on February 27, 2008, for the above indicated project in Jennings and Jackson counties in Indiana.

We do not disagree with the proposal in this report to advance the project to the environmental impact statement level of review or with the proposals to eliminate from further consideration Western Alternative W, both Through Town Alternatives (One Way Pair and Added Travel Lanes), and Bypass Alternatives C and E. It is our understanding, based on my staff's participation in the March 20, 2008 resource agency meeting, that FHWA now favors adding another Western Alternative, a variation on Alternative W employing transportation system management techniques. We do not oppose consideration of that alternative, although we do not have enough information about what it might involve to comment on its possible impacts on historic properties. At the March 20 meeting, FHWA and the Indiana Department of Transportation also proposed to eliminate from further consideration Bypass Alternative D. We are not aware of any reason why eliminating Alternative D would be disadvantageous from the standpoint of avoiding impacts on historic properties, but we recognize that there may be issues related to other kinds of resources that would make Bypass Alternative D attractive.

Inasmuch as the investigation into the impacts on historic properties to date has been based to a great extent on existing documents, however, we would caution against drawing further conclusions about the alternatives that will be advanced for additional study based on what is currently known (as reflected in Table 6.3). Field investigations conducted during the next stage of analysis will shed further light on the significance and integrity of known properties and might identify other, potentially significant properties that are not currently documented. Furthermore, the analysis of indirect effects on historic properties could indicate that significant adverse effects would occur that are not related to the direct impacts that have been projected to date.

The Section 106 area of potential effects ("APE") of one mile on either side of each alternative—subject to narrowing or widening as dictated by physical conditions and potential effects—that was recommended in Section 5.3.4.1 is probably an appropriate starting point for field investigations of historic properties, other than investigations exclusively of an archaeological nature. We would suggest that the APE for each alternative also extend outward from each terminus with a similar radius, to take into account indirect effects that could occur to properties lying beyond the areas where actual construction would occur.

If you have questions regarding issues pertaining to historic buildings or structures, please contact John Carr at (317) 233-

1949 or jcarr@dnr.IN.gov. Questions about archaeological matters may be directed to Dr. Rick Jones at (317) 233-0953 or rjones@dnr.IN.gov. In all future correspondence regarding the above indicated project, please refer to DHPA #1882.

Very truly yours,

James A. Glass, Ph.D.
Deputy State Historic Preservation Officer

JAG:JLC:JRJ:jj

cc: Lawrence M. Heil, P.E., Federal Highway Administration, Indiana Division
Christopher Koeppel, Indiana Department of Transportation

Environmental Unit
402 W. Washington Street, Rm. W264
Indianapolis, IN 46204-2641

11 April 2008

Lawrence M. Heil, PE
US Department of Transportation
575 North Pennsylvania Street, Room 254
Indianapolis, IN 46204

Re: DNR #12826-1: US 50 North Vernon Corridor Preliminary Alternatives Screening Report; Multi County (Jackson and Jennings)

Dear Mr. Heil:

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969. The following comments and recommendations are separated by Division within the Department.

DIVISION OF FORESTRY

Any chosen route should minimize the impact on the forested acreage and protected lands within it's route as much as possible. Alternatives A and D are the least recommended due to the number of forested acres and number of classified forest impacted. Alternative B is the most preferred, but areas populated with Eastern Hemlock need to be avoided. Alternatives W and W1 are the most preferred as they have the least impact to forested land and classified forests. The right-of-ways passing through forested areas should be kept to a minimum width. Any timber that is to be removed from a right-of-way should be utilized in order to avoided wasting the resource. The Division of Forestry recommends that areas of forestland that are cleared, and not covered under the 1991 MOU between IDNR and INDOT, be mitigated at a 2:1 ratio or greater.

Any fees or penalties that may be incurred by the landowners should be reimbursed to the landowner for areas that are removed from the classified forest program or conservation programs such as the Conservation Reserve Program (CRP) or the Wildlife Habitat Incentives Program (WHIP). Fees and penalties may include survey redescriptions, back taxes withdraw penalties, and repayment of funds for cost share practices.

DIVISION OF FISH & WILDLIFE

There are western and eastern alternatives associated with this project. The western alternatives go from US 31 eastward to County Road 575 West. The eastern alternatives begin at County Road 575 West and extend eastward to US 50 east of North Vernon. Based on the information contained in the report and the results of a meeting on March 20, 2008, all Western Alternatives and eastern Alternatives A and B are being carried forward for further analysis. Portions of the alignment are along existing US 50, while other portions will be new terrain.

There will be several impacts that will result from this project, including impacts to wetlands and floodway habitat. Any new alignments of US 50 could have unreasonably detrimental impacts to fish, wildlife, and botanical resources. The existing US 50 has several large public land properties and areas of significant natural quality located adjacent or close to its

right-of-way. The public land possibly affected includes federal, state and local public land: including 2 national wildlife refuges, a state fish and wildlife area, a state forest, a dedicated state nature preserve, a county park (originally a state park) and a number of high quality/unique natural areas. Several of the alternatives could or do impact one or more of these areas. All the alternatives presented impact large forested habitat areas and stream valleys that have not been identified as containing high quality natural areas or rare species, but have not been surveyed. New-terrain alignments should avoid impacts to forested areas and other natural habitat areas as much as possible.

For any alternative, we recommend the route that results in the least impact to fish, wildlife, and botanical resources. Environmentally preferable transportation options should focus on low impact alternatives that minimize road widening and that select new-terrain road construction as an option of last resort. As the environmental impacts from road construction are typically permanent and irreversible, new terrain road alignments need to be laid out with avoidance and minimization of environmental impacts as a top priority.

Western Section:

Alternatives W and W1 will result in the fewest impacts to fish, wildlife, and botanical resources as they make the greatest use of existing US 50. Alternative W3 would result in greater impacts compared to Alternatives W and W1 as it makes greater use of new terrain. Alternative W2 would result in the greatest impact to resources, including a new crossing over Storm Creek through an existing riparian corridor. Using the existing US 50 reduces the number of new crossings and new habitat fragmentation.

Eastern Section:

Alternative A will have almost two times the impact to forested habitat compared to Alternative B. However, Alternative B may impact a unique habitat type, unless it is realigned. As noted in previous comments, the alignment should avoid impacts to remnant stands of eastern hemlock. Hemlock may exist near the alignment for Alternative B. If so, the alignment should be modified to avoid impacting these trees. If impacts are unavoidable, this alternative should not be selected. For Alternative A, designing a bridge at the Vernon Fork that goes over portions of the forested valley is recommended as this would help avoid some impacts. Again, when choosing the preferred alternative, continue to further avoid habitat and natural resources through minor shifts in the alignment.

Designs for new bridges should include an opening with minimum dimensions of 8’ tall by 24’ wide that does not include the size of the opening over the channel. This opening under the bridge with unsubmerged dry land is essential for wildlife passage. If riprap is planned under the bridge, only dry land unarmored with riprap should be considered in the opening dimensions. Considerations can be made if alternative armoring materials are used.

In general, stream crossings should maintain a natural stream bottom. Bridges are recommended over culverts, and 3-sided culverts are recommended over 4-sided culverts. If a 4-sided culvert is used, it should be buried a minimum of 12” to maintain a natural stream bottom. If existing crossings are modified, they must provide for fish passage. In addition, modification of existing crossings should not impair wildlife movement to a greater degree than existing conditions.

Mitigation will be required for temporary and permanent impacts within the floodway. Impacts under one acre typically require 1:1 mitigation, and impacts of 1 or more acres require 2:1 mitigation. Mitigation ratios for wetland impacts can be found in the Natural Resources Commission's Information Bulletin #17 (see http://www.in.gov/legislative/register/20061213-IR-312060562NRA.xml.pdf).

Fish, wildlife, and botanical resource losses can be expected to occur as a result of this project. These losses can be minimized through implementation of the following measures, in addition to the above recommendations.

Revegetate all bare and disturbed areas within the project area using a mixture of grasses, sedges, wildflowers, shrubs, and trees native to Southern Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion.

Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.

Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.

Do not cut any trees suitable for Indiana bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark) from April 1 through September 30.

Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure.

Do not construct any temporary runarounds or causeways.

Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.

Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction.

Post "Do Not Mow or Spray" signs along the right-of-way.

Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.

Seed and protect all disturbed streambanks and slopes that are 3:1 or steeper with erosion control blankets (follow manufacturer's recommendations for selection and installation) or use an appropriate structural armament; seed and apply mulch on all other disturbed areas.

Plant five trees, at least 2 inches in diameter-at-breast height, for each tree which is removed that is ten inches or greater in diameter-at-breast height.

DIVISION OF NATURE PRESERVES (Natural Heritage Data)

Western section:

Muscatatuck National Wildlife Refuge (NWR) is located immediately south of each of the proposed alternatives in this section. As long as all of the proposed alternatives avoid the NWR, there should be no serious impacts to this resource.

Eastern section:

The state species of special concern Least weasel (*Mustela nivalis*) and the state endangered Kirtland's snake (*Clonophis kirtlandii*) have both been recorded at the location where Alternatives C, A, B, and E all converge. In Alternative A at Selmier State Forest, no state listed species or significant natural features have been recorded.

At the Vernon Fork crossing:
- The Indiana bat, a limestone cliff, and several rare invertebrates have been recorded in the vicinity of the proposed Alternative B.
- The Indiana bat and four (4) other rare invertebrates have been recorded about ¼ mile south of Alternative D.
- The state rare Barren strawberry (*Waldsteinia fragarioides*), the state endangered Clingman hedge-nettle (*Stachys clingmanii*) (recorded barely north of Option 1), the state threatened Sullivantia (*Sullivantia sullivantii*) (located just north of the other two plants), and Calli Nature Preserve are all located within the vicinity of Alternative E at the north end.

Of the 3 alternatives proposed for further study, Alternative A has the fewest potential impacts to Natural Heritage elements, Alternative D has the next fewest potential impacts, passing within approximately ¼ mile of Natural Heritage elements, and Alternative B appears to have the most potential impacts to Natural Heritage elements, passing right through a limestone cliff area, as well as Indiana bat and several rare invertebrate species area.

Our agency appreciates this opportunity to be of service. Please do not hesitate to contact Christie Stanifer, Environmental Coordinator, at (317) 232-4160 or toll free at 1-877-928-3755 if we can be of further assistance.

Sincerely,

J. Matthew Buffington
Environmental Supervisor
Division of Fish and Wildlife

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

APR 02 2008

REPLY TO THE ATTENTION OF:
E-19J

Larry Heil, P.E.
FHWA – Indiana Division
575 North Pennsylvania St.
Room 254
Indianapolis, Indiana 46204

Re: Preliminary Alternatives Screening Report / [Draft] Final Report – US 50 Corridor from I-65 near Seymour, Indiana to near the Jennings/Ripley County Line.

Dear Mr. Heil:

The U.S. Environmental Protection Agency (U.S. EPA) received your February 26, 2008, letter and copy of the February 2008, *Final Report* for the Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT) Environmental Assessment (EA)/Corridor Study of the above referenced US 50 corridor. Your letter invited us to review and comment on the *Preliminary Alternatives Screening Report* and invited us to participate in the March 20, 2008, Agency Review Meeting to discuss the findings of the screening report.

As you know, Ms. Virginia Laszewski of my staff participated in the March 20th Agency Review Meeting via telephone conference call and provided U.S. EPA's comments on the documentation sent for our review. This letter serves to reiterate U.S. EPA's comments during the meeting and regarding the February 2008, *Preliminary Alternatives Screening Report / [Draft] Final Report*.

We appreciate the clarification provided during the meeting that the February 2008, *Final Report* we received for our review should have been titled a *Draft Final Report* and that the *Preliminary Alternatives Screening Report* is contained within the *Draft Final Report*. U.S. EPA understands that a future *Final Report* documenting the agencies' comments on the *Preliminary Alternatives Screening Report / [Draft] Final Report* and the decisions made during the March 20th Agency Review Meeting will not be published. Instead, FHWA/INDOT intend that a report addendum be developed and circulated that summarizes major changes that have resulted from comments received on the February 2008, *Preliminary Alternatives Screening Report / [Draft] Final Report*.

Please send us a copy of FHWA/INDOT's decision addendum as soon as it is available.

March 20, 2008, Meeting - *Preliminary Alternatives Screening Report / [Draft] Final Report*
U.S. EPA agrees that an Environmental Impact Statement (EIS) should be undertaken if the project moves forward.

We agree that the *[Draft] Final Report* be amended to recommend that only the following alternatives are carried forward for detailed analysis in the future EIS:

- western alternatives: upgrade existing US 50 with TSM, W1, W2, and W3, and
- eastern alternatives A and B.

We agree that the *[Draft] Final Report* be amended to recommend that the following alternatives be eliminated from further consideration:

- all through town alternatives, and
- eastern alternatives C, D and E.

We recommend that the incorrect reference to Sixmile Creek be changed to Storm Creek in the discussions regarding wetland and forest impacts associated with western alternative W2 (pages 6-21 and 6-53).

The *[Draft] Final Report* contains contradictory sentences regarding the ability of the eastern alternative E to relieve truck traffic through the city. We recommend that the second and fifth sentences in the Alternative E discussion in Chapter 6 (page 6-51) be rewritten, as appropriate, to clarify the meaning intended.

To date, we believe a good effort has been made to avoid resource impacts including wetland impacts in the development and identification of the route alternatives to carry forward for detailed analysis in the EIS. Please continue to emulate this good work as the project progresses.

Keep in mind for the future EIS that it may be difficult to present western alternative W2 as the least environmentally damaging practicable alternative (LEDPA) for Clean Water Act, Section 404 permitting. There are other western alternative routes that satisfy purpose and need but have relatively far fewer direct wetland impacts. A particular concern for this alternative is the potential for relatively large forested wetland loss and the difficulty of successfully compensating for forested wetland loss.

We also advise that careful consideration be given to how each eastern route alternative may impact the direction of any future airport expansion and consequently, contribute to cumulative impacts. The future EIS will need to address this issue.

Future FHWA/INDOT EA/Corridor Study Reports

An EA/Corridor Study *Final Report* documents FHWA/INDOT's final decisions, including but not limited to, the alternatives to be carried forward for detailed consideration in a future Environmental Impact Statement (EIS) in compliance with the National Environmental Policy Act (NEPA). For FHWA/INDOT's future EA/Corridor studies, we continue to advise FHWA/INDOT consider the resource agencies comments on the *Preliminary Alternatives Screening Report* prior to publishing the FHWA/INDOT EA/Corridor Study *Final Report*. We believe the final documentation of the final decisions made for an EA/Corridor Study be contained in the Final Report to better inform the start of the EIS for a proposal by eliminating any confusion that could occur due to inadequate EA/Corridor Study documentation. This is particularly true when an EIS is not started soon after the conclusion of an EA/Corridor Study. The knowledge behind the final decisions made that are different from those contained in a prematurely published EA/Corridor Study "Final Report" may get lost if they are only memorialized in an addendum and/or errata sheet.

In addition, for future EA/Corridor Studies, we recommend that the titles given to various reports be consistently used by FHWA, INDOT and the consultants. In order to avoid confusion and expedite the agency review process, we also advise that report titles accurately reflect the nature of what the reports actually contain and the title names are correctly used in the cover letters accompanying the reports sent for agency review and comment.

We appreciate the opportunity to provide these U.S. 50 EA/Corridor Study comments. If you have any questions, please contact Ms. Laszewski, at 312/886-7501 or email at laszewski.virginia@epa.gov.

Sincerely,

Kenneth A. Westlake, Supervisor
NEPA Implementation
Office of Enforcement and Compliance Assurance

cc: Steve Smith, Long-Range Transportation Planning Section, Indiana Department of Transportation, 100 North Senate Ave., Indianapolis, Indiana 46204-2219

Carl Camacho, P.E., Bernardin, Lochmueller & Assoc., Inc., 6125 South East Street, Indianapolis, Indiana 46227-2128

Mike Litwin, USFWS, Bloomington Field Office, 620 South Walker Street, Bloomington, Indiana 47403-2121

Doug Shelton, U.S. Army Corps of Engineers, Attention: CELRL-OP-FN, P.O. Box 59, Louisville, Kentucky 40201-0059

United States Department of the Interior
Fish and Wildlife Service

Bloomington Field Office (ES)
620 South Walker Street
Bloomington, IN 47403-2121
Phone: (812) 334-4261 Fax: (812) 334-4273

April 3, 2008

Mr. Carl Camacho
Bernardin Lochmueller & Associates, Inc.
6125 South East Street
Indianapolis, Indiana 46227

Dear Mr. Camacho:

The U.S. Fish and Wildlife Service (FWS) has reviewed the Preliminary Alternatives Screening Report (Report), dated February, 2008, for the US 50 North Vernon Planning and Environmental Assessment Study in Jennings and Jackson County, Indiana. The following comments are being submitted in response to your request for comments dated February 26, 2008.

These comments are consistent with the intent of the National Environmental Policy Act of 1969, the Fish and Wildlife Coordination Act (16 U.S.C. 661 et. seq.), the Endangered Species Act of 1973, and the U. S. Fish and Wildlife Service's Mitigation Policy.

The Report reviews Purpose and Need and Preliminary Alternatives from previous correspondence for the US 50 study. It analyzes and evaluates the preliminary alternatives in two phases: Purpose and Need (Phase 1) and potential impacts/public and agency input (Phase 2). Based on the results of the evaluation the Report retains 3 western route segment alternatives (W1, W2 and W3) and 3 eastern route segment alternatives (A, B and D) to carry forward for further NEPA study. The "no-build" alternative was also retained as a baseline, however all action alternatives which do not involve US 50 reconstruction and a bypass of North Vernon were eliminated (Travel Demand Management, Travel Systems Management, Intelligent Transportation Systems and mass transit). The Report recommends an Environmental Impact Statement (EIS) for all alternatives carried forward for further study.

The issues of greatest concern for the FWS are national wildlife refuges, federal trust resources and water quality/aquatic habitat. Federal trust resources include migratory birds, federally endangered/threatened species and interjurisdictional fishes. The FWS' Region 3 also maintains a regional list of Resource Conservation Priority Species which includes candidates for the federal endangered species list and declining species which may eventually become candidates. The following comments address those resource issues, recognizing that most wildlife habitat impacts will affect federal trust species and/or aquatic resources in some manner.

Environmental Impact Evaluation

The environmental impact categories used in the analysis and evaluation which directly pertain to wildlife resources are summarized in Table 6-3. Those categories are grasslands, forest, wetlands, open water, floodplain and karst (acres affected); streams (number crossed); and public lands and government-funded habitat restoration/enhancement lands (number of parcels affected). Potential wetland impacts are further broken down into wetland types based on the National Wetlands Inventory. In Section 5.3.5.1 affected streams are categorized as named streams, tributaries or unnamed ditches.

We have several concerns with the limited scope of the environmental evaluation methodology. While we recognize that the scope of analysis is limited for preliminary alternatives due to cost considerations, evaluation of the remaining route alternatives should include the following components:

1. Stream impact analysis should address the quality of the streams and riparian corridors being affected and should include at an estimate of the extent of impacts at each impact site (e.g. anticipated right-of-way width at crossings and potential for stream channel relocation).

2. Fish surveys should be conducted at all major streams which would be affected. Existing stream survey information could substitute for this component where available.

3. Section 5.3.5.4 is titled Wildlife Habitat and Section 5.3.5.5 is titled Managed Lands and Forests. We recommend that the discussion of forest be transferred to the Wildlife Habitat section. Forest impact analysis should address the quality of woodlots and large forested areas being affected, and the extent of forest fragmentation that would occur.

4. The EIS should provide an analysis of potential impacts from secondary development for each alternative. Impacts should be considered in terms of adjacent wildlife habitat (forest, streams and wetlands) that may be affected by future development in ways that would probably not have occurred "but for" construction of the specified route alternative.

5. In accordance with our Memorandum of Understanding with INDOT, a karst survey should be conducted for Alternative D (for which potential karst impacts have already been identified) and for all other route alternatives which cross karst topography. All of the eastern route segments pass through karst terrain to some extent.

Table 5.12, in Section 5.4, is titled Potential Mitigation Measures. The Mitigation for Water Body Modifications category includes avoidance and minimization of stream impacts through best management practices. That category should be expanded to include stream enhancement and restoration. The table should be expanded to include mitigation for forest loss and fragmentation.

The evaluation of eastern Alternative D on page 6-48 notes that the alternative has higher natural resource impacts than other eastern route alternatives, then concludes that the alternative should be carried forward for further study. We believe that this evaluation is understated; Alternative D

has approximately 50% more total new right-of-way than the next closest alternative retained (718 acres) and substantially more impacts in most natural resource categories.

Alternatives Eliminated

All non-build alternatives have considerably less impacts on wildlife habitat than new road construction, both directly and indirectly. While non-build alternatives may not be adequate per se to serve this project purpose and need we recommend that non-build alternatives be considered as complementary project components, to reduce the scope and impacts of whichever build alternative is selected. Section 6.2.5 states "According to the Urban Transport Fact Book, mass transit carries only about 2% of the commuters in urban areas". We recommend that this statement be deleted because it is a poor basis for future planning. Low ridership on mass transit is often due in large part to the general inadequacy of funding and the predilection for highway construction over the last several decades. Major investment in mass transit may substantially change the public's future transportation preferences, resulting in reduced impacts to wildlife habitat, both directly through reduced road building and indirectly through energy conservation.

Comparison of Build Alternatives Carried Forward for EIS Analysis

Western Alternatives

Of the 3 remaining alternatives, Alternative W-2 has the greatest quantitative impacts on forest (50 acres; 17-22 acres greater than W-1 and W-3). It also has the greatest impacts on wetlands (14.8 acres forested wetland; 9.2 - 10.6 acres greater than W-1 and W-3). Other habitat impacts do not differ greatly among the 3 alternatives. The wetland impacts of W-2 are of greatest concern in this regard, however we must also consider the western alternatives in terms of their impacts on Muscatatuck National Wildlife Refuge (see discussion below). We cannot draw conclusions about the western alternatives until more information is provided from on-the-ground studies.

Eastern Alternatives

Alternative D has by far the greatest quantitative impacts on wildlife resources, including total right-of-way (718 acres), forest loss (216 acres) and fragmentation, wetland loss (9.9 acres), streams crossed (21), karst features identified (4) and classified forest and CRP parcels (10). Alternative B has the least impacts for right-of-way (448 acres), forest loss (87 acres), wetlands (0.8 acres), and Classified Forest and CRP parcels (1). Alternative A is midway between B and D in most habitat impacts categories. We consider Alternative D to be unacceptable due to the magnitude of wildlife impacts and recommend that it not be selected. We tentatively support Alternative B as having the smallest impacts, however we cannot draw a final conclusion in that regard until more information is provided from on-the-ground studies.

National Wildlife Refuges

All remaining western route alternatives skirt the boundary of Muscatatuck National Wildlife Refuge, and all remaining eastern route alternatives pass within a few miles of Big Oaks National

Wildlife Refuge. Our comments regarding both refuges in our review of the Preliminary Alternatives document (July 11, 2007) are still appropriate. The greatest potential for impacts is at the Muscatatuck Refuge, for which we are providing the following additional comments:

1. None of the alternatives retained for further study will directly affect Refuge property. We are still analyzing the potential indirect impacts of those alternatives in terms of the following issues:

a. Visitor safety.

b. Water quality.

c. Wildlife collisions.

d. Traffic disturbance of wildlife.

2. Alternative W-2, which shifts US 50 to the north, might actually have positive impacts on the Refuge for some or all of those issues.

Endangered Species

The proposed project is within the range of the federally endangered Indiana bat *(Myotis sodalis)* and running buffalo clover (*Trifolium stoloniferum*) (Ripley County only). The endangered species comments in our letter of July 11, 2007 are still appropriate for the alternatives carried forward for EIS analysis. Coordination with botany experts will be necessary to determine whether there are any concerns regarding potential impacts on running buffalo clover. We recommend the Indiana DNR, Division of Nature Preserves for that purpose.

Based on the current level of information, some alternatives may affect Indiana bat summer habitat to the extent that take of the listed species may occur, as defined under Section 7 of the Endangered Species Act. Bat surveys may be advisable for specific areas along some alternatives, to assist in the evaluation process by determining whether the Indiana bat is present and what level of Section 7 consultation will be necessary for various alternatives. As the evaluation process continues the FWS is available to coordinate with INDOT regarding Section 7 consultation, the possible need for bat surveys and appropriate locations for survey sites.

This endangered species information is provided for technical assistance only, and does not fulfill the requirements of Section 7 of the Endangered Species Act.

Executive Order #13186, issued on January 10, 2001, directs each federal agency taking actions having or likely to have a negative effect on migratory bird populations to work with the FWS to develop an agreement to conserve migratory birds. In addition to avoiding or minimizing impacts to migratory birds populations, agencies are expected to take reasonable steps to restore and enhance habitat and incorporate migratory bird conservation into agency planning processes whenever possible. The Environmental Impact Statement you are preparing will need to address this issue.

For further discussion, please contact Mike Litwin at (812) 334-4261 ext. 205.

Sincerely yours,

for Scott E. Pruitt
Field Supervisor

cc: IDEM, Water Quality Standards Section, Indianapolis, IN
Christie Stanifer, Indiana Division of Fish and Wildlife, Indianapolis, IN
Federal Highway Administration, Indianapolis, IN
Muscatatuck National Wildlife Refuge, Seymour, IN
Big Oaks National Wildlife Refuge, Madison, IN
National Park Service, Omaha, NE
Ethyl Smith, U.S. Department of Interior, OEPC, Washington, D.C.
Stephanie Nash USFWS, BPA(ERT), Arlington, VA

Jaime Sias

From: Carl Camacho
Sent: Wednesday, April 30, 2008 10:40 AM
To: Jaime Sias; Kia Gillette
Subject: FW: Hwy 50 alternatives impact on Purdue University

From: Biehle, Donald J. [mailto:biehled@purdue.edu]
Sent: Friday, March 21, 2008 1:57 PM
To: Carl Camacho
Cc: Fankhauser Jr, Jerry J; Hawkins, Stephen E.; Kladivko, Eileen J
Subject: Hwy 50 alternatives impact on Purdue University

Carl,

I am writing because of the impact of Highway 50 Alternative A and Alternative B on property owned by Purdue University.

The far eastern edge of these alternatives would take 14 acres of land from the Southeast Purdue Agricultural Center as referenced on page 5-69 of the Feb. 2008 Final Report
http://www.us50northvernon.org/downloads/US_50_Final_Report.pdf
This land would include both forest land and cropland.

Of particular note is a long term drainage research project that occupies this land. Information about this research can be found online at http://www.agry.purdue.edu/water/fieldstn/sepac.htm

I would like to visit with you or someone else on the study team about this issue. I look forward to hearing from you.

Sincerely,

Donald J. Biehle, Superintendent
Southeast Purdue Agricultural Center
4425 E Co Rd 350 N
PO Box 216
Butlerville IN 47223-0216
biehled@purdue.edu
812-458-6977
812-458-6979 fax
812-592-8426 cell

BERNARDIN ● LOCHMUELLER & ASSOCIATES, INC.

PLANNERS ● ENGINEERS ● SURVEYORS
6125 South East Street (US 31 South)
Indianapolis, IN 46227
TEL. (317) 222-3880 / FAX: (317) 222-3881

March 27, 2008

RE: US 50 – NORTH VERNON CORRIDOR PLANNING/EA STUDY
March 20, 2008, RESOURCE AGENCY MEETING MINUTES
DES Number: 0401401 & 0401402
BLA PROJECT Number: 106-0060-OCS/CS05

A Resource Agency meeting was held for the above referenced project on Thursday, March 20, 2008 at the Indiana Government Center North Building, Room N925, located at 100 Senate Avenue, Indianapolis, Indiana. Accommodations for participation from a remote location via conference call were also provided. Copies of handouts for the meeting were previously provided via e-mail. This meeting began at 1:30 pm and ended at 3:30 pm.

A list of those in attendance is listed below:

In Attendance	
Name	**Organization**
Carl Camacho	Bernardin, Lochmueller & Associates, Inc. (BLA)
Kia Gillette	BLA
David Ripple	BLA (via phone)
Tom Cervone	BLA (via phone)
David Holtz	Indiana Department of Transportation (INDOT)-Planning
Andrew Fitzgerald	INDOT-Planning
Laura Hilden	INDOT-Environmental Services
Ben Lawrence	INDOT-Environmental Services
Steve Smith	INDOT-Long-Range Planning Section
Karl Leet	INDOT
Larry Heil	Federal Highway Administration (FHWA)
Matt Buffington	Indiana Division of Natural Resources (IDNR)-Fish and Wildlife
John Friedrich	IDNR-Forestry
John Carr	IDNR – DHPA
Kimberly Wafford	Shrewsberry & Associates (S&A)
Virginia Laszewski	US Environmental Protection Agency (USEPA), Region 5 (via phone)

* The Federal Highway Administration (FHWA) initiated the meeting by commenting that a more detailed analysis will follow (an Environmental Impact Statement-EIS) and the Notice of Intent (NOI) will be refreshed. The following comments/questions were made during the course of the meeting:

Q: There was confusion about what is requested from the agencies at this stage of the project. The cover of the document provided indicated that it was a Final Report and there was concern that if this is the Final Report, will agency comments be incorporated? The FHWA transmittal letter dated February 26, 2008, and included with the Final Report to the agencies identified the enclosed report as a Preliminary Alternatives and Screening Report but the cover said Final Report.

A: This project is following the new Section 6002 guidelines. The project was initiated as a Corridor Planning/Environmental Assessment (EA) study with a Notice of Intent (NOI). The EA phase of the project is completed, hence the identification of the document as the Final Report. However, the words "final report should not have been used since this project will be advanced to an Environmental Impact Statement (EIS) and a NOI will be published. The Final Report received by the agencies with the February 26, 2008, FHWA transmittal letter should be considered the Preliminary Alternatives Screening Report as noted in the FHWA transmittal letter. As the transmittal letter stated, we are formally requesting comments on the document as a Preliminary Alternatives Screening Report and request **comments be provided by April 4, 2008**. All agency comments will be incorporated into the development of the EIS.

* Carl Camacho from BLA started with a PowerPoint presentation about the screening of alternatives. The following items were discussed or comments made:

Q: What happens with Alternative W2 and other alternatives that don't use existing US 50?
A: Existing US 50 would be relinquished to the local agency (city or county agency).

C: For the alternatives that are adjacent to the railroad, the railroad is an existing impediment to wildlife.
A: This will be looked at in greater detail for the final recommendation.
C: Alternative W2 crosses county roads and the railroad is very close, additional overpass bridges may be necessary in the future as county road intersections can become problems when adjacent to railroads.
C: Railroad corridors often also serve as utility corridors which can pose problems with a new adjacent roadway facility.
C: The facility will be access-controlled with access at county roads and some drives; therefore, some low volume roads may need to be closed and traffic routed to a different roadway. Coordination with schools and Emergency Service Providers would be done as a part of the EIS development.
C: Local road closures are a big concern for residences.
C: Local access issues are not addressed in detail at the current phase of the study.
C: Local road access to the new road may not be as big of an issue if existing US 50 remains as a local road.

C: Alternative W2 was stated to cross Sixmile Creek, with wetlands impacts in that area. Wetland impacts are mostly to forested areas, not sure if you can avoid wetlands if forested. Alternative W2 also has highest total forest acres.
C: It was noted that there is an existing bridge across Sixmile Creek along existing US 50 that already impacts the wildlife, therefore a new bridge at that location may not have significant impacts. Additional analysis will be needed to reduce environmental impacts.
C: **In discussions related to Alternative W2 the report, this crossing of Storm Creek was identified incorrectly as a crossing of Sixmile Creek**.

C: The $50 million cost programmed for the project does not include secondary and tertiary cost (mitigation costs, etc.); we do not want to raise expectations related to timing and the facility type because INDOT may not have the funding.
C: Secondary and tertiary costs could be a third to half more cost on top of construction.
C: It is important to note that at the meetings last week (CAC, public officials, and public meetings) it was presented that we do not have sufficient funds for the project.
C: It is unlikely that it will be constructed all at once. It is more likely to be constructed in "usable pieces." At the meetings, it was also requested that locals provide input related to which segments of the corridor should be constructed first.
C: The Department of Defense (DOD) may be involved in funding.
C: FHWA often includes a large contingency for year of expenditure costs.

C: The commissioner of INDOT has been briefed and has participated in the decision making for this study.

C: From a corridor preservation standpoint, there likely will not be a lot of competition in terms of buying land, but there may be competition north of North Vernon. Coordination with local zoning agencies may be necessary.

C: For eastern options, Alternative A was revised to include an option 1 and option 2. Option 2 is least costly, and will be the route Alternative A. Option 1 is eliminated. Alternative A is closer to newer businesses like Walmart, Lowe's, etc. and offers greater room for development.

C: Alternative C is similar to Alternative A but travels north of the airport.

C: Alternative D is considered the "bypass alternative" as it travels around town and the MUTC to the north.

C: Alternative E currently splits the Preserve and County Park. Two options, option 1 and option 2, were proposed. Option 2 reduces potential 4(f) impacts and other historic issues.

C: The report recommends that all thru-town alternatives be eliminated. They have a larger affect on businesses and historic districts. For the thru-town alternatives, there is also a concern about maintaining an at-grade railroad crossing downtown.

C: Alternative C is also suggested for elimination because it will significantly reduce traffic draw and possibly disable airport expansion.

C: Alternative E is suggested for elimination. The alternative crosses SR 3/7 and would require access to it. It would have an at-grade railroad crossing just east of SR 3/7. Traffic at the SR 3/7 intersection with existing US 50 (Walnut Street) would be significant and would possibly require up to seven lanes of roadway. The alternative would also increase thru-town traffic in this area as trucks would need to go through town to get north to industry and back south to the alternative. It is also not consistent with land use/development goals for the area. The development trends have been north of town rather than south.

Q: What is the train count on the Southern Railroad?
A: It is the Old Madison Railroad and it is fairly low, maybe 2 or 3 per day.

C: On page 6-51, there are contradicting sentences about traffic and Alternative E.
A: We will look into this and correct it.

C: The locals like the northern alternatives because development is to the north. The trucks go up there and there are open spaces along SR 3 for development.

Q: In the EIS, will we see a modified W on the west side using existing US 50 with minor improvements?
A: When we approve an EIS, we may not have all of the money by 2030. We may issue a Record of Decision (ROD) with what we have or do a phased or staged ROD.
C: That is one way or you can do some existing alignment improvements.
C: **Consensus was to include in the EIS an additional Western Alternative Preliminary similar to Alternative W that would include improvements to existing US 50 in combination with Transportation Management System Alternatives due to financial concerns related to the project.**

C: Alternatives E and B are most effective at diverting east-west truck traffic. Going through town fails to intercept truck traffic from the north.
C: Initially, FHWA was reluctant to dismiss Alternative E because it does perform very well in some instances. However, it is not consistent with land use plans in the area, and has significant impacts to the county park. The accumulation of issues caused us to eliminate it.

Q: Did you look into adding a spur form SR 7on the west side in combination with Alternative E?
A: This would likely call for another bypass so the cost and impacts would escalate.

C: I understand all alternatives meet Purpose and Need (P&N) and I understand why Alternative E was eliminated. Sentences #2 and #5 in the Alternative E discussion in Chapter 6 of the report need to be rewritten for clarity.
C: It needs to be reemphasized it was not compatible with future land-use.

Q: Do you have any actual and projected traffic and truck flow maps for the alternatives?
A: Yes, the travel demand model has project truck traffic flow for each alternative and the report contains tables that discuss these results.

C: Muscatatuck Urban Training Center (MUTC) favors Alternatives A and B. Alternative D puts some restrictions on them.

C: Many locals prefer Alternative A but would likely be receptive of Alternative B as the preferred alternative.

C: Alternative D seems to have the largest opposition because of farmland impacts.

C: Alternatives similar to Alternatives A, B and E are shown in the local comprehensive plan.

Q: The question was raised, "Why keep Alternative D?" It is the preferred alternative of IDNR, however it is not favored by other agencies. This is the only alternative that ties into US 50 east of Butlerville and alleviates some traffic concerns in that area. It also has a very high cost. It may have larger negative economical impact on town due to its total bypass of the town. All of US50 through the towns would have to be relinquished to local governments for up keep, is not favored by local government. Trucks may find US50 more convenient and continue their use of US 50.

C: The MUTC is not supportive of Alternative D because it would restrict them to the north.

C: Local government relinquishment was also brought up, there is a large amount of US 50 that would be relinquished to the locals.

C: Keeping Alternative D at this phase of the study development may actually be more costly due to time and money required for the additional EIS study of the area that would be necessary if Alternative D were eliminated at this phase.

C: The Indiana Department of Natural Resources (IDNR) liked Alternative D and hesitates to eliminate it at this point of the study.

C: Many DNR concerns are met with revisions to Alternative A, additional revisions may be necessary. DNR is willing to dismiss Alternative D with a revised Alternative A.

C: Locals were shocked to see Alternative D in presentation and landowners are withdrawing money from banks.

C: **It is recommended that Alternative D be removed from further consideration.** This is recorded in the meeting minutes and will be announced after the public and agency comment period if other comments do not alter this decision. An addendum will also be added to the report. Reasons for eliminating it should be documented.

Q: Concern was expressed about the airport and future runway expansion. Has this been considered in relation to the alternatives and in terms of cumulative impacts to wetlands and forests?

C: It has not been included in this study.

Q: A question was raised for Alternative A. Can the urban [cross] section be extended along CR 350 east to lessen impacts to the possible Section 4f properties (Selmier State Forest and St. Anne's Golf Course) by reducing required right of way? (Rather than using the rural cross-section)?

A: Yes, this should be looked at in more detail in additional studies and is recommended in the study recommendation.

C: At the Muscatatuck River crossing, a different type of cross section (perhaps a transitional cross section) may need to be considered because the maximum speed limit for the urban is 45 mph due to the barrier curb.

C: IDNR has concerns with hemlock stands for Alternative B.

C: You should consider phasing the eastern and western sections for fiscal reasons. It may need to be just 2 lanes in some areas when initially constructed.

C: It was suggested to look at minimizing cross sections, possibly making some semi-urban with narrower medians.

C: The next study would likely include a footprint for four lanes to get environmental clearance and have a detailed study related to construction phasing and staging.

Q: Will agencies be getting the revised version of the report?

A: This report will not be revised. Following the end of the comment period (April 4, 2008) there will be a report addendum developed and circulated that will summarize major changes that have resulted from comments

received on the Preliminary Alternatives Screening Report. The document, the addendum and all comments received throughout the project will be given to INDOT as a starting point for the EIS.

Q: How soon will the EIS process start?

A: An INDOT Project Manager has been assigned. It is anticipated that there will be a decision by INDOT in May for how to approach an EIS (e.g. Request for Proposals—RFP, or different approach).

C: Resource agencies should be given an opportunity to review a document prior to the Final Report so comments could be included in Final Report.

A: When EIS process starts, the Screening Report will develop into the Draft EIS and everything that was decided as a part of the Screening Report comments and coordination will be included in the Draft EIS. Agencies and the public will have many opportunities to review subsequent documents (Draft EIS, Final EIS, etc.) before the environmental study is completed.

C: For future studies, according to the process, agency review/comment should occur prior to finalizing the report.

C: Meeting minutes will be sent out to the agencies next week (week of March 24 thru March 28) and comments are due April 4, 2008.

C: Per public comments, an eastern alternative should be looked at that follows east side of railroad on the west side of North Vernon.

C: An assessment of the corridor next to railroad should be completed as a part of the EIS because of operational concerns. For design of the Eastern Section Alternatives adjacent to the existing railroad west of North Vernon, there are no issues with intersecting roads but there could be an issue with Western Section Alternatives near the railroad.

C: **A summary of alternatives recommended for further NEPA study was discussed. In the Eastern Section of the Study Area, Alternatives A and B (with revisions/tweaking to avoid and minimize impacts) were recommended for further NEPA study. For the Western Section of the Study Area, the TSM alternative and Alternatives W1, W2, and W3 are recommended for further NEPA study. All other alternatives have been eliminated from consideration.**

These Meeting Minutes were prepared by:

Carl D. Camacho, P.E.
Project Manager

March 27, 2008
Date

cc: File
Participating Agencies
Project Management Team

Public Comments

Carl Camacho

From: Janos Bingham [zachbb@msn.com]
Sent: Monday, August 06, 2007 9:28 PM
To: Carl Camacho
Subject: Fw: Comments, Attn:Carl D. Camacho,P.E.
Follow Up Flag: Follow up
Flag Status: Red

----- Original Message -----
From: Janos Bingham
Sent: Monday, August 06, 2007 9:15 PM
Subject: Comments, Attn:Carl D. Camacho,P.E.

It seemed like everyone was leaning toward the North Route. In that case it seems like the best route would be North of Hayden. If you used my proposed exit off I-65 you would not even have to contend with the railroad. It would miss all the businesses on Hwy 50 and many more homes lining the Hwy. Fewer people to deal with. I am well aware it will take farm fields in places. Many will be some of ours I am sure since we have several over that way. But seeing the difference in a concentrated area as US 50 and North in the country, I would think less money & time would be spent on this proposal .

The big turn or loop in the road at 575 W is the busiest intersection on US 50 between North Vernon and Seymour. There are businesses on 3 corners plus the stone quarry which always has many trucks a day pulling on to the road. I think it would be wise to keep them on the old 50 to alleviate the steady stream of traffic pulling out there. To make a big loop there does not seem very efficient. The only business that could possibly suffer from no 50 through traffic could be Bingham Farm Machinery. It just seems so much less involved to take it North, that I feel it may be the answer.

Now it looks like the most efficient would be to get off of 65 on the overpass at rd .700 N. in Jackson Co. and go straight North to hook up to your Northern route. We were told you like the off ramps to be 3 miles apart, but I have seen exceptions and if you ever have been around when they have an accident on 65, with just one off ramp you would see how those of us on the East side are cut off from Seymour for hours. That extra exit would sure help Seymour and all of us around here.

Now if the 3 miles is how you want it there is the next overpass North of that. I believe it would still be a straight line to your loop and very close to 3 or 4 miles from 50 exit. It is rd. 800 N. in Jackson =20 Co.

Even by avoiding the Muscatatuck Refuge by your proposal you are still so close to all the animals. The deer killed by cars would have to increase and that is a real danger. Local traffic knows to be on the look out in that area .

If you have to use the 50 exit now you can still go to the first road that goes left or North before the Refuge which is rd. 1250 E., in Jackson Co. or the first road to the left or North, after the refuge which is rd. 900 W in Jennings Co. and take off straight North from there.

I hope you will review this proposal, that has been talked about by several officials in Seymour and see it's merit. Thanks for this opportunity .

Respectively Submitted by
Janos Bingham
812-346-2955
zachbb@msn.com

US 50 – North Vernon
Corridor Planning and
Environmental Assessment Study

Comment Form

Event: Open House **Date:** June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: J. Bingham

Address: 1505 So. Co. Rd. 575 W
North Vernon, In. 47265

Comments:

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: **www.us50northvernorn.org**
- Or mail to:
  US 50 – North Vernon Corridor Planning/EA Project
  Bernardin, Lochmueller & Associates, Inc.
  ATTN: Carl D. Camacho, P.E.
  Project Manager
  6125 South East Street (US 31 South)
  Indianapolis, IN 46227

Fold along this line, tape closed, and mail with proper postage.

Place Stamp Here

US 50 – North Vernon Corridor Planning/EA Project
Bernardin, Lochmueller & Associates, Inc.
ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

Betty Creech
P.O. Box 659
North Vernon, IN 47265
June 28th, 2007

Mr. Carl D. Camacho, P.E., Project Manager
US 50 – North Vernon Corridor Planning/EA Project
Bernardin, Lochmueller & Associates, Inc.
6125 South East Street
Indianapolis, IN 46227

Dear Mr. Camacho:

I have attended both of your planning meetings at North Vernon regarding the US 50 Bi-Pass Project, as we own the farm just east of North Vernon that you show tri-secting - on your Alternate Plan B Corridor Study. Looking at the map, you will see the Muscatatuck River winds around the farm.

We have owned and lived on this farm for 43 years, so are pretty much aware of the area. Where you propose crossing the Muscatatuck is over the reservoir for the City of North Vernon's water supply, just above the City dam and pumping station.

A few years back, there was a major fish kill here in the river, and the EPA was called in to try to find the problem. I talked to one of the men who was here on the farm checking, and he said it could possibly have been from a black-top residue. At the time, there was a black-topping operation set up inside the Quarry, and even tho they had NOT had a spill, they said a heavy rain could have washed a residue from the roadways into the drains. They never did determine where the contaminate had originated ..... the river eventually cleared up.

At another time, there was a minor oil spill from an oil company in the area, which drained into the reservoir, and they called in a 'Mop Up Company' whose men were here for several days cleaning up the river.

The Muscatatuck is a slow moving river, fed only by springs and run off. Only in a rainy season, a heavy rain or when water is being released from the Brush Creek Reservoir - when needed water is let down - is there a noticeable movement of the water. Here above the dam it is mostly pooled, so contaminates are slow to dissipate.

What I am emphasizing is that the whole area drains into the reservoir, and if this route is chosen, any spillage or drainage or ditch run-offs from the new highway will go into the City's reservoir – North Vernon's drinking water. Perhaps your engineers were not aware of this when they were drafting the routes, but if they will check their topographical maps, they will see the problem. This needs to be brought to their attention.

Thank you for your informative meetings – we all know the bi-pass is needed, but we also need to get it right.

Respectfully,

Betty Creech

CC: John Hall, Mayor, North Vernon
Jack Kelly, President, North Vernon Water Board
North Vernon Plain Dealer & Sun
Charles R. Waggoner, Attorney, City of North Vernon
Harold McConnell, Attorney

US 50 – North Vernon Corridor Planning and Environmental Assessment Study

Comment Form

Event: Open House

Date: June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: CURTIS & KAYE DE CAMP

Address: 1330 E. PRIVATE RD. 350 N.

NORTH VERNON, IN. 47265-6770 TEL: 812-346-6857

DATE: JULY 07, 2007

Thank you for allowing my family the opportunity to comment on the proposed upgrading of U.S. 50 at North Vernon. We hope you will take our concerns and suggestions seriously.

Our extended family is strongly opposed to Alternative A being used as a bypass.
*It would go through the family farm (which has been in the De Camp family for 60 years). Five (5) of our homes would be either destroyed or made untenable and the tranquility and privacy of our rural way of life - **which way of life is our deliberate choice** - would be destroyed.*

We have strived to make this place a sanctuary for wildlife as well as for ourselves and the effect Alternative A would have on this beautiful section of Muscatatuck Creek and all who live here would be quite devastating. We invite you to come and visit us to see for yourselves before you make such a devastating choice.

It is no light matter to propose to tear up people's whole lives even if you have the power to do it. So we ask that those in charge seriously consider the results of any choices they make. It does not only affect the families directly in the path of the road works, but eventually the decision makers themselves who have to live with the consequences of their actions.

For this reason, we also cannot condone the use of most of the other bypasses. Think of all the families who would be similarly devastated by any uncompassionate or ill-considered decisions.

If the road needs upgrading, then we would opt for one of the following 3 choices.

Choice 1: Keep the highway going through North Vernon but use 2 (one-way) roads. With off and on ramps provided, the North Vernon businesses would not be adversely affected by the loss of transiting business- especially gas stations, restaurants and the like. And the highway would remain in an urban environment just as it is now.
Choice 2: Alternative E would be the shortest and straightest route with less impact on people who have chosen rural, uncrowded lifestyles.
Choice 3: Alternative B would skirt and contain the industrial area which would have several benefits. [a] It would prevent industrial sprawl and create a contained, sensible area for industry. [b] There are not too many homes in the industrial area so it would not affect as many individuals. [c] This alternative would also preserve access to St. Anne's golf course and Selmier State Forest (unlike Alternative A).

Thank you for reading and especially for taking time to consider our concerns.
Please come and visit us.

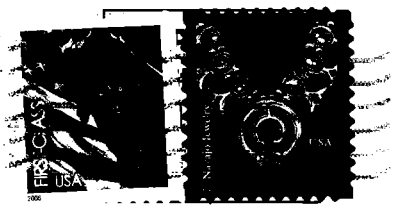
Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: **www.us50northvernorn.org**
- Or mail to:
  US 50 – North Vernon Corridor Planning/EA Project
  Bernardin, Lochmueller & Associates, Inc.
  ATTN: Carl D. Camacho, P.E.
  Project Manager
  6125 South East Street (US 31 South)
  Indianapolis, IN 46227

Fold along this line, tape closed, and mail with proper postage.

CURTIS & KAYE DE CAMP
1330 E. PRIVATE RD. 350N
NORTH VERNON, IN 47265-6770

INDIANAPOLIS IN 462
06 JUL 2007 PM 5 L



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6125 South East Street
Indianapolis, IN 46227

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BY INDY

Carl Camacho

From: Trent Woodward [twoodward@fpbhonline.com]
Sent: Thursday, July 12, 2007 9:10 AM
To: Carl Camacho
Subject: City of North Vernon Annexation Map
Follow Up Flag: Follow up
Flag Status: Red
Attachments: 2007_05_09_AnnexMasterPlanMap_067238.pdf

F P B H, =20 Inc.

Engineers Surveyors Planners Inspectors
72 Henry Street P.O. Box 47 North Vernon, Indiana 47265
Phone: 812-346-2045 Fax: 812-346-8045 Toll Free: 1-866-ENG-FPBH
www.fpbhonline.com

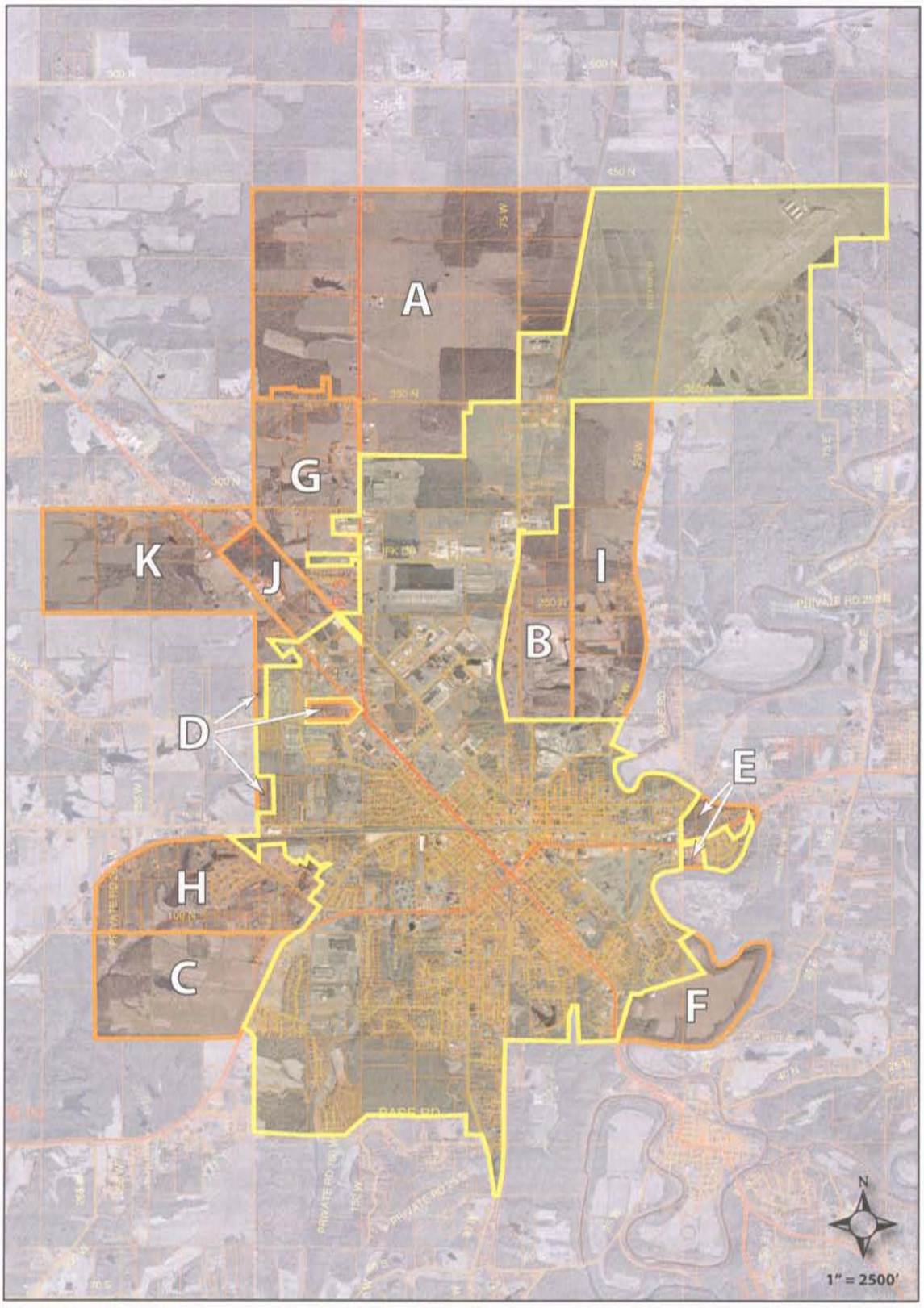
Mr. Camacho,

Here is the city annexation map for North Vernon in PDF format. If there is anything else that you need, just let us know.

If you have any questions or desire any additional information, please feel free to contact us at any =20 time.

Trent Woodward
Planner / GIS Technician
812-346-2045 x110

xc:
file:



= Existing City Boundary

= Proposed City Boundary

City of North Vernon Annexation Master Plan

Areas outlined will be studied over a 5-10 year period as directed by the City Council. Studies or annexations may or may not occur in alphabetical order.

FPBH, Inc.

Engineers & Surveyors & Planners & Inspectors

72 Henry Street
P.O. Box 47
North Vernon, IN 47265

Phone: (812) 346-2045
Fax: (812) 346-8045
Toll Free: 1-866-END-FPBH
www.fpbhonline.com

SCALE: 1" = 2500' DRAWN BY: TDW CHECKED BY: BRB
DATE: MAY 9, 2007 JOB NO: 06-7238
FOR: CITY OF NORTH VERNON

ANNEXATION MASTER PLAN MAP
-CITY OF NORTH VERNON, IN-

Revision	Date

US 50 – North Vernon
Corridor Planning and
Environmental Assessment Study

Comment Form

Event: Open House **Date:** June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
[illegible]s are welcomed and appreciated.

Name: George Horstman

Address: 2075 West US Hwy 50
North Vernon IN 47265

Comments:

We live on Hwy. 50 just past middle school road on a small farm. Something really needs to be done. None of proposed routes will change our farm, but any will ease traffic in our area. 40 acres of our farm is in the city limits. It would be great if rail could carry more of the traffic load, + ease the burden on the highways.

Others more knowledgable than I must make a decision about the route to take around N. Vernon. Definitely the cost to the taxpayer should be weighed into this decision. Sorry this is late.

George Horstman

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: **www.us50northvernorn.org**
- Or mail to:
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  ATTN: Carl D. Camacho, P.E.
  Project Manager
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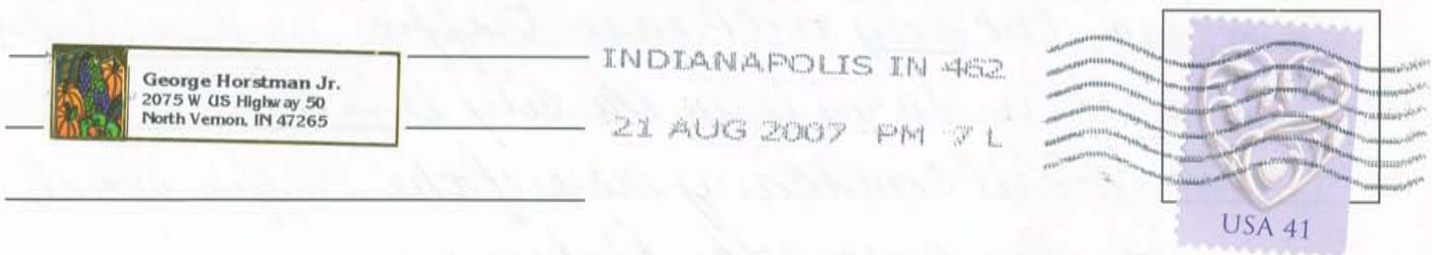

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Comment Form

US 50 – North Vernon Corridor Planning and Environmental Assessment Study

Event: Open House

Date: June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: DEAN JONES N.V. WATER SUPT.

Address: 439 9TH ST.
NORTH VERNON, IN 47265

Comments:

MY SYSTEM WILL ONLY BE AFFECTED BY THE WIDENING OF 50 THROUGH DOWNTOWN + THE POPLAR STREET ALTERNATIVE. MY PROBLEM IS NOT OPPOSITION TO THESE ALTERNATIVES BUT, THE WATER COMPANY'S BUDGET IS NOT SUFFICIENT TO PAY FOR MUCH MAIN RE-LOCATION. THE MAINS BEING IN + OUT OF CURRENT EASEMENT AFFECTS POSSIBLE FEDERAL MONEY PAYING FOR RE-LOCATION. WE ARE WILLING TO HELP AS MUCH AS OUR FINANCES WILL ALLOW. LESSENING TRAFFIC THROUGH OUR OLDEST SECTION OF TOWN COULD LESSEN SOME STRESS ON OUR 80 yr. OLD MAINS. ALL THOSE TRUCKS CAN VIBRATE LOOSE TUBERCULATION IN THE MAINS OR WORSE YET, CAUSE MAINS TO BREAK.

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: **www.us50northvernorn.org**
- Or mail to:
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ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

Carl Camacho

From: Seal, Glenda [GSEAL@indot.IN.gov]
Sent: Friday, July 20, 2007 3:28 PM
To: Carl Camacho
Cc: Hamilton, Beth; Ude, Jim; Local Service Center
Subject: #12610, US 50 BYPASS
Follow Up Flag: Follow up
Flag Status: Red

Dear Carl,

We received the following comments (see below) from Judy Kipper that need to be included in the US 50 North Vernon Corridor Planning and Environmental Assessment Study. I have sent Mrs. Kipper an e-mail giving her the web site http://www.us50northvernon.org so that she can find out information about the study and to let her know that any future comments about the study can be sent to the following address:

US 50 – North Vernon Corridor Planning/EA Project
Bernardin, Lochmueller & Associates, Inc.
ATTN: Carl D. Camacho, P.E.
Project Manager
6125 South East Street (US 31 South)
Indianapolis, IN 46227

Glenda M. Seal
Customer Service Manager
INDOT - Seymour District
185 Agrico Lane
Seymour, IN 47274
812-524-3720

From: Dennis Kipper [mailto:kippers@verizon.net]
Posted At: Friday, July 13, 2007 9:44 PM
Posted To: Local Service Center
Conversation: US 50 BYPASS
Subject: US 50 BYPASS

I just want to ask for your careful consideration on choosing the route for by pass 50 around North Vernon, In.
I live on 250 West, (AKA as Kipper Lane) which is mentioned in three of the possible routes, B, C, and D. We live on close to 100 acres
of land that has been deeded to a "Kipper" since 1866!!!!!!!!!!!!! We were awarded a Hoosier Homestead Award in 1983.
At the present time, there are four generations of Kipper's with homes on this land. The rest of the land is rented
farm land. Alot of people would be affected if the bypass were to come down our road. I am all for progress and moving forward, but
I hope someone can come up with a better route than to destroy our homes or anyones' homes. I ask that you think about this from
the stand point that it would be your home that would be destroyed and not what a few business men want that do not even live in this area. I vote to keep my historical farm in tack for future generations of Kippers, starting with my children and grandchildren.

Thank you,

Judy Kipper

Kirchmer Family
July 31, 2007

US 50 - North Vernon Corridor Planning / EA Project
Bernardin, Lochmueller & Associates, Inc.
Attn: Carl D. Camacho, P. E.
Project Manager
6125 South East Street (US 31 South)
Indianapolis, IN 46227

Dear Mr. Camacho:

The purpose of this letter is to raise what our family considers to be a significant community and environmental impact related to several of the build alternatives being proposed for the North Vernon highway 50 corridor currently under development and review.

A bit of family history is in order. Our parents, Clarence and Helen Kirchner settled on CR 150 east near Saint Ann's Catholic church. They had 18 children, and all but 4 of them have settled in the North Vernon area to raise their respective families. In fact, there is a dense concentration of Kirchners in the square formed by county road 150 east, CR 550 north, Base Line road, and CR 450 north. That small area has 14 Kirchner family homes. As family members grew up and started new families, our parents gifted several acres of the family farm to the newlyweds and the small Kirchner community subsequently grew. At the moment, the Kirchner family has 18 children, 54 grandchildren (most of whom are married and also living in the North Vernon area), and 68 great-grandchildren.

Before our parents died, they deeded 13 acres to a family corporation. That parcel of land is just behind the homes on CR 150 east and CR 450 north. It has been developed by the family into a family park. There is a pond that is stocked with fish, a shelter house, a baseball diamond, basketball court, volleyball courts, and various pieces of playground equipment. This park has become the focal point for most all of our family gathering and celebrations. Several family weddings and receptions have also been held there. We all treasure the peaceful atmosphere of that family gathering spot and are very concerned about the noise and traffic a nearby highway would cause.

After our parents died, the remaining farm property in the estate was purchased by several of the 18 children so that the entire farm remains in the family.

We as a family recognize the challenges presented by the future potential growth of the area and welcome the study currently underway to plan for that future growth. We are very much aware of the explosive growth that the Muscatatuck Urban Training Center will bring to the area. Several family members are already employed there.

A lot of attention in the plan addresses traffic from the center, as training groups arrive and depart, but does not touch on something that we perceive as being vital to the center's future growth. The airport already has a significantly long runway for an airport its size. That means that it can handle very large planes as is. Military aircraft

traffic has substantially increased in 2007. Any future ground traffic plan will have to improve the direct link of the airport with the training center. With the addition of new terminal facilities, the airport will also help develop the industrial growth in the area. That suggests to us that build alternative B and E will not remain as viable alternatives since they do not address the direct involvement of the airport in the future growth and significance to the Muscatatuck Urban Training Center or the North Vernon community at large.

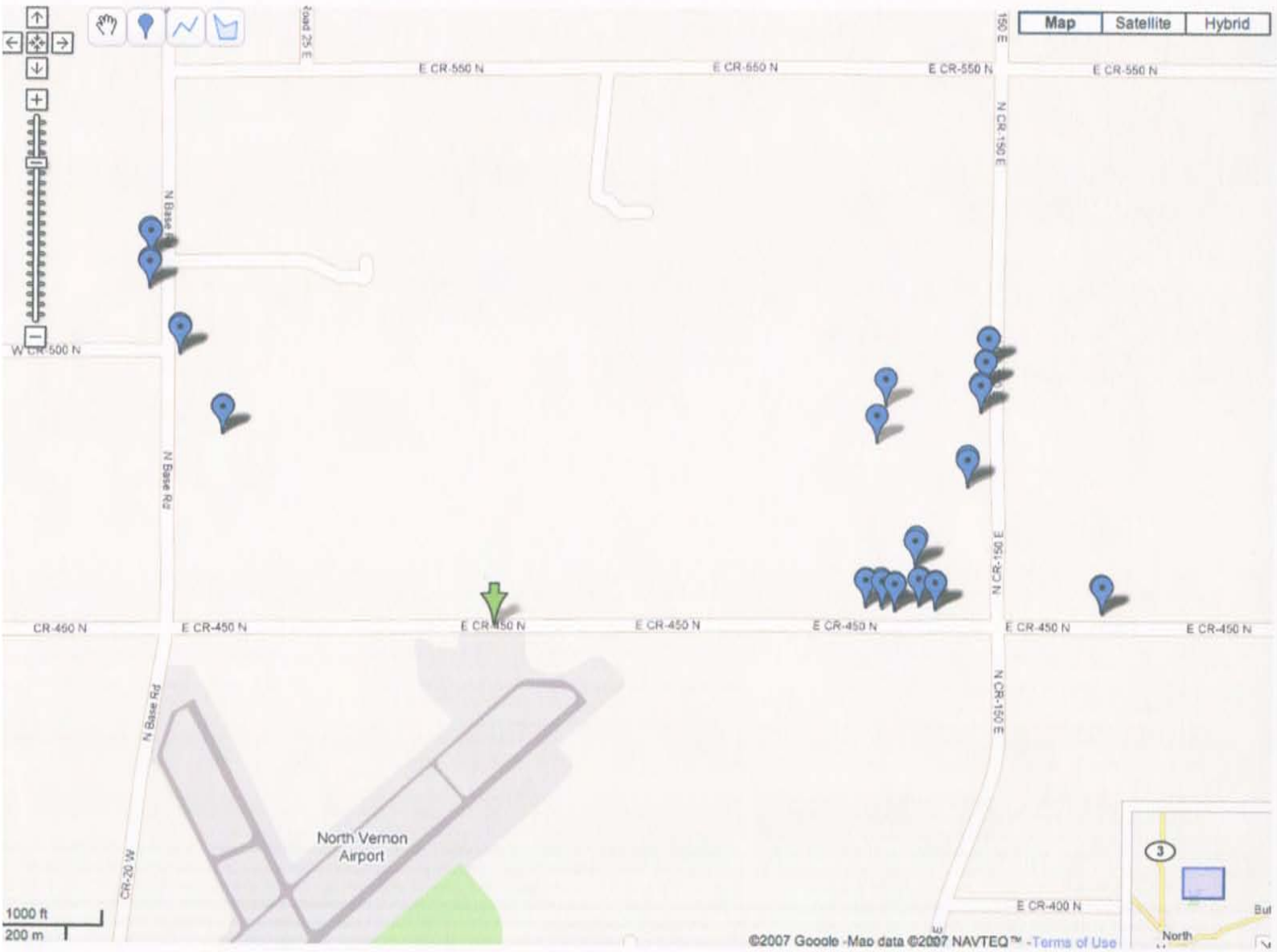
Our specific area of community concern almost borders the airport. We would like, as a very interested and potentially directly affected community group, to lend our support to Build alternatives A or B. While alternative B does not have direct access to the airport, a short connector from the airport to B could be easily accomplished. Alternative A would lend itself to the airport directly, while greatly improving and expanding all industrial corridor growth below the airport and providing for significant industrial growth.

We take direct issue with build alternatives C & D, which would directly threaten Kirchner homes and divide the section of our property that has the most concentration of current and future family development.

Respectfully,

The Kirchner Family

Pins on the map below represent Kirchner family homes in the area of interest.



Eric J. Kirchner

Brittany Kirchner

Jeanette Kirchner Sirsich

Jane F. Kirchner

Dorothy Kirchner Palmer

Joseph L. Kirchner

Michael K. Kirchner

John Kirchner

Stephen A. Kirchner

Mark E. Kirchner

Robert Kirchner

Arden Kirchner

Margaret Carson

Jean Kirchner

Emily Kirchner

Karen Kirchner

Geraldine Kirchner

Cynthia Kirchner-Neal

Douglas M. Kirchner

Vicki L. Kirchner

Timothy J. Kirchner

Patrick R. Kirchner

Sandra A. Kirchner

Rick Carson

Karla Carson

Lyle Johnson

Michelle Colglazier

Richard Colglazier

Mary Kirchner Buck

US 50 – North Vernon
Corridor Planning and
Environmental Assessment Study

Comment Form

Event: Open House **Date:** June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Hattie Kuntz

Address: 2575 W. Co. Rd. 150 N
North Vernon, In 47265

Comments:

I'm a widow. I have lived on this property come September 49 yrs. My house we built in 1970 moved in & Dec 23 - will 37 yrs. my husband & I built it & he is deceased.

a lot of memories in this home & he isn't here to build me another one or boss it built.

I'm too old to move, & am 1½ miles from the railroad bridge on 7. (O & M ave)

I pray you will go another route.

Hattie Kuntz

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: **www.us50northvernorn.org**
- Or mail to:
  US 50 – North Vernon Corridor Planning/EA Project
  Bernardin, Lochmueller & Associates, Inc.
  ATTN: Carl D. Camacho, P.E.
  Project Manager
  6125 South East Street (US 31 South)
  Indianapolis, IN 46227

Fold along this line, tape closed, and mail with proper postage.

Ms Hattie M Kuntz
2575 W County Road 150 N
North Vernon, IN 47265

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ATTN: Project Manager, Carl D. Camacho, P.E.
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Indianapolis, IN 46227

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US 50 – North Vernon Corridor Planning and Environmental Assessment Study

Comment Form

Event: Open House

Date: June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: CAROL LAYMAN HUSBAND = DON

Address: 2730 W CO RD 200 NORTH

NORTH VERNON 812 346-2780

Comments:

We have turned our 44 acre farm into an Official nature sanctuary, mainly birds.

We are the outdoor lab for North Vernon Elementary, having hosted field days since 1988. We stress local wildlife in our educational presentations.

We are between alternative A and alternative B. I have circled our place on the map (one of the maps).

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
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ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

Carl Camacho

From: Grady, Timothy - Timothy L [Timothy.L.Grady@Lowes.com]
Sent: Wednesday, August 01, 2007 3:09 PM
To: Carl Camacho
Cc: kertel@jenningsedc.com
Subject: FW: Hwy 50
Follow Up Flag: Follow up
Flag Status: Red

Carl,

Not a formal letter but did want to get to you Lowe's opinion of the various routes being considered. Please see the yellow highlight. We are concerned that the road will now require traffic to make a left hand turn onto JFK.

Tim G.

CUSTOMER FOCUSED

... sending INTENSE MESSAGES of BELIEF!

From: Ochs, Rodney - Rodney E
Sent: Thursday, July 05, 2007 3:02 PM
To: Grady, Timothy - Timothy L
Subject: Hwy 50

Here are my thoughts..

From the West..

1st choice would be option D
2nd choice would be option A to D

From the East

1st choice would be option D
2nd Choice would be option D to A

Either way these routes will hit north of the DC. Which means the trucks will be going south on Hwy 3 and need to turn left into the DC. As a result Hwy 3 would need to be wider to allow for trucks to pull into a turning lane. Due to cross over traffic and problems visually turning onto Hwy 3 from JFK... a light might need to be considered.

Rodney Ochs
Transportation Manager
Lowe's Indiana RDC

US 50 – North Vernon Corridor Planning and Environmental Assessment Study

Comment Form

Event: Open House **Date:** June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Howard Malcomb

Address: 910 South State IN

county council & Airport Board

Comments:

alternative A is the correct route on the North side of town. I think you should look at going streight East to the East side of Butlerville.

and after you cross 7 I would like to see you go West to I65. insted of going back to old 50

I don't think going through downtown is a gerod idea, also bringing the traffic into town to get out of town makes no since.

Thanks You Howard Malcomb

HBMALCOMB@verizon.net

Ways to submit your comments:

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Comment Form

Event: Open House

Date: June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Michael McGowen

Address: 5395 W CR 600 N
Scipio, IN 47273

Comments:

1. Please include a glossary of acronyms or spell out on map Legend (ie. LOS, VCLOS, HCMLOS etc.)

Ways to submit your comments:

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Comment Form

Event: Open House **Date:** June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
Comments are welcomed and appreciated.

Name: Mike Megel

Address: 805 S CR 650 W
N. Vernon, IN. 47265

Comments:

The "Rural New Terrain Alternative" as proposed goes south of current U.S. 50 and splits our family farm.

Shuggestion one: stay closer to current Hwy 50 and go close to wooded area to the immediate area south of current Hwy 50

Shuggestion two: where you have proposed to go south, cross the RR track and go north so that the four proposals to the north would meet up with this New road.

Shuggestion three: a new exit off Interstate 65 North of the current Hwy 50 and travel straight across. This area is practical and has very ~~little~~ few houses. Also this would reduce traffic on the current Seymour/N.V. exit.

Ways to submit your comments:

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- Or mail to:
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  Indianapolis, IN 46227

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Mike Megel
805 S CR650W
North Vernon, IN. 47265

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ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

US 50 North Vernon
Corridor Planning and
Environmental Assessment Study

Comment Form

Event: CAC/CP Meeting **Date:** March 22, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Kathy Ertel

Address:

Comments: Possible Info to
Add: Duke Energy - Chip Orben
S Eastern IN REMC - Barry Lauber
Midwest Gas

Also, FYI City of N.V & Jennings Co looking to engage w/ Catch A Ride in May for Public Transportation. Grants from INDOT have been already obtained and a City & County route "Loop" has been identified.

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: www.us50northvernorn.org
- Or mail to:
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  Bernardin, Lochmueller & Associates, Inc.
  ATTN: Carl D. Camacho, P.E.
  Project Manager
  6125 South East Street (US 31 South)
  Indianapolis, IN 46227

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Bernardin, Lochmueller & Associates, Inc.
ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

Carl Camacho

From: Richard Morin [richard@rlm-engineering.com]
Sent: Monday, July 09, 2007 3:06 PM
To: Carl Camacho
Subject: US 50 Bypass
Follow Up Flag: Follow up
Flag Status: Red

Carl,

I am a resident in the study area of the US 50 Bypass project. I attended the June 2007 public meeting.

I was glad to see that aerial photos were available at the meeting. Although these were at a scale that made it difficult for most residents to identify specific features. It also appeared that the proposed alignments seemed to be laid out without much effort. That is, it appears that the primary guideline was to draw straight lines without review of land use or features. Even slight adjustments to the lines as drawn would have missed houses or other features. Also, important items, such as landfills were not taken into consideration with the alignments. Therefore, I do not wish to discuss specific alignment, but I do have a few general comments.

Generally, Alignment A in the vicinity of State Highways 3 and 7 appear to make the most sense.

- Major Intersection distances: This places primary highway intersections at a reasonable distance from the congestion where Highways 3 and 7 join. It also places the distance between the bypass intersections on highway 3 and 7 at a reasonable distance to reduce congestion, and entrance/exit issues. The spacing of these major intersections is important in reducing congestion and providing the best traffic patterns.
- The location of where the alignment crosses SR 7 may even have additional advantages if moved slightly to the north near the Country Squire Lakes (CSL) entrance. With the high population center of CSL and only one main entrance, then the =20 intersection and alignment could have advantages in reducing congestion on SR 7 and reducing county highway use.
- CR 300 N (between SR 7 and SR3) is heavily used as a connector by CSL residents (and others) to access SR 3 to the industrial park, Wal-Mart, etc. Alignment A in the vicinity of SR 7 and 3 would appear to reduce the use of the underdesigned county road system through easier use of the bypass location.
- Alignment A should not be located on the existing CR 350 N alignment between SR 7 and SR 3. This area has many residential driveways which affects the limited access nature of the bypass. Relocating the alignment slightly north of CR 350 N should be advantageous in limiting access drives, reducing construction traffic control, reducing aquisition and construction costs, and reducing impacts to residents.

Alternatives B, C & D have little benefits over Alternative A.

- Each does not align with SR 7 and SR 3 at reasonable locations. "B" is too close to the congestion and would likely add to congestion in the area. It also would disturb a significant developed area with the existing industries.
- "C" and "D" cross SR 7 and SR 3 at a diagonal which will reduce the use of the bypass. The diagonal does not help traffic flow created by the population center by Country Squire Lakes, ie primary objective to improve traffic artery routes (US 50, SR 3 and SR 7).
- "D" is too long of a route and once the area is learned by travellers, would likely have lower use than other alternatives.
- The information presented also did not indicate what happens when the bypass crosses county roads. For instance, for Alternatives C and D, what happens where CR 300 N is crossed. Will there be an intersection? or will the road be closed? or will there be an overpass? This is important as it impacts construction costs, area to be acquired, and impacts to the local traffic patterns. As indicated previously, CR 300 N between SR 7 and SR 3 is used a a connector between SR 7 and SR 3. If 300 N is closed, then the traffic patterns will be affected. It wiould likely place more traffic on SR 7 and the SR 7 and SR 3 intersection than is occurring presently. The alignment of bypass in "C" and "D" in this area reduces the use as a connector between SR 7 and SR 3. The alignment is very close to the SR 3 and CR 300 N intersection and an additional intersection would create additional hazards and congestion. Whichever method is used, the alignment is not the best for improving the artery =20 routes.
- As a note, the Madison Railroad is an active railroad and owns the railroad right-of-way to CR 300 N. Alignment B, C, and D crosses the Madison Railroad. Alignment A does not. Although the railroad tracks are not currently used in this section,

it is possible for the railroad to begin using the tracks in the future.

Alternative E does not improve artery traffic on SR 3 and SR 7. It would continue high volume truck use of streets in North Vernon and provides minimal improvements of the alternatives listed.

New rural alignment between Six Mile Creek and CR 400 W: A new alignment in this area would seem unnecessary, increase costs, and increase impact to the area. With the exception of the immediate vicinity of Six Mile Creek, the existing alignment between 580 W and 400 W would appear a reasonable alignment. There is only one residence driveway entrance between 580 W and 400 W. The amount of property needed to be acquired would be minimized by use of the existing alignment and so fewer impacts would be expected. If the existing alignment is not used, then the existing roadway should be removed as it would not have any purpose in this area.

I anticipate that the next public meeting will have better alignment considerations, ie. missing existing features to the extent practical. I may have additional comments upon review of future information.

Richard L Morin, PE
2005 W. County Road 300 N
North Vernon, IN 47265

Phone (812) 346-6139
Cell (812) 592-0872
Fax (812) 346-6440

US 50 – North Vernon
Corridor Planning and
Environmental Assessment Study

Comment Form

Event: Open House **Date:** June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Gary + Kristi Nolker

Address: 280 W. Co Rd 260 N.
North Vernon, IN 47265

Comments:

We are deeply concerned about the wildlife if the by-pass is brought close to our property. Daily we see wild turkeys, deer, birds and foxes that will be displaced if the by pass is through here. Thank you for your time

Kristi Nolker

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: **www.us50northvernorn.org**
- Or mail to:
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Gary & Kristi Nolker
280 W. County Rd. 260 N.
North Vernon, IN 47265

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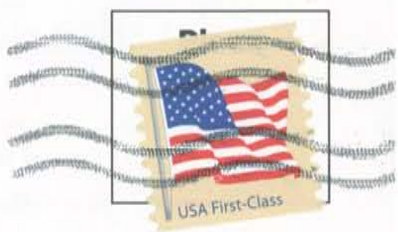

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Comment Form

Event: Open House

Date: June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: John R. Percifield

Address: Box 294
Vernon, In. 47282

Comments: I think Alternative "C" as this save our green space, and is shorter to urban center.

John R Percifield

Ways to submit your comments:

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Event: Open House **Date:** June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Raymond Richart

Address: 4395 N. CO. RD. 150 E
North Vernon, Ind. 47265

Comments:

TAKE ALTERNATIVE "A" HOOKUP TO THE WEST END OF ALTERNATIVE "B". THIS WILL TAKE CARE OF "3-7-5-0" NORTH ON 3+7 NOTHING SOUTH. UNLESS I'M MISSING SOMETHING ALTERNATIVE "E" IS THE ONLY ONE THAT DOES ANYTHING FOR 3+7 SOUTH.

THANKS FOR YOUR TIME
Raymond Richart

Ways to submit your comments:

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Raymond Richart
4395 N.C.O.R.R. 15 E
North Vernon, Ind. 47265

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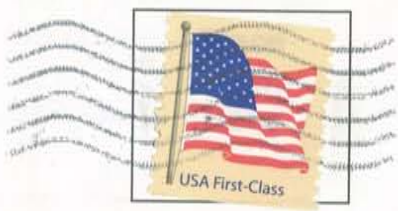

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Event: Open House

Date: June 26, 2007

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All comments are welcomed and appreciated.

Name: Roger Short

Address: 550 Persimmon Dr.
North Vernon, In 47265

Comments:

I think alternative "A" is the best ~~Best~~ alternative. With MUTC & Honda both looking to expand over the next few years. This is the best alternative. Also with Honda there will be other companies coming to North Vernon which would locate on the North side of North Vernon since that is where our Industrial Park is located.

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Event: Open House **Date:** June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Wayne Stearns

Address: P.O. Box 103 North Vernon, IN. 47265

wstearns@hsonline.net

Comments:

I called the Chamber of Commerce Director of Washington, IN. on 6-25-07 to ask him how the U.S. #50 bypass of his town approx 15 years ago has effected commerce there. I will sum up his responses:

(1) new development sprang up along the new bypass

(2) The older downtown Washington survived because the bypass was less than 2 miles from the old US #50

Hence, I am not opposed to a bypass of North Vernon If it is less than 2 miles from the center of our downtown – St. Hwy #3, 7, & US #50 intersection –

Alternative A is good

Alternative B is Best

Kind thanks

Wayne Stearns

Ways to submit your comments:

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Wayne Stearns
P.O. Box 103
North Vernon, IN. 47265

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Event: Open House **Date:** June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Connie Thomas

Address: 2560 N. CR 20W
N. V.

Comments:

above address location of Cedar Knoll Farm, Inc. Providing therapeutic & recreational horse back riding and carriage driving for disabled persons. If alt B used, we will have to leave the area. we need the pasture and spaces for driving & riding.

Also, Creech property one of the best farm lands, featured in "Birds & Bees Magazine", one of the longest family-owned farms in J.C. - Many wild life in area around her farm use her farm pasture & travel back & forth to Schneider. Shame to cut her farm 1/2!

Thank you

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US 50 – North Vernon Corridor Planning and Environmental Assessment Study

Event: Open House

Date: June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Don Trowbridge

Address: 525 Buckeye
North Vernon

Comments:

MY OPINION OF THE US 50 IS TO GO THRU TOWN EAST WALNUT & WEST POPLAR THIS WOULD COST A LOT LESS MONEY & A LOT LESS PROPERTY TO BUY & LOT LESS DISTURBANCE TO THE WILD LIFE & HISTORIC LAND & PLACES IN THE BY PASS AREA
AS A TRUCK DRIVER I HAVE BEEN THRU TOWN'S THAT HAS DONE THIS & I HAVE HAD NO PROBLEM GOING THRU

Ways to submit your comments:

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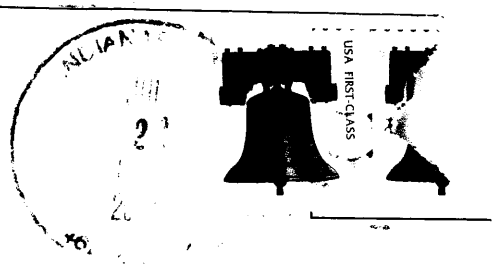
Scott Tuttle
505 S County Road 700 W
North Vernon, IN 47265



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Comment Form

Event: [illegible]use **Date:** June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Scott Tuttle

Address: 505 South County Road 700 West
North Vernon, IN 47265

Comments:

The most cost efficient way would be to widen the
ting US 50. It will disrupt fewer homes and not
estroy anymore precious farm ground. In my area there
e lots of family farms that have been around for over
ndreds of years. This is the second time the Tuttle Farm
has been affected. The first time was in 2001 when INDOT
said we are going to widen your intersection on County Road
700 West. So the house I'm living in now had to be
moved or be condemned and lost forever. My grandfather tore
down the old house and built a new home in about 1969.
This farm meant as much to him as it does to me. But
he always said to my sister and me the day would come
that the house would have to moved when US 50 became
four lanes. So he planted two maple trees in the yard south
of the driveway for the future location. I'm glad he didn't
live to see that day. Because it's not pleasant for anyone to

live through. When you work hard all your life to have a place the way you want and offered pennies on the dollar for the memories. Now me and my family are living the nightmare once again. This bypass road will split the farm in the middle now. Destroying part woods we played and run through as a kid. I thought there was a Bill passed to protect farm ground from being turned into subdivisions of housing. What about foolish projects like this one. When the only smart and affordable solution is to re do the existing road. I'm a contractor and I know the cost per mile has to be cheaper to redo Highway 50. I'm working in this area along the roads I know that the State of Indiana or INDOT has enough rightway for the new lanes. So they wouldn't have purchase as much property. This problem wouldn't if Homeland Security wasn't in the county. We should have used our roads and kept the former Jefferson Proving Grounds for this. I wonder if Bernardin, Lochmueller and Associates will be screwed up bad or worse than the intersection at 700 West. FPBH Engineers and Survey of North Vernon when they did the survey and staked it for the purchase of the ground, I left those wood stakes in the same place for reference where the new property line was. This was in spring of 2001 and weren't moved till the job started in 2005 by Dave Omara Contractor of North Vernon. I have been told by INDOT employe inspector my second driveway used to be more heavy equipment in and out. John Ehrlking of INDOT that in the meeting this would be kept open for our small excavating business. Mr. Wick said on his plans showed it didn't exist. If you don't do the research you can't find there was fifty foot easement to exit on US 50. When asking FPBH several times they said I can't answer your questions I don't have my plans again. Between FPBH and Dave Omara they watched there backs. They promised to put topsoil on everything but it was sold and nothing hardly grows. The grade was off several times getting ready for the new pavement. When the job was done the new border fence and survey makers were placed different

than the first survey it now has a lot of bends instead of a straight line. When my father and I met and questioned FPBH about this problem they said they didn't do the initial survey but I watched them do it. FPBH said the different bends were for different alternatives. I guess I should put garage doors on both ends of my house and charge a toll because your plans will probably work like theres. Everybody is concerned about global warming how many more acres of trees and crop ground will be destroyed that creates the air we ~~[illegible]~~ breath. The woods has active wildlife, deer gather, wild turkeys and bald eagles from the Missaatatuck Wildlife Refuge. The ground has springs that run most year around. There is corrugated field tile for drainage that will be ruined from help drying many acres. We will be no longer able to take four wheelers across and through the woods to the other fields. ~~[illegible]~~cause if you construct a bypass road across the ~~[illegible]~~lace. The only and last recommendation I will ~~[illegible]~~make is to reduce the current path of US 50. ~~[illegible]~~t destroying the area.

Sincerely

Scott Tuttle

US 50 – North Vernon Corridor Planning and Environmental Assessment Study

Comment Form

Event: Open House **Date:** June 26, 2007

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Russell Yeager

Address: 5975 N. Co. Rd 500 E
North Vernon In 47265

Comments:

We are affected by the alternative D route We feel this is a long way out of the way just to bypass North Vernon and alot of our farm ground will be wasted & Not only is our farm going to have a highway but we also live on the road coming from Muscatatuck training Center so will also have all the traffic from the center to the Bypass in our Front yard!
We believe if anything is to be done to US 50. Its should be widen through town or take the Southern route. This looks to be the Shortest and most useful way to go!
We see no benefit to us in the rural area!

Ways to submit your comments:

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  Indianapolis, IN 46227

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Russell Yeager
5975 N C R 500 E
North Vernon, IN 47265

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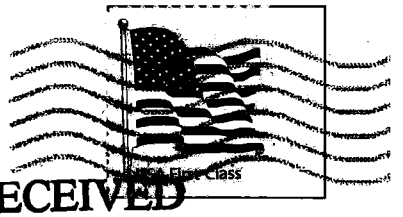

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Comment Form

Event: Open House **Date:** February 8, 2007

Please provide your comments and mail to the address on the back of this sheet. All comments are welcomed and appreciated.

Name: Gene Luedke

Address: 27 Tenth St.

North Vernon, IN 47265-1621 812-346-5317

Comments:

Afternoon presentation was well presented. Of particular interest to me was the fact that a significant number of staff was present to help on an individual basis, for comments and question answers

Ways to submit your comments:

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Please provide your comments and mail to the address on the back of this sheet. All comments are welcomed and appreciated.

hbmalcomb@peoplepc.com

Name: Howard L Malcomb (airport Board + Co. Council)

Address: 910 South State St.

North Vernon, IN 47265

Comments:

Road 350 N would be the best route north of town, It would benifit the industrial park, Lowes, etc. The airport will be expanding North someday. The Army training center have told us that they will use our airport soon so the runway will need to go further north.

I think also if the new road stayed about 1 mile north of the railroad and joined 65 around the scales north of the Seymour exit it would be in the right place to go around Seymour. It would abe cheaper and easyier to cross farmland than moveing utilites and blocking traffic. The new road could be limited access so it could be a better connection for heavy truck traffic.

I have flown this route and not many houses are in the way this way.

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Howard L Malcom
910 South State St
North Vernon, IN 47265

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Please provide your comments and mail to the address on the back of this sheet. All comments are welcomed and appreciated.

Name: Steve Walsh Farm Bureau

Address: 3840 W 300 S

North Vernon IN.

Comments:

work on CAC

Also on CAC

Don Biehle - Southeast Purdue Ag Center

biehled@purdue.edu

Ways to submit your comments:

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Please provide your comments and mail to the address on the back of this sheet. All comments are welcomed and appreciated.

Name: Michael McGowen

Address: 5395 W CR 600 N

Scipio, IN 47273

Comments:

US 50 improvements are critically needed for continued economic development in the area.

Reccommend that both a short range and a long range solution be considered

1) Short range solution (1-5 yrs) low cost traffic flow improvements (Signal synchronization/coordination, one-way pairs, no parking in downtown area etc.)

2) Long Range (5-10 yrs) (by-pass, widening etc.)

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  US 50 – North Vernon Corridor Planning/EA Project
  Bernardin, Lochmueller & Associates, Inc.
  ATTN: Carl D. Camacho, P.E.
  Project Manager
  6125 South East Street (US 31 South)
  Indianapolis, IN 46227

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US 50 – North Vernon Corridor Planning/EA Project
Bernardin, Lochmueller & Associates, Inc.
ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

2014

US 50 North Vernon
Corridor Planning and
Environmental Assessment Study

Comment Form

Event: Open House **Date:** February 8, 2007

Please provide your comments and mail to the address on the back of this sheet. All comments are welcomed and appreciated.

Name: ROBERT E. PETTIT, Sr.

Address: 405 PLEASANT DRIVE
NORTH VERNON, IND 47265

Comments:

You said in the meeting on Feb 8, 2007 that you would not get started on the 50 by pass until 2014. By that time we won't be able to get through North Vernon because of the traffic. We need it now and the sooner the better. I think it would be best to put it North of N. V. instead of South of N.V. there wouldn't be so many bridges to build. I am 77 years old and I might be dead by 2014.

Thanks
Bob Pettit

Ways to submit your comments:

- Place your completed comment sheet in the comment box provided tonight.
- Submit a comment via the project website: www.us50northvernorn.org
- Or mail to:
  US 50 – North Vernon Corridor Planning/EA Project
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  Project Manager
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  Indianapolis, IN 46227

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Mr. Robert E. Pettit Sr.
405 Pleasant St. DRIVE
North Vernon, IN 47265

US 50 – North Vernon Corridor Planning/EA Project
Bernardin, Lochmueller & Associates, Inc.
ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

Jaime Sias

From: Carl Camacho
Sent: Wednesday, April 30, 2008 10:37 AM
To: Jaime Sias
Subject: FW: US Highway 50 Bypass Project-Jennings County

Importance: High

-----Original Message-----
From: Ponsler, Brad [mailto:bponsler@infarmbureau.org]
Sent: Tuesday, March 18, 2008 11:57 AM
To: Carl Camacho
Subject: US Highway 50 Bypass Project-Jennings County
Importance: High

Mr. Carl Camacho

Hello!
Thanks for the information this morning on the phone.
I appreciate the information.

As I mentioned on the phone today, one of my concerns was that the resource agency meeting on March 20th needed to have representation from the Agricultural Community, including =20 agencies and organizations that work with Agriculture.
I know that you mentioned that USDA-NRCS had been invited.
Do you have a list of those agencies and groups that have been invited to the meeting on March 20th?
My thoughts would be to include: The Indiana State Dept. of Agriculture, =20 Farm Service Agency, USDA-NRCS (which you mentioned), and possibly a representative from Indiana Farm Bureau.
For my information, where will the meeting be held on March 20th?

I want to be certain that Agriculture has a voice in the process.
Thanks again for your help.
Please feel free to add my email address to your list of contacts for this project.

Take care,
Brad

Brad Ponsler
Regional Manager - Indiana Farm Bureau, Inc.
812-592-2121 Mobile

US 50 North Vernon
Corridor Planning and
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Comment Form

Project Phase: Preliminary Alternatives Screening Report (Final Report) **Date:** March 13, 2008

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: MR. MRS. ED BIEHLE

Address: 4830 West 100 South

NORTH VERNON IN 47265

phone: 812-528-0191 (cell) 812-346-9081 (home)

Comments: email - lbiehle@seidata.com

Dear Sirs 3-24-08

I have enclosed the section of the Highway 50 expansion that is of concerned to us.

We have just spent 2 years and Sweral hundred thousand dollars having our 13 acre lake drained, drudged and reconstructed. (I have highlighted our lake in blue on the map)

Over 200 acres of surrounding farms dram into our lake.

The woods, fields, and even the property north of U.S. 50 has a culvert that drains under 50 into our lake.

We would like to draw attention to these facts, before the huge excavation process to build the overpass is surveyed. The woods that are proposed removed, are a huge filter for our lake.

We welcome the opportunity to discuss the possibilities to protect our lake. Thank you.

M. Mrs Ed Bi[illegible]

CRISIS

ทางหลวง

Also West
North Fork Vermont
Bridle lake


N
U.S. 50

Subject: Comments, Attn:Carl D. Camacho,P.E.

It seemed like everyone was leaning toward the North Route. In that case it seems like the best route would be North of Hayden. If you used my proposed exit off I-65 , just North of the existing US 50 exit you would not even have to contend with the railroad. It would miss all the businesses on Hwy 50 and many more homes lining the Hwy. Fewer people to deal with. I am well aware it will take farm fields in places. Many will be some of ours I am sure since we have several over that way. But seeing the difference in a concentrated area as US 50 and North in the country, I would think less money & time would be spent on this proposal .

The big turn or loop in the road at 575 W is the busiest intersection on US 50 between North Vernon and Seymour. There are businesses on 3 corners plus the stone quarry, Dave O'mara black topping, and Ebbings junk yard which have many trucks a day pulling on to the road. I think it would be wise to keep them on the old 50 to alleviate the steady stream of traffic pulling out there. To make a big loop there does not seem very efficient. The only business that could possibly suffer from no 50 through traffic could be Bingham Farm Machinery and the Truck Stop. It just seems so much less involved to take it North, that I feel it may be the answer.

Now it looks like the most efficient would be to get off of 65 on the overpass at rd .700 N. in Jackson Co. and go straight North to hook up to your Northern route. We were told you like the off ramps to be 3 miles apart, but I have seen exceptions and if you ever have been around when they have an accident on 65, with just one off ramp you would see how those of us on the East side are cut off from Seymour for hours. That extra exit would sure help Seymour and all of us around here.

Now if the 3 miles is how you want it there is the next overpass North of that. I believe it would still be a straight line to your loop and very close to 3 or 4 miles from 50 exit. It is rd. 800 N. in Jackson Co.

Even by avoiding the Muscatatuck Refuge by your proposal you are still so close to all the animals. The deer killed by cars would have to increase and that is a real danger. Local traffic knows to be on the look out in that area .

If you have to use the 50 exit now you can still go to the first road that goes left or North before the Refuge which is rd. 1250 E., in Jackson Co. or the first road to the left or North, after the refuge which is rd. 900 W in Jennings Co. and take off straight North from there.

I hope you will review this proposal, that has been talked about by several officials in Seymour and see it's merit. Thanks for this opportunity .

I am sure the Government paid a lot for this study, but I feel the company did not do their job if they just flew over and went by maps. My simple study could still save you million's by making US 50 a real by pass and going through country which is not as populated. There was talk that the overpass I am proposing was going to be upgraded anyway. If this is true you are really missing a good opportunity. You say you plan on working around people's homes or business, but if you take the first leg of your plan and go down the excisting US 50 this will not be the case.

Respectively Submitted by
Janos Bingham
812-346-2955
[redacted]

3/13/2008

US 50 North Vernon
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Project Phase: Preliminary Alternatives Screening Report (Final Report) **Date:** March 13, 2008

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All comments are welcomed and appreciated.

Name: AJ Bright

Address: 7405 N CRD 500 E North Vernon IN. 47265

Comments:

I live in the Eastern section and think Alternative A would be the best. It is less money than Alternative D, would cost tax payers less cause we are already pay taxes on the Selmier Forest area. It would also take less wet land area and Farm land. It is close to the Airport and the town which most Bypasses don't take you out 10 miles into the county. I am against Alternate D because it cost more money, takes more wet land + Farmland this would effect a lot of Farm Family That have had there acres and Farms in there family all there lives. So I ask that you use Alternate A or B, but I do believe A is the Best.

Sincerly AJ Bright
and Family

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: **www.us50northvernorn.org**
- Or mail to:

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  Project Manager
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  Indianapolis, IN 46227

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AJ Bybee 7405 NCRD
500 E North Vernon IN.
47265

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ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

Betty Creech
P.O. Box 659
North Vernon, IN 47265
March 17th, 2008

Mr. Carl D. Camacho, P.E., Project Manager
US 50 – North Vernon Corridor Planning/EA Project
Bernardin, Lochmueller & Associates, Inc.
6125 South East Street
Indianapolis, IN 46227

Dear Mr. Camacho:

I have attended all of your public planning meetings at North Vernon regarding the US 50 Bi-Pass Project, as we own the farm just east of North Vernon that you show tri-secting on your Alternate B Corridor Study Plan. Looking at the map, you will see the Muscatatuck River winds around the farm. Our family has lived here for over 43 years, so I am aware of the whole area, and I have multiple concerns:

1. THE FARM:

Your Plan B will tri-sect our 165 acre farm, a large part over 60 tilled acres, of which there is precious little left in Jennings County. And you will leave two areas land-locked.

2. ENVIRONMENTAL:

Where you propose crossing the Muscatatuck is over the reservoir for the City of North Vernon's water supply – just above the City Dam and Pumping Station.

As I set out in my previous letter to you, there was a major fish kill here in the reservoir a few years back, and the EPA was called in to find the problem One of their men here on site informed me that it was possibly from a run off from a black-top residue. At the time, there was a black-topping operation set up inside the Quarry, and even tho they had NOT had a spill, they said a heavy rain could have washed a residue from the roadways into the drains.

And at another time, there was an oil spill from an oil company in the area, which also drained into the reservoir, and again EPA was called in. A "Mop Up Company" was here several days cleaning up the river with bales of straw.

As I see on your map, there will be at least a mile of new highway (all the way over to Road 20W) that will drain into either Woods Branch or the Muscatatuck above the City Dam. If this route is chosen, any spillage or drainage or ditch run-offs from the new highway will go into the City's Reservoir – North Vernon's, Hayden's and Vernon's drinking water. Also to be considered is not only the black-top residue, but rubber tire residue, oils, winter snow salts, plus any spillage.

The Muscatatuck is a slow moving river, fed only by springs and run off. Only in a rainy season, a heavy rain or when water is being released from the Brush Creek Reservoir – when needed water is let down – is there a noticeable movement of the water. Here above the dam, the water is mostly pooled, so contaminates are slow to dissipate.

As you drive West onto Road 250 (the road just north of the Stone Quarry) your Plan B map shows the new road to go just South of Lowe's. Between the factories and Lowe's you can see a fenced-in mound. Many years ago, the old Arvin Plant was pumping acids into this pit from a lead plating process. The sludge was eventually mounded over with soil, grassed, fenced, and signs placed all around. This area is only feet away from the West edge of the Stone Quarry, which pumps their waters into the reservoir. So obviously this contaminated area cannot be disturbed. (Your Map shows going directly over it)

3. HISTORICAL:

Where you propose crossing the Muscatatuck onto the farm from the south – there is a steep rocky bluff – quite high. At the top brim of this cliff is a Railroad Track, which will either have to be bridged over or tunneled under. And here we run into some other problems, as there are some old Hemlock Trees – that are protected - growing out of these craggy rocks.

Also here on the farm, on the hillside where you show turning to the West, is an old Indian Spring. According to what we have been told, this bend in the river was an Indian Camp, and we have found many Indian artifacts, including axes, bird points and a pestle below the spring.

4. SUMMARY:

I cannot, for obvious reasons, make a recommendation. However, living in the area, I see a lot of traffic and congestion in Industrial Park at work shift times now. Your Plan B cuts through the middle of the Industrial Park, and not only will take out some of the present factories, but will inhibit further expansion of the existing factories, plus causing major snares at quitting time. Plan A runs less than a mile north of Lowe's and allows for future growth and ease of traffic flow.

Plan A makes the most use of existing roadways/roadbeds, thus minimizing the need for eminent domain.

Plan A is also the closest plan to both the MUTC and the airport. Its ease of access to and from the airport is especially important.

Thank you for your informative meetings. We here in Jennings County are going to have to live with this new highway from now on, so we need to get it right.

Respectfully,

Betty Creech

CC:
State Representative Dave Cheatham
Jennings County Economic Development Commission
Jennings County Soil & Water District
North Vernon Mayor Harold Campbell
Members North Vernon Water Board
Members North Vernon City Council
Members Jennings County Council
Commissioners, Jennings County
Department of Natural Resources/ Rob McGriff
DNR/Division of Historic Preservation, Indpls.
Jennings County Historical Society
North Vernon Plain Dealer & Sun

US 50 North Vernon
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Project Phase: Preliminary Alternatives Screening Report (Final Report) **Date:** March 13, 2008

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Don Galyean 812-767-1111

Address: 370 So Co Rd 700 W
N Vernon In 47265

Comments:

Put In Automatic Traffic Light At Jennings Co High School - Quit Stopping US 50 Until High School Parking Lot Is Empty! Regardless Of Hwy 50 Projects!

Let Potentionally Effected Property Owners Know Any Possable Plains, By Mail Not Just News Paper, As Soon As Possable! Business And Resipentual!

Ways to submit your comments:

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- Or mail to:

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Project Manager
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US 50 North Vernon Corridor Planning and Environmental Assessment Study

From what I understand of the Final Report released in February, is that the projected population growth and job growth in Jennings County, North Vernon and the Muscatatuck Urban Training Center it will cause a lot of congestion and safety concerns in North Vernon.

I do not like the idea of new road construction because of the impacts on residents, businesses, and the environment in the county. Having said that I feel that if a Bypass is needed it should be as short as possible to reduce environmental impact and cost effective as possible and still meet the traffic needs and safety in our community.

There are several of the alternatives that seam to be reasonably close to the same in cost and environmental impact. The option that stands out to have the most negative impact in this report in my opinion is Eastern Alternative D. This is the longest alternative in the study.

Concerns I have with Eastern Alternative D

1. Eastern Alternative D is $48.4 million more than the next closest alternative A, and $55.4 million more than alternative B. With the National Debt where it is and our economic situations we are facing now I think we should look for the most efficient ways to spend our Tax Revenue, and I don't think this is it.

2. Eastern Alternative D will also cover 200 acres more Farmland than the next closest Alternative A, and 236 acres

more than Alternative B. With Grain and Food prices increasing because of the increased use of corn and soybeans for Ethanol and Bio fuels, the continued lose of Farmland is only going to drive these prices higher for Food and Fuel.

3. Eastern Alternative D will also cover 63 acres more Forest than the next closest Alternative A, and 129 acres more than Alternative B. Alternative D will also impact 6 classified forest compared to only 3 in Alternative A and NONE in Alternative B.

   I understand that there are some concerns with Eastern Alternative A with Selmier State Forest and St. Ann Golf Course. In this area I feel that some adjustments could be made to minimize the impact to these to areas. The Bypass could be narrowed, similar to an Urban Route where there is no grass medium and this would reduce the road width and environmental impact to this area. Even without this adjustment I feel the small amount of acres affected in this area of Alternative A are minimal to the 6 Classified Forest, 63 more Forest Acres, 200 more Farmland Acres and 4.4 more Wetland Acres that are in Alternative D.

4. There are also several other negative impacts with this larger Eastern Alternative D that are more than in the shorter Alternatives with only a few impacts being less.

5. According to this studying Eastern Alternatives A and B would both meet the needs for Transportation and Safety considerations for North Vernon, Muscatatuck Urban Training Center, and Jennings County with less Cost and Environmental impact to our community. Although all 3 Alternatives meet our needs. In several areas of the study Alternatives A or B are pointed out as being better than Alternative D in meeting our needs.

6. Alternatives A and B also closely represent the Bypass plans that were adopted as part of Jennings County Comprehensive Plan in November 1994.

In Conclusion

I feel that if we do need to have an Eastern Bypass of North Vernon it should be either Alternative A or B. Eastern Alternative D is not a good option. It is the largest and has the most negative impact on the environment. I do not feel that the extra $48.4 - $55.4 million cost is a good way to spend our Tax Revenue when there are other options that can achieve the same goals for less cost.

I sincerely Thank You for listening to my concerns!

Tom Gasper and Family

Home Ph# 812-346-6918
Cell Ph# 812-525-4844
E – Mail tgasper@seidata.com

I sent copies to:
Sen. Richard Lugar
Rep. Baron Hill
Sen. Evan Bayh

Rep. Dave Cheatham
Sen. Johnny Nugent
Sen. James Lewis

US 50 North Vernon
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Name: _____

Address: _____

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Comments:

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Project Manager
6125 South East Street (US 31 South)
Indianapolis, IN 46227

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Mr. ~~Danny~~ Kirby
425 S. County Road 750 W.
North Vernon, IN 47265-6758

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US 50 – North Vernon Corridor Planning/EA Project
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Indianapolis, IN 46227

Dan Kirby
425 S. Co. Rd. 750 W.
North Vernon, In. 47265
812-352-4171 or 812-569-1466
Email: DannyKirby@msn.com
March 23, 2008

To Whom It May Concern,

Please read this entire letter. If you just skim over it you may get the wrong impression of what I'm trying to say, *because I'm not at all complaining, I'm just observing, suggesting, and have a couple of questions.*

If either proposed route, W-2 or W-3, of the Hwy. 50 project is chosen, my wife and I will not only lose our home, but the homes of our son-in-law and daughter, (Shawn and Lisa Franklin), who live next door to us, and probably my son-in-law's parents, (Bob and Bonnie Franklin), who live on the other side of my daughter and son-in-law, will be lost too. If the project does not take Bob and Bonnie's home it would be almost worthless in property value loss because the southern edge of your 300' wide route takes in all of their driveway and touches the northern edge of their garage, unless you take 250 feet instead of 300 feet in that section, but even then it would put them in a squeeze.

I understand that sacrifices will have to be made by everyone involved. The current highway 50 is a big problem that needs to be corrected, and if we must relocate then that's God's will, and I have no complaint yet, just some major concerns.

First, how will you properly and fairly appraise a person's home and property? It's one thing when a person **wants to sell**; they are glad when they find a buyer. But when a person is content where they are, and think this is where they are going to live the rest of their life, but are told they have no choice, and **must sell** and relocate, it's very stressful.

In our case we sold our paint store, in North Vernon, 6 years ago, and moved over here a year later, at the request of our son-in-law, Shawn. It is beautiful here. I've spent a lot of money on landscaping and a new garage, plus we have a nice 1-1/4 acre lot between us and Shawn that he keeps mowed. Our 2 grandchildren walk across the lot to visit us almost everyday. Shawn's mom and dad have the 1 acre lake in front of their house. I believe there is a total of 16 acres here.

Bob is the pastor of our church, Living Word Baptist, right on Hwy. 50 just a block east of Hwy. 31. We have church cookouts, picnics, ball games, fishing contests, and all kinds of social activities at Bob's home and property. Bob is also the owner of Franklin Salvage Yard, just on the north side of the railroad tracks by our property. His son, Shawn, is the manager and I work there too. We can all walk to work if we want to. So as you can see it's like we have our own little community here.

I know you said that you would try to be flexible and make minor changes in the routing as the project progresses. In our case I don't see anyway of re-routing. We have the railroad right-of-way up against our property on the north, and only 200 yards to the South is the current highway 50. There isn't any room for re-routing.

Since my wife and I will both be in our 70's, Lord willing that we live that long, when construction begins, it will be even more stressful on us to relocate and break our families apart; but if we have to, then so be it, God knows what is best for all of us.

Back to my concern about how people's property will be appraised. My home, for example, would be appraised at a certain value. Do we get 100% of that value like we should? I personally believe that the home owner should get **more** than the fair appraised (not under-appraised) market value, **at least** 10% more, to compensate them for having to go through the **unasked for stress** of a forced relocation. There is a big difference in wanting to relocate and **having** to relocate. Plus, even if we could find compatible property, which I doubt, we would want it to be closer to Seymour which would probably cost more. We have no desire to move farther away from Seymour and our church!! Basically, if we must relocate we will end up with either less property or a lesser valued home than we have now, unless we are willing to pay more than you give us. That's one reason why I believe if you pay people more than what their home and/or property is worth, it would be less stressful for them and you would have less unhappy people. I'm not convinced that the government treats people fair in situations like this because they know they don't have to if they can get away with it.

My second concern does not affect **me**, but I can't help but wonder how you will treat people concerning their **productive** farmland. If a farmer **wanted** to sell his land, he would get his price and be happy. But when he does **not want to sell** and you take all or even a **portion** of his productive acreage, (but not the home) then he should be compensated much more than market value of that cropland. He is losing those income producing acres forever, and is stuck with a home and less income acres or a home and no income acres.

The payment he receives should be calculated at the number of acres he is losing multiplied times the average annual income from those acres for the last 5 years. Then he should be paid that amount multiplied times the number of years of his currently projected life expectancy. In reality, even if the farmer died, the family **could** have rented out the land to another farmer, to continue having some sort of income.

So the farmer who has to sell part or all of his cropland (but not his home) is going to come out the loser no matter how you figure it. Now he has to find a buyer who wants a smaller farm or one who wants a house with no acres. Then the original farmer has to go and try to find farmland to buy that comes close to matching the acres he previously had, plus maybe a house, if he can find any for sale at all. You don't just run out and buy more land like going to the grocery store for a loaf of bread. We are losing more and more farmland year by year because of **"progress".**

All across America we just keep reducing the amount of our precious land by covering it with more blacktop and concrete. When what we have is gone, there is no more.

I know it would me a traffic mess to widen the present highway 50, but you have already projected that **widening** would be the least expensive route and it would destroy the least amount of property, since two lanes are already there. I believe it would also be the least damaging to people's lives. We humans have learned to deal with traffic slow-downs.

There are farmers (Lester Maschino and his brothers) who own pasture land just across the road from us to the east. They used to rent it out to a man to put his cattle in, but for the last 2 years they have used it to produce hay to sell and to feed their own livestock. Their land is rectangle shaped, with the longest sides running parallel to Hwy. 50 on the south and the railroad tracks on the north.

If you pick proposed route W-2 or W-3, it will split their income producing pasture land right down the middle length-wise. This means they are going to lose 50% of their income and hay production. Now that means they will not only have lost income, but will have to purchase hay every year to feed their livestock. This is similar to your

employer coming to you and saying that he is going to give you a big bonus, but then he is also going to cut your salary for the rest of your working career by 50%.

I'm just asking that you consider these things, along with all the other things you must weigh. It does sound as if all the people who are involved in this project have tried to consider every aspect so as to do the least damage to the lives of those who must pay the price of progress and expansion.

Thank you for your time and consideration!!

Sincere Regards,

Dan Kirby

Dan Kirby

US 50 North Vernon
Corridor Planning and
Environmental Assessment Study

Comment Form

Project Phase: Preliminary Alternatives Screening Report (Final Report) **Date:** March 13, 2008

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Howard L Malcomb (Jennings Co Council, Airport Board)

Address: 910 South State, North Vernon, IN 47265

hbmalcomb@verizon.net

Comments:

1. The bypass is the most needed part.
2. plan A south of the Airport is the best route, but should go east past Butlerville
3. the route going close to Mutton creek looks the best in the west
4. I don't understand the purple route south of Hayden

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Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Kenneth Matern

Address: 620 E. Co. Rd. 550 N.
North Vernon, IN. 47265

Comments:

I am against the Alternative D Route because it takes up too much prime farm land, needed for food and fuel. I live on 550 N. and it cuts through my 120 acre farm on a diagonal, which leaves me with two triangle tracts of land, which will depreciate by 50%. Many other farms will be cut up the same way, and the farmers are going to be very unhappy. Also it will be dangerous to cross several roads of 4 lane traffic with big farm machinery, and for school buses.

I think Alternative A or B would be a lot shorter route with a lot less good farm ground taken, that will serve the same purpose of getting around North Vernon and be a lot less expense. Also a lot less farmers involved and a lot fewer roads to cross.

Thank You
Kenneth Matern

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
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Indianapolis, IN 46227

March 13, 2008

Bernardin, Lochmueller & Associates, Inc.
ATTN: Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

RE: US 50 - North Vernon Corridor Planning/EA Project
Comments on Final Report

Dear Mr. Camacho:

I have several comments to make concerning the Final Report.

1. Railroads are depicted on Figures 5.5, 5.10, and the Eastern Alternative Maps. However, the maps do not depict the Madison Railroad property located between SR 3 and SR 7 south of CR 300 N. The tracks have not been used for many years, but the property is owned by Madison Railroad which is an active railroad. Madison Railroad does not own property north of CR 300 N. Madison Railroad property impacts every bypass alternative, except for Option 1 of Alternative A which was not chosen for a final alternative.

    a. The discussion of Alternatives A, B, and D (pages 6-38, 6-41, and 6-47) indicate that "no at grade railroad crossings will exist for traffic diverted from US 50". Alternative A, B, and D will cross railroad property and the grade must be maintained for the railroad property to have any future potential for reactivation of the tracks. Should the railroad decide to activate the tracks prior to construction of the bypass, then the above quote would be incorrect, unless an overpass is constructed. Land acquisition and design of the bypass would need to incorporate this consideration.

2. Table 2.2 and Figure 2.5 do not include the existing traffic light at the Walmart/Ace Hardware intersection on SR 3.

3. The discussion of Alternatives A, B, and D (pages 6-38, 6-41, and 6-47) indicate that "traffic impediments will be reduced with the elimination of two traffic signals". There is no discussion as to which two traffic signals will be eliminated. Even with a reduction of traffic, the elimination of traffic lights would seem troublesome.

    a. Also, it would appear that Alternative B would create traffic impediments (on SR 3) with the addition of another traffic light at the bypass crossing of SR 3

with several traffic lights nearby. Elimination of the traffic lights on SR 3 would create additional hazards due to high traffic volume that would still exist within this commercial area. This was not addressed in the report.

4. Section 2.4.1.3 does not include the county's largest employer which is the Jennings County School (JCS) system. Although this is not an industrial employer, JCS impacts traffic tremendously. Besides employees, many students drive to the high school complex from all parts of the county. How are each alternative impacted due to the traffic patterns for the school? Will county arterial routes be affected? Will students and employees utilize Brownstown Road and CR 150 N to access the bypass for northern and eastern routes and will these routes LOS be reasonable?

5. How are crossing of each arterial routes handled? Will they be intersections, overpasses, or dead ends?

6. How are arterial routes (such as CR 150N, 200N, 300N, 75W, 150E, etc.) affected by the location of each alternative? Will the LOS increase on these routes and if so, will traffic lights be necessary? Will improvements be necessary to these routes and if so, shouldn't costs be considered? Note that, in particular, CR 150N and 200N will become alternate access to US 50 West from portions of North Vernon.

7. The traffic (count) maps indicate high traffic volume on SR 7 between CR 300N and CR 350N (entrance to Country Squires Lake (CSL)). However, it shows a reduced volume on SR 7 between CR 300N and North Vernon. Section 2.6.1 lists traffic concerns and this is stated in item 6 for year 2000.

    a. The traffic counts do not distinguish the counts on CR 300N east and west of SR 7 separately.
    b. From experience, there is a high traffic volume on CR 300N between SR 7 and SR 3. A large part of the high volume is due to residents in CSL (and north) using CR 300N to access the SR 3 industrial and commercial area.
    c. The alternatives will impact this section of CR 300 N differently which is not discussed in the report.
        i. Option 1 of Alternative A (that was discarded) would have the most beneficial impact to traffic volume on CR 300N. The bypass would likely be used rather than CR 300 N.

ii. Option 1 of Alternative A also beneficially impacts the high LOS of SR 7 between CR 350N and CR 300N.

iii. Option 1 of Alternative A also best complies with the purpose stated in Section 3.6 for Enhanced National Security by reducing travel time the most between Camp Atterbury and MUTC.

iv. Alternative B may reduce some traffic load on CR 300N.

v. Alternative A and D (and discarded C) will likely increase the traffic volume on CR 300N or increase the traffic volume on SR 7 south of CR 300N.

1. If an intersection is placed on CR 300N with the bypass, then several intersections will occur in a short distance (1/4 mile). The intersection would enhance the ability of the high population of CSL and areas north to use CR 300N to access bypass US 50 east while also continuing to be used to access the SR 3 industrial and commercial areas.
2. If an overpass is located on CR 300N, then it would be similar to above.
3. If CR 300N is made a dead end, then the traffic volume on SR 7 south of CR 300N increases.
4. If CR 300N is made a dead end, this will increase the difficulty of an already difficult left (south) turn from CR 300N to SR7.

8. Table 4.2 provides the Socio/Economic/Environmental comparisons of Options 1 and 2 of Alternative A. Many of the "negative" comparisons in the list could be minimized with slight modification to the alignment. For instance, the alignment of Option 1 was shown to use existing CR 350N between SR 7 and SR 3. With many residences in this section of existing roadway, then a new route parallel to CR 350N between SR 7 and SR 3 would reduce the relatively high residential impacts.

9. The following solution is presented as an improved alternative as based upon the above comments:

Let's identify it as Option 3. This option is a modification of either Alternative A or D. It can be described as beginning on the alignment of Alternative A, B, and D just west of CR 250 W and making a northerly turn west of and parallel to CR 250 W (Kipper Lane). It continues north and crosses CR 200 N and CR 300 N and then makes an easterly turn, crosses SR 7 and parallels CR 350 on a new route to either the north or south

of CR 350 N and crosses SR 3 and continues until it meets with Alternative A or D. See attached drawing.

Option 3 provides certain benefits over the other alternatives, such as:

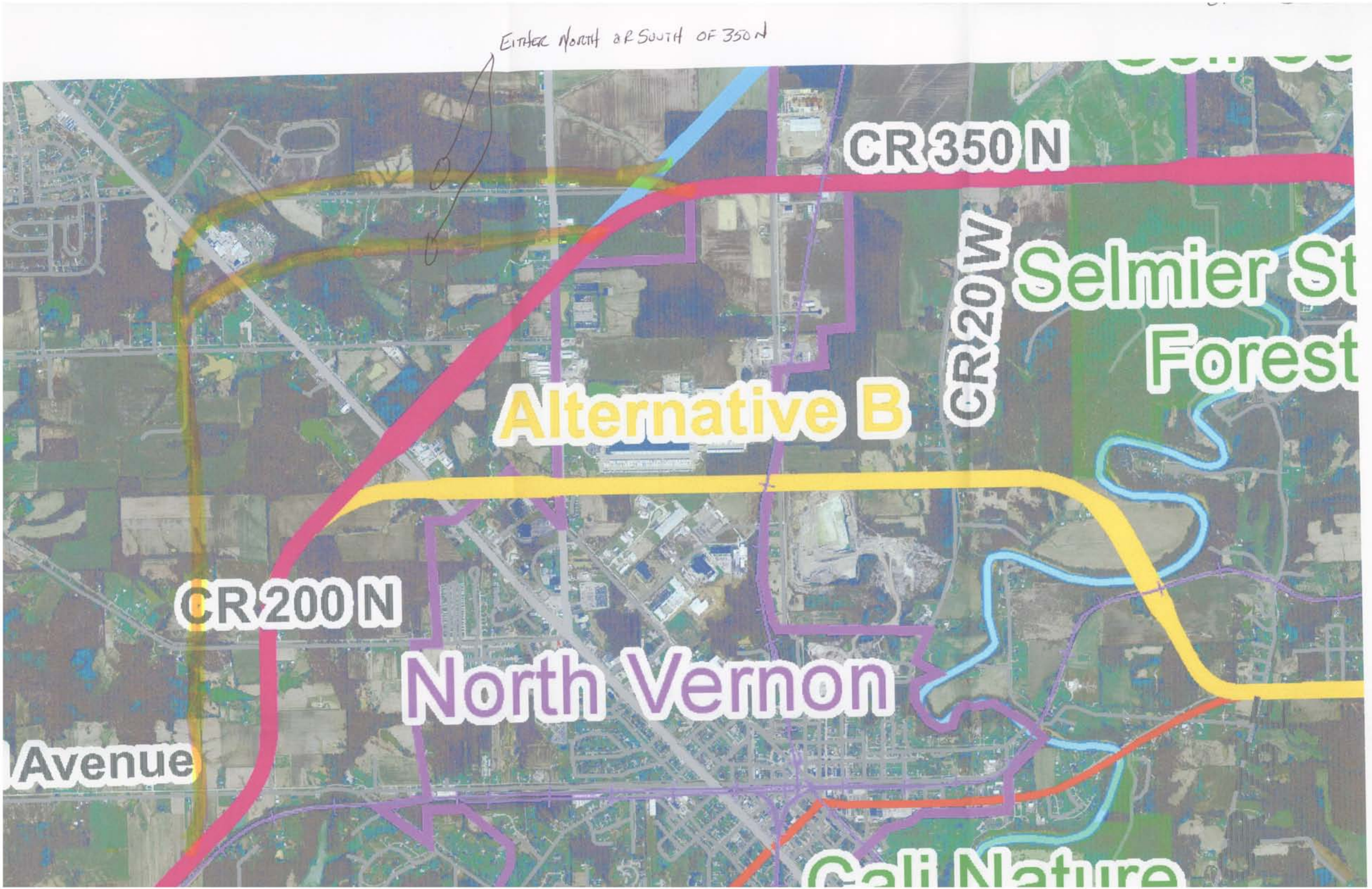
1. Likely reduced traffic volume on SR 7 south of CR 350N.
2. Likely reduced traffic volume on CR 300 N.
3. Likely reduced residential impacts.
4. Likely reduced commercial property impacts.
5. No crossing of Madison Railroad property.
6. Highest Enhanced National Security in minimizing travel time between Camp Atterbury and MUTC.
7. Likely similar impact to farmland, forest, wetlands, and floodplains.

I have not only tried to provide comments or identify issues, but also provided a potential solution for consideration as an improved project. I will be happy to discuss these issues further. You may contact me at my cell phone 812 592-0872.

Sincerely,

Richard Morin

Richard Morin
2005 W County Road 300 N
North Vernon, IN 47265


EITHER NORTH OR SOUTH OF 350 N
CR 350 N
CR 20 W
Selmier St
Forest
Alternative B
CR 200 N
North Vernon
Avenue

US 50 North Vernon
Corridor Planning and
Environmental Assessment Study

Comment Form

Project Phase: Preliminary Alternatives Screening Report (Final Report) **Date:** March 13, 2008

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Donna Randall

Address: 2955 w. CR 200 N
North Vernon, In 47265

Comments:

I have been traveling alot lately from North Vernon to Brownstown & I have noticed the traffic there seems to be pretty much same amount. there are 2 lanes & turn-arounds @ turning points off US 50 on the west side of Seymour it seems to work well. So why the need for 4 lanes from Seymour to North Vernon? With raising gas there isn't as much traffic & I doubt that we will ever see low gas prices again - I work on Rescue Ambulance in Jennings Co for over 35 yrs & the worst & most often accidents are on SR 7 N. there is your need for 4 lanes. Sweeden is in the 200 N. area had family forced out of proving ground & left them vacant which seems to be depreciating. North Vernon downtown is dead why go around it?

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: **www.us50northvernorn.org**
- Or mail to:

US 50 – North Vernon Corridor Planning/EA Project
Bernardin, Lochmueller & Associates, Inc.
ATTN: Carl D. Camacho, P.E.
Project Manager
6125 South East Street (US 31 South)
Indianapolis, IN 46227

Fold along this line, tape closed, and mail with proper postage.

Donna Randall
2955 W County Road 200 N
North Vernon, IN 47265

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US 50 – North Vernon Corridor Planning/EA Project
Bernardin, Lochmueller & Associates, Inc.
ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

US 50 North Vernon Corridor Planning and Environmental Assessment Study

Comment Form

Project Phase: Preliminary Alternatives Screening Report (Final Report) **Date:** March 13, 2008

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Eugene L. Rudicel

Address: 1300 W. CO Rd 60 S.
North Vernon, IN 47265

Comments: I feel the north bypass closest to town would be the best for the existing businesses in North Vernon.

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: **www.us50northvernorn.org**
- Or mail to:

  US 50 – North Vernon Corridor Planning/EA Project
  Bernardin, Lochmueller & Associates, Inc.
  ATTN: Carl D. Camacho, P.E.
  Project Manager
  6125 South East Street (US 31 South)
  Indianapolis, IN 46227

Fold along this line, tape closed, and mail with proper postage.

Place Stamp Here

US 50 – North Vernon Corridor Planning/EA Project
Bernardin, Lochmueller & Associates, Inc.
ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

GALY & JANET SPEER
3600 E. C.R. 600N
NORTH VERNON, IN
47265

March 13, 2008

North Vernon Corridor Planning and Environmental Assessment Study
US 50 Bypass

To whom it may Concern:

This is to address the Alternative D for the US 50 bypass. We are concerned as citizens, taxpayers, farmers and landowners.
Alternative D takes the most taxable acres out of taxation adding more tax burden to the already over burdened farmers and landowners. Farmers already pay a major portion of taxes in this county.
Alternative D is the longest route by 4.4 miles and cost 48.4 million dollars more than the other alternatives; again adding more tax burden to the landowners.
Alternative D would take 63 more forest acres, 3 historic properties, 1 archaeological site, 3 more classified forest and two more conservation reserve acres than other proposed sites. It would also take a cemetery and two churches. Alternative D would also take 41 residences and cross 9 streams.
Alternative D takes a total of 700 acres or 226 acres more than the other alternatives.
Alternative D goes thru prime farm ground – some that has been in families for over 100 years. It will also go thru a dairy farm.
Alternative D will split farms in half. It will cut off access to farms by having only two entrances. How many miles will farmers be forced to drive out of the way with their equipment just to go from their shops (place where equipment is worked on) to their fields? How many more hours will it take moving from field to field. How much longer will equipment be on the road? Equipment that is dangerous to have on the roads because non-farm people do not respect the farmers' right to be on the road.
If a bypass is truly necessary, there must be another way.

Janet M. Speer
Galy Speer
Walter E. Speer
Mary E. Speer
Michael A. Jurasevich
Mary Jo Jurasevich

US 50 North Vernon Corridor Planning and Environmental Assessment Study

Comment Form

Project Phase: Preliminary Alternatives Screening Report (Final Report) **Date:** March 13, 2008

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Walter E. Speer

Address: 3405 E Co Rd 650 N
North Vernon In 47265

Comments:

I was there at the meeting, Mar 13, 2008 at the Jennings Co High School. I listened to what was said but was very disappointed that no one was able to voice their concerns. I am a farmer and own a lot of taxes in Jennings Co. The farm ground that will be effected by the Alternative D is so much greater than the other two, with all the bldgs of schools and even the project the more taxes on us will be even greater. When there is a meeting I feel our concerns should be heard from whoever needs to speak.

I would hope there will be a way for our voices to be heard.

Mr. Walter E. Speer

812-346-4029

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: **www.us50northvernorn.org**
- Or mail to:

  US 50 – North Vernon Corridor Planning/EA Project
  Bernardin, Lochmueller & Associates, Inc.
  ATTN: Carl D. Camacho, P.E.
  Project Manager
  6125 South East Street (US 31 South)
  Indianapolis, IN 46227

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Walter E. Spurr
3405 E CR 650 N
North Vernon IN 47265

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US 50 – North Vernon Corridor Planning/EA Project
Bernardin, Lochmueller & Associates, Inc.
ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

US 50 North Vernon
Corridor Planning and
Environmental Assessment Study

Comment Form

Project Phase: Preliminary Alternatives Screening Report (Final Report) **Date:** March 13, 2008

Please provide your comments and mail to the address on the back of this sheet.
All comments are welcomed and appreciated.

Name: Scott Tuttle

Address: 505 South County Road 700 West
North Vernon, IN 47265

Comments:

I've reviewed your plans and since there is no option to widen the existing highway. The only logical answer is to go Alternative W2 because it only affects eleven (11) residents. I think thats important not ruin more peoples lives. They also need to bring back the twin pairs thru North Vernon and don't say it won't work because Bedford already has the twin pairs. Dividing east and west bound lanes that have not caused any problems. Lets do the right thing of the people who are going suffer from this project. By building W2 people won't notice the noise by following the railroad track most of the way to town. This would also preserve a lot farm ground and protect the wildlife from the refuge that follow different propertys on the south side of US 50. Hopefully INDOT is smart enough to do the right thing for once.

Ways to submit your comments:

- Return your completed comment sheet to a member of the Project Team.
- Submit a comment via the project website: **www.us50northvernorn.org**
- Or mail to:

  US 50 – North Vernon Corridor Planning/EA Project
  Bernardin, Lochmueller & Associates, Inc.
  ATTN: Carl D. Camacho, P.E.
  Project Manager
  6125 South East Street (US 31 South)
  Indianapolis, IN 46227

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Scott Tuttle
505 S County Road 700 W
North Vernon, IN 47265

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US 50 – North Vernon Corridor Planning/EA Project
Bernardin, Lochmueller & Associates, Inc.
ATTN: Project Manager, Carl D. Camacho, P.E.
6125 South East Street
Indianapolis, IN 46227

Based on looking at the reportedly 504 page document that is supposed to be the basis for the public presentation at Jennings County High School in the auditorium on March 13, 2008, and also attending that presentation, some points, which are listed below, have come to mind relating to the project.

No mention is made relating to the subject of detours during the project including the length of such detours where in this context length refers to the multiple items consisting of but not necessarily limited to:

calendar time (months/years) that the detour(s) will be in effect

clock time (minutes/hours) that will be added to travel time on each trip taken while the detour is in effect

The mileage added for the detour, as well as what this translates to in terms of cost to operate the vehicle (fuel, maintenance, etc) and for commercially operated vehicle, additional work time for personnel driving the vehicle

Routing to mean which of the alternatives (A, B, C, W, W1, W2, etc) will require the least amount of detour(s) during the construction phase.

Will detour routings be something like

Seymour-US31-Columbus-Hwy46
-Greensburg-421-Versailles
or
Seymour-US31-Scottsburg-250
-Madison-421-Versailles?

(To rephrase it, will this be like the Hwy 46 mess between Columbus and Greensburg where the detour was
Columbus-7-North Vernon-3-Greensburg?)

Can the detour route(s) handle the extra traffic? That questions includes places like downtown Greensburg and downtown Madison.

Can any of the alternatives be done in such a way that no substantial detours will be required such as building the eastbound southern side of the 4 lane with median while leaving the present 50 operating, and then built the westbound northern side while either using the old highway 50 or the new southside lanes or actually routing eastbound traffic only on the new lanes and all westbound traffic on the old lanes which would be restricted to westbound traffic only?

What is the impact to businesses such as Lowes and Walmart by needing to use such detours

Why do the traffic counts for W(L), W1(M), and W2/W3(H)

differ so much in traffic diversion through North Vernon?

Considering that in June 2007 this presentation of March 13 was supposed to be presented in September 2007, it is established that schedule slippage is a factor of 3 slower than the projection. In light of the 2007 indication that construction might start in 2014 (previously it was supposed to be 2010), a 7 year schedule with a slippage factor of 3 means it will be 21 years after 2007 or the year 2028 before construction will begin. What is wrong with that picture?

Based on what is presented in Table 2.8 and page 2-24, the highway crash data shows Jennings County to the be 91st worst out of the 92 counties in the state. Although incidental to your study, did you ascertain any reasons for what is causing this? Will the Hwy 50 improvements do anything to measurably improve this ranking?

Are copies of the base aerial/satellite(?) photo used for the superposition of the routes available to the public? In what format? At what cost? From whom?

How much would it cost to add traffic signals at the poor LOS locations such as CR900W and CR700W? While doing that, how difficult would it be to do things that are within the technical state of the art including

1. Countdown timers to indicate when the signal is due to change

2. "Intelligent" scheduling to minimize the impact of entering traffic and cross traffic based on how many and how long such traffic is waiting at the intersection. In the process it should be possible to also raise the LOS.

Why, if Hwy 50 is a significant part of Columbus to Cincinnati traffic, do most of the options end many miles (about 5) from the Ripley County line? Dumping the eastbound traffic onto the present Hwy 50 to proceed through Butlerville appears to be nonsensical. What is going on in choosing to terminate these routes so far from the eastern county line and project boundary?

Why to the two options that rejoin Hwy 50 between North Vernon and Butlerville dip so far to the southeast to then join Hwy 50 to travel northeast rather than simply going east to join Hwy 50 closer to Butlerville and incur a shorter travel distance as well?

It was my impression that this study was to select a route (as in a SINGULAR route or [try again] one route). The project seems to have come up very short in this respect? How many more months, years, decades (yes decades, not to

mention centuries) will it be before the inertia is overcome to make significant progress? Extrapolating on someone's written comment relating to the June presentation, how many people involved in anyway with this project will still be alive when (or should that be if) it is completed? How many years after Major Moves money is gone will it be before anything concrete (yes, there is a pun in there) is accomplished?

Sincerely,

Joe U Clark

JOE UHLARIK
P.O. BOX 1
BUTLERVILLE, IN
47223

Full Name: Teresa Arthur
Last Name: Arthur
First Name: Teresa

Home Address: 75 N County Road 600 E
Seymour, IN 47274-9581

E-mail: ta57at@wmconnect.com
E-mail Display As: ta57at@wmconnect.com

Comment Date: March 31, 2007

I have traveled this road for 49 years and have seen so many bad wrecks due to the terrible conditions of this road. It is much too narrow,too crooked, and has long stretches with no way for traffic to pass slow moving traffic. It is time all the money is spent maintaining big interstates when the people of southern Indiana have to travel such treacherous State Roads and US routes.

Full Name: Traci Ashley
Last Name: Ashley
First Name: Traci

Home Address: 2655 W Co Rd 200 N
North Vernon, IN 47265

E-mail: trace812@yahoo.com
E-mail Display As: trace812@yahoo.com

Comment Date: September 11, 2007

Though I fear my comments will come too little, too late, I feel I need to make them heard.

North Vernon is in no economic position to support a bypass. Those who think that it will only encourage new business are mistaken. North Vernon has always been a "bedroom community" to the area counties, namely Columbus. Downtown businesses can't attract customers or remain open. North Vernon has even had two restaraunt closings in the past month. Other communities are able to attract businesses without having a 4-lane limited access divided highway. Traffic is NOT the problem in North Vernon.

On a more personal note the bypass alternatives that use County Road 250 West will effect my family directly. Not my home, but the homes of my parents, my brother's family, my aunt's family, and my uncle's family. I mean these houses will have to be demolished. My home, and 3 other family members will then be located on a highway. We will all be "forced" to move from land that has been in our family for about 140 years. My brothers' home, which will have to be demolished, has been home to 6 generations of my family.
Though I have not done my neighbor's genealogy, from browsing census records, I'm confident that our neighbors - 5 of them - will lose homes that sit on land that has been in their family just as long.

Proponents argue that a bypass will increase property values. With the way my taxes are, if my home value increases any more, I will be taxed from my home as well.

In the 1920's, my grandfather and his brothers went to Michigan to work for Ford to make enought save the family farm. Every generation since has made major sacrifices to keep family land in the family. It will be a very sad time for our family to have an unneeded road displace us all.

Traci Ashley

Full Name: Shawn Bevers
Last Name: Bevers
First Name: Shawn

Home Address: 5380 W. County Road 175 N.
North Vernon, IN 47265

E-mail: srwbevers1@netzero.com
E-mail Display As: srwbevers1@netzero.com

Comment Date: June 27, 2007

I am opposed to the "A" route by-pass. This would bring the bypass within a mile of my property and would defeat the purpose of buying property and building my home in this location. Which was to live "in the country".

Full Name: Lisa Biehle
Last Name: Biehle
First Name: Lisa

Home Address: 4830 West 100 South
North Vernon, IN 47265

E-mail: lbiehle@seidata.com
E-mail Display As: lbiehle@seidata.com

Comment Date: July 06, 2007

I feel that the alternatives D&E would not be effective at eliminating the traffic problem currently disrupting downtown North Vernon because they are so extremely north and south of the city.
Alternative E would actually force the traffic to
travel further into town, causing congestion
in a completely new location south of town. Alternative A seems most effective at eliminating the current problem by allowing the heavy traffic to travel around the city.
I appreciated the opportunity to attend the proposal meeting to be informed the five possible options.

Sincerely,
Lisa Biehle

Full Name: John & Rita Bott
Last Name: Bott
First Name: John & Rita

Home Address: 4410W 740N
Scipio, IN 47273

E-mail: johnritabott@verizon.net
E-mail Display As: johnritabott@verizon.net

Comment Date: August 08, 2007

While the bypassing of small towns by US 50 looks like a good idea for traffic flow, it is too late to move the roadway from its existing path. Too many people have built on the planned routes and/or it may destroy our county park which is unacceptable. It's time to think seriously about fixing what you have!
1. Buy and remove Ruby Janes building and round off that corner of US 50 and devise a method of removing that stoplight on 50. (this will require creative thinking)
2. Remove the stoplight at Millers Tavern. It was installed for Arvin traffic and is now an extreme hinderence to traffic flow since Arvin left town 40 years ago. It causes grid lock traffic.
3. Relane 50 through town to make 2 major lanes with a center turn lane. Remove parking if necessary.
4. Re program stoplight at 7 & 50 intersection so that left turn arrow is at the end of the green light instead of before the green light and only if turn traffic is present. (left turn priority stop lights are also an extreme hinderence to traffic flow in small towns as most left turn traffic will clear during a normal light cycle without the arrow)
5. On the west side, remove the stoplight at Norris Ave. Widen the right of way by removing power poles and trees to make 2 major lanes and a center turn lane. Re route traffic from Norris Ave to enter 50 at some other place beside the turn in front of Hall Heating. Round off this turn to make it more gentle.
Please seriously consider this option in lieu of raping our country side or our county park. This method would also be much more cost effective.
Thanks for listening. Although we live in Scipio, we are in North Vernon and on 50 at least 2 or 3 times a day.

Full Name: James Brewner
Last Name: Brewner
First Name: James

Home Address: 205E. 350N.
North Vernon, IN 47265

E-mail: brew@netscape.com
E-mail Display As: brew@netscape.com

Comment Date: July 02, 2007

Please explain the property value determination process if property has to be bought from private citizens for this project.

Full Name: Scott Chasteen
Last Name: Chasteen
First Name: Scott

Home Address: 1555 Victoria Dr
North Vernon, IN 47265

E-mail: schasteen@seymourtubing.com
E-mail Display As: schasteen@seymourtubing.com

Comment Date: July 31, 2007

A northern bypass makes the most sense. It would allow easier access to the major highways from the industrial section and help North Vernon be able to better compete for industry. Also, any downtown option would not alleviate the congestion from truck traffic going through the town.

Full Name: Curtis & Kaye De Camp
Last Name: De Camp
First Name: Curtis & Kaye

Home Address: 1330 E., Private Rd., 350 N
North Vernon, IN 47265-6770

E-mail: totenki@yahoo.com
E-mail Display As: totenki@yahoo.com

Comment Date: July 06, 2007

Thank you for allowing my family the opportunity to comment on the proposed upgrading of U.S. 50 at North Vernon. We hope you will take our concerns and suggestions seriously.

Our extended family is strongly opposed to Alternative A being used as a bypass.
It would go through the family farm (which has been in the De Camp family for 60 years).
Five (5) of our homes would be either destroyed or made untenable and the tranquility and privacy of our rural way of life - which way of life is our deliberate choice - would be destroyed.

We have strived to make this place a sanctuary for wildlife as well as for ourselves and the effect Alternative A would have on this beautiful section of Muscatatuck Creek and all who live here would be quite devastating. We invite you to come and visit us to see for yourselves before you make such a devastating choice.

It is no light matter to propose to tear up people's whole lives even if you have the power to do it. So we ask that those in charge seriously consider the results of any choices they make. It does not only affect the families directly in the path of the road works, but eventually the decision makers themselves who have to live with the consequences of their actions.

For this reason, we also cannot condone the use of most of the other bypasses. Think of all the families who would be similarly devastated by any uncompassionate or ill-considered decisions.

If the road needs upgrading, then we would opt for one of the following 3 choices.

Choice 1: Keep the highway going through North Vernon but use 2 (one-way) roads. With off and on ramps provided, the North Vernon businesses would not be adversely affected by the loss of transiting business- especially gas stations, restaurants and the like. And the highway would remain in an urban environment just as it is now.
Choice 2: Alternative E would be the shortest and straightest route with less impact on people who have chosen rural, uncrowded lifestyles.
Choice 3: Alternative B would skirt and contain the industrial area which would have several benefits. [a] It would prevent industrial sprawl and create a contained, sensible area for industry. [b] There are not too many homes in the industrial area so it would not affect as many individuals. [c] This alternative would also preserve access to St. Anne's golf course and Selmier State Forest (unlike Alternative A).

Thank you for reading and especially for taking time to consider our concerns.
Please come and visit us.

Sincerely,
Curtis & Kaye De Camp

Full Name: Tom Gasper
Last Name: Gasper
First Name: Tom

Home Address: 5795 n co rd 150 e
North Vernon, IN 47265

E-mail: tgasper@seidata.com
E-mail Display As: tgasper@seidata.com

Comment Date: December 14, 2007

I am sending this with the hope that I could get some information as to the progress of this project. I was at the public meeting this summer and at that time we were told that we would be getting an update on this sometime this fall. The location of this bypass would have a very big affect on our family and our farming oppertion. The alternative D would go thruogh the home farm were our family grew up.This would split our families and farming operation to be living and working on both sides of this.

If you could send me an up date on this project my family and I would greetly appreciate it.

Thank You for your time !!

Tom Gasper

Ph# 812-346-6918 Mob# 812-525-4844

Full Name: Bernard Hauersperger
Last Name: Hauersperger
First Name: Bernard

Home Address: 1125 S. CR 700 W.
North Vernon, IN 47265

E-mail: bhauer@fpbhonline.com
E-mail Display As: bhauer@fpbhonline.com

Comment Date: July 11, 2007

I reside fairly close to the realignment area around the Hayden Area. I have a few comments:
1. I would like to see Limited Access for as much of the Cooridor as possible with no driveway access.
2. I would like to see a bicycle trail added to US 50. This could be a multiuse cooridor with future utilities.
3. I would like to see a future Utility area added to US 50. This could be a multiuse cooridor with a bicycle trail.
4. I would like noise control to be considered in your budget. Either a lower (cut) profile grade or screening is suggested.
5. A CR 700 W. Underpass is suggested because of current steep grades and improvements to current alignment with US 50.

I am in favor of the project. Hopefully, final alignment details and education to the process will gain further support for your efforts.

Sincerely,
Bernard Hauersperger

Full Name: Hoosier Landscapes Inc.
First Name: Hoosier Landscapes, Inc.

Home Address: 490 South County Road 660 West
North Vernon, IN 47265

E-mail: hoosierlandscapesinc@yahoo.com
E-mail Display As: hoosierlandscapesinc@yahoo.com

Comment Date: July 11, 2007

We are interested in better understanding the maps considering our address. The maps do not detail our exact location in reference to the proposed highway expansion. It appears that our property falls in the path of three of the alternatives. Is our property going to be affected by any of the proposed alternatives? Thank you for your help in this matter.

Dusty Williams
Hoosier Landscapes, Inc.
(812) 346-6939

Full Name: Elizabeth Kirchner
Last Name: Kirchner
First Name: Elizabeth

Home Address: 2100 E CR 450 N
North Vernon, IN 47265

E-mail: elkirchner2007@aol.com
E-mail Display As: elkirchner2007@aol.com

Comment Date: July 12, 2007

To whom it may concern:

I am obviously writing concerning the bypass, and I am obviously directly affected by the decisions and choice that you will make or have already made. I want to make it clear that I do not want this bypass to be on my land, near my land, near my home or near my neighborhood. Most of the land in our area has been in families for years. We all have worked hard our whole lives to keep it that way. Now someone, just because they can, wants to ruin our little piece of heaven on earth. I drive through North Vernon daily and the only time that traffic is bad is when a function is going on in North Vernon. A bypass is not going to help that! You could not convince me that there is one good reason that this bypass will be necessary. I don't know what the motives are that you may have to make the decisions or recommendations that you have or will make, but they cannot be moral or in the best interest of the people.

In closing, it saddens me that I will no longer have the peacefulness I once enjoyed. I will no longer be able to let my children play outside, I can no longer go for jogs or let my kids ride their bikes down the road. These are all things that affected where I lived and raised my children, and now all the things I have cherished are gone. You will make your decisions and recommendations regardless of what I say, but don't you dare tell me that I or any of Jennings County should be excited about it. This is the worst thing to ever happen to Jennings County. North Vernon is a small farming town, and that is why most choose to stay here. We do not want it to get bigger or have more industry or to attract more people or have a need for a bypass. Just leave well enough alone.

Sincerely,

Elizabeth Kirchner

Full Name: Steve Kirchner
Last Name: Kirchner
First Name: Steve

Home Address: 4112 E. 31st Street
Columbus, IN 47203

E-mail: kirchnerfam@sbcglobal.net
E-mail Display As: kirchnerfam@sbcglobal.net

Comment Date: July 12, 2007

We feel like this road should be kept closer to North Vernon. Route C&D should not be used as it will affect numberous families. The use of routes C or D would result in several families who have lived a lifetime in this area to suffer hardships from such a drastic change. We are planning a future on our property in the route C area. Please consider the families affected when making this decision.

Full Name: Deborah Kuntz
Last Name: Kuntz
First Name: Deborah

Home Address: 3280 W. Co. Rd. 150 N
North Vernon, IN 47265

E-mail: deborah_kuntz@yahoo.com
E-mail Display As: deborah_kuntz@yahoo.com

Comment Date: July 10, 2007

I travel highway 50 each day to work from N. Vernon to Seymour and find that the only times there is congestion is during peak school hours as buses are arriving and departing. Actually I find it more frustrating in Seymour and never have a long wait in North Vernon. I understand a new route is to assist the MUTC vehicles but can they not use Highway 50 during non-peak hours to travel. I have given much thought about this project and really cannot justify destroying homes for convenience of commuters. Many individuals choose to live in a country setting and would not appreciate a highway next to them, myself included. I am not in favor of destroying homes to expand highway 50.

Thank you for your consideration.

Deborah Kuntz

Full Name: Jeffrey Kuntz
Last Name: Kuntz
First Name: Jeffrey

Home Address: 3280 W. Co. Rd. 150 N.
North Vernon, IN 47265

E-mail: jeff_kuntz@yahoo.com
E-mail Display As: jeff_kuntz@yahoo.com

Comment Date: July 09, 2007

Dear project team : I would not like to see the highway 50 project come through alternatives A,B,C,D,or E. There are several people in the community that have lived here all there lives, and people who have just purchased new homes on some of the routes of the new highway. People who don't want to relocate after spending all there lives and hard earned money and even handed down to them from generation to generation to get something to call home and then have a Hwy. come through the middle of it like it or not it just don't seem fair. I don't know who's idea it was for the project but I would think they should let the people decide or vote on the decision . I thought this was a democratic country? I don't think there is enough traffic coming through town to need a bypass, I think if they did install one af the alternatives, the truck drivers will still take the short route right through town. There are more traffic problems in Seymour and Columbus than in Noth Vernon, it takes 12 to 15 minutes to get to Seymour from North Vernon and then 20 to 25 to get through Seymour from Hwy.31 to Freeman Field if your lucky. The people in my neighbor hood and I'm sure a lot of other people in other neighbor hoods that are dealing with the Hwy. coming through there property or even close don't want it, that's the reason we live in the country or the out skirts of town. We enjoy the peace and quite not the sound of semi's and traffic buzzing all day and night. I would appreciate some long hard thought about what they are going to do and some consideration for the people who are being affected by it. I under stand that all of this is just an estimation of existing problems that might occur in the future so why not wait until there is a need and not jump to conclusions. If the military is the main purpose of the Hwy. then maybe they should try to time there convoy's to come through at night or even at a less busy time of the day. Maybe to just let the people know when they're going to be coming through if at all possible. The army is trained to do alot of their missions at night anyway and if they did have to leave the premises in a hurry wouldn't you think air evacuation would seem to be alot faster than the Hwy. They come in and out of there all the time with helicopters now. Besides what's the chances of them having to hurry a bunch of soldiers in training out to to do something anyhow, there probably not even trained completely yet. I would think they would get there soldiers from a trained base and not from a training center. THANKS FOR YOUR TIME.

Full Name: Greg Martin
Last Name: Martin
First Name: Greg

Home Address: 325 North State Highway 3 & 7
North Vernon, IN 47265

E-mail: greg@muscatatuckpark.com
E-mail Display As: greg@muscatatuckpark.com

Comment Date: July 05, 2007

[Comment_001 July 5, 2007]

Hello, I am director of Jennings County Parks & Recreation. We manage the Muscatatuck Park. We have just become aware that our property is listed as alternative E in a potential bypass upgrade for US 50. It is noted that alternative E is not the most likely alternative to be chosen. It is also noted that this is the shortest alternative, by a good percentage. With that in mind we would like to empress upon the planning team the extent and specifics of what this project would do to this facility and the community that uses it. Although a specific route is vauge at this point, your powerpoint map conveys a genral route and we will want to look at this.

Muscatatuck Park is now 86 years old, instated in 1921 as indiana's fourth state park. There are currently only two significant parks that supply recreation to the community, the county park and the city park. There are two smaller mini-parks, and one twonship park pretty far from the population. Usage from the Muscatatuck park durning an average week day is well over a hundred visits per day, 500 to 750 visits per weekend is common. We cater to annual family reunions. Weekend Shelter use is often booked up with these reunions, as well as birthday parties, parties in general and often weddings. Camping is our number one income producer, and has been growing.

The park has many historical elements. WPA shelters, road work, bridge work, etc. 1840 stone cutting mill with ruins and a reconfigured two story shelter at a very picturesque overlook area. 1850 homestead, which was the inn to the State Park. 1913 school house, moved and remodeled to award winning quality.

That is the general back ground. Last week we hosted the DINO (do Indiana off road) racing and running series. Our trails are increasinly popular with locals as well as recreationists throughout the state. This facility is also the only decent advertised place to do rock climbing in the state.

Our local paper printed an aritcle and a survey about his project. They did the community great disservice in informing them that this alternative would travel "between the Muscatatuck Park and Crosely SFWA". If this were the case, the road would be south of the Park. The proposed alternative actually runs most near the northern border of the facility.

Without going into great detail on this form to clarify to what extent each element would be effected, here is a list of major park elements that would either be removed or significantly altered if alternaitive E was enacted. Assuming the propsed road would like to use the topograghy efficiently, yet not be too steep or curvy, I can generalize a rough potential path.

From west to east following a line as represented by bypass on map:

upper wildlife marsh (removed)
shelter one (removed)
Main park road (reconfigured)
WPA road retaining wall (removed in this area)
main park canyon (significantly altered)
Walnut grove School house (removed)
Director's Residence (removed)
Visitor center parking lot (significantly altered)
Park front entrance (significantly altered)
Two loop hiking trails (one Mountain bike race loop)

Blasting and excavation for a canyon bridge would most likely disrupt a limestone cavern system that feeds our spring near the Vinegar Mill. Wildlife and habitiat would be altered likewise (Most likely removing current limestone dens, was

fox, sometimes ground hog, maybe raccon this year?)

Everyone I have talked to about the project, (including the bikers from indy this past weekend), state this would simply ruin the facility. Having the entire northern border of the facility with a bypass with most likely a major intersection (underpass?) cannot do any good for the facility, and the community likewise.

I do live at this facility and have been very instrumental in bring this park up to a resepectable level. The facility was in great disrepair when I first started in 1991. Slowly but steadily the infrastructure has been cleaned and repaired to compliment the natrual beauty of the area. It is only a slight conflict of interest that my place of residence will be elimanated. I petitioned very hard a few years back to the County Council to modify my payment structure so I would be able to move from the Park and by my own home. I took a paycut, and lost part of the park budget, yet it went through. We have not moved yet, but the wife and I hope to..... maybe sooner than later?

So....we do not mind moving. I cannot imagine that I would stay working for the department if this was to come into reality. It would essentially undo the last fifteen years of what I worked exceptionally hard at, and create something basically not worth working for.

So there are the facts with regards to the facility, with a bit of perspective thrown in for good measure. I could do a bit better with normal email checking my spelling, and most likely will try this route also.

Have a good day

Greg Martin

[Comment_002 January 25, 2008]
Hello, just curious on the time frame for the meeting for "Preffered Alternatives". I am sure you are super busy and the plan is a detailed project. We (JCPR) are doing are 5-year plan for the IDNR and this information is relative. Thanks.

Have a great day!

Full Name: Martin F McCoy Jr.
Last Name: McCoy, Jr.
First Name: Martin F

Home Address: 1645 E. County Road 400 N.
North Vernon, IN 47265

E-mail: mmccoynv@netzero.com
E-mail Display As: mmccoynv@netzero.com

Comment Date: June 27, 2007

Just a question that may not have been posed after last nights discussion. Has there been any thought to "Combine" one alternative with another in order to come up with an "Optimum" solution when considering all properties, issues, etc. as you spoke about last night ? For example: Combine parts of Alternative "A" with parts of Alternative "C" or something like that ?
I realize too that alot of this won't really affect people until 7 years from now - by that I mean full implementation of a plan. Maybe this can be communicated as well to ease the burden on some of these folks who feel as if they are being "railroaded" in the name of progress ? Just a thought.
Thanks for your time,
Marty

Full Name: Steven McIntire
Last Name: McIntire
First Name: Steven

Home Address: 1595w co rd 350n
North Vernon, IN 47265

E-mail: horseshoesem@yahoo.com
E-mail Display As: horseshoesem@yahoo.com

Comment Date: June 26, 2007

If you would drop alterative A south to almost to road 300n there would a house next to 7 and you would be going thou a open gound until you get to the corner of 350 and 3 you would 2 houses you would be disruping a lot less people we are had ether way.

Full Name: Jean Meador
Last Name: Meador
First Name: Jean

Home Address: 619 GreenBriar Circle - CSL
North Vernon, IN 47265

E-mail: jeanmeador@comcast.net
E-mail Display As: Jean Meador (jeanmeador@comcast.net)

Comment Date: March 08, 2007

Hello,

I attended the meeting of 2-8-2007, at the training center. We were told that this was in planning stage at this time and no date has been set to start construction. I live in Country Squire Lakes, and I have heard that you are to start construction on the by-pass sometime in 2008, is this so? I am all for the by-pass for MUTC for easy in and out. Please let me know of the projected date and year of construction.

Thank you for your time.

Jean Meador

Full Name: Jean Meador
Last Name: Meador
First Name: Jean

Home Address: 619 GreenBriar Circle - CSL
North Vernon, IN 47265

E-mail: jeanmeador@comcast.net
E-mail Display As: Jean Meador (jeanmeador@comcast.net)

Comment Date: March 08, 2007

Hello again,

As I was looking on all of the sites I noticed that it says on Jennings County start year is 2015, as I mentioned in my first question, we were told start year is 2008 and end in 2010 on the by-pass, or is that just for US 50 from West UAB of North Vernon to East of UAB of N.V.

Full Name: Jean Meador
Last Name: Meador
First Name: Jean

Home Address: 619 GreenBriar Circle - CSL
North Vernon, IN 47265

E-mail: jeanmeador@comcast.net
E-mail Display As: Jean Meador (jeanmeador@comcast.net)

Comment Date: November 29, 2007

Good Morning, Mr. Camacho,

I wanted to update my e-mail... jeanmeador@comcast.net.... I, went to the meeting back on June 26, 2007. I made the statement that I lived at Country Squire Lakes, and also, that it would be GREAT!! if the Hwy 50 project would come right through the middle of us, it would solve a lot of our problems. We do own our properties, csl doesn't...We wanted to become a Town, last year, but that didn't pan out (commissioners) decided against us, loss of TAX REVENUES, and our water\sewer and sur-debt charge, are outragious, and the current Water Board is resigning on March 1, 2008. Although, we are part of Jennings County, we are not acknowledged what so ever.... So, PLEASE, Think of US, in your planning of YOUR PROJECT....

Please keep me advised on the dates of meetings...

Thank you,

Jean Meador

Full Name: Dan Megel
Last Name: Megel
First Name: Dan

Home Address: 710 S Co Rd 650 W
North Vernon, IN 47265

E-mail: dan.megel@ocas.com
E-mail Display As: dan.megel@ocas.com

Comment Date: July 07, 2007

Dear Mr. Carl Camacho,
I was able to talk to you at the meeting regarding the "Rural new Terrain Alt" area near Hayden.I have a 220 acre farm in the path of the new road. I support the expansion of US 50 but feel the route could be tweaked to make more sense.
I know you told me at the meeting that farm ground and the Hoosier Homestead did not figue into the DOT evaluation. Agriculture has however been a major focus of the current administration and is a very important asset for the State of Indiana and Jennings County. I serve on the Jennings County Soil and Water Board and see first hand the importance of preserving farm land whenever possible.
You said to give alternatives. First, I know there is some support for movging the highway norht of the railroad earlier and avoinding the Hayden area. That is a decision for DOT because either way it affects individual's property and would just be passing the buck.
I would ask that if the route must go through my farm that it be moved north as far as possible. This would appear to be a good route since it would save the farm ground east of me and would bring the new route back into US 50 sooner utilizing some of the old rightaway and saving the DOT on acquisition costs. It would be a more direct route and save on construction cost.
The current route would just miss my house and my brother's house severely impacting our quality of life. We think a compromise would make sense for a lot of reasons and would be happy to meet on site to discuss possible changes.
Lastly, I want to say that I know you have a difficult job trying to balance many issues. I would hope that compromise is possible to reach a solution that is more acceptable to our way of life as well as my neighbors while still dealing with the traffic problems in the area.
Thanks for listening.

Dan Megel

Full Name: Jan Megel
Last Name: Megel
First Name: Jan

Home Address: 710 S Cty Rd 650 W
North Vernon, IN 47265

E-mail: janmegel@hotmail.com
E-mail Display As: janmegel@hotmail.com

Comment Date: July 07, 2007

Dear Mr. Carl Camacho,

This letter is in regard to the expansion of highway 50 through North Vernon. My husband and I own a farm consisting of 220 acres about six miles west of North Vernon. The proposed plan will cut through the middle of our property. This land is designated as a Hoosier Homestead and the Megel Family acutually came from France and settled this property. We are in no means against progress and can see the need for the highway expansion. We are, however, suggesting the plan be moved to the north edge of our property so as to keep as much of our place intake as possible. We would very much appreciate your consideration in this matter.

Thank you,
Jan Megel

Full Name: Tom Moore
Last Name: Moore
First Name: Tom

Home Address: 2925 N CR 90 E
North Vernon, IN 47265

E-mail: tomasearl@hotmail.com
E-mail Display As: tomasearl@hotmail.com

Comment Date: June 26, 2007

Dear Sirs,
1) Whatever route is chosen, if there is to be a median, then please consider bringing all 4 lanes together and using concrete barriers, thus eliminating the median. This -a- reduces land use and environment impact -b- improves LOS by keeping vehicles in the respective lanes -c- eliminates the need of future installation of barriers that are now being installed on I-65 -d- reduces the long-term maintenance costs (mowing, landscaping, etc.) -e- provides efficient access control.

2) For environmental and human impact reasons, I hope you use a route through town. If so, then veering east after the intersection with Hwys 3&7 and proceeding immediately behind the Carnegie building, then onto the Regal Rug complex will take away the sharp turn at the railroad tracks, leave the historic district intact to develop on its own, and use some real estate that the owners are ready to unload.

Full Name: Gary & Kristi Nolker
Last Name: Nolker
First Name: Gary & Kristi

Home Address: 280 West County Road 260 North
North Vernon, IN 47265

E-mail: gnolker@seidata.com
E-mail Display As: gnolker@seidata.com

Comment Date: November 02, 2007

Hello,
I would like to voice my comments about the Hwy 50 Bypass in North Vernon. I live at 280 W. 260 N. where one of the projected paths is close to our home. I would like to note that we have so many facets of wildlife in our area that would be disrupted and obliterated if the bypass would go thru around this area. We see regularly fox, coyotes, deer, wild turkeys not to mention the birds and bats we have. I wanted you to note that the wildlife is of much concern to us and our neighbors and we don't want to permanently disrupt their habitat. Thank you very much for your time. We have attended 2 meetings thus far about the bypass.
I would like to see the meetings held in a bigger room or somewhere that can house the people who would like to come.
Thanks
Kristi & Gary Nolker
North Vernon, IN

Full Name: Catherine Reed
Last Name: Reed
First Name: Catherine

Home Address: 2715 North County Road 275 East
North Vernon, IN 47265

E-mail: Cathy.Reed61@Gmail.com
E-mail Display As: Cathy.Reed61@Gmail.com

Comment Date: November 11, 2007

Attended June meeting and interested in any updates on the project. Have all the studies been evaluated and a feasible route been established? Jennings County businesses need some promising news about its future and I feel this by-pass will eventually play a key role in surviving our economic slump. Thanks.

Randy Weaver

Full Name: Theodore (Ted) Brunner
Last Name: Brunner
First Name: Theodore (Ted)

Home Address: 11287 Clarkston Rd.
Zionsville, IN 46077

E-mail: tbrunner@indy.rr.com
E-mail Display As: tbrunner@indy.rr.com

Comment Date: April 04, 2008

My wife and I own a 160 A. farm .5 mi. north of US 50 at Co. Rd. 400 West in Spencer twp., Jennings county. Further the proposed route of the US 50 relocation in this immediate vacinity comes within about 500 ft. of our south east property corner as you cross existing 50 proceeding north along the existing RR row. The proposed route does not interfere with our property but its proposed route unnecessarily takes out the homes of my father, James Brunner and brother Jeff Brunner. We realize the proposed routing is only preliminary at this point and with 30 years management experience in the highway construction industry I realize there are many hurdles to cross before finalizing the roadway alignment. We would like to be supportive of improvements to highway 50 because we realize they are needed and that some properties will be impacted. Although my wife and I do not currently live in the area we were raised in Jennings county, many of the people to be impacted along this route are life long friends and we plan to return in the next few years. This proposed road alignment could easily be adjusted to eliminate many of the locally objectionable intrusions, reduce the amount of new right of way, significantly reduce the costs of the improvement, and still meet both the current and long term improvement needs.

Other points I want to make in this quick overview are consideration needs to be given to how far from the high school and west side of town the new route ties in to the current alignment. This will make it difficult for the new road to assist with congestion relief and improved trafice flow needed for the school and west side. If the new alignment is too far west and or north of town it will add through town traffic to the current roadways needing to go south on SR 3 & 7 which will add to the significant congestion already on that roadway on the near north side in the area from the north split to the current us 50 location. And, finally, when the "old" us 50 alignment is turned back to the city and county for maintenance where will the money come from for long term to care. The city and county are already short on highway maintenance money. There are many details that I would welcome the opportunity to review with the planning group that I believe could add to the success of ultimately helping the project happen. I look forward to that opportunity.

Randy Weaver

Full Name: Deloris Fox
Last Name: Fox
First Name: Deloris

Home Address: 6025 N County Rd 750 E
Butlerville, IN 47223

E-mail: msfoxtrot@hotmail.com
E-mail Display As: msfoxtrot@hotmail.com

Comment Date: February 04, 2008

I like alternative D. If you are going to do it. Do it right. Go by Muscatatuck so it will be accessable to semis.

Randy Weaver

Full Name: David Hocking
Last Name: Hocking
First Name: David

Home Address: 9800 NCR 700 E
Seymour, IN 47274

E-mail: david.hocking@grote.com
E-mail Display As: david.hocking@grote.com

Comment Date: January 04, 2008

As a person who commutes from Seymour to Madison via HWY 50 & SR7 daily, I am very much interested in this project. I am certainly not opposed to any of the proposals that were flagged for further study. I was not aware of the recent public meeting, otherwise, I would have made an effort to attend. I am not sure what kind of direct input I can contribute to this project, but feel free contact me if the need arises. I very much would like to be kept informed of further activities. I will check on the website more frequently for updates. Thank You for your time. David Hocking (wk.ph. 812-265-8254)

Randy Weaver

Full Name: Delbert Vincent
Last Name: Vincent
First Name: Delbert

Home Address: 135 S Co Rd 610 West
North Vernon, IN 47265

E-mail: deldigs@hotmail.com
E-mail Display As: deldigs@hotmail.com

Comment Date: March 31, 2008

I would like to offer my opinon on how routes should be chosen. I aatended the last meeting held in March at the High School. During the presentation given by your staff they showed a chart giving the breakdown of how many houses and businesses each route would potentially involve. My opinon is this that along each of those routes for both the west and east side projects all affected property owners be asked if they would be interested in selling their property. As an example if along one route there are 30 homes and along another there are 15 homes and each home owner is asked if they would be willing to sell their homes, and 25 out of the 30 said yes and only 3 out of the 15 said yes then although more homes might have to be bought your actions of trying to respect everyones private property rights would be better suited. This is my only opinon as for now concerning this project since everything is still preliminary at this point. As per my understanding.
Sincerey
Delbert F. Vincent