Transportation Plan 2010

JANUARY 2011 DRAFT

ZIONSVILLE

FOR ALL THE RIGHT REASONS

Zionsville Transportation Plan

DRAFT

January 25, 2011

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ACKNOWLEDGEMENTS

The Zionsville Transportation Plan was developed with the ideas, input and effort of the following Working Group members:

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1 INTRODUCTION

1.1 Plan Purpose

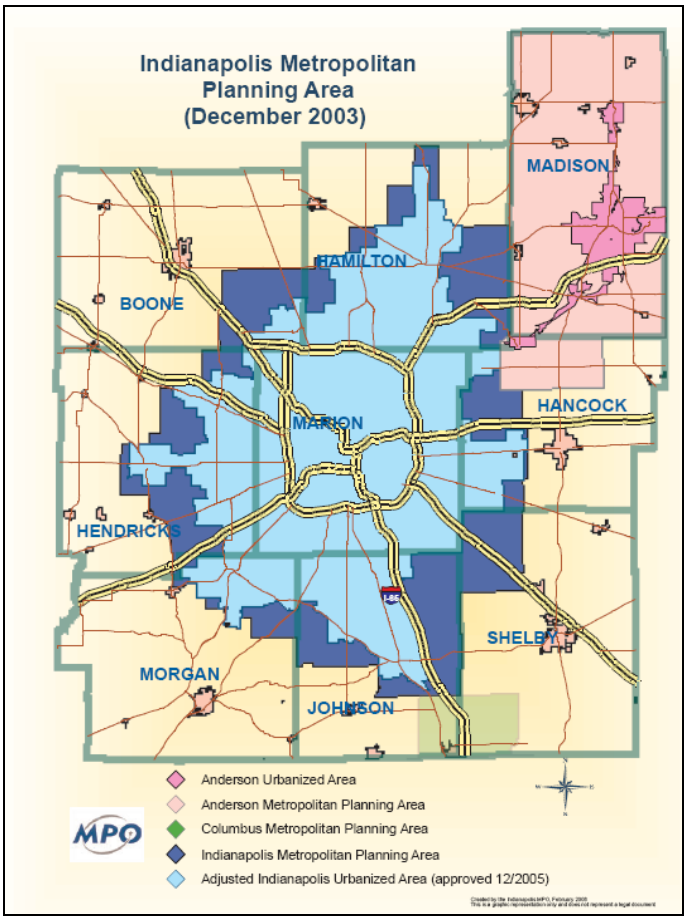
This document provides a plan for the development of transportation facilities in and around Zionsville, Indiana over the next 25 years. The plan is based on an evaluation of community goals and anticipated 25-year transportation needs. This plan is intended to serve as a guide for public infrastructure and private development decisions by:

- Identifying short and long term transportation construction priorities
- Identifying right-of-way requirements for transportation facilities
- Anticipating future capital funding needs

As of January 1, 2010, the Town of Zionsville merged with the previously unincorporated areas of Eagle and Union Townships in Boone County. The coverage area for this plan includes the entirety of the consolidated Town of Zionsville. Most of the Town of Zionsville is located within the Indianapolis Metropolitan Planning Area (MPA). **Figure 1-1** shows the Indianapolis MPA and its relationship to Boone County. **Figure 1-2** shows the location of Zionsville within Boone County.

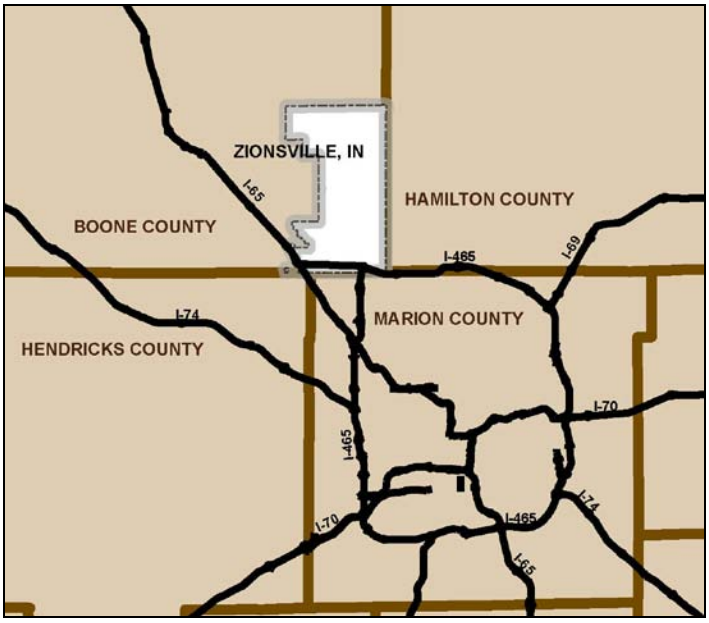
The development of this transportation plan has been funded through the Indianapolis Metropolitan Planning Organization (MPO). The Indianapolis MPO is the primary entity responsible for regional transportation planning within the Indianapolis region. The MPO helps to ensure that transportation planning in the Indianapolis Metropolitan Planning Area is coordinated among all responsible governments. MPO activities are guided and approved by the Indianapolis Regional Transportation Council, which is comprised of representatives from each of the affected local and state governments. This includes representation from the Town of Zionsville.

Figure 1-1 Indianapolis Metropolitan Planning Area



Source: Indianapolis Metropolitan Planning Organization

Figure 1-2 Zionsville Location Map



1.2 Planning Process

This plan is the result of a comprehensive, coordinated effort to identify long term transportation needs and solutions for the Town of Zionsville. The plan components were developed through review of existing trends, assessment of future land use development and travel demand forecasts, input from Working Group members, and discussions with stakeholders. Public information meetings were held on June 3, 2010 and September 29, 2010 to obtain public input on the draft needs and recommendations identified in this plan.

1.3 Related Plans and Documents

Several existing plans and other planning documents were reviewed during the development of the Zionsville Transportation Plan. Summary descriptions of these documents are provided below.

1.3.1 *Indianapolis Regional Transportation Plan (2009)*

The Regional Transportation Plan is maintained by the Indianapolis Metropolitan Planning Organization as a long-range (25-year) plan for transportation improvements in the Indianapolis Metropolitan Planning Area (MPA). This area includes Marion County and portions of eight other Central Indiana counties. The southeast corner of Boone County—east of SR 267/CR 400 E and south of SR 32—is within the Indianapolis MPA. This includes all of Zionsville that is south of SR 32. The plan identifies anticipated regional transportation issues and needs through the 25-year horizon and proposes a set of transportation improvement projects to help address those issues and needs.

The most recently adopted update of the Regional Transportation Plan is dated Fall 2009 and has a planning horizon of 2030. A major review and update of the Regional Transportation Plan is currently underway and will extend the planning horizon to 2035. The following transportation improvements are identified for construction by 2030 in the plan and are expected to impact travel in Zionsville:

- Construct a new 4-lane extension of CR 400 S from 0.478 miles E of CR 500 E to 0.267 miles E of CR 575 E (146th St. Extension. Phase I).
- Construct a new road from CR 400 S at CR 650 E northeastward to CR 300 S at CR 750 E (146th St. Extension, Phase 3).
- Widen US 421/Michigan Road from 2 lanes to 4 lanes between CR 550 S and CR 300 S.
- Construct the Ronald Reagan Parkway (new road) from 56th Street in Hendricks County to the I-65/SR 267 interchange in Boone County.
- Widen I-65 from 4 lanes to 6 lanes between I-865 and US 52 in Lebanon.
- Improve the I-465/I-865 interchange.
- Widen 146th Street in Hamilton County from 2 lanes to 4 lanes between the Hamilton/Boone County Line and Springmill Road.
- Widen US 421 from 2 lanes to 4 lanes between .9 miles north of I-465 and 121st Street (project completed).
- Widen I-465 in Marion County from 6 lanes to 10 lanes between 86th Street and US 31.

In addition to these projects, the widening of Zionsville Road from 2 lanes to 4 lanes between 96th Street and SR 334 is designated in the plan as an "illustrative project." This means that a need has been identified for the project but funding and a construction time frame have not been identified.

1.3.2 *Zionsville Comprehensive Plan (2003)*

This document provides long range goals and policies to direct the development of Zionsville. The plan emphasizes the desire to maintain Zionsville's "village" heritage while enhancing its employment, shopping, recreation and cultural opportunities. The plan emphasizes trails, pedestrian facilities and a grid roadway network to minimize traffic congestion. The Comprehensive Plan sets forth a number of general goals for Zionsville that implicitly affect the transportation system, as well as a number of explicit goals for transportation. These are shown below:

General Goals for Zionsville:

1. To remain a town, and retain the small town atmosphere, with emphasis on the health, welfare, and safety of the community.
2. To preserve the beauty of the natural environment and provide suitable recreational facilities for all residents.
3. To preserve the central business district (Main Street) and maintain the village theme throughout all commercial areas in the community.
4. To grow and develop in a planned manner.
5. To assure adequate services are planned for all of the town's citizens.
6. To ensure that the funding for public services is determined by and within the means of the economic base of the area.

Transportation Goals:

1. Provide improved mobility between the Zionsville area and Indianapolis regional transportation system.
2. Create a new local access point to the interstate system and improve connections to Michigan Road.
3. Improve east-west connections within the planning area.
4. Create east-west and north-south links to better serve the TIF area, including improvements to 106th Street and the creation of a north-south connector from 96th Street to 106th Street.
5. Work with "Context-sensitive design" principles in order to produce roadways that are more compatible with their physical environment and more acceptable to the surrounding community.
6. Implement the "ten year program" established by the 2000 Transportation Plan Update.
7. Continue to implement many of the recommendations identified by the Pathway Committee in the Pedestrian and Bicycle Path System, including its non-motorized transportation network.
8. Create effective links to a regional system of pedestrian and bicycle pathway facilities.
9. Ensure that regulatory changes are properly incorporated in the Zionsville Traffic Ordinance through amendment as they are implemented.
10. Create, maintain, and utilize all appropriate legal authorities to ensure development, acquisition, and funding of parking facilities in the downtown village business areas.

11. Establish a procedure to ensure the State Highway Department is notified when new street mileage is accepted to assure the town's receipt of proper gasoline tax revenues.
12. Require sidewalks and curbing in all new developments and with any new construction.
13. Study alternate routes through or around Zionsville to alleviate potential congestion problems.

The Zionsville Comprehensive Plan incorporates the text and maps of the current Zionsville Transportation Plan Update, as well as a pathways map developed by the Zionsville Pathways Committee. The proposed land use map from this plan is **Figure A-1** in **Appendix A**.

1.3.3 *Indianapolis Regional Pedestrian Plan (2006)*

The Indianapolis Regional Pedestrian Plan was completed by the Metropolitan Planning Organization in 2006 and identifies recommended facilities for pedestrians, bicycles and other non-motorized forms of transportation within the MPA. This includes facilities within Zionsville. The plan also includes recommended design guidelines for these facilities. The plan recommends a number of exclusive bicycle/pedestrian trails that follow existing roads or scenic natural corridors. It also recommends "pedestrian districts" in the Zionsville Village and the 96th Street and Zionsville Road areas, as well as "pedestrian corridors" along US 421 and SR 334. These districts and corridors would emphasize pedestrian connectivity and accessibility. A map of the plan recommendations is **Figure A-2** in **Appendix A**.

1.3.4 *Indiana Trails, Greenways and Bikeways Plan, Final Draft (2006)*

This plan provides an inventory of existing recreational trails throughout the state and identifies a planned network of interconnected trails. The plan also discusses issues and strategies related to developing the planned trail network. The plan identifies the abandoned Penn Central rail corridor from Zionsville to Lafayette as the potential location for a regional trail. A portion of this corridor is already being used in Zionsville for the Nancy Burton Trail. A short segment is also open in Thorntown as the Thorntown Keewasakee Trail

1.3.5 *Boone County Comprehensive Plan (2009)*

This plan is intended to guide decisions about development in unincorporated areas of Boone County. The planning area included the portions of Eagle and Union Townships that were not within the town limits of Zionsville or Whitestown at the time, but have since been incorporated into Zionsville. The plan contains specific recommendations regarding land use and development in each of the County's Townships. The countywide future land use map is shown in **Figure A-3** of **Appendix A**. Specific recommendations affecting Zionsville include:

- Extension of the Indiana Farm Heritage Trail along the abandoned Penn Central Railroad from Zionsville to Whitestown and Lebanon
- New residential development adjacent to existing residential development and consistent with adjacent densities
- Open space preservation to minimize impacts to the existing natural landscape

- Mixed-use development near Zionsville Road south of the Village, near Executive Airport, and on the east side of US 421 at SR 334 and CR 300 S

1.3.6 *IndyGo Comprehensive Operational Analysis (2005)*

A Comprehensive Operational Analysis (COA) of the IndyGo Transit System was conducted for the Indianapolis Metropolitan Planning Organization as part of the "DiRecTionS" Regional Rapid Transit Study. This study evaluated the existing service provided by IndyGo for the Indianapolis region and recommended operational improvements to serve future demand. IndyGo does not currently provide bus service to Zionsville or Boone County. However, the following two routes were proposed for implementation within the 15-year horizon of the COA:

- Route 34L – Michigan Road Limited. This route is proposed to offer limited-stop service along Michigan Road between Zionsville and downtown Indianapolis. Buses would begin the route at the Zionsville Medical Center on Oak Street and travel east on Oak Street, south on 1st Street, east on Sycamore Street and south on Michigan Road to downtown Indianapolis. The COA proposed initial service by 2014 and operation with 30 minute headways, 7 days a week by 2020.
- Route 209 – Zionsville Express. Express buses would operate along I-65 from SR 334 in the vicinity of Royal Run (SR 334 at CR 700 E) to downtown Indianapolis. Buses would operate on 30-minute headways during morning and evening peak periods by 2020.

1.3.7 *Marion County Thoroughfare Plan (June 2002)*

The Marion County Thoroughfare Plan was developed by the City of Indianapolis Department of Metropolitan Development. This Plan includes two improvements on Marion County streets that are important to Zionsville. The first is the proposed widening of Zionsville Road from 2 lanes to 4 lanes between 86th Street and 96th Street. The second is the proposed widening of Georgetown Road to 4 lanes for its entire length, along with the proposed extension of Georgetown Road from 86th Street to 96th Street. This extension would need to cross over I-465 west of US 421, and it would connect to 96th Street in the vicinity of the Boone/Hamilton county line. The thoroughfare plan map is shown in **Figure A-4** of **Appendix A**.

1.3.8 *Boone County Thoroughfare Plan (1999)*

This plan identifies future roadway needs and recommended improvements for the unincorporated areas of Boone County. This includes the portions of Eagle and Union Townships that were not part of Zionsville at that time. The plan examined roadway improvement needs under scenarios of low, medium and high traffic growth through a horizon year of 2018. The thoroughfare map is **Figure A-5** in **Appendix A**. The following proposed improvements would directly impact Zionsville:

- Upgrade CR 300 S east of Whitestown and connect it to CR 400 S and the I-65/SR 267 interchange.
- Implement a new north-south corridor between SR 32 and 96th Street by extending Cooper Road north to CR 875 E and straightening the bend that connects CR 875 E to CR 900 E.
- Construct a new interchange at I-865 and Cooper Road.

- Improve 96th Street between Cooper Road and Ford Road.
- Widen SR 334 to a 5-lane section west of Zionsville, between Cooper Road and I-65.
- Upgrade SR 32 to a "Super-2" highway with wide, paved shoulders and turn lanes as needed.
- Upgrade SR 267 as necessary to accommodate the proposed Ronald Reagan Parkway.

1.3.9 *Zionsville Traffic Impact Fee Study Report (2006)*

This study was conducted to support the assessment of roadway impact fees for new development by the Town of Zionsville. The study identifies additional roadway trips expected to be generated by new land use development between 2006 and 2016. These trips were assigned to the roadway network to identify roadway capacity improvements that will be required to support the anticipated development. The study calculated that a road impact fee of $90 per 24-hour generated trip could be assessed to new development within the Zionsville study area in order to cover the cost of required roadway improvements.

Roadway improvements identified in the study included proposed new facilities to serve development, capacity increases to meet anticipated demand on existing roads, and roadway widening to meet minimum standards. The study established a minimum acceptable highway capacity "level of service" for roadway and intersection operation. It also established a minimum acceptable pavement width of 20 feet for two-lane roadways.

Specific roadway improvement projects recommended in the Traffic Impact Fee Study are shown in Section 4.3 of this report.

1.3.10 *2007 Hamilton County Thoroughfare Plan Update (July 2007)*

This plan provides guidance for development of Hamilton County's transportation system to support the needs and development of the county. The Thoroughfare Plan, included as **Figure A-6** in **Appendix A**, does not describe specific projects, but does show designated new and existing thoroughfares on a map. The thoroughfare map shows projects in a few areas that could be significant for Zionsville. The segment of 146th Street between Springmill Road and the Boone County Line is designated as a "completed study" corridor on the plan map. Widening of this segment is currently under design. The plan also shows new connections within the commercial and industrial areas on both sides of US 421 south of 96th Street. This includes an extension of Commerce Drive to 96th Street on the east side of US 421 and new extensions of Mayflower Park Drive on the west side of US 421. These changes could relieve some traffic demand on US 421 for trips to and within these retail and industrial areas. Finally, the plan also shows construction of a new 126th Street connection from US 421 to Towne Road, with an extension southeast to connect with 116th Street at Ditch Road. This could spur development along 126th Street west of US 421, but would also provide an alternative east-west route between 116th Street and 131st Street.

1.3.11 *Carmel Clay Comprehensive Plan (July 2009)*

This plan provides recommendations for future land use and infrastructure to support development in Carmel and Clay Township. The portions of Carmel/Clay Township that are adjacent to Michigan Road are designated for community or regional commercial uses with the opportunity to integrate some mixed uses. Land on the west side of Michigan Road between 96th Street and 106th Street is designated for office employment use with the potential for some supporting mixed uses. Land between 126th Street and 146th Street adjacent to Zionsville is designated for Estate Residential land use.

The transportation plan identifies the same improvements that are shown in the Hamilton County Thoroughfare Plan, as discussed above. In addition, the plan identifies a proposed grade-separated bicycle-pedestrian crossing of Michigan Road at 106th Street. This plan is shown in **Figure A-7** in **Appendix A**.

1.3.12 *Whitestown Comprehensive Plan (2005)*

The land use and transportation maps for the Whitestown Comprehensive Plan were reviewed. Industrial and Commercial land uses are generally designated for the I-65 corridor, between SR 334 and CR 400 S. The land that borders Zionsville is generally designated for low to medium density residential. A village mixed-use area is designated for the vicinity of CR 400 S and Zionsville-Whitestown Road. The transportation plan map shows the connection of CR 300 S to CR 400 S and extension to the I-65/SR 267 interchange. It also shows the extension of CR 875 E south to SR 334 and the completion of CR 700 E between CR 400 S and CR 300 S. CR 700 E is designated as a major arterial from SR 334 to SR 32. The Whitestown Transportation Plan map is **Figure A-8** in **Appendix A**.

1.3.13 *INDOT Statewide Interchange Study (2007)*

INDOT completed an update of its Statewide Interchange Study in 2007. This study identified long-term improvement needs at existing interchanges on the state highway system and reviewed the feasibility of several potential new interchanges. The study included a review of a potential new interchange on I-865 at Cooper Road. This review concluded that construction of this interchange could provide modest benefits to traffic operation the adjacent interchanges on I-465, and I-65. In addition, traffic volumes through Zionsville could be expected to decrease. The study recommended more detailed analysis to determine the magnitude of potential benefits.

1.4 Progress since the 2000 Plan Update

Several roadway improvements that were identified as either committed or recommended projects in the 2000 Zionsville Transportation Plan have since been completed or are underway. These include:

- US 421 widening south of Templin Road
- Ford Road Extension to Mulberry Street
- SR 334 rehabilitation from Main Street to Boone Village
- 106th Street realignment

- Andrade Road realignment
- Bennett Parkway construction
- 96th Street/Ford Road improvements (underway)

The following projects that were recommended in the 2000 Transportation Plan have not yet been initiated:

- Templin Road extension to Mulberry Street
- Cooper Road Interchange
- Cooper Road extension to CR 875 E
- New east-west road north of O'Neal Avenue

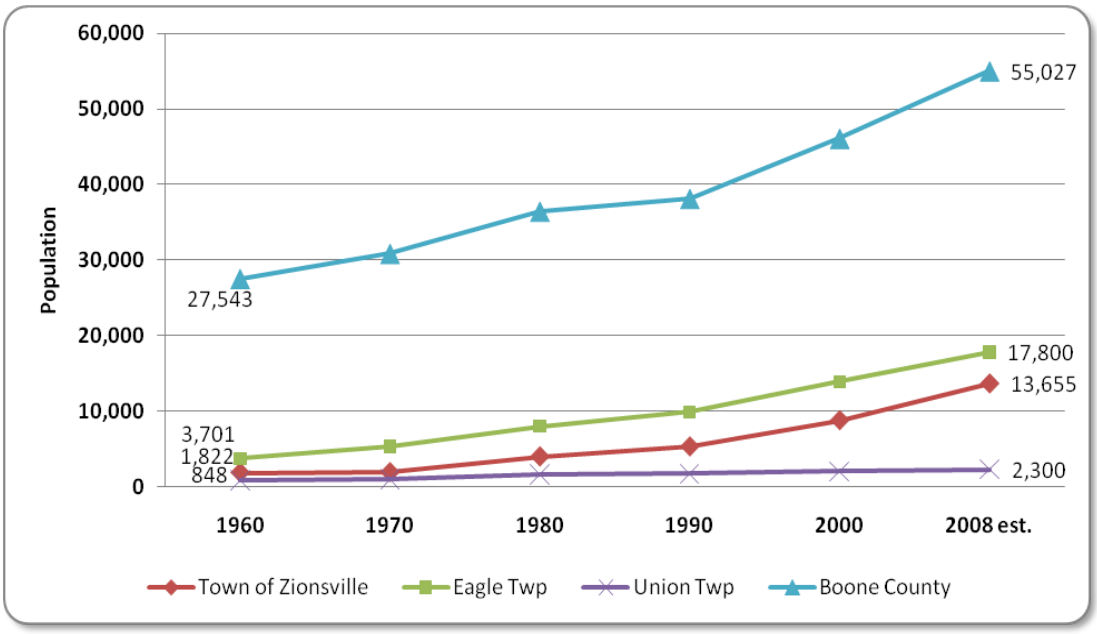
The 2000 Transportation Plan also included a recommendation for adoption of traffic impact analysis guidelines. This has been accomplished by identifying traffic impact analysis requirements within the Zionsville Subdivision Control Ordinances. In addition, the Town has adopted a road impact fee in compliance with Indiana state statutes.

2 DEVELOPMENT TRENDS

2.1 Existing and Forecast Population

The Town of Zionsville's population has grown at a steady rate from 1,822 in 1960 to an estimated 13,655 in 2008. **Figure 2-1** shows how the population growth in Zionsville compares to that of Eagle Township, Union Township and Boone County as a whole over this time period. The populations of Eagle Township and Boone County shown in the figure include the population of Zionsville, and Zionsville has become a larger proportion of both during this time. In 1960, 49% of Eagle Township residents and 7% of Boone County residents lived in Zionsville. By 2008, 25% of Boone County residents and 77% of Eagle Township residents lived in Zionsville.

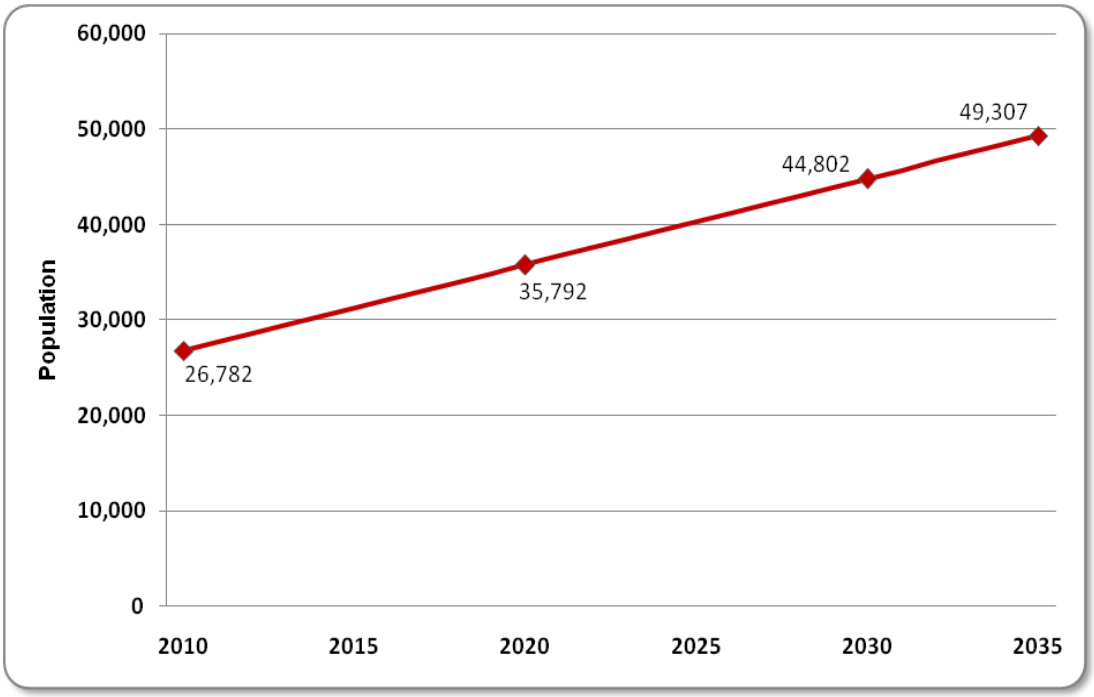
Figure 2-1 Zionsville Historic Population Growth



Source: U.S. Census of Population and Housing

As of January 1, 2010, the Town of Zionsville has merged with the previously unincorporated areas of Eagle and Union Townships. A forecast of population growth for this consolidated Town of Zionsville was developed based on historical population and building data collected by the Town of Zionsville and Boone County. As shown in **Figure 2-2**, population in Zionsville is projected to grow by approximately 22,525 or 84% between 2010 and 2035.

Figure 2-2 Population Forecast for the Consolidated Town of Zionsville



Source: Town of Zionsville and HNTB

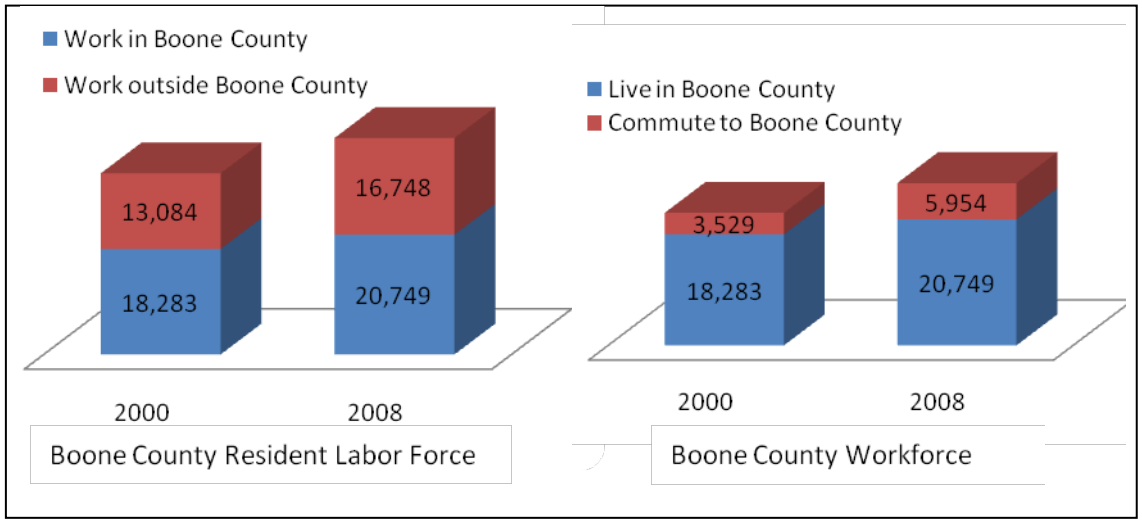
2.2 Local Economic Conditions

Census data and other data available from the State of Indiana are presented below in order to provide a snapshot of the socio-economic conditions in Zionsville and Boone County. At this time, the 2010 Decennial Census has been conducted, but results are not available. Some 2000 Census results may not accurately reflect existing conditions, and updated information has been used where available. All of these data, however, describe the Town of Zionsville and the surrounding Townships before their 2010 merger.

2.2.1 *Employment and Commuting Patterns*

In 2000, the number of persons who lived in Boone County and worked anywhere—the implied resident labor force—was 31,367. The total number of persons who worked in Boone County and lived anywhere—the implied workforce—was 21,812. By 2008, the implied resident labor force had increased to 37,497 and the implied Boone County workforce had increased to 26,703. The number of Boone County residents who remain in the county for their jobs has fallen slightly from 58% to 55% over these years, while the number of Boone County jobs that are filled by Boone County residents has fallen slightly from 84% to 78%.

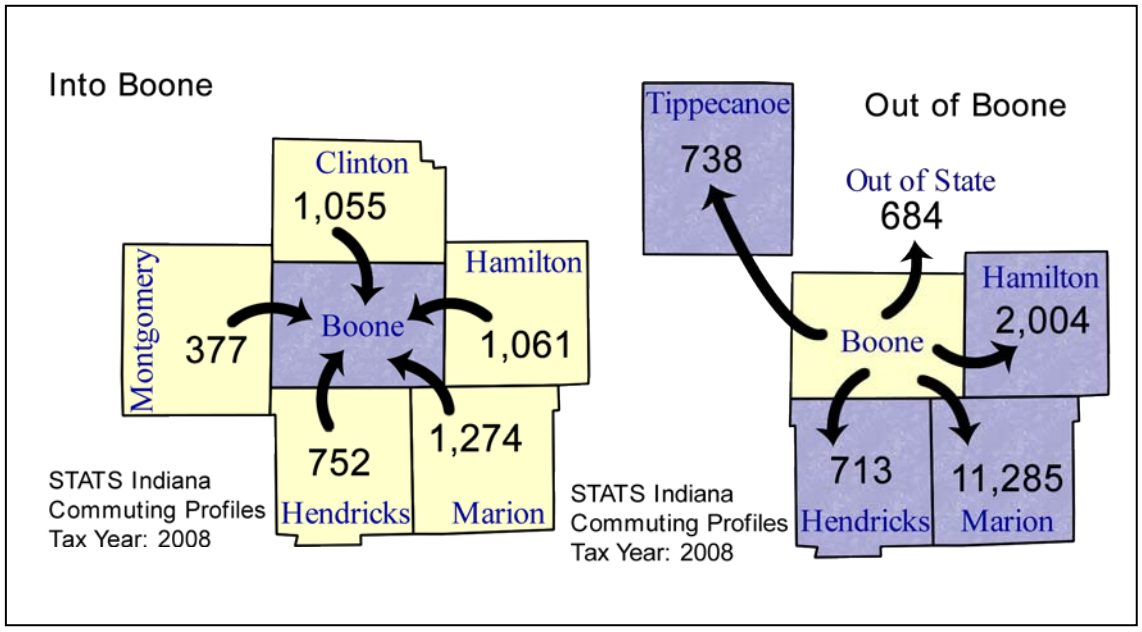
Figure 2-3 Boone County Labor and Employment



Source: Indiana Department of Revenue

Figure 2-4 shows the Indiana counties that are the primary origins and destinations of Boone County commuting trips. According to the Indiana Department of Revenue, over 30% of the County's implied resident labor force commutes to Marion County to work and over 5% commutes to Hamilton County. Boone County's non-resident workforce is more diversified in that it includes workers who live in Marion County (5%), Clinton County (4%), Hamilton County (4%), and Hendricks County (3%) to name a few.

Figure 2-4 Boone County Commuting Patterns



Source: Indiana Business Research Center, Indiana University

Table 2-1 provides a comparison of the modes and average travel times for work commutes in Zionsville, Boone County, the Indianapolis Metropolitan Area, and the State of Indiana. This information is from the 2000 Decennial Census, and the may be outdated. The relationship among the various areas is still expected to be valid, however. The average Zionsville resident is significantly less likely to carpool to work and is more likely to drive alone or work from home. Average commute times for Zionsville residents are lower, probably reflecting the higher percentage of residents that drive alone to work or work from home.

Table 2-1 Mode of Commute to Work

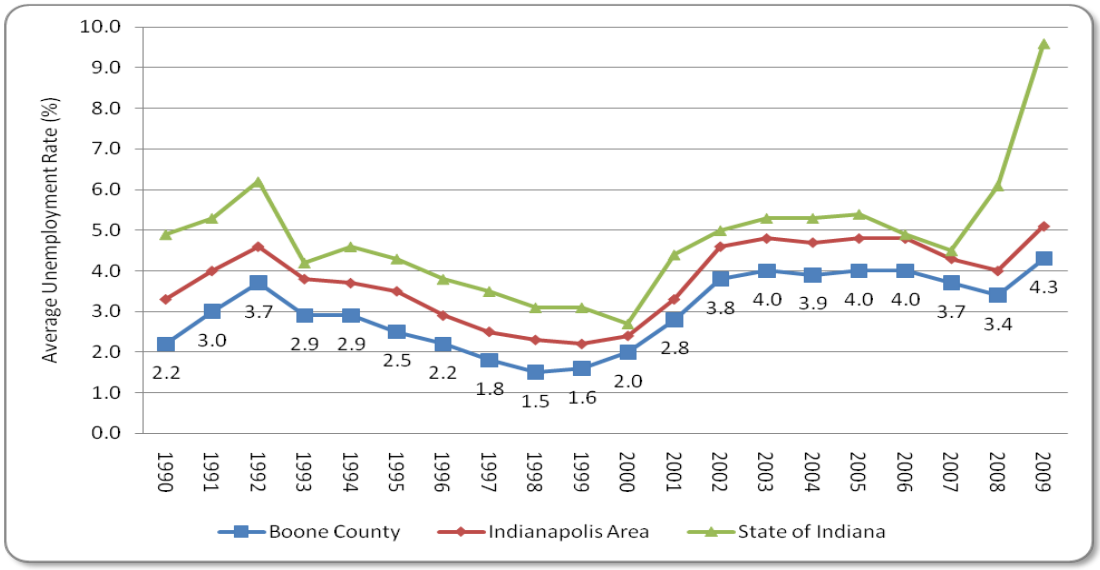
Mode	Zionsville	Boone County	Indianapolis MSA	Indiana
Car, truck, or van - drove alone	88%	84%	83%	82%
Car, truck, or van - carpooled	4%	9%	10%	11%
Public transportation (including taxicab)	0%	0%	1%	1%
Walked	2%	1%	2%	2%
Other means	1%	1%	1%	1%
Worked at home	6%	5%	3%	3%
Mean travel time to work (minutes)	21.8	23.0	23.8	22.6

Source: 2000 U.S. Census of Population and Housing

2.2.2 *Unemployment*

According to the Indiana Department of Workforce Development, the unemployment rate for Boone County has historically been below that of the Indianapolis Metropolitan Area and the State of Indiana (see **Figure 2-5**). As of September 2009, the annual average unemployment rate for Boone County is 4.3%, which is less than the Indianapolis Metropolitan Area (5.1%) and much less than the State of Indiana as a whole (9.6%).

Figure 2-5 Historical Unemployment Rates



Source: Indiana Department of Workforce Development

2.2.3 *Household Income*

According to the Census Bureau, the median household income for the Town of Zionsville in 2000 was $81,770. That is equivalent to $103,600 when adjusted for inflation to 2010 (using the Consumer Price Index). The median household income for Zionsville was 65% higher than that of Boone County, 80% higher than the overall Indianapolis Metropolitan Area, and almost twice the statewide average.
Between 1990 and 2000, the median household income for the Town of Zionsville increased by over 15% in the Town of Zionsville. In comparison, household incomes in Eagle Township, Boone County, the Indianapolis Metropolitan Area, and the State of Indiana as a whole all increased by approximately 9% during the same period. Union Township experienced a decrease in household income during the same time period. More recent estimates are not available for Zionsville, but the Census Bureau has estimated that Boone County continued to experience a rise of 12% in median household income between 2000 and 2008, while the Indianapolis Metropolitan Area and the State of Indiana experienced decreases of 4% and 5.5% respectively during the same time period.

2.3 Land Use

2.3.1 *Existing Land Use*

A base map of existing land use information for Zionsville was developed during this planning process. A previous land use map from the 2003 Zionsville Comprehensive Plan was updated and expanded to include all land within the new corporate boundaries using interpretation of 2008 aerial photography. **Figure 2-6** is a map of existing land use for the Zionsville planning area.

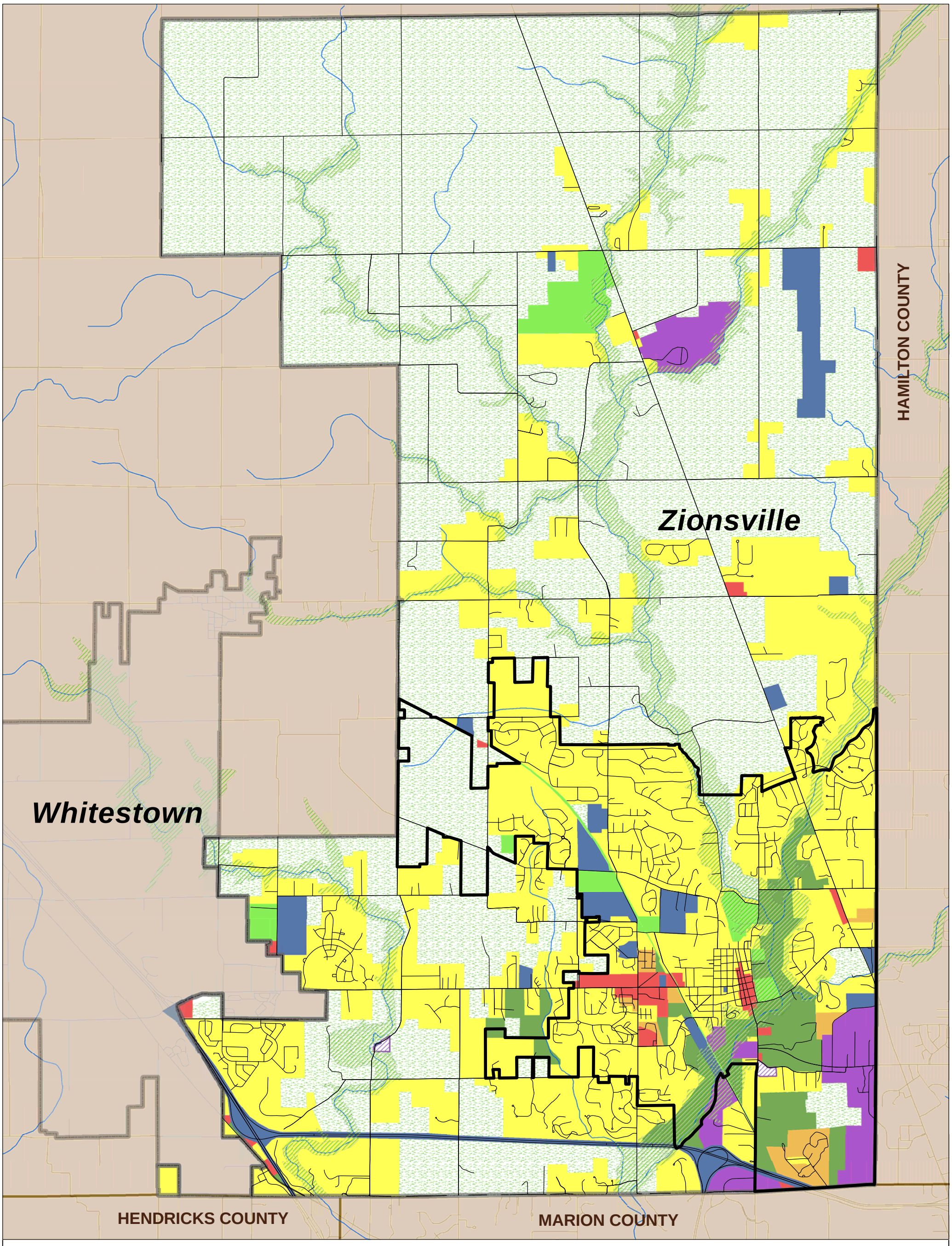


Figure 2-6
Generalized Existing Land Use
Zionsville Transportation Plan

Date: 7/30/10
Source: Boone County Aerial Orthophotograhpy, 2008

- Agriculture
- Natural Areas
- Single-Family Residential
- Multi-Family Residential
- Commercial
- Industrial
- Cemetery
- Public
- Recreation
- Corporate Limits
- Zionsville Urban Limits
- Floodplain

0 0.25 0.5 1 1.5 2 Miles

N

HNTB

2.3.2 *Future Land Use Development*

The extent of residential, commercial and industrial land use development in Zionsville between 2010 and 2035 was estimated by assuming that the per-capita acreage of development in each land use classification would not change through the planning horizon. General areas of significant future land use development were identified based on the knowledge of Town of Zionsville staff and Transportation Plan Working Group members, as well as through stakeholder interviews. The total new acreage required for each type of land use was assigned as either infill to existing developments that are not at capacity or as new development on land that is currently being used for agricultural purposes. This assignment was made based on an assessment of the build-out of existing developments using aerial photography.

The new acreage forecast for each land use classification is shown in **Table 2-2**, and the general location of anticipated growth is shown in **Figure 2-7**. Most residential development is anticipated to occur north and west of the existing residential areas, but south of CR 300 S. Commercial development is anticipated along or near US 421, either south of SR 334 or near CR 300 S. Industrial development is anticipated in the TIF area south of 106th Street or near the Indianapolis Executive Airport.

Table 2-2 Estimated Acreage for New Development, 2010-2035

Land Use Type	Infill to Existing Developments	New Developments	Total
Single-Family Residential	620	3,550	4,150
Multi-Family Residential	10	70	80
Commercial	0	280	280
Industrial	100	350	450

Source: HNTB analysis

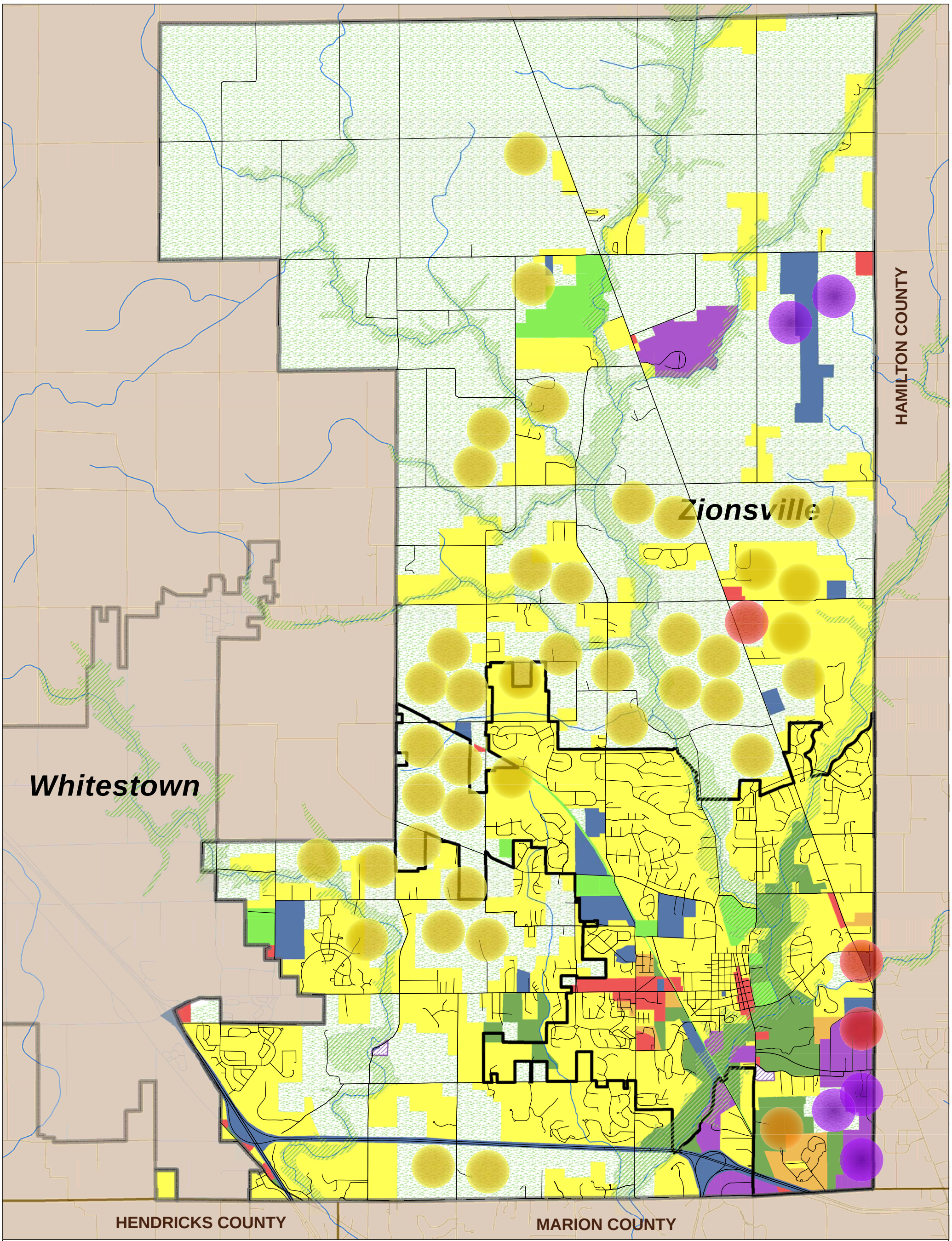


Figure 2-7
Future Growth Areas
Zionsville Transportation Plan

Date: 7/30/10
Source: Boone County Aerial Orthophotograhpy, 2008.

Existing Land Use
- Agriculture
- Natural Areas
- Single-Family Residential
- Multi-Family Residential
- Commercial
- Industrial
- Cemetery
- Public
- Recreation
- Corporate Limits
- Zionsville Urban Limits
- Floodplain

Anticipated Growth Areas
- Future Residential
- Future Multi-Family
- Future Commercial
- Future Industrial

Note: This map is intended to reflect the general locations of anticipated growth through 2035 based on current trends. It is not a plan.

0 0.25 0.5 1 1.5 2 Miles

N

HNTB

3 EXISTING TRANSPORTATION SYSTEM

3.1 Road Network

3.1.1 *Existing Conditions*

Figure 3-1 is a map of the existing roadway network in and around Zionsville. The most recent available daily traffic volumes on Zionsville area highways are shown on this map. The Town of Zionsville is traversed by three Interstate highways—I-65, I-465 and I-865. However, there are no interchanges within Zionsville that provide access to these facilities. The interchanges used most for access to Zionsville are the I-465/US 421 (Michigan Road) interchange, the I-65/SR 334 interchange, and the I-465/86th Street interchange. US 421 and SR 334 are the most heavily traveled non-Interstate streets in Zionsville. 96th Street, Zionsville Road, Ford Road, CR 300S and SR 32 are other roads that carry significant traffic volumes. US 421 south of Templin Road has four travel lanes, while all other roads in Zionsville have only two travel lanes.

Most traffic flow in or out of Zionsville is oriented toward Indianapolis to the southeast or Hamilton County to the east. This orientation of travel toward the southeast and east, combined with the barriers presented by the Interstate highways and the lack of good east-west connectivity, forces travel onto the few roads mentioned above. US 421, Zionsville Road, Ford Road and 96th Street are the only good alternatives for many Zionsville residents to cross I-465 and I-865. Cooper Road and Kissel Road also cross I-865, but currently do not serve regional travel needs well. This lack of connectivity and alternate routes also increases traffic volumes on SR 334 through the Zionsville Village, as drivers seek access to US 421.

Vehicle crash data for the years 2003 through 2006 were provided by the Indianapolis MPO, as obtained from the Indiana State Police. The locations with at least ten crashes during this four-year period are shown in Table 3-1. Seven of the nine intersections in the table are on state highways. The number of crashes at the two Zionsville intersections is not high enough to indicate a crash problem.

Table 3-1 Intersections with 10 or more Crashes, 2003-2006

Intersection	Crashes
US 421 & SR 334	63
SR 334 & Ford Road	62
US 421 & Templin Road	29
US 421 & CR 300 S	20
US 421 & Willow Road	14
Bloor Lane & Ford Road	13
Oak Street (SR 334) & 1st Street (SR 334)	11
Mulberry Street & Turkey Foot Avenue	10
US 421 & SR 32	10
96th Street & Zionsville Road	10

Source: HNTB analysis of Indiana State Police crash records

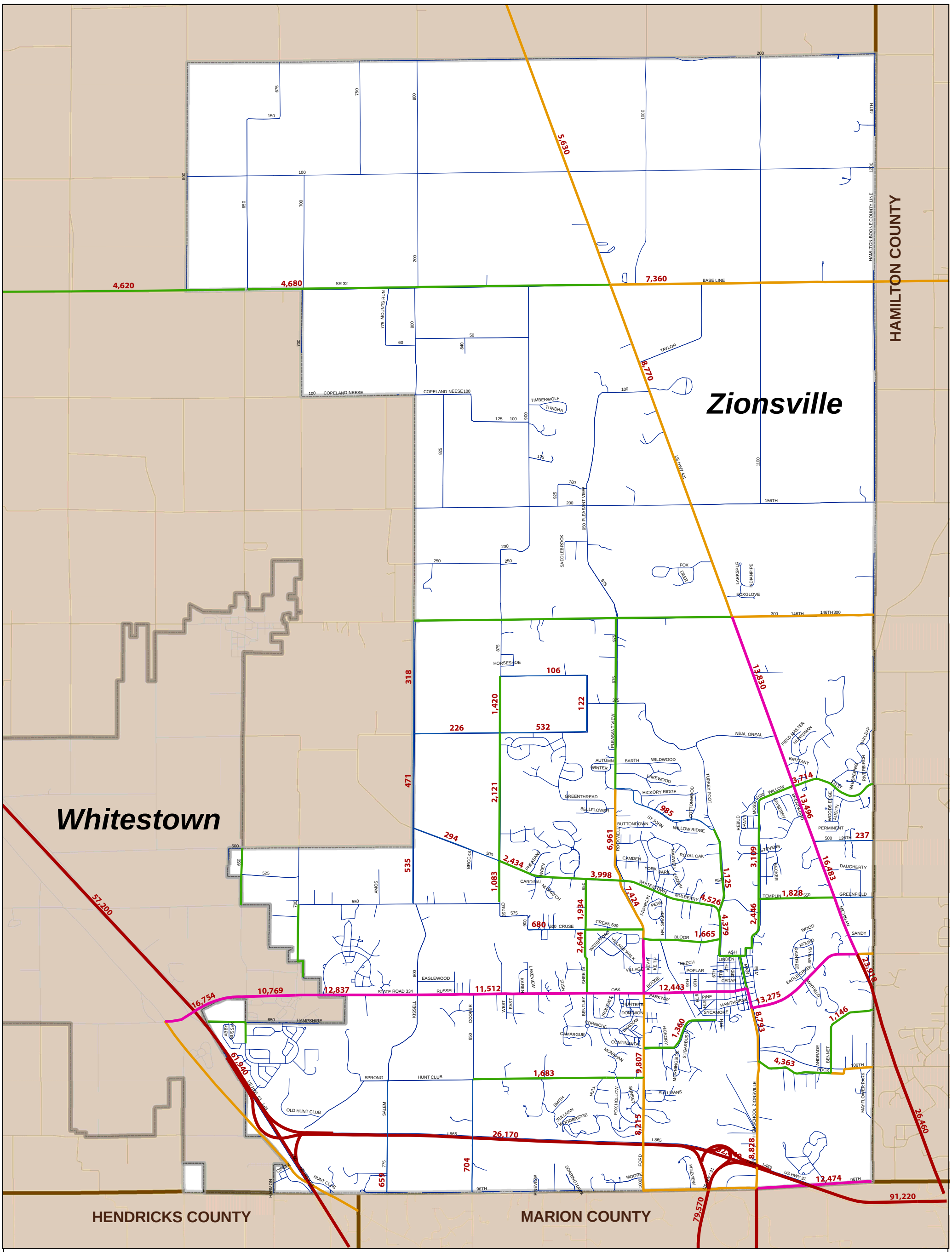


Figure 3-1
Existing Roadway Network
Zionsville Transportation Plan

Date: 7/30/10

Source: Indiana Department of Transportation (INDOT) Traffic Counts (2006 and 2007); Zionsville Traffic Counts (2006)

HNTB

Daily Traffic Volume

- < 1,000
- 1,000 - 4,999
- 5,000 - 9,999
- 10,000 - 19,999
- > 20,000
- Corporate Limits
- XXX Daily Traffic Volumes

N

Note: Traffic volume ranges are estimated for segments where no volumes are shown

0 0.25 0.5 1 1.5 2 Miles

3.1.2 *Travel Trends*

The Indiana Department of Transportation maintains an extensive traffic counting program on state-maintained roads, including US 32, US 421 and SR 334 in Zionsville. In addition, the Town of Zionsville conducts periodic traffic counts on some of its roads, most recently in support of the 2006 Traffic Impact Fee study. Twenty year growth trends on SR 334, US 421, Ford Road and Zionsville Road are shown in **Appendix B**. Traffic volume trends show the steady growth in demand on Zionsville's major thoroughfares. Remaining 2-lane segments on these roads are nearing their capacities.

The 2000 Zionsville Transportation Plan noted that traffic volumes on SR 334 appeared to have stabilized at approximately 10,000 vehicles per day as motorists began to seek alternate routes to Indianapolis such as Zionsville Road and Ford Road. More recent counts, however, show that SR 334 volumes continue to increase despite the growing volumes on the alternate routes. This continued traffic growth on SR 334 may reflect the growing congestion on Ford Road and Zionsville Road coupled with the increased desirability of US 421 as a commercial destination.

3.1.3 *Existing Functional Classification*

Figure 3-2 shows the existing functional classification of the roads in Zionsville, as recognized by the Federal Highway Administration and the Indiana Department of Transportation. The functional classification of a roadway describes how it balances the two primary functions of all roads: (1) carrying through traffic and (2) providing access to adjacent property. Roads that are primarily used for through traffic service (typically for longer trips) are referred to as arterials. Those used primarily for access to abutting property are local streets. Collector roads link local streets with arterials and often serve balanced demands for travel and access to property.

The functional classification of a road guides decisions including lane requirements, appropriate design standards, cross section elements, right-of-way, and access management components. The functional classification also has implications for the funding of roadway improvements, as most types of federal funding are not available for roads that are classified by the Indiana Department of Transportation as "local."

Functional classification should be defined in the context of the overall roadway network to provide a balanced system that meets both travel and access requirements. Failure to provide a well-planned network of streets in a variety of functional classifications can result in congested streets that were not designed for high traffic volumes, cut-through traffic on neighborhood streets, high crash rates and other problems.

The following paragraphs provide summary descriptions of the various roadway functional classifications shown in **Figure 3-2**. The classifications should reflect how the roads function today, and may not correspond with the planned future classification shown in the Town's Thoroughfare Plan. The distinction between rural and urban roads in this classification system is based on the urban area boundaries identified by federal government and do not necessarily correspond to the rural and urban service districts designated by Zionsville.

Freeways accommodate the highest operating speeds, greatest traffic volumes and longest trips. Freeways are divided highways with a minimum of two travel lanes in each direction. They are intended solely for mobility and provide no direct access to adjacent land uses. Examples: I-465, I-865 and I-65.

Principal Arterials carry high traffic volumes and are intended primarily for through traffic movement rather than land access. Partial control of access is desirable on these facilities. In rural areas, these facilities serve substantial statewide or interstate travel. Within urbanized areas, these facilities serve both through trips and longer intra-city trips. They serve major through movements between important centers of activity in a metropolitan area and a substantial portion of trips entering and leaving the metropolitan area. Examples: US 421 south of SR 32.

Minor Arterials are intended to serve a mobility function, with some access to land. They connect with and supplement the principle arterial system. In rural areas, these facilities serve both interstate and inter-regional travel. In urban areas, they provide major intra-community connections. Minor arterials may carry local bus routes, but they should not penetrate neighborhoods. Minor arterials provide lower travel speeds and accommodate shorter trips than principal arterials, while providing more access to property. Examples: SR 334, Ford Road south of SR 334, Zionsville Road, SR 32, US 421 north of SR 32.

Rural Major Collectors are rural roads that serve the larger towns not directly served by arterials and other traffic generators of equivalent intra-county importance like consolidated schools, shipping points, county parks and important agricultural areas. Major collectors link these places with nearby larger towns or cities, or with routes of higher classification. Major collectors serve as important intra-county travel corridors. Example: the segment of CR 300 S that is west of US 421.

Rural Minor Collectors are rural routes that are spaced at intervals consistent with population density in order to collect traffic from local roads and assure that all developed areas are within a reasonable distance of a collector road. Minor collectors provide service to smaller communities and locally important traffic generators that are not served by roads of higher classification. Example: The segment of CR 1100 E that is north of SR 32.

Urban collectors provide both land access and traffic circulation within residential, commercial and industrial areas. Urban collectors may penetrate residential neighborhoods, providing a connection between the neighborhoods and higher volume arterials. Examples: Mulberry Street, Willow Road.

Local Roads and Streets are all public roads and streets not classified as arterials or collectors. They provide direct access to abutting properties and are intended to serve only local traffic movement. Traffic speeds and volumes are generally low, and through traffic is discouraged.

For the most part, the existing functional classification designations maintained by the Indiana Department of Transportation appear to be appropriate for the existing roadway usage. However, the classification of some roads does not reflect recent growth and roadway improvements in Zionsville. The existing classification of the following roadways should be reviewed by INDOT and the Indianapolis MPO:

- Ford Road/Pleasant View Road north of SR 334
- 6th Street
- Starkey Road
- Bloor Lane
- 131st Street
- CR 700 E
- CR 550 S
- Holliday Road
- CR 200 S
- Cooper Road

A change in the federal urbanized area boundaries is anticipated due to the results of the 2010 Decennial Census. It would be appropriate for the Town of Zionsville to request review of the existing functional classification of these roads once the urbanized boundaries have been updated.

The Town of Zionsville should also consider future requests for review of its federal roadway functional classifications as land around Zionsville continues to develop. New developments and a growing population will continue to change the function of the existing road network. Roadway functional classifications in Zionsville are ultimately expected to reflect the proposed future classifications shown in the Thoroughfare Plan, **Figure 5-1**. Having its roads appropriately classified will allow Zionsville the most flexibility in seeking federal funding sources for capital improvements.

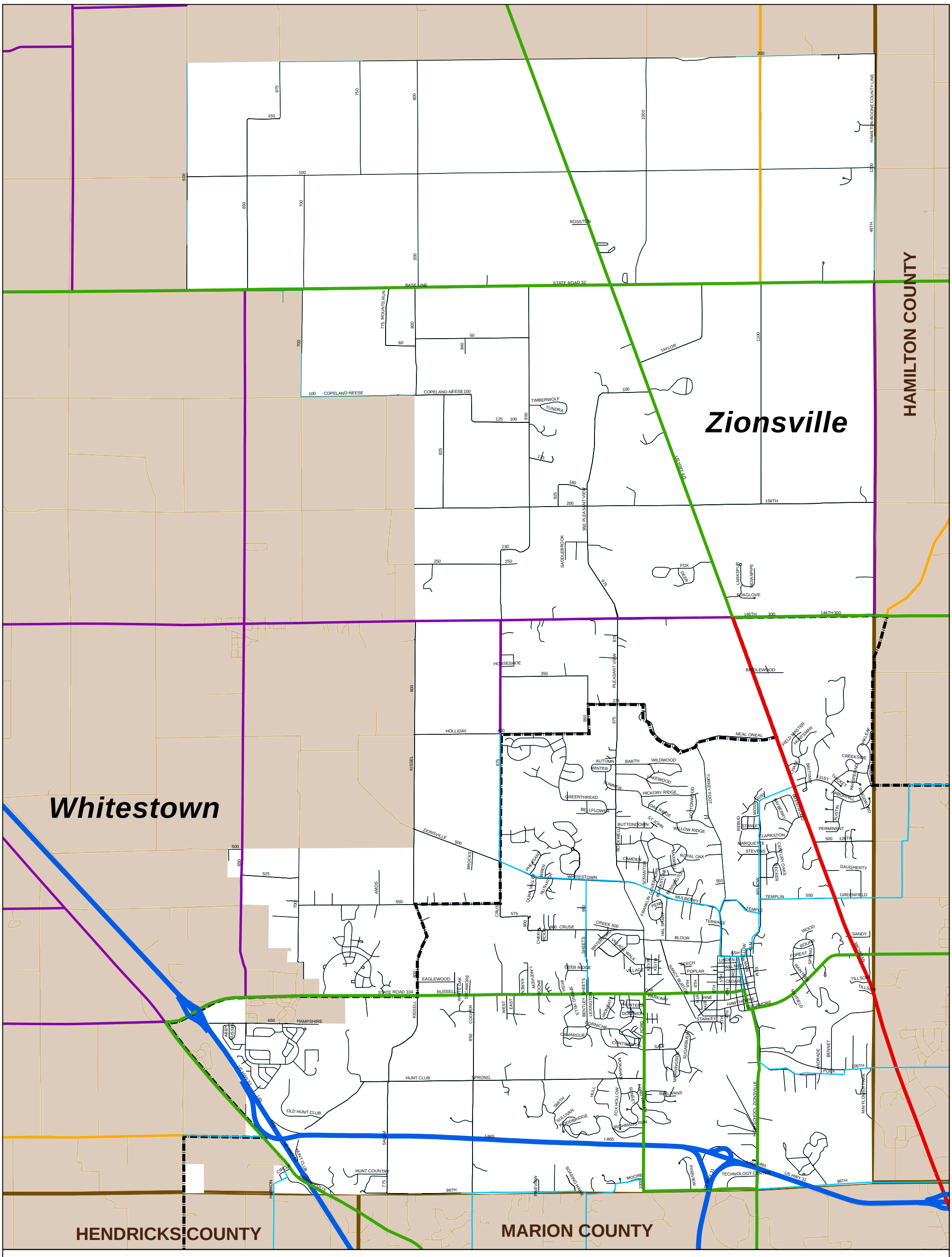


Figure 3-2
Existing Federal Roadway Functional Classification

Zionsville Transportation Plan

Interstate
Principal Arterial
Minor Arterial
Rural Major Collector
Rural Minor Collector
Urban Collector
Local Road
Federal Urbanized Area Limits

Date: 7/30/10
Source: Indiana Department of Transportation (INDOT) 2009 Functional Classification Maps

HNTB

0 0.25 0.5 1 1.5 2 Miles

N

3.2 Trails and Sidewalks

For the past 25 years, the Town of Zionsville has been working to create a comprehensive system of pedestrian and bicycle pathways. Zionsville's emphasis on providing non-motorized alternatives for access to residential neighborhoods, schools, parks and businesses has enhanced the quality of live for its citizens and made it an attractive place to live and work. The Zionsville Pathways Committee is charged with the responsibility of planning and implementing projects to expand the Town's trail network.

A map of the existing pathway network in Zionsville in shown in Figure 3-3. The spine of Zionsville's pathway system is the Nancy Burton/Dave Brown Trail, which follows the abandoned Penn Central Railroad right-of-way through the heart of town between Eagle Creek and CR 825 E. This route is part of the Indiana Farm Heritage Trail, which is expected to someday stretch from Zionsville to Lafayette. Other pathways have been constructed in park areas and in conjunction with new development and road projects with the goal of making all streets pedestrian and bicycle friendly.

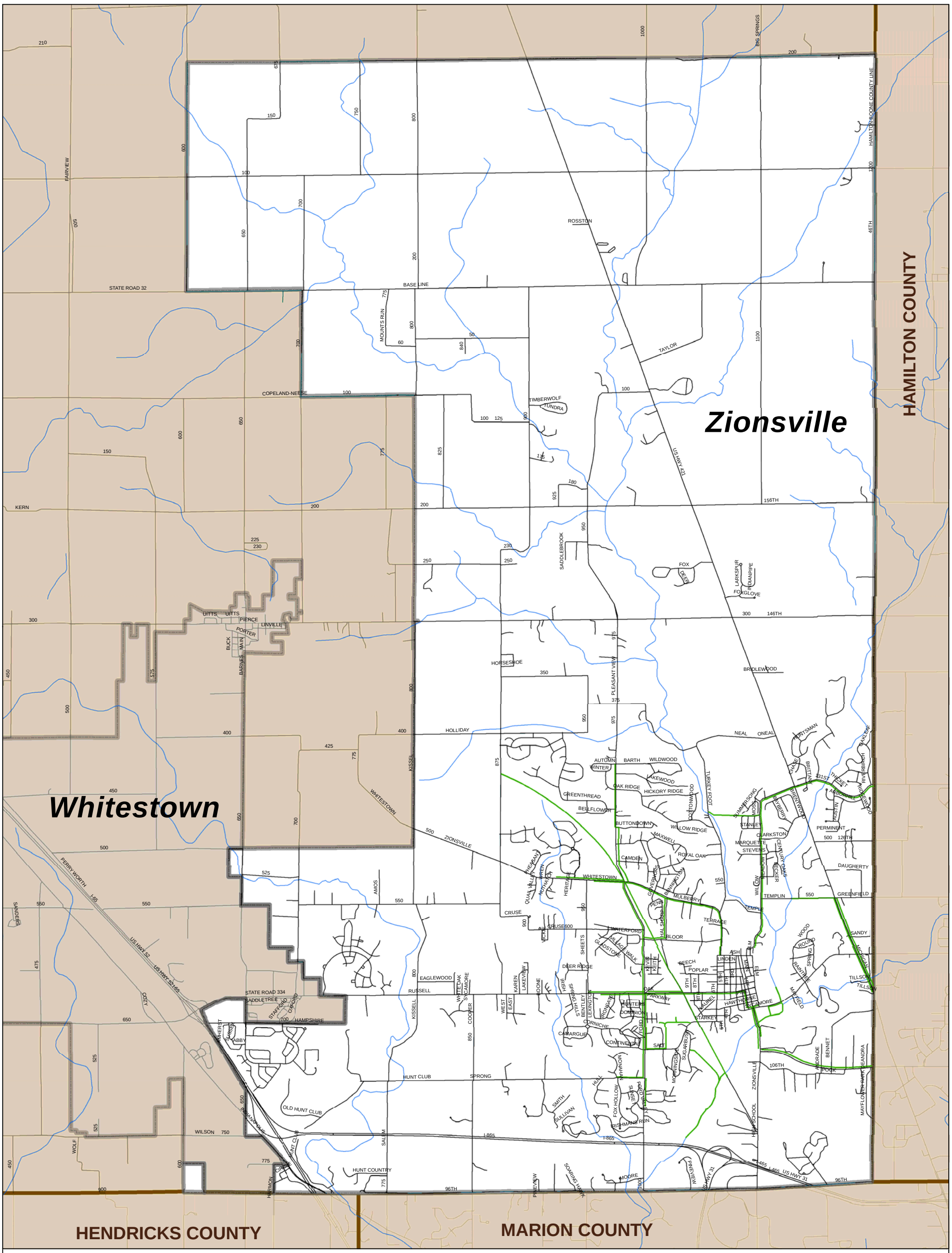


Figure 3-3
Existing Pathway Network
Zionsville Transportation Plan

Date: 7/30/10

Existing Pathway
Corporate Limits

0 0.25 0.5 1 1.5 2 Miles

N

HNTB

3.3 Other Modes of Transportation

There is currently no fixed-route transit service available in Zionsville. IndyGo provides service within Marion County, with two routes terminating near Zionsville. The IndyGo Michigan Road route (Route 34) terminates near Michigan Road and Depauw Boulevard (south of I-465), with 3 trips per day as far north as 96th Street. The IndyGo Park 100 route (Route 37) travels as far north as 86th and Zionsville Road.

The Boone Area Transit System (BATS) provides demand-responsive public transportation throughout Boone County between the hours of 7:30 am and 4:30 pm, Monday through Friday. Service to surrounding counties is provided for Boone County residents over the age of 60 and Medicaid clients traveling to medical appointments. Transportation service must be scheduled in advance, with medical-related trips having priority.

There is currently no passenger rail or intercity bus service that serves Zionsville. The closest stops for these services are in downtown Indianapolis.

The Indianapolis Executive Airport is located on the south side of SR 32, between CR 1100 E and County Line Road (CR 1200 E). This is within the Town of Zionsville. The airport is owned and operated by the Hamilton County Airport Authority and managed by Montgomery Aviation, Inc. The airport serves approximately 45,000 annual departures, which are primarily corporate-related operations. Twenty private companies currently have aircraft based at the airport. There is no scheduled passenger service at Executive Airport, and none is anticipated. The closest scheduled passenger air service is available at the Indianapolis International Airport in Marion County.

Corporate operations are expected to grow at the Indianapolis Executive Airport, and airport-related industrial development could spur additional air and ground traffic demand. Airport-related roadway traffic impacts will likely be focused on SR 32, US 421, CR 300 S and CR 1100 E.

4 TRANSPORTATION NEEDS

4.1 Current and Committed Projects

Table 4-1 lists the previously committed but not yet constructed road projects in and around Zionsville that are expected to have significant capacity, safety or operational impacts on the transportation network. **Figure 4-1** shows the location of most of these listed projects. The term "committed" implies that funding has been identified for these projects and there is a commitment from the responsible organization to construct them. These projects are not necessarily described in the recommendations of this Transportation Plan, but it is assumed that they will be constructed when analyzing the future transportation needs of Zionsville.

The ongoing I-65 widening project is the most significant capacity addition project shown in the table, although it will not greatly affect travel within Zionsville. Multiple projects are underway or programmed to CR 300 S and connect it to CR 400 S and I-65 at the SR 267 interchange. These projects are being led by Boone County. These projects are often referred to collectively as the "146th Street extension," as the goal is to connect 146th Street in Hamilton County with I-65 and the future Ronald Reagan Parkway. This would eventually result in a continuous arterial roadway from I-70 at the Indianapolis international Airport to I-69 in Noblesville. The greatest benefit for Zionsville will be improved access from northern Eagle Township to I-65, US 421, Westfield and Carmel. Other committed projects shown in the table involve reconstruction or repaving of existing roads without additional capacity. Several pathways projects are also in various stages of development. A new trail connecting Turkey Foot Park to Willow Road is currently under construction. The following new trail segments are also in the project development process:

- Along Eagle Creek, from the Nancy Burton Trail to Zionsville Road
- Along SR 334, from Lion's Park to Raintree Drive and on to US 421
- Along Turkey Foot Avenue, from Turkey Foot Park to Mulberry Street

Table 4-1 Significant Committed Road Projects Near Zionsville

Jurisdiction	Facility	Location	Work Description	Phases	FY 2009 Cost	FY 2010 Cost	FY 2011 Cost	FY 2012 Cost	FY 2013 Cost
Boone Co.	CR 300 S.	US 421 to Hamilton County Line	Reconstruction	CN	$ 4,122,300				
Boone Co.	Ford Road	Over Eagle Creek	Bridge replacement	PE	$ 318,230				
Boone Co.	146th St. extension	CR 300 S at US 421 to CR 400 S at CR 400E	Widen/new road	PE		$ 250,000			$ 1,500,000
Boone Co.	CR 400 S	E of CR 500 E to E of CR 575 E	Widen/new road	PE/CN		$ 275,000		$ 3,039,425	
Boone Co.	Ronald Reagan Parkway	Hendricks County line to I-65	New road	PE		$ 3,400,000			
Boone Co.	CR 650 S	I-65 to SR 267	Reconstruction	PE/RW /CN		$ 220,000	$ 345,000		$ 3,200,000
Hamilton Co.	146th St.	Springmill Rd. to Ditch Rd.	Added travel lanes	CN			$ 6,615,000		
INDOT	SR 32	1 Mi. E of SR 39 to Hamilton County line	Rehabilitation	CN	$18,700,000				
INDOT	I-65	I-865 to 0.5 Mi N of SR 334	Added travel lanes	PE	$ 2,000,000				
Boone Co.	Farm Heritage Trail		Right-of-way acquisition	RW				$ 1,034,187	
INDOT	I-65	I-865 to US 52	Added travel lanes	PE/CN		$30,450,000	$51,015,000		
INDOT	SR 334	CR 650 E to US 421	Resurfacing	CN			$ 1,910,000		

Sources: Indianapolis Regional Transportation Improvement Program and Indiana Department of Transportation Statewide Transportation Improvement Program
CN = construction, RW = right-of-way acquisition, PE = Preliminary Engineering

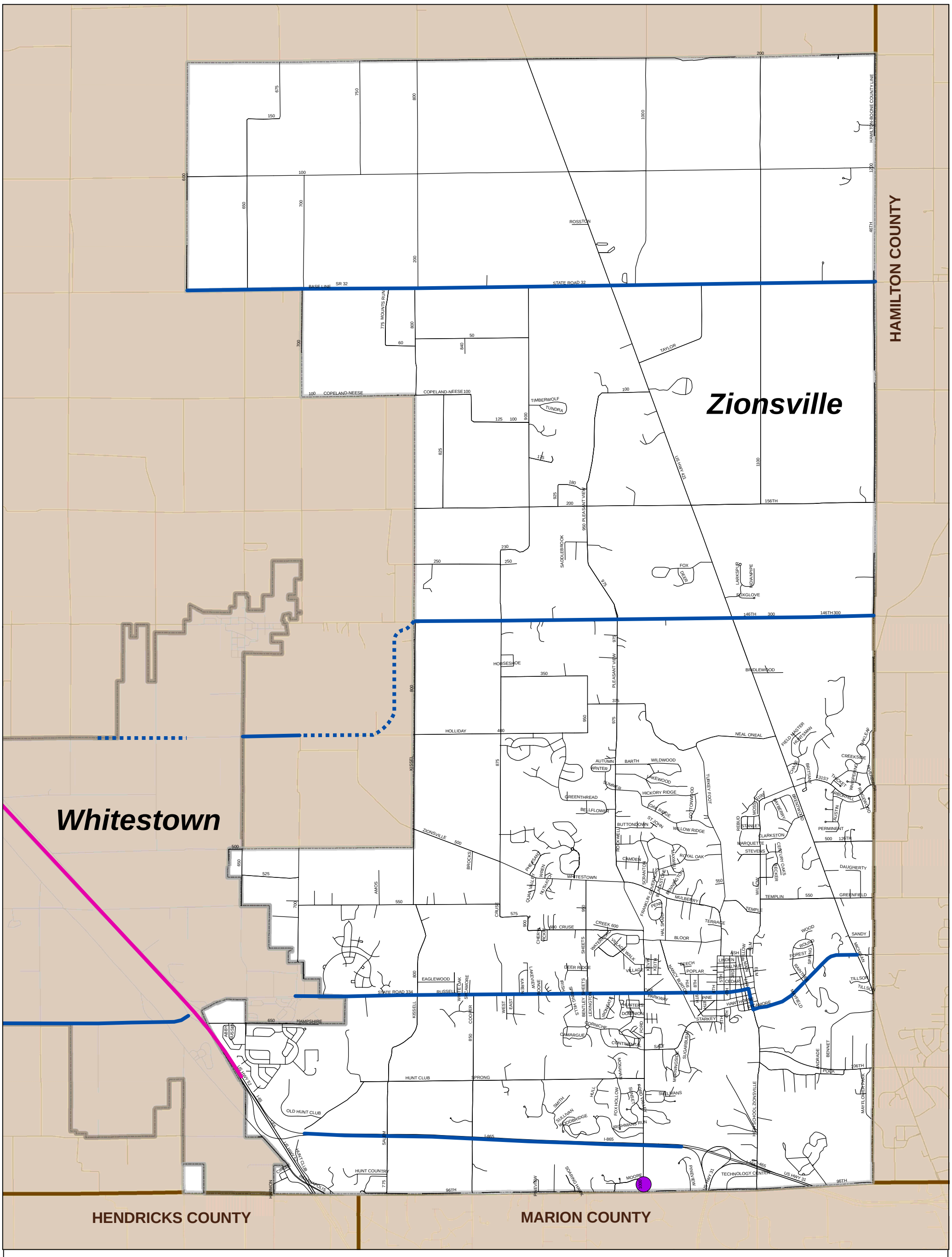


Figure 4-1
Committed Road Projects
Zionsville Transportation Plan

Date: 7/30/10

Sources: Indianapolis Regional Transportation Improvement Program, 5/19/2010
Indiana Department of Transportation Statewide Transportation Improvement Program, 1/13/2010

HNTB

Legend

- Bridge Replacement
- Added Travel Lanes
- New Roadway
- Resurfacing/Reconstruction

N

0 0.25 0.5 1 1.5 2 Miles

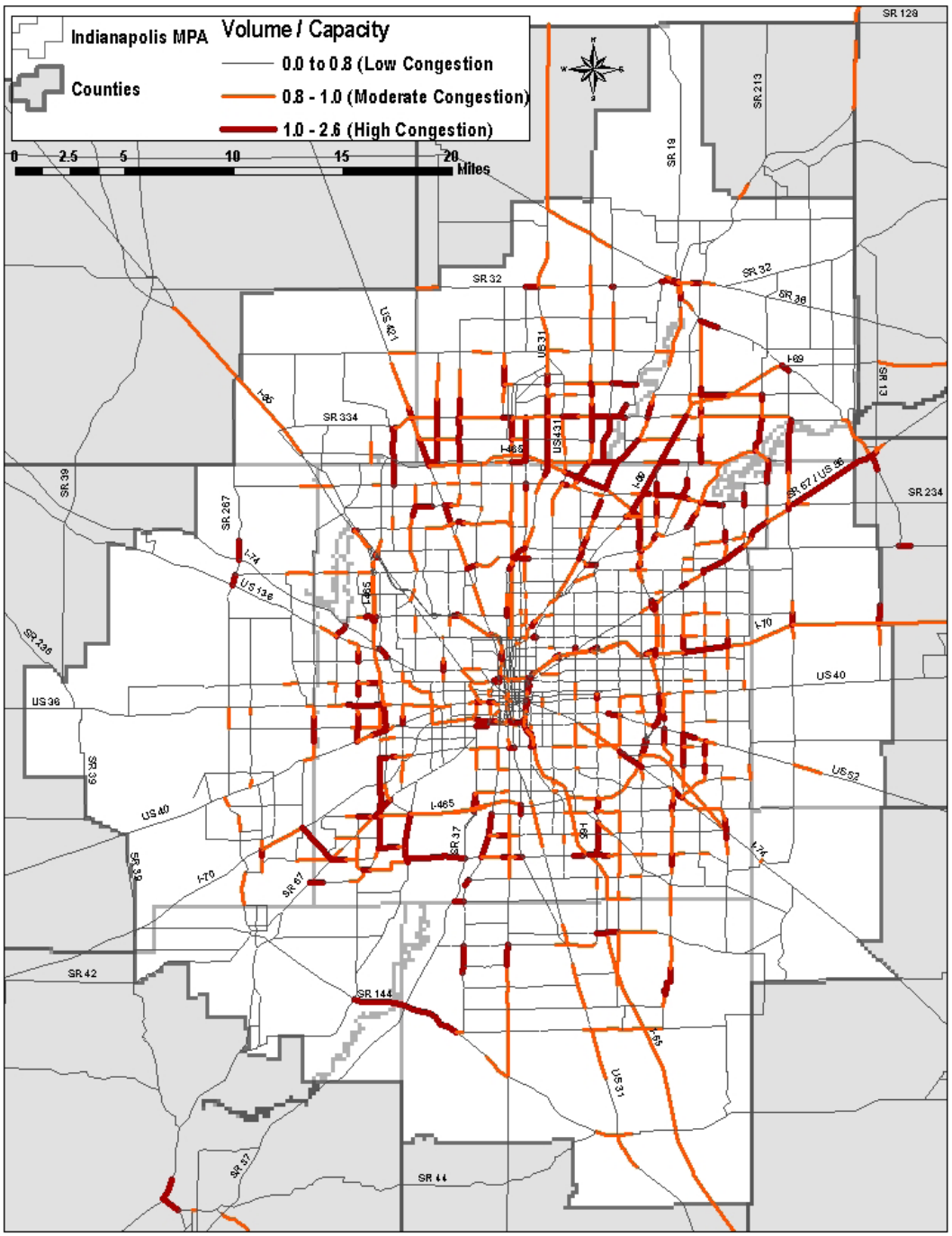
4.2 Travel Demand Forecasts

The 2030 travel demand forecasts developed by the Indianapolis MPO for the current Regional Transportation Plan are the best source of long-term travel demand information within the Indianapolis Metropolitan Planning Area. **Figure 4-2** shows the roadway segments in the Indianapolis region that the MPO anticipates will be congested by 2030 if only the currently committed roadway improvement projects are constructed. This map shows that Zionsville Road from 86th Street to SR 334 is expected to have high congestion. Several other roadway segments in Zionsville, including portions of Ford Road, CR 300 S, SR 334, US 421 and I-65 are also expected to have moderate congestion. Note that not all roadway segments are analyzed by the MPO for its regional planning purposes. Only the roads that are shown on the map are included in its travel demand modeling. The MPO's "committed" network included projects that were committed for funding by 2006. It did not include the current widening project on I-65, the anticipated widening of US 421 north of SR 334, or the connection of CR 300 S to CR 400 S and the I-65/SR 267 interchange.

Figure 4-3 shows the roadway segments in the Indianapolis region that the MPO anticipates will be congested by 2030 if all of the recommended road improvements included in its "cost-feasible" 2030 regional plan are constructed. This includes the projects identified in Section 1.3.1 of this document. This map shows high congestion only on a portion of US 421 north of SR 334 and moderate congestion on a portion of Zionsville Road. The MPO travel demand modeling that produced the results shown in this figure assumed that additional lanes would be constructed on Zionsville Road between 96th Street and SR 334. However, this project was subsequently removed from the MPO's cost-feasible transportation plan, so forecast congestion on and near Zionsville Road is likely to be greater than what is shown.

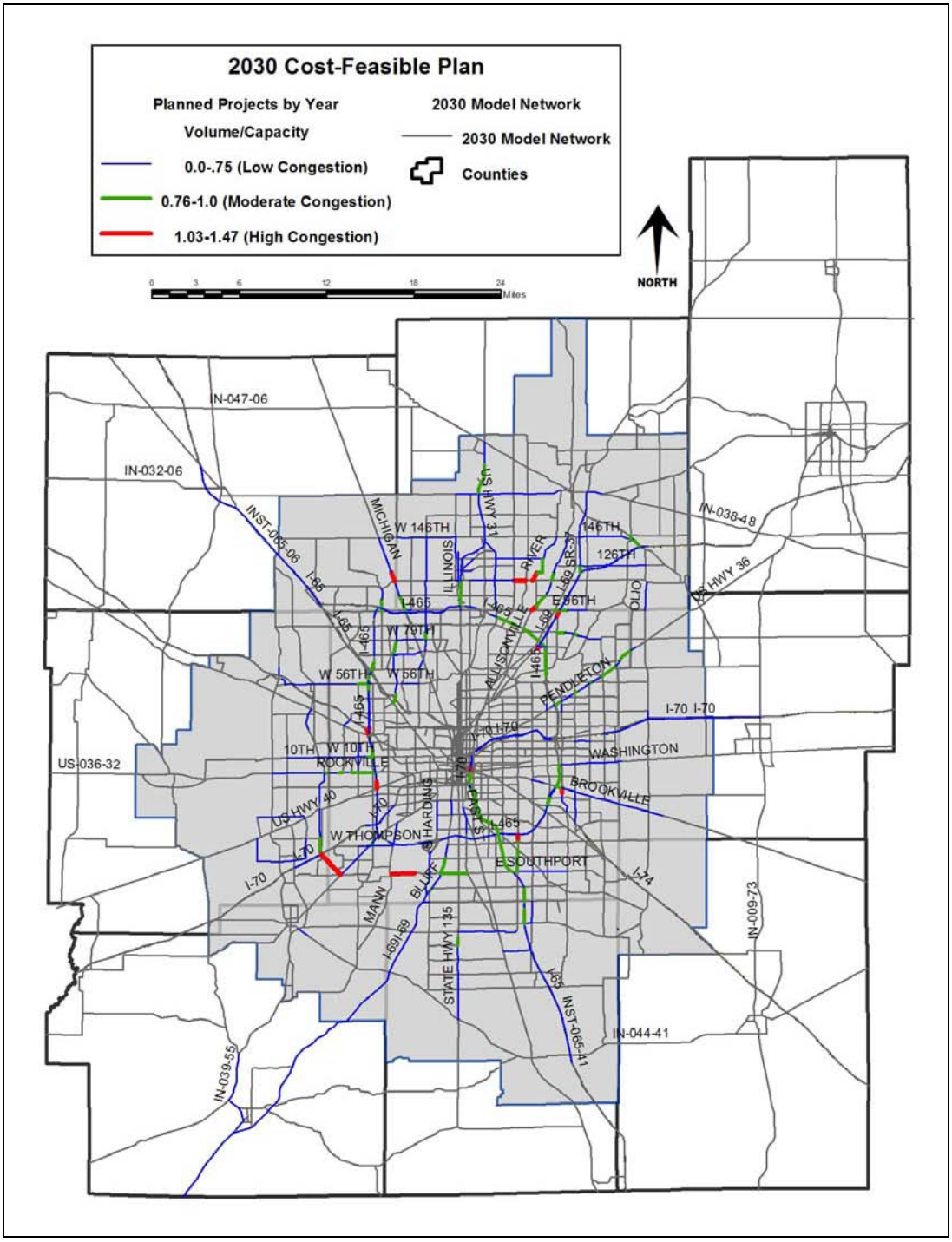
The Indianapolis MPO currently is working with an updated version of its regional travel demand model that extends the forecast horizon to 2035, which is the same horizon as the Zionsville Transportation Plan. Forecasts of congested roadway segments for 2035 have not yet been developed by the MPO. However, **Table 4-2** shows the forecast growth in trips to and from Zionsville between 2010 and 2035. This table shows trip ends, where each trip has two ends. A trip between Zionsville and an external location would therefore produce one trip end in Zionsville, while a trip within Zionsville would produce two trip ends in Zionsville. According to the MPO, travel demand in Zionsville is expected to grow by approximately 135% over the next 25 years. For comparison, travel demand growth in Zionsville was also forecast using the land use development forecasts identified in Section 2.3.2 and the methods of the Institute of Transportation Engineers *Trip Generation*. This yielded travel demand growth forecast that are approximately 15% higher due to slightly more aggressive land development assumptions.

Figure 4-2 2030 Forecast Congestion on Existing Plus Committed Network



Source: Indianapolis MPO 2030 Regional Transportation Plan 2009 Update, Fig. 4-2

Figure 4-3 Forecast Congestion on 2030 Planned Network



Source: Indianapolis MPO 2030 Regional Transportation Plan 2009 Update, Fig. 8-2

Table 4-2 Forecast 2010-2035 Growth in Zionsville Trip Ends

Land Use	MPO Travel Demand Model Estimate			HNTB Growth Estimate
	2010	2035	Growth	
Residential	40,702	89,556	48,854	58,600
Non-Residential	54,042	133,450	79,408	87,700
Total Trip Ends	94,744	223,006	128,262	146,300

Sources: Indianapolis MPO Travel Demand Model and HNTB analysis.

4.3 Zionsville Traffic Impact Fee Study

The Town of Zionsville has established an impact fee structure to help fund the cost of roadway improvements necessary to serve new development. In accordance with Indiana statute, an impact fee study was conducted in 2006 that identified the roadway improvements that were anticipated to be required by 2016. The study area was limited to those roadway facilities within the Town of Zionsville at that time.

Table 4-3 provides a summary of the recommended improvements from that study. These improvements included proposed new roads to serve development, capacity increases to meet anticipated demand on existing roads, and roadway widening to meet a minimum acceptable pavement width of 20 feet for two-lane roadways. The study also forecast unacceptable levels of traffic congestion would occur on Zionsville Road and SR 334 by 2016, but they were not identified for additional capacity due to town policy that they remain 2-lane roads in order to maintain the existing character of the town.

The recommendations of the traffic impact fee study provide a good indication of roadway improvement needs in Zionsville over the next ten years. Specific project details may change if actual development differs significantly from the forecast developed in 2006. In fact, Indiana statute requires that impact fee studies be reviewed and updated periodically to reflect changing conditions. Since the Zionsville study was conducted in 2006, for instance, the Town has merged with Eagle and Union Townships. In addition, economic conditions have slowed development throughout the nation. An update to the Zionsville traffic impact fee is expected in 2011 with a horizon year of 2021.

Table 4-3 2016 Improvement Needs from Zionsville Traffic Impact Fee Study

Road	Limits	Improvement	Reason
CR 350 S	CR 875 E to CR 950 E	Widen from 14 to 20 feet	Standards
CR 400 S	CR 800 E to CR 875 E	Widen from 18 to 20 feet	Standards
CR 400 S	CR 950 E to 925' west of CR 950 E	Widen from 16 to 20 feet	Standards
CR 500 S/126th St.	US 421 to 2865' west of US 421	Widen from 18 to 20 feet	Standards
96th St.	Zionsville Rd to 5420' east of Zionsville Rd.	Widen from 2-lane to 5-lane	Demand
CR 950 E	CR 400 S to CR 350 S	Widen from 16 to 20 feet	Standards
Bennett Pkwy Extension	CR 700 S to 96th St.	New 2-lane road	Development
CR 850 E Extension	SR 334 to CR 575 S	New 2-lane road	Development
US 421	CR 550 S to Willow Rd.	Widen from 2-lane to 5-lane	Demand
106th St. Extension	Zionsville Rd. to west of Andrade Dr.	new 2-lane road with median	Development
North/South Connector	CR 700 S to 106th St. Extension	New 2-lane road	Development
CR 600 S & Ford Rd.	intersection	Traffic signal	Demand
Bloor Ln. & Ford Rd.	intersection	Traffic signal and added lanes	Demand
Starkey Ave. & Ford Rd.	intersection	Traffic signal and added lanes	Demand
Hunt Club Rd. & Ford Rd.	intersection	Traffic signal and added lanes	Demand
Whitestown Rd. & Ford Rd.	intersection	Traffic signal	Demand
Whitestown Rd. & CR 950 E	intersection	Traffic signal and added lanes	Demand
CR 500 S/Whitestown Rd. & CR 875 E	intersection	Added lanes	Demand
96th St. & Bennett Pkwy.	intersection	New intersection	Development
106th St. & Zionsville Rd.	intersection	New intersection	Development
106th St. & N/S Connector	intersection	New intersection	Development
106th St. & Bennett Pkwy.	intersection	New intersection	Development
CR 700 S & N/S Connector	intersection	New intersection	Development
SR 334/Oak St. & 1st St.	intersection	Traffic signal and added lanes	Demand
US 421& CR 550 S/121st St.	intersection	Traffic signal	Demand
US 421& CR 500 S/126st St.	intersection	Traffic signal and added lanes	Demand
US 421& Willow Rd.	intersection	Added lanes	Demand
SR 334 & CR 950 E	intersection	Traffic signal	Demand

Source: Zionsville Traffic Impact Fee Study Analysis, 2006

4.4 Summary of Needs and Opportunities

Long-term transportation needs and opportunities in Zionsville were synthesized from several sources during the preparation of this plan. These sources included:

- Observation of existing transportation operation
- Comparison of population, land use development and travel demand growth forecasts to the capacity of the existing transportation system and committed improvements.
- Review of related plans and documents
- Discussions among the Transportation Plan Working Group
- Interviews with key stakeholders
- Public input

The sections that follow provide a summary of key transportation needs and opportunities that were identified through this process.

4.4.1 *Roadway Transportation*

Zionsville would like to preserve the unique character of its Village and its rural areas. However, growing traffic demand has resulted in traffic congestion on a roadway network that was designed for low volumes and lacks good connectivity. Until alternate connections are made, traffic volumes will continue to grow on SR 334, Ford Road, Zionsville Road, 96th Street, and 106th Street as motorists use these routes to access US 421 and the Interstate system.

Growth in and around Zionsville will continue to intensify the need for alternate connections to the regional arterial system that do not impact the Zionsville Village. The need will be especially great to serve the growing areas north and west of the Village. Congestion on SR 334 will continue to grow, and in its present form, it cannot continue to be the only viable east-west route for most of Zionsville's residents. While 96th Street and 106th Street can serve the areas south of the Village and east of Zionsville Road, additional connections to US 421 are needed north and west of the Village. The upgrade of CR 300 S and its connection to CR 400 S and to I-65 at SR 267 will help somewhat in the long term, but this connection is too far north to serve much of Zionsville's existing development adequately. Additional connections to US 421 between SR 334 and CR 300 S are also needed.

North-south connectivity in the western part of Zionsville will also need improvement. Much of the residential development in the area is now occurring—and will continue to occur—between Zionsville and Whitestown. Improved connections to I-865 or 86th Street between I-465 and I-65 would relieve growing demand on Ford Road, Zionsville Road, SR 334 and US 421.

Along with improved connectivity, some portions of Zionsville's road network will need to be upgraded to meet minimum geometric and pavement design standards appropriate for their growing traffic volumes. Most area roads were originally designed for low-volume rural traffic, and some have not been upgraded to meet modern design standards and increased demand. Roads with insufficient pavement width or design can have safety problems and ongoing maintenance issues.

Within the Village, the streets that are designated as SR 334 not only carry more traffic than they were originally designed for, they serve commercial vehicles that require access for deliveries. Zionsville and the Indiana Department of Transportation should work together to consider how best to balance through traffic movement, the needs of bicycles and pedestrians, and the need for commercial vehicle deliveries to a thriving retail area.

Finally, it will be important to ensure that future development is accomplished in such a way that it preserves the mobility within designated arterial corridors in Zionsville, particularly the US 421 and SR 334 corridors. Site design and roadway access management techniques should be employed within these corridors as they are developed so as not to degrade their primary mobility function.

4.4.2 *Bicycle and Pedestrian Transportation*

The pedestrian and bicycle pathway system is an important asset to the community and contributes greatly to the high quality of life experienced by Zionsville residents. Zionsville should continue to build its pathway system, with a goal of providing adequate bicycle and pedestrian connections among major residential areas, schools facilities parks, the Village and major employment areas. The Town should continue to ensure that bicycle and pedestrian accommodations are considered for all arterial and collector road improvements.

Pathway development priorities are established through an ongoing process led by the Zionsville Pathways Committee. Implementation priorities over the next several years should consider the following needs and opportunities:

- Extend pathways to the new school sports facility from the Zionsville Rail Trail and from the existing pathway on Whitestown Road
- Provide adequate pathways along and crossing the SR 334 corridor west of the Village
- Provide pathway links from Zionsville to and across US 421
- Improve bicycle accommodation in the Village
- Preserve the opportunity for extension of the Zionsville Rail Trail as part of the Indiana Farm Heritage Trail

Zionsville Community Schools is also working to provide appropriate facilities and encourage walk and bike access to its schools. A federally funded “Safe routes to school” assessment would help to identify specific issues and opportunities.

4.4.3 *Public Transportation*

Along with an expanded pathway network, improved public transit would also offer transportation choices to Zionsville residents and workers, who are currently almost entirely automobile dependent. Only minimal public transit service currently exists to meet the most basic transportation needs of Zionsville citizens who do not have automobile access. Improved transit service would improve Zionsville’s quality of life and reduce automobile demand on its roads. Public transportation should connect major activity centers within Zionsville so that residents can visit local employment, shopping, medical and recreation destinations without automobiles. To serve this purpose, transit service should link the Zionsville Village to commercial development on SR 334 and US 421 and to nearby major employment destinations.

Zionsville should also seek to participate in an expanded regional transit system. This would make Zionsville destinations like employment centers and the Village more accessible from locations throughout the Indianapolis metropolitan area. It would also provide opportunities for Zionsville residents to use public transportation for regional work commutes. Extension of IndyGo's Michigan Road route, along with express bus service between Zionsville and downtown Indianapolis would be a key component. The Town should also preserve the opportunity for possible future connection to a regional rail transportation network via the CSX Zionsville Industrial Track.

5 TRANSPORTATION PLAN

5.1 Roadway Network

5.1.1 *Thoroughfare Plan Map*

The Thoroughfare Plan map shows the proposed 2035 roadway network for Zionsville. The roads are color coded according to their proposed future functional classification. Proposed functional classifications have been defined to provide a balanced road network that meets future travel and access needs within Zionsville and provides connectivity to the regional transportation system. The proposed system attempts to provide better regional connectivity for new development surrounding the Zionsville Village. This will provide alternate travel routes and alleviate congestion problems on existing roads.

The general desired locations of proposed new thoroughfare segments in Zionsville are indicated by the shaded areas shown on the Thoroughfare Plan. These proposed segments are described in more detail in Section 5.1.2. The color of the shading reflects the proposed functional classification of each thoroughfare. While the shaded areas show the general locations proposed for the new segments, exact alignments are not shown. These alignments will be determined through more detailed studies that consider the benefits, costs and impacts of various alternative alignments, including property and environmental impacts. The specific alignment of a new segment will be influenced by both existing and proposed development.

It is also anticipated that other new collector and local streets not shown on the Thoroughfare Plan will be constructed as part of new developments. Minor Collector streets should be constructed at ¼-mile to ½-mile spacing in order to provide appropriate access from thoroughfares to new development areas. Direct access from private property to the arterials and collectors shown on the plan should be discouraged.

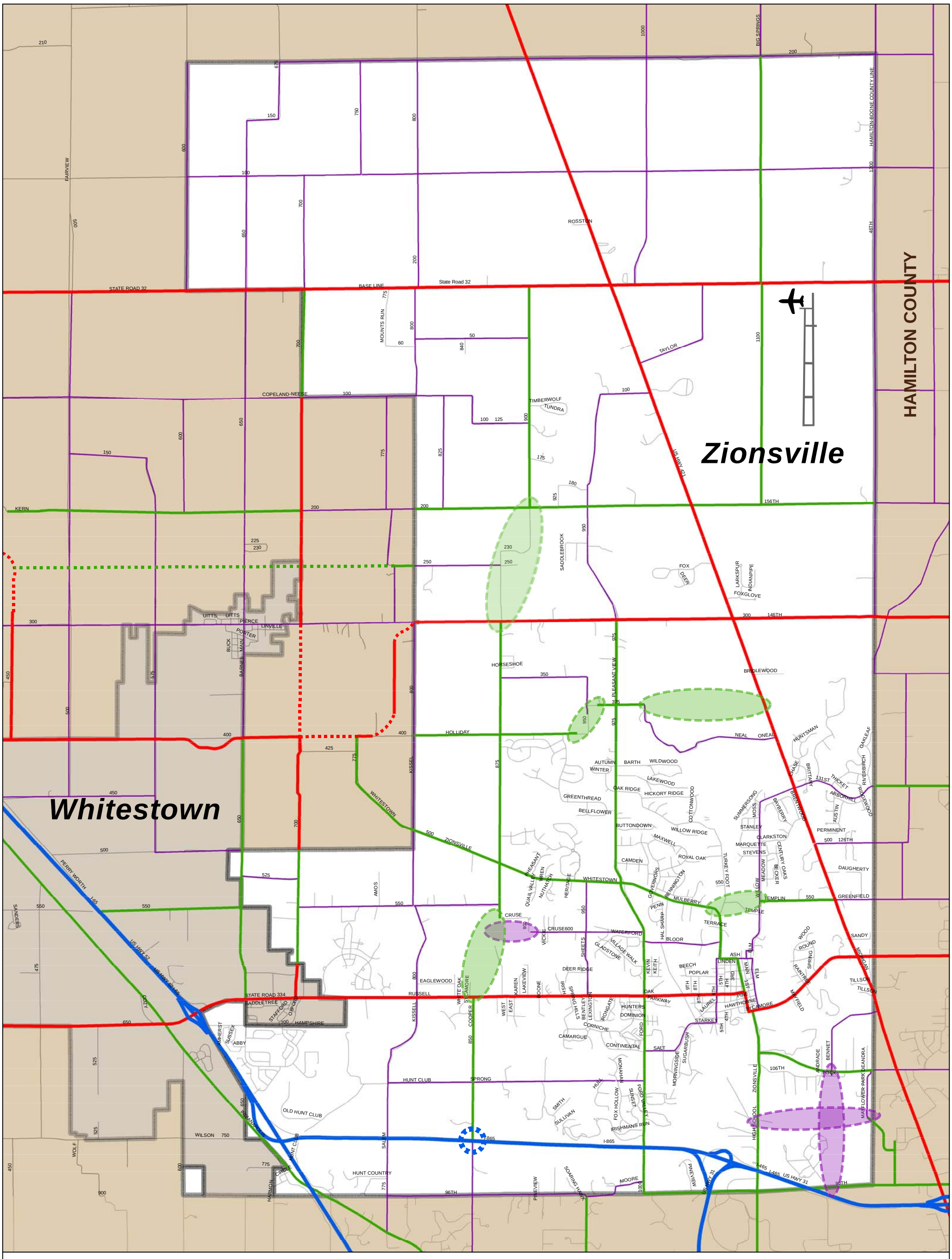


Figure 5-1
Thoroughfare Plan
Zionsville Transportation Plan

Date: 11/2/10

	Existing	Zionsville Proposed (Alignment To Be Determined)	Whitestown Planned (Per Whitestown Thoroughfare Plan)
Interstate			
Primary Arterial			
Secondary Arterial			
Collector			
Minor Collector	As needed for access to new developments; see plan text.		
Local Road			

Indianapolis Executive Airport / Runway

Corporate Limits

Potential Interchange Subject to Further Study

Functional classifications shown in adjacent jurisdictions are per their adopted plans

0 0.25 0.5 1 1.5 2 Miles

N

HNTB

5.1.2 *Proposed Road Projects*

5.1.2.1 I-865/Cooper Road Interchange Study

Construction of a new interchange at I-865 and Cooper Road was first identified as a congestion relief solution in the 1988 Zionsville Transportation Plan and was added to the Boone County Transportation Plan in 1998. This new interchange would provide an alternate access to the regional arterial system for existing and anticipated development west and northwest of the Zionsville Village. The interchange would reduce travel demand through the Village and along other major roads leading to the existing I-65/SR 334, I-465/US 421, and I-465/86th Street interchanges. Reducing congestion around existing interstate interchanges and in the Zionsville Village would improve local mobility and make these areas more viable for economic development. The new interchange could also relieve congestion on the Interstate system in the vicinity of the adjacent existing interchanges.

The primary purpose of the proposed Cooper Road interchange is to improve regional access, and from its inception, the Town has taken a position of avoiding development in the immediate vicinity of the interchange. Nevertheless, this type of development could be an unintended consequence of the interchange if it is not implemented properly. Other unintended consequences could include environmental impacts within Cooper Road corridor (north and south of I-865) and in the unique surrounding historic area, as well as the diversion of through traffic to the interchange from areas outside of the immediate Zionsville vicinity..

The Indiana Department of Transportation (INDOT) included the Cooper Road interchange in an evaluation of potential new interchanges for its 2007 Statewide Interchange Study. The evaluation concluded that there were no known fatal flaws to constructing the interchange and that it could provide modest regional benefits to traffic operation. However, the study noted that more evaluation would be required to determine benefits and impacts to the interchange. It also noted that the interchange should be included in the Long Range Transportation Plan for the region developed by the Indianapolis Metropolitan Planning Organization prior to consideration by INDOT.

The proposed Cooper Road interchange would provide diversion from existing congested routes and improve operations of nearby interchanges, but the level of this benefit has never been fully quantified. Likewise, the future level of service on alternate routes without the interchange has not been clearly defined. These evaluations require the application of a regional travel demand model, such as the one maintained by the Indianapolis MPO. That model is currently being refined and was not available for use at the time of this study.

In order to provide the information needed by the Town of Zionsville to make a fully informed decision, it is recommended that a special study be conducted to evaluate in detail the benefits and impacts of the potential I-865/Cooper Road interchange. Although the interchange has been in local plans for many years, it has never been studied in detail. This study should be structured to support a decision to either proceed with the project or remove it from the Transportation Plan. The study should include at least the following tasks:

- Identify future traffic conditions with:
    - No added capacity (to define potential problems)
    - Cooper Road interchange per current plan
    - Other system changes, instead of or with Cooper Road interchange as needed to address problems
- Review potential benefits and impacts to:
    - Zionsville "village" area
    - Rural area near Cooper Road, north/south of I-465
    - Regional roads: I-465, I-865, I-65, US 421, 86th St
- Review feasibility and potential effectiveness of protective zoning or land use regulations to protect the Cooper Road corridor from unwanted development
- Conduct a broad-based and inclusive process involving citizens, elected officials/staff, other agencies
- Evaluate potential interchange configurations to support traffic demand
- Evaluate the feasibility of project implementation
- Identify potential project funding and implementation steps

The Town of Zionsville should work with the Indianapolis Metropolitan Planning Organization (MPO) and INDOT to initiate this special study of the I-865/Cooper Road interchange. Construction of this interchange ultimately would need to be endorsed by the MPO and approved by INDOT and the Federal Highway Administration. It would also require subsequent preparation of a federally-required Interchange Justification Study and an environmental study in compliance with the National Environmental Policy Act of 1969 (NEPA).

Consistent with this recommendation, the Transportation Plan Map shows the Cooper Road interchange as "subject to further study."No action should be taken to advance the project until the special study is complete and the Transportation Plan is modified.

5.1.2.2 Cooper Road reconstruction

If the I-865/Cooper Road interchange is constructed, the reconstruction of Cooper Road between I-865 and SR 334 would be completed concurrently so that the road would accommodate anticipated interchange traffic. This segment of Cooper Road would be reconstructed to meet Zionsville standards for a 2-lane secondary arterial. This recommendation and others related to Cooper Road should be revisited as part of the Cooper Road interchange study. If the I-865/Cooper Road interchange is removed from the Transportation Plan the entire segment of Cooper Road south of SR 334 should be classified as a Collector.

5.1.2.3 Cooper Road/CR 875 E connection

The extension of Cooper Road north of SR 334 would provide better regional connectivity for development north of SR 334 and west of Ford Road. This new road segment would be beneficial whether or not the Cooper Road interchange is constructed. The following two improvements are proposed as part of this project:

- Extend Cooper Road north of SR 334 as a 2-lane secondary arterial on new alignment to connect to CR 875 E at CR 550 S
- Upgrade existing CR 875 E between CR 550 S and Whitestown Road to meet Zionsville standards for a 2-lane secondary arterial

CR 875 E may eventually require an upgrade north of Whitestown Road to accommodate the increased traffic volumes that are anticipated with new development.

5.1.2.4 CR 375 S extension

This project would upgrade existing CR 375 S between Pleasant View Road and O'Neal Road and extend it eastward on new alignment to intersect Michigan Road (US 421). This 2-lane road would provide access to US 421 for new development south of CR 300 S. Via CR 950 E, it would also provide an important connection to CR 400 S and I-65. The specific location of the CR 375 S extension will be contingent on development plans in the vicinity.

5.1.2.5 Templin Road extension

This project would extend Templin Road westward from its intersection with Willow Road along new alignment to intersect Mulberry Street near Turkey Foot Avenue. This 2-lane road would improve access to US 421 for existing residential development north of the Village, relieving demand on SR 334 and other streets through the Village. An alignment and environmental impact study would determine the best location to cross Eagle Creek and the best way to tie into Mulberry Street and Turkey Foot Avenue. Two possible alternatives are shown in **Appendix C**. Improving or replacing the existing Mulberry Street/Turkey Foot intersection is a key safety benefit that should be considered during the evaluation of alternatives.

5.1.2.6 Templin Road reconstruction

This project would reconstruct the existing section of Templin Road between Willow Road and US 421 to match the cross section of the Templin Road extension. This would include the provision of a bicycle and pedestrian path.

5.1.2.7 96th Street widening

This project would widen 96th Street to provide 4 travel lanes plus a center median between Zionsville Road and the Hamilton County line. This project was identified by the Zionsville Traffic Impact Fee Study as necessary to meet future travel demand. Commercial and industrial development south of SR 334 and east of Zionsville Road will contribute significantly to additional travel demand on this portion of 96th Street. Long range plans of the Indiana Department of Transportation include the widening of I-465 in this vicinity, and it is assumed that work on the bridges that cross 96th Street would include reconfiguration of the bridge piers to better accommodate a 4-lane 96th Street.

5.1.2.8 Bennett Parkway Extension

This project would extend the Bennett Parkway from its existing terminus at CR 700 S southward to intersect with 96th Street near the Hoosier Village retirement center. This new road segment would serve development of commercial and industrial land uses in the Bennett Technology Park, the adjacent Dow properties and other sites in the area east of Zionsville Road and south of 106th Street.

5.1.2.9 East-West Collector from Zionsville Road to Mayflower Park Drive

This new collector road segment would serve development south of 106th Street and east of Zionsville Road. The specific alignment of this road will depend on development plans and may be affected by the potential for a future commuter rail station near Zionsville Road.

5.1.2.10 CR 600 S extension

This project would extend CR 600 S westward on new alignment from its intersection with CR 900 E to the new Cooper Road extension, a distance of approximately 1650 feet. This road will serve as a 2-lane collector connecting Cooper Road to Ford Road, and the proposed improvement would eliminate two 90-degree turns along the route. The existing segments of CR 900 E and CR 575 S would remain as local roads.

5.1.2.11 CR 875 E realignment

This project would realign the jog from CR 875 E to CR 900 E that exists between CR 300 S and CR 200 S. As development continues in the northern and western portions of Zionsville, the connection of Cooper Road to CR 875 E and CR 900 E to provide a continuous north-south secondary arterial will become important for regional access. This realignment will eventually be necessary to improve the safety and capacity of this road segment.

5.1.2.12 CR 950 E realignment

This project would realign the segment of CR 950 E between CR 375 S and CR 400 S. This realignment would improve safety and provide a more continuous east-west arterial connection to serve continued growth south of CR 300 S.

5.1.2.13 Road Widening for Standards

Many roads in Zionsville were not designed to meet modern standards. As traffic traffic volumes increase due to continued development, the narrow lanes and thin thin pavement on these roads will contribute to increased maintenance and safety safety concerns. These roads should be widened and resurfaced or reconstructed as funding allows and traffic volumes dictate. Several road segments within Zionsville's urban service area were specifically identified for widening in the Zionsville Traffic Impact Fee Study. Traffic volumes and pavement conditions on other roads in the recently incorporated areas of Zionsville should also be monitored to identify candidates for widening or reconstruction.

5.1.2.14 US 421 (Michigan Road) Widening

The Indiana Department of Transportation is currently planning to widen US 421 as far north as CR 300 S. The widened section would have 4 travel lanes and a median, curb and gutter with enclosed storm drainage, and adjacent shared-use paths. The segment of US 421 between CR 300 S and SR 32 is planned for reconstruction as a 2-lane road with shoulders and open ditch drainage. The Town of Zionsville supports the widening of US 421 south of CR 300 S to serve growing demand. An access management plan should be developed for US 421 and incorporated into the design of the widening project. This will help to preserve through travel capacity on the road as adjacent property is developed.

5.1.2.15 I-65 at I-865 and SR 334 Interchange Improvements

Many Zionsville area residents pass through these two congested interchanges daily. The Town of Zionsville supports improvements at these interchanges to provide additional capacity and increase safety. According to the 2007 INDOT Interchange Study, improvements to these interchanges were included in earlier versions of the Department's Major Moves road improvement program. These improvements are not included in the most recent available Major Moves information or other INDOT project programming documents.

5.1.2.16 CR 300 S / CR 400 S Improvements

Boone County is currently improving CR 300 S and CR 400 S and is studying potential alignments for a new road to connect CR 300 S to CR 400 S somewhere between CR 650 E and CR 800 E. This road will complete and important east-west connection between 146th Street in Hamilton County and the I-65/SR 267 interchange and the future Ronald Reagan Parkway. It will help to improve access to the regional transportation system for the developing areas north and west of the Zionsville Village. It is Zionsville's desire that the new connection between CR 300 S and CR 400 S be designed so that it does not emphasize CR 700 E as a high-volume through traffic route.

5.1.3 *Estimated Project Costs*

Table 5-1 provides a summary of the preliminary construction cost estimates for the needed transportation improvements identified in this plan. The table includes all projects except the US 421 widening, I-65 interchange improvement, and CR 300 S / CR 400 S improvements, as these projects are anticipated to be funded by the Indiana Department of Transportation and by Boone County, respectively. Zionsville would likely be responsible for a share of the cost of the Cooper Road interchange, should it be constructed, although the proportion is not known. The Town of Zionsville would not necessarily be responsible for implementing or funding all of the other projects identified in the table, as some may be implemented partially or entirely through private development.

The costs shown in Table 5-1 are provided in 2010 dollars and include the costs of design, right-of-way acquisition and construction. The cost estimates assume that all required right-of-way will need to be purchased for the projects (no donated right-of way). The Bennett Parkway cost estimated is based on a recent study performed for the Town of Zionsville. The cost estimates for the other projects are based on assumed typical sections, project length and anticipated requirements for significant structures. Utility relocation and significant grading or environmental requirements have not been specifically considered. No design has been performed for these projects, and estimates are subject to change based on the development of more project specific information.

Table 5-1 Estimated Costs of Zionsville Road Projects

Road	Limits	Improvement	Length (Miles)	Preliminary Cost Estimate (2010)[1]
I-865	At Cooper Road	New Interchange	--	Pending study
Cooper Road	I-865 to SR 334	Reconstruct 2-lane road	1.24	Pending study
Cooper Road	SR 334 to CR 550	New 2-lane road	0.90	$5,900,000
CR 875 E	CR 300 S to CR 200 S	Realign 2-lane road	0.57	$3,700,000
CR 375 S	CR 1000 W to US 421	New 2-lane road	1.30	$8,700,000
CR 950 E	CR 400 S to CR 375 S	Realign 2-lane road	0.38	$2,600,000
Templin Road	Mulberry to Willow	New 2-lane road	0.44	$5,000,000
Templin Road	Willow to US 421	Reconstruct 2-lane road	0.67	$4,700,000
CR 600 S	New Cooper to CR 900	New 2-lane road	0.31	$1,900,000
Bennett Parkway	96th to 106th	New 2-lane road	0.98	$8,480,000
New Road	Zionsville Rd to Mayflower Park Drive	New 2-lane road	0.96	$6,300,000
96th Street	Zionsville Rd to Hamilton County	Widen to 4 lanes	1.02	$9,600,000

[1] Costs reflect current year planning-level estimates of design, construction and right-of-way acquisition costs based on assumed typical sections and project length. No project design has been performed.

5.1.4 *Access Management*

Access management involves the implementation and control of roadway design elements in order to allow safe and efficient access to property while preserving the traffic movement function of the transportation system. Access management typically involves ordinances that control the location, spacing and design of intersections and driveways on arterial and collector roads. Proper access management can preserve the throughput of a corridor, reduce congestion, and crashes, provide for aesthetic pedestrian and landscaped areas, create attractive areas for business and residential development and increase property values.

Access management will be increasingly important to preserve the carrying capacity of Zionsville's road network in light of anticipated land use development. Zionsville's Subdivision Control Ordinances discourage direct access to arterials and encourage shared access through properly designed driveways. In addition, it is recommended that the Town of Zionsville take the following steps to manage access on its roadways:

- Establish intersection and driveway spacing requirements for primary and secondary arterials, including required corner clearance from driveways to public street intersections and minimum setback requirements for frontage roads and other parallel streets. The recommendations of the Indiana

Department of Transportation's Access Management Guide and Driveway Permit Manual, along with the Transportation Research Board's Access Management Manual, should be considered in establishing these requirements.

- Establish the minimum requirements for the separation between an arterial street and on-site circulation (driveway throat length) shown in **Table 5-2** to ensure that traffic entering or circulating on adjacent property does not negatively impact arterial traffic movement:
- Assure that the minimum lot size and frontage requirements along arterials contained in zoning ordinances support driveway spacing and intersection corner clearance requirements.
- Require that, where possible, existing properties be brought into compliance with access management requirements upon:
    - Subdivision of the property
    - Request for zoning change
    - Request for new a driveway permit

Table 5-2 Driveway Throat Length Requirements along Arterials

Number of Egress Lanes	Minimum Throat Length[1]
1	50
2	75
3	200
4	300

[1]Throat length should be longer if determined by traffic study.

Access management will be especially critical along US 421 and SR 334, two key regional corridors that are already experiencing development pressure. Zionsville has established a US 421 corridor overlay zoning district that includes access management requirements that will be important to preserving the traffic capacity of this arterial. Developers are required to submit a site access and circulation plan for new developments. New driveways onto US 421 are restricted where can be obtained from side streets or adjacent parking lots. Where drives are allowed onto US 421, joint access from adjacent parcels is encouraged. In addition, cross access between adjoining parcels is required to be provided through the use of frontage or backage roads.

The Town of Zionsville should consider updating the US 421 overlay zoning requirements to include the driveway spacing and design requirements discussed above. The Town should also consider applying similar access management requirements to other arterial roads, including SR 334.

5.2 Non-Motorized Transportation

The Pathways Plan shown in Figure 5-2 identifies the proposed pathway network for the Town of Zionsville. This map may be updated periodically by the Zionsville Pathways Committee. Table 5-3 lists the priority pathway segments identified by the Zionsville Pathways Committee.

Bicycle and pedestrian facilities shown in the plan may be provided either within road rights-of-way or by facilities constructed in separate rights-of-way. The use of off-street shared-use facilities that accommodate both bicyclists and pedestrians is recommended in arterial corridors if high traffic speeds are anticipated. Bicycle use along low-speed arterial segments or within collector corridors could optionally be accommodated on-street through the use of dedicated bicycle lanes or wide vehicle travel lanes. Local streets do not typically require special bicycle accommodations, as bicycles can share vehicle travel lanes. Table 5-4 provides recommended accommodation for bicycles and pedestrians within road rights-of-way.

In the future, the Town of Zionsville may designate corridors for the implementation of equestrian paths. Equestrian use could be accommodated in separate corridors or alongside shared use paths by providing additional pathway width. Roadway right-of-way widths that accommodate non-motorized uses are identified in Section 5.4.

Table 5-3 Priority Pathway Projects

Pathway/Location	Limits
Segments currently in design or pre-construction	
Eagle Creek	100-Foot Bridge to Zionsville Road
SR 334	Lion's Park to Raintree Drive
SR 334	Raintree Drive to US 421
Turkey Foot Avenue	Turkey Foot Park to Mulberry St.
Other Priority Trail Segments	
Rail Trail	CR 875 E to CR 800 E
Rail Trail	100-Foot Bridge to 96th Street
Rail Trail	SR 334 to Rail Trail
Turkey Foot Avenue	Turkey Foot Park to Holliday Trail
Temple Road	Willow Road to Turkey Foot Avenue
Templin Road	Willow Rd, to Lost Run Farms pathway
Holliday Road	CR 975 E to US 421
Eagle Creek/Ford Road	South Starkey Park to Ford Road
Eagle Creek	Lion's Park to Willow Road
Eagle Creek	South end Starkey Park to 96th Street Park
Eagle Creek	North from Lion’s Park through Elm Street Green

Source: Zionsville Pathways Committee

Table 5-4 Non-Motorized Travel Accommodation within Road Rights-of-Way

Functional Classification	Pedestrian Accommodation	Bicycle Accommodation
Primary or Secondary Arterial	Sidewalk or Shared Path	On Street or Off Street Bike Path
Collector or Minor Collector	Sidewalk or Shared Path	On Street or Off Street Bike Path
Local Street	Sidewalk	On Street

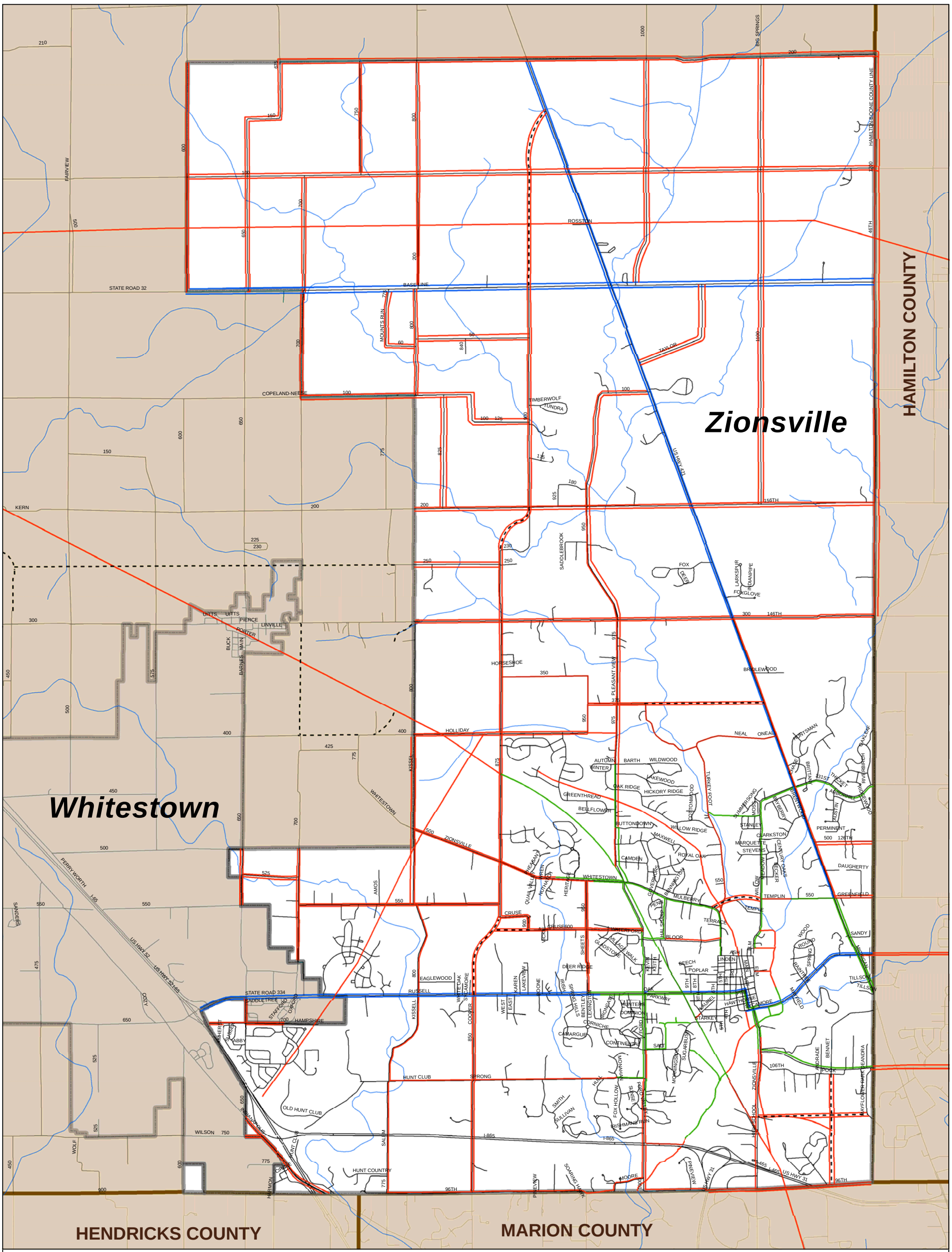


Figure 5-2
Pathways Plan
Zionsville Transportation Plan

Date: 7/30/10

- INDOT Related Project
- Existing Pathway
- Future Pathway Project
- Corporate Limits

0 0.25 0.5 1 1.5 2 Miles

N

HNTB

5.3 Public Transportation

Figure 5-3 shows areas of proposed fixed-route local and regional transit service in Zionsville. Local service should provide connectivity between major commercial and employment areas near Zionsville. These include the Village, the Ford Road/SR 334 vicinity, the Anson area, the commercial areas along US 421 and the anticipated employment areas in the vicinity of 106th Street and Bennett Parkway.

Local transit service should be coordinated with future regional transit modes currently being planned in order to provide connectivity between Zionsville and the rest of the Indianapolis metropolitan area. The transit service map reflects the future express bus routes identified by IndyGo for the Michigan Road and I-65 corridors. These routes include potential park and rides in the SR 334 corridor near Ford Road and near the I-65 interchange.

Commuter rail service between Zionsville and downtown Indianapolis is also possible, although planning for a regional rail system is in its early stages. This rail service would use the existing CSX Zionsville Industrial Track south of 96th Street, with an extension north along the abandoned right-of-way under I-465 to Zionsville Road. A commuter rail station with park and ride lot would be located along Zionsville Road. The station should be located as far north as possible in order to encourage bicycle and pedestrian access from the Village. Reservation of an area for a future rail transit station should be considered in planning.

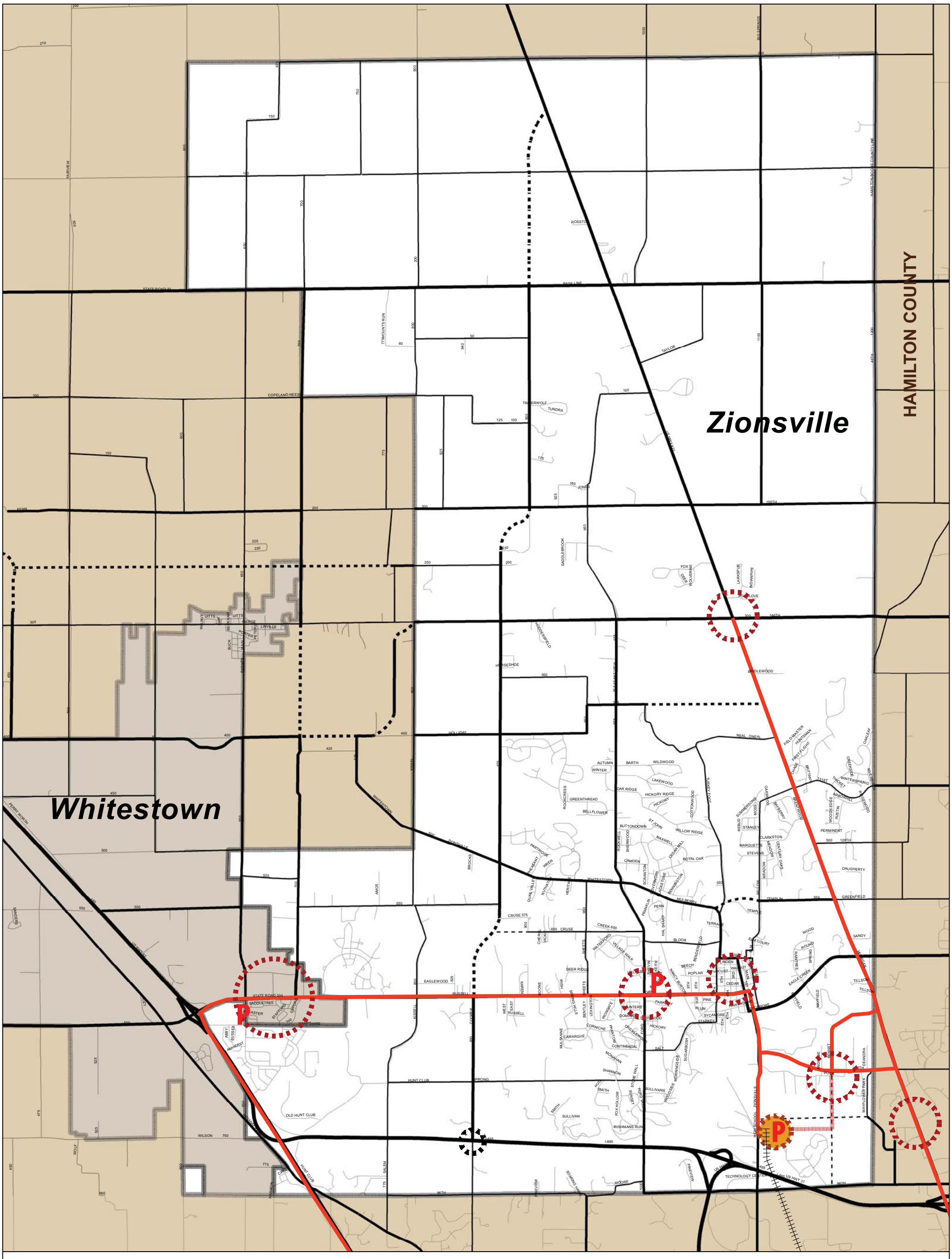


Figure 5-3
Transit Plan
Zionsville Transportation Plan

Date: 7/30/10

Corporate Limits
Transit Route
Key Transit Destination
Potential Park and Ride Lot
Potential Commuter Rail Station
Potential Commuter Rail Line to Indianapolis
Proposed Interchange

0 0.25 0.5 1 1.5 2 Miles

N

HNTB

5.4 Right of Way Requirements

Right-of-way (ROW) is publicly owned land reserved for a transportation facility or other public uses. Roadway rights-of-way must be wide enough to accommodate travel lanes, auxiliary turning lanes, medians, parking lanes, sidewalks, bicycle and pedestrian facilities, roadway drainage, utilities, safety buffer and landscaping. **Table 5-5** identifies the minimum right-of-way width required to construct typical sections of a roadway based on the functional classification of the roadway. Any changes to these requirements within the Zionsville Subdivision Control Ordinances or design standards will supersede this table.

It is important to identify right-of-way requirements in advance so that adequate rights-of-way will be set aside for transportation needs as an area is developed. Additional right-of-way could be required to accommodate specific terrain conditions as well as turning lanes at driveways and intersections. Conversely, when a road is to be constructed or improved in an area that is already developed or is environmentally sensitive, the Town of Zionsville may allow narrower right-of-way at its discretion. A roadway facility should typically be centered within the right-of-way, but this may also be altered at the discretion of the Town in order to accommodate special circumstances.

Table 5-5 Right-of-Way Requirements by Functional Class

Functional Classification	Minimum Right-of-Way Width (feet)	Travel Lanes
Primary Arterial	140	2-4
Secondary Arterial	110	2-4
Collector	80	2
Minor Collector	80	2
Local Street	60	2

Reservation of additional right-of-way at intersections will be required if it is necessary to accommodate the recommended intersection improvements identified by the Zionsville Traffic Impact Fee Study (or subsequent updates).

On-street parking should generally be prohibited on primary arterials, secondary arterials, collectors and minor collectors. However, it may be allowed by the Town of Zionsville in certain cases.

Where equestrian trails are designated for construction within a roadway corridor, the minimum right-of-way widths identified in **Table 5-5** will be increased by 25 feet.

5.5 Plan Implementation and Revision

Once this Transportation Plan has been recommended for adoption by the Plan Commission and formally adopted by the Town Council, the Town of Zionsville should take the following actions to carry out its recommendations:

- Request funding and technical assistance (travel demand modeling support) from the Indianapolis MPO to conduct the special study of the Cooper Road interchange. Upon completion of the study, revise this Transportation Plan accordingly.

- Revise the Town's ordinances as necessary to implement the right-of-way and access management standards recommended in the plan

- Request incorporation of the plan's recommendations in the Indianapolis Regional Transportation Plan maintained by the Indianapolis Metropolitan Planning Organization

- Request that the Indianapolis Metropolitan Planning Organization and the Indiana Department of Transportation review the existing functional classification of Zionsville's road network, as discussed in Section 3.1.3.

- Work with the Indiana Department of Transportation (INDOT), the MPO and other affected agencies to initiate an Interchange Justification Study of the I-865/Cooper Road interchange

- Continue to coordinate with Boone County, Whitestown, the Indianapolis Metropolitan Planning Organization, the Indiana Department of Transportation and other affected local jurisdictions on the planning and development of projects identified in this plan

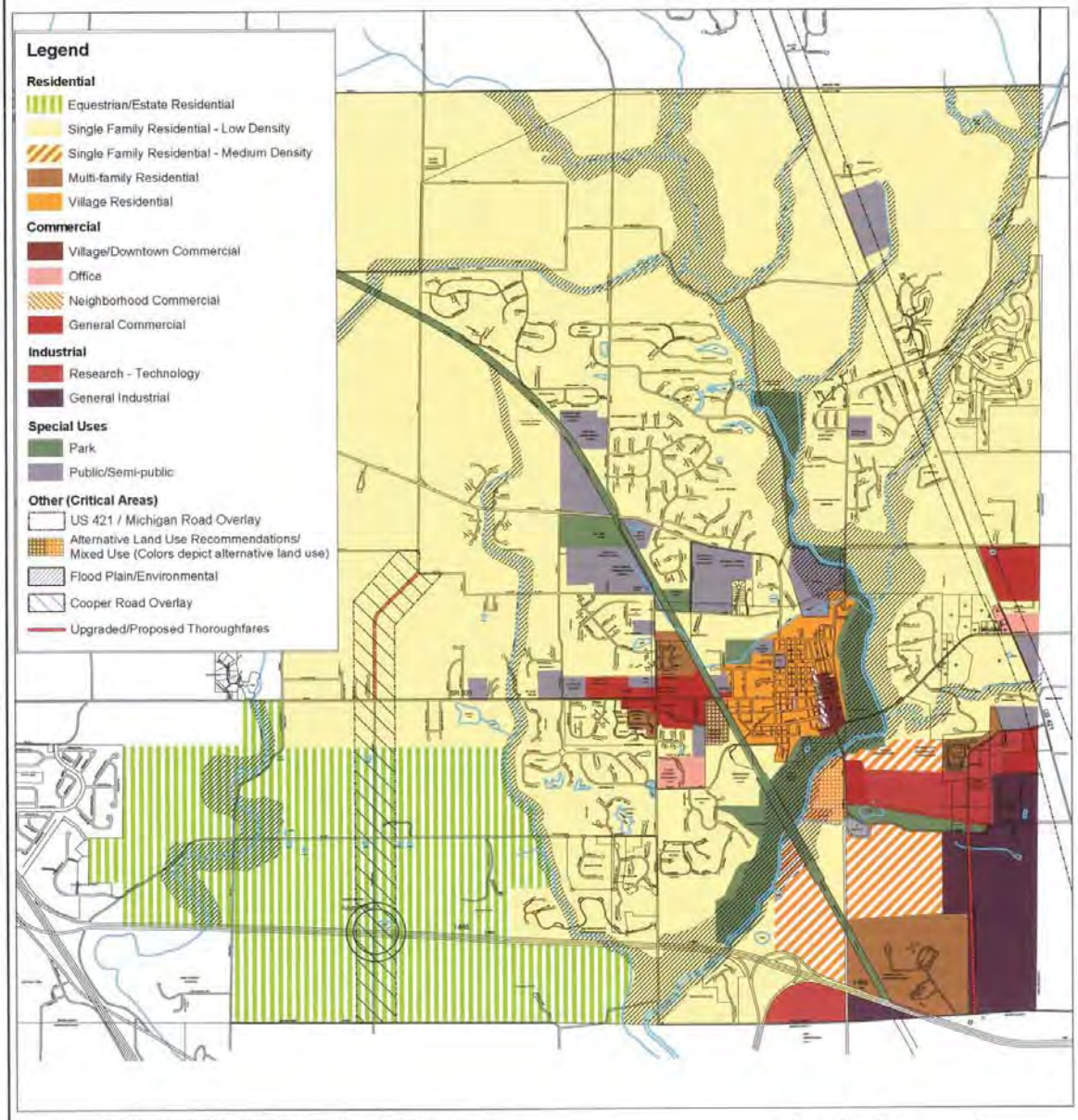
- Continue an ongoing process to identify, evaluate and implement spot network improvements

The Plan Commission and Town planning staff should periodically review this plan and revise it as necessary to reflect changes in local and regional transportation conditions, priorities concerns or opportunities.

APPENDIX A

RELATED PLAN MAPS

Figure A-1



Note: See Text for Detailed Description of Land Use Classification

0 0.25 0.5 1 Miles

N

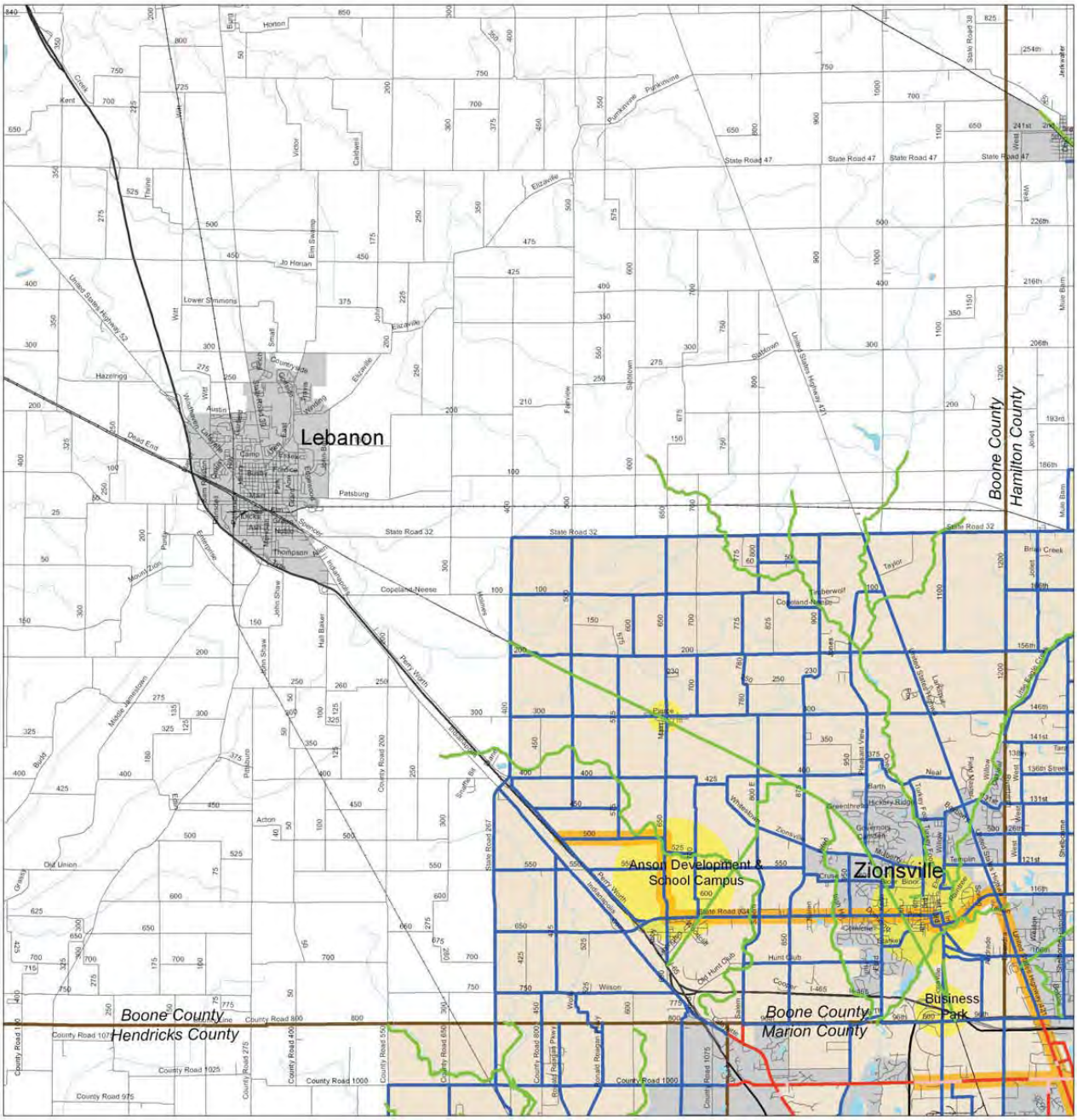
Zionsville Comprehensive Plan

HNTB

Figure 6.2 Proposed Land Use

July 2003

Figure A-2



Vision Plan- Boone County

Indianapolis MPO Regional Pedestrian Plan
November 2006

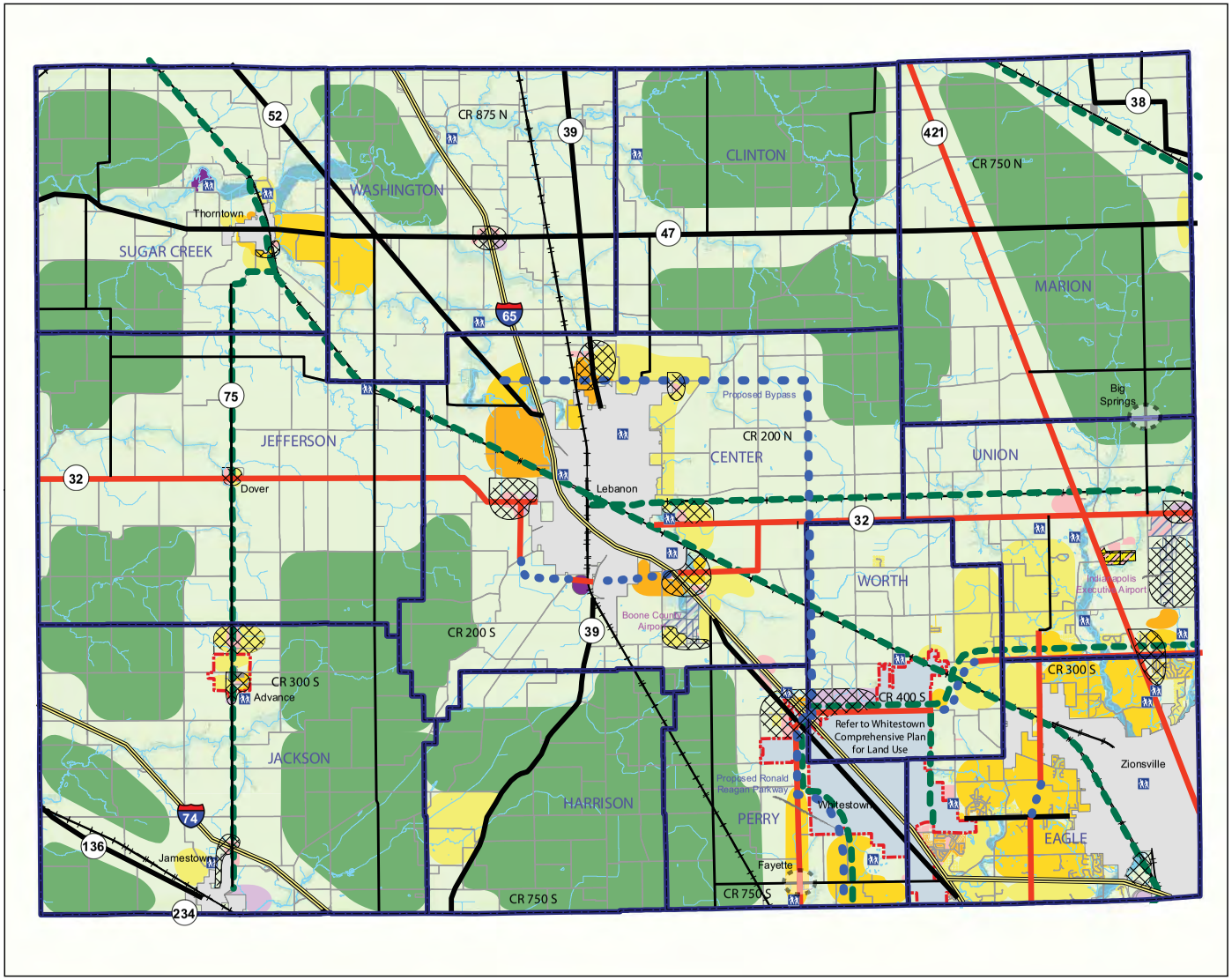
- Recommended Collector Sidewalk
- Marion County Existing Sidewalk
- Recommended Multi-Use Path (within road right-of-way)
- Recommended Multi-Use Path (within off-street right-of-way)
- Urban Greenway
- Recommended Pedestrian Corridor (existing or planned development area)
- Recommended Pedestrian District (existing or planned development area)
- County Boundary
- Urbanized Area, Census 2000
- Indianapolis Metropolitan Planning Area (MPA)

N

0 1 2 Miles

This map was created by Storrow Kinsella Associates from information and data provided by but not limited to: IGIC (formerly INGIS), IMAGIS, SAVI, IUPUI (LUCI), MPO, IDNR, Hoosier Rails to Trails, and local jurisdictions/ municipalities.

Boone County Future Land Use



Legend

- Township

Corporate Boundaries

- Area Plan Commission
- Incorporated Area
- Whitestown

Transportation

- Interstate
- Major Arterial
- Major Collector
- Minor Collector
- Proposed Road
- Local Roads
- Proposed Trails
- Railroad
- Rivers

Future Land Use

- Mixed Use
- Residential - low
- Residential - medium
- Residential - high
- Commercial
- Light Industrial
- Heavy Industrial
- Ag Production
- Parks/Recreation
- Ag General
- Airport District
- Landfill

0 2 4 Miles

N

STRUCTUREPOINT

Figure A-3

MAP 6
RECOMMENDED THOROUGHFARE PRIORITY IMPROVEMENTS

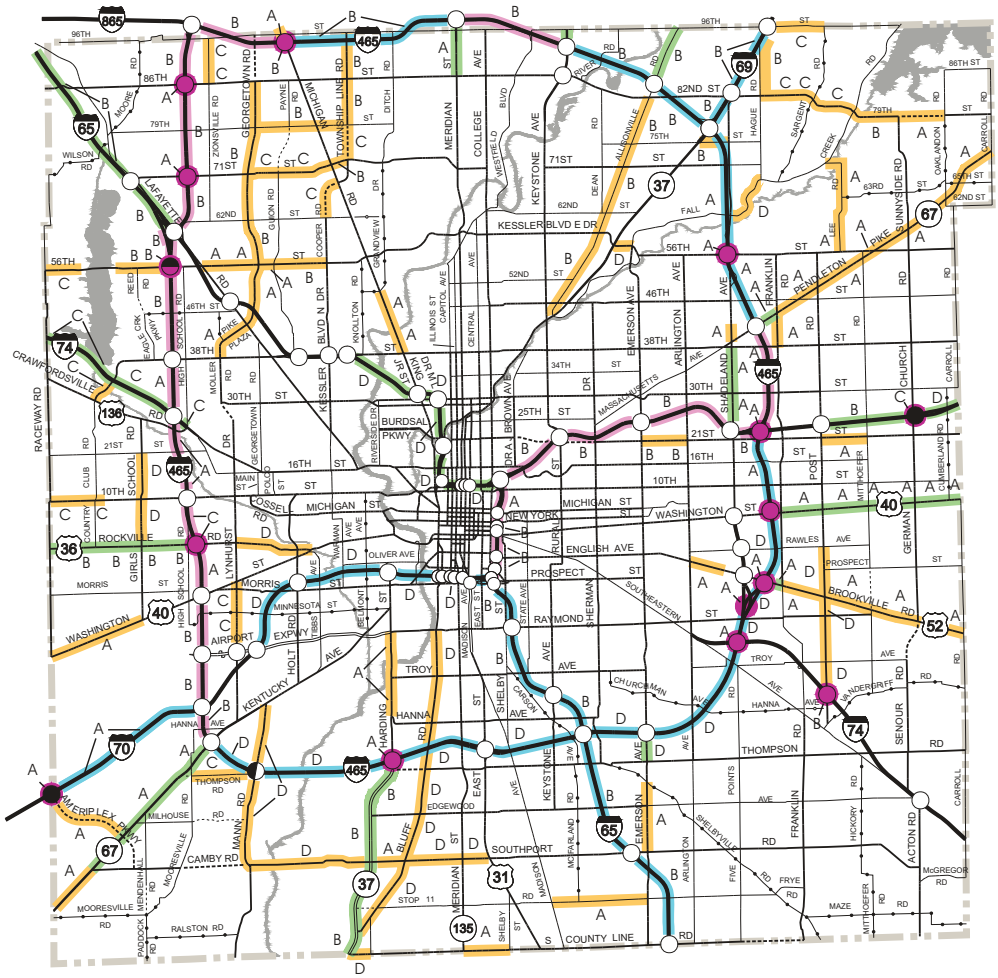


Figure A-5

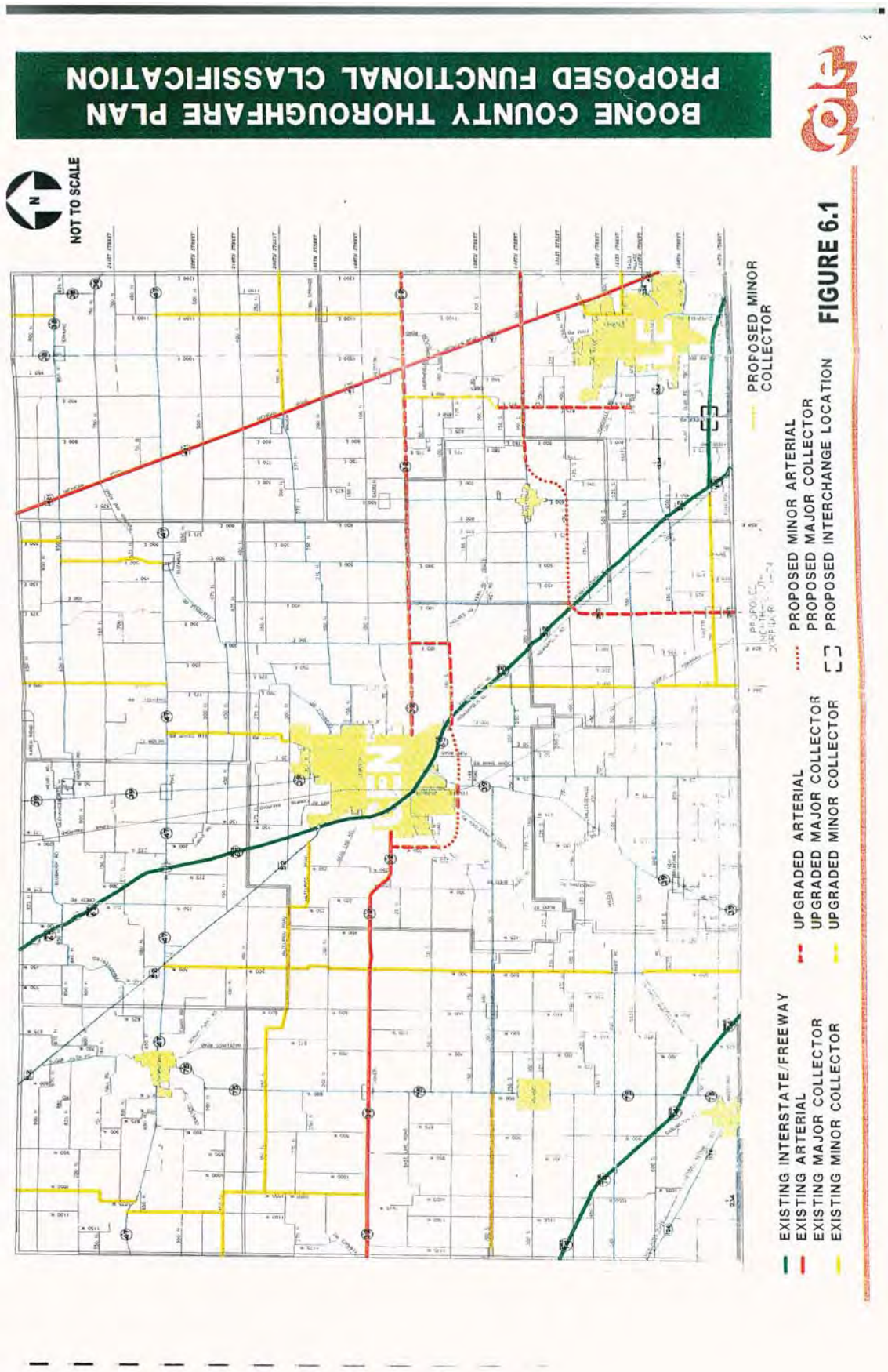
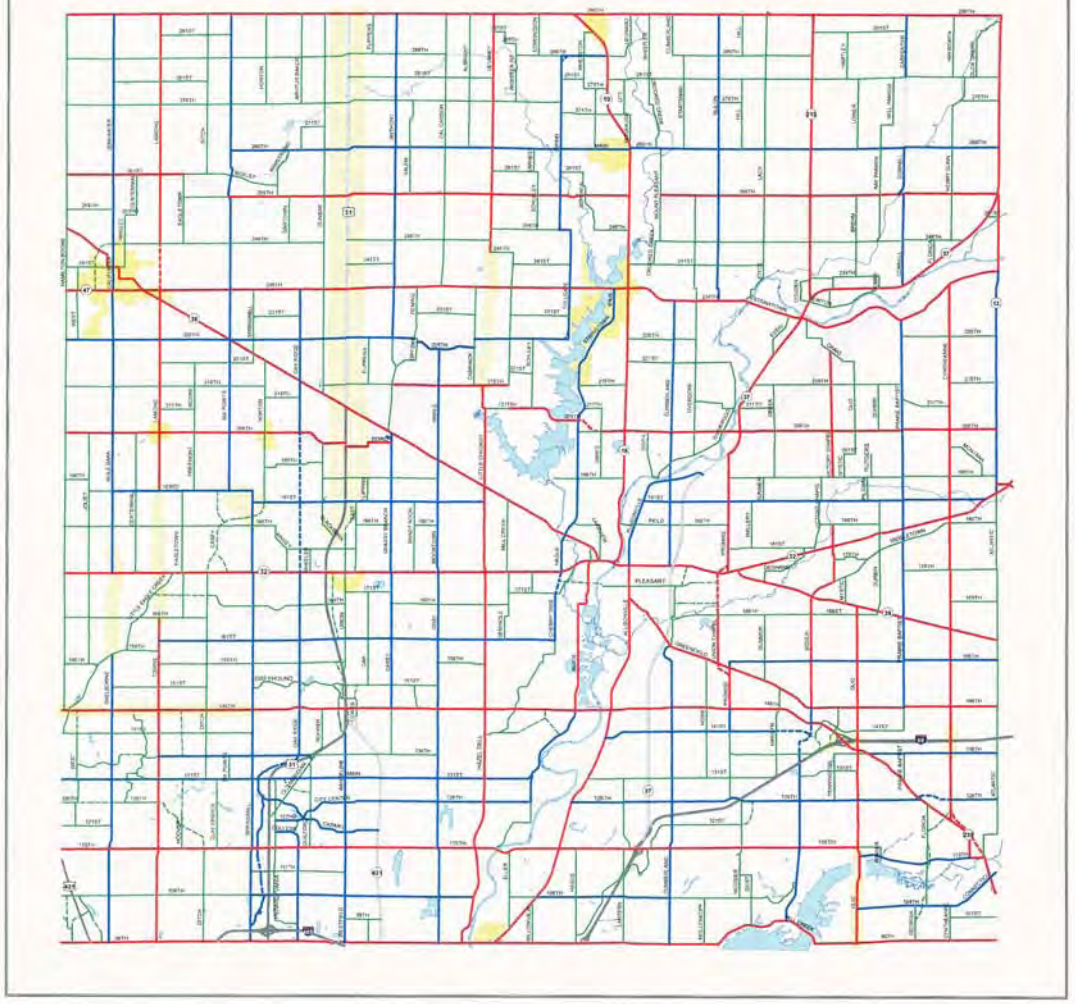

BOONE COUNTY THOROUGHFARE PLAN
PROPOSED FUNCTIONAL CLASSIFICATION
NOT TO SCALE
N
EXISTING INTERSTATE/FREEWAY
EXISTING ARTERIAL
EXISTING MAJOR COLLECTOR
EXISTING MINOR COLLECTOR
UPGRADED ARTERIAL
UPGRADED MAJOR COLLECTOR
UPGRADED MINOR COLLECTOR
PROPOSED MINOR ARTERIAL
PROPOSED MAJOR COLLECTOR
PROPOSED INTERCHANGE LOCATION
PROPOSED MINOR COLLECTOR
FIGURE 6.1

Figure A-6



Hamilton County Thoroughfare Plan

Hamilton County, Indiana

Legend

Classifications

- Interstate
- Expressway
- Primary Arterial
- Secondary Arterial
- Collector

Completed Studies

Recommended Studies

Context Sensitive Area*

*Context Sensitive Areas are to provide flexibility in standards, particularly when Primary and Secondary Arterials go through an urban context

Classifications (new connections)

- New Connections
- Primary Arterial
- Secondary Arterial
- Collector

1 0.5 0 1 Miles

CLASSIFICATION NOTE:

If Hamilton County Thoroughfare Plan classifications differ with those within the jurisdictional limits of a local planning authority, the classification with the higher design standards shall prevail.

HAMILTON COUNTY PLAN COMMISSION
Hamilton County Government & Judicial Center
One Hamilton County Square Suite #306
Noblesville, Indiana 46060
Phone: (317) 776-8490
Last Updated: 10/05/2007[illegible]

HAMILTON COUNTY HIGHWAY DEPARTMENT
1700 S. 13th Street
Noblesville, Indiana 46060
Phone: (317) 773-7770

Cross-Sectional Design Elements

Classification	Right-of-way **	Number of Lanes	Median	On-street Parking	Curb / Shoulders	Clear Zone	Paths / Sidewalks
Primary Arterial	150' * †	4	Yes (12-16' Curbed / 22' Uncurbed)	Not Permitted ***	2' Curbs / 8' Paved Shoulders	10' Curbed / 26' Uncurbed	Two 10' paths and/or 5' sidewalks
Secondary Arterial	110' * †	2 or 4	Optional (12 - 16')	Not Permitted ***	2' Curbs / 8' Paved Shoulders	10' Curbed / 26' Uncurbed	Two 10' paths and/or 5' sidewalks
Collector	100' †	2	Optional (12 - 16')	Permitted (0, 1 or 2 sides)	2' Curbs / 3' Stone Shoulders	10' Curbed / 23' Uncurbed	Two 10' paths and/or 5' sidewalks
	Refer to individual study	Refer to individual study	Refer to individual study	Refer to individual study	Refer to individual study	Refer to individual study	Refer to individual study

Notes:
* Add 10' width at intersections for potential right turn lane (500' in length from the intersection)
** Minimum required right-of-way. See Hamilton County Highway Geometric Standards for County Roads for corner cuts and details on additional requirements.
*** Parking may be permitted on a case-by-case basis, particularly in an urban context
† May be reduced in an urban context

Map Revisions

Hamilton Co. Plan Commission	Hamilton Co. Commissioners	Change

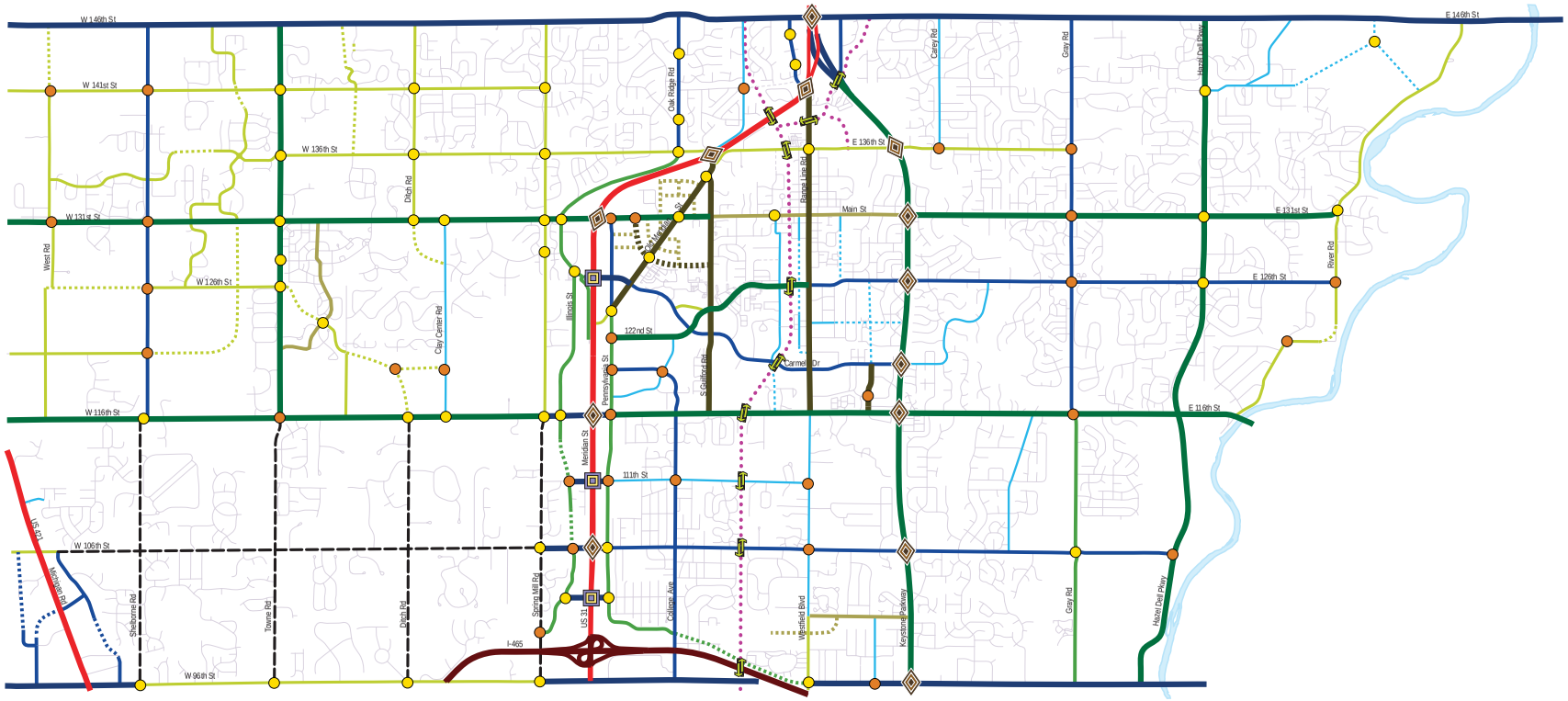
This map does not represent a legal document.
It is intended to serve as an aid in graphic representation only.
Adopted July 9, 2007

Reference Maps

The following are additional reference maps which can be found in the 2007 Hamilton County Thoroughfare Plan Update Report.

Map Title	Map Number
2006 Traffic Volumes	A1
2006-2010 Estimated Growth Rates	A2
2011-2020 Estimated Growth Rates	A3
2021-2030 Estimated Growth Rates	A4
2030 Projected Traffic Volumes	A5
Jurisdictional Classification	A6
Planned Improvements	A7
Future Land Use	A8
NEXT	A9
Hamilton County Trails	A10
MPO Pedestrian Plan	A11
Capacity Focus Area	A12
Corridor Sensitive Focus Area	A13
Environmentally Sensitive Focus Area	A14
Fixed Route Transit Focus Area	A15
Pedestrian Focus Area	A16
Major Transit Focus Area	A17
Safety Focus Area	A18
School Zone Focus Area	A19
SR 37 Focus Area	A20
US 31 Focus Area	A21

Thoroughfare Plan Map



MAP LEGEND

- Interstate
- U.S./State Highway
- Primary Arterial
- Primary Parkway
- Urban Arterial
- Urban Arterial (Proposed)
- Secondary Arterial
- Secondary Arterial (Proposed)
- Secondary Parkway
- Secondary Parkway (Proposed)
- Urban Collector
- Urban Collector (Proposed)
- Residential Parkway
- Residential Parkway (Proposed)
- Collector Street
- Collector Street (Proposed)
- Collector Street per NOAX Agreement
- Residential Street
- Residential Street (Proposed)
- Off-Street Commuter Trail
- Grade-Separated Crossing
- Interchange Location
- Overpass Location
- Roundabout Intersection (Existing)
- Roundabout Intersecton (Proposed)
- River

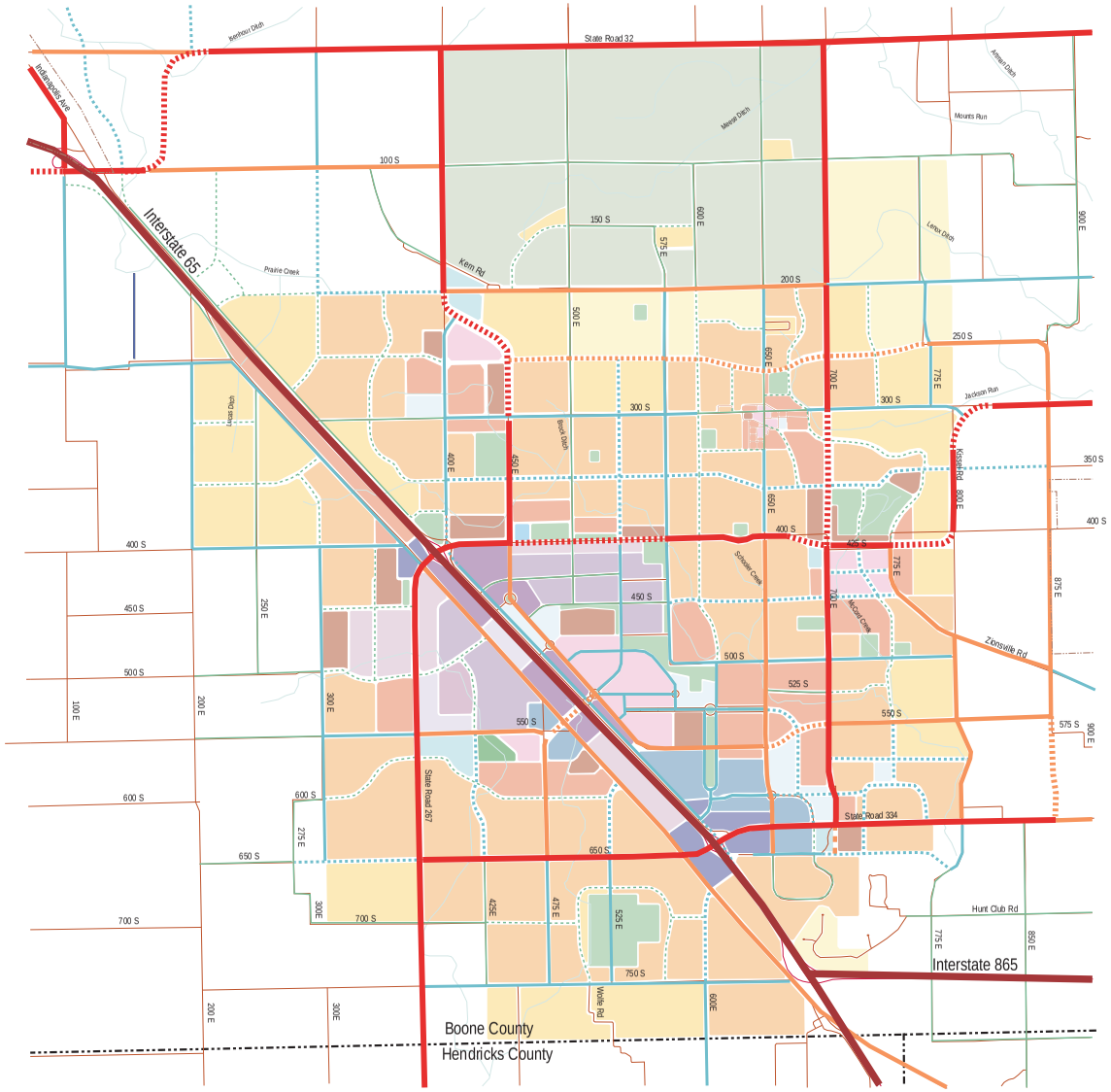
THOROUGHFARE PLAN MAP

1/4 MILE 1/2 MILE 3/4 MILE 1 MILE

N

Map Prepared by Ground Rules, Inc. Last Revised 07-06-2009

Figure A-7



Town of Whitestown

Transportation Plan

Legend

- Interstate (limited access, on-ramps, very high speed)
- Major Arterial (limited access, signaled intersections, high speed)
- Minor Arterial (access management, moderate speeds)
- Major Collector (collects minor collector and local street traffic)
- Minor Collector (collects local street traffic)
- Local Street/County Road (feeds into minor and major collectors)
- Alternative Transportation System (non-sidewalks)

Dashed roads indicate future road locations and their color indicates the intended street classification.

- Equestrian/Agriculture District
- Open Space/Recreation
- Very Low Intensity Residential (0 to 1 d.u. per acre)
- Low Intensity Residential (1 to 2 d.u. per acre)
- Medium Intensity Residential (2 to 4 d.u. per acre)
- High Intensity Residential (4 to 8 d.u. per acre)
- Very High Intensity Residential (8 to 12 d.u. per acre, multifamily)
- Office/Institutional
- Moderate Intensity Commercial
- High Intensity Commercial
- Highway Commercial
- Mixed Use Village
- Low Intensity Industrial
- Medium Intensity Industrial
- High Intensity Industrial
- Mixed Use Commerce Park

Last Revised: September 3, 2005

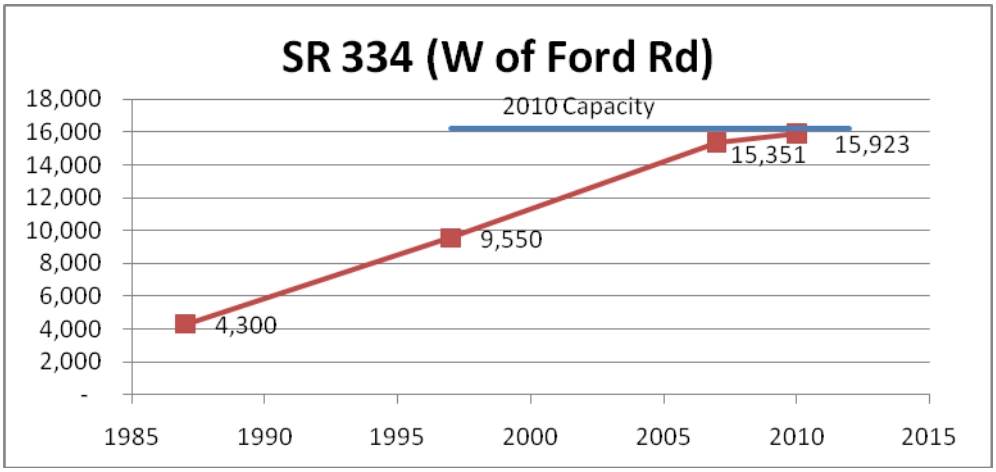
Map Prepared By:

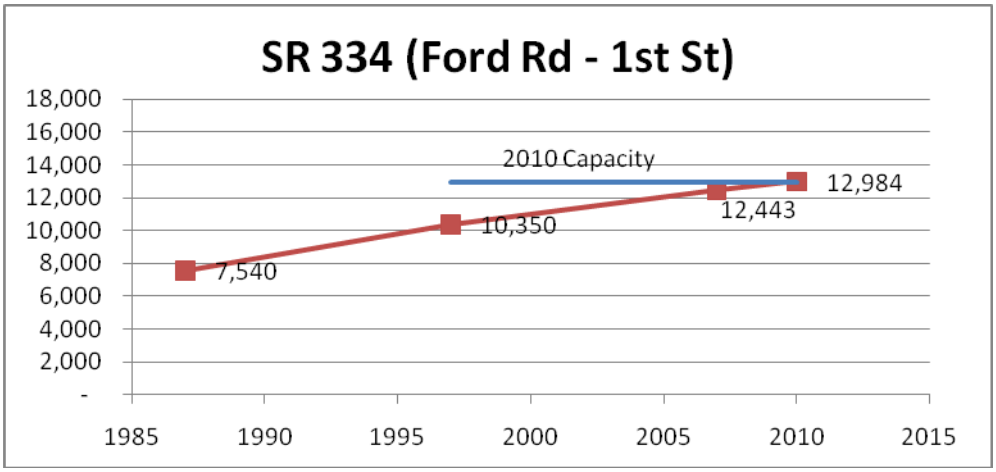
GroundRules
website www.groundrulesinc.com

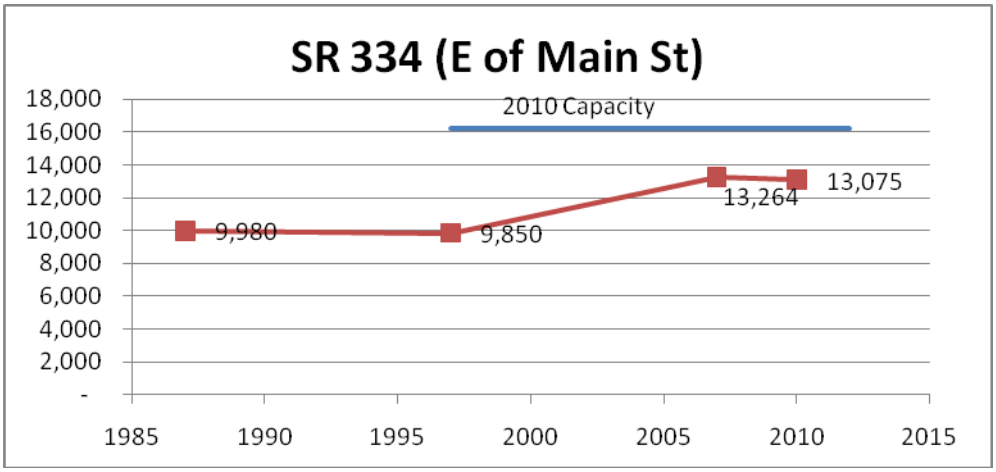
Figure A-8

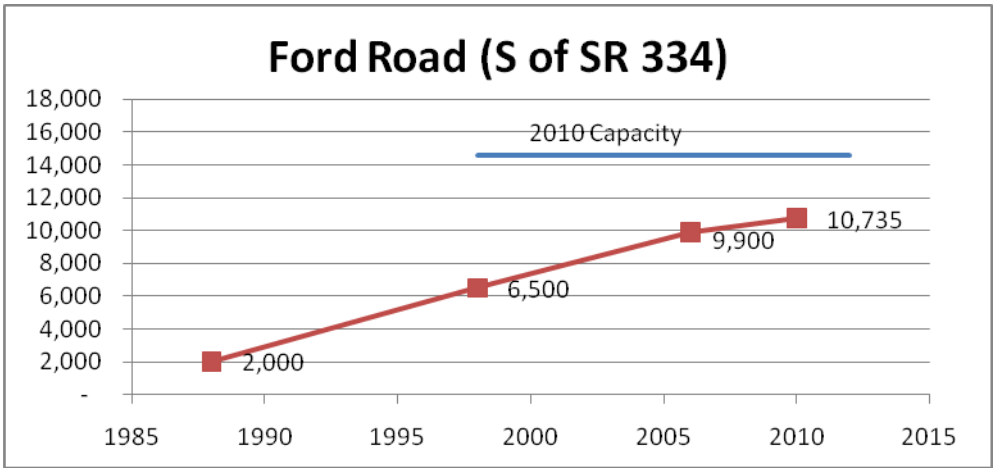
APPENDIX B

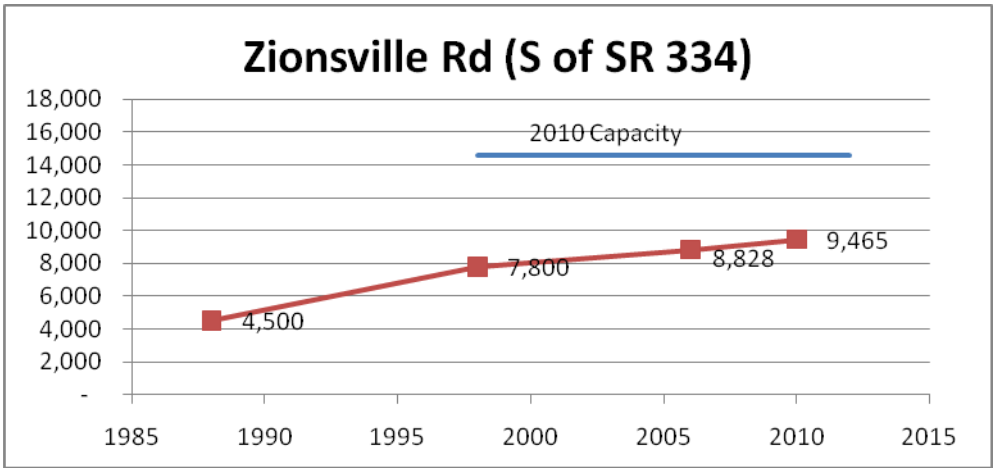
ZIONSVILLE TRAFFIC VOLUME TRENDS

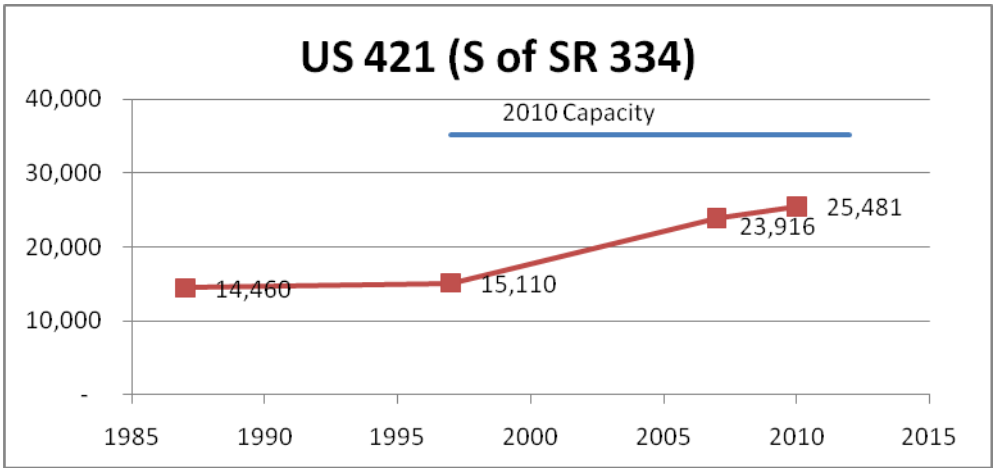

SR 334 (W of Ford Rd)
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2010 Capacity
4,300
9,550
15,351
15,923
1985
1990
1995
2000
2005
2010
2015

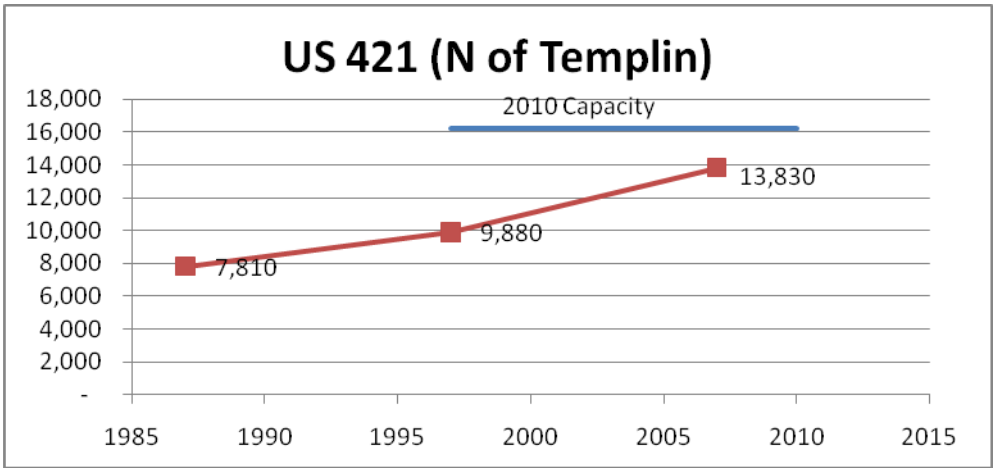

SR 334 (Ford Rd - 1st St)
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2010 Capacity
7,540
10,350
12,443
12,984
1985
1990
1995
2000
2005
2010
2015


SR 334 (E of Main St)
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2010 Capacity
9,980
9,850
13,264
13,075
1985
1990
1995
2000
2005
2010
2015


Ford Road (S of SR 334)
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2010 Capacity
2,000
6,500
9,900
10,735
1985
1990
1995
2000
2005
2010
2015


Zionsville Rd (S of SR 334)
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
2010 Capacity
4,500
7,800
8,828
9,465
1985
1990
1995
2000
2005
2010
2015



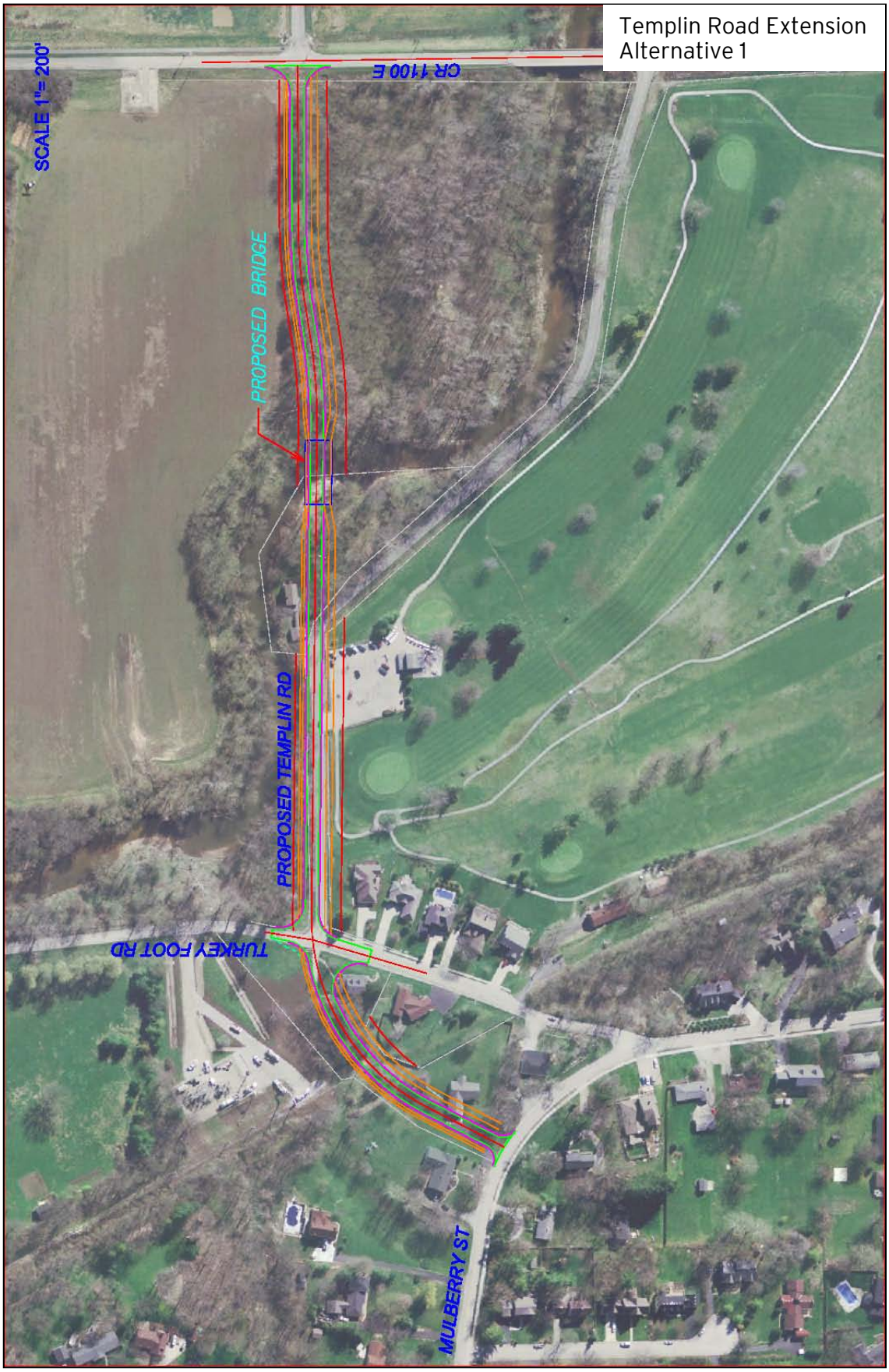
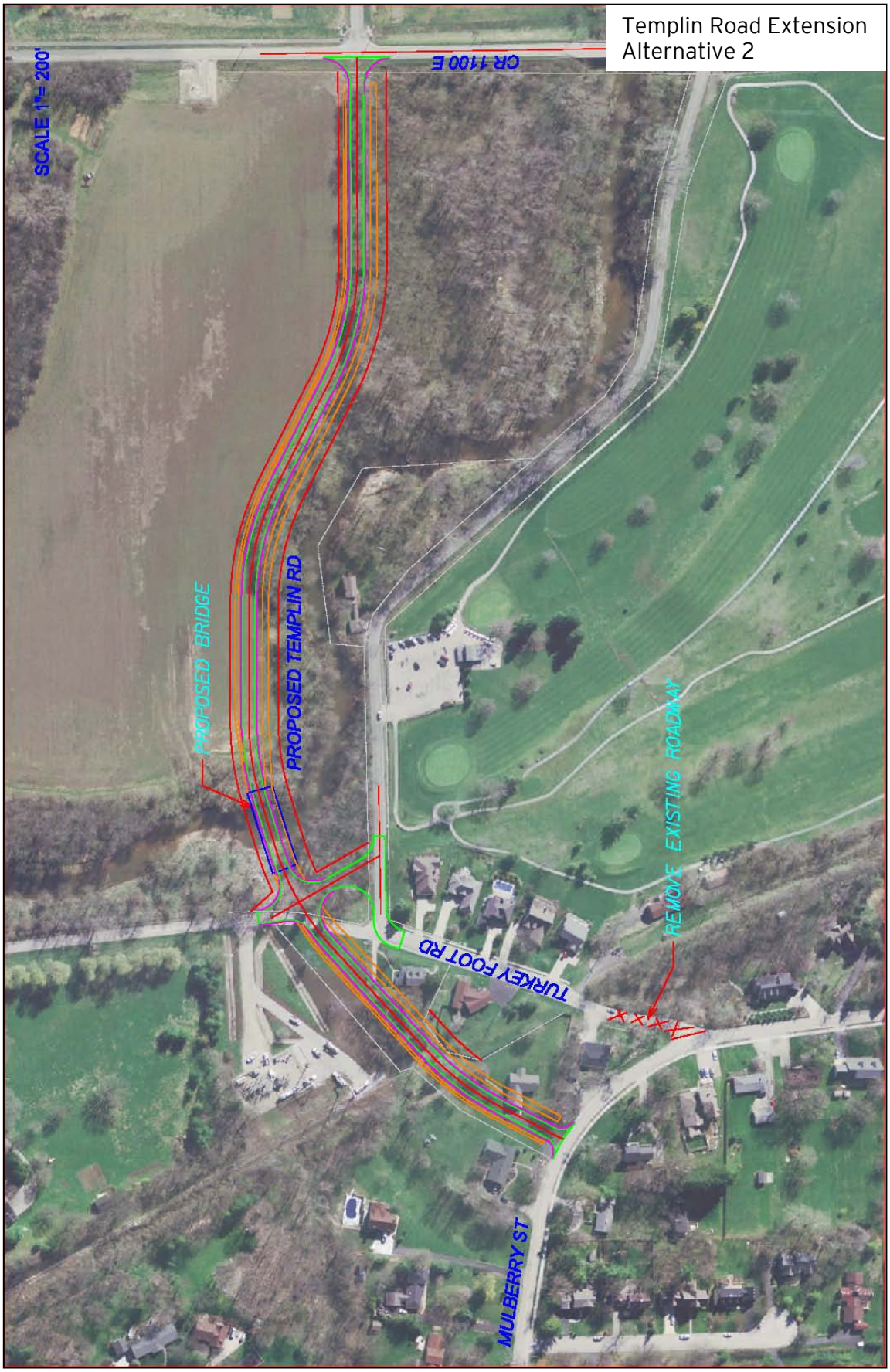


Note: 2010 Capacity volumes were estimated using Table 1 of the 2009 Florida Department of Transportation Quality/Level of Service Handbook

APPENDIX C

TEMPLIN ROAD EXTENSION ALTERNATIVES

Templin Road Extension
Alternative 1



Templin Road Extension
Alternative 2