

Johnson County

I-69

Corridor Plan

December 2018

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RESOLUTION

WHEREAS, the Plan Commission of Johnson County has given careful study to the requirements of the County and the unincorporated area within the jurisdiction of the Plan Commission, particularly relative to the impacts anticipated with the development of Interstate 69 through the northwest corner of the County, and

WHEREAS, the Johnson County Department of Planning and Zoning and the Johnson County Highway Department commissioned a third party to craft the I-69 Corridor Plan, a proposed Amendment to the Johnson County Comprehensive Plan, which is intended to address opportunities and challenges associated with the development of Interstate 69 through the County, and

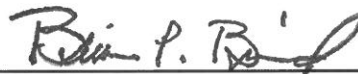
WHEREAS the proposed I-69 Corridor Plan was brought before the Johnson County Plan Commission after proper notice at Public Hearings held in the Auditorium of the Courthouse Annex Building on August 27, 2018, September 24, 2018, October 22, 2018 and November 26, 2018, and was ultimately recommended for approval;

NOW THEREFORE, BE IT RESOLVED by the Johnson County Board of Commissioners that:

The I-69 Corridor Plan, included in full as a part of this resolution, shall become an adopted component of the Johnson County Comprehensive Plan.

Approved by the Johnson County Board of Commissioners at a regularly-scheduled meeting on December 17, 2018.

Board of Commissioners of Johnson County, Indiana



Brian Baird, Chairman



Ronald West



Kevin Walls

**TOWN OF BARGERSVILLE, JOHNSON COUNTY INDIANA
RESOLUTION NO 2018-15**

**A RESOLUTION OF THE TOWN OF BARGERSVILLE, INDIANA
APPROVING THE JOHNSON COUNTY I-69 CORRIDOR PLAN**

WHEREAS, the Town Council of the Town of Bargersville, Indiana (the “Town”) had identified adequate reason to partner with Johnson County to analyze the I-69 Corridor Plan (“the Plan”); and

WHEREAS, the Town identified significant impacts to the Town of Bargersville transportation network resulting from the construction of I-69; and

WHEREAS, the Johnson County hired HWC Engineering to define and describe the issues, advise us of our options and make recommendations to address these issues in the near future; and

WHEREAS, the Bargersville Plan Commission held a public hearing on the Plan and recommended to the Bargersville Town Council that the Plan be approved; and

WHEREAS, the Plan is not an amendment to the Town’s Comprehensive Plan and the Plan is advisory with respect to infrastructure improvements and future land uses; and

WHEREAS, the Town has reviewed the Plan and is satisfied with the services performed, information contained therein, and methodology applied; and

WHEREAS the Town has received 10 copies of the Plan for our records and will keep them on file at the Town Hall and one (1) copy will be kept at the Public Library for future reference;

NOW THEREFORE BE IT RESOLVED by the Town Council of the Town of Bargersville, Indiana that:

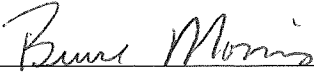
Section 1. The Plan is hereby approved, contingent upon comments and approval from the Johnson County Commissioners.

Section 2. The Town of Bargersville will fully consider all comments and feedback received from the Johnson County Commissioners and will direct HWC Engineering to provide amended copies of the Plan reflecting all said comments.

Passed and adopted by the Town Council of the Town of Bargersville, Indiana
this 11th day of December, 2018.

AYES

NAYS




Bruce Morris, President

Bruce Morris, President




Rowana Umbarger, Vice President

Rowana Umbarger, Vice President



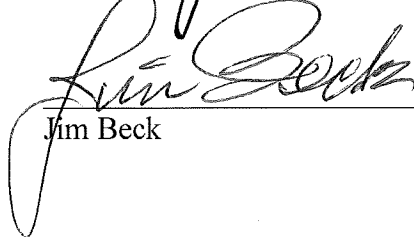
Kenneth Zumstein

Kenneth Zumstein



Gayle Allard

Gayle Allard



Jim Beck

Jim Beck

ATTEST:



Nancy Kehl, Clerk-Treasurer

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CHAPTER 1: EXECUTIVE SUMMARY

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OVERVIEW

Johnson County, Indiana has tremendous economic, transportation and land use opportunities due to its location in the growing Indianapolis Metropolitan Area. These opportunities are expanded by the ongoing upgrade of SR 37 to I-69. White River Township, the focus of this study, is located in the northwestern part of the county and is directly impacted by the future I-69 corridor. In 2015, the Indiana Department of Transportation (INDOT) started the design process for Section 6 of I-69, which runs from Martinsville to Indianapolis. This is the final section of the interstate upgrade that will connect southern Indiana to Indianapolis.

While this growth has been a benefit to the county in many ways, infrastructure and transportation corridor improvements have not kept up with the pace of development, which has created traffic challenges throughout the township. The increase of additional traffic and development has created the need for load capacity improvements to serve existing traffic and future projected traffic increases.

Growth Impacts

Due to the conversion of SR 37 into I-69, the current traffic patterns within White River Township will change, including a significant reduction in access points along the interstate. This reduction of access will greatly affect the way people move about White River Township. According to the Indianapolis Metropolitan Planning Organization (MPO), Johnson County is forecasted to increase in population to 167,899 by 2035. Additionally, White River Township's population is expected to increase by over 22,000 individuals between now and 2035. The majority of the growth White River Township has experienced is a result of significant residential growth in the northern half of the township. Future growth will be driven by both continued growth of unincorporated areas, as well as future development activity in the town of Bargersville and the southwest portion of the city of Greenwood.



Goals and Purpose

This corridor plan will address the reduction of access points, potential issues created by those reductions, and transportation impacts on the existing transportation network as a result of projected growth as well as identify necessary priority transportation projects. This plan should be used as a planning tool to approach INDOT and the Indianapolis MPO for support on immediate and future infrastructure projects and to manage the projected long-term growth in the area.

This plan will also address preferred development standards and future land use assumptions. As the transportation network changes in White River Township, land use and development will be altered. Policies and development standards will be addressed within this plan. All future land use and future functional classification maps are conceptual only, for the sole purpose of projecting traffic infrastructure needs. Johnson County does intend to adopt the land use plan for unincorporated White River Township into its Comprehensive Plan. The town of Bargersville plans to utilize these items to guide updates to the town's governing documents in the future. Bargersville retains full jurisdictional control over their development plans and related ordinances to guide how the town will develop within its jurisdiction. This document therefore is advisory with respect to infrastructure improvements and potential future land uses for the town of Bargersville.

Through this planning effort, the following key goals were established to provide a foundation to:

- » *Ensure future interchanges serve as appropriate gateways into the community by establishing necessary development guidelines;*
- » *Ensure thoroughfares provide pedestrian connectivity to neighborhoods and critical assets within the county;*
- » *Enhance traffic flow and transportation safety by widening roadways and improving key intersections;*
- » *Plan for appropriate land uses along key corridors;*
- » *Connect current and future land uses with the transportation needs of today and tomorrow;*
- » *Manage primary arterial corridors within White River Township;*
- » *Manage cross county east/west corridors as they impact White River Township;*
- » *Enhance multi-jurisdictional coordination for transportation planning;*
- » *Improve access management along key corridors;*

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LAND USE ANALYSIS

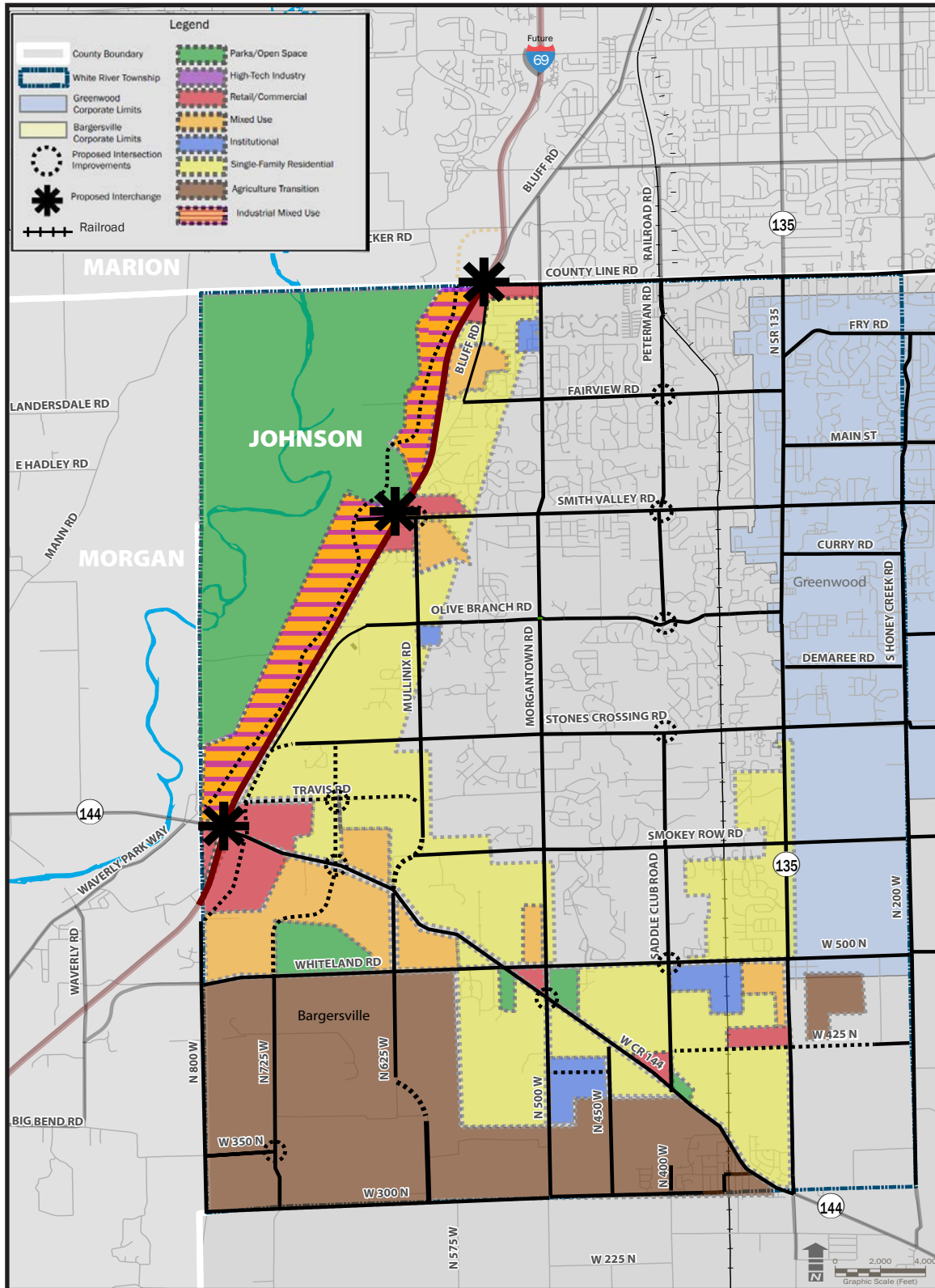
The corridor plan directly connects transportation needs to land uses and future development that influence transportation networks. Exhibit C, on both page 13 and the Land Use Analysis chapter, is an illustration of the proposed future land uses along the corridor and within the town of Bargersville. The proposed land uses were influenced by Johnson County's 2017 White River Township Future Land Use Plan's and the 2013 town of Bargersville Comprehensive Plan's key elements and goals. These plans have guided the understanding of what future development may look like within White River Township. The Future Land Use Categories defined in Chapter 4: Land Use Analysis, do not supersede Bargersville's Zoning Ordinance definitions, and therefore these maps are not to be taken as adopted into the Town of Bargersville's Comprehensive Plan or Zoning Ordinances.

White River Township's unique topographical and hydrological constraints have limited the opportunity for development, especially on the west side of SR 37. This land use plan was created considering existing developments, hydrological constraints, likely development patterns, and market demand for future development and redevelopment. Specific attention was given to the areas along the future I-69 corridor.

While much of White River Township has been built as single-family residential, there are some areas that would be conducive to commercial, retail or mixed-use development along the new interstate and major arterial corridors within the township.

A mix of commercial, retail and residential development is identified at three I-69 interchanges: SR 144, Smith Valley Road and County Line Road. Other areas where mixed-use is appropriate are along major corridors, such as Morgantown Road, Smith Valley Road, SR 135 and CR 144. The mixed-use classification allows flexibility in the blend of allowed uses. Uses that should be considered within these areas are discussed in greater detail within Chapter 4, Land Use Analysis.

EXHIBIT C: FUTURE LAND USE MAP



*This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.

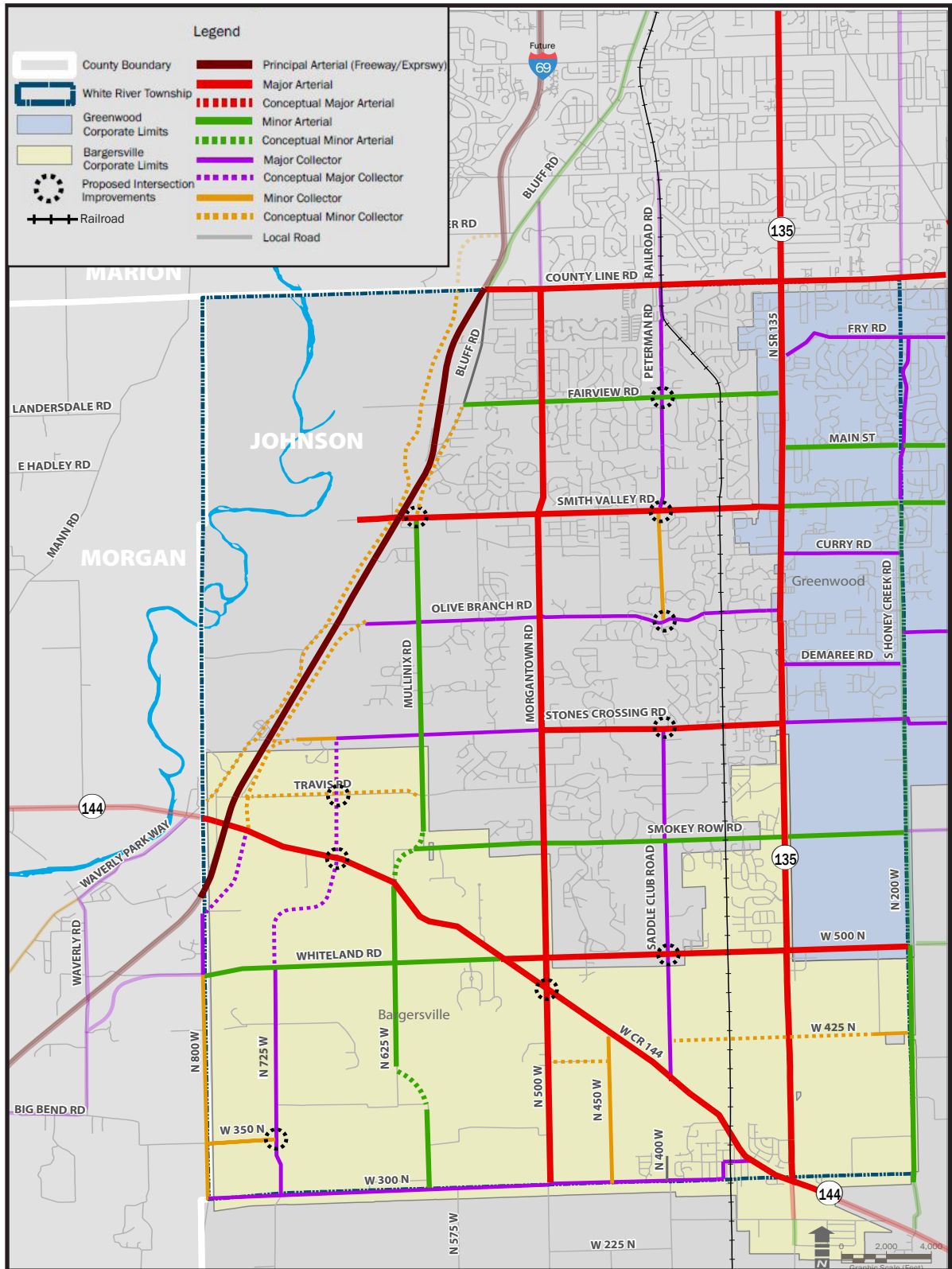
TRANSPORTATION ANALYSIS

Future functional classification maps are based on two key characteristics: roadway mobility and accessibility. These aspects are used to identify classifications of road segments of the transportation network. As part of this planning study, an update to the functional classification map has been proposed, as illustrated in Exhibit Q. Several factors influenced the creation of the proposed future functional classification map including:

- » *Steering committee comments and public input;*
- » *A review of existing traffic patterns and conditions;*
- » *Future 2035 traffic count data;*
- » *Future land use and development/redevelopment opportunities;*

With the upgrade of SR 37 to I-69, and loss of access points to that corridor, the future functional classification map update reflects anticipated traffic needs through 2035. The majority of the functional classification changes are upgrades to higher classifications. Higher classifications, which typically require wider lane widths, additional right-of-way requirements and additional traffic lanes. A detailed description of all proposed changes are included in Chapter 6, Transportation Analysis.

EXHIBIT Q: FUTURE FUNCTIONAL CLASSIFICATION MAP



**This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.*

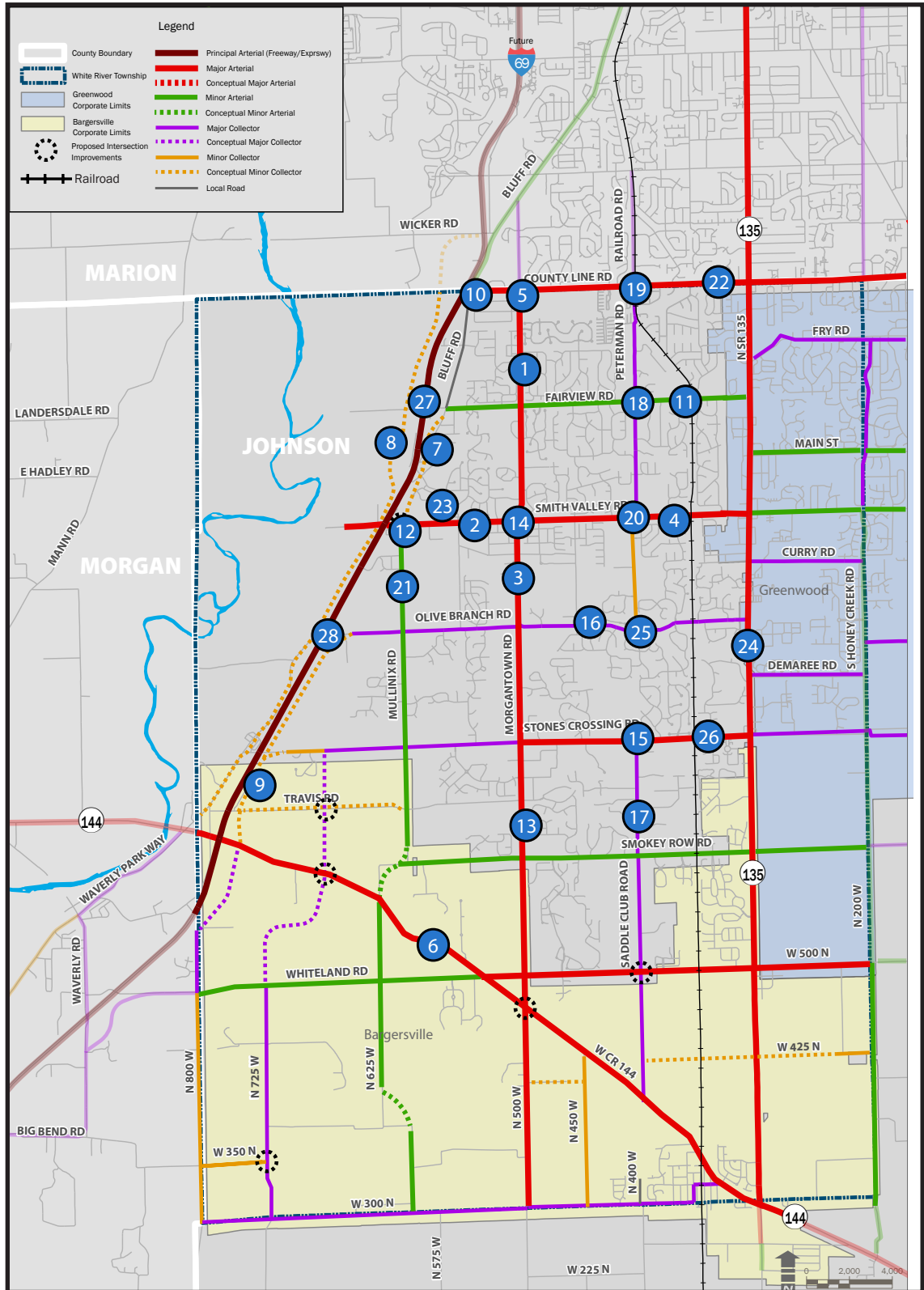
RECOMMENDED TRANSPORTATION NETWORK IMPROVEMENTS

The projects illustrated in Exhibit W and Table 17 were identified to ensure White River Township's infrastructure addresses current needs and keep pace with the demands of future growth. These projects were identified based on the transportation analysis of existing traffic count data, existing accident and transportation issues, future traffic count data and INDOT's projected transportation ratings for 2045. Land use, utility infrastructure and existing development patterns were also considered.

Because of the current demands on the existing transportation network within White River Township, some of these priority projects have immediate need for completion. These immediate projects should, if possible, be completed by the time INDOT begins its construction of I-69 into Johnson County. As indicated in INDOT's Final Environmental Impact Statement Report for I-69, many of the major thoroughfares, such as SR 135, Morgantown Road, Smith Valley Road and SR 144, are likely to have low service ratings once I-69 is completed if improvements are not made to the corridors. The priority projects list may aid in relieving the anticipated traffic; however, long-term upgrades will need to be made to ensure the transportation network within White River Township can accommodate not only existing demand and the impacts of the I-69 project, but the anticipated continued growth of the township as well.

Proposed improvements include widening roads to adding lanes and turn lanes and adding medians for access control. Intersections are also identified as priority projects, as these may mitigate congestion in areas where the roadway could otherwise move traffic efficiently.

EXHIBIT W: RECOMMENDED TRANSPORTATION NETWORK IMPROVEMENTS MAP



**This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.*

TABLE 17: RECOMMENDED TRANSPORTATION NETWORK IMPROVEMENTS

Road Section	Description	Priority
1.) Morgantown Road from County Line Road to Smith Valley	Widening to 4 to 5 lanes	High
2.) Smith Valley Road from I-69 to Morgantown Road	Widening to 4 to 5 lanes	High
3.) Morgantown Road from Smith Valley to Stones Crossing Road	Widening to 4 to 5 lanes	High
4.) Smith Valley Road from Morgantown Road to SR 135	Widening to 4 to 5 lanes	High
5.) Morgantown Road and County Line Road Intersection	Intersection Improvement	High
6.) CR 144 from I-69 to Morgantown Road	Widening to 4 to 5 lanes	High
7.) Bluff Road from Fairview Road to Smith Valley Road	Frontage Road	High
8.) West side frontage Road from County Line to CR 144	Frontage Road	High
9.) Frontage Road from Olive Branch Road to CR 144	Frontage Road	High
10.) County Line Road from I-69 to Morgantown Road	Widening to 4 to 5 lanes	High
11.) Fairview Road from Morgantown Road to SR 135	Widening to 3 to 4 lanes	Medium
12.) Mullinix Road and Smith Valley Road intersection	Intersection Improvement	Medium
13.) Morgantown Road from Stones Crossing Road to CR 144	Widening to 4 to 5 lanes	Medium
14.) Smith Valley Road and Morgantown Road Intersection	Intersection Improvement	Medium
15.) Stones Crossing Road and Saddle Club Road Intersection	Intersection Improvement	Medium
16.) Olive Branch Road from Morgantown Road to SR 135	Widening to 3 to 4 lanes	Medium
17.) Saddle Club Road from Stones Crossing Road to Smokey Row Road	Widening to 3 to 4 lanes	Medium
18.) Peterman Road and Fairview Road Intersection	Intersection Improvement	Medium
19.) Peterman Road and County Line Road Intersection	Intersection Improvement	Medium
20.) Peterman Road and Smith Valley Road Intersection	Intersection Improvement	Medium
21.) Mullinix Road from Smith Valley Road to CR 144	Widening to 3 to 4 lanes	Medium
22.) County Line Road from Morgantown Road to SR 135	Widening to 4 to 5 lanes	Medium
23.) Smith Valley Road and Paddock Road Intersection	Intersection Improvement	Medium
24.) SR 135 from Smith Valley Road to CR144	Widening	Medium
25.) Olive Branch Road and Berry Road Intersection	Intersection Improvement	Low
26.) Stones Crossing Road from Morgantown to SR 135	Widening to 3 to 4 lanes	Low
27.) Fairview and I-69	Future Access	Low
28.) Olive Branch and I-69	Future Access	Low

POLICY RECOMMENDATIONS

The following policy recommendations were also identified. These recommendations include updates to existing policies or the creation of new policies that help support recommended network improvements to best manage long-term growth in the township. These recommendations include:

- » *Updating corridor overlay district language;*
- » *Adopting a bicycle, pedestrian and trail master plan;*
- » *Adopting an access management program for all roads classified as a collector and above*
- » *Adopting a traffic impact study requirement for new development considerations;*
- » *Considering implementing traffic impact fees for new development;*
- » *Updating zoning ordinance and subdivision control ordinances to reflect recommendations of this plan;*
- » *Considering speed limit consistency along major corridors;*
- » *Coordinating storm water discussions with INDOT as part of the I-69 project;*
- » *Allowing a mix of uses and densities along major corridors;*
- » *Providing sewer utility services to the area around the proposed CR 144 interchange;*
- » *Pursuing east side frontage road along I-69;*
- » *Introducing traffic calming measures on Bluff Road;*
- » *Special studying of the SR 135 corridor;*
- » *Formalizing preferred option for regional east/west corridor*
- » *Working with INDOT to ensure the appropriate interchange aesthetics;*

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CHAPTER 2: INTRODUCTION

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PURPOSE OF THE PLAN

The I-69 Johnson County Corridor Plan is a long-range transportation planning tool for public officials, property owners, developers, residents and other parties involved in development and transportation projects. This plan is a coordinated effort between Johnson County and the Town of Bargersville. The plan provides analysis and guidance on improving a transportation system that is expected to be significantly impacted by the INDOT I-69 project.

It is important to note this plan is not a traffic study and does not establish rules and procedures for dealing with neighborhood traffic conditions, such as traffic calming mechanisms.

The creation of this plan required analyzing and understanding the following:

- » *Existing conditions, traffic counts, accident data, and land use*
- » *Potential future travel demands*
- » *Future land uses and redevelopment opportunities*
- » *Transportation network priorities*
- » *Potential corridor overlay district development standards*
- » *Project priorities and associated funding alternatives*

Plan Intent

The intent of this plan is to serve two primary purposes. The first is to help guide development patterns within White River Township. The second is to leverage conversations with INDOT, the Indianapolis MPO, Johnson County incorporated areas within Johnson County, and adjacent counties to realize long-range goals and identify potential funding for priority projects. The recommendations and priority projects within this plan have been identified through analysis of existing transportation constraints and goals, land use opportunities, regulation policies, anticipated future growth within the area and overall transportation network design.

Study Area

The study area is primarily focused on the northwest part of Johnson County including all of unincorporated White River Township as well as all of the Town of Bargersville within White River Township.



The area of analysis, however, is not just limited to White River Township. As transportation and traffic does not stop at the township border, Greenwood, Whiteland, Morgan County and Marion County's future transportation projects will likely impact White River Township's network and vice versa. Therefore, land use and transportation plans for these areas must be considered as part of this study.

PUBLIC PARTICIPATION

As part of the planning process, the consultant (HWC Engineering) worked with a steering committee, interviewed key stakeholders and held a public workshop to keep citizens involved and gather public input. The purpose of engaging these groups of individuals was to:

- » *Outline the strengths, weaknesses, opportunities and threats (SWOT) facing the county;*
- » *Analyze existing issues and anticipated future issues due to the future I-69 corridor;*
- » *Identify key land use opportunities;*
- » *Define key goals and strategies for managing transportation infrastructure ;*

These discussions were supported by county-wide background research, comparable precedent data and analysis of key issues identified in the previous planning work.

Steering Committee

The steering committee was made up of 26 individuals representing a diverse coalition of property owners and citizens, local business owners, safety officials, community planning and parks representatives, elected officials, real estate professionals, school and church representatives and local utility company representatives. The steering committee members, with their broad community representation, participated in a variety of discussions that led to the development of the county's corridor plan vision.

Stakeholder Interviews

It is important to engage in conversations with various stakeholders within the county and White River Township who will be impacted by the anticipated growth within the township and ongoing I-69 project.

Key individuals, organizations and groups were interviewed. These stakeholders were diverse not only in their interests and areas of focus, but also in the geographic areas of Johnson County they represent. Stakeholders included representation from:

- » *School districts*
- » *Property owners affected by the removal of existing interstate access*
- » *Public safety officials*
- » *Neighboring community representatives*
- » *Community organizations and businesses*

Stakeholders voiced their transportation concerns and outlook on Johnson County's growth. These stakeholders, which helped create priority projects that influenced this plan.

Public Input Meeting

Getting a full representation of the county's needs, concerns and desires was a strong focus of this planning effort. Beyond the steering committee discussions and stakeholder interviews, a public workshop was held to gather input from the general public regarding Johnson County's existing conditions and anticipated future needs. 100 individuals attended the public meeting held the evening of November 28, 2017, at the White River Township Branch Library in Greenwood, Indiana. A full overview of the public input meeting can be found in the Appendix.



Public Input Meeting 11/28/2017 at the White River Township Library Branch: Source: HWC Engineering

AREAS OF FOCUS

Analysis of the feedback from the public, steering committee and community stakeholders allowed for the identification of the following key areas of focus for this planning effort:

Manage present needs as well as the needs of the future

With transportation network constraints, such as congestion and changing access and connectivity, future road projects should be identified to plan ahead for future transportation issues. Future transportation projects must not only meet present needs, but must also accommodate future needs created by continued growth. These road projects may include intersection improvements, widening of roadways and shoulder to accommodate public safety vehicles and increase capacity, access management and curbed medians that help guide turning movements.

Manage primary corridors

Primary corridors that runs north/south or east/west should be considered for priority project upgrades. These major corridors will likely see traffic impacts of I-69 first and existing issues are anticipated to worsen as the I-69 project is initiated in White River Township. Upgrades to these corridors will strengthen the overall transportation grid and enhance connectivity to collector and local roads that feed into them. It is important to consider how traffic moves through these primary corridors.

Cross county east/west regional corridor

As identified in previous planning efforts throughout Johnson County, the implementation of a major corridor that runs east/west across the county should be considered. This corridor creates a connection to adjacent communities and will have a regional impact. Creating a major corridor connection from SR 37/I-69 to I-65 and beyond will create opportunities for development and improve regional connectivity.

Multi-jurisdictional coordination

White River Township shares county boundaries with Morgan and Marion county, as well as city and town jurisdictions within the township. Because traffic and transportation needs do not stop at jurisdictional boundaries, it is important that all jurisdictions communicate transportation goals, plans and projects. Each jurisdiction has its own unique design standards and future land use plans that impact the transportation network. Sharing goals, projects and plans will create transportation consistency throughout the county and provide a better overall transportation network.

Access management

Major corridors, especially SR 135, need access management programs that guide the number, frequency and distances of entrances from the main thoroughfare. By implementing access management practices, corridor congestion will likely decrease as traffic flow moves more easily along the primary corridors. Access management practices may be implemented through frontage roads or with corridor design standards.

Multi-Modal connectivity

The transportation system is not limited only to vehicles - bicyclists and pedestrians require facilities to move around the community as well. Connecting existing residential subdivisions to amenity areas where commercial, retail and parks are located helps encourage alternative modes of transportation. Creating pedestrian and bike-friendly connection to destinations where individuals visit enhances the quality of life of residents and visitors.

Frontage road connectivity on east side I-69

Because of the proposed loss of access points resulting from the I-69 project, frontage roads are a critical component of the transportation network. As most development is located on the east side of I-69, frontage roads connecting CR 144 to Smith Valley Road to County Line road are warranted. These frontage roads are not intended to carry high volumes of traffic. They will, however, create access for public safety vehicles and local residents and businesses to improve connectivity to future access points of the interstate. These roads will also play a significant role in moving traffic if primary corridors are restricted or blocked as a result of construction or accident activity.

Interchanges as gateways

The three new interchanges connecting the area to I-69 will become gateways into White River Township, Johnson County and the cities and towns within the county. Buildings, lighting, signage, and other architectural and site design considerations will set the first impression for visitors into the area. Interchange design will also impact the impression left on those traveling along the I-69 corridor.

Managing future truck traffic

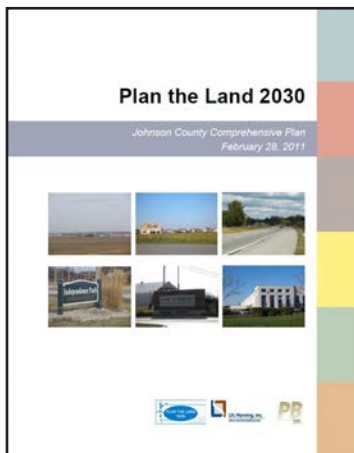
As corridors are upgraded and land uses change, it is important to manage the type of traffic utilizing the corridors. Regional truck traffic and large delivery trucks should not mix with local car traffic along residential corridors. With the upgrades to I-69, semi-truck traffic traveling regionally will likely utilize I-465 to get to I-65 and go around Johnson County, rather than through it. If this is the case, potential adverse impacts of future truck traffic should be mitigated. Specific design standards can help discourage regional truck traffic from accessing the local transportation network.

Defining appropriate corridor land use

Given the importance that land use has on the overall transportation network, it is essential that appropriate land uses be identified for key corridors. Finding the right mix and balance of uses will help establish the understanding of existing and future transportation network needs.

Previous plans

Creating this plan began with a thorough review of current and past plans for Johnson County and adjacent communities. The following identifies some of the key goals and objectives from each of these plans that influenced the analysis and findings of this corridor plan.



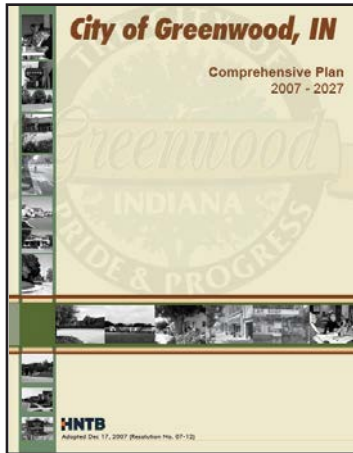
Johnson County 2011 Comprehensive Plan + 2017 White River Township Future Land Use Amendments key elements:

- » *Support a diverse and high income employment economy*
- » *Protect the environment and natural resources*
- » *Increase walk-ability and bike-ability*
- » *Improve and require a quality transportation system*
- » *Ensure quality non-transportation infrastructure*
- » *Focus on three critical areas: Morgantown Road, west of the Center Grove High School campus; Smith Valley Road corridor, from SR 37/I-69 to Greenwood city limits; Old Smith Valley Commercial Area*



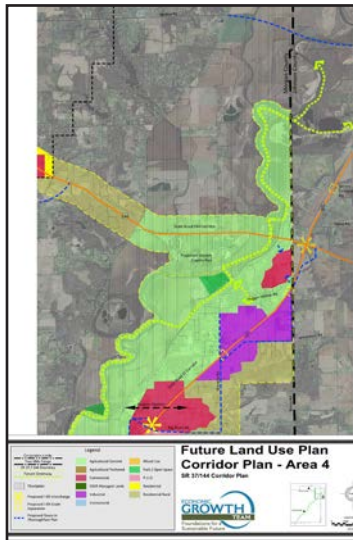
Town of Bargersville 2013 Comprehensive Plan key elements:

- » *Maintain quality housing opportunities*
- » *Create an environment for commercial development to serve citizens within and outside of Bargersville*
- » *Promote Bargersville as a destination*
- » *Actively guide downtown revitalization and lead revitalization efforts with public investment and public/private partnerships*
- » *Assist in creating and sustaining commerce and economic growth by improving and maintaining current infrastructure for the immediate and future needs and well-being of residents and businesses*
- » *Enhance safe travel on existing roads and plan for future growth, while minimizing congestion*
- » *Create and sustain high-quality economic growth by promoting commerce corridors*



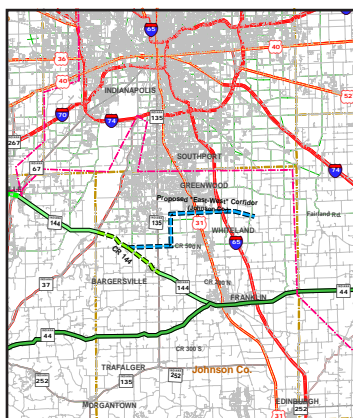
City of Greenwood 2007 Comprehensive Plan key elements:

- » *Provide housing needs of Greenwood's present and future residents*
- » *Create a system of well-planned business corridors that reflect the desired identity of Greenwood*
- » *Gain a competitive edge by developing a multi-modal network within and around the City of Greenwood*
- » *Employ access management principles to reduce congestion and increase pedestrian activity*



Morgan County 2010 Comprehensive Plan key elements:

- » *Promote growth and redevelopment in areas with existing infrastructure*
- » *Capitalize on economic development opportunities*
- » *Provide county-wide park and recreation opportunities, including both facilities and services/programs*
- » *Provide safe and efficient transportation networks for Morgan County*



INDOT Central Indiana Suburban Transportation & Mobility Study 2005

- » *Create an east/west connector linking Morgan, Johnson and Shelby Counties: SR 144 to Whiteland Road to Worthsville Road*

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CHAPTER 3: EXISTING CONDITIONS

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LOCATION

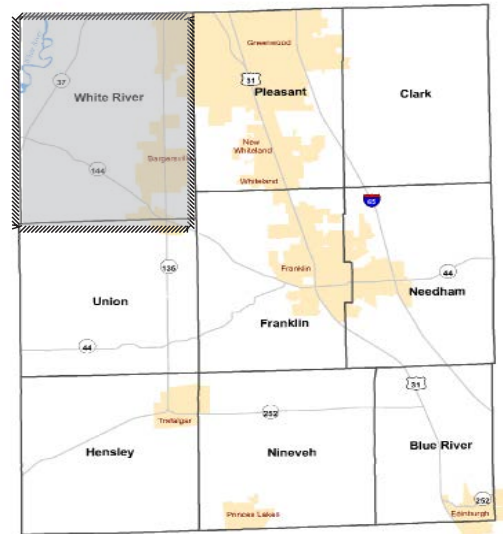
Johnson County is located south of Indianapolis, Indiana, and borders Marion County to the north, Morgan County to the west, Brown County to the south and Shelby County to the east. Only 20 minutes from downtown Indianapolis, Johnson County is experiencing the growth other metropolitan areas outside Indianapolis have experienced for decades.

The focus of this planning effort lies within White River Township, one of nine townships in the county. White River Township is located in the northwest corner of the county and consists of unincorporated areas in the county, city of Greenwood and town of Bargersville.

The majority of the county is located within the Indianapolis Metropolitan Planning Organization (MPO). The Urbanized Area Boundary (UAB) incorporates the majority of White River Township. Being within the UAB provides opportunities for transportation funding for certain recognized projects. The entirety of White River Township is included in the Metropolitan Planning Area as defined by the 2010 U.S. Census.

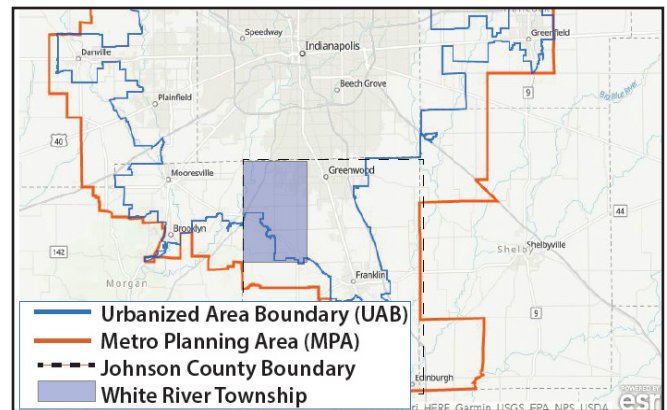
Section 6 of INDOT's I-69 project is expected to run along the existing SR 37 corridor, a portion of which is located in White River Township. Section 6 of I-69 will greatly impact the township and Johnson County's transportation network by removing multiple existing points of access to the county from the existing SR 37 corridor.

Johnson County, Indiana Townships



Johnson County Township Map

Source: U.S. Census Bureau 2011



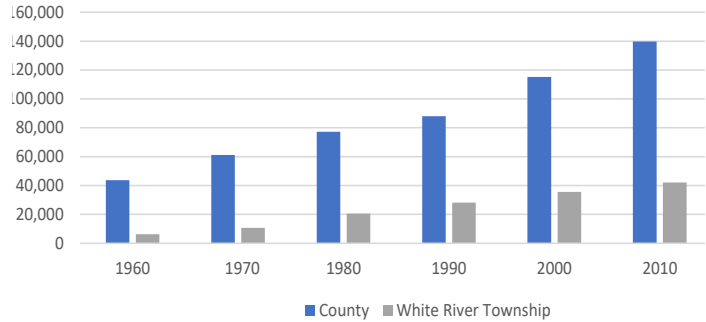
Indianapolis Metro Planning Area

Source: MPO.org

DEMOGRAPHIC, ECONOMIC, AND POPULATION TRENDS

White River Township and Johnson County have seen consistent population growth over the past 50 years. According to Stats Indiana, Johnson County has grown by more than 95,950 people, from 43,704 people in 1960 to 139,654 people in 2010. This steady and consistent growth is also reflected in the 2016 census population projection for Johnson County (147,567 individuals). Many factors impact this growth, including proximity to Indianapolis, great schools, municipal growth within cities and towns of Johnson County and an overall strong quality of place.

Johnson County + White River Township Population Data 1960-2010



Source: Stats.Indiana.edu

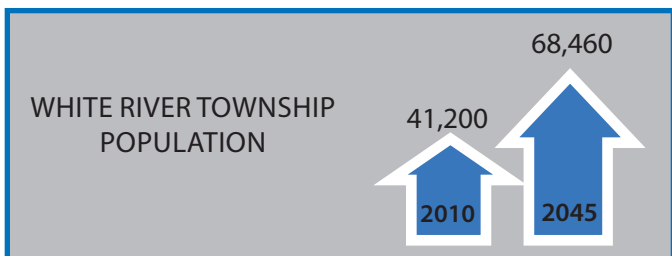
Johnson County’s population at the 2010 census was 139,654 individuals, approximately 41,200 of which having lived in White River Township while the 2016 projected 44,892 people living in the township. The Indianapolis MPO’s 2045 projection indicates White River Township’s population may rise to about 68,460 people by 2045. The MPO conducts these projections to gauge the future transportation needs and the funding required for upkeep on projects for the entire metropolitan Indianapolis region.

PROJECTED 2016 POPULATIONS

JOHNSON COUNTY	147,567
WHITE RIVER TOWNSHIP	44,892

Source: Census.gov

The MPO’s projected 25,000 population increase is likely a result of the same factors that have driven historical growth in Johnson County. The I-69 project, available development ground within Bargersville and the availability of developable property inside unincorporated White River Township are all growth factors that support the MPO’s projected population increase.



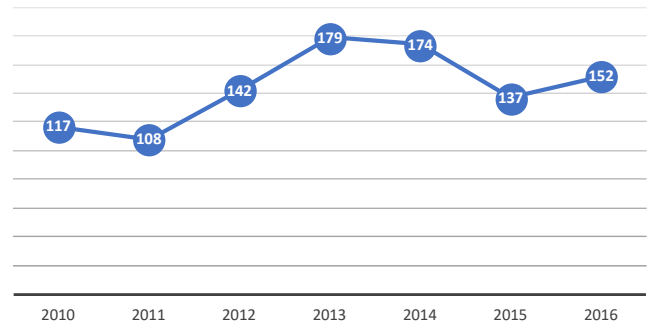
Source: Indianapolis MPO

Historically, unincorporated Johnson County experiences a healthy annual number of building permits and is projected to experience increased permit activity as developers of single-family residential, multi-family residential, and commercial projects target this area for new development.

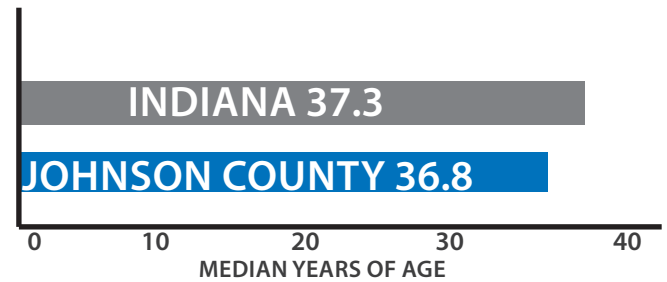
The median age of Johnson County’s population is 37 years, which mirrors the median age for the state of Indiana. According to the Indiana Economic Development Corporation (IEDC), Johnson County’s median household income is approximately 27 percent higher than the state of Indiana.

UNINCORPORATED JOHNSON COUNTY RESIDENTIAL BUILDING PERMITS

TOTAL UNITS (2010-2016)



Source: Socds.huduser.gov



Source: 2010 Census.gov

JOHNSON COUNTY MEDIAN HOUSEHOLD INCOME (2017):

\$68,148

THE STATE OF INDIANA: \$56,094

THE NATION: \$57,230



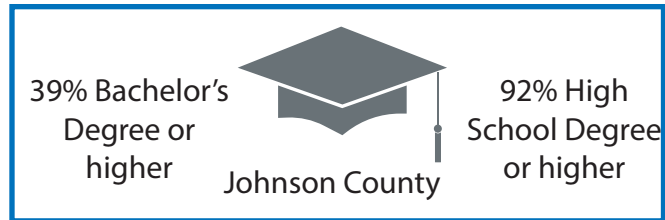
74% HOMEOWNERS

26% RENTERS

Source: Indiana.zoomprospector.com, stats.indiana.edu

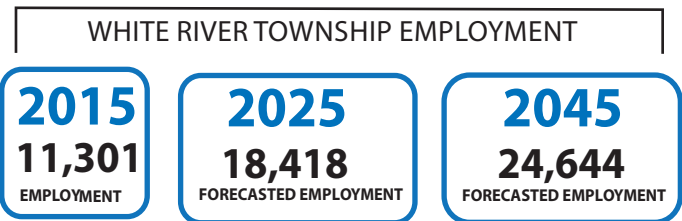
Employment and Talent Pool

Johnson County has a fairly educated workforce, as 92 percent of the population has obtained a high school degree and 39 percent possesses with a bachelor’s degree or higher.



Source: 2010 Census.gov

The top 2017 job industries within Johnson County are as follows: Retail (10,400 jobs); Health care and social services (8,670 jobs); Accommodation and food services (6,600 jobs); and manufacturing (5,000 jobs). The Indianapolis MPO projects a significant increase in the number of people employed in White River Township between 2015 and 2045. In some studies, projections indicate a doubling of employment. While that magnitude of growth is optimistic, fundamental elements are in place to support significant job growth over the next thirty years.

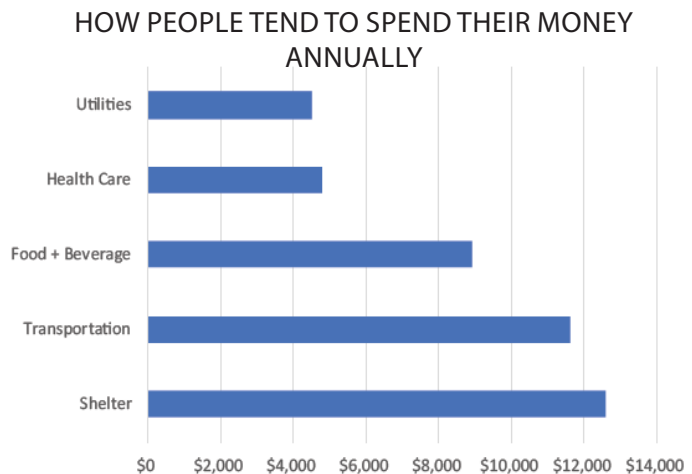


Source: Indianapolis MPO

According to 2010 census data, the majority of working individuals in White River Township are earning over \$3,333 a month. Of those earnings, people tend to spend most of their money on home and transportation. Food and beverage expenses are the third highest area where people spend their money, while health care and utilities round out the top five household expenses.

WHITE RIVER TOWNSHIP EARNINGS PER MONTH	
<\$15,000	20%
\$15,000>\$39,996	28%
>\$39,996	52%

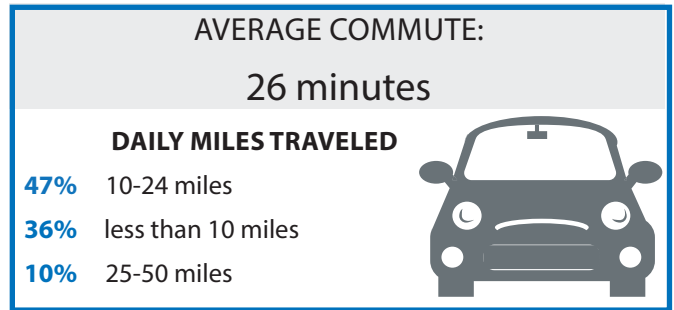
Source: onthemap.census.gov



Source: Indiana.zoomprospector.com

Commuting

The majority of Johnson County residents are employed outside of the county, traveling between 10-24 miles to work each day. It is important from a transportation aspect to understand the number and routes of those commuting to and from work. These routes are expected to change with the limited number of access points onto the future I-69 corridor. According to onthemap.census.gov, over 53 percent of workers that living White River Township currently commute to work in Indianapolis, while 11 percent work in the city of Greenwood and 22 percent work elsewhere outside of the county.

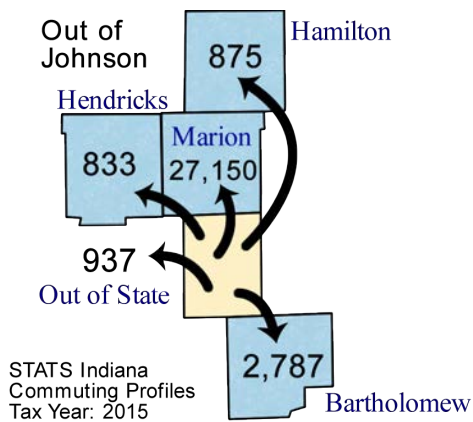


Source: Census on the Map

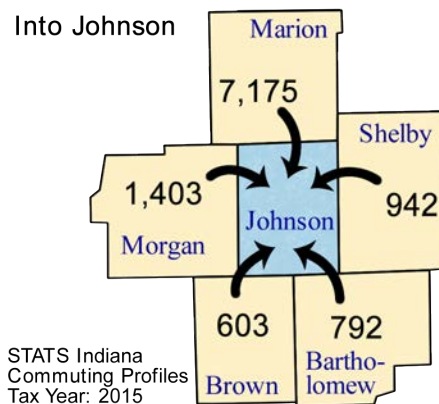
JOHNSON COUNTY, IN	
Employed in county, live outside	13,299
Live in county, employed outside	35,607
Employed and live in county	65,600
Total employed persons in Johnson County	101,207

Commuter flow into and out of Johnson County

Source: STATS Indiana



The future I-69 corridor is expected to increase accessibility to and from Indianapolis, which will make commutes easier and quicker. However, this applies only if the current transportation network is enhanced to accommodate the loss of access points that residents currently use in their commute.



EXISTING COMMUNITY ASSETS

There are numerous aspects that create a quality of place for a community, one being the community assets available. These assets include public safety locations, school systems, libraries, parks and open space, all of which are accessed through the transportation networks within a community. Exhibit A identifies many of these assets located within White River Township. A complete list of these community assets is located within the Appendix.

Schools

There are nine schools located within the White River Township study area. The majority of these are public schools within the Center Grove School Corporation District. The Center Grove School Corporation is ranked as the 32nd largest district within Indiana and is continuing to grow, plans for a new elementary and middle school. This growth is expected to drive additional vehicle traffic to and from the multiple schools within White River Township. The Center Grove School District is recognized as one of the state's best school districts.

Public Safety

The Johnson County Sheriff's Department serves the majority of White River Township. While parts of Greenwood and Bargersville are within the township, intergovernmental agreements with the Sheriff's Office ensure proper safety coverage. Currently, the Indiana State Police has jurisdiction over SR 37 and US 31. However, the Sheriff's Department often fills the gap when called for additional support.

There are six fire stations located within White River Township, including Greenwood, Bargersville and White River Township Fire Departments. White River Township Fire Station 53 will be impacted by INDOT's I-69, project as it is located at the proposed

Smith Valley interchange. Because response times are critical for public safety officials, it is important that there is an efficient transportation network providing access throughout the township.

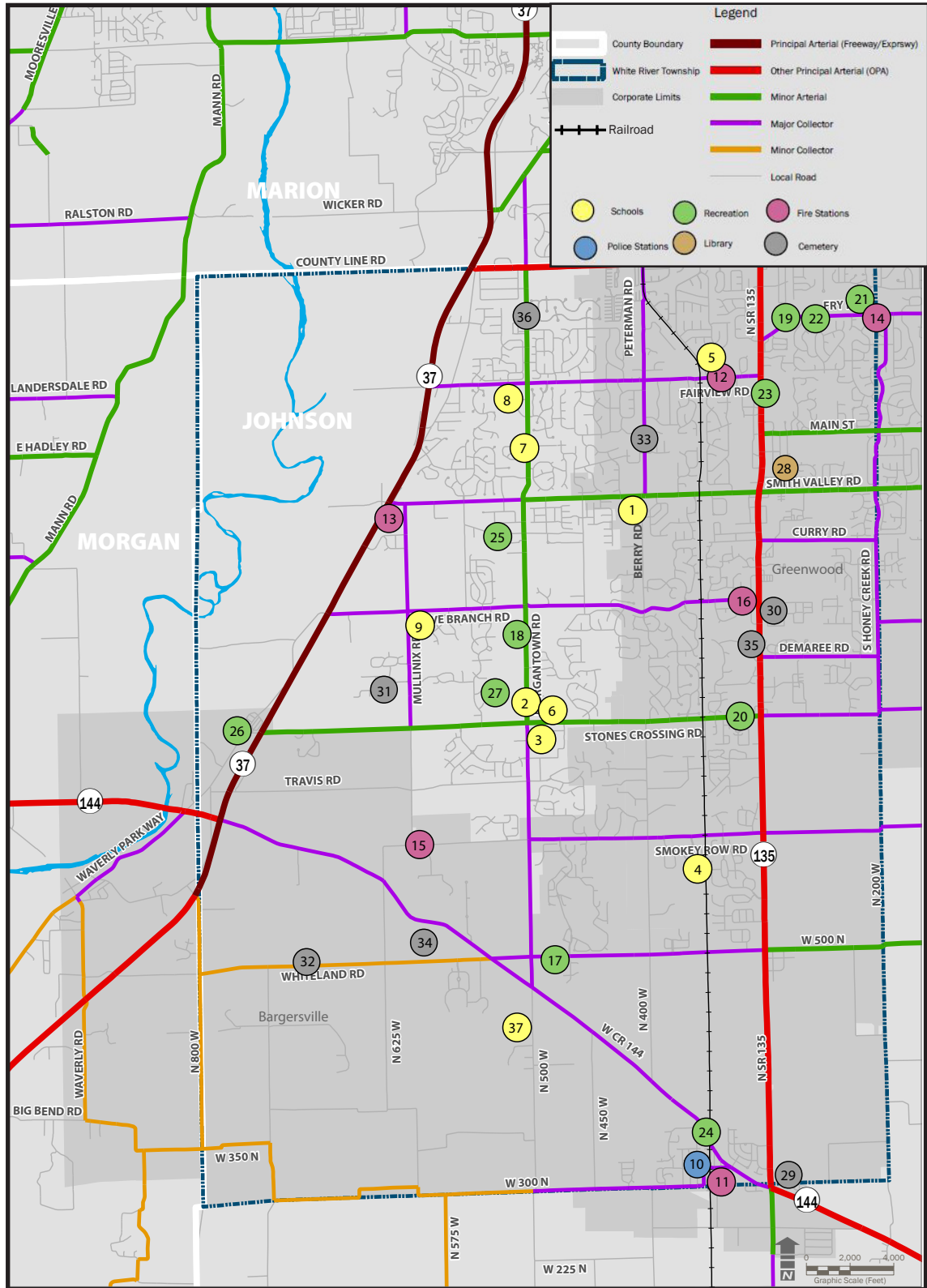
Parks and Greenspace

There are a few parks within the White River Township study area. Most include basketball courts and playground equipment. The Johnson County Hoosier Horse Park which, includes more than 200 acres of land, is southeast of the study area; however, connectivity to this large park and the existing smaller parks was identified as a goal of residents of White River Township.

Library

The White River Branch of the Johnson County Public Library is located on the east side of SR 135. In addition to basic library functions, this library provides residents of White River Township with meeting space for events, craft nights, story time and other arts and craft activities for all ages. As individuals utilize library offerings, the facility generates significant traffic as a destination gathering place for the community.

EXHIBIT A: COMMUNITY ASSETS MAP



Source: HWC Engineering

Data Source: ESRI GIS

EXHIBIT A3: COMMUNITY ASSETS LIST

LABEL	ASSET
1	SUGAR GROVE ELEMENTARY SCHOOL
2	CENTER GROVE ELEMENTARY SCHOOL
3	CENTER GROVE HIGH SCHOOL
4	MAPLE GROVE ELEMENTARY SCHOOL
5	NORTH GROVE ELEMENTARY SCHOOL
6	CENTER GROVE MIDDLE SCHOOL CENTRAL
7	CENTER GROVE MIDDLE SCHOOL NORTH
8	PLEASANT GROVE ELEMENTARY SCHOOL
9	SS FRANCIS AND CLARE CATHOLIC CHURCH/ SCHOOL
10	BARGERSVILLE POLICE DEPARTMENT
11	BARGERSVILLE FIRE STATION 1
12	WHITE RIVER TOWNSHIP FIRE STATION 52
13	WHITE RIVER TOWNSHIP FIRE STATION 51
14	GREENWOOD FIRE STATION 92
15	BARGERSVILLE COMMUNITY FIRE STATION 2

LABEL	ASSET
16	WHITE RIVER TOWNSHIP FIRE STATION 51
17	CAMPBELL FIELD
18	WALNUT RIDGE GOLF COURSE
19	NORTHWEST ANNEX
20	HARRY MCNABB MEMORIAL FIELDS
21	NORTHWEST PARK
22	TRAILS PARK
23	ORCHARD GOLF CENTER
24	BARGERSVILLE BASKETBALL COURT
25	SMITH VALLEY COMMUNITY CENTER
26	BLUFF CREEK GOLF COURSE
27	INDEPENDENCE PARK
28	JOHNSON COUNTY PUBLIC LIBRARY
29	BARGERSVILLE CEMETERY
30	FOREST LAWN CEMETERY
31	LOWE CEMETERY
32	MALLOW CEMETERY
33	MESSERSMITH CEMETERY
34	MILLER CEMETERY
35	MOUNT AUBURN CEMETERY
36	MOUNT PLEASANT CEMETERY
37	WALNUT GROVE ELEMENTARY SCHOOL

OTHER MODES OF TRANSPORTATION

Outside of the vehicular transportation system, this corridor plan recognizes that existing bicycle, pedestrian and public transportation networks will need to be part of future infrastructure improvement considerations.

Bicycle and Pedestrian Network

Within Johnson County, the cities of Greenwood, Franklin and Bargersville have plans for sidewalk and trail extensions throughout their communities. Adjacent counties also have plans including potential connections into Johnson County. Notably, both Marion and Morgan County have plans reflecting future trail corridors along the White River that could connect to Johnson County within the study area. Concurrent with this I-69 corridor plan, Johnson County is beginning the process of creating a county-wide trail, bicycle and pedestrian plan.

Public Transit

Access Johnson County is a bus or van system that provides transportation to all users within its route system. Vans for handicapped individuals scheduled in advance. Access Johnson County has predetermined routes, primarily along US 31, including a Greenwood east/west connector and a Franklin east/west connector. This transit system does not currently have a pre-determined route west of SR 135 into White River Township.

The IndyGo bus system of Marion County has service areas south of Marion County into Johnson County by its Green and Blue line; however, it does not extend its services west of SR 135.

Johnson County Senior Services is a system for elderly individuals serviced by CIRT (Central Indiana Regional Transportation Authority). This service is provided on an as-needed basis and appointments or reservations are required for travel.

Rail

CSX has a short rail line running parallel with SR 135 through Johnson County into Marion County. This short rail line connects regional railroads to each other. Outside of White River Township, a major CSX rail line service runs along US 31, connecting Indianapolis and Louisville, Kentucky.

Air

There are seven airports located throughout Johnson County. The largest of these airports is Indy South Greenwood Airport. With a 5,100-foot runway and a heated hanger, this airport provides fast travel to Indianapolis's major destinations such as Lucas Oil Stadium, Bankers Life Fieldhouse and the Indiana Convention Center. The nearest international airport is the Indianapolis International Airport, located less than 20 miles northwest of White River Township.

EXISTING CONDITIONS SUMMARY

This chapter addressed existing conditions in Johnson County and White River Township, as well as many of the factors that influence the existing transportation network. The projected population and employment growth will increase volumes of traffic White River Township is currently experiencing. Destinations such as schools, airports, library and community assets play a part in the transportation network by influencing connectivity needs via vehicle or walking trails. Future land uses that accommodate the growing housing demand will likely create additional traffic. With this in mind, it is important to analyze the current and future land uses as part of this corridor study. Further land use and development analysis is discussed in Chapter 4.



CHAPTER 4: LAND USE ANALYSIS

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INTRODUCTION

The transportation network within White River Township is highly impacted by the land uses and development types surrounding major corridors and intersections. This chapter will analyze the existing land uses, development constraints, development opportunities and identify appropriate future land uses to ensure the future transportation system can adequately support desired growth.

Major transportation generators, such as intense retail and commercial uses, major employers and locations of new and existing schools, impact the network and were considered throughout this planning process. Much of White River Township and adjacent communities, such as Greenwood and Indianapolis, developed as primarily residential, which significantly affects White River Township's transportation network. According to the Institute of Traffic Engineers Trip Generation Manual (ITE), typical single family residential home generates approximately 9.5 trips per day on local road networks. These trips include commuting to work, school and shopping. The continued residential development in White River Township, as well as anticipated supportive higher traffic non-residential and primary employer development, will continue to create pressure on the local and regional transportation networks.

Key themes identified that impact land use considerations along the corridor in the future include:

- » *A desire to grow primary employment opportunities in the area. Technology industries, research and development facilities, corporate offices and headquarters were identified as desired uses to target for the corridor.*
- » *The strategic development of flood fringe areas to preserve floodplain areas as potential active and passive open space areas. It is necessary to provide connectivity to these areas and other community amenities from existing developed areas.*
- » *A mix of residential use types and densities within the corridor. Single-family detached dwellings will likely dominate the landscape of White River Township in the future at key intersections and along major corridors; however, the market may support mixed-density and mixed-use development.*

The 2017 White River Township Comprehensive Plan update established preferred land uses for the majority of White River Township. Areas around the future I-69 corridor were left largely undefined until a detailed overlay analysis was completed for that area. This planning effort is intended to define detailed land uses along the interstate corridor.

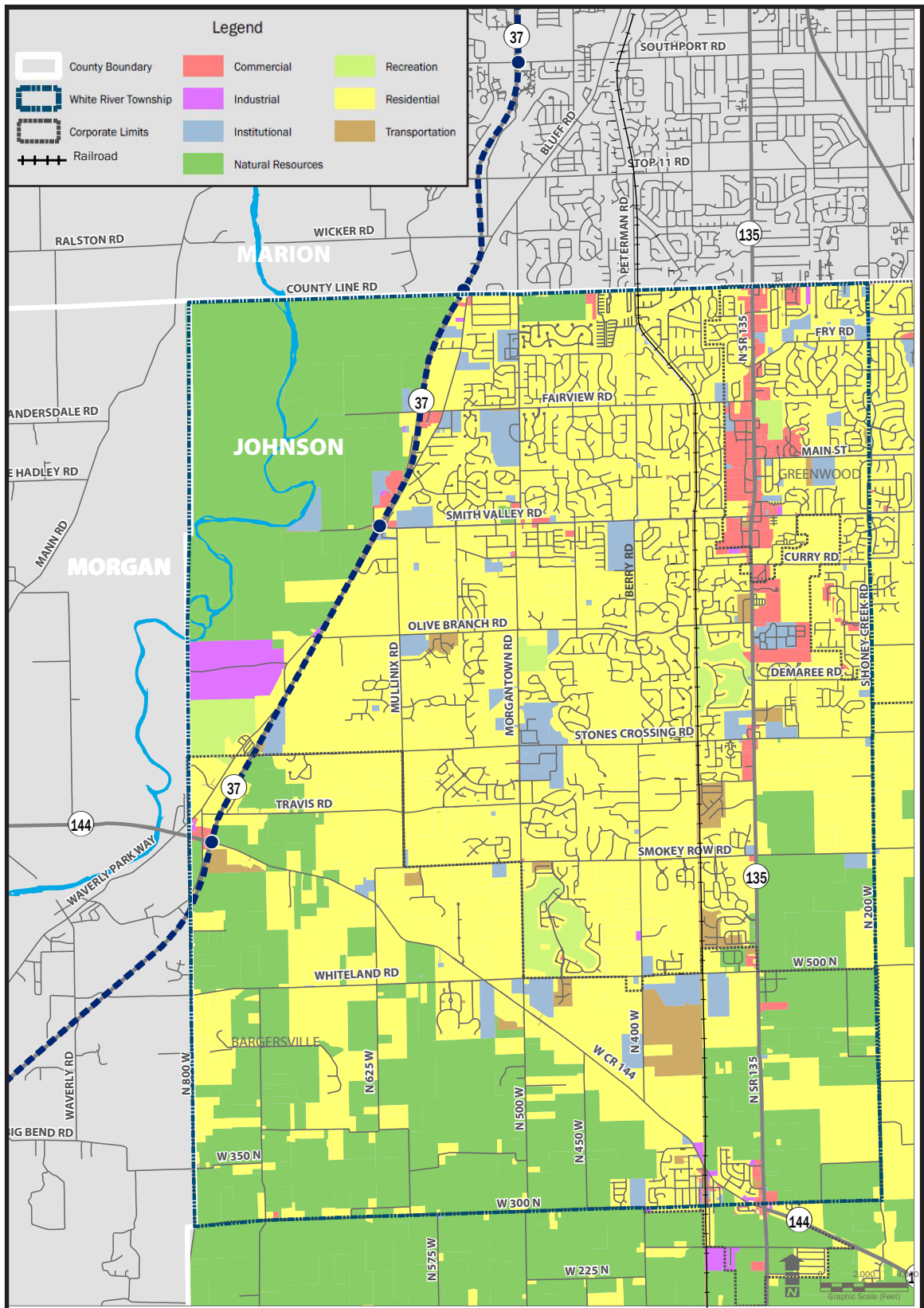
EXISTING LAND USES

Most of White River Township is comprised of single family residential and undeveloped natural resources, as identified in Exhibit B. This land use pattern is typical of the counties surrounding Marion County. As metropolitan growth continues to impact areas such as Johnson County, more commercial and retail uses are likely to locate here to accommodate the single-family residential uses.

Parcels along major corridors like SR 135 are primarily existing retail and commercial uses. These uses include everyday amenities and shopping, such as grocery and hardware stores, restaurants and day care centers. The Smith Valley Road and County Line Road intersections to SR 37 provide a different type of commercial use, as it caters to the highway traffic by providing gas stations, pharmacy and convenience stores. Landscaping and vehicle repair facilities are located here as well. Existing industrial uses are limited to the west side of SR 37 and southwest of downtown Bargersville.

The future land use map within this corridor plan focuses on the town of Bargersville corporate limits and areas not already identified within the 2017 Johnson County Future Land Use Plan, specifically the areas along the I-69 corridor and west of the interstate. The majority of Bargersville's current land uses include agricultural and single-family residential. Commercial and retail uses are located closer to downtown Bargersville, where CR 144 and SR 135 intersect.

EXHIBIT B: EXISTING LAND USE MAP- WHITE RIVER TOWNSHIP



Source: ESRI Mapping

FUTURE LAND USE MAP

Exhibit C identifies the preferred future land use not already identified within the 2017 Unincorporated White River Township Future Land Use Plan. The future land use map includes similar and different classifications from the previous planning efforts from the county and the town of Bargersville. The classifications that differ from previous planning efforts have been updated to better reflect the anticipated development and redevelopment opportunities brought by the future I-69 corridor.

This recommended land use map update was developed from input from a variety of sources, including hydrological and existing development constraints. These land use recommendations are also based on information and insight from the public input meetings, stakeholder and steering committee meetings where preferences were identified.

The focus of this Future Land Use Map is along the future I-69 corridor in unincorporated White River Township and areas within the Town of Bargersville. Details of the types of uses anticipated within each land use category are included following Exhibit F.

Mixed-use classifications may include commercial, retail and mixed density residential uses. The mixed-use classification offers flexibility in what uses may be best suited in the future. As corridors develop, the type of development should not be limited to only retail, commercial, industrial, single-family residential or multi-family residential. Further details are included later in this chapter.

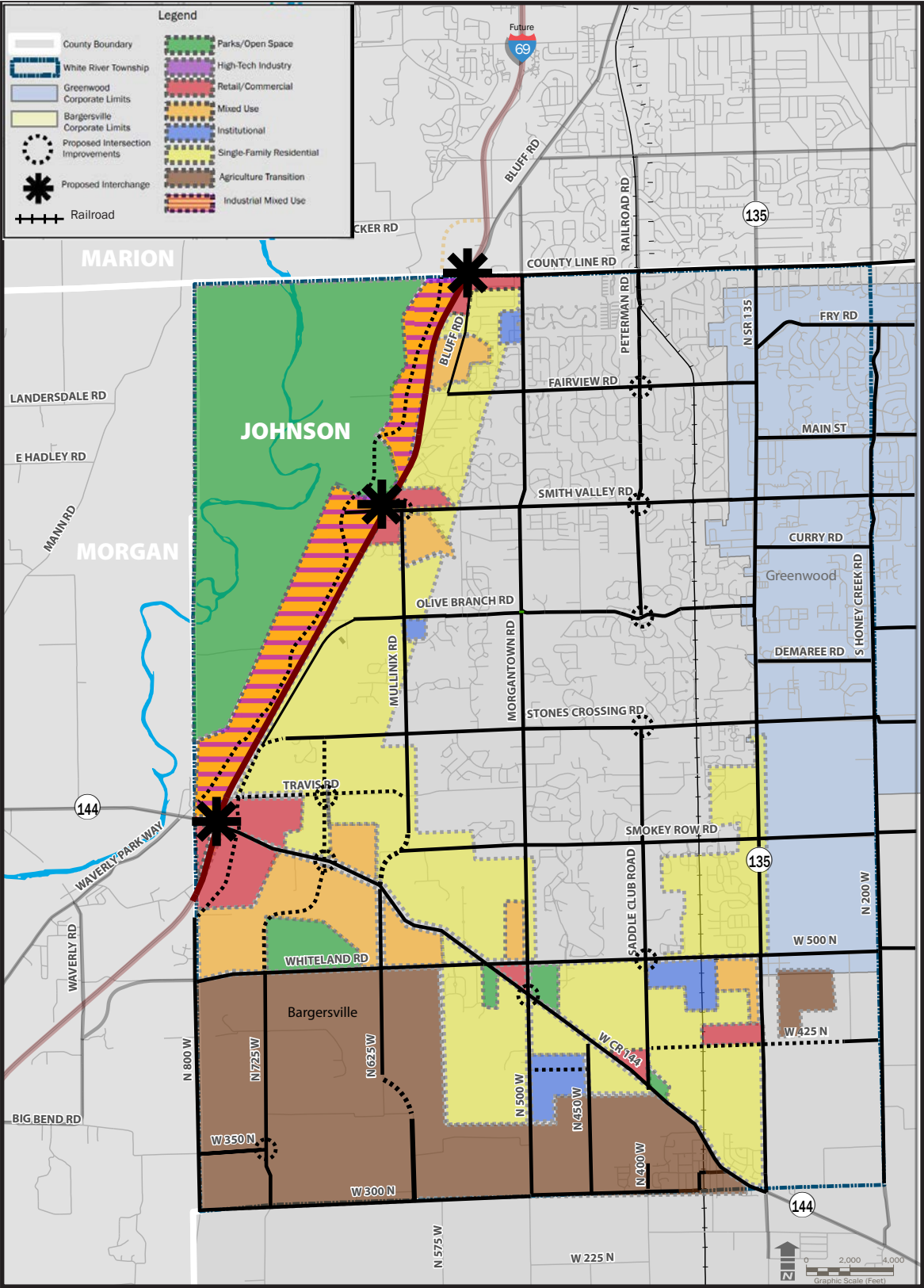
Industrial uses have been identified along the western boundary of the future interstate. This location was identified through the public planning process and is best suited where interstate access is available and buffering is possible from the single-family residential subdivisions. Preferred industrial uses include technology industry, light manufacturing and research and development focused industries.

FUTURE LAND USE CATEGORIES

Some key differences between existing land use maps and the maps proposed in this plan include:

- » *Commercial uses once proposed along the entire CR 144 corridor. Those uses are now limited to key intersection and gateway locations.*
- » *Potential redevelopment scenarios have been taken into consideration where access is proposed to be removed from current SR 37.*
- » *Certain areas of potential floodway fringe areas included in anticipation for possible future mitigation efforts.*

EXHIBIT C: FUTURE LAND USE MAP



*This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.

Parks/Open Space

This classification is intended to identify the areas best suited for parks and open space. With the majority of the northwest corner of White River Township limited to the floodplain and floodway, development of those areas is difficult and expensive. The large parks and open space area indicated in the northwest corner of the township provide potential for a regional attraction to adjacent counties as a nature park and continuing trail along the river. It is important to consider parks and open spaces within the developed areas of White River Township. While most residential subdivisions require common space and open spaces within their development approval, it was noted during the public engagement process that larger parks that provide hiking, biking and recreational sports are desired. By creating these parks, it provides an opportunity for the town of Bargersville and Johnson County to connect these destinations and residential subdivisions by sidewalk or multi-use trail.

Technology Industry

The technology industry uses indicated in Exhibit F are best suited on the west side of future I-69. Because the interstate is intended to drive additional traffic and access from Evansville to Indianapolis, it is likely industrial users will seek sites along the interstate with easy access and visibility. The technology industrial classification varies from the traditional industrial and warehousing that communities oftentimes allow in industrial zones. The technology industrial use is intended to attract technology, science and engineering influenced development and manufacturing. Office uses are also encouraged in this area, especially if they include a headquarters for their respective business.

Retail/Commercial

It is likely that the interchanges along I-69 will develop or potentially redevelop as retail and commercial development. These areas along the interchanges at County Line Road, Smith Valley Road and CR 144 have retail and commercial businesses. The future land use map indicates these uses will likely expand and provide additional retail and business opportunities for convenience and shopping. Retail along Morgantown Road and CR 144 may offer more neighborhood retail amenities, such as grocery and everyday shopping. Areas at the CR 144 interchange should focus on higher end destination retail with a regional focus.

Mixed-Use

This land use classification was created to allow flexibility in the allowed uses of areas within certain areas of the township. Areas along CR 144 will likely develop as neighborhood retail and commercial and mostly mixed-density residential. These uses differ from the mixed-use potential indicated on the west side of the interstate along the frontage road connection. These uses will likely be business and offices, and will accommodate the parks, open space and technology industrial uses in the area. Areas along the interchange at Smith Valley Road will likely include mixed-density residential as well as continued retail uses to the west.

Institutional

It is important to identify and preserve land intended for government or institutional uses. Libraries, schools, fire and police department locations are included in this land use classification. Areas around institutional uses are likely to be single-family residential, but may include limited retail opportunities as well.

Single-Family Residential

The most common land use classification is the single-family residential use. This use is located along the east side of the interstate and along parts of CR 144. Single-family residential does not limit the density of the residential lots within these areas. The respective jurisdiction's ordinances should allow a mix of single-family residential densities, but much of the area may ultimately have relatively low-density development.

Agriculture Transition

The future land use map has updated the natural resources classification, taken from the existing land use map, to a new classification called Agriculture Transition. This classification allows flexibility of development, including single-family residential and agricultural uses. This flexibility allows or permits residential and agricultural uses where they are best suited in context to the overall future land use plans in comprehensive plan documents. The agriculture transition classification is located within the town of Bargersville's jurisdiction, south of CR 144. This area is rural in nature and lacks major infrastructure allowing development to occur today. That said, infrastructure is planned for the area and future development is anticipated. The density of development may be less per acre in these areas than north of CR 144.

Developability Considerations

Development considerations within White River Township are significantly influenced by development constraints. These constraints include both topographical and hydrological issues. While much of the area of White River Township has already developed, future development of the township will be significantly influenced by the ability to overcome some of these constraints. This is a larger issue north of CR 144 than it is south of that corridor. These constraints have impacts along the current SR 37 corridor and within the western part of the township.

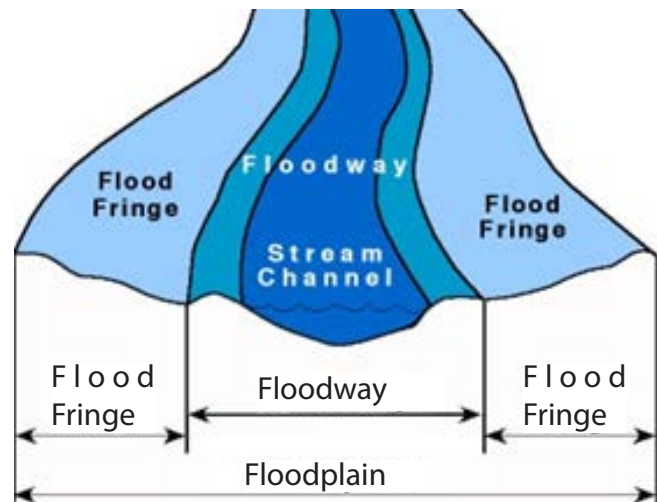
Hydrological Constraints

White River Township's northwestern corner is within the large floodplain created by the White River basin. Flooding in 2017 temporarily closed many local streets and bridges and extended beyond the identified flood fringe areas. Exhibit D identifies the amount of land within this floodplain.

One distinguishing characteristic is the nature of the flood fringe on the east side of SR 37. While a definitive hydrological study would be required to verify, there is some thought as to whether or not SR 37 influences the watershed, thus influencing the flood fringe area on the east side of SR 37. According to the floodplain map in Exhibit D, the floodplain is more pronounced on the east side of the highway. An analysis of watershed and drainage improvements may be warranted at the time of INDOT's I-69 project. It is recommended that ongoing conversations occur between the county and state with regards to this matter prior to the final engineering of I-69 to help mitigate future flood impacts east of the interstate. If any mitigation is possible, it would open up additional opportunities for development for residential and non-residential uses, as well as potentially

lower flood insurance costs to home and business owners.

As shown below, the difference between the flood fringe and flood way is that development can occur with proper mitigation within the flood fringe area, while development is prohibited within the floodway. The floodway is the channel of a creek, river or waterway where any obstruction or structure is prohibited. The flood fringe area is the remaining portion of the flood plain and typically includes a 100-year flood area.

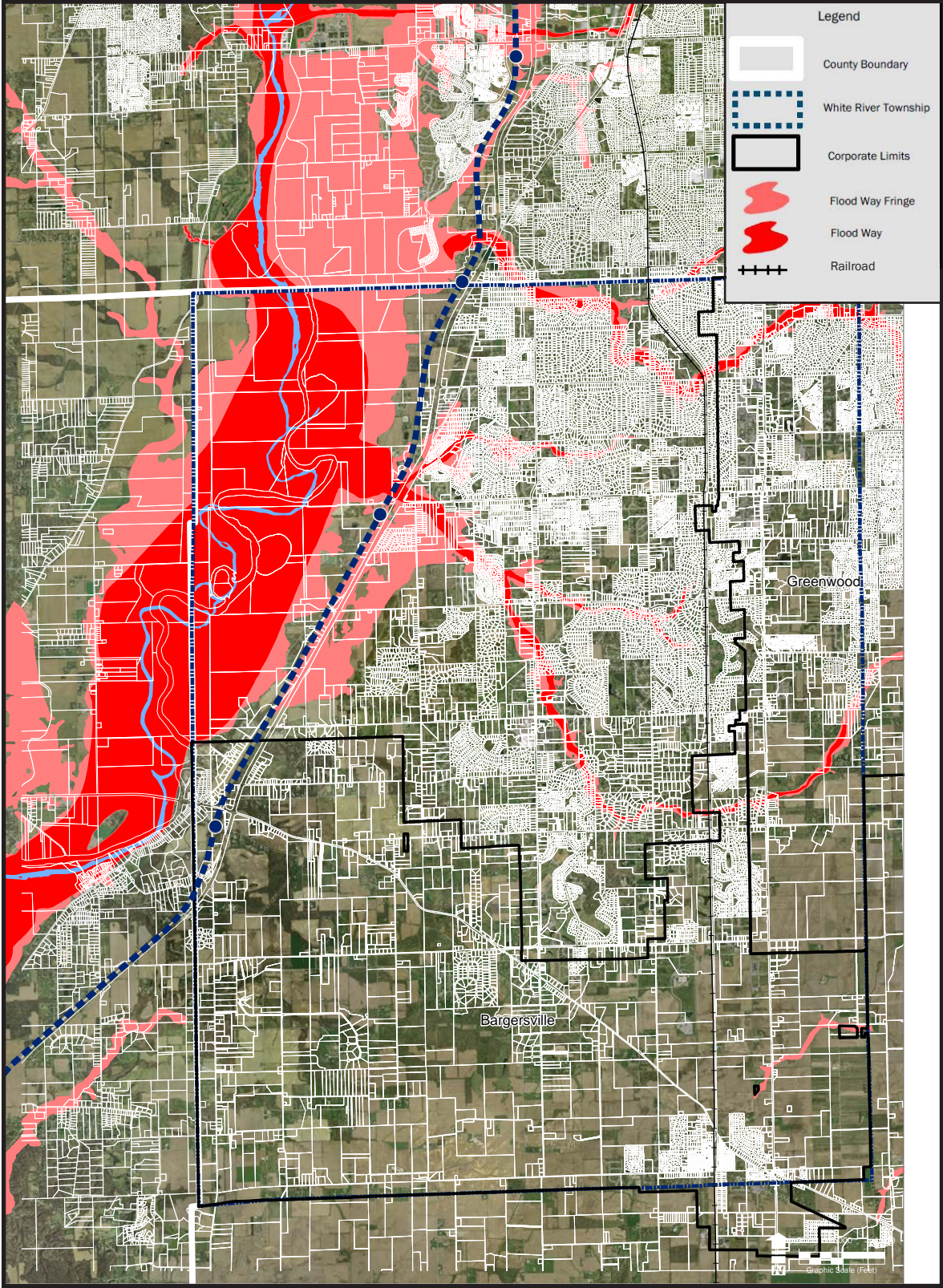


Example of Floodplain classifications

Source: HWC Engineering

Current uses within this floodplain include single family residential, commercial uses and recreational uses, such as golf clubs and baseball fields. A mining quarry is also located on the west side of SR 37 within this floodplain area. While it is not impossible to develop within the flood fringe area, special mitigation and development requirements can become costly. Historically, Johnson County has allowed structures within the flood fringe areas with appropriate mitigation.

EXHIBIT D: EXISTING HYDROLOGICAL CONSTRAINTS



Source: HWC Engineering

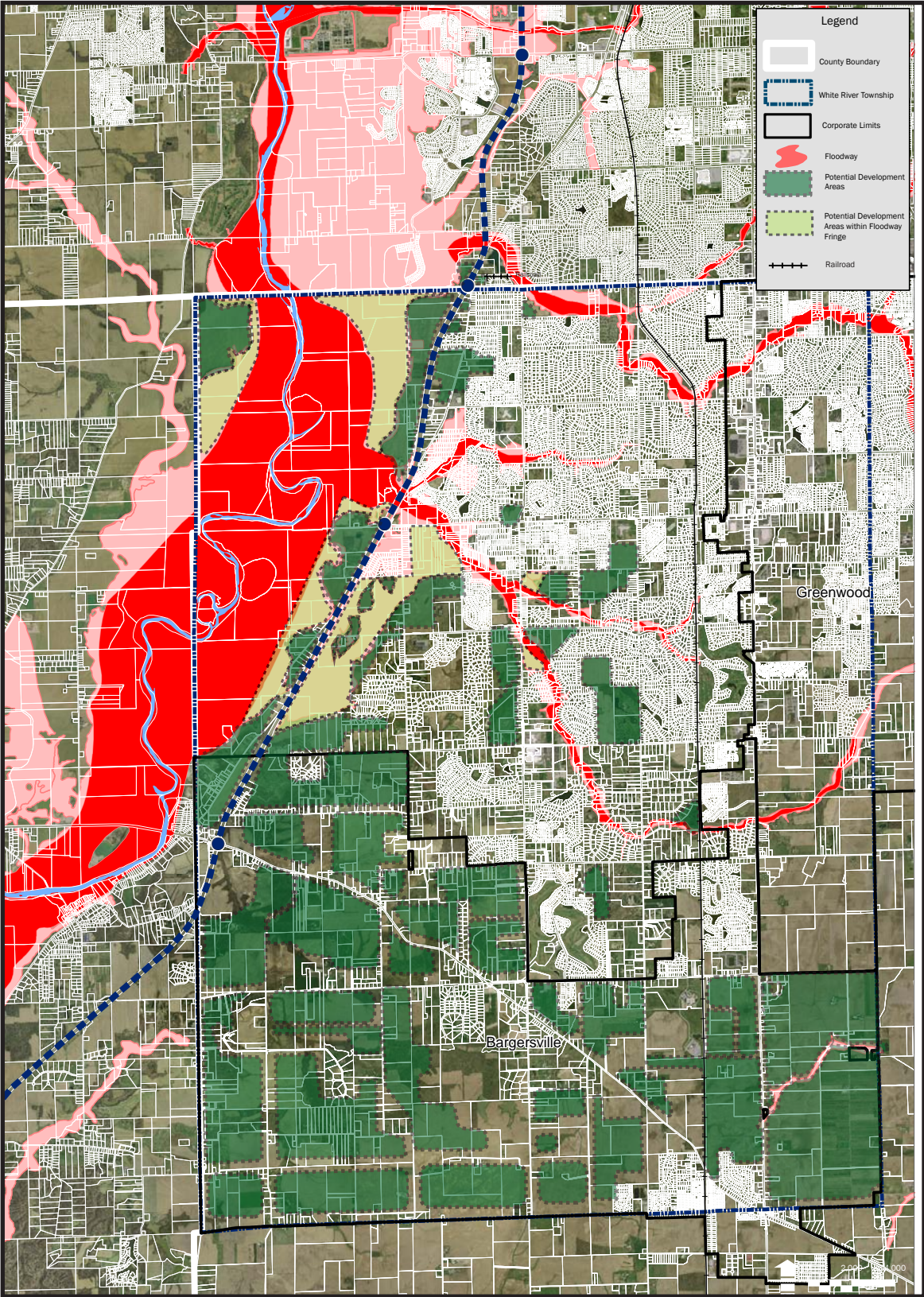
Potential Site Developability

The floodway fringe identified in Exhibit E indicates some areas where properties are either currently undeveloped or underdeveloped. While some sites may prove difficult even with mitigation and may remain undeveloped, others may be able to mitigate environmental elements to be able to develop. Exhibit E identifies developable areas within the flood fringe that may be able to be reclaimed. Some techniques to build within the flood fringe area include flood-proofing the structure, soil fill and elevating the structure. Any type of development within the flood fringe area requires special permitting from IDEM prior to obtaining development approval locally.

While there are circumstances where mitigation should be allowed, and, in some cases, encouraged, this is not the case for all properties within the floodway fringe. Johnson County should discourage developments that will have adverse affects on the floodplain and natural water sources. It is important to consider the environmental impacts of building within the flood areas. Some negative impacts of building within the flood areas include potential flooding of the structure, increased erosion and additional pollution of the waterway.

In addition to the hydrological constraints previously mentioned, some areas within White River Township have significant topographical challenges. Grade differences and rolling hills may affect the developability and connectivity of those sites.

EXHIBIT E: POTENTIAL SITE DEVELOPABILITY



EXISTING DEVELOPMENT SITES

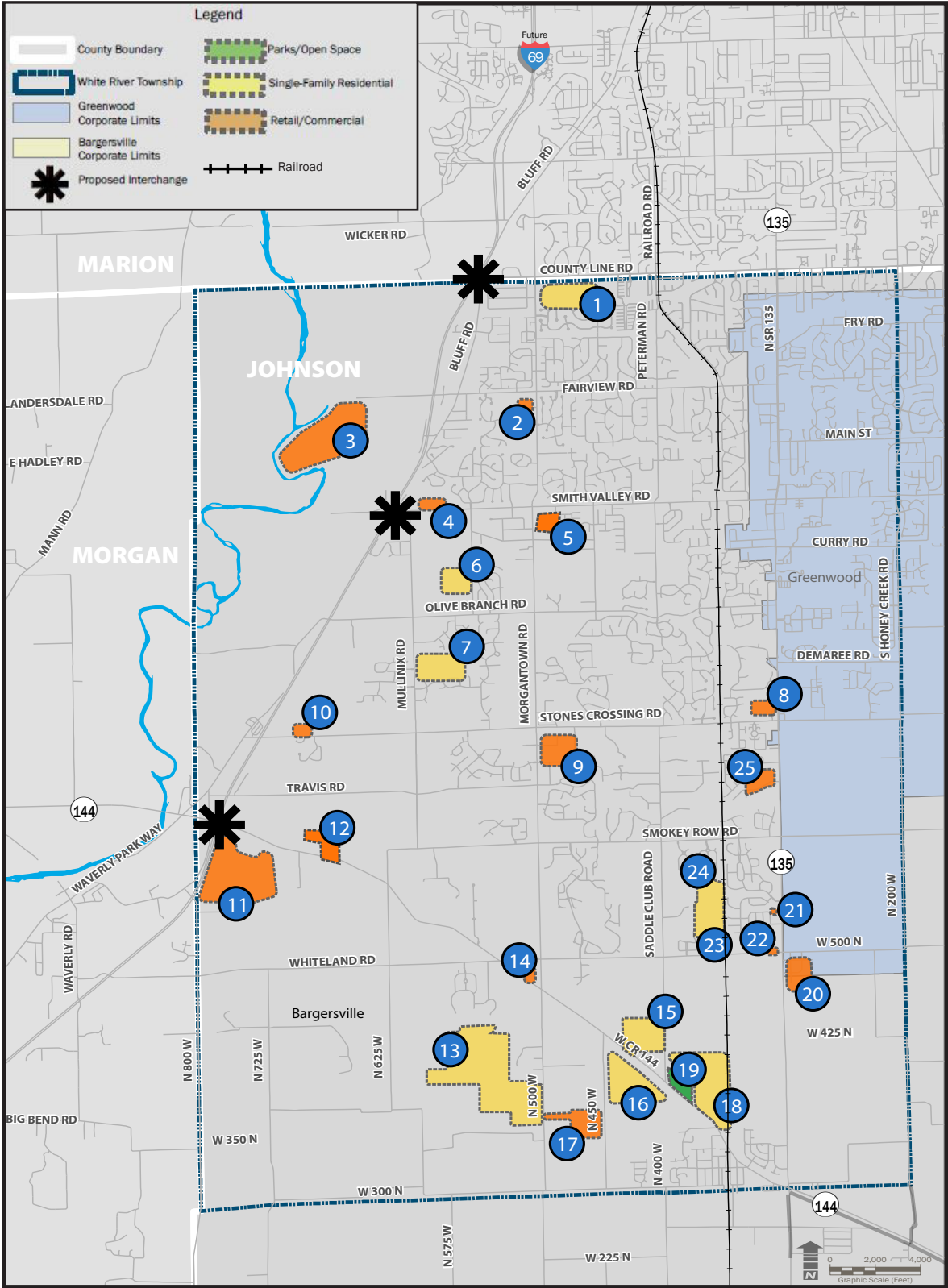
Exhibit F identifies sites that, as of June 2018, have filed application for consideration for development, received development approval or are under construction. These sites show the mix of development types already being approved within the study area. These development types will impact the transportation system by adding traffic and requiring transportation network improvements, both now and in the future.

The majority of projects are classified as residential development. These residential subdivisions include single-family detached residential homes in developments, generally ranging between 20 and 200 lots. These developments will increase traffic volumes on the current transportation network. The ITE Trip Generation Manual indicates each new home adds approximately 10 trips to the road network daily. A trip includes activities such as going to school, work and shopping, as well as traveling home. Other factors such as school buses, mail delivery, garbage collection, etc.

The institutional sites indicated in the list of development projects in Table 1 includes municipal buildings such as a new fire station headquarters and a new elementary school. New schools have significant impacts to the transportation system. Uses around the existing schools within White River Township are residential. Large residential developments around main destinations, such as schools, can create areas of traffic congestion. It is important to consider the location and impacts of these developments to plan for road improvements to accommodate the generated traffic from those uses.

Other commercial developments are either existing businesses expanding their services or new retail development. The commercial projects are equally spread between the county and the town of Bargersville's jurisdictions. Table 2 identifies the existing development project name and type of land use.

EXHIBIT F: EXISTING DEVELOPMENT SITES



For additional details reference Table 1 on Page 58

TABLE 1: EXISTING DEVELOPMENT LIST

Project Number	Project Name	Development
1.	Pleasant Valley Sec 1 (61 lots)	Residential
2.	White River Township Fire Station/Headquarters	Commercial
3.	Martin-Maretta Mining Expansion	Commercial
4.	Southland Church Expansion	Commercial
5.	Christian Brothers Automotive	Commercial
6.	Riley Meadows Sec 1-4 (103 lots)	Residential
7.	Calvert Farms (204 lots)	Residential
8.	Assisted Living Center (60 bed)	Commercial
9.	Center Grove High School Expansion	Commercial
10.	Stones Crossing Church Expansion, Medical Clinic	Commercial
11.	White River Commercial	Commercial
12.	Bohlander Commercial	Commercial
13.	Aberdeen (185 lots)	Residential
14.	Honey Grove Commercial	Residential
15.	Saddle Club (140 max lots)	Residential
16.	Saddle Club South (179 max lots)	Residential
17.	Walnut Grove Elementary	Commercial
18.	Morningside (387 lots)	Residential
19.	Kephart park	Park/Open Space
20.	South Grove Landing	Commercial
21.	Hickman Orthodontics	Commercial
22.	South Grove Commons	Commercial
23.	Wyncrest Sec 2	Residential
24.	Shadowood Sec 2 (30 lots)	Residential
25.	Aspen Trace Phase 2	Commercial

See Exhibit F on Page 57 for a location map of these developments.

POTENTIAL DEVELOPMENT AREAS

To understand the development capacity for the undeveloped areas of White River Township we must identify locations where development is most likely going to occur in the future. Based on a review of development constraints, existing development activity, historical development, and anticipated future market demands, the areas within White River Township most likely to develop in the future have been identified. These areas are identified in Exhibit G and described further in Table 2. The areas include undeveloped properties in unincorporated White River Township, as well as within the borders of the town of Bargersville. Potential development areas within flood fringe areas the greatest likelihood of future remediation opportunities and demand for development were also identified.

Residential: Single-family/Multi-family

White River Township's current and future land uses north of Stones Crossing Road are primarily single-family residential. These are identified in the county's comprehensive plan and, will likely develop as anticipated in the future.

The majority of future residential growth is indicated south of Stones Crossing Road in the Town of Bargersville's jurisdiction. Residential subdivisions include a variety of densities, including 1.5 to 2.5 units per acre for single-family residential. With the amount of undeveloped land along CR 144, it is likely large residential subdivisions will develop south of CR 144. Multi-family residential is also included in the residential land use classification. It is likely multi-family residential will be located within planned mixed-use areas or as a buffer between retail classifications and single-family residential. According to the Indianapolis MPO, White River Township's growth is expected to increase by over 27,000 people by 2045. As people continue to move into Johnson County and White River Township, jobs, schools, shopping, parks and housing developments will need to accommodate them. This growth will

affect the existing transportation network, as each single-family residential development will require egress and ingress to their development. These entrance and exit points should be coordinated when located on any primary corridor.

Commercial/Retail

Commercial and retail uses are currently the prominent land use along SR 135. Public input results show many residents prefer the amenities of restaurants, retail stores and grocery stores the area provides. The number of curb cuts onto SR 135 created traffic challenges and will need to be mitigated in the future.

Bargersville's 20-year conceptual land use plan currently indicates a commercial/retail strip along CR 144. After discussions with stakeholders and the public, it appears limiting retail to certain areas along the corridor may be a better alternative than focusing in one area, like SR 135. These areas should be primarily located at major intersections to accommodate the surrounding residential uses. Areas at intersections, such as Morgantown Road and CR 144, are likely to develop as commercial/retail. The areas along intersections and major internal corridors, such as Morgantown Road and Smith Valley Road, will likely develop or redevelop with neighborhood-oriented amenities. Small grocery stores, offices, clinics and services are anticipated in neighborhood oriented retail and commercial. By spacing out the commercial and retail areas along this corridor, access points for development is easier to manage.

It is also likely commercial/retail will develop closest to I-69, especially at the CR 144 interchange. These commercial/retail developments are likely to be between 10 to 30 acre tracts of land where regional retail such as restaurants, hotels and retail shopping centers are located. Other traditional highway interchange retail, such as truck facilities and adult-oriented businesses, are not desired within White River Township.

Technology Industrial/Commercial

There is a strong desire to increase the number of primary employers within White River Township. These employers may be office-oriented and industrial in nature. Industrial users will likely focus their location efforts along the I-69 corridor. While visibility may not be critically important to potential future industrial users, accessibility to the interstate will be a significant consideration. The preferred industrial uses are technology manufacturing and advanced manufacturing, with a desired focus on technology and research-oriented industries. When these uses are located close to interchanges, the aesthetic components of the facilities need to consider the role interchanges play as gateways into the area.

Tech-based industrial buildings have little to no air, traffic and light pollution and are able to be located alongside uses like restaurants, multi-family residential and recreational facilities. Industrial and commercial uses are likely to range between 25 to 200 thousand square feet to accommodate a variety of industrial users. Areas 2, 5, 12 and 48 in Exhibit G have been identified as areas where industrial buildings would be best-suited within White River Township.

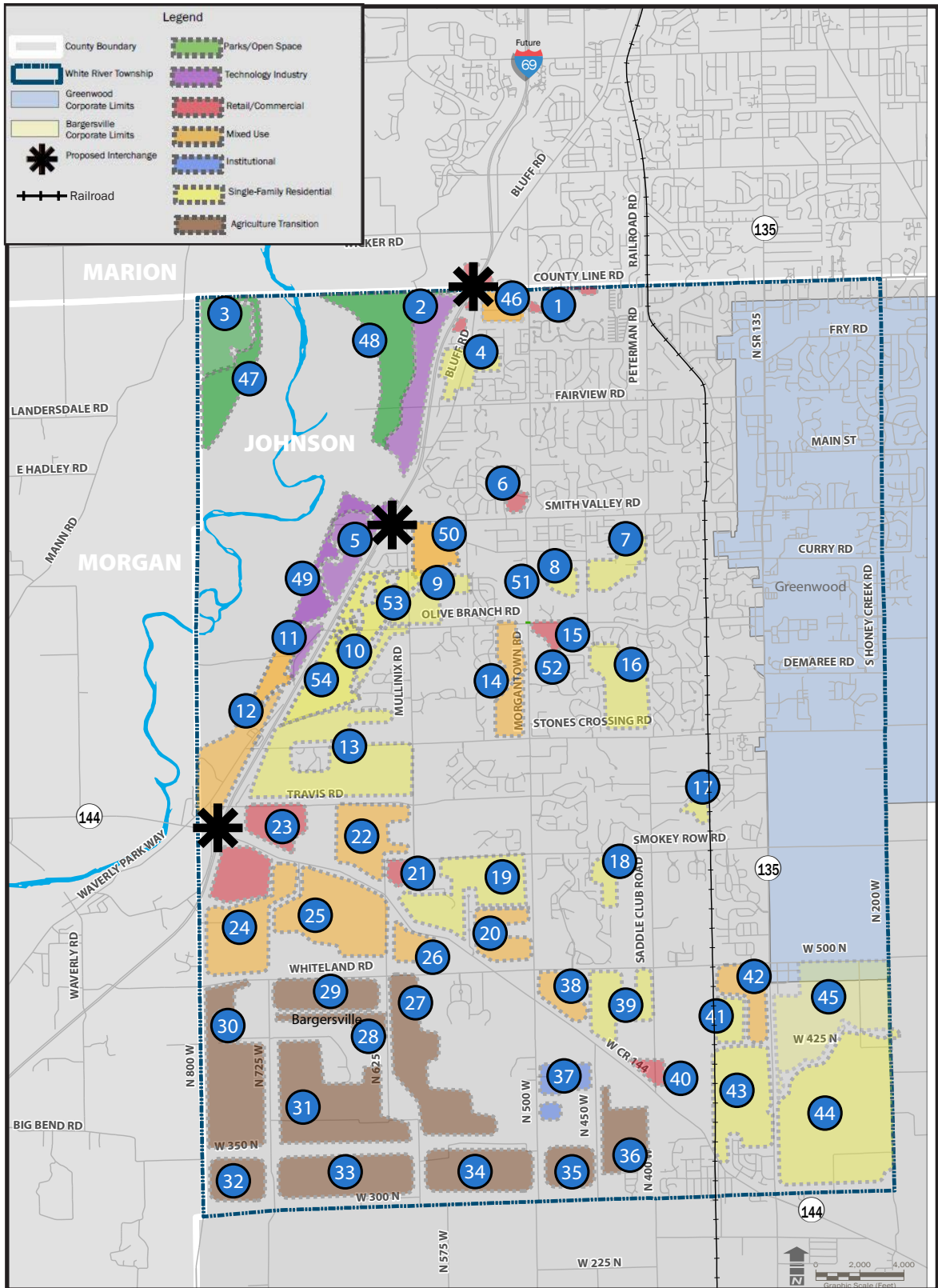
Green/Open Space

Floodplain constraints on the west side of the future I-69 corridor pose development challenges; however, there is an identified need for additional green space and recreational facilities within White River Township. White River Township has an opportunity to be a destination location for recreational opportunities. Likely located on the west side of the interstate, hundreds of acres of floodplain are available for potential park/open space projects. These areas have the potential to create a connection to the White River Whetzel Trace Greenway from Morgan County, as well as the White River Greenway in Marion County, and tie into the proposed I-69 pedestrian crossing at Smith Valley Road. This connection will help tie existing developed areas east of the future interstate to potential westside amenities.

Mixed-Use

The mixed-use areas identified in the potential development areas map allow flexibility of retail, and mixed density residential and commercial uses within these areas. These uses may be blended adjacent to one another or within the same building. Allowing a variety of uses gives the county and the Town of Bargersville flexibility to determine what type of uses should be located on specific corridors or major intersections. Table 2 suggests uses suitable for each of these areas and more detailed descriptions for each mixed-use area Table 2. Each mixed use area is unique and will present different development and redevelopment opportunities. Ultimately each area may have one predominant land use, but flexibility should be offered to potential developers that are interested in submitting creative plans that seek to achieve the goals and objectives of local comprehensive plans or this corridor plan.

EXHIBIT G: POTENTIAL FUTURE DEVELOPMENT AREAS



For additional details reference Table 2 on Page 62 and 63

*The proposed developments are based on projected land uses and actual land uses may change over time.

TABLE 2: POTENTIAL DEVELOPMENT AREAS LIST

Area	Land Use Classification	Approximate Acreage
1.	Residential	10
2.	Industry	50
3.	Park/Open Space	115
4.	Single-Family Residential	60
5.	Industry	45
6.	Retail	10
7.	Single-Family Residential	70
8.	Single-Family Residential	11
9.	Single-Family Residential	60
10.	Single-Family Residential	15
11.	Industry	15
12.	Mixed-Use (Light Industrial, Office, Retail)	130
13.	Single-Family Residential	390
14.	Mixed-Use (Neighborhood Retail, Office, Mixed-Density Residential)	110
15.	Retail	20
16.	Single-Family Residential	90
17.	Single-Family Residential	5
18.	Single-Family Residential	30
19.	Single-Family Residential	350
20.	Mixed-Use (Neighborhood Retail, Office, Mixed-Density Residential)	40
21.	Retail	15
22.	Mixed-Use (Retail, Mixed-Density Residential)	250
23.	Retail	160
24.	Mixed-Use (Office, Technology Industry, Mixed-Density Residential)	240
25.	Mixed-Use (Retail, Office, Mixed-Density Residential)	350
26.	Mixed-Use (Mixed-Density Residential)	110

See Exhibit G on Page 61 for a location map of these developments.

TABLE 2: POTENTIAL DEVELOPMENT AREAS LIST (CONT.)

Area	Land Use Classification	Approximate Acreage
27.	Single-Family Residential	350
28.	Single-Family Residential	40
29.	Single-Family Residential	230
30.	Single-Family Residential	550
31.	Single-Family Residential	310
32.	Single-Family Residential	130
33.	Single-Family Residential	300
34.	Single-Family Residential	230
35.	Single-Family Residential	130
36.	Single-Family Residential	180
37.	Single-Family Residential	140
38.	Mixed-Use (Retail, Mixed-Density Residential)	60
39.	Single-Family Residential	190
40.	Retail	25
41.	Single-Family Residential	65
42.	Mixed-Use (Retail, Mixed-Density Residential)	145
43.	Single-Family Residential	230
44.	Single-Family Residential	760
45.	Single-Family Residential	340
46.	Mixed-Use (Retail, Mixed-Density Residential)	10
Land Uses within Floodway Fringe		
47.	Park/Open Space	100
48.	Park/Open Space	180
49.	Light Industrial	110
50.	Mixed-Use (Neighborhood Retail, Mixed-Density Residential)	70
51.	Single-Family Residential	10
52.	Single-Family Residential	15
53.	Single-Family Residential	160
54.	Single-Family Residential	150

See Exhibit G on page 61 for a location map of these developments.

Mixed-Use Areas

The following areas are classified in Exhibit G and Table 2 as mixed use areas. Each of these areas has the potential for different uses specific to the area and context of development around them. Proposed developments in these districts should be reviewed/considered independently and in the context of surrounding areas. The following descriptions offer broad guidelines for the foundational land uses in these areas, but should not prohibit appropriate alternatives.

Area 12

This area is located on the west side of I-69 between the undevelopable floodplain area and the highway. Because of its location, this area is likely to be attractive for office and industrial uses. A small amount of retail is also likely here closer to the CR 144 interchange. Area 12 is ideal for industry, as it provides easy access to the interstate. This industry should be focused on technology manufacturing, research and development and headquarters facilities.

Area 14

Located on Morgantown Road, between Olive Branch Road and Stones Crossing, neighborhood retail, some office, but mostly mixed-density residential is desired along this major corridor. Surrounded by existing residential neighborhoods, this area is likely to provide neighborhood retail, such as small grocery, shops and restaurants. Uses such as these will accommodate different densities of residential. This may include town homes, medium density attached residential and traditional single-family residential. Buffers will be important as new uses transition to existing development.

Area 20

Located on Morgantown Road, Area 20 is located in close proximity to CR 144, Whiteland Road and

Morgantown Road. Because of this highly visible location, neighborhood retail, office and mixed-density residential are preferred land uses. Due to the amount of retail located along CR 144, Area 20's neighborhood retail is intended to support the existing and proposed single-family residential surrounding this area. Retail uses in this area will likely be less intense than the retail uses along CR 144 closest to the interstate.

Area 22

Area 22 is located along CR 144, Mullinix Road and a proposed Smokey Row Road extension to CR144. This area is also highly visible and will likely develop as mostly retail and mixed-density residential. The residential uses in this area will include the single-family detached residential that currently surrounds this area and will provide more dense residential opportunities, including town homes and apartments closer to CR144.

Area 24

Area 24 is located at the southwestern boundary of White River Township. According to Morgan County's future land use plan, areas within the Waverly area, just west of Area 24, are likely to develop as industrial and some residential. Because of this influence, Area 24's proximity to the interstate and surrounding proposed land uses will likely support office, technology industry and mixed-density residential. With significant retail planned at the corner of CR144 and I-69, Area 24 should support that retail with office uses and mixed-density residential. While the mix of residential may have varying densities, the majority of this area will likely be single-family residential, especially south toward Whiteland Road.

Area 25

This area, much like Area 22, is likely to develop with retail and mixed-density residential uses. The retail proposed at the interchange of CR 144

and I-69 will likely expand along CR 144 into Area 25. This area may also include office uses and mixed-density residential. The combination of office and residential provides the opportunity for people to work, live and shop within the same development. However, the bulk of this area will likely be single-family residential especially south toward Whiteland Road.

Area 26

Area 26 is located between CR 144, CR 625-W and Whiteland Road. Surrounded by single-family residential, Area 26 will likely serve as a buffer between the retail and office along CR 144 by including mixed-density residential. The mixed-density residential classification is not limited to apartments and town-homes, but may also include duplex or smaller lot single-family detached homes.

Area 38

Higher volumes of traffic are expected at the corners of Morgantown Road, Whiteland Road and CR 144, where Area 38 is located. Because of this high traffic, retail will be located here as people pass through to shop, eat and commute to work. As one of the smaller mixed-use areas identified in the future land use plan, Area 38 will likely first develop as retail then may accommodate mixed-density residential to buffer existing and future lower density residential areas.

Area 42

Also located within a high-traffic area, Area 42 will likely develop with retail and mixed-density residential at the corner of Whiteland Road and SR 135. Existing retail along SR 135 may continue south into Bargersville. The retail in this area will likely be less intense than the fast-food restaurant and big box retail located north along

SR 135. Area 42 will also support mixed-density residential as a buffer between retail uses on SR 135 and will provide diverse housing types near the elementary school on Whiteland Road.

Area 46

Much like its sister area at Smith Valley Road, construction of the interstate will create mixed-use redevelopment opportunities along County Line Road. This area is expected to have similar buffering requirements and land uses as those described in Area 50. Due to its existing residential nature, redevelopment within this area should include larger tracts of development, rather than spot zoning and small scale commercial development. Consolidation of the residential lots prior to commercial rezoning and development is encouraged to maintain the integrity and respect of the existing development.

Area 50

Smith Valley Road is expected to experience higher traffic volumes and potential redevelopment in the areas along Mullinix Road and Smith Valley Road. Area 50 has been identified as a mixed-use area to accommodate neighborhood retail for the existing residential neighborhoods surrounding this area, as well as provide mixed-density residential to a variety of residential types at this interchange. As this area evolves with the construction of the interstate, it will be important to ensure any redevelopment efforts are sensitive to the existing properties in the area. Extra care must be given when reviewing any new projects to ensure their compatibility with surrounding uses. Buffering and planning will be required to mitigate potential impacts on surrounding property owners.

ADDITIONAL LAND USE CONSIDERATIONS

Several other opportunities must be considered regarding future land use in White River Township. These considerations or policies will help decision makers review development petitions in the future. The development landscape will change over time as the I-69 project is completed. One key to success in maximizing positive benefits of the future interstate to maintain a level of flexibility. This will allow opportunities not yet anticipated to accomplish the community's goals. The following discusses some of these considerations.

Redevelopment Opportunities

Redevelopment pressure will occur along the I-69 corridor, especially at the Smith Valley Road and County Line Road interchanges. Redevelopment is likely not to occur immediately; however it is appropriate to plan ahead for sites along corridors where both residential and commercial estate demands are high. Redevelopment is not limited to only retail and commercial uses- residential opportunities exist along certain corridors, as well. These residential uses may be a mix of residential densities.

Areas identified in the 2017 Johnson County Comprehensive Plan indicate redevelopment opportunities along major corridors. Additionally, because of the I-69 project, changes to access will likely provide redevelopment opportunities along these major corridors. As key intersections and corridors are improved pursuant to this plan, right-of-way will need to be acquired. This right-of-way acquisition may impact parcels by constraining the existing use of future development. Consideration should be given to these remnant parcels on a case-by-case basis to determine if flexibility is warranted in design standard

Corridors likely to experience commercial redevelopment opportunities:

- » *County Line Road from I-69 to Morgantown Road;*
- » *Smith Valley Road from I-69 to Morgantown Road; and*
- » *Morgantown Road from Olive Branch Road to Stones Crossing Road;*

Corridors likely to experience residential redevelopment opportunities:

- » *Fairview Road near the interstate;*
- » *County Line Road near the interstate; and*
- » *Olive Branch Road near the interstate;*

Park and Land Conservation

The steering committee, focus groups and public input events held throughout this planning process highly encouraged preserving land along existing waterways, parks and open space on the west side of the future interstate. Additionally, there is a possibility of creating a master regional trail network adjacent to and including Johnson County. Early discussions indicate this trail may be installed on the west side of I-69. It is recommended the county continues encouraging the design and implementation of this regional trail network. These trails could become a significant regional tourist draw and serve as a great amenity for area resident to enhance quality of place. Open space ground and land used for mining on the west side of SR 37 also offers opportunity for a large regional park in the future. This should be considered as mining operations seek development approval and conditions placed on the use of the property cease. This regional park, with or without the regional train network, could be a tremendous amenity for the area. It will be important to ensure pedestrian connectivity is developed across the

Density

future interstate to support the possibility of this park. It will also be important to develop an active conversation with property owners about their willingness to donate or sell property for the potential park. There are certain tax advantages available for such transactions, which could entice some property owners to move forward. While the community has a plan for this park it is important to have early conversations with key property owners prior to planning for the project.

Development Character

When development occurs along the updated transportation networks within White River Township, it is important to help guide the development in ways that are architecturally pleasing to the community. Some visual preferences were identified in the public engagement process, and details of these items are included in Chapter 7, Corridor Plan.

Gateway Opportunities

With the opportunity to influence and design the new interchanges within White River Township, this planning process also explored design opportunities for the gateways into White River Township and the communities within Johnson County. These gateway opportunities do not only allow guidance to type and design of development. They also allow signage, lighting and landscaping improvements to the look and feel entering the county. Details of these items are also included in Chapter 7.

Throughout this planning process, the public indicated a variety of desired residential densities. Densities for residential uses should reflect the type of development. Duplex or town home developments are typically located in denser subdivisions than single-family residential subdivisions. These areas will likely be located along major corridors or destination areas, such as retail or commercial developments, parks and major industrial areas where people can walk to work, restaurants and shopping centers in an urban setting. Single-family subdivisions may also exceed local zoning standards to attract large lots for home buyers. Instead of trying to attract one type of residential development, the county and abutting jurisdictions should consider offering a variety of residential housing types and understanding the densities within them.

Economic Impact Summary

Based on several forecasts, it is not a question as to whether White River Township will continue to grow, but how fast and by how much. The Indianapolis MPO projects White River Township will grow by more than 27,000 people between 2010 and 2045. The MPO also projects total employment in White River Township may more than double between 2015 and 2045. While these numbers may seem large, analysis of the potential development areas identified in Exhibits F and G indicate that the actual growth potential for White River Township may in fact exceed the MPO's projections at total build-out of the township.

Several factors impact an area's growth rate. Market demands, availability of land, availability of infrastructure and competing markets are just a few of the factors that weigh into potential growth rates. ESRI Business Analyst data project an annualized residential growth rate of 1.51% between 2017 and 2020, which is slightly more robust than the census projected between 2010 and 2016. However, permit activity and market activity have increased significantly over the past five years relative to the period leading up to 2010. The ESRI Business Analyst also projects robust growth in median household income and median home values between 2017 and 2022 for White River Township. This data suggests an apparent upward trend in attractiveness for sustainable residential growth in White River Township.

This residential growth is a strong indicator of the potential for non-residential development within the township. The ESRI Business Analyst identifies that in 2017 there were approximately 1,180 total businesses in White River Township, and these businesses employed nearly 11,500 people. Based on an analysis of SIC (Standard Industrial Classification) codes for all businesses, the majority of businesses in the township are

retail and service-oriented, which represents almost 60 percent of total businesses with nearly 72 percent of employees. Finance, insurance and real estate markets represent another 14 percent of total businesses and 10 of employees, while construction represents nearly 11 percent of businesses and 6% of employees. Manufacturing represents only 2% of total businesses and just over 2% of the employment base within White River Township.

The ESRI Business Analyst also provides a retail marketplace analysis discussing surplus and leakage across a variety of retail industry sub-sectors. A surplus indicates an overabundance of retail opportunities compared to the relative spending of individuals within the township. When leakage occurs, individuals are forced to look outside of White River Township for relative goods and services. According to the ESRI Business Analyst, there is leakage across virtually all retail sub-sectors within White River Township. While some of these individuals are choosing to seek goods and services in other areas throughout Johnson County, such as the US 31 or I-65 corridors, others are seeking these goods and services outside of the county. Regardless, this leakage factor identifies an opportunity for potential non-residential development, especially in retail and service establishments.

Future market demand for light industrial, research and development and advanced manufacturing opportunities within White River Township is less clear. With the projected growth of a relatively highly educated workforce in the township, there would be a pool of employees to support this kind of development. These uses have never been a strong focus of the overall economic development attraction policies for White River Township. However, feedback

received from the public indicates a desire to focus efforts of business attraction on these primary employment opportunities. With the combination of improvements planned at limited access locations along I-69, future availability of utilities to service these areas, available workforce to support these business, and an aggressive focus on attraction policies, it is possible White River Township could successfully attract technology-oriented industrial users to the interstate corridor.

The potential development areas of Exhibit G identified several developmental opportunities including residential and non-residential uses. As mentioned previously, the Indianapolis MPO projects a population increase for White River Township to nearly 68,500 people by 2045. Assuming a gross density of two (2) units to the acre, while also factoring in the residential development potential of the areas identified in Exhibit G, it would appear total build-out could reach closer to 78,200 people. Some areas of White River Township have developed with a greater density per acre, which presumes total build-out of the areas identified as potential development areas for residential development. Similar build-out analysis of the areas identified for future retail and office development indicate the possibility of more than 1.5 million square foot availability on approximately 160 acres.

Also identified within the plan are approximately 320 acres of potential industrial development on the west side of the future I-69. A series of activities would be required to activate this industrial property, including mitigation of floodway fringe areas and expansion of necessary utilities to those locations.

LAND USE ANALYSIS SUMMARY

This chapter analyzed existing land uses and sites where land uses could be best utilized within White River Township. This is because the updated future land use map takes into consideration the changing transportation network due to the construction of the future interstate. The interstate, and its related transportation improvements, will spur development in key areas.

The changes to the land use plan will require updates to policy documents, such as comprehensive plans. It is important to consider the updates to zoning ordinances and corridor overlay districts to encourage a specific type of development in areas. Chapter 7 will expand on the corridor overlay language.

Land Use Recommendations

- » *Update overlay districts and comprehensive plans to reflect the future land use map changes*
- » *Create development design standards for overlay areas to support desired future land uses*
- » *Evaluate local standards for floodway fringe development that may support strategic development and encourage accessibility to future open space.*
- » *Allow a mix of uses and densities along major corridors to support the type and character of development desired in White River Township*
- » *Work with INDOT to reduce the floodway fringe areas on the east side of the future interstate*



CHAPTER 5: UTILITY INFRASTRUCTURE ANALYSIS

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THE IMPORTANCE OF UTILITIES

Utilities, such as water, sanitary sewer and proper drainage, are critical in attracting and retaining development. While low density residential development can function off a well or septic system, commercial, industrial and most residential subdivision developments have higher demand for water and sewer systems as they require more capacity. As expected development and redevelopment will occur at the new I-69 interchanges, and it is important the county and responsible jurisdictions plan for such development. Planning ahead may entail providing essential utility extensions to areas for development interest. For example, small lot subdivisions will require utility access for development approval.

CURRENT UTILITY SYSTEMS

Sanitary Sewer

Currently, the wastewater treatment plant (WWTP) in Bargersville is rated at 1.5 million gallons per day (MGD). Currently, the plant experiences average daily flows of 0.6-0.7 MGD, but peaks of 2 MGD have been observed. The current sanitary sewer service and jurisdiction map is illustrated in Exhibit H. This map shows current interceptor locations, as well as where regional interceptors are proposed within Bargersville, Greenwood and White River Township service boundaries. Lines locations and sizing is also indicated by the different color lines. The plant was expanded seven years ago, so most equipment and operations are still running smoothly. Plant expansion is planned or completion within the next 2 years, as state revolving fund (SRF) paperwork and permits are submitted. The plant will be expanded to accommodate 2.5 MGD.

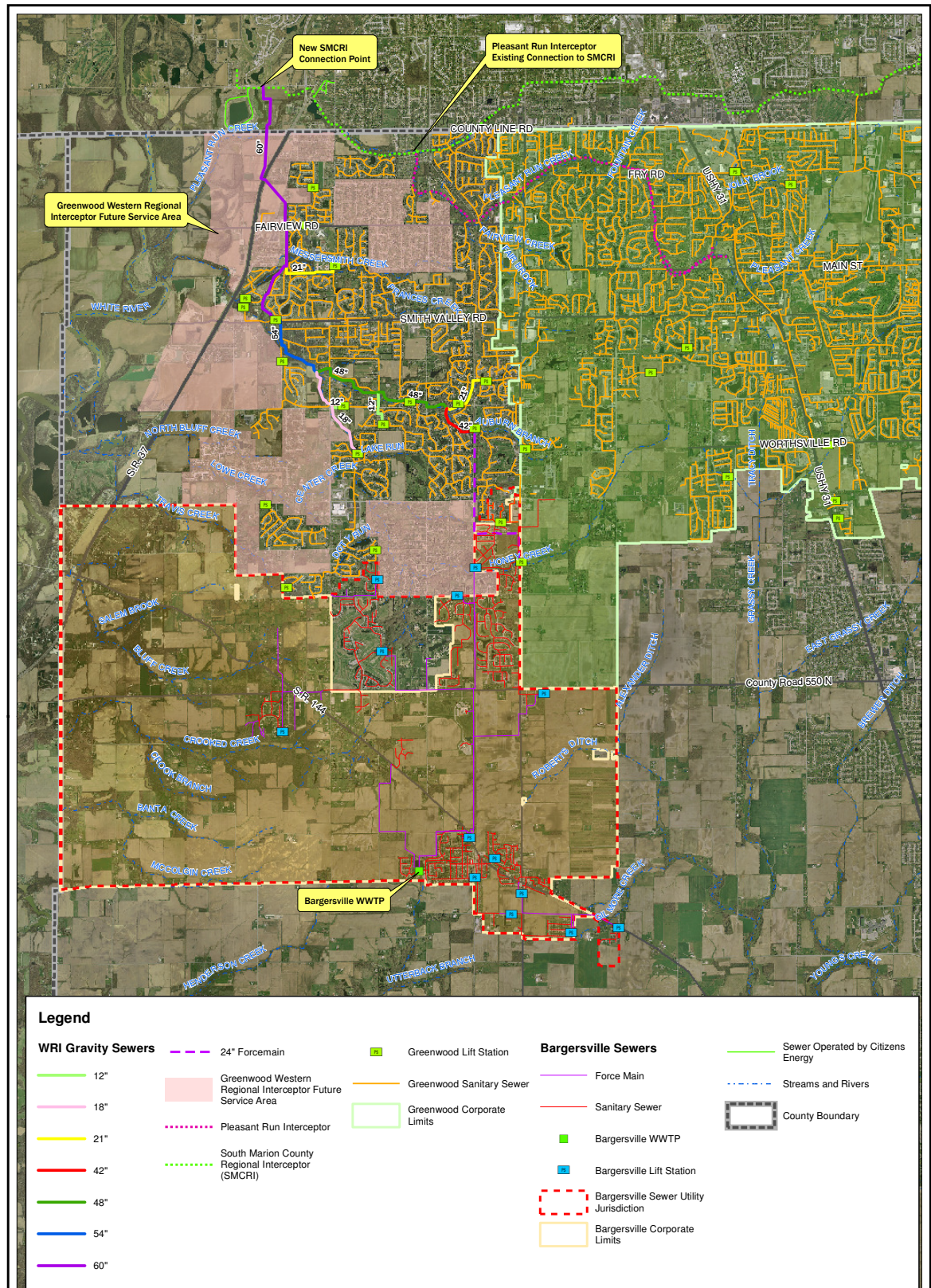
A Sanitary Sewer Master Plan was completed by Strand and Associates for the town of Bargersville in 2015, which included a recommendation to extend sewer service to the SR 37/CR 144 interchange via gravity sewers and associated lift stations. The proposed seven new lift stations near the intersection will feed two force mains running back to the existing WWTP. The plan recommended the town continue using the existing WWTP as development occurs. When sufficient development has occurred, the plan recommended the town construct a new treatment plant, and abandon the present WWTP and associated force mains. The new WWTP

would collect from the town's entire service area, including new development near the study area at a future I-69 interchange at CR 144. These lift stations and associated sewers are shown in Exhibit H.

Given an assumption of approximately two homes per acre and 5.5 square miles (3,520 acres) of developable land, future peak flow rates from new development is estimated to be around 7 MGD. Given these estimates, a new WWTP will be necessary to serve future development around the CR 144 interchange and associated development.

Other future interchanges in the study area, Smith Valley Road and County Line Road, will likely be serviced by the existing Greenwood sewer, and in the future, the Greenwood Western Regional Interceptor (WRI). The WRI is currently being designed by HWC and is planned to be operational by December of 2020.

EXHIBIT H: EXISTING SANITARY SEWER INFRASTRUCTURE MAP



Source: HWC Engineering

Water

Existing water lines in and around the study area are shown on Exhibit I. Bargersville owns and operates two water plants.

One plant is located in Morgan County on Smokey Row Road near the White River and has an associated wellfield consisting of three wells. The plant is rated at 6 MGD and produces water at a static pressure of 140-150 psi. According to plant operators, the plant could double its output with only equipment additions.

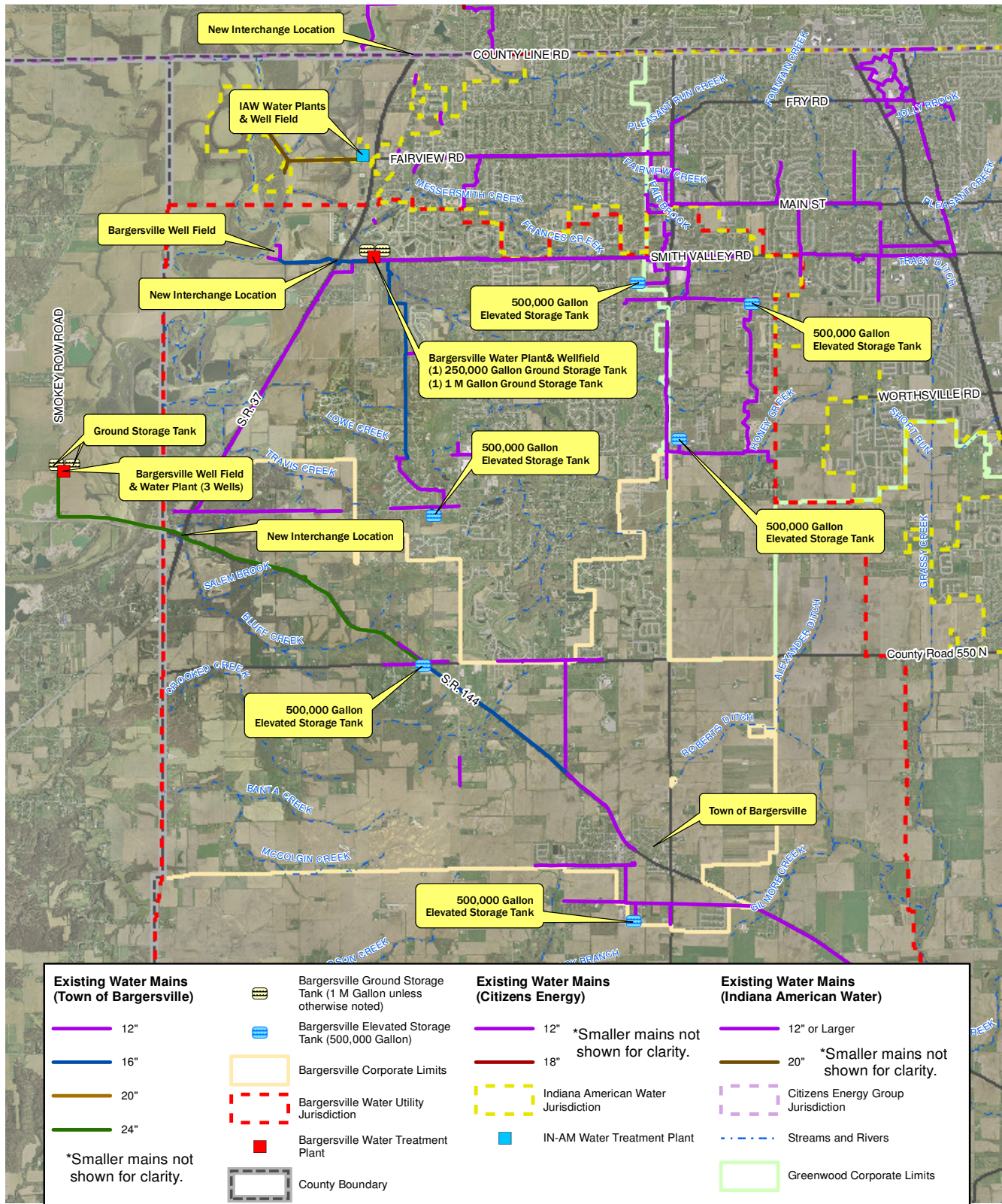
The second plant is located on Smith Valley Road and draws water from two wellfields. One wellfield is west of SR 37 near the White River, and the other is on or near plant property. The plant is also rated at 6 MGD and produces water at a static pressure of 110-120 psi.

Bargersville usually sees pressures of 55-60 psi. Given that the elevation of the town is approximately 60 feet higher than the producing plants, serving the CR 144 interchange with adequate water pressure should not be an issue. The town owns and operates six 500,000 gallon elevated storage tanks, three 1 million gallon ground storage tanks, and a 250,000 gallon ground storage tank.

During winter months, the plants typically have a combined flow of 2.5 MGD, however during the summer months, this flow can reach up to 7 MGD. Together, this information indicates that the system will need additional storage to accommodate higher summertime demands, as development occurs in the study area. However, at the present time, the operators of both water plants are able to meet system demands. Between both plants, Bargersville serves the potential interchange locations of I-69 at both CR 144 and Smith Valley Road.

The other future interchange in the study area, County Line Road, is served by Indiana American Water.

EXHIBIT I: EXISTING WATER INFRASTRUCTURE MAP



Source: HWC Engineering

FUTURE UTILITY IMPROVEMENTS

White River Township is fortunate to have good infrastructure in place in many areas within the township. Especially within the northern half of the township. Areas south of Stones Crossing have good access to water systems, but access to sanitary sewer systems is limited to locations closer to the town of Bargersville. Future water improvements may be initiated by public stakeholders, but it is more likely future work will be driven by private investment. Additional sewer lines, as well as treatment capacity, will be required to support the anticipated growth and development in the southwestern part of the township. This includes the area at the proposed CR 144 interchange within the town of Bargersville's tax increment finance district. Future lift station and interceptor layouts prepared for the town of Bargersville by Strand and Associates can be found in the Appendix of this document.

Discussions are ongoing as to the best methodology to provide sewer service to southwestern White River Township. While a final solution has not been determined as to the most efficient and effective way to provide sanitary sewer service to southwestern White River Township, it is critically important that these discussions continue and that a solution is ultimately identified. The ultimate solution may include public initiation, private initiation or combination of both. Whatever the case, developmental pressure will be increasing along the interstate and at the CR 144 interchange. A timely resolution that serves all parties fairly is in everyone's best interest.



CHAPTER 6: TRANSPORTATION ANALYSIS

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INTRODUCTION

Road networks are one of the most important infrastructure systems within any developed or developing area. The ability of a network to carry both vehicular and pedestrian traffic safely and efficiently is critical to the success of an area.

A unique majority of Johnson County's recent growth is within the unincorporated county, outside of its large cities and towns. White River Township has seen much of this growth and is expected to see continued growth in the foreseeable future. White River Township has experienced significant growth, and road infrastructure projects have not kept up with the pace of development. Within the town of Bargersville corporate limits, significant growth is occurring and expected to continue. For much of this area, the road network remains rural and is not equipped to manage anticipated future traffic volumes. Upgrades and new road connections will be required when planning for the future of White River Township. White River Township's success depends on the transportation network's ability to accommodate the expected increase of traffic and development projected by the Metropolitan Planning Organization (MPO) and Indiana Department of Transportation (INDOT).

This chapter's analysis was focused on the

following key elements:

- » *Existing transportation functional classifications*
- » *Existing traffic count data*
- » *Existing traffic accident data*
- » *Future projected traffic count data*
- » *I-69 interchange alignments and impacts*
- » *Anticipated I-69 improvements*
- » *Future functional classification changes*
- » *MPO planned projects*

CURRENT FUNCTIONAL ROAD CLASSIFICATIONS

Classification Definitions (FHWA)

The Federal Highway Association (FHWA) defines functional classification designations based on the priority of mobility for through traffic versus access to adjacent land. In other words, streets are designed along an opposing continuum to either connect to destinations to carry through traffic. Other important factors related to functional classification include access control, speed limit, traffic volume, spacing of routes, number of travel lanes and regional significance.

Interstates, such as I-69, are the highest classification of roadway. They prioritize mobility and have extremely limited access. Interstates are high speed, high volume and have statewide or national significance. They are planned and maintained by state authorities with federal oversight.

Other Freeways & Expressways look very similar to interstates, but without the interstate designation. These have regional or statewide significance. SR 37 and US 31 in Johnson County are examples of this classification.

Principal Arterials carry high volumes of regional traffic. They serve major cities from multiple directions. In rural areas, they provide connectivity between cities and towns, such as Greenwood and Bargersville. Arterials provide direct access to adjacent land, but may limit the number of intersections and driveways to give higher priority to through traffic. Principal arterials are spaced 1 to 3 miles apart in suburban areas and farther apart in rural areas. County Line Road and SR 135 are examples of principal arterials.

Minor Arterials are similar to principal arterials, but are spaced more frequently and serve trips of moderate length. Spacing of minor arterials is typically 1 to 3 miles in suburban areas and further apart in rural areas. Minor arterials connect most cities and towns and provide connectivity between principal arterials. Stones Crossing Road, Smith Valley Road and parts of Morgantown Road are minor arterials.

Major Collectors gather traffic from local roads and connect them to the arterial network. These shorter trips are usually completed within the county and at lower speeds. They provide a balance between access to land and corridor mobility. Major collectors provide connectivity to traffic generators not already on the arterial system, such as schools, parks and major employers. Olive Branch Road, Fairview Road and parts of Morgantown Road are examples of major collectors.

Minor Collectors are similar to major collectors, but are used for shorter trips. They provide traffic circulation in lower-density developed areas and connect rural areas to higher-class roadways. Portions of Whiteland Road are classified as a minor collector.

Local Roads make up the largest percentage of roadways in the county. Their primary function is to provide access to individual land parcels. Trips are short, lower speeds prevail and cut-through traffic may be discouraged. All remaining roads that are not arterials or collectors are considered local roads. Local roads are not part of the system of roads eligible for federal funding.

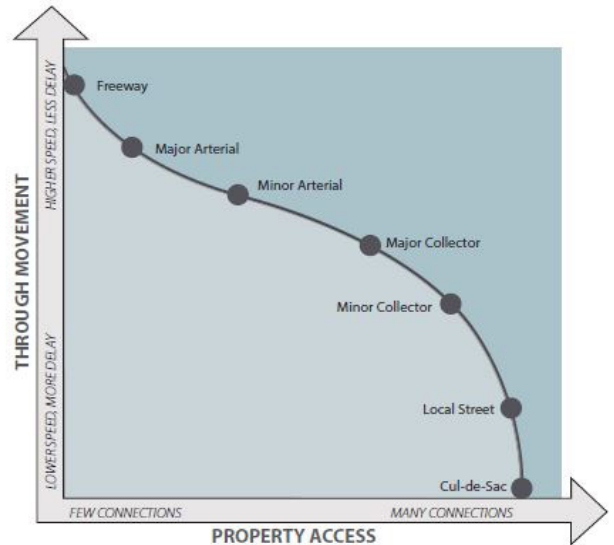
EXISTING ROAD NETWORK

Existing Functional Classification

Exhibit J illustrates the existing functional classification map for roadways currently classified by the Indianapolis MPO and recognized by INDOT.

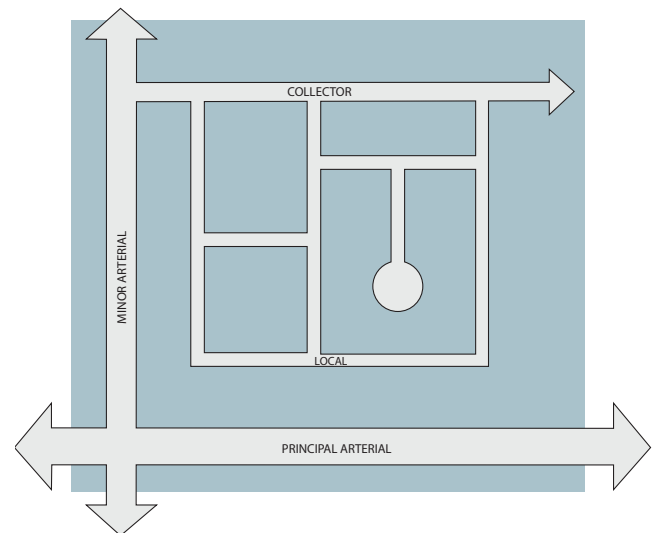
The majority of roadways within the study area are identified as minor arterial and collector roads. The principal arterial roadways include SR 37, County Line Road and SR 135, as indicated in Exhibit J. SR 135 and SR 37 are currently within the state’s jurisdiction, which means any improvements on these major corridors require state permitting approval and are likely initiated with state or federal funding.

The current functional classification map was developed based on current access to SR 37. A majority of the roadway network connecting to SR 37 is within the rural portions of the Town of Bargersville and unincorporated Johnson County. Many of the roadways are unclassified or indicated as local roadways. The current roadway network creates levels of roadways that connect to each other to create a grid or pattern that serves all roadway classifications, including major and minor collectors, local roadways and major and minor arterials. Currently, there are gaps where development has not filled in this network pattern. It is important the county and town of Bargersville plan for this build-out before development constrains the ability to develop the required future networks.



This functional classification diagram illustrates how classifications relate differently to through movements and property access

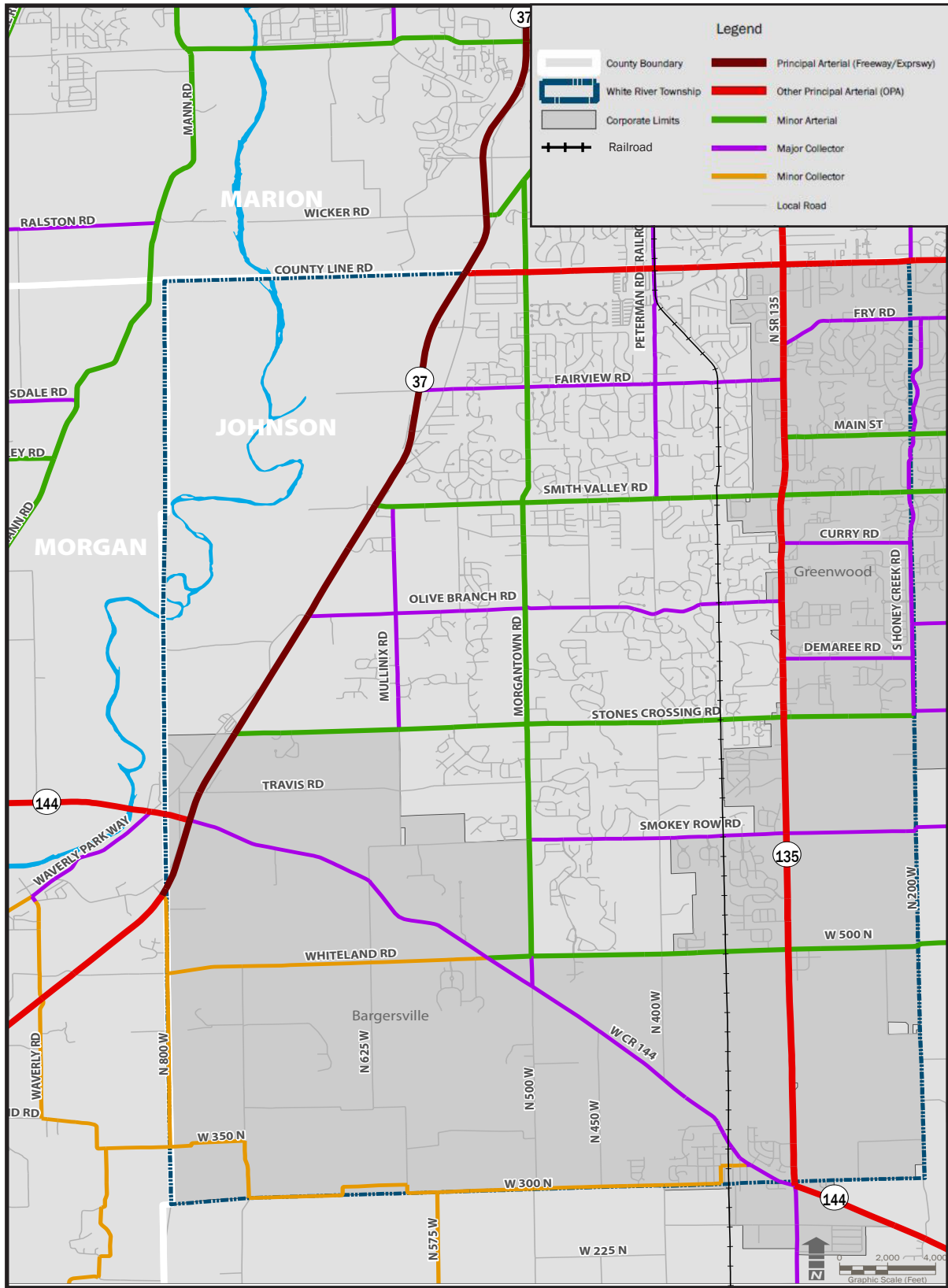
Source: HWC Engineering



Roadway classifications establish a hierarchy, which serve to create a functioning and efficient roadway network.

Source: HWC Engineering

EXHIBIT J: EXISTING FUNCTIONAL CLASSIFICATION MAP



Source: HWC Engineering
 Data Sources: Indianapolis MPO

Functional Classification Street Standards

The standards below represent the right-of-way and number of lanes for each road classification within Johnson County, town of Bargserville and city of Greenwood, according to their current ordinances and regulations.

Table 3: EXISTING ROAD STANDARDS BY JURISDICTION		
Johnson County		
	NO. OF LANES	MINIMUM RIGHT-OF-WAY (FEET)
MAJOR ARTERIAL	4 or 5	130
MINOR ARTERIAL	2 or 3	130
MAJOR COLLECTOR with curb	2 or 3	100
MINOR COLLECTOR with shoulder	2	70
LOCAL ROAD	2	50
Town of Bargserville		
MAJOR ARTERIAL	4 or 5	115
MINOR ARTERIAL	3 or 4	115
MAJOR COLLECTOR	2 or 3	70-80
MINOR COLLECTOR	2	70-60
LOCAL ROAD	2	65-60
City of Greenwood		
MAJOR ARTERIAL	4 or 5	120
MINOR ARTERIAL	4 or 5	100
MAJOR COLLECTOR	2	70
MINOR COLLECTOR	2	70
LOCAL ROAD	2	60

It is imperative to understand the existing functional classifications and how each classification may vary in separate jurisdictions. Improvements to corridors across jurisdictional lines should be consistent to maintain the effectiveness of the corridor’s overall traffic flow. If widening occurs within one jurisdiction, widening should be coordinated with the adjacent jurisdiction. To ensure this is done correctly, it is important to make sure similar right-of-way and proper number of lanes are identified for each of the corridor’s classification amongst all jurisdictions within Johnson County.

Table 3 identifies similar road classifications within White River Township; however, the minimum street standards, including right-of-way and number of lanes for these classifications, differ for Johnson County, the city of Greenwood and the town of Bargserville. Consistency between design standards will help ensure proper right-of-way and lanes are being planned for future expansion or development as roads cross jurisdictional boundaries. As cross jurisdictional projects are proposed, jurisdictions will need to communicate with one another to provide continuity along corridors.

The full 130-foot right-of-way identified in Johnson County’s current standards reflects the roadways within rural parts of the county. As development has occurred in most of the northern section of White River Township, the roadways within those developed areas reflect a suburban development style. As future road networks are planned, it will be critical to ensure this suburban style is reflected in the standards for future transportation projects in northern parts of the township.

EXISTING NETWORK CONDITIONS

Traffic Count Data

Existing traffic data for arterials and collector corridors within White River Township was collected from the Indianapolis MPO in 2017. This data was supplemented by existing traffic count information provided by Johnson County in 2017. A reflection of traffic counts can be found within Exhibit K. A detailed listing of traffic counts by road segment can be found in the Appendix. Currently, significant traffic volume exists along SR 135, County Line Road, eastern sections of Fairview Road, Smith Valley Road, eastern sections of Fairview Road and eastern sections of Stones Crossing Road. These volumes are consistent with what might be expected in most cases given current access to SR 37 and existing development patterns in the area. Moderate traffic volumes currently exist along Morgantown Road, Whiteland Road and Peterman Road. As noted previously, the heaviest traffic volumes exist in the northern half of the township primarily driven by the level of development that exists in that area today.

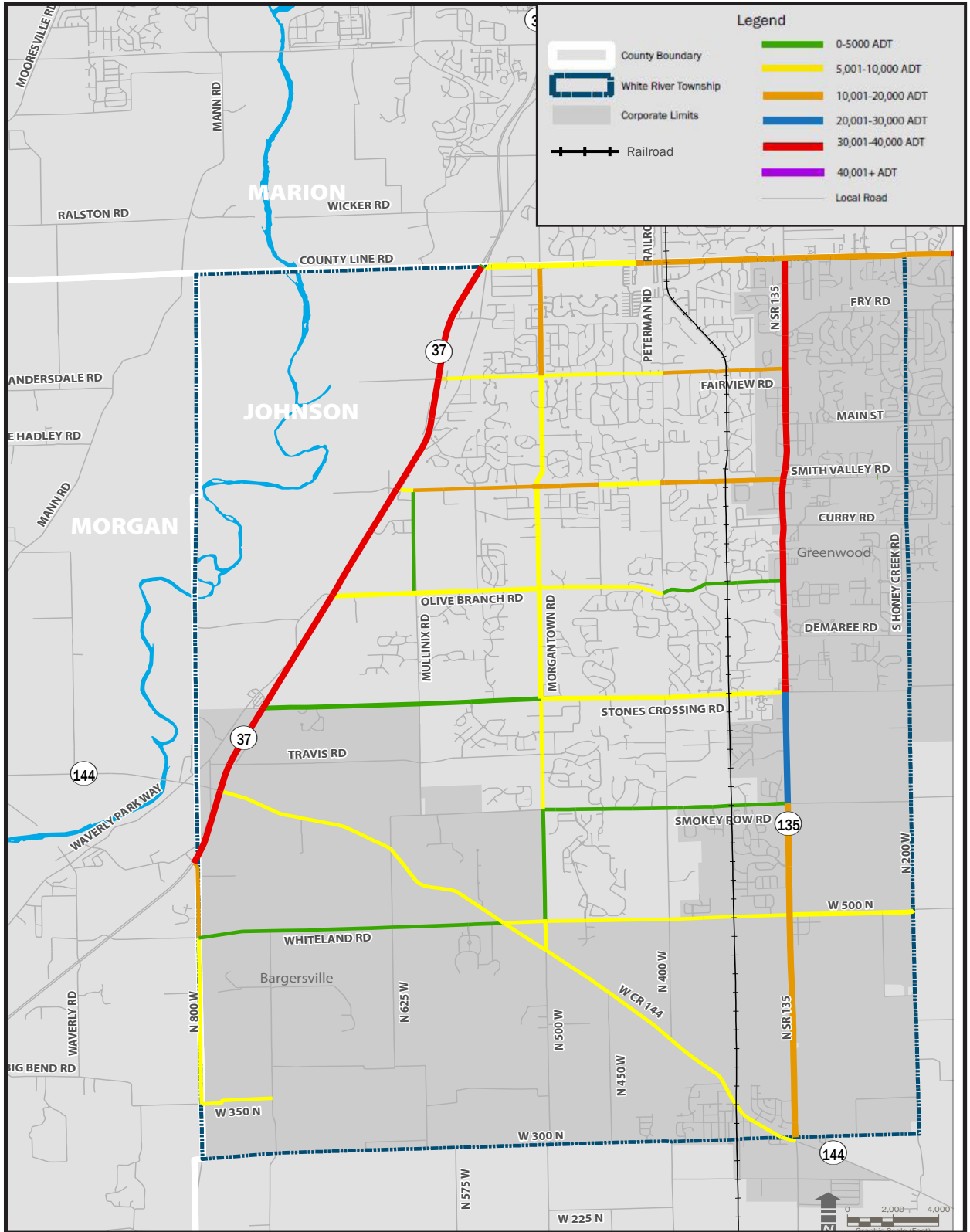
INDOT has identified within its Final Environmental Impact Statement Report for Section 6 of the I-69 project a series of 2010 traffic count numbers for a handful of key corridors within White River Township. INDOT also identified a level of service for select road segments as well. This rating, also known as Level of Service (LOS), uses traffic volumes, roadway geometrics, traffic control through intersections and lane widths to establish an assumption of the affected areas of a road to move traffic. The LOS rating system is based on an A-F rating, with F being the poorest performance measure. Table 5 indicates that, according to INDOT, Smith Valley Road and Morgantown Road currently operate at Level C, while SR 135 operates at level D. Level C indicates a road functioning with some constriction, but often performing at a reasonable level. Level D indicates a level of constriction that falls below what would be considered optimal traffic flow. Given that limited improvements have been made to the road network since 2010, and more recent traffic counts indicate traffic volumes have increased since 2010, an assumption can be made that the relative level of service of these roads has remained the same if not worsened since 2010.

TABLE 4: EXISTING TRAFFIC COUNTS AND LOS RATINGS

Segment		MPO/Johnson County 2017	INDOT 2010 LOS Rating
County Line Road	East of Morgantown and SR 37/I-69	5,577	B
Smith Valley Road	East of SR 37/I69	10,324	C
SR 135	South of County Line Road	35,536	D
Morgantown Road	South of County Line Road	14,710	C
SR 144	East of SR 37/I69	8,300	B

Source: MPO, INDOT Final Impact Statement Report Section 6

EXHIBIT K: EXISTING TRAFFIC COUNT DATA



Data Sources: MPO, Johnson County Highway Department (2017)

Existing Accident Data

As part of this analysis, accident frequency and locations were acquired through the Johnson County Sheriff’s Office’s ARIES database. This data is important as it identifies key locations or intersections of the transportation network that currently experience higher incidents of accident activity. Factors influencing these trends may include;

- » *High rates of speed;*
- » *Topographical issues;*
- » *High traffic volumes;*
- » *Lack of lane widths and shoulder widths; and*
- » *Constrained visibility;*

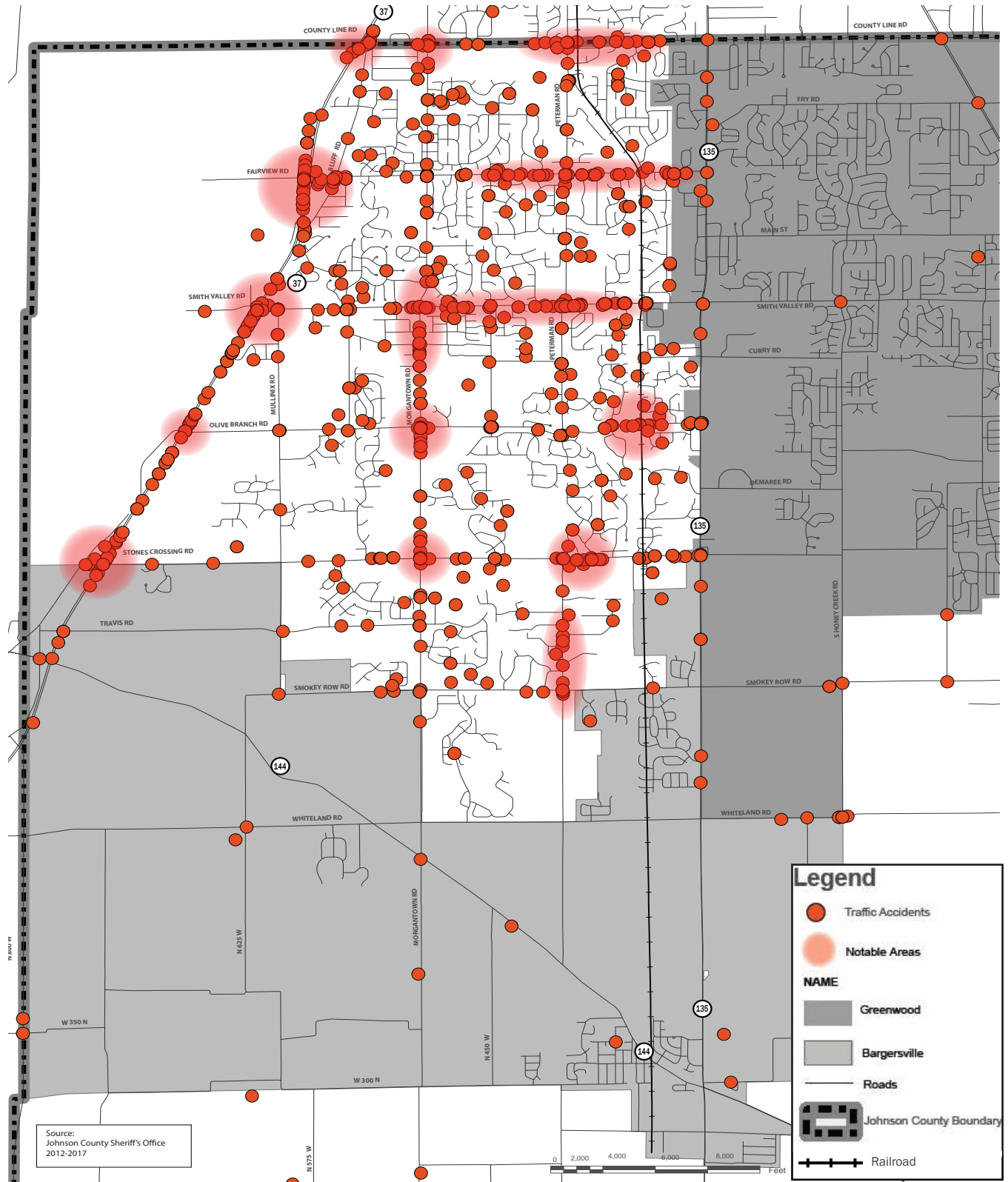
By mapping this data, as seen in Exhibit L, it becomes apparent there are sections of roadways and intersections that may currently need attention to mitigate future occurrences of accidents. Intersections listed in Table 5 may warrant improvements to facilitate a more effective traffic flow especially at peak traffic times.

Upon completion of the I-69 corridor, accident prone areas identified in Exhibit L and Table 5 may change. Depending on supporting road network improvements, these conditions may improve or worsen.

Table 5: Existing High Accident Intersections and Road Sections	
<i>Notable Intersections</i>	
County Line Road & SR 37	
Fairview & SR 37	
Smith Valley Road & SR 37	
Stones Crossing Road & SR 37	
County Line Road & Morgantown Road	
Smith Valley Road & Morgantown Road	
Olive Branch Road & Morgantown Road	
County Line Road & Peterman Road	
Peterman Road & Fairview Road	
Smith Valley Road & Peterman Road	
Stone Crossing & Saddle Club Road	
<i>Notable Roadway Sections</i>	
Smith Valley Road from Morgantown to Peterman Road	
Fairview Road from Morgantown to SR 135	
County Line Road from Morgantown to SR 135	
Saddle Club Road from Smokey Row to Stones Crossing Road	
Olive Branch Road from Morgantown to SR 135	

Data Source: Johnson County Aries Portal

EXHIBIT L: ACCIDENT DATA HEAT MAP



Data Source: Johnson County Aries Portal

Existing Network Challenges

Given the traffic counts in the northernmost section of White River Township, the current roadway network struggles to handle existing traffic on the main corridors, especially at peak times. Current road classifications do not reflect the current usage of the roads today.

Table 6 shows existing transportation constraints, which were identified through input from key stakeholders, data gathered from the public, visual evaluation of each corridor and information provided by the staff and steering committee for this project. These constraints are limited to the existing conditions surrounding the corridors and do not take into consideration future constraints as a result of continued growth and development in the area or planned future improvements to SR 37. This analysis compares current functional classifications to the actual road volumes roads currently experience.

Table 6: Existing Transportation Network Challenges

<i>Route</i>	<i>Current Classification</i>	<i>Constraint</i>
1. CR 144	Major Collector	Functions as major arterial, winding roadway, difficult turning sight-lines
2. N 800 W	Minor Collector	Narrow, no future access to I-69
3. N 725 W	Local	Narrow
4. Whiteland Road	Minor Collector/ Major Collector	Portions function as minor arterial, narrow in areas
5. N 625 W	Local	Narrow, sharp 90 degree turns
6. W 350 N/Big Bend Road	Minor Collector	Narrow, sharp 90 degree turns
7. W 300 N	Minor Collector	Sharp 90 degree turns
8. N 500 W/ S Morgantown Road	Local	Difficult turning sight lines onto CR 144, narrow
9. N 450 W	Local	Difficult turning sight lines onto CR 144, narrow
10. N 400 W/ S Saddle Club Road	N/A	Does not exist currently and breaks up road network
11. N 400 W/ Saddle Club Road	Local	Difficult turning sight line onto CR 144, narrow
12. Smokey Row Road	Major Collector	Narrow, numerous curb cuts without passing blisters, functions as minor arterial from Mullinix to SR 135
13. Stones Crossing Road	Minor Arterial	Functions as major arterial, narrow, no future access to I-69
14. Morgantown Road	Minor Arterial/ Major Collector	Functions as major arterial, narrow in areas, numerous curb cuts without passing blisters
15. Mullinix Road	Major Collector	Functions as minor arterial, narrow, challenging topography,
16. Travis Road	Local	Narrow, no future access to I-69
17. Mullinix Road	Major Collector	Functions as minor arterial, numerous curb cuts without passing blisters
18. Smith Valley Road	Major Collector	Functions as major arterial, narrow, numerous curb cuts without passing blisters, congested intersections
19. Smith Valley Road	Minor Arterial	Functions as major arterial, congested intersections, narrow, numerous curb cuts without passing blisters
20. S Honey Creek Road	Major Collector	Functions as minor arterial
21. Fairview Road	Major Collector	Functions as minor arterial, no future access to I-69, numerous curb cuts without passing blisters, dangerous intersections/ road sections
22. Bluff Road	Local	Functions as minor collector, no future access to I-69, runs through residential subdivision, intersection close to SR 37/Co Line Road
23. West Frontage Road	Local N/W	Missing sections, expected to have interstate access

FUTURE NETWORK CONDITIONS

The continued growth of the area and the construction on I-69 are the two most significant issues facing White River Township. These issues will be examined in the following sections.

I-69 Project Timing

Construction is slated to begin on Section 6 of I-69 in 2020. This section is proposed to run from Martinsville to the I-465 loop through White River Township. Work is projected to begin in Martinsville and work northward. INDOT's revised preferred alternative for Section 6 was updated in February 2018. This final section is expected to have the highest traffic volumes of the entire corridor due to the density of existing housing and development and the expected growth of this area from now until 2045.

Future Access Constraints to I-69

The I-69 project will reduce access to SR 37 from eight existing access points to three proposed access points. It is expected the current road network will struggle to handle the altered traffic patterns, as they presently struggle managing existing traffic flows in some areas. As access is redirected, residents and employees will have to find new routes to work, school and shopping. These routes will likely be the path of least resistance and will congest existing roadways, forcing them to serve traffic volumes well beyond their current capacities. The design of the future roadways is pivotal to the success of the road networks.

New Gateways

Limiting future access creates transportation issues within the area, but it also presents an opportunity to rethink key gateways into the community. While the proposed interchanges are not new access points to the corridor, they will significantly enhance the visibility of areas at County Line Road, Smith Valley Road and CR 144. Through the public engagement process of this plan, it became apparent that there is a strong desire to upgrade the first impression created at these new interchanges. With this in mind, consideration must be given to the aesthetics of the interchanges and the developments around them.

Upgrades will be more challenging at County Line Road and Smith Valley Road as a significant amount of development already exists at those future interchanges. The interchange at CR 144 provides greater flexibility in defining the proper character for the area initially. Preferred gateway design elements and site design standards are discussed further in Chapter 7.

Current I-69 Section 6 Proposed Design

The three segments of the Section 6 project that run through White River Township are illustrated in the following pages. These three segments include Banta Road to Stones Crossing Road, Stones Crossing Road to Fairview Road and Fairview Road to Wicker Road. These segments include the road alignment, pedestrian connectivity, limited access and affected parcel identification. While there may be limited access along I-69, INDOT has shown frontage roads in some areas to provide access to residents and businesses along the corridor.

Banta Road to Stones Crossing Road

Exhibit M identifies the proposed INDOT I-69 improvements from Banta Road to Stones Crossing Road. The proposed interchange at CR 144 is an overpass interchange with a service road connection to Stones Crossing Road. This partial diamond alignment with a loop ramp is intended to serve southbound exiting traffic more efficiently than a full diamond interchange. With service stations, floodplain and existing structures located at this interchange, INDOT opted to move the interchange to avoid moving or removing these structures. An access road is proposed on the west side of I-69 to create a connection between Huggin Hollow Road and CR 144. No similar connection is proposed on the east side of I-69. Regardless of the I-69 project, the area along CR 144 is expected to experience significant continued residential, retail and commercial growth in the future.

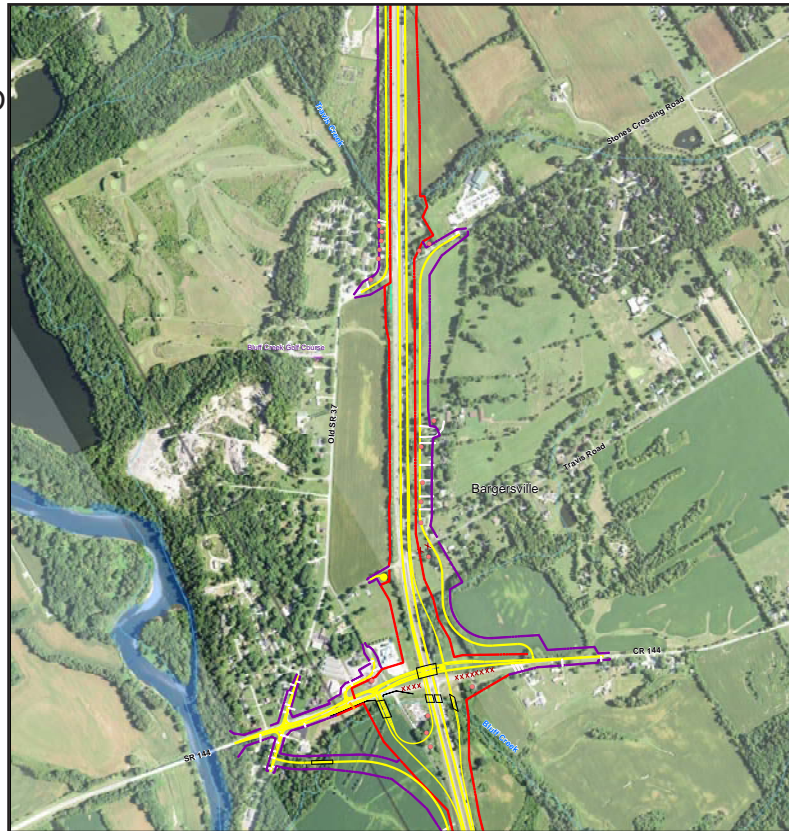
The removal of the current SR 37 intersections at Stones Crossing and Travis Road will change the way White River Township residents, businesses and public safety agencies gain access to I-69 in the future. Instead of an interchange at these locations, INDOT has provided a service road that runs from CR 144 to Stones Crossing Road on the east side of I-69 to provide eastern access to the CR 144 interchange. This service road will likely not accommodate heavy traffic therefore, alternative north/south corridors should be considered. A local service road on the west side of I-69 connecting CR 144 to County Line Road is also proposed.

Table 7: KEY PROPOSED ALTERATIONS

New interchange at CR 144 and I-69
New east-side frontage road from CR 144 to Stones Crossing Road
I-69 access removal at Travis Road
New west side slip ramp from east bound CR 144 to southbound frontage road connecting to Banta Road
Frontage road access on west side of I-69 from CR 144 to Old SR 37
Banta road access removed from I-69
Impacted parcels at Banta Road, CR 144 interchange, Travis Road and Stones Crossing Road

EXHIBIT M: INDOT I-69 SECTION 6 BANTA ROAD TO STONES CROSSING

2 LANES
NORTHBOUND
↓ ↓ ↑ ↑
2 LANES
SOUTHBOUND



STONES
CROSSING
ROAD

TRAVIS ROAD

SR 144 OVER I-69
(INTERCHANGE)

MATCH LINE TO
INDOT MAP #6

MATCH LINE TO
INDOT MAP #6

2 LANES
NORTHBOUND
↓ ↓ ↑ ↑
2 LANES
SOUTHBOUND



SR 144 OVER I-69
(INTERCHANGE)

BANTA ROAD

Source: IN.GOV/INDOT/PROJECTSI-69

Stones Crossing Road to Fairview Road

INDOT proposes an overpass interchange at Smith Valley Road, as illustrated in Exhibit N. This interchange will provide east/west access, as well as ramps. Rather than the traditional stop intersection at ramp terminals, roundabout intersections are proposed. Continued connection to the access road on the west side of I-69 will provide additional north/south access for residents, businesses and public safety agencies.

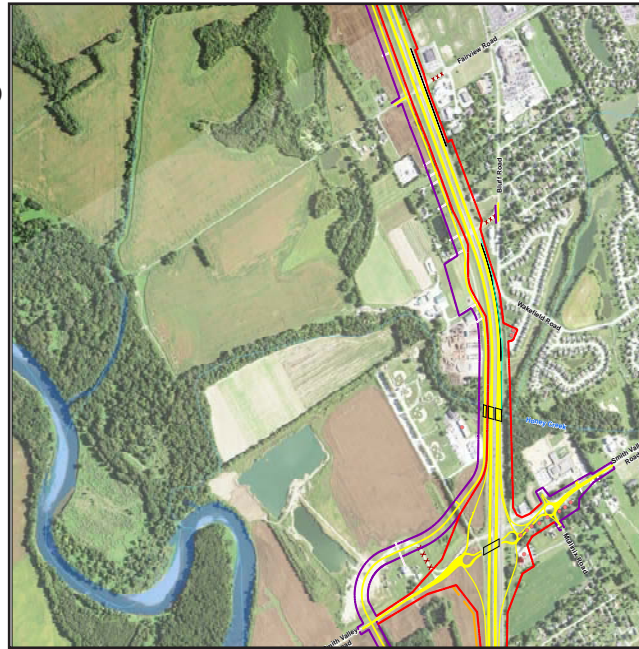
Access at Olive Branch Road is proposed to be removed. A cul-de-sac is proposed for vehicle turn around. There is no connection proposed for the west side service road.

There is concern regarding the properties that line the east side of I-69. INDOT has identified parcels that will likely be directly affected due to right-of-way acquisition for the I-69 project. Among those affected parcels is the White River Township Fire Station Number 53, which is located at the intersection of SR 37 and Smith Valley Road. This station will require relocation.

Table 8: KEY PROPOSED ALTERATIONS
New interchange at Smith Valley Road
New west side frontage road from Stones Crossing Road to County Line Road
I-69 access removal at Stones Crossing Road (east and west)
I-69 access removal at Olive Branch Road (east and west)
I-69 access removal at Bluff Acres Drive (east)
I-69 access removal at Fairview Road (east and west)
Impacted parcels at Smith Valley Road interchange and Wakefield subdivision
Roundabout at Smith Valley Road and Mullinix Road
New intersection at Smith Valley Road and west side frontage road

EXHIBIT N: INDOT I-69 SECTION 6 STONES CROSSING TO FAIRVIEW ROAD

2 LANES
NORTHBOUND
↓ ↓ ↑ ↑
2 LANES
SOUTHBOUND



FAIRVIEW ROAD
BLUFF ROAD
SMITH VALLEY ROAD
OVER I-69 (INTERCHANGE)

MATCH LINE TO
INDOT MAP #7

MATCH LINE TO
INDOT MAP #7

2 LANES
NORTHBOUND
↓ ↓ ↑ ↑
2 LANES
SOUTHBOUND

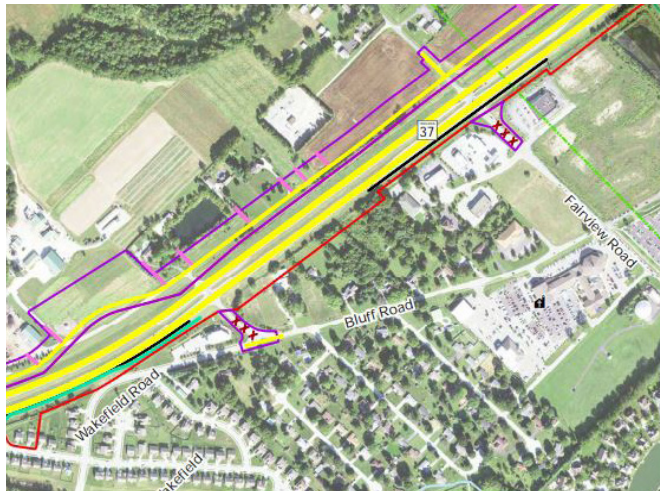


SMITH VALLEY ROAD
OVER I-69 (INTERCHANGE)
BLUFF ACRES DRIVE
OLIVE BRANCH ROAD
STONES CROSSING ROAD

Source:
IN.GOV/INDOT/PROJECTSI-69

Other parcels affected include residential subdivisions, specifically Wakefield. Two residential parcels have been indicated as impacted by INDOT's preferred alignment. The I-69 alignment has been shifted slightly to the east to reduce potential impacts to residential properties. Additionally, Bluff Acres Drive is proposed to lose its access to I-69 as part of the project. This will significantly impact how many residents in the area gain access to the corridor in the future.

With the construction of I-69, Fairview Road is losing its existing connection to both the north and southbound lanes of SR 37. The proposed west side service road will continue north to County Line Road. The Fairview Road intersection currently has a church, medical office, pharmacy, child care facility and other commercial uses that will lose connectivity to the corridor. The loss of current access to SR 37 at both Bluff Acres Drive and Fairview Road creates a potentially significant traffic concern on the east side of future I-69. Currently, both existing residential and commercial traffic utilizes these access points for access to SR 37. With these access points removed, it is likely current and future traffic will find alternative routes to achieve access at either Smith Valley Road or County Line Road. To do so, traffic may begin to utilize Wakefield Road through the Wakefield subdivision as an access point to Smith Valley Road. If unmitigated, this will create a significant traffic conflict through the existing residential area.



Removal of Bluff Road connection
Source: INDOT.gov

The loss of access to the interstate at Fairview Road will make it difficult for the businesses along SR 37 to survive. Many of these businesses specifically target customers from the highway, and without future access, there is concern that current businesses would not remain viable with local access alone. Therefore, it is anticipated these properties may redevelop over time.

The construction of the Smith Valley Road interchange will likely result in pressure not only to improve Smith Valley road to the east, but also to intensify redevelopment interest in the area around the interchange. Based on traffic volumes anticipated for the corridor, it is likely there will be market interest in non-residential development near the interchange.

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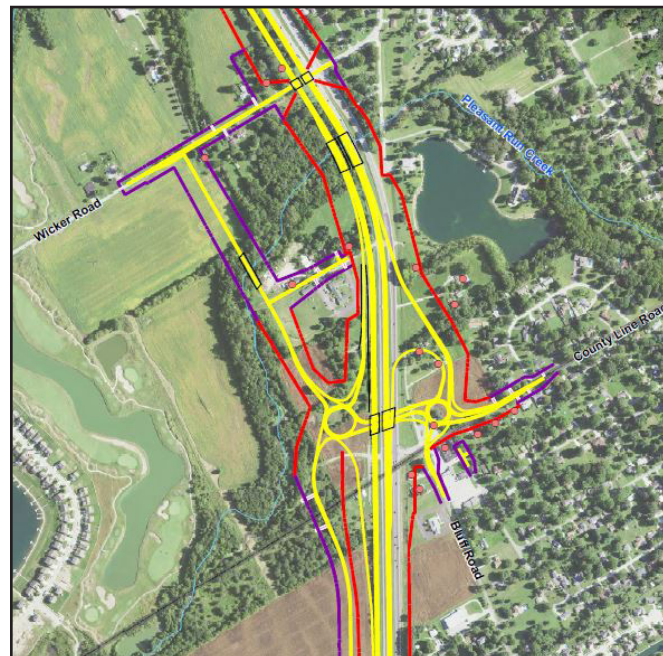
Fairview Road to Wicker Road

The northernmost section of I-69 through White River Township impacts more residential and commercial properties due to the size and orientation of INDOT’s preferred alternatives. To accommodate existing and future traffic, significant improvements will be required to Mullinix Road, Morgantown Road, Smith Valley Road and County Line Road to accommodate the loss of access at Fairview Road, as illustrated in Exhibit O.

The County Line Road interchange will likely be the busiest of the interchanges impacting White River Township, as it serves both Johnson County and Marion County traffic. The interchange has shifted north in an effort to reduce the impact to existing development in Johnson County. While the floodplain on the west side of I-69 within White River Township poses an environmental constraint to future development, flood fringe areas will likely continue to develop in the future with proper mitigation. The area south of the interchange will likely face market pressure for commercial and retail development and redevelopment of existing parcels.

The frontage road proposed on the west side of I-69 will connect residential and future development on the west side of I-69 to this interchange.

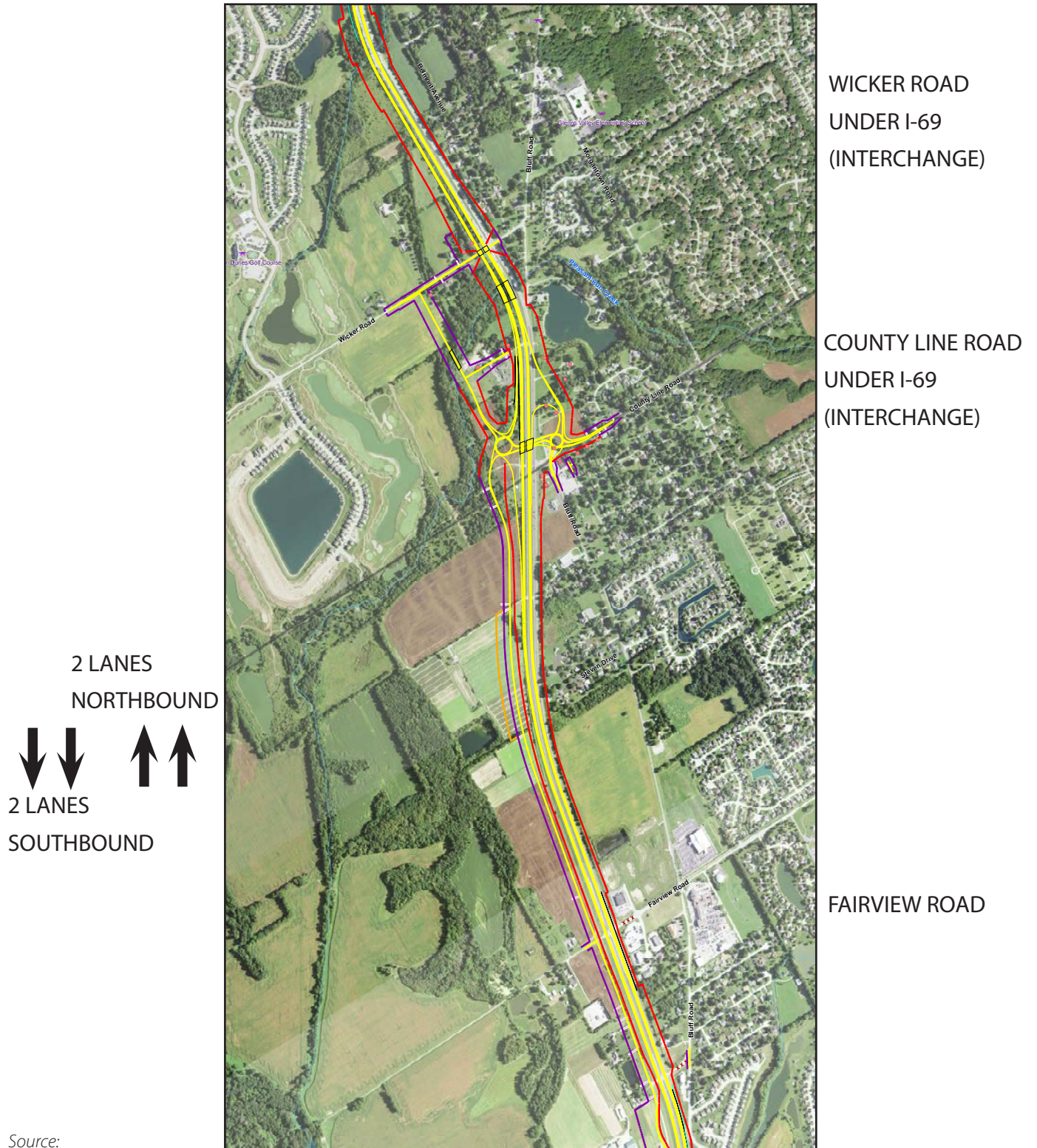
A connection to the proposed Wicker Road overpass on the west side of I-69 has been identified due to lack of connectivity from Wicker Road to County Line Road.



County Line Road interchange detail
Source: IN.gov

Table 9: KEY PROPOSED ALTERATIONS
New interchange at County Line Road
New west side frontage road from Stones Crossing Road to County Line Road
I-69 access removal at Fairview Road (east and west)
New west side frontage road to connect County Line Road to Wicker Road
Affected parcels at County Line Road and Bluff Road (east side)
Affected parcels at frontage road connecting County Line Road and Wicker Road

EXHIBIT O: INDOT I-69 SECTION 6 FAIRVIEW ROAD TO WICKER ROAD



Source:
IN.GOV/INDOT/PROJECTSI-69

Future Traffic Projections

Exhibit P shows the Indianapolis MPO 2035 traffic projections for White River Township. These projections take into account planned future land uses and anticipated growth of residential and non-residential uses within and around the township. This regional traffic model makes assumptions about long-term development patterns and projected growth throughout the Indianapolis metro region. This model also takes into account improvements planned as part of the I-69 project. These considerations include improvements proposed as part of the project as well as the reduced number of access points proposed along I-69. Based on this model, significant growth in traffic volume is anticipated throughout White River Township along and north of CR 144. This includes significant projected traffic

volume on SR 135, Smith Valley Road and County Line Road as they will be the only access points to I-69 after its completion. There is also significant traffic volume projected on Morgantown Road, Stones Crossing Road east of Morgantown Road, and Fairview Road east of Morgantown Road.

The MPO model south of CR 144 does not project significant traffic flow in the future. Based on the analysis completed in the land use section of this document, it appears the MPO's growth projections for this area underestimate the amount of development that will take place by 2035. While the densities in this area may remain lower than those in the northern parts of White River Township, a significant number of homes, as well as non-residential development, is projected in this area.

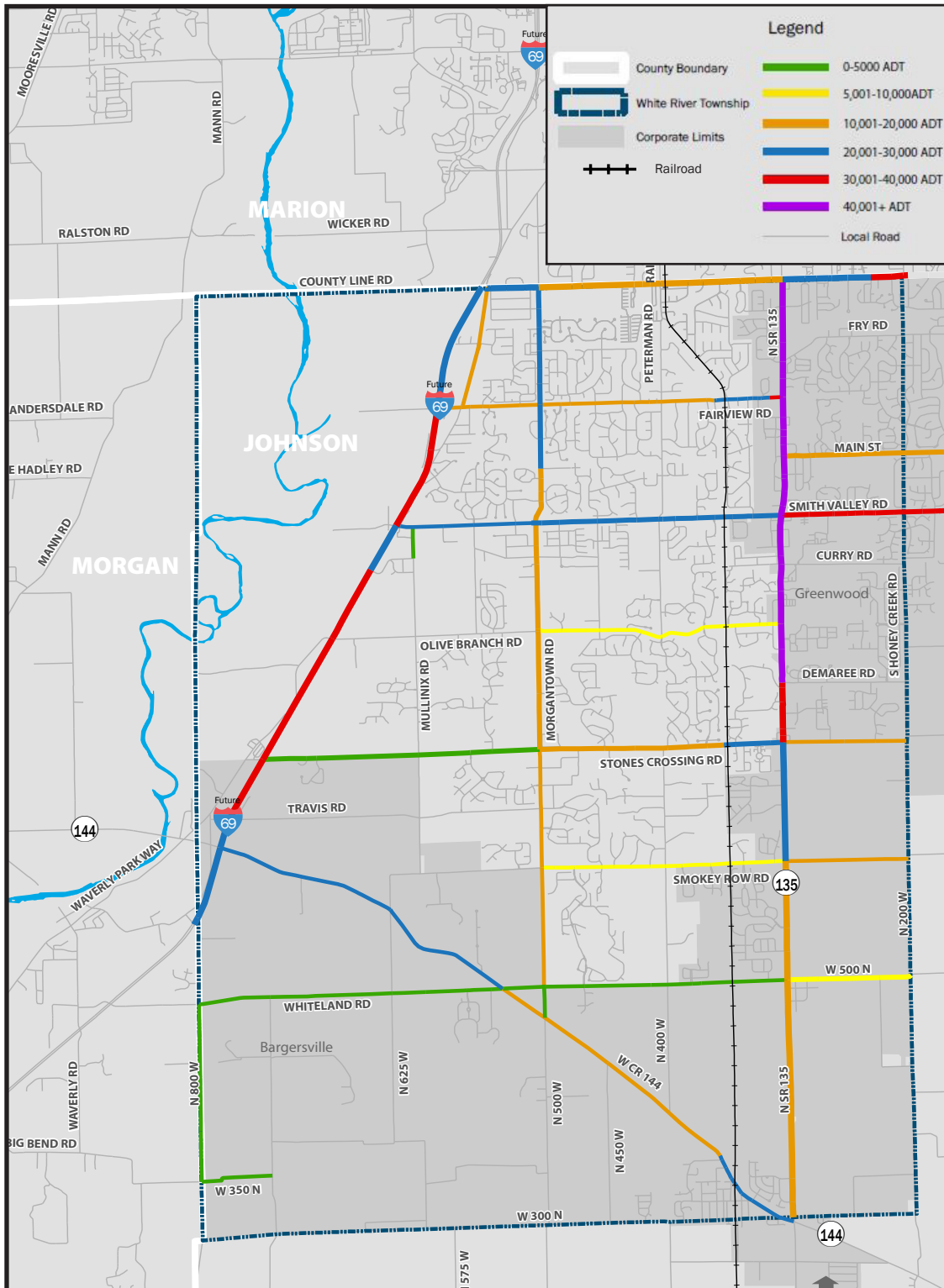
Table 10: MPO 2035 Projection Traffic Volume Increases

Segment	2017 ADT	2035 ADT	Change
County Line Road between SR 135 and I-69	5,577-12,041	18,927-21,554	Increase of up to 6,886-15,977
Fairview Road between SR 135 and I-69	4,942-12,022	11,084-20,528	Increase of up to 6,142-8,506
Smith Valley Road between SR 135 and I-69	9,318-17,241	27,951-29,499	Increase of up to 12,258-18,633
Morgantown Road between County Line Road and CR 144	1,577-8,706	10,172-24,872	Increase of up to 8,595-16,166
Stones Crossing Road between Morgantown Road and SR 135	8,872-9,955	14,924-20,423	Increase of up to 6,052-10,468
Smokey Row Road between SR 135 and S. Honey Creek Road	1,712-4,624	13,106-12,107	Increase of up to 8,482-10,395
CR 144 between I-69 and SR 135	3,404-8,300	17,960-24,134	Increase of up to 14,557-15,834

Source: Indianapolis MPO

Reference: Appendix Exhibit A9 and A10

EXHIBIT P: FUTURE 2035 MPO TRAFFIC COUNT DATA



Data Sources: Indianapolis MPO (2035)

*This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.

Table 11 identifies the changes between the existing MPO traffic counts and projected, MPO traffic volumes in White River Township. While nearly every road segment is expected to increase in traffic flow, some major roadways are anticipated to double or triple the existing number of vehicles per day.

According to INDOT’s Final Environmental Impact Statement Report, SR 135 south of County Line Road currently has a “D” LOS traffic impact rating. This “D” rating indicates the current condition of the roadway and its ability to move traffic effectively is unacceptable for existing facilities and development. According to INDOT, the estimated 2045 rating for SR 135 shows an increase of traffic due to the Section 6 project thus resulting in an “F” rating. Therefore, this major north/south connector will fail if improvements to alternative north/south connections are not made. Other roadways within the INDOT report also indicate a decrease in LOS rating in 2045.

Table 11 also compares the MPO 2035 projections and INDOT’s 2045 projections. Indot’s projections in the Final Environmental Impact Statement Report are less than the MPO 2035 projections for these key corridors, which may indicate the impacts on the roadways after the I-69 project is complete will require more than those projected by INDOT.

The change in traffic counts aids in identifying segments of roadways that will require improvements to provide additional capacity. Capacity improvements may include additional right-of-way to widen lanes, additional turn lanes or improvements to intersections. A detailed breakdown of traffic projections by road segment can be found in Table 12.

TABLE 11: KEY ROAD SEGMENTS TRAFFIC COUNTS

Segment		MPO 2035	Changes from MPO 2017	INDOT 2045 with I-69	Changes from INDOT 2010	INDOT 2045 LOS Rating
County Line Road	East of SR 37/I-69	21,554	+15,977	22,300	12,100	B/C
Smith Valley Road	East of SR 37/I69	27,951	+17,627	21,100	11,200	D
SR 135	South of County Line Road	63,393	+27,857	43,200	3,400	F
Morgantown Road	South of County Line Road	23,846	+17,188	14,200	600	C
CR 144	East of SR 37/I69	24,134	+15,834	18,300	13,200	D

Data Sources: Indianapolis MPO (2035) and IN.GOV/INDOT/PROJECTSI-69

TABLE 12: EXISTING AND 2035 MPO TRAFFIC COUNT DIFFERENCES

Road	Segment	Existing	Future	Difference
Morgantown Road	Fairview Road and County Line Road	7,029	23,846	17,188
Morgantown Road	Fairview Road and Smith Valley Road	8,056	24,872	16,816
Morgantown Road	Smith Valley Road and Olive Branch Road	7,479	17,656	10,177
Morgantown Road	Olive Branch Road and Stones Crossing Road	8,706	15,301	6,604
Morgantown Road	Stones Crossing Road and Smokey Row Road	5,200	11,829	10,252
Morgantown Road	Smokey Row Road and Whiteland Road	1,577	10,485	8,908
Mullinix Road	Olive Branch Road and Smith Valley Road	2,225	2,228	3
Stones Crossing Road	SR 37 and Mullinix Road	2,075	1,122	-953
Stones Crossing Road	Mullinix Road and Morgantown Road	3,236	4,718	1,482
Stones Crossing Road	Morgantown Road and CR 400 W	8,872	18,275	17,221
Stones Crossing Road	CR 400 W and SR 135	9,955	20,423	18,711
Whiteland Road	CR 800 W and CR 325 W	2,748	2,185	-563
Whiteland Road	CR 625 W and Morgantown Road	2,848	2,911	961
CR 144	SR 37 and Morgantown Road	8,300	24,134	15,834
CR 144	Morgantown Road and CR 400 W	6,305	19,125	12,820
CR 144	CR 400 W and SR 135	6,637	17,960	11,323
Olive Branch Road	Morgantown Road and Peterman Road	5,620	6,437	816
Olive Branch Road	Peterman Road and SR 135	4,592	9,661	5,069
Smokey Row Road	Morgantown Road and CR 400 W	1,054	5,305	4,251
Smokey Row Road	CR 400 W and SR 135	1,712	6,364	4,652
Whiteland Road	Morgantown Rd. and CR 400 W	5,229	3,617	-1,612
Whiteland Road	CR 400 W and SR 135	6,666	3,617	-3049
County Line Road	Peterman Road and SR 135	12,041	18,927	6,886
Fairview Road	Peterman Road and SR 135	12,022	34,530	22,508
Fairview Road	SR 37 and Morgantown Road	7,229	11,084	4,055
Fairview Road	Morgantown Road and Peterman Road	9,405	17,892	8,487
Smith Valley Road	Peterman Road and SR 135	17,241	29,499	12,258
Smith Valley Road	Morgantown Road and Peterman Road	15,407	25,442	10,035
Smith Valley Road	SR 37 and Morgantown Road	11,899	29,609	17,710
SR 135	Fairview Road and Smith Valley Road	34,216	58,298	24,082
SR 135	Smith Valley Road and Olive Branch Road	35,685	54,107	28,390
SR 135	Stones Crossing Road and Smokey Row Road	23,259	29,951	6,692
SR 135	Smokey Row Road and Whiteland Road	14,204	19,845	5,641
SR 135	CR 500 N and CR 144	12,524	19,347	6,823
SR 135	CR 144 and Whiteland Road	5,577	21,554	15,977

Data Sources: Johnson County Highway Department (2017)
Indianapolis MPO (2035)

FUTURE FUNCTIONAL CLASSIFICATION MAP

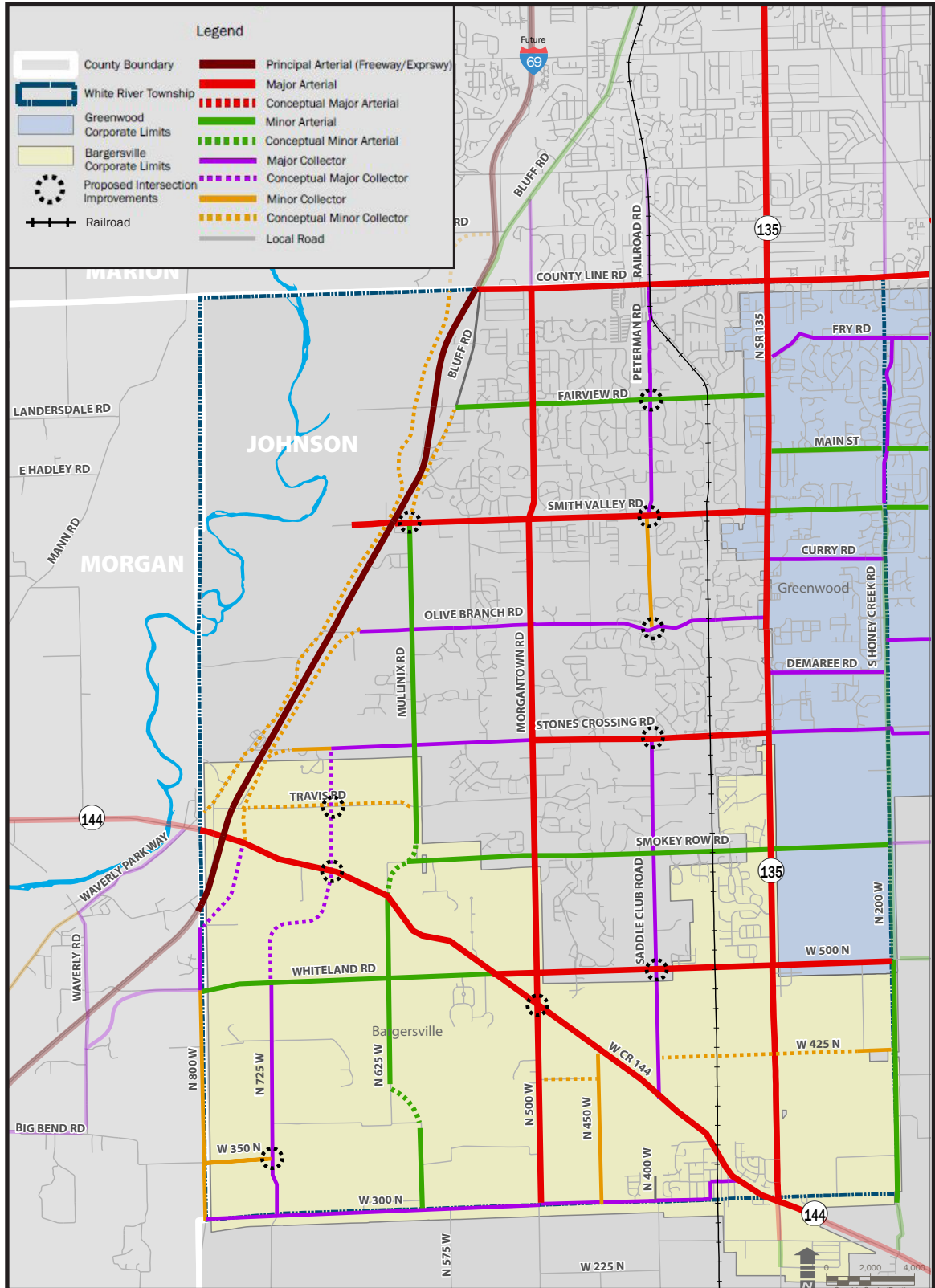
The proposed future functional classification map, Exhibit Q, indicates functional class upgrades to major corridors throughout White River Township. These upgrades will likely require additional right-of-way. Acquiring right-of-way in developed areas may be a challenge if development does not allow proper front yard setbacks as indicated in the zoning ordinances.

This map also identifies proposed intersection improvements. While traffic congestion is a common issue, intersection improvements may further congest corridors with more free flowing intersections with higher traffic counts.

The proposed functional class changes are a result of review and analysis of a variety of data. These data points include an analysis of existing road conditions and traffic patterns, projected development and growth and future projected traffic counts. The recommended changes consider construction of I-69 and the related reduction in access to that corridor. Additionally, each recommendation considers the entire local road network. However, the need for improvements may change over time as future improvements are made and development patterns materialize. Road improvement necessity must be considered in connection to other improvements made or planned to be completed within the township.

As well, it is worth noting that these recommendations are purposefully long range in nature. Future conditions will be impacted by a variety of factors, and it will be important to revisit this functional class map over time to ensure it accurately reflects changing conditions.

EXHIBIT Q: FUTURE FUNCTIONAL CLASSIFICATION MAP



*This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.



FUNCTIONAL CLASSIFICATION CHANGES

Exhibit R and Table 13 identify the proposed changes between the existing and future functional classification maps.

1. CR 144 from SR 37 to SR 135

Existing classification: Major Collector

Future classification: Major Arterial

As one of three interchanges along I-69, traffic is expected to increase along this corridor with the loss of access points from Stones Crossing, Travis Road and Olive Branch Road to the future interstate. This corridor is currently experiencing increased residential development and will also attract retail development in the future. This corridor has been upgraded from a major collector to a major arterial to ensure improvements can accommodate the increased traffic and development generated by the I-69 project. Roundabouts as intersection improvements to CR 144 should be encouraged during the design process of upgrades as opposed to signalized intersections.

2. CR 800 W/Banta Rd. from Whiteland Road to CR 144

Existing classification: Minor Collector

Future classification: Major Collector

This segment of CR 800 W/Banta Rd. is being upgraded to accommodate the traffic from proposed future residential development, as identified in the Morgan County and Town of Bargsville's comprehensive plans. Development along CR 800 W/Banta Road. and Waverly Road is expected to include single-family residential. This residential development will likely require a connection to either the CR 144 interchange or Big Bend Road interchange to I-69. Significant retail development is also proposed at the eastern corners of I-69 and CR 144.

3. New road connection from CR144 to Whiteland Road

Existing classification: Unclassified

Future classification: Major Collector

This proposed new road connection provides access from major east/west connectors Stones Crossing Road and Whiteland Road. This major collector network provides transportation access to developments within the network system at the CR 144 interchange. A new intersection at CR 144 will also remove regional traffic from frontage roads close to the proposed designed interchange because of the potential regional significance of Stones Crossing Road as an east/west regional corridor in connection with Worthsville Road. It is important the intersection of this new road connection is far enough from the interchange that traffic does not affect the flow on and off the interstate.

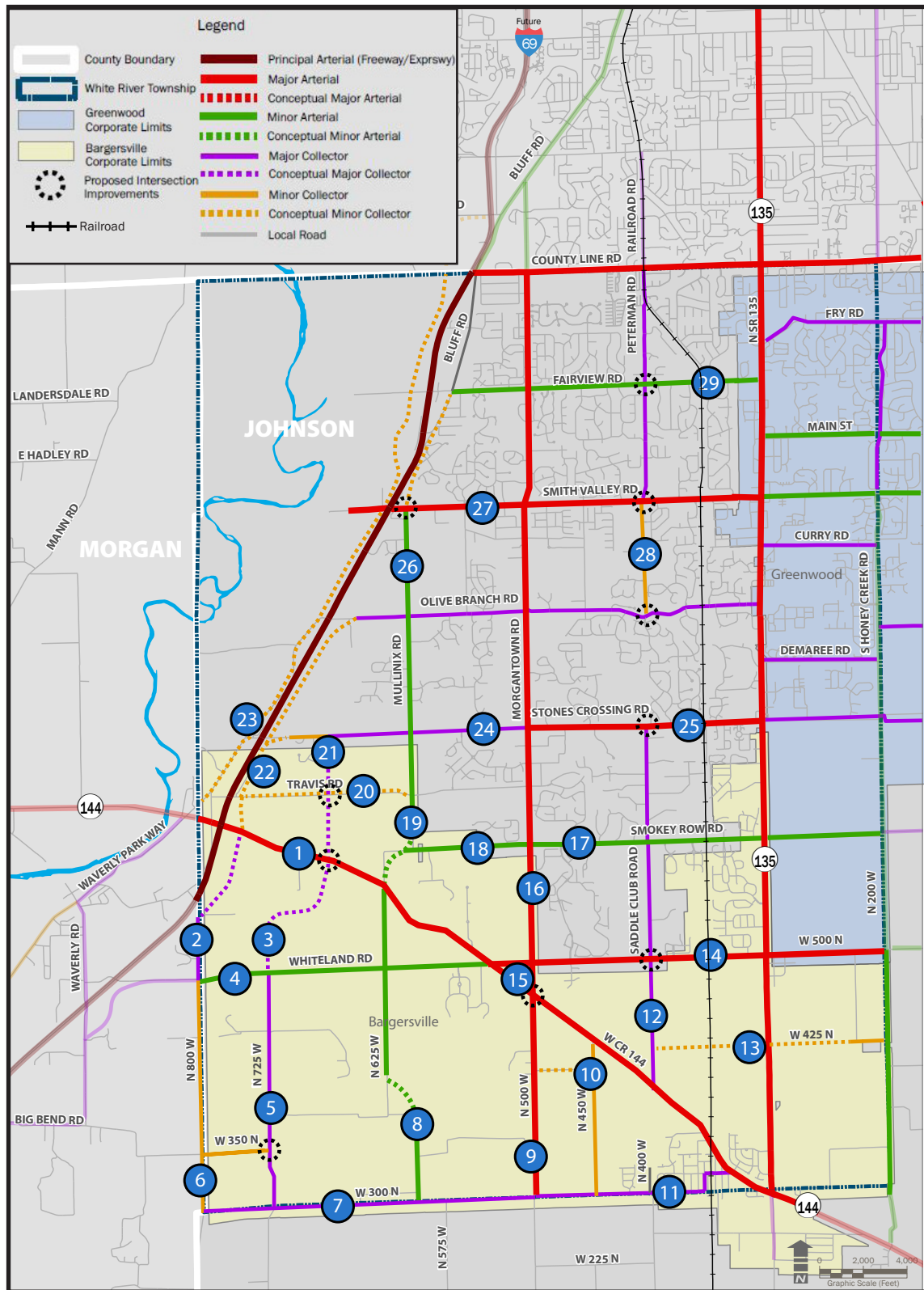
4. Whiteland Road from CR 800 W to CR 144

Existing classification: Minor Collector

Future classification: Minor Arterial

The classification upgrade for this road segment is intended to accommodate east/west traffic without utilizing CR 144 as the main corridor. Whiteland Road serves as a major east/west connector into Morgan County. The upgrade to this road segment also serves the single-family residential development proposed in this area. Whiteland Road is one alternative for a regional connector across Johnson County. While most of the impact of this connector would be felt east of CR 144, this segment will also experience and increase in traffic as a local connector to CR 144.

EXHIBIT R: CHANGES TO FUNCTIONAL CLASSIFICATION MAP



For detail please reference Table 13

*This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.

TABLE 13: CHANGES TO FUNCTIONAL CLASSIFICATION LIST

Road Segment	Existing Classification	Future Classification
1. CR 144 from SR 37 to SR 135	Major Collector	Major Arterial
2. CR 800 W from Whiteland Road including connection to CR 144	Minor Collector	Major Collector
3. New road connection from CR 144 to Whiteland Road	N/A	Major Collector
4. Whiteland Road from CR 800 W to CR 144	Minor Collector	Minor Arterial
5. CR 725 W from Whiteland Road to CR 300 N	N/A	Major Collector
6. CR 800 W from CR 350 N to CR 300 N	N/A	Minor Collector
7. CR 300 N from CR 800 W to CR 500 W (Morgantown Road)	Minor Collector	Major Collector
8. CR 625 W from CR 300 N to CR 144	N/A	Minor Arterial
9 CR 500 W (Morgantown Road) from CR 300 N to CR 144	N/A	Major Arterial
10. CR 450 W from CR 300 N to CR 144 including connection to CR 500 W (Morgantown Road)	N/A	Minor Collector
11. CR 300 N from CR 500 W to CR 144	Minor Collector	Major Collector
12. Saddle Club Road from CR 144 to Stones Crossing Road	N/A	Major Collector
13. CR 425 N from CR 200 W to Saddle Club Road (includes existing and new section)	N/A	Minor Collector
14. CR 500 N (Whiteland Road) from SR 135 to CR 144	Minor Arterial	Major Arterial
15. Morgantown Road from CR 144 to CR 500 N (Whiteland Road)	Major Collector	Major Arterial
16. Morgantown Road from CR 500 N (Whiteland Road) to County Line Road	Minor Arterial	Major Arterial
17. Smokey Row Road from Morgantown Road to SR 135	Major Collector	Minor Arterial
18. Smokey Row Road from Morgantown Road to new road connection into CR 144	N/A	Minor Arterial
19. Mullinix Road from Smokey Row Road to Stones Crossing Road	N/A	Minor Arterial
20. Travis Road from Mullinix Road to new frontage road connection to CR 144	N/A	Minor Collector
21 New road connection from Stones Crossing Road to Travis Road to CR 144	N/A	Major Collector
22. New frontage road connection from Stones Crossing Road into CR 144	N/A	Minor Collector
23. New road connection from CR 144 to County Line	N/A	Minor Collector
24. Stones Crossing Road from Morgantown Road to new frontage road connection into CR 144	Minor Arterial	Major Collector/Minor Collector
25. Stones Crossing Road from Morgantown Road to SR 135	Minor Arterial	Major Arterial
26. Mullinix Road from Stones Crossing Road to Smith Valley Road	Major Collector	Minor Arterial
27. Smith Valley Road from SR 37 to SR 135	Minor Arterial	Major Arterial
28. Peterman Road from Olive Branch Road to Smith Valley Road	N/A	Minor Collector
29. Fairview Road from Bluff Road to SR 135	Major Collector	Minor Arterial

For map please reference Exhibit R

5. CR 725 W from Whiteland Road to CR 300 N

Existing classification: Unclassified

Future classification: Major Collector

The upgrade to CR 725 W will provide additional network connections to the roadway system south of CR 144. This additional north/south corridor is anticipated to connect to the new roadway connector north of CR 144, which will provide additional access to any new development proposed in this area.

6. CR 800 W from Whiteland Road to CR 300 N

Existing classification: Minor Collector

Future classification: Minor Collector

This segment is identified as a changed segment because it aligns more effectively into CR 300 N. The existing alignment resulted in difficult intersections, specifically at CR 350 N. The topography in this area should be considered as upgrades to the right-of-way and straightening of the roadway designed. The road is classified as a minor collector, as it is anticipated most residential and retail traffic will stay north of Whiteland Road.

7. CR 300 N from CR 800 W to CR 500 W (Morgantown Road)

Existing classification: Minor Collector

Future classification: Major Collector

CR 300 N straightens the roadway to better reflect a major road collector design. The straightening of this corridor will better serve the road network south of Whiteland Road. This roadway segment is the southernmost boundary of White River Township and the town of Bargersville and will serve as a significant southern east/west corridor.

8. CR 625 W from CR 300 N to CR 144

Existing classification: Unclassified

Future classification: Minor Arterial

Another north/south connection south of CR 144, will connect Mullinix Road to the southern boundary of White River Township, which upgrades the segment to a minor arterial. Because single-family residential is proposed in this area, the minor arterial classification allows expansion of the county road to a more suburban cross section that accommodates higher traffic volumes. CR 625 W also connects to other minor arterial roadways, such as Whiteland Road and Smokey Row Road, which are two significant east/west corridors.

9. CR 500 W (Morgantown Road) from CR 300 N to CR 144

Existing classification: Unclassified

Future classification: Major Arterial

As a major north/south corridor, the extension of Morgantown Road to CR 300 N will provide additional north/south connections to relieve pressure from I-69 and SR 135. Single-family residential, as well as a new elementary school, are proposed along the southern portion of Morgantown Road.

10. CR 450 W from CR 300 N to CR 144

Existing classification: Unclassified

Future classification: Major Collector

This segment of CR 450 W provides an upgraded street section to accommodate the proposed new elementary and single-family residential development in this area. This road segment creates additional connections within the roadway network, which improves traffic to flow to a variety of ancillary roadways.

11. CR 300 N from CR 500 W (Morgantown Road) to CR 144

Existing classification: Minor Collector

Future classification: Major Collector

Upgrading to a major collector classification, this segment of CR 300 N is likely to carry the single-family residential traffic and anticipated traffic at the proposed new elementary school between CR 500 W (Morgantown Road) and CR 450 W.

12. Saddle Club Road from CR 144 to Stones Crossing Road

Existing classification: Unclassified

Future classification: Major Collector

Creating additional connections to CR 144, this segment will likely carry residential traffic to and from the retail likely to be located along CR 144. This major collector classification is continued to Stones Crossing Road where single-family residential is currently located. Utilizing north/south corridors such as this reduces the traffic volumes along major arterial roadways such as Morgantown Road and SR 135.

13. CR 425 N from CR 200 W to Saddle Club Road

Existing classification: Unclassified

Future classification: Minor Collector

The new road connection to Saddle Club Road from CR 425 will reduce traffic along Whiteland Road as an east/west connection. This segment is creating additional connections for the transportation network between Whiteland Road and CR 144.

14. CR 500 N (Whiteland Road) from SR 135 to CR 144

Existing classification: Major Collector

Future classification: Major Arterial

This segment of Whiteland Road is critical to the success of east/west corridors within White River Township. As an enhanced corridor, the upgrade to Whiteland Road provides the opportunity to SR 144, SR 135 and Morgantown Road. This also allows Whiteland Road to potentially serve as the main east/west cross county connector.

15. Morgantown Road from CR 144 to CR 500 N (Whiteland Road)

Existing classification: Major Collector

Future classification: Major Arterial

This small segment is being upgraded from a major collector to a minor arterial to better reflect the anticipated traffic from Morgantown Road onto CR 144.

16. Morgantown Road from CR 500 N (Whiteland Road) to County Line Road

Existing classification: Minor Arterial

Future classification: Major Arterial

The existing traffic along Morgantown Road grants the upgrade from a minor arterial to a major arterial. Additional traffic from the I-69 project grants immediate upgrades to widen and improve the roadway from County Line Road to Stones Crossing Road. With existing schools, residential and commercial development along this segment, Morgantown Road is expected to experience high volumes of traffic as commuters and visitors utilize the north/south corridor to reach one of the three interstate access points at County Line Road, Smith Valley Road or CR 144.

17. Smokey Row Road from Morgantown Road to SR 135

Existing classification: Major Collector

Future classification: Minor Arterial

The connection to SR 135 is proposed an additional east/west connection along Smokey Row Road. This connector upgrade is in anticipation of the increase of traffic off Morgantown Road to SR 135. This classification also continues to a new road connection into CR 144.

18. Smokey Row Road from Morgantown Road to new road connection into CR 144

Existing classification: Unclassified

Future classification: Minor Arterial

The connection to CR 144 is proposed through a new roadway connection at the intersection of Smokey Row Road and Mullinix Road, both minor arterials. This roadway upgrade will support the commercial, retail and residential development that will likely occur at key intersections and areas north of CR 144. This connection point will complete the roadway network, and traffic will likely move freely both north and south along Mullinix Road to CR 625 as well as east and west to Morgantown Road, SR 135 and the City of Greenwood.

19. Mullinix Road from Smokey Row Road to Stones Crossing Road

Existing classification: Unclassified

Future classification: Minor Arterial

This segment connects Mullinix Road between Smith Valley Road and CR 144, which creates additional connection to the transportation network. This segment also creates a connection to Travis Road and the new frontage road connection at the CR 144 and I-69 interchange.

20. Travis Road from Mullinix Road to new frontage road connection to CR 144

Existing classification: Unclassified

Future classification: Minor Collector

This new road classification upgrades the existing local county road to a minor collector. The purpose of this upgrade is to complete a connection between the proposed new road connection at Stones Crossing Road and Mullinix Road to CR 144. Travis Road is another roadway that is losing its connection to the interstate. This roadway is intended to collect traffic and distribute to higher classifications of roadways, such as Mullinix and Stones Crossing. This will also allow for better management of the significant anticipated traffic increases resulting from the retail development planned for the interchange.

21. New road connection from Stones Crossing Road to CR 144

Existing classification: Unclassified

Future classification: Major Collector

Connecting Stones Crossing Road and CR 144, this new road is intended to collect local traffic along Travis Road and Stones Crossing Road without congesting the frontage road. This major collector connection creates a grid network for the anticipated future mixed-density residential and retail development. This roadway also extends past CR 144 to complete the corridor to Whiteland Road.

22. New frontage road connection from CR 144 to Stones Crossing Road

Existing classification: Unclassified

Future classification: Minor Collector

Identified as a proposed frontage road in INDOT's Map 6 of Section 6 within Johnson County, this roadway is intended to serve the collector traffic from loss of access points at Stones Crossing Road and Travis Road. This frontage road is not expected to collect high volumes of traffic, as alternative routes and intersections to CR 144 should be further away to prevent congestion at the interchange. This road is anticipated to be constructed by INDOT as part of the I-69 project.

23. New road connection from CR 144 to County Line Road

Existing classification: Unclassified

Future classification: Major Collector

Identified as a proposed frontage road by INDOT, this roadway is intended to provide access to the local roadways on the west side of I-69. This frontage road connects the southernmost interchange at CR 144 to the interchange at Smith Valley Road where an overpass is proposed. The frontage road also runs north to Wicker Road, north of County Line Road, where an access point is proposed within Marion County. This frontage road is identified as a minor collector classification, as it is intended to serve as a collector of local traffic for the existing residential and commercial development on the west side of the interstate. This frontage road is also essential for public safety access, as it allows additional access to all three interchanges. This road is anticipated to be constructed by INDOT as part of the I-69 project.

24. Stones Crossing Road from Morgantown to new frontage road connection to CR 144

Existing classification: Minor Arterial

Future classification: Major Collector/Minor Collector

Reduced to a major collector, this roadway segment is expected to collect local traffic to higher classified roadways such as Mullinix Road. Because of the loss of access to I-69 at Stones Crossing Road, no additional traffic is expected for this segment as traffic will likely utilize Mullinix Road, Smokey Row Road or Morgantown Road instead.

25. Stones Crossing Road from Morgantown Road to SR 135

Existing classification: Minor Arterial

Future classification: Major Arterial

Upgraded to a major arterial, Stones Crossing Road from Morgantown Road to SR 135 is expected to carry an increased level of traffic. This segment will be an important connector to the few north/south corridors in White River Township. In addition, Stones Crossing Road is a potential alternative for an east/west connector across the county paired with Worthsville Road. It is important multiple jurisdictions involved in the major east/west connector collaborate to ensure proper classifications and consistent roadway design.

26. Mullinix Road from Stones Crossing Road to Smith Valley Road

Existing classification: Major Collector

Future classification: Minor Arterial

Mullinix road, another north/south corridor, is upgraded to a minor arterial to provide access to existing residential and businesses within the areas south of Smith Valley Road that will be losing access to the future interstate. Deliveries and additional residential traffic will require wider roadways and increased classification and standards.

27. Smith Valley Road from SR 37 to SR 135

Existing classification: Minor Arterial

Future classification: Major Arterial

As one of the interchange corridors, Smith Valley Road is anticipated to experience higher traffic volumes as traffic moves towards the interchanges. This upgrade from SR 37 to SR 135 is required to properly accommodate the increase of traffic and ensure access management along this major arterial is being considered for major corridors as such.

28. Peterman Road from Olive Branch Road to Smith Valley Road

Existing classification: Unclassified

Future classification: Minor Collector

This segment of Peterman Road connects Smith Valley Road (where interstate traffic will likely be located) to Olive Branch Road (a roadway that will be losing an interstate connection). By upgrading this segment to a minor collector, local traffic can utilize this roadway instead of congesting Morgantown Road or SR 135.

29. Fairview Road from Bluff Road to SR 135

Existing classification: Major Collector

Future classification: Minor Arterial

This east/west corridor is expected to serve the developments between County Line Road and Smith Valley Road that carry high amounts of traffic between two of the three interchanges. To discourage traffic off Bluff Road, Fairview Road's upgrade should carry traffic away from areas where connections are restricted from the interstate.

STREET STANDARDS

Upgrades to the future functional classification map will require coordination between adjoining jurisdictions, such as Johnson County, the city of Greenwood, and the town of Bargersville as portions of the White River Township.

Context Sensitive Standards

Given the existence of both rural and suburban characters within White River Township, the proposed sections described in the following pages differentiate between suburban and rural road sections that would be best suited for the character of the area it serves. Areas north of Stones Crossing Road are predominantly developed as residential subdivisions with some commercial properties. This development pattern is considered “suburban”. The southern portion of the township is, for the most part, currently rural in nature. It is, however, beginning to experience the same residential and commercial growth as the north portion of the township.

The residential development in the southern part of the township may be at a lower overall density than what is currently in place in the northern half of the township. With this in mind, a different road cross section may be required to serve potential development in the southern part of the township than what is required in the northern part. However, the town of Bargersville desires to develop urban cross-section roads in areas with more intense development patterns.

Right-of-Way Standards Matrix

Tables 14A and 14B identify the recommended street and right-of-way standards for White River Township. This matrix was created to identify the minimum right-of-way required for street classifications. This matrix also helps identify whether curb and gutter, sidewalk or paths are required. Additionally, the matrix analyzes the number of lanes, lane widths, parking and median requirements.

The table is broken into two sections: street and border. The street section includes vehicular drives, curb and lanes. The border section includes pedestrian or bicycle amenities, including sidewalk, walking path and street separation. These sections have different design standards based on the suburban or rural roadway location. Rural roadways are likely to have a wider right-of-way and may not require sidewalk or trail. Suburban roadways will require curb and gutter or shoulder design with a trail or sidewalk. An outline of typical road cross sections for these classifications can be found later in this chapter, and further details are included in the Appendix.

TABLE 14A: RIGHT-OF-WAY STANDARDS MATRIX

		MAJOR ARTERIAL		MINOR ARTERIAL	
		SUBURBAN	RURAL	SUBURBAN	RURAL
Street Section	Minimum ROW	110'	130'	100'	120'
	Design Speed	50	50	45	45
	# Of Travel Lanes	4 or 5	4 or 5	3 or 4	3 or 4
	Travel Lane Width	12'	12'	12'	12'
	Total Pavement Width	66'	66'	52'	52'
	Curb	2' Chairback curb and gutter	10' width shoulder or swale	2' Chairback curb and gutter	10' width shoulder or swale
	Parking	n/a	n/a	n/a	n/a
	Median	10' concrete median or 16' center turn lane*	10' concrete median or 16' center turn lane*	Median may be installed for access management	Median may be installed for access management
	Trail/Sidewalk Width*	10' Trail or 6' Sidewalk**	10' Trail or 6' Sidewalk**	10' Trail or 6' Sidewalk**	10' Trail or 6' Sidewalk**
Border Section	Setback from Edge of Pavement/Curb	5'	5'	5'	5'

Notes:

* Morgantown Road and Smith Valley Road shall require concrete median with no landscaping for access management purposes.

** Depending on underlying land use, roadways should include a minimum 6-foot concrete sidewalk to separate the shared-use trail.

Minimum right-of-way may be influenced by jurisdictional boundaries.

Optional parking widths may be influenced by travel lane widths.

TABLE 14B: RIGHT-OF-WAY STANDARDS MATRIX (CONTINUED)

		MAJOR COLLECTOR		MINOR COLLECTOR	
		SUBURBAN	RURAL	SUBURBAN	RURAL
Street Section	Minimum ROW	90'	110'	70'	100'
	Design Speed	35	35	35	35
	# Of Travel Lanes	2 or 3	2 or 3	2	2
	Travel Lane Width	12'	12'	12'	12'
	Total Pavement Width	40'	40'	24'	24'
	Curb	2' Chairback curb and gutter	10' width shoulder or swale	2' Chairback curb and gutter	10' width shoulder or swale
	Parking	n/a	n/a	+8' optional	n/a
	Median	n/a	n/a	n/a	n/a
	Border Section	Pedestrian Amenities*	10' Trail or 6' Sidewalk*	10' Trail or 6' Sidewalk*	10' Trail or 6' Sidewalk*

Notes:

* Depending on underlying land use, roadways should include a minimum 6-foot concrete sidewalk to separate the shared-use trail.

Minimum right-of-way may be influenced by jurisdictional boundaries.

Optional parking widths may be influenced by travel lane widths.

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Potential Cross Sections

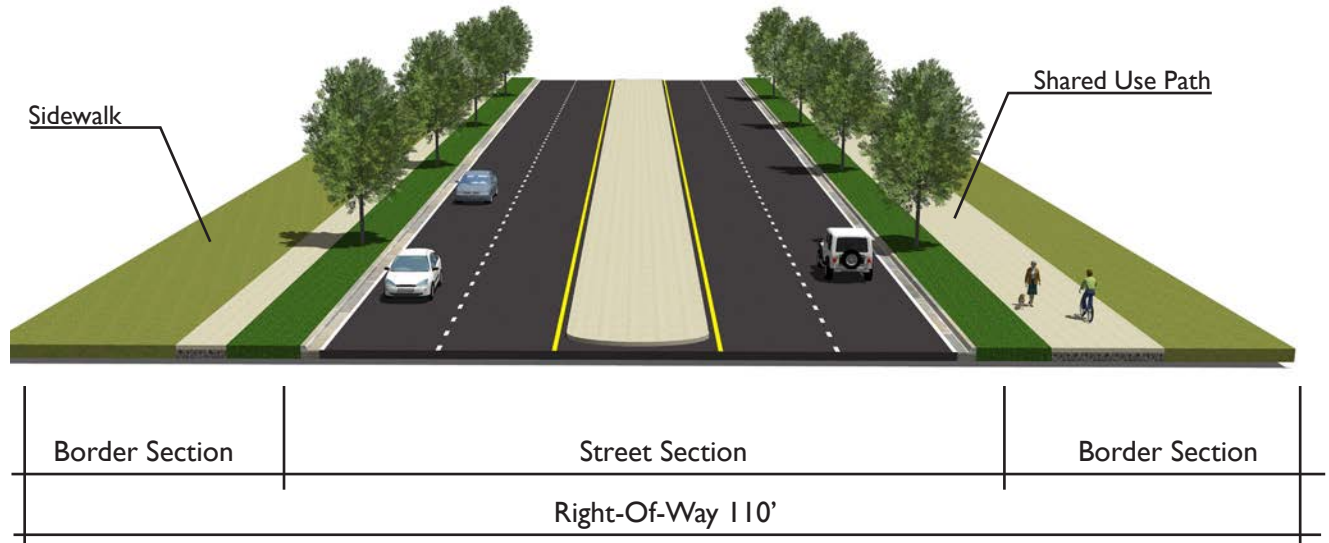
The potential cross-sections illustrated in Exhibit S1 through S4 visually identify the standards shown in the right-of-way standards matrix. The street section and border section have unique standards for each road classification. These illustrations represent various components of the standards matrix, which are intended to be flexible and may be phased over time. It will be important to secure right-of-ways pursuant to this matrix.

While landscaped medians and street trees are aesthetically pleasing in suburban and urban areas, it is oftentimes difficult to maintain these medians. Weather, emissions, salt and debris cause difficulty when growing trees and shrubbery inside median areas. Johnson County and the Town of Bargersville want to limit landscaping in medians. Landscaping is encouraged at major intersections, development entrances and community gateways for aesthetic purposes, but it should be designed to limit overall maintenance requirements and cost. When installed at the entrances to new developments, landscaping should be maintained by the developer.

Alternative road cross sections can be found in the Appendix of this document.

EXHIBIT S1: TYPICAL STREET STANDARDS

MAJOR ARTERIAL
SUBURBAN



RURAL

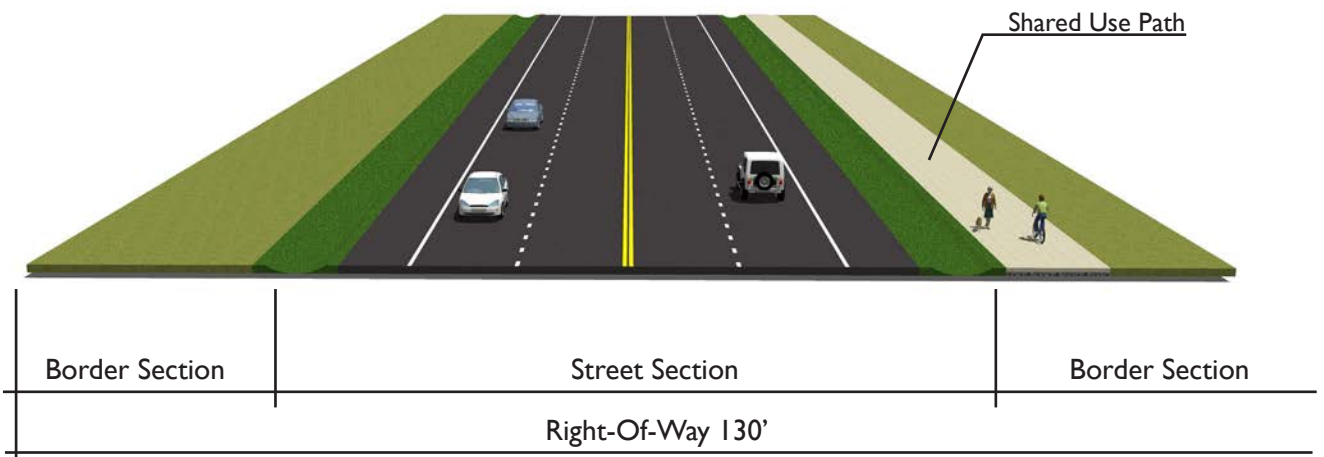
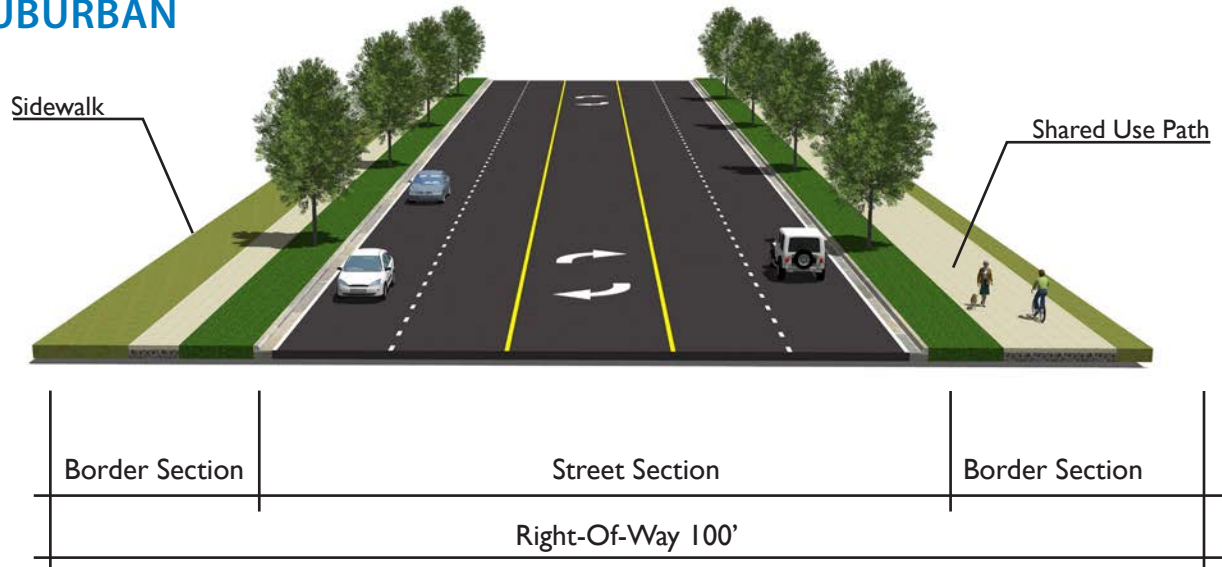


EXHIBIT S2: TYPICAL STREET STANDARDS (CONTINUED)

MINOR ARTERIAL
SUBURBAN



RURAL

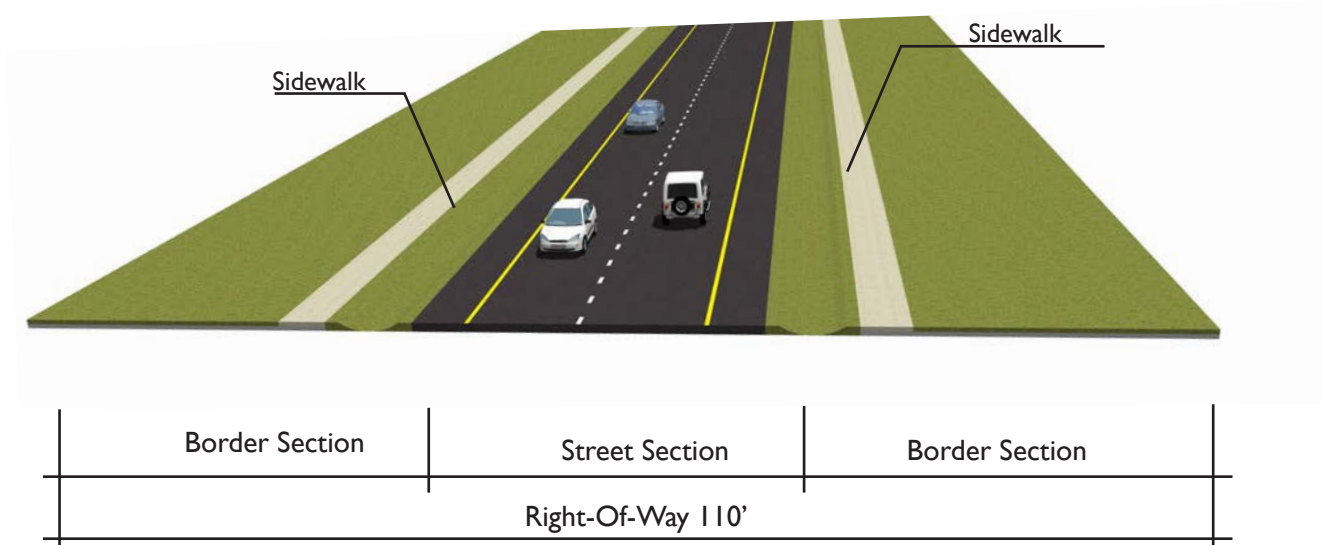
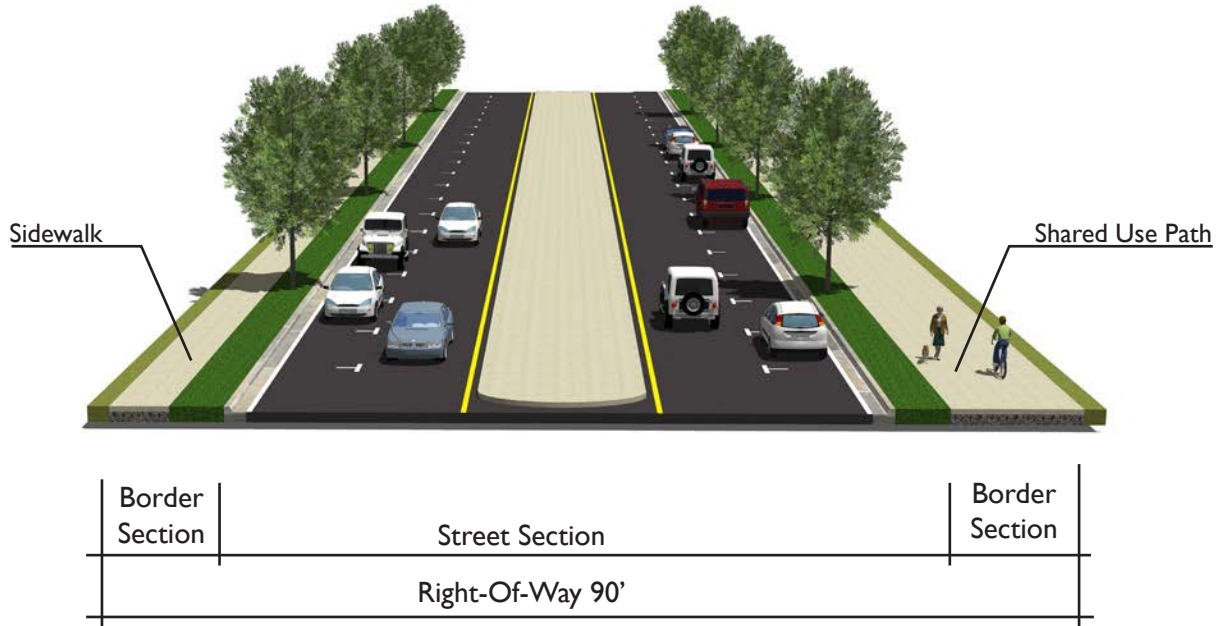


EXHIBIT S3: TYPICAL STREET STANDARDS (CONTINUED)

MAJOR COLLECTOR
SUBURBAN



RURAL

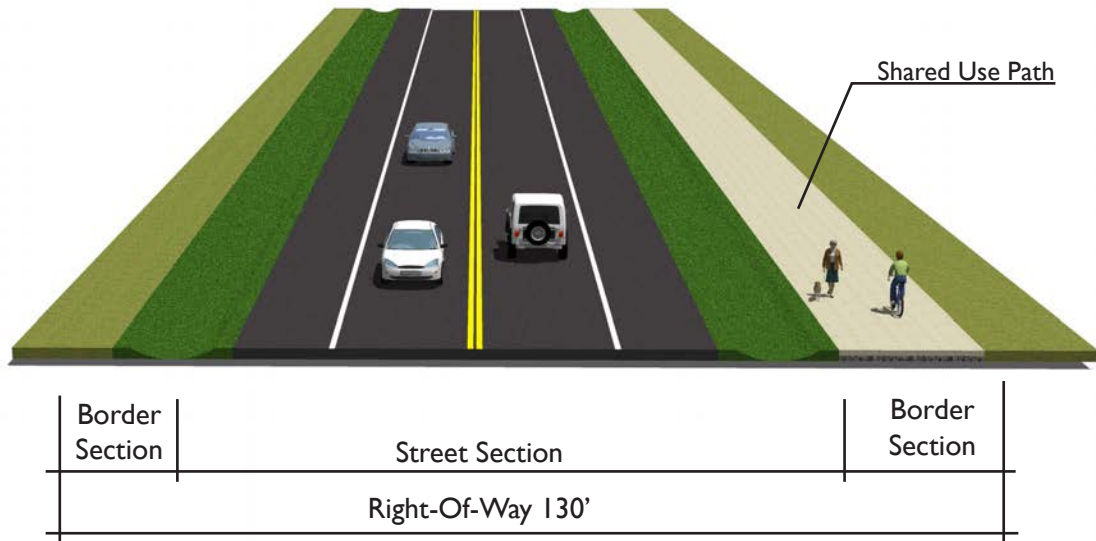
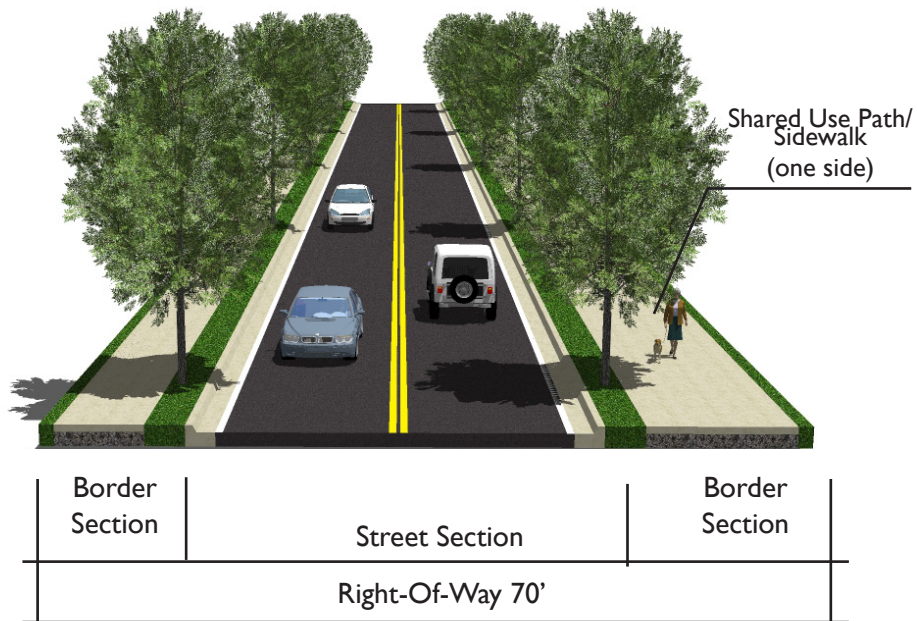
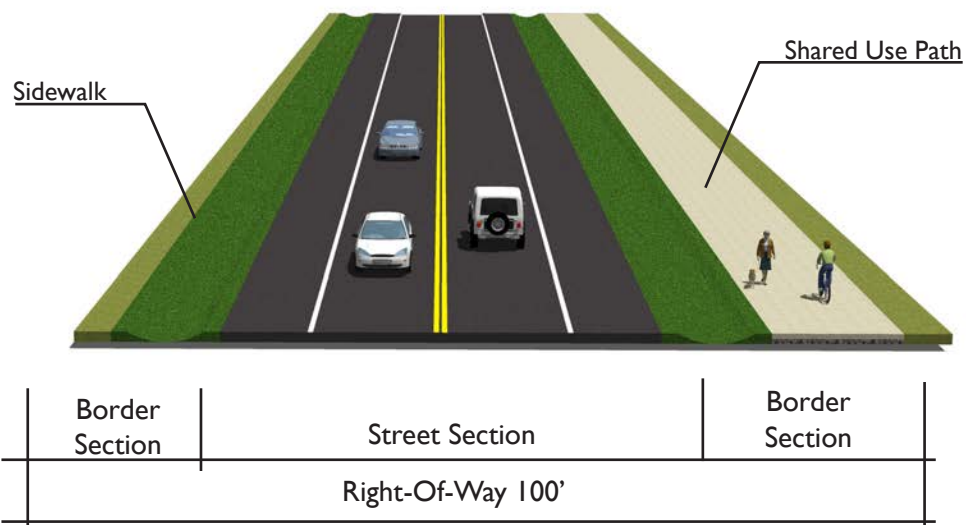


EXHIBIT S4: TYPICAL STREET STANDARDS (CONTINUED)

MINOR COLLECTOR
SUBURBAN



RURAL



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ACCESS MANAGEMENT

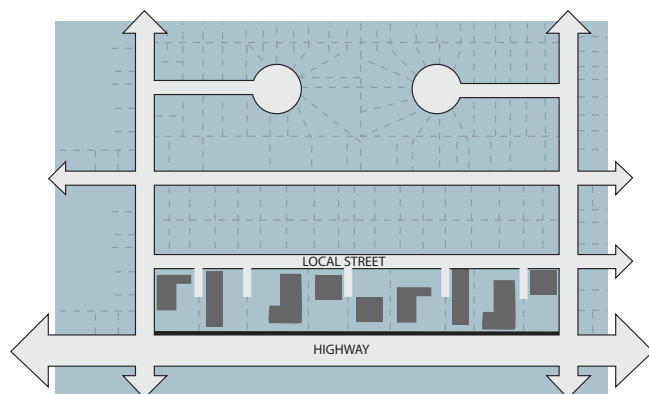
SR 135 exemplifies what happens when proper safeguards are not in place to manage access to arterial corridors. The public has expressed frustration with backed-up traffic due to slow down from individual turning movements at multiple access points along this corridor. INDOT's LOS predicts this corridor will fail without some manner of mitigation because of current design and projected future traffic volumes.

To avoid similar issues along other arterial corridors in the future, a formalized access management plan should be created for the township. All arterial roads in White River Township are projected to experience significant traffic volume increases in the future. To manage this additional traffic and protect the important role these roads play in connectivity throughout the county and access to commercial and residential uses along these corridors, several access management strategies are recommended, including:

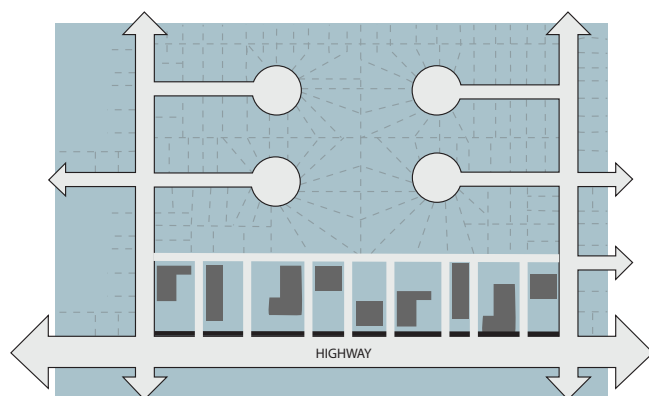
- » *Access to individual tracts along arterial corridors will ideally be gained by frontage and planned access roads if access does not already exist to the arterial.*
- » *Shared access drives be provided between contiguous parcels to limit the number of access points to arterial corridors. Current access points should be reduced, if possible, as future development and road improvements are completed.*
- » *Full access intersections on arterial corridors should be spaced no closer than one-half mile minimum intervals within commercial and industrial areas and one mile minimum intervals in residential areas.*
- » *New direct access to arterial corridors should*

be considered only where physical limitations and/or traffic impact studies show there is no reasonable access from an existing access point or where enhancement to traffic flow can be demonstrated. Additional access points may be considered, but shouldn't occur at intervals of less than 600 feet. These access points should be "right turn only" and no median cuts should be allowed.

The benefits of corridor access management are illustrated in Table 15. This identifies the benefits for each network user, including motorists, pedestrians and bicyclists.



With Access Management



Without Access Management

Table 15: Corridor Access Management Benefits

<i>User</i>	<i>Benefit</i>
1. Motorists	Fewer delays and reduced travel times; safer traveling conditions
2. Bicyclists	Safer traveling conditions, more predictable motorist movements, more options in the connected street network
3. Pedestrians	Fewer points of conflict with vehicles and use of median refuges which increases safety, more pleasant walking environment
4. Transit Users	Fewer delays and reduced travel times, safer more convenient trips to and from transit stops in a connected street and sidewalk network
5. Freight	Fewer delays and reduced travel times, which lowers the cost of delivering goods and services
6. Business owners	More efficient roadway system serving local and regional customers, more pleasant roadway corridor to attract customers, improved corridor aesthetics, stable property values
7. Government Agencies	Lower costs to achieve transportation goals and objectives, protection of long-term investment in transportation infrastructure
8. Communities	More attractive, efficient roadways without the need for constant road widening

Frontage Roads

Due to the loss of access points to I-69, INDOT is proposing a frontage road connecting CR 144 to County Line Road/Wicker Road on the west side of the future interstate. INDOT is also proposing a frontage Road from CR 144 to Stones Crossing Road on the east side of the interstate. Both of these projects are projected to be constructed by INDOT as part of the construction process in I-69. These frontage roads are not intended to support heavy traffic volumes; however, Johnson County and the town of Bargersville should work with INDOT to advance the construction of these project as early as possible to help mitigate constraints that will arise during the construction process of the interstate itself.

It is not currently known the exact construction schedule or construction phasing plan for the part of I-69 Section 6 in Johnson County. Given current traffic patterns and traffic volumes, careful consideration of traffic management will need to be given during the construction period. With this in mind, it is recommended INDOT consider extending its east side frontage road north from its current terminus at Stones Crossing Road to connect Olive Branch Road. This will allow traffic accustomed to accessing SR 37 at Olive Branch Road a viable alternative north of the interchange at Smith Valley Road or south, the interchange at CR 144.

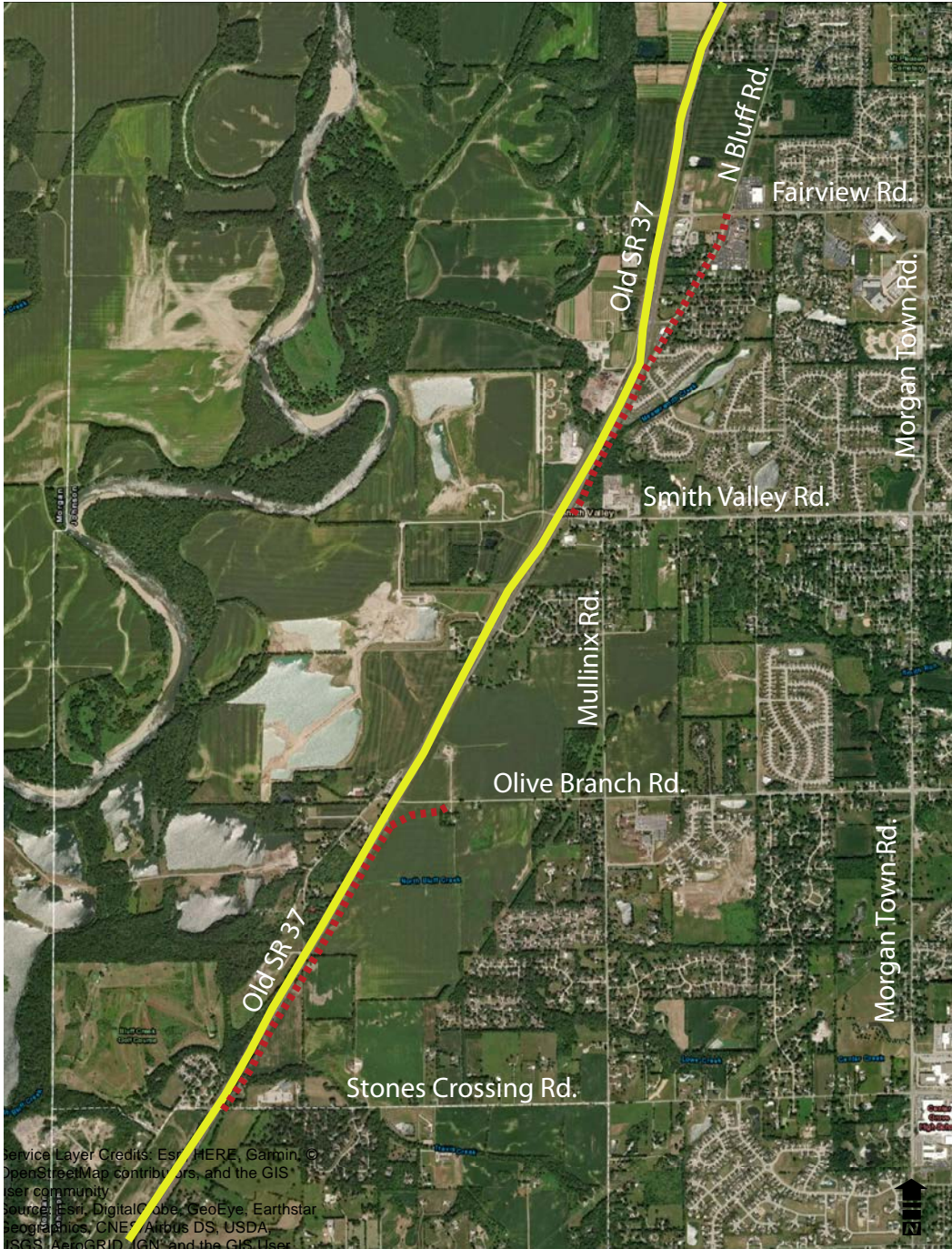
Frontage road connectivity should be considered Smith Valley Road to Bluff Road. This would provide additional local connectivity for those losing access at Fairview Road and Bluff Acres Road as part of the interstate upgrade. Currently Bluff Road connects directly into the Wakefield subdivision even with the current access to SR 37. With the removal of the current access

locations at Fairview Road and Bluff Acre Road, even more traffic will be channeled through the residential neighborhood. Additionally, these improvements collectively will create an additional east side frontage road connection pairing with the one currently proposed on the west side of the interstate. These paired frontage roads would have several positive impacts, both during construction of the interstate and after the interstate is completed. These include:

1. Enhanced access for public safety and emergency response vehicles
2. More flexibility to construction phasing/access closure during the construction of I-69
3. Better interstate connectivity for existing development on the east side of SR 37
4. Better support for future development opportunities for property on the east side of future I-69
5. Reduction in the amount of commuter traffic funneling through the Wakefield residential neighborhood

It is important to note that any proposed frontage road is not a replacement for the long-term improvements necessary for Morgantown Road. Continued growth in White River Township, combined with the limited access to I-69, will still warrant significant upgrades to Morgantown Road in the future, as it must serve as a true north/south arterial within White River Township, given identified future traffic volumes and the limited number of north/south alternatives in the township. It is possible, however, that the long-term improvements necessary for Morgantown Road could be lessened, or the need for full buildout of the road delayed, with the existence of a more complete frontage road connection on the east side of I-69.

**EXHIBIT T: FRONTAGE ROAD
STONES CROSSING ROAD TO OLIVE
BRANCH ROAD**



Service Layer Credits: Esri, HERE, Garmin, ©
OpenStreetMap contributors, and the GIS
User community
Source: Esri, DigitalGlobe, GeoEye, Earthstar
Geographics, CNES/Airbus DS, USDA,
USGS, AeroGRID, IGN, and the GIS User

Source: HWC Engineering

*This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.

The frontage road poses several challenges. The first is the overall cost of the project. Given the nature of the road and the locations it must be run, the concept estimated cost for the connection from Stones Crossing Road to Olive Branch Road is \$5,000,000, and the connection of Bluff Road to Smith Valley Road is \$8,800,000. These costs do not include property acquisition, and few homes would be impacted by the Bluff Road extension. The proposed routing of the east side frontage road can be found an Exhibit T.

EAST/WEST REGIONAL CORRIDOR

The creation of a regional east/west corridor has been discussed for a long-time in Johnson County. Over the years, continued growth and development in Johnson County has made it increasingly difficult to build such a corridor. Providing better east/west access in the county to major thoroughfare corridors, such as I-65, US 31 and future I-69, will not only serve existing local commuters, but future commuter and regional traffic as well. The city of Greenwood is working to improve Worthsville Road to enhance east/west connectivity across the county. This work should continue, as it will likely have a significant benefit to the overall local transportation network. Given the volume of future growth anticipated in Johnson County, an additional corridor should be identified and protected for future long-term transportation needs. One alternative to consider is Whiteland Road. Currently, much of Whiteland Road has limited development, reducing the relative cost of right-of-way reservation and lessening the impact to existing users along the road. As this area developed over time, right-of-way can be secured through the development process, also reducing the long-term cost of the project. It provides relative direct access to the future I-69 interchange at CR 144 and the existing Whiteland Road interchange on I-65. One challenge is that

Whiteland Road currently runs through the heart of the town of Whiteland. Discussions are ongoing, however, about potential alternatives to bypass around the town core. This is a long-term discussion, but one that may have short-term needs, as development continues to move south in the county. Successful development of this corridor will require the coordinated efforts of several jurisdictions within the county including Johnson County, the town of Bargsville, the city of Greenwood, the town of Whiteland and the city of Franklin. While the development of this corridor is long-term, it is recommended the county work to coordinate discussions with all stakeholder communities to develop a collective understanding of the potential corridor and what will be required to deliver it in the future.

TRANSPORTATION ANALYSIS SUMMARY

This chapter has analyzed the existing and anticipated future challenges with the county's transportation network. Existing issues include traffic congestion and accidents expected to worsen without transportation improvements, especially along key corridors. To attract the desired land uses discussed in Chapter 5 of this plan, it is important to design proper road infrastructure to accommodate future development and move traffic efficiently and effectively throughout White River Township, the town of Bargsville and Johnson County. Within Chapter 8, Implementation Strategies, specific projects are identified and prioritized. Funding opportunities are discussed for the variety of projects identified.

The reduction of access points to I-69 requires traffic to utilize other corridors already experiencing significant traffic volumes especially at peak times. Some key issues were identified to be taken into consideration if the transportation network is to function properly in the face of continued growth and future I-69 project. These issues include:

- » *A study of necessary improvements to SR 135;*
- » *Suggested improvements to Bluff Road;*
- » *Bicycle and pedestrian connectivity;*
- » *A Future overpass at Fairview Road;*
- » *East/West major corridors;*
- » *North/South major corridors; and*
- » *A primary regional east/west corridor;*

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CHAPTER 7: CORRIDOR OVERLAY PLAN

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INTRODUCTION

The Corridor Overlay chapter addresses issues related to the development standards, aesthetics and character of the gateways and key corridors in Johnson County. While land use is important along these corridors, ensuring entrances to the corridors, and the corridors themselves, are inviting to potential businesses and visitors to the county is also crucial to the success of the corridor. Developing strong gateway corridors provides a sense of place and presents the first impression that can help display the desired character of the community to both people who live in the county and visitors.

This chapter will address: key focus areas, the look and function of the gateways and how I-69 will fit into the existing corridor network. Conceptual development plans for the proposed interchanges will also be described. The factors and issues discussed in this chapter will play a large role in addressing existing and future transportation issues that may arise along the key corridors in White River Township.

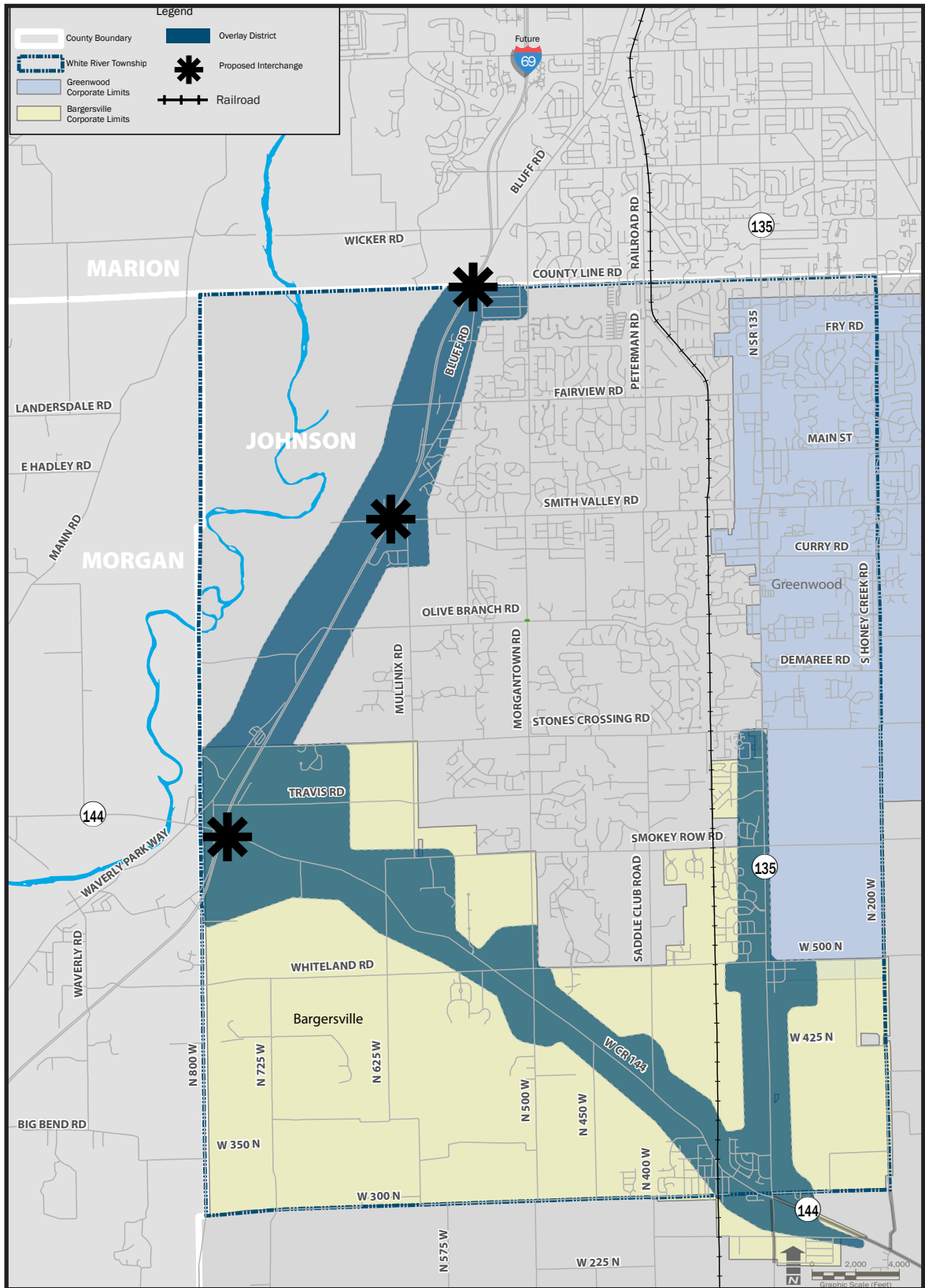
CORRIDOR MAP

To implement many of the components discussed in this corridor plan, an overlay district ordinance is proposed for both Johnson County and the town of Bargersville. A full copy of the proposed ordinance can be found in the Appendix of this document. This ordinance will address several issues in the corridor including, but not limited to:

- » *Land use;*
- » *Site access;*
- » *Site design standards;*
- » *Building design and materials;*
- » *Specific development criteria by land use*
Landscaping;
- » *Parking requirements;*
- » *Lighting; and*
- » *Approval and review procedures;*

Both Johnson County and the town of Bargersville currently have corridor overlay standards. The proposed overlay is intended to replace those standards. It is important to note the standards of the overlay district apply only to key corridors, including SR 37/future I-69, State Road 135 and County Road 144. The specific area covered by this ordinance is identified in Exhibit U.

EXHIBIT U: CORRIDOR OVERLAY DISTRICT MAP



*This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.

KEY FOCUS AREAS

Community Character

The community character of the district includes key elements that help create a sense of place. Some of these elements include: architectural styles, intersection improvements, iconic structures and landscape features and architectural development themes. It is important these characteristics create a pleasing and consistent aesthetic throughout the corridor. During the public input meetings as part of this planning effort, residents identified many of the layout and design choices typical to standard commercial developments to be unappealing. Standard flat-faced strip commercial buildings and lack of building material mix were identified as items that should be avoided, if possible, in future developments. Instead, respondents identified a desire for development to feel “upscale” and utilize unique features and design

elements to distinguish new developments and set the desired character for the community.

Based on public meeting input, residents do not want developments that require large and unused parking lots or development that includes stand-alone commercial buildings not related to one another. Undesired uses along the corridors were also identified; including traditional industrial manufacturing uses, significant outdoor storage of materials and products, buildings that disrupt the landscape and community character, truck stops and adult-oriented businesses. There is a strong desire for interchanges and corridors use features to include master planning to avoid the random collection of uses found at many interstate interchanges. While heavy industrial uses are not desired within the township, there is an opportunity for a high-tech industry that does not produce the environmental concerns of more traditional manufacturing uses. These high-tech, light industry uses have been located on the west side of I-69, separated from most residential development on the east side of the



Some or all of the design components illustrated above can be implemented at intersections throughout the corridor

Source: HWC Engineering

future interstate. As part of the overlay district ordinance language, architectural and building style guidelines can be implemented to ensure specific building design captures the community character desired along the corridors.

Look and Function of Gateways

The look and function of the gateways within White River Township was identified as an important element of this corridor plan. An inviting gateway welcomes visitors into the county, which can spur visitors and residents to spend time and money within the county. Gateways also create a visually-defined boundary between two areas, and, with consistent design, can help build character in a designated area. Lastly, attractive gateways can be an important tool to help attract non-residential development and grow the tax base of the county.

Johnson County has the opportunity to create new gateways by utilizing I-69 as the seam that ties the corridor and development together. This can be done by providing specific signage, lighting standards, vegetation or sculpture and art along the corridor. Pedestrian access is important for the look and function of the corridors, as it provides a unique feel and activity aside from vehicular traffic. It is important as development occurs along the major corridors that right-of-way be preserved and sidewalks or trails be built to accommodate alternative modes of transportation in a safe and efficient way. Pedestrian access is proposed at both the Smith Valley and CR 144 interchanges. These interchanges will allow pedestrians and bicyclists to move from the east side to the west side of I-69 where different types of land uses are proposed. One land use proposed for the west side of I-69, is the promotion of a large regional park. This park could be a natural park that connects Morgan County's proposed regional trail network into Johnson County's bicycle and pedestrian access.

Provide for Growth

Planning ahead for anticipated growth helps the county prepare for improvements needed along the major corridors. The Indianapolis MPO has forecasted a significant amount of growth within Johnson County. It is important to plan for this growth to ensure it is controlled and designated to areas defined by the community. Providing for growth is not just planning for those moving to Johnson County to live, but also new businesses starting in the county, or moving to the county which grow the employment and tax base. Preparing the infrastructure for more traffic is an important and necessary step in ensuring a smooth growth transition.

Transportation design will be a significant consideration of development within the key corridors of the township. Site access controls will need to be put in place to avoid some of the congestion issues currently in place on SR 135. Intersection improvements will need to be considered as development occurs, including roundabouts, to reduce waiting times at intersections, reduce severity of accidents, and create community character elements. Johnson County and the town of Bargersville needs to ensure intersections are visually appealing and creating a smooth functional transition from intersection to corridor.

While some redevelopment and infill development will occur within White River Township, Bargersville and the southern half of the township will likely experience high volumes of residential, commercial and retail development. Completing the roadway network to connect these new developments is important for public safety access as preparation of future congestion on major corridors to those developments. Providing ancillary roadways throughout this area

may relieve traffic from major corridors, as well as provide multiple ways to move about the southern half of the township. Frontage roads and access roads, as previously mentioned, can aid in major corridors, such as CR 144, to reduce access points and provide ways to move about developments without clogging the major corridors with visitor traffic.

Complete streets policy as a tool

One way to implement sidewalk and trail development is to amend/adopt a complete streets policy for the county and the town of Bargersville. This policy guides the desired location and helps the community achieve its overall goal of providing corridors for all types of transportation, including biking, walking, running, driving and commuting that is suitable for all ages and abilities. This policy also identifies the importance of connectivity throughout the community. Complete streets policies can require development to include elements of alternative modes of transportation and reduce limitations to walk, bike or commute. Good examples of complete streets policies are being adopted throughout the State of Indiana, recognizing that corridors not just move cars, but people as well. Other ways to improve the corridors through this policy are to increase visibility, identify clear signage and pedestrian crossings and design intersections to attract development by encouraging safe and easy multi-modal bicycle and pedestrian travel. Pedestrian connectivity must be a significant consideration of all future road projects on White River Township.

Serve local and regional needs

The corridors throughout Johnson County provide opportunities to serve both local and regional transportation needs. Corridors bridge connections between areas of the community. From a local standpoint, connectivity and traffic flow should be enhanced throughout the community. Regionally, the I-69 corridor provides exposure, viability and efficient access to Johnson County. The I-69 corridor allows for growth of commercial, advanced manufacturing technology industry and residential sectors.

Aside from CR 144 being the major east/west corridor, it is important that Johnson County establish and be persistently prioritize an alternative east/west corridor connecting the rest of Johnson County to I-65. Alternatives are discussed in the Transportation Analysis chapter of this plan. It is important that when an efficient and logical east/west corridor is identified, that the county makes this a priority project.

Third Commerce Corridor

Johnson County currently has two major north/south commercial corridors: US 31 and I-65. These corridors play a major role in serving the local and regional economies and the nation's distribution network. I-65 is a direct route to northwest Indiana and Chicago and, as well as a southern route to Louisville. US 31 is a connector to South Bend. The I-69 corridor will help bridge some gaps in connectivity throughout the state and create a more direct route to other areas, including Bloomington, Crane Naval Base and Evansville. The three corridors will provide different needs and complement each other, which will create balance in the county from a development and congestion standpoint. The I-65 corridor currently offers a direct route through the county. Development along I-65 is primarily light commercial and manufacturing/distribution. US 31 is the corridor that offers a lot of residential and commercial opportunities in the county. When I-69 is introduced, the county will have a corridor that offers some of what both US 31 and I-65 offer. This will become the third commerce corridor in Johnson County, which will ease some of the congestion currently found on US 31 and I-65. It is important that future land uses compliment one another rather than compete with what may be a more natural fit for one of the other corridors. Ultimately, I-69 will serve the residential base of White River Township with additional residential development, targeted commercial development and technology focused industrial primary employers.

Conceptual Interchange Enhancements

Part of the overall aesthetic consideration of the corridors are the development of the interchanges along I-69 in Johnson County. Exhibits V1 and V2 demonstrate a possible bridge for one the interchanges and design elements that should be considered. The enhancements shown in this rendering showcase ways to create a visually appealing bridge consistent with the desired character identified by stakeholders in this planning process. These elements may not be the final design for the interchanges, but rather are intended to help facilitate discussions with INDOT about the final design of the interchange once engineering of the Johnson County portion of I-69 begins.

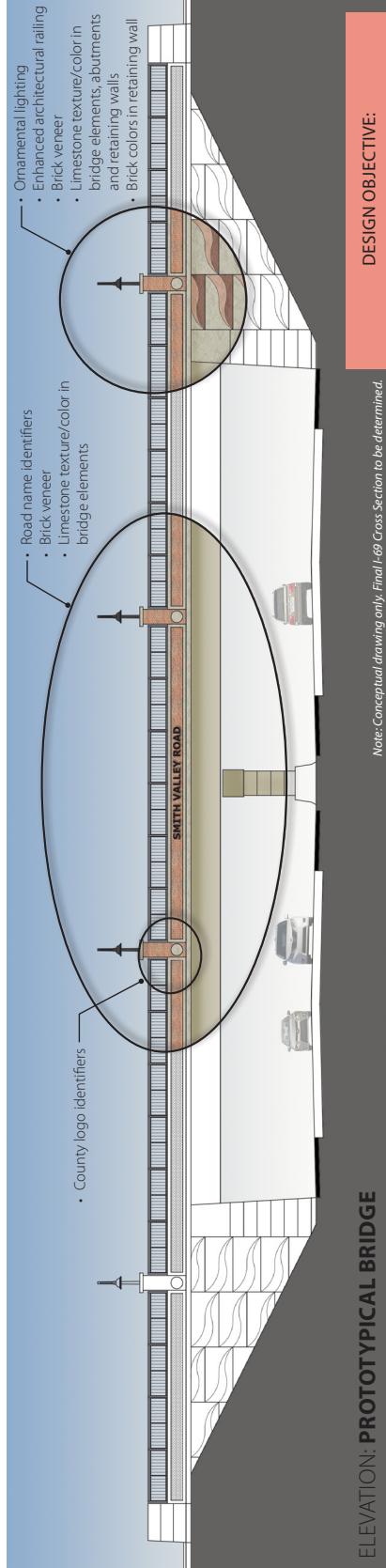
There should be a consistent theme for all three interchanges to allow people to know when they have entered and exited Johnson County. Creating customized county logo identifiers will allow a continuous aesthetic to carry throughout the county. The bridges should also include protected pedestrian paths with scaled lighting to create a safe option for non-motorists. The paths should be lined with a barrier wall with 1-to 2-foot tall railing for additional pedestrian protection. Banners are another great way to continue community character throughout a corridor. Interchange bridges are highly visible, so it is important to create an aesthetic with an appropriate tone for the county.

The retaining walls lining the corridor will have low-maintenance native vegetation that creates visual interest along the corridor. The retaining walls will be made of mechanically stabilized earth (MSE) with the capability to bear heavy loads while maintaining a pleasing aesthetic. Colors

and textures recommended for this corridor would mimic limestone and brick. It is important for drivers to be visually stimulated at times during the drive and an interchange bridge is a great opportunity to provide a stimulating break for drivers. The name of the interchange will be included on the bridge allowing drivers to better identify their location. Creating an appealing interchange will make for a pleasant drive on I-69 and an inviting opportunity for people to live in, visit and do business in Johnson County.

EXHIBIT V1: CONCEPTUAL I-69 INTERCHANGE BRIDGE ENHANCEMENTS

CONCEPTUAL I-69 INTERCHANGE BRIDGE ENHANCEMENTS



ELEVATION: PROTOTYPICAL BRIDGE

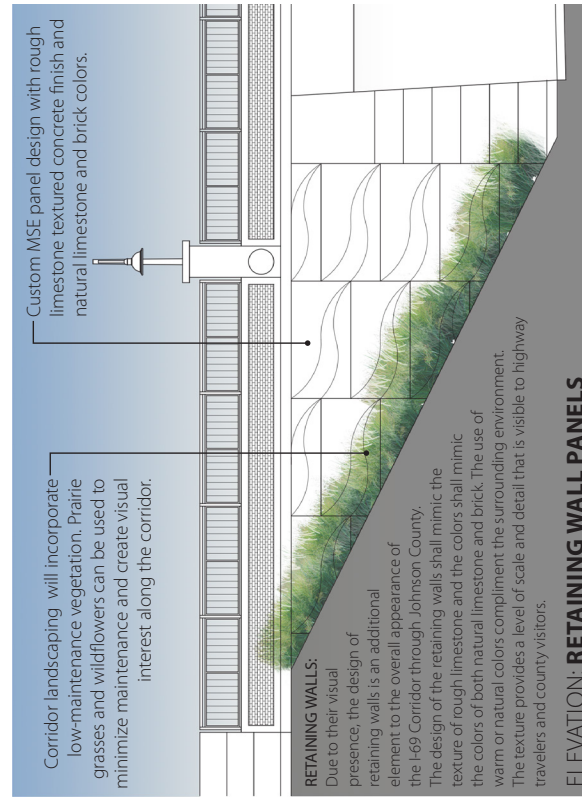
Note: Conceptual drawing only. Final I-69 Cross Section to be determined.

DESIGN OBJECTIVE:

To incorporate preferred bridge treatments into the final design of designated overpass bridges throughout the I-69 Corridor in Johnson County. Among the preferred bridge treatments are road name identifiers (dimensional cut letters), ornamental lighting, enhanced architectural railing, county logo identifiers and the use of brick and limestone texture/color.

The road name identifiers are designated for three interchange bridges: SR 144, Smith Valley Road and County Line Road. It is proposed that both northern and southern approaches receive preferred design treatment.

These preferred design treatments are intended to guide INDOT on additional enhancements at the time of final design.



Corridor landscaping will incorporate low-maintenance vegetation. Prairie grasses and wildflowers can be used to minimize maintenance and create visual interest along the corridor.

RETAINING WALLS:

Due to their visual presence, the design of retaining walls is an additional element to the overall appearance of the I-69 Corridor through Johnson County. The design of the retaining walls shall mimic the texture of rough limestone and the colors shall mimic the colors of both natural limestone and brick. The use of warm or natural colors compliment the surrounding environment. The texture provides a level of scale and detail that is visible to highway travelers and county visitors.

ELEVATION: RETAINING WALL PANELS

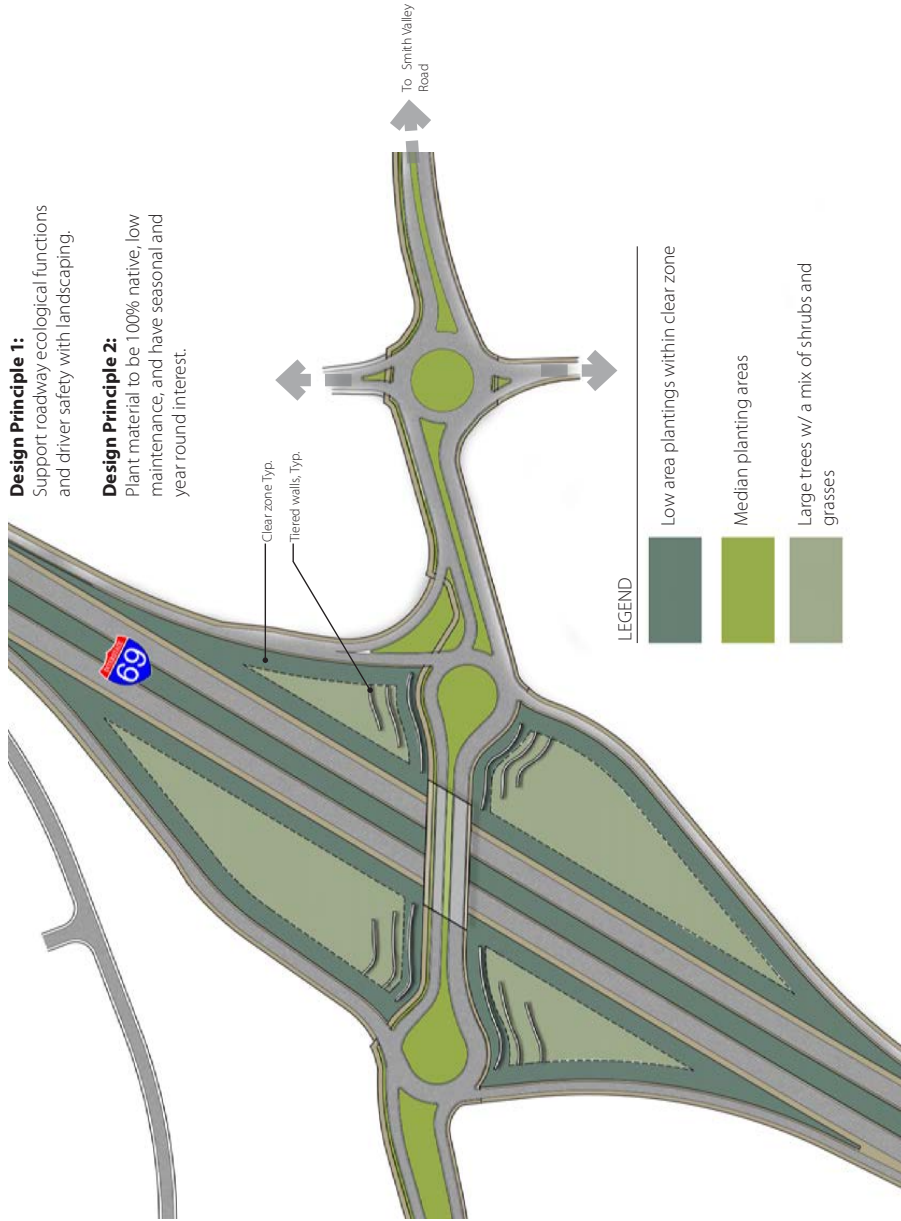
SECTION: PEDESTRIAN PATHS

*This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.

EXHIBIT V2: CONCEPTUAL I-69 INTERCHANGE BRIDGE ENHANCEMENTS



CONCEPTUAL I-69 INTERCHANGE LANDSCAPE PLANS



Design Principle 1:
Support roadway ecological functions and driver safety with landscaping.

Design Principle 2:
Plant material to be 100% native, low maintenance, and have seasonal and year round interest.

DESIGN OBJECTIVE:

To incorporate preferred landscape treatments into the final design of designated overpass bridges throughout the I-69 Corridor in Johnson County.

The landscape treatment will use a mix of native Indiana wild flowers, grasses, shrubs, and trees.

The plant material will be designed in masses, clusters and drifts. As speeds change, so shall the level of detail within the landscape areas. Landscaping adjacent to the high speed mainline will have a simple level of detail so that it can be clearly perceived.

In addition, tiered walls are proposed to add interest and help with the transition of slopes.

These preferred design treatments are intended to guide INDOT on additional enhancements at the time of final design.

PRECEDENT IMAGES



LANDSCAPE TREATMENT DIAGRAM

**This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.*

Interchange Conceptual Development Plans

For reference purposes, a series of conceptual development plans have been created for each of the proposed Johnson County interchanges along future I-69. These drawings are conceptual and are for illustrative purposes only. They do not reflect actual development underway and no timetable exists for any conceptual building shown in these drawings. While development and redevelopment interest is likely in each of these areas, the ultimate developments sought and approved may look very different than the ones identified in this plan.

It is worth noting that there are some key themes that run across all three plans; as noted below.

1. The concepts contemplate 360 degree architecture on the commercial and industrial facilities with special attention given to the facades that face roads and existing development areas. A strong aesthetic control is considered to maintain a consistent theme throughout the county.
2. Any development/redevelopment in these areas must be sensitive to existing uses and properties. Significant setback and buffering considerations may be required to ensure proper transition between uses is maintained.
3. Regional detention is desired to limit the number of ponds, maximize development potential and limit maintenance costs of future drainage improvements.
4. Cross-access between lots and developments is essential to limit the number of road access points, especially along main corridors.

5. Where possible and practical, buildings should be brought up to the road to shield large parking areas from being visible from thoroughfares.

6. Buildings internal to development should be linked to each other through building materials and site design elements

Additional details can be found in the draft overlay ordinance in the Appendix.

County Line Road and I-69 Interchange Conceptual Plan

County Line Road is the northern most interchange in Johnson County for the I-69 corridor plan. This interchange was moved slightly north which creates a larger impact from the footprint of the interchange in Marion County than it does in Johnson County. Exhibit W shows the interchange concept plan for County Line Road. This plan, based on feedback that we received from the public, stakeholders and market analysis identifies the potential for advanced technology manufacturing located on the west side of the interchange. Currently shown are 10 light manufacturing/R&D facilities, each of which is approximately 52,000-square-feet.

The east side of the interchange identified the potential for redevelopment of the areas closest to the interchange into retail and office space with a transition into mixed-density residential uses. The mixed use commercial/retail space is currently shown at approximately 36,500 square feet, with about 39,000 square feet of additional retail and 42,000 square feet of office space oriented in the concept plan. Lastly, a collection of roughly 5000 square foot medium density buildings are shown on the southern edge of the redevelopment area. There is potentially 50 to 60 residential units in that area.

The area east of the interchange with hash marks is identified as an area for future development. This area will likely experience redevelopment pressure over time. As redevelopment is considered, it will be important to consider the impacts such activities will have on remaining property owners. In this circumstance, it would be appropriate to require any development to

acquire a significant portion of the area as part of a redevelopment effort rather than approaching redevelopment in a parcel-by-parcel of piecemeal fashion.

EXHIBIT V: COUNTY LINE ROAD AND I-69 INTERCHANGE
CONCEPTUAL PLAN



**This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.*

Smith Valley and I-69 Interchange Conceptual Plan

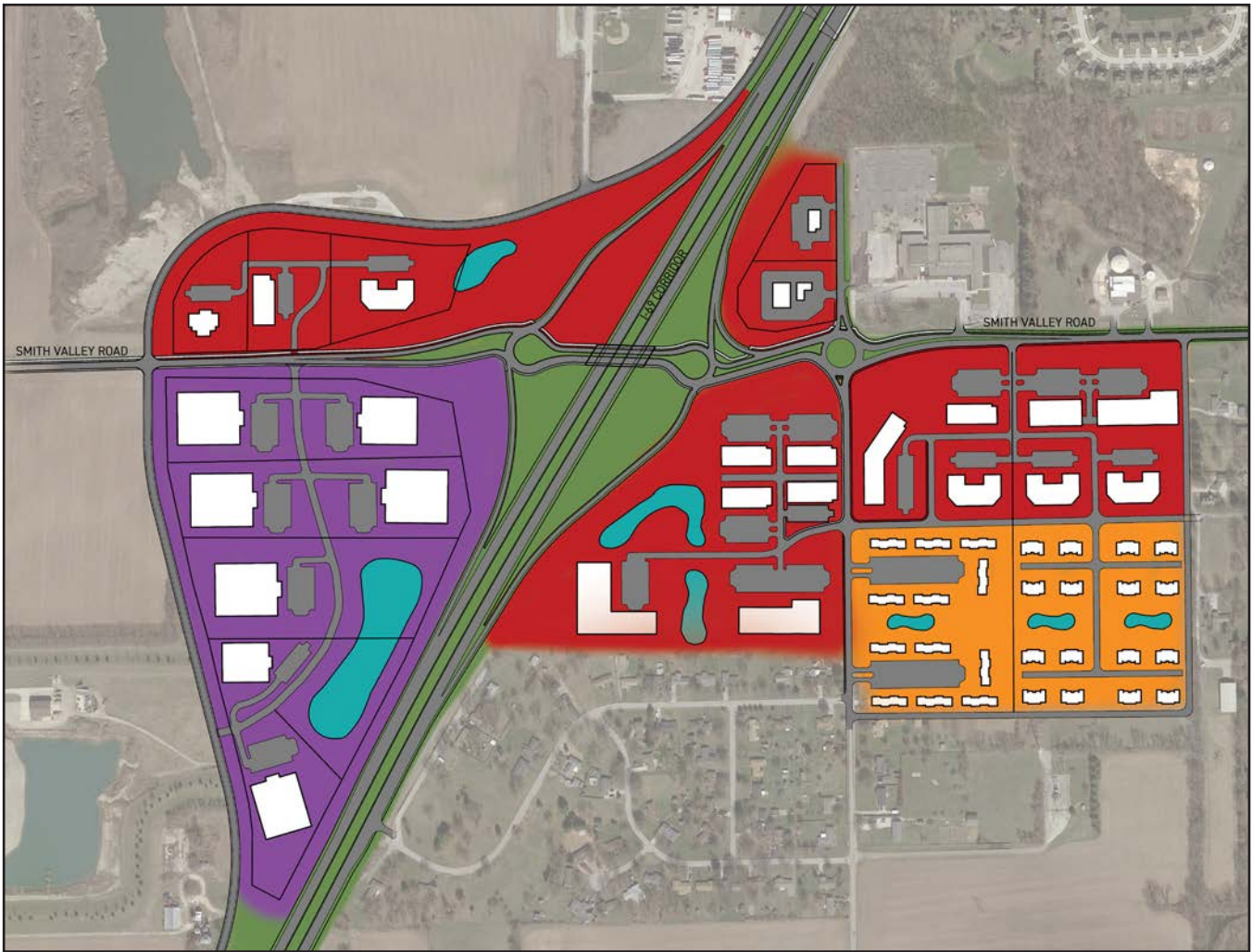
In terms of scope development, the interchange concept plan describing the Smith Valley Road and I-69 interchange offers more than the County Line Road interchange. Not constrained by county boundary line, all four corners of this interchange will be activated with development of the interstate. In the northwest corner of the interchange, three 47,000-square-foot retail buildings are shown on the concept plan.

The southwest corner is shown with technology-focused industrial and advanced manufacturing technology uses, including seven potential buildings totalling 322,000-total square feet.

The southeast side of the interchange contains primarily retail uses at the interchange and along Smith Valley Road. The concept plan shows approximately 55,000 square feet of B shop retail, 67,000 square feet of retail and office space and an additional 72,000 square feet of office space.

The southern portion of the concept plan identifies three types of mixed-density residential. The first foot print of residential shows 1,200-square unit with about 11 buildings and four units per unit. The second residential shown is approximately 16 buildings with four units in each. Each unit will be roughly 1,000-square feet and each building will make up 4,000-square feet. The final residential type shows three buildings with footprints of about 8,000-square feet each, totaling approximately 54 units.

EXHIBIT W: SMITH VALLEY ROAD AND I-69 INTERCHANGE
CONCEPTUAL PLAN



Legend

- Commercial/Retail
- Industrial
- Mixed Use

**This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.*

CR 144 and I-69 Interchange Conceptual Plan

The interchange located at CR 144 offers a unique opportunity, as it is a southern gateway into Johnson County. Given the interchange's relative proximity to the county line, most of the development potential for Johnson County lies on the east side of the interstate. CR 144 is a main connector from Morgan County and Hendricks County and an important gateway for Johnson County. Despite the west side constraints, this interchange likely represents the most straight forward pathway to development. As mentioned previously in this plan, sewer access is an issue. Once resolved, however, this interchange has the most open development ground of any of the three interchanges.

Development around the northwest quadrant of the interchange is shown to be primarily technology-focused light industrial. The plan identified the potential for five 52,000 square foot buildings.

The northeast quadrant of the interchange identifies 52,000 square feet of 'B' shop retail behind 16,000 square feet of retail and 105,000 square feet of office space. A large piece of this area is owned by the Morgan County Memorial Hospital Foundation and may be developed as a future medical institutional use.

The southeast quadrant is currently being looked at by a developer. The preliminary concept plan submitted by the developer has been included in this drawing for reference. The concept plan identifies a mix of uses, including retail and residential.

EXHIBIT X: CR 144 AND I-69 INTERCHANGE CONCEPTUAL PLAN



**This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.*

Corridor Overlay Plan Summary

This chapter has highlighted several elements fundamental to ensuring the corridors in White River Township set the tone for the character desired by the community, as the gateways along the new interstate will create the first impression for visitors and new businesses for Johnson County. Working with INDOT will be critical to make sure the interchange infrastructure works with the development standards to help set that first impression. This character then needs to be extended through thoughtful development practices along the key township corridors.

Many of the elements discussed in this plan must be implemented through development regulations and ordinances. A draft of that overlay ordinance is attached in the Appendix.

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CHAPTER 8: IMPLEMENTATION STRATEGIES

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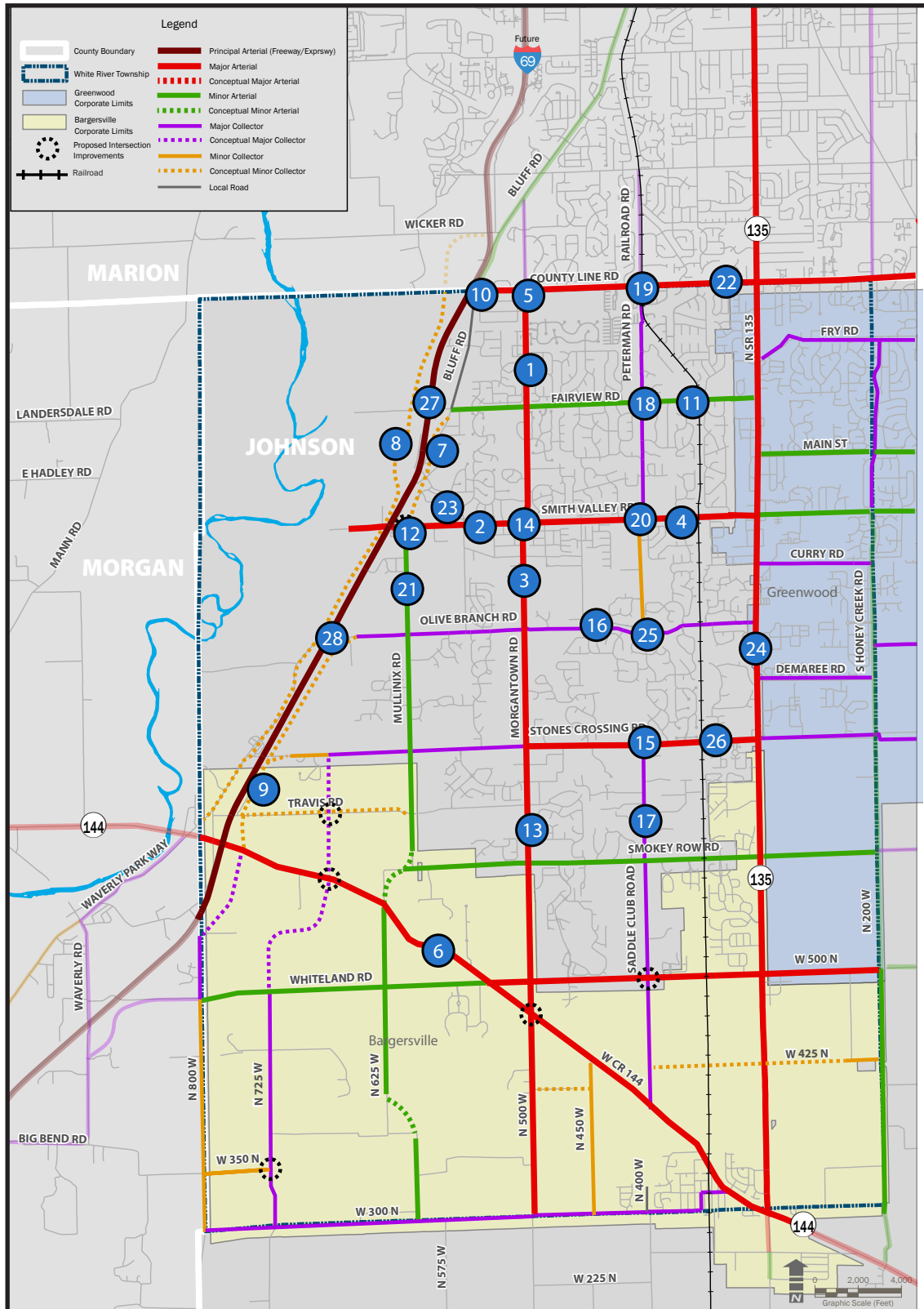
INTRODUCTION

Throughout this document, a series of goals and issues were identified relating to the transportation network and development expectations for the proposed interstate corridor. Related to those goals and issues was a series of analysis points to identify additional areas of focus and strategies regarding the transportation systems within White River Township. This chapter is dedicated to outlining the strategies and projects necessary to implement the plan's goals. Within this chapter, a series of priority projects will be identified to enhance the safety and efficiency of traffic flow throughout White River Township. These projects are intended to address both today's needs, as well as the projected needs of the future. Also included in this chapter is a series of policy recommendations to help address future transportation needs and manage development activities along the interstate corridor.

RECOMMENDED TRANSPORTATION PRIORITY PROJECTS

The projects in Exhibit W and Table 17 were identified to ensure White River Township can address existing traffic congestion and mitigate the projected traffic counts resulting from projected growth, development and changes in traffic patterns resulting from the I-69 project. These projects were identified based on the transportation analysis of existing traffic count data, existing accident and transportation issues, future traffic count data and INDOT's projected transportation ratings projected for 2045. Land use, utility infrastructure and existing development factors were also considered in identifying these priority projects. Table 17 lists the road name and section or intersection with a description of the recommended project and a recommended priority of each project. Proposed intersection improvements will aid in relieving congestion points along key corridors, and proposed road widening projects will aid in capacity and traffic flow. The highest priority projects should be considered in coordination with the I-69 project, as they will assist in managing traffic during the interstate construction process.

EXHIBIT W: RECOMMENDED TRANSPORTATION NETWORK IMPROVEMENT PRIORITY PROJECTS MAP



**This map is conceptual only and for the purpose of assisting the analysis of this plan. They are subject to change as actual development occurs in the future in currently undeveloped areas.*

TABLE 17: TRANSPORTATION NETWORK IMPROVEMENT PRIORITY PROJECTS

Road Section	Description	Priority
1.) Morgantown Road from County Line Road to Smith Valley	Widening to 4 to 5 lanes	High
2.) Smith Valley Road from I-69 to Morgantown Road	Widening to 4 to 5 lanes	High
3.) Morgantown Road from Smith Valley to Stones Crossing Road	Widening to 4 to 5 lanes	High
4.) Smith Valley Road from Morgantown Road to SR 135	Widening to 4 to 5 lanes	High
5.) Morgantown Road and County Line Road Intersection	Intersection Improvement	High
6.) CR 144 from I-69 to Morgantown Road	Widening to 4 to 5 lanes	High
7.) Bluff Road from Fairview Road to Smith Valley Road	Frontage Road	High
8.) West side frontage Road from County Line to CR 144	Frontage Road	High
9.) Frontage Road from Olive Branch Road to CR 144	Frontage Road	High
10.) County Line Road from I-69 to Morgantown Road	Widening to 4 to 5 lanes	High
11.) Fairview Road from Morgantown Road to SR 135	Widening to 3 to 4 lanes	Medium
12.) Mullinix Road and Smith Valley Road intersection	Intersection Improvement	Medium
13.) Morgantown Road from Stones Crossing Road to CR 144	Widening to 4 to 5 lanes	Medium
14.) Smith Valley Road and Morgantown Road Intersection	Intersection Improvement	Medium
15.) Stones Crossing Road and Saddle Club Road Intersection	Intersection Improvement	Medium
16.) Olive Branch Road from Morgantown Road to SR 135	Widening to 3 to 4 lanes	Medium
17.) Saddle Club Road from Stones Crossing Road to Smokey Row Road	Widening to 3 to 4 lanes	Medium
18.) Peterman Road and Fairview Road Intersection	Intersection Improvement	Medium
19.) Peterman Road and County Line Road Intersection	Intersection Improvement	Medium
20.) Peterman Road and Smith Valley Road Intersection	Intersection Improvement	Medium
21.) Mullinix Road from Smith Valley Road to CR 144	Widening to 3 to 4 lanes	Medium
22.) County Line Road from Morgantown Road to SR 135	Widening to 4 to 5 lanes	Medium
23.) Smith Valley Road and Paddock Road Intersection	Intersection Improvement	Medium
24.) SR 135 from Smith Valley Road to CR144	Widening	Medium
25.) Olive Branch Road and Berry Road Intersection	Intersection Improvement	Low
26.) Stones Crossing Road from Morgantown to SR 135	Widening to 3 to 4 lanes	Low
27.) Fairview and I-69	Future Access	Low
28.) Olive Branch and I-69	Future Access	Low

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PRIORITY PROJECT COST ANALYSIS

To support the implementation of the transportation improvements identified in this chapter, a series of conceptual cost estimates have been developed to better understand the overall scope and impact of these projects. These costs are solely conceptual and not intended to represent the actual cost of the future project or provide specific budgeting direction for funding of the projects. At the time any of these projects are proposed for implementation, detailed engineering analysis and related cost estimation will be necessary prior to the initiation of the projects.

While each project is part of a network system analysis, one project does not necessarily require the implementation of another. In other words, while each project is related to one another, each project can be considered independently as well. As projects on this list get built, it will be important to understand the impact to existing and projected traffic flow resulting from each implemented project. Future overall transportation network needs may change as a result of altered traffic patterns resulting from the implementation of projects or future constraints not anticipated as result of this plan.

The costs identified in this chapter are based on a series of assumptions and design criteria for each road segment. The costs identified do not include project engineering, construction inspection or right-of-way acquisition costs associated with any of the projects.

TABLE 18: PRIORITY IMPROVEMENT PROJECT COST ANALYSIS

Road	Segment	Indirect Cost Subtotal *	Roadway Construction Subtotal	Estimate Total
Smith Valley Road	I-69 to Morgantown Road	\$3,500,000	\$10,700,000	\$14,300,000
Improvement Description	4" overlay to 2 exist 12' Lanes; Construct 2- 12' lanes with 16' center median & curb/gutter; 6' sidewalks both sides			
Morgantown Road	County Line Road to Smith Valley Road	\$5,900,000	\$17,800,000	\$23,600,000
Improvement Description	4" overlay to 2 exist 12' Lanes & construct 2- 12' lanes with 16' center median & curb/gutter & 6' sidewalks both sides			
Smith Valley Road	Morgantown Road to SR 135	\$5,800,000	\$17,700,000	\$23,500,000
Improvement Description	4" overlay to 2 exist 12' Lanes & construct 2- 12' lanes with 16' center median & curb/gutter & 6' sidewalks both sides			
Fairview Road	Morgantown Road to SR 135	\$6,200,000	\$18,700,000	\$24,900,000
Improvement Description	4" overlay to 2 exist 12' Lanes & construct 2- 12' lanes with 16' center median & curb/gutter & 6' sidewalks both sides			
Morgantown Road	Smith Valley to Stones Crossing	\$5,800,000	\$17,500,000	\$23,300,000
Improvement Description	4" overlay to 2 exist 12' Lanes & construct 2- 12' lanes with 16' center median & curb/gutter & 6' sidewalks both sides			
Morgantown Road	Stones Crossing Road to CR 144	\$6,400,000	\$19,500,000	\$25,900,000
Improvement Description	4" overlay to 2 exist 12' Lanes & construct 2- 12' lanes with 16' center median & curb/gutter & 6' sidewalks both sides			

Notes:

Conceptual costing only-not based on actual site engineering of any of the projects.

Implementation of any of these projects will require design engineering and survey services to set alignments and establish actual construction cost estimates.

These costs do not include construction engineering, construct inspection or right-of-way acquisition costs.

*Additional Contingency: 25 percent

*Construction Survey: 3 percent

*Mobilization and Demobilization: percent

TABLE 18: PRIORITY IMPROVEMENT PROJECT COST ANALYSIS (CONT.)

Road	Segment	Indirect Cost Subtotal *	Roadway Construction Subtotal	Estimate Total
Stones Crossing Road	Morgantown to 135	\$6,400,000	\$19,400,000	\$25,800,000
Improvement Description	4" overlay to 2 exist 12' Lanes & construct 2- 12' lanes with 16' center concrete median & curb/gutter & 8' sidewalks both sides			
Whiteland Road	CR 144 to SR 135	\$7,500,000	\$22,600,000	\$30,000,000
Improvement Description	4" overlay to 2 exist 12' Lanes & construct 2- 12' lanes with 16' center concrete median & curb/gutter & 8' sidewalks both sides			
CR 144	SR 37 to Whiteland Road	\$6,700,000	\$20,300,000	\$27,000,000
Improvement Description	Construct 4- 12' lanes & 10' shoulders with 8' sidewalks both sides			
CR 144	Whiteland Road to SR 135	\$7,600,000	\$23,100,000	\$30,700,000
Improvement Description	Construct 4- 12' lanes & 10' shoulders with 8' sidewalks both sides			
Mullinix Road	Smith Valley to CR 144	\$7,400,000	\$22,400,000	\$29,900,000
Improvement Description	Construct 2- 12' lanes with 16' center turn lane & 10' shoulders with 8' sidewalks both sides			
Smokey Row Road	CR 144 to SR 135	\$7,700,000	\$23,300,000	\$31,000,000
Improvement Description	Construct 2- 12' lanes with 16' center turn lane & 10' shoulders with 8' sidewalks both sides			
Olive Branch Road	Morgantown Road to SR 135	\$4,600,000	\$13,900,000	\$18,500,000
Improvement Description	Construct 2- 12' lanes with 16' center turn lane & 10' shoulders with 8' sidewalks both sides			

Notes:

Conceptual costing only-not based on actual site engineering of any of the projects.

Implementation of any of these projects will require design engineering and survey services to set alignments and establish actual construction cost estimates.

These costs do not include construction engineering, construct inspection or right-of-way acquisition costs.

*Additional Contingency: 25 percent

*Construction Survey: 3 percent

*Mobilization and Demobilization: 5 percent

PROJECT FUNDING ALTERNATIVES

Given the scope of work for the transportation network improvements in White River Township necessary to accommodate projected future growth and the impacts of the I-69 project, no single funding source would be able to finance all of the work. With this in mind, it will be important for county officials to aggressively pursue funding alternatives to support local projects. What follows is a discussion of some of the funding alternatives available to Johnson County and the Town of Bargersville.

INDOT Through the I-69 Project

With the submission of the Final Environmental Impact Report, the alignment of the future interstate corridor is virtually set. However, design specifications of corridor improvements have some flexibility. It is unlikely additional access points to the interstate could be negotiated, but it may be possible to have INDOT include a more complete east side frontage road along I-69, as discussed in the Chapter 6, Transportation Analysis. Following the adoption of this plan, the county should initiate a conversation with INDOT regarding the possible inclusion of this project within the overall interstate construction project.

Indianapolis Metropolitan Planning Organization (MPO)

As stated previously, much of White River Township lies within the MPO's Urbanized Area Boundary and all of White River Township lies within the MPO's Metropolitan Planning Area. The process to update the state's on-system Functional Class Map for White River Township pursuant to the recommendations of this plan has already begun. The next step is to present the findings of this report to the MPO to seek the inclusion of more of the county's project within the MPO's Long-Range Transportation Plan. The current list of Johnson County projects within the LRTP is included in the Appendix of this document. Currently, the list includes proposed long-term improvements to sections of County Line Road, Smith Valley Road, Stones Crossing Road, Whiteland Road and CR 144. Most of these improvements exist in the plan for illustrative purposes only. Morgantown Road is not included in the LRTP as a future project at all. It will be essential for White River Township to secure LPA funding through the MPO funding process to fund the required future transportation improvements. County leaders will need to provide the 20 percent match for these monies, but this is a far better alternative to funding the projects with exclusively local monies.

INDOT Funds Outside of the I-69 Project

As identified previously in this plan, SR 135 is, and is projected to be, a challenging corridor for White River Township. The MPO's future traffic projections for SR 135 indicate that in 2045 there may be as many as 55,000 cars a day traveling on sections of the corridor. A comprehensive study of the SR 135 corridor, that reflects not only the projected growth in the area but also the changing traffic patterns as a result of the I-69 project, needs to be completed. This is a necessary first step if state funding will ever be allocated for future improvements to this critical north/south corridor.

Additionally, the need for improvements to Morgantown Road will become critically important as access points are removed from SR 37 as part of the interstate project. Consideration must be given by INDOT and the MPO of advance consideration of funding of this project given both the short-term and long-term need.

Local Tax Increment Financing (TIF)

Tax Increment Financing is a tool used by municipalities to promote and spur economic development by designating property tax revenue from increases in assessed values within a TIF district. TIF districts usually begin in an area that is blighted or underdeveloped, where development would usually not take place, but is because of the TIF. For example, an area is identified as an area of interest for development, the government then invests a certain amount of money to incentivize developers to come to the area who also invest a certain amount of money, usually more than the government. The difference between the original assessed value and the increased assessed value results in the amount of funds allocated to the TIF Fund. The money in the fund is used to pay for improvements, the costs of projects or other

related costs. TIF is not a viable solution for all communities, but it is a useful tool for areas that are experiencing, or are projected to experience, significant non-residential growth. Bargersville has already taken steps to implement a TIF area over the future interchange at CR 144. Similar consideration should be given the opportunities that TIF may provide at along other major corridors such as SR 135, Whiteland Road, Smith Valley Road and Morgantown Road. While roads are not the only elements of infrastructure needed to support community growth and economic development in White River Township, TIF districts are one option to be able to partially support needed transportation improvements.

Specialized State Funding Programs

From time to time the State of Indiana will initiate specialized funding programs, beyond the MPO, for which makes Johnson County and the Town of Bargersville eligible. Two recent examples of this are the Community Crossing and TRAX programs. Given the focus on infrastructure funding at both the state and federal level, it is reasonable to assume that more of these types of programs will be created in the future. Local entities should leverage all of these programs for potential transportation infrastructure funding.

Road Impact Fees

Impact Fees are fees placed on developers for new developments the proceeds of which are earmarked for transportation improvements identified in the local impact fee plan. State statute allows for the creation of impact fees for a variety of issues such as parks, utilities, public safety and transportation. These fees are collected when a builder obtains a building permit for a project (residential and non-residential). A skepticism of the fees is that some believe they discourage development. In reality, developers have expressed that they actually like the fees as they establish the cost of doing business in a community upfront. Various impact fees have been implemented in communities in Central Indiana and it does not appear to have slowed growth in the areas where they have been implemented. Like TIF, impact fees are an appropriate tool for growing areas, like White River Township. Given the amount of growth (both residential and non-residential) projected for White River Township (especially in the Town of Bargersville), impact fees may be a viable alternative to support future transportation improvements.

Local Funding

Given the amount and cost of needed infrastructure improvements in White River Township, it is unlikely that the needed improvements will be able to be completed without significant investment from the local entities. Whether a 20% match on an MPO project, a 100% locally funded project or a public private partnership with a private development interest, the local jurisdictions will need to be prepared to invest in their local transportation networks. When corridors cross jurisdictional lines, like the ultimate east/west regional connection corridor across Johnson County, opportunities will be created for joint funding and shared cost between impacted jurisdictions. There are several options available for local funding including, but not necessarily limited to:

1. Local property taxes. This may be coupled with the use of existing and future TIF districts to leverage the maximum potential funding benefit.
2. Local income taxes. Statutory changes in 2017 eliminated several income taxes such as COIT, EDIT and CAGIT in favor of a consolidated Local Income Tax (LIT). The maximum LIT for a county is 2.5% under the statute and that may create additional funding opportunities for Johnson County.
3. Road Impact Fees. As mentioned previously, this could be a significant revenue source for a growing area like Johnson County.
4. Wheel tax. Currently the county collects a wheel tax and those funds must be utilized on transportation related projects.

POLICY RECOMMENDATIONS

These recommendations are either updates to existing policies or creation of new policies that help support the recommended network improvements to manage long-term growth.

» *Update corridor overlay district language*

It is recommended that Johnson County and the Town of Bargersville update their existing corridor overlay language to include the I-69 corridor, CR 144 and SR 135. Bargersville's current corridor overlay district language includes CR 144 and SR 135 and identifies commercial and retail uses along the entire corridors. The proposed plan references land use maps to include mixed use and development focus areas at high traffic intersections as well as addressing the corridor's character and access management. Johnson County's comprehensive plan identified the need for additional details for the area along I-69. This overlay will need to be updated to reflect the proposed access points to I-69 as these will develop differently than anticipated in the previous land use map. Also, additional language should be included to address aesthetics and the appropriate character at key gateways. A draft of the revised overlay district language is included in the appendix of this document.

» *Adopt a bicycle, pedestrian and trail master plan*

Additional connections to key destinations such as retail, commercial, school, parks and neighborhoods is strongly desired by the citizens of White River Township. In most cases, trail and sidewalk pathways will follow along roadway corridors. However, topographical challenges and narrow street rights-of-way in some areas means that sidewalks and trails may not be located solely along the roadways. A Bicycle and Pedestrian Master Trail Plan can identify the best routes to complete connections to recreational alternatives and amenities for residents and visitors. By providing a network of trail and recreational

paths for White River Township, individuals may be more likely to walk or bike to destinations rather than drive potentially reducing congestion to the vehicular transportation system. Additionally, any trail master plan for Johnson County should coordinate with Morgan County and Marion County to ensure the maximum opportunities for regional connectivity.

» *Adopt an access management program for all roads classified as a collector and above*

Access management is important to implement in high traffic roadways. By reducing the number of stops or turns, vehicles are able to move more efficiently through the corridor with limited interruption. As indicated within this plan, access management principles for curb cut design along roadways and the use of frontage roads can aid in the efficiency of the roads within White River Township. Currently the City of Greenwood and Johnson County are working to address some of the existing access issues that exist along SR 135 and this work should continue. In order to get ahead of future congestion problems, White River Township and Bargersville need to consider access management issues moving forward as corridors such as CR144, Smith Valley Road, Whiteland Road and Morgantown Road are improved.

» *Adopt a traffic impact study requirement for new development considerations*

As new development and potential redevelopment opportunities come to White River Township, it is recommended traffic impact studies be required for developments to better understand the additional traffic and potential issues that may be created as a result of the development. Currently the Town of Bargersville collects these studies on a case by case basis. Impact studies are important elements that the county and Bargersville can use to justify future infrastructure investments and the implementation of certain potential funding

tools for future projects. The studies can also be helpful in determining project specific needs such as access controls, design standards, turn lanes and right-of-way considerations.

» *Consider implementing traffic impact fees for new development*

Unlike the traffic impact study, traffic impact fees can be required for any new development within White River Township and the Town of Bargersville if the proper ordinances are put into place. Because the new development will likely increase the amount of traffic on the adjacent roadways, traffic impact fees received by each new development would create a funding mechanism to help finance the transportation improvements that are required as a result of those new developments. This is especially important for Bargersville given that much of the future road improvements in the southern part of White River Township will be the result of the development of currently undeveloped property. These fees have the advantage of helping shift some of the burden of future infrastructure needs on those that create the need. Road impact fees are one of the few tools available to growing areas to help manage future infrastructure needs and are a viable tool for areas that are anticipated to experience as much potential future growth as White River Township.

» *Update zoning ordinance and subdivision control ordinances to reflect recommendations of this plan*

In some cases, design standards and right-of-way widths are recommended in this plan that are different than those of the existing zoning codes and subdivision control ordinances. Where these standards differ, it is recommended that the ordinances be amended to reflect the standards developed within this plan.

» *Consider speed limit consistency along major corridors*

To ensure ease of traffic flow and lessen confusion of traffic speeds, it is recommended consistency of speed limits along major corridors be established. These changes should be completed taking into consideration local, state and federal guidelines. The key here is to create consistency in the implementation of speed control ordinances in similar situations and along similar corridors. This will help vehicle operators better anticipate speed limit changes.

» *Coordinate storm water discussions with INDOT as part of the I-69 project*

As part of the engineering for I-69, county officials should work with INDOT to evaluate where there are measures that can be taken to help mitigate the floodway fringe areas along future I-69, especially on the east side of the future interstate. Analysis may also indicate potential alteration of the floodway itself, but the focus of this recommendation is trying to find opportunities to mitigate/reduce the floodway fringe areas where appropriate. The hope is that additional developable area can be created to help support the overall economic development impact of the interstate, especially near the new planned interchanges. This report has identified several areas that would be attractive for commercial and industrial development if some alteration of the floodway fringe were possible. It will be important to have these discussions early on in the design process.

» *Allow a mix of uses and densities within major corridors*

Because every corridor will likely have its own character of development, it is recommended that a variety of uses and densities along major corridors, such as Morgantown Road, Smith Valley Road and CR 144 be encouraged. By allowing a mix of uses along major corridors, it provides flexibility and ability for the county and Bargersville to maximize the economic development potential and provide unique destinations for living, shopping and employment options. Beyond land use, it will also be important to consider an appropriate mix of development densities. This may result in higher density developments at key intersections and gateways to take advantage of their economic development opportunities.

» *Provide sewer utility services to the area around the proposed CR 144 interchange*

Development along the interstates is driven by many factors including the availability of utility infrastructure and proper roadway access. While water service is available near the interchange, sanitary service is not currently available. There are multiple discussions taking place about the best method to provide sanitary service to the area around the proposed interchange. These discussions should continue and a reasonable solution found and implemented. This solution may require a combination of public and private partners to deliver the infrastructure. Whatever the ultimate solution, the true economic potential of the interchange cannot be achieved without full utility services.

» *Pursue east side frontage road along I-69*

With three access points to I-69, it is important frontage roads and alternative access roads be considered for emergency vehicle access and alternative routes in the event of accidents. A full frontage road along the west side of the future interstate is already proposed within INDOT's plans. This plan recommends pursuit of

a similar frontage road along the east side of the future road. Bluff Road already exists between County Line Road and Fairview Road. As part of the proposed work for the interstate, INDOT is proposing a frontage road to connect CR 144 to Stones Crossing. This plan recommends pursuit of additional consideration to connect Stones Crossing Road to Fairview Road. Most of this connection would be relatively straight forward except for the segment between Fairview Road and Smith Valley Road where existing development will need to be considered in any future routing.

» *Traffic calming measures on Bluff Road*

If a full frontage road along the east side of I-69 cannot be completed, then work will need to be completed to lessen the potential for Bluff Road to become a desired north/south alternative to connect future traffic from County Line Road to Smith Valley Road. With the proposed elimination of current SR 37 access at Fairview Road and Bluff Acres Road, traffic patterns will shift within the area to get to one of the limited number of proposed access points to the future interstate. Bluff Road already serves as a north/south route for limited traffic, the limited access points will likely push additional traffic through existing residential areas such as the Wakefield subdivision. Traffic calming measures should be considered for this roadway to discourage individuals to use this as a through street to County Line Road and Smith Valley Road. These measures may include offsetting intersections, partially closing off access to Bluff Road south of Fairview Road, speed control improvements, etc. The future improvement of Morgantown Road will hopefully mitigate some of the use of Bluff Road but without the completion of a better connection to Smith Valley Road, some measure of traffic reduction/calming will be required.

» *Special study of the SR 135 corridor*

Aside from SR 37, SR 135 currently carries the majority of the north/south traffic in White River Township. The current high traffic volumes are projected to get even higher as the township continues to grow. While study of the corridor has been completed in the past, it has not resulted in the kinds of improvements that are needed for this corridor now or in the future. The Town of Bargersville, Johnson County and the City of Greenwood should work with INDOT and the Indianapolis MPO to complete a study of what it will take to provide and maintain functionality of this corridor in the future. This special study may identify recommended improvements to intersections, access management and prioritize a schedule of planned improvements.

» *Formalize preferred option for regional east/west corridor*

There has been much discussion of the need for an east/west regional corridor through Johnson County. Different alternatives have been discussed but it appears that, as time goes on, viable alternatives are becoming limited. The City of Greenwood is working to improve the Worthsville Road corridor as a connection between I-65 and future I-69. This study suggests that another viable alternative would be improving Whiteland Road across the county as a regional corridor. The relative openness of the corridor, as well as the ongoing discussions about rerouting Whiteland Road south of Whiteland, seem to make this a viable alternative for consideration. Given the anticipated future growth in the area, if Whiteland Road is to be this corridor efforts should be made to, at a minimum, secure right-of-way from future developers to support the development of the corridor in the future. This will require a multi-jurisdictional discussion between the county, the Town of Bargersville, the City of Greenwood, the

Town of Whiteland and likely the City of Franklin. Given this, it will be essential that the county take the lead in setting the table for discussions if Whiteland Road is to be pursued in the future.

» *Interchange aesthetics*

Johnson County and the Town of Bargersville will have the opportunity to negotiate with INDOT the aesthetic character of the future interstate interchanges along I-69 in Johnson County. Through discussions with stakeholders and the public as part of this planning effort, a concept of potential improvements have been included in the Corridor Overlay chapter of this plan. This should be considered a starting point for the discussions with INDOT. It will be important for community leaders to ensure that key stakeholder who have been involved in these discussions locally, like ASPIRE, remain engaged in the conversations as they begin with INDOT. The exact timing of the conversations is not known at the time of this planning effort, but early discussions should take place to make INDOT aware of the county's interest in being involved in the discussions. It will also be important to make sure that the aesthetic discussions take place early enough in the design of the Johnson County section of I-69 to have a full impact on the final decision making process.

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CHAPTER 9: APPENDIX

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EXHIBIT A1: KEY TERMS LIST

There are several technical terms used throughout this plan that are specific to transportation planning. Some of these key terms are listed below. A more complete listing can be found in the appendix.

Annual Average Daily Traffic (AADT): The total traffic volume passing a point or segment of a highway facility in both directions for one year divided by the number of days in a year.

Capacity: The maximum rate of flow at which persons or vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic and control conditions, usually expressed as vehicles per hour or persons per hour.

Functional Classification: Classification of roadways based on two key characteristics: roadway mobility (traffic volume) and roadway accessibility (entry and exit onto the roadway).

Level of Service: Qualitative measure describing operational conditions within a traffic stream, generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, safety, comfort and convenience.

Multi-Modal: Utilizing multiple forms of transportation, including transit, vehicular, cycling and pedestrian.

Right of Way: Publicly owned land reserved for public infrastructure purposes such as roadways, railroads, utilities, greenways, etc.

FHWA: Federal Highway Administration. Agency within the U.S. Department of Transportation that supports state and local governments in the design, construction and maintenance of the nation's highway system (Federal Aid Highway Program) and various federally and tribally owned lands.

Indianapolis MPO: Indianapolis Metropolitan Planning Organization. Responsible for conducting a continuing, cooperative and comprehensive transportation planning process within the Indianapolis region.

INDOT: Indiana Department of Transportation

EXHIBIT A2: CLASSIFICATION MAP CHANGES LIST

Road Segment	Existing Classification	Future Classification
1. CR 144 from SR 37 to SR 135	Major Collector	Major Arterial
2. CR 800 W from Whiteland Road including connection to CR 144	Minor Collector	Major Collector
3. New road connection from CR 144 to Whiteland Road	N/A	Major Collector
4. Whiteland Road from CR 800 W to CR 144	Minor Collector	Minor Arterial
5. CR 725 W from Whiteland Road to CR 300 N	N/A	Major Collector
6. CR 800 W from CR 350 N to CR 300 N	N/A	Minor Collector
7. CR 300 N from CR 800 W to CR 500 W (Morgantown Road)	Minor Collector	Major Collector
8. CR 625 W from CR 300 N to CR 144	N/A	Minor Arterial
9. CR 500 W (Morgantown Road) from CR 300 N to CR 144	N/A	Major Arterial
10. CR 450 W from CR 300 N to CR 144 including connection to CR 500 W (Morgantown Road)	N/A	Minor Collector
11. CR 300 N from CR 500 W to CR 144	Minor Collector	Major Collector
12. Saddle Club Road from CR 144 to Stones Crossing Road	N/A	Major Collector
13. CR 425 N from CR 200 W to Saddle Club Road (includes existing and new section)	N/A	Minor Collector
14. CR 500 N (Whiteland Road) from SR 135 to CR 144	Minor Arterial	Major Arterial
15. Morgantown Road from CR 144 to CR 500 N (Whiteland Road)	Major Collector	Major Arterial
16. Morgantown Road from CR 500 N (Whiteland Road) to County Line Road	Minor Arterial	Major Arterial
17. Smokey Row Road from Morgantown Road to SR 135	Major Collector	Minor Arterial
18. Smokey Row Road from Morgantown Road to new road connection into CR 144	N/A	Minor Arterial
19. Mullinix Road from Smokey Row Road to Stones Crossing Road	N/A	Minor Arterial
20. Travis Road from Mullinix Road to new frontage road connection to CR 144	N/A	Minor Collector
21. New road connection from Stones Crossing Road to Travis Road to CR 144	N/A	Major Collector
22. New frontage road connection from Stones Crossing Road into CR 144	N/A	Minor Collector
23. New road connection from CR 144 to County Line	N/A	Minor Collector
24. Stones Crossing Road from Morgantown Road to new frontage road connection into CR 144	Minor Arterial	Major Collector/Minor Collector
25. Stones Crossing Road from Morgantown Road to SR 135	Minor Arterial	Major Arterial
26. Mullinix Road from Stones Crossing Road to Smith Valley Road	Major Collector	Minor Arterial
27. Smith Valley Road from SR 37 to SR 135	Minor Arterial	Major Arterial
28. Peterman Road from Olive Branch Road to Smith Valley Road	N/A	Minor Collector
29. Fairview Road from Bluff Road to SR 135	Major Collector	Minor Arterial

EXHIBIT A3: COMMUNITY ASSETS LIST

LABEL	ASSET	LABEL	ASSET
1	SUGAR GROVE ELEMENTARY SCHOOL	16	WHITE RIVER TOWNSHIP FIRE STATION 51
2	CENTER GROVE ELEMENTARY SCHOOL	17	CAMPBELL FIELD
3	CENTER GROVE HIGH SCHOOL	18	WALNUT RIDGE GOLF COURSE
4	MAPLE GROVE ELEMENTARY SCHOOL	19	NORTHWEST ANNEX
5	NORTH GROVE ELEMENTARY SCHOOL	20	HARRY MCNABB MEMORIAL FIELDS
6	CENTER GROVE MIDDLE SCHOOL CENTRAL	21	NORTHWEST PARK
7	CENTER GROVE MIDDLE SCHOOL NORTH	22	TRAILS PARK
8	PLEASANT GROVE ELEMENTARY SCHOOL	23	ORCHARD GOLF CENTER
9	SS FRANCIS AND CLARE CATHOLIC CHURCH/ SCHOOL	24	BARGERSVILLE BASKETBALL COURT
10	BARGERSVILLE POLICE DEPARTMENT	25	SMITH VALLEY COMMUNITY CENTER
11	BARGERSVILLE FIRE STATION 1	26	BLUFF CREEK GOLF COURSE
12	WHITE RIVER TOWNSHIP FIRE STATION 52	27	INDEPENDENCE PARK
13	WHITE RIVER TOWNSHIP FIRE STATION 51	28	JOHNSON COUNTY PUBLIC LIBRARY
14	GREENWOOD FIRE STATION 92	29	BARGERSVILLE CEMETERY
15	BARGERSVILLE COMMUNITY FIRE STATION 2	30	FOREST LAWN CEMETERY
		31	LOWE CEMETERY
		32	MALLOW CEMETERY
		33	MESSERSMITH CEMETERY
		34	MILLER CEMETERY
		35	MOUNT AUBURN CEMETERY
		36	MOUNT PLEASANT CEMETERY

EXHIBIT A4: PUBLIC INPUT SUMMARY

Public Input Meeting Results

1

Existing Traffic Issues

1 Tell us about current traffic concerns

1. Place a post-it note next to the issues and tell us about them.



Key Topics for Discussion:

- No more roundabouts/more roundabouts
- Truck traffic clogs east/west corridors
- Widen Smith Valley Road and County Line Road (4 or 5 lanes)
- Enforce standard speed limit- 35 mph for major roadways
- Congestion on corridors:
 - SR 135
 - County Line Road
 - Morgantown
 - Stones Crossing
- Need trails on major roadways
- Need for railroad overpass to eliminate stops
- Dangerous intersections:
 - Olive Branch + Peterman
 - Stones Crossing + Saddle Club
 - Railroad Road
 - Left turn off Paddock to Smith Valley
 - SR 144
 - Smith Valley + Carefree (6 entrance points)

EXHIBIT A5: PUBLIC INPUT SUMMARY (CONTINUED)

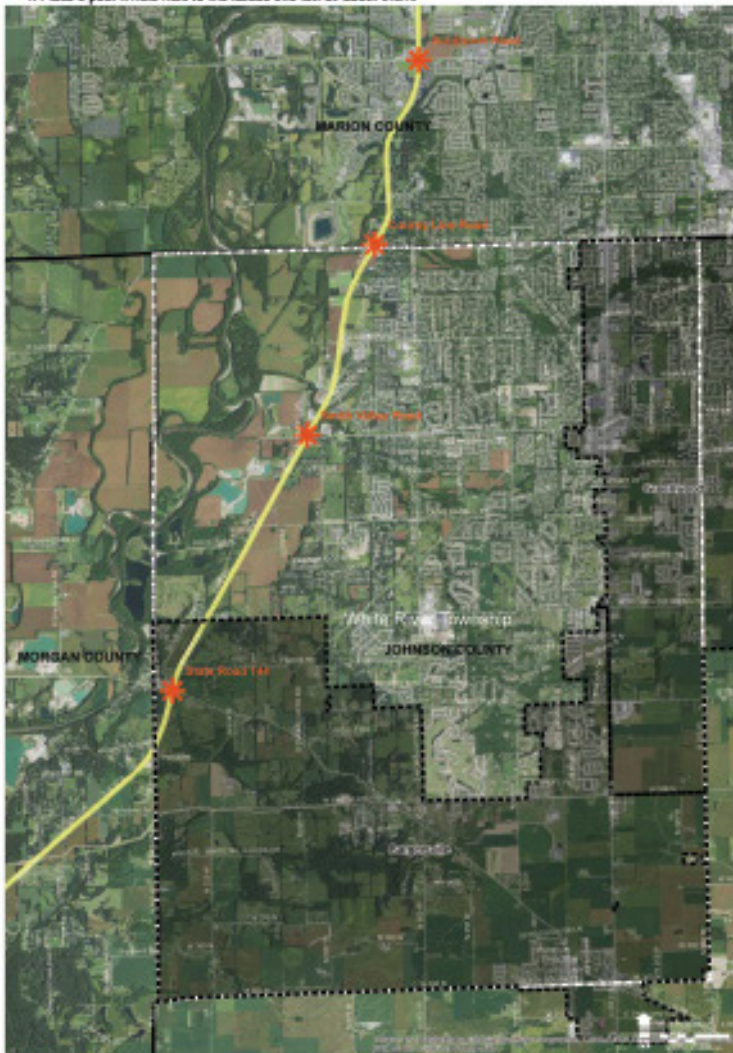
Public Input Meeting Results

2

Anticipated Future Traffic Issues

2 Tell us about future traffic issues you anticipate with the proposed I-69 alignment

1. Place a post-it note next to the issues and tell us about them.



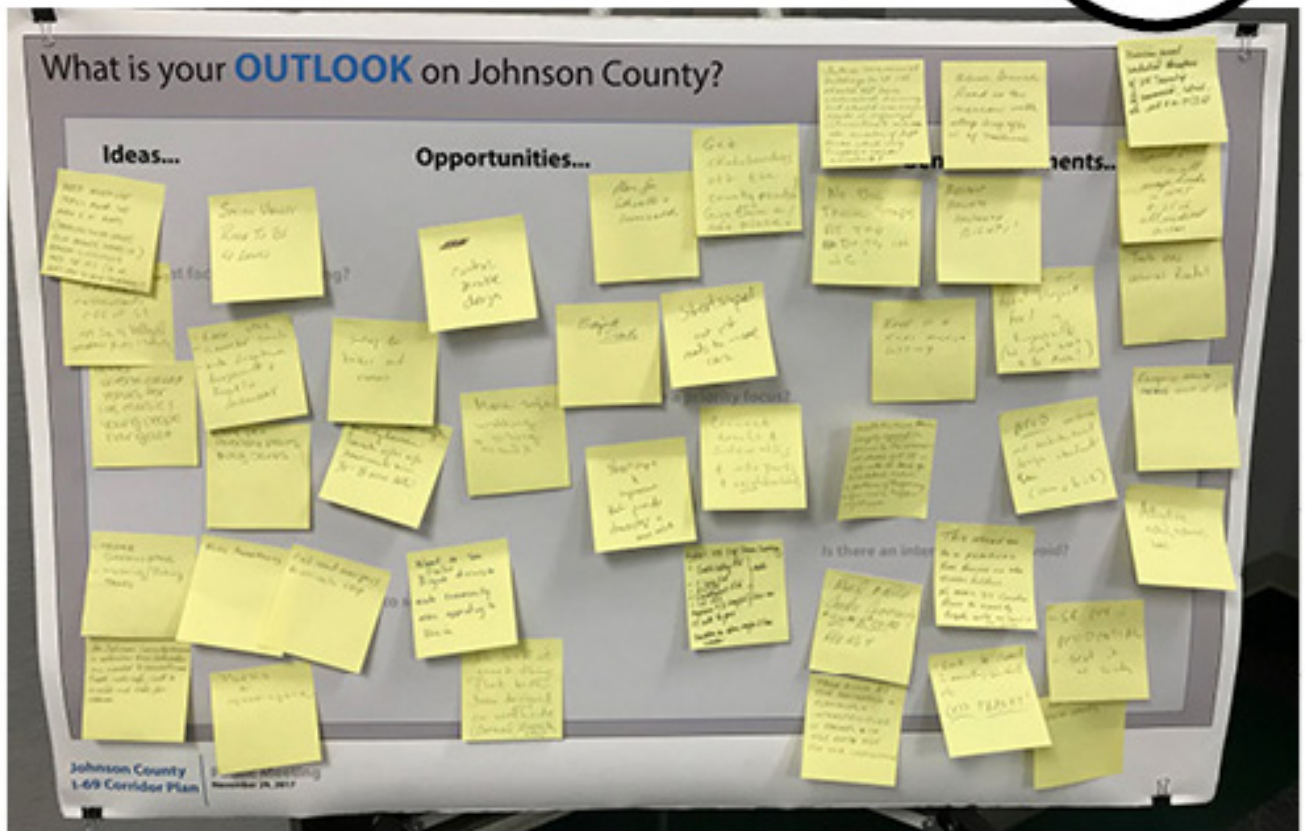
Key Topics for Discussion:

- Smith Valley can't handle increased traffic
- Need 69 access point on Fairview because of school locations
- 144 is not designed to handle traffic
- Removing access points on 69 will increase existing congestion issues
- SR 135 needs more access management
- SR 144 needs 4 or 5 lanes
- 40-45 mph is too fast- 35 mph is desired
- SR 37 + SR 144 roads can't handle any new development
- Increased traffic through Wakefield neighborhood by Bluff Road due to Fairview closure
- Need for emergency vehicle access on west side of 69
- Improvements needed to Mullinix and intersection improvements.

EXHIBIT A6: PUBLIC INPUT SUMMARY (CONTINUED)

Public Input Meeting Results

3

**OPPORTUNITIES:**

- Update interchanges to gateways into Johnson County
- Utilize Bargersville + Franklin as destinations
- Create unique architectural standards for new development (brick + stone)
- Establish speed standard (major roads 35mph; residential areas as 25mph)
- Use precedent locations on north side (Zionsville, Westfield, Carmel)
- Maintain rural elegant feel

ISSUES:

- Need for trails and sidewalk connectivity
- Commercial development only along interchanges
- No truck stops at any interchange in Johnson County
- Need for places for younger population to go/ play/skateboard
- Future commercial buildings on SR 135 should NOT have individual driveways but should use access roads at signalized intersections to reduce the number of left turns which clog traffic and cause accidents

EXHIBIT A7: PUBLIC INPUT SUMMARY (CONTINUED)

Public Input Meeting Results

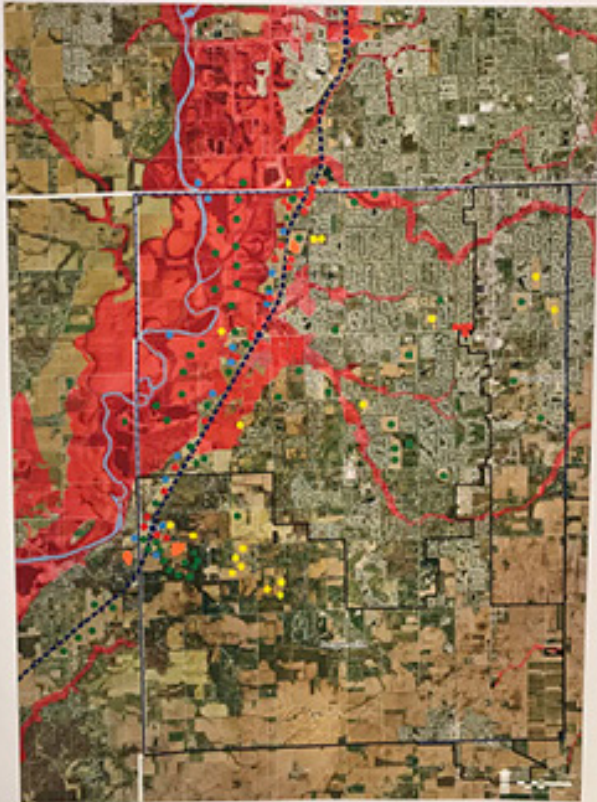
4

Anticipated Development Areas

4 Where do you WANT certain land uses within Johnson County?

1. Place a YELLOW dot on the map where you want to see RESIDENTIAL.
2. Place a RED dot on the map where you want to see COMMERCIAL/RETAIL.
3. Place a GREEN dot on the map where you want to see PARKS/OPEN SPACE.
4. Place a BLUE dot on the map where you want to see INDUSTRIAL/MANUFACTURING.
5. Place a BROWN dot on the map where you want to see MULTI-FAMILY RESIDENTIAL.

- YELLOW- SINGLE FAMILY RESIDENTIAL
- RED- COMMERCIAL/RETAIL
- GREEN- PARKS/OPEN SPACE
- BLUE- INDUSTRIAL/MANUFACTURING
- BROWN- MULTI-FAMILY RESIDENTIAL



Johnson County
I-69 Corridor Plan
Public Meeting
November 28, 2017

SINGLE FAMILY RESIDENTIAL

- Should be located along SR 144
- Along Bluff Road

COMMERCIAL/RETAIL

- Location opportunity on west side of future I-69
- Location opportunity on Smith Valley before SR 135 intersection
- Location opportunity at SR 144 interchange (both west and east sides)
- Location opportunity at County Line Road interchange (both west and east sides)

PARKS & RECREATION

- Should be located at Sr 144 interchange
- Open space should be located at under/undeveloped sites between subdivisions
- Use flood plain as open space on west side of future I-69

INDUSTRIAL

- Location opportunity on west side of future I-69
- Location opportunity at SR 144 interchange (both west and east sides)

MULTI-FAMILY RESIDENTIAL

- Location opportunity at SR 144 interchange
- Location opportunity along Bluff Road

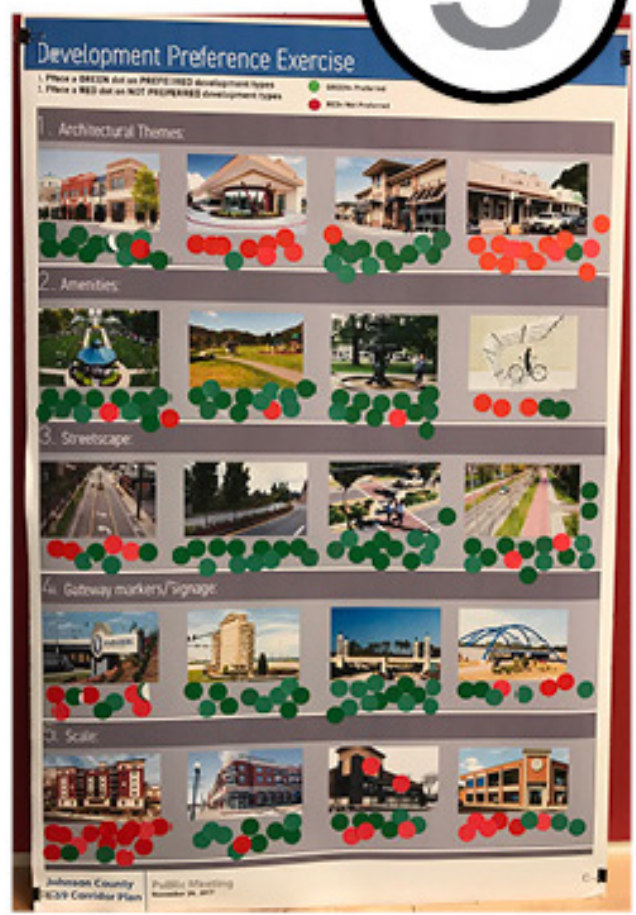
EXHIBIT A8: PUBLIC INPUT SUMMARY (CONTINUED)

Public Input Meeting Results

5

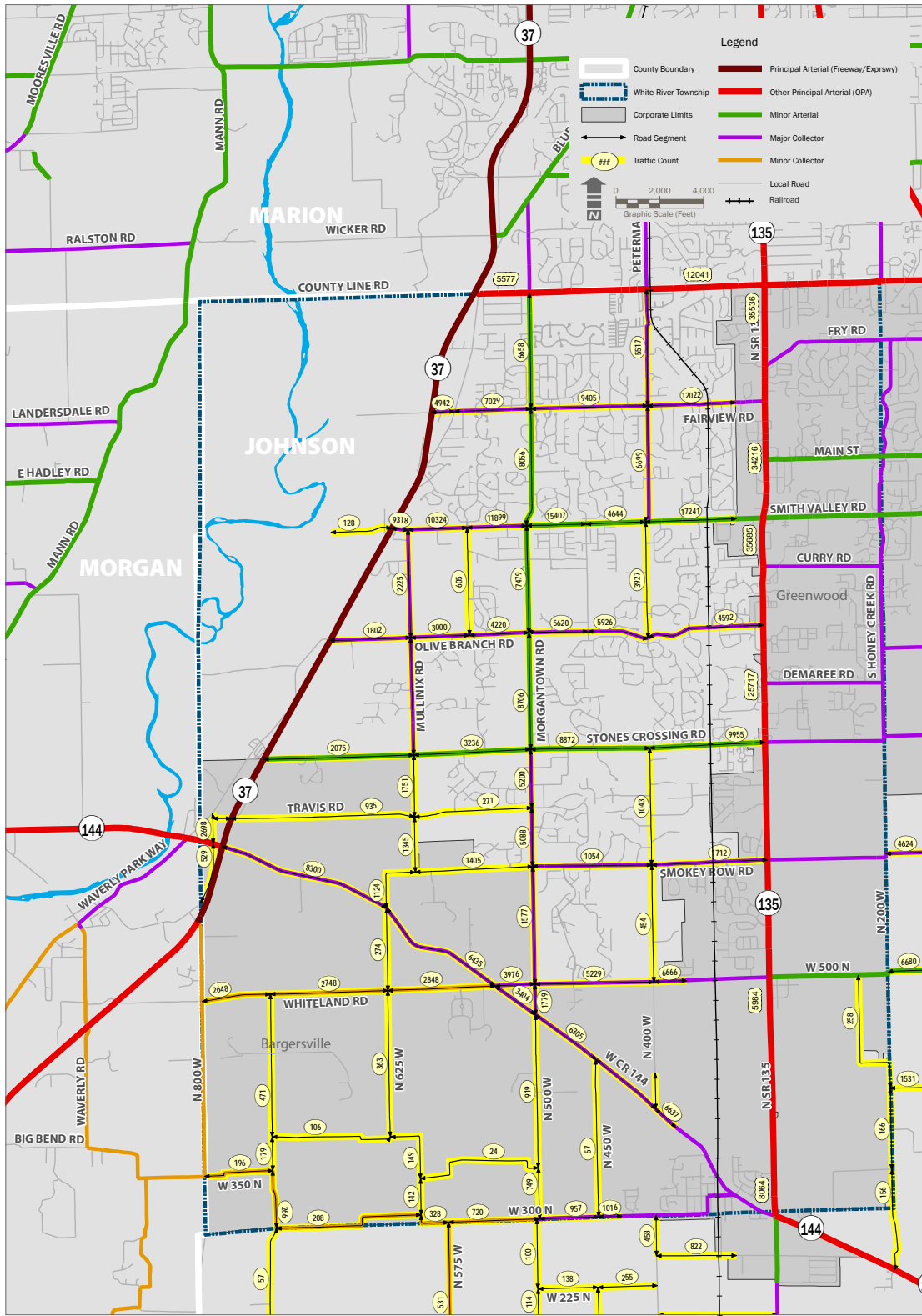
**Tangibles:**

- Smaller square footage, all brick one-story office buildings desired or glass/brick 2-3 story multi tenant commercial office desired.
- Stone and architecturally appealing industrial (not big box distribution with loading docks) desired
- High quality grocery store desired/ strip multi tenant retail discouraged
- Large brick + stone, large lot single family residential and town home style homes desired
- 3-4 story apartment with amenities and duplex housing desired for multi-family residential

**Tangibles:**

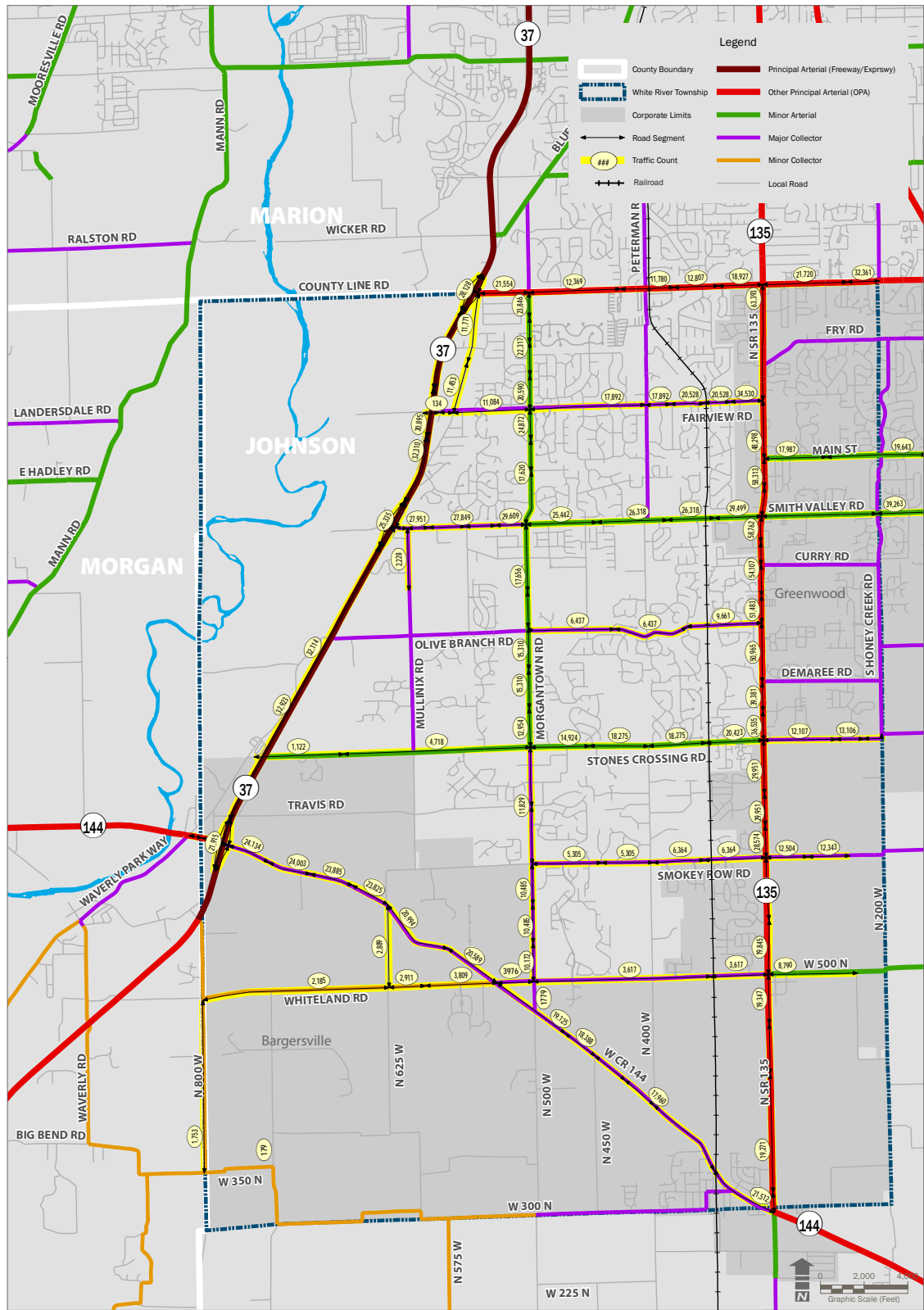
- Two-story brick/multi facade treatment architectural theme desired/strip EIFS architectural themes discouraged
- Fountains, Open Space parks, and park facilities (covered shelters, pergolas, etc.) desired.
- Median vegetation + street trees, safe pedestrian cross walks, and separated bike lines and trails desired.
- Interchange overpass gateway art (tall pillars, decorative lighting desired. Brick or stone monument directional signage desired.
- 2-3 story urban multi use buildings desired. 4-5 story undesirable

EXHIBIT A9: EXISTING TRAFFIC COUNTS MAP



Source: HWC Engineering
Data Source: Johnson County

EXHIBIT A10: FUTURE TRAFFIC COUNTS MAP



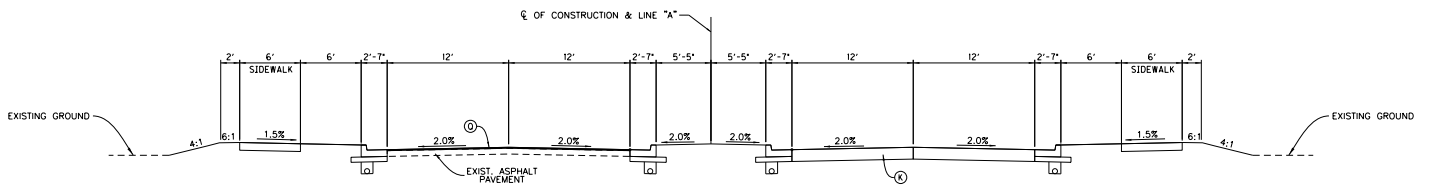
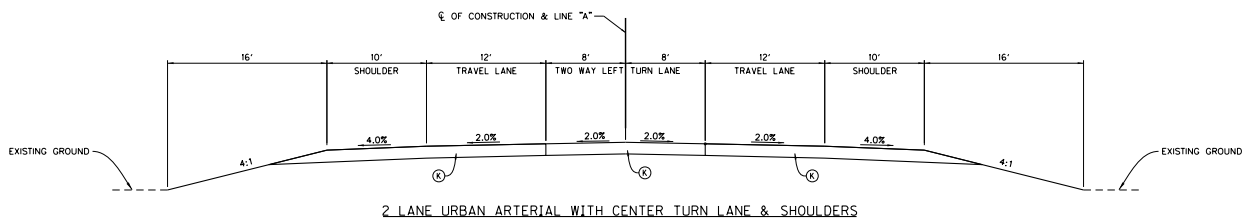
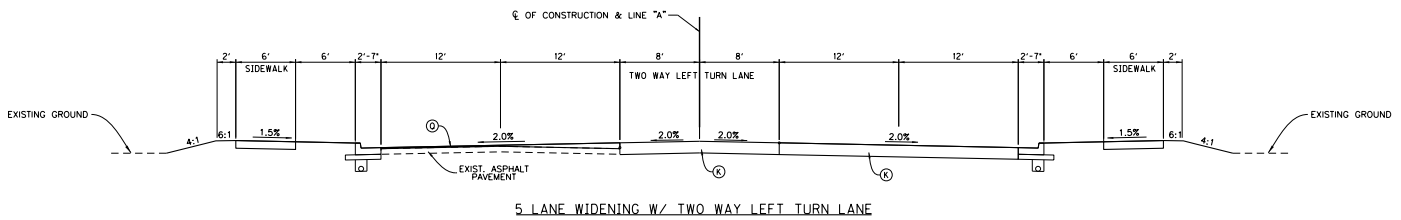
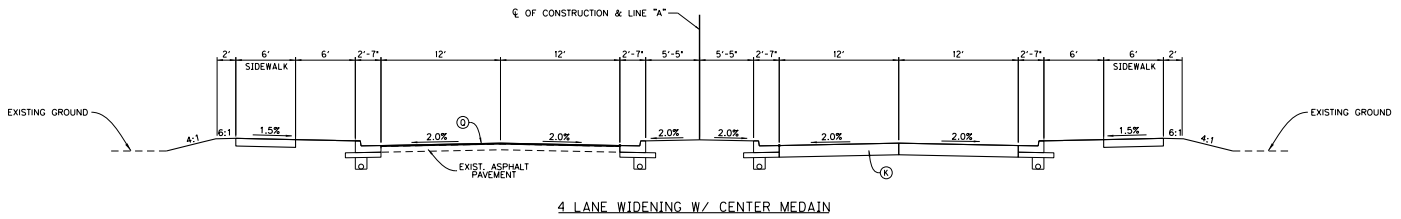
Source: HWC Engineering
Data Source: Indianapolis MPO

EXHIBIT A12: 2045 LRTP RECOMMENDED PROJECTS

The list below identifies the projects within White River Township that are already slotted for design and construction through the MPO. These projects have been considered when developing the priority projects list in Chapter 8. Some of these transportation projects are assigned a long term time lines. It is likely INDOT will have started the construction or completed the construction of I-69 by the time major roadways that affect White River Township's transportation network are improved as indicated in this table.

Table 16: 2045 LRTP Recommended Projects List					
<i>LRTP #</i>	<i>Project Name</i>	<i>Description/Project Type</i>	<i>Sponsor</i>	<i>Cost</i>	<i>Assigned Period</i>
5203	Smith Valley Road Widening	Widen 2 in to 4 in from SR 135 to S. Emerson Ave. Added Travel Lanes	Greenwood	\$44,755,995	2016-2025
5108	Worthsville Road Connector	New 2 lane roadway extending Worthsville Road to Franklin Road; East-West Connector	Johnson Co.	\$3,660,370	2016-2025
6116	County Line Road Widening	Widen 2 in to 4 in div. From Morgantown to SR 135- Added travel lanes	Indianapolis DPW	\$7,296,168	2026-2035
5102	Stones Crossing Widening	Widen 2 in to 4 in div. From SR 37 to SR 135- added travel lanes	Johnson Co.	\$32,856,568	2036-2045
5107	Whiteland Road Widening	Widen 2 in to 4 in div. From SR 225 E to I-65	Johnson Co.	\$17,646,908	2036-2045
5101	Smith Valley Road from Mann Rd to Sr 37	New 2 in on 4 in div. ROW- new road	Johnson Co	\$11,500,000	Illustrative
5104	CR 144 Widening from SR 37 to Whiteland Rd	Widen 2 in to 4 in div.- Added travel lanes	Johnson Co.	\$9,100,000	Illustrative
5105	Whiteland Road Widening	Widen 2 in to 4 in div. From CR 144 to SR 135- Added travel lanes	Johnson Co.	\$6,500,000	Illustrative
5303	Whiteland SE Bypass	Construction of SE bypass of Town of Whiteland, includes overpass of Louisville & Indiana rail line- New road	Whiteland	\$100	Illustrative

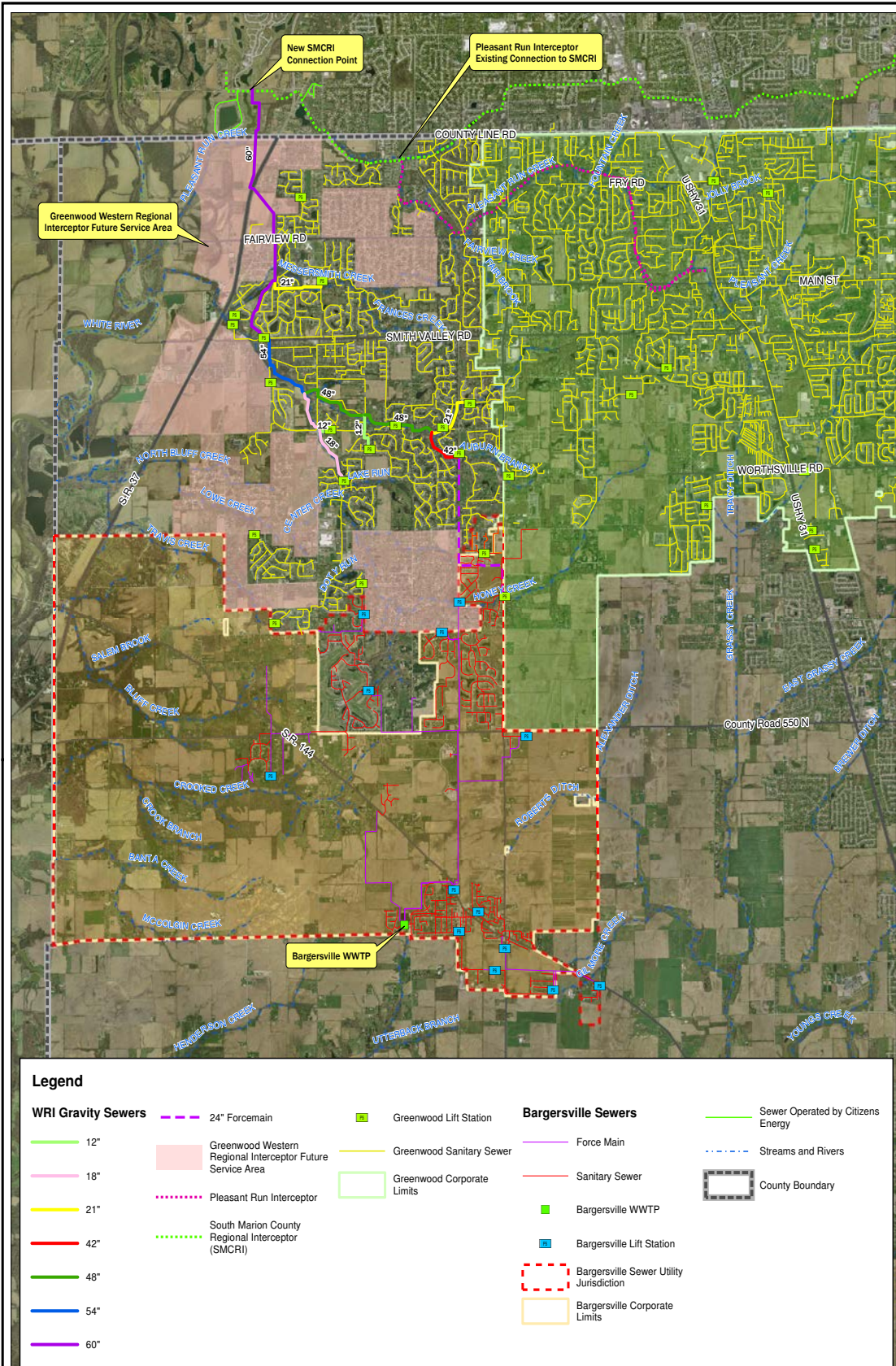
EXHIBIT A13: TYPICAL STREET CROSS SECTIONS



- (X) FULL DEPTH HMA PAVEMENT
- (4) 4" ASPHALT OVERLAY

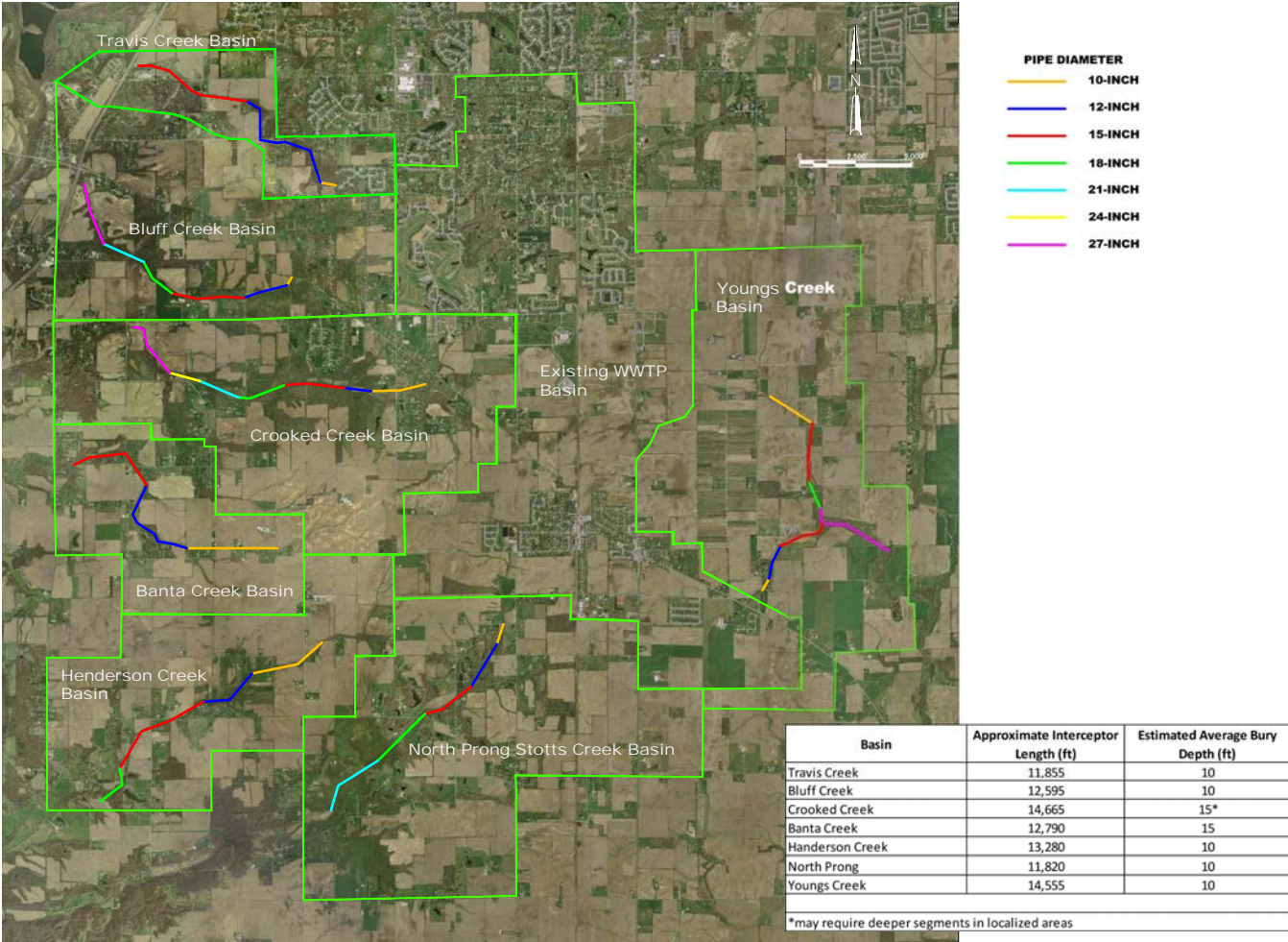
Source: HWC Engineering

EXHIBIT A14: FUTURE SEWER LINE MAP



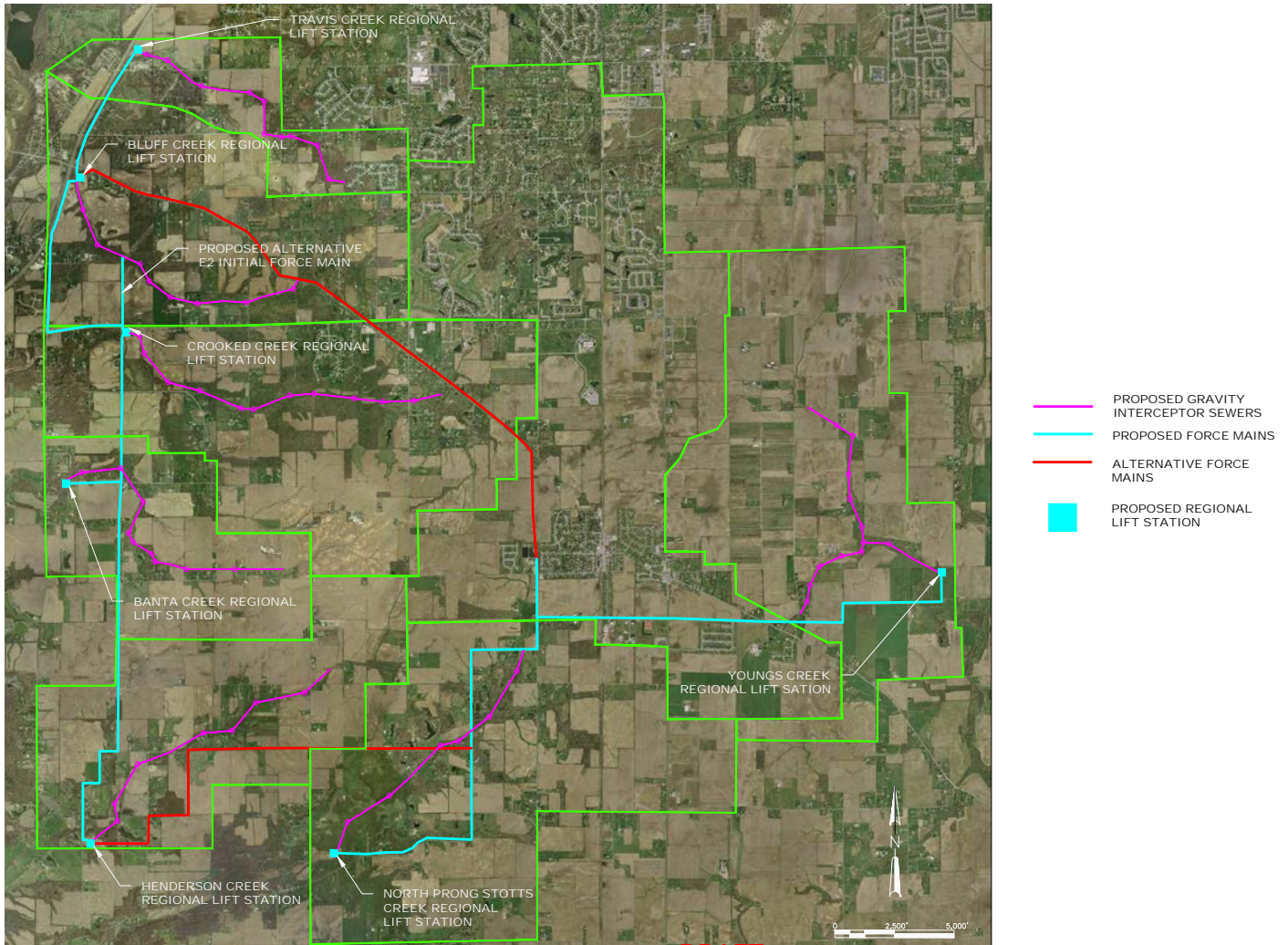
Source: HWC Engineering

EXHIBIT A15: PROPOSED GRAVITY INTERCEPTORS



Source: 2015 Bargserville Sanitary Sewer Master Plan by Strand and Associates

EXHIBIT A16: PROPOSED REGIONAL LIFT STATIONS



Source: 2015 Bargarville Sanitary Sewer Master Plan by Strand and Associates

EXHIBIT A17: SMITH VALLEY ROAD FROM I-69 TO MORGANTOWN ROAD COST ESTIMATE

Conceptual Cost Estimate
Revision Date: 3-21-18

INDIRECT COST ITEMS					
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
105-08407	ADDITIONAL (CONTINGENCY-25%)	1	L.S.	284547	\$ 2,845,47
105-08445	CONSTRUCTION ENGINEERING 3%	1	L.S.	322148	\$ 322,148
110-01001	MOBILIZATION AND DEMOBILIZATION 5%	1	L.S.	538909	\$ 538,909
INDIRECT COST SUBTOTAL:					\$ 3,543,802
ROADWAY CONSTRUCTION ITEMS					
		6,100	LFT		
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
201-52370	CLEARING RIGHT OF WAY	1	LS	40000.00	\$ 40,000
203-02000	EXCAVATION, COMMON	33,889	CYS	25.00	\$ 847,222
	BORROW	3,388	CYS	40.00	\$ 135,558
	EROSION CONTROL	1	LS	125000.00	\$ 125,000
207-08284	SUBGRADE TREATMENT, TYPE II	2,240	SYS	10.00	\$ 22,400
207-08935	SUBGRADE TREATMENT, TYPE IC	31,313	SYS	20.00	\$ 626,267
211-08285	STRUCTURAL BACKFILL, TYPE 2	10,318	CYS	30.00	\$ 309,473
301-07448	COMPACTED AGGREGATE, NO. 53, BASE - 3"	3,488	TON	30.00	\$ 104,547
	HMA SURFACE, TYPE C (1.5")	1,408	TON	95.00	\$ 133,885
	HMA INTERMEDIATE, TYPE C (2.5")	2,348	TON	85.00	\$ 199,823
	HMA BASE, TYPE C (4")	3,758	TON	75.00	\$ 281,820
	HMA INTERMEDIATE, TYPE C (2.5" - under C&G)	3,203	TON	85.00	\$ 272,213
	HMA BASE, TYPE C (3" - under C&G)	4,227	TON	75.00	\$ 317,048
	HMA SURFACE, TYPE C (1.5") Overlay	1,478	TON	95.00	\$ 140,239
	HMA INTERMEDIATE, TYPE C (2.5") Overlay	2,480	TON	85.00	\$ 209,128
	PUBLIC ROAD APPROACHES (12")	1,780	TON	150.00	\$ 264,000
401-10258	JOINT ADHESIVE, SURFACE	12,200	LFT	1.00	\$ 12,200
401-10259	JOINT ADHESIVE, INTERMEDIATE	24,400	LFT	1.00	\$ 24,400
401-11785	LIQUID ASPHALT SEALANT	12,200	LFT	1.00	\$ 12,200
408-05520	ASPHALT FOR TACK COAT	18.3	TON	500.00	\$ 8,133
804-08070	SIDEWALK, CONCRETE	8,133	SYS	80.00	\$ 488,000
805-08120	CURB, CONCRETE	2,000	LFT	23.00	\$ 46,000
805-08140	CURB AND GUTTER, CONCRETE	24,400	LFT	25.00	\$ 610,000
810-08108	POCP FOR APPROACHES, 8 IN - COM.	800	SYS	75.00	\$ 60,000
	POCP FOR APPROACHES, 8 IN - RES.	1,440	SYS	80.00	\$ 88,400
	SEEDING - MULCH - FERTILIZER	8	ACRES	10000.00	\$ 80,000
	SODDING	7,458	SYS	8.00	\$ 44,733
828-08401	FIELD OFFICE, A	24	MOB	2500.00	\$ 80,000
715-05048	PIPE, TYPE 4 CIRCULAR 8 IN	24,400	LFT	12.00	\$ 292,800
715-05149	PIPE, TYPE 2 CIRCULAR 12 IN	11,712	LFT	45.00	\$ 527,040
715-05152	PIPE, TYPE 2 CIRCULAR 18 IN	3,050	LFT	50.00	\$ 152,500
	PIPE, TYPE 2 CIRCULAR 24 IN	3,050	LFT	80.00	\$ 183,000
	PIPE, TYPE 2 CIRCULAR 36 IN	3,050	LFT	75.00	\$ 228,750
	PIPE, TYPE 2 CIRCULAR 48 IN	3,050	LFT	100.00	\$ 305,000
715-09084	VIDEO INSPECTION FOR PIPE	23,812	LFT	2.00	\$ 47,624
718-52810	AGGREGATE FOR UNDERDRAIN	2,358	CYS	35.00	\$ 82,553
718-89153	GEOTEXTILES FOR UNDERDRAIN	17,822	SYS	3.00	\$ 52,867
720-45410	MANHOLE, C4	122	EACH	4000.00	\$ 488,000
	MANHOLE, J4	122	EFT	5000.00	\$ 610,000
	INLET, B1S	244	EACH	3000.00	\$ 732,000
801-04308	ROAD CLOSURE SIGN ASSEMBLY	10	EACH	400.00	\$ 4,000
801-08203 (A)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID WHITE, REMOVABLE)	12,200	LFT	1.00	\$ 12,200
801-08203 (C)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID YELLOW, REMOVABLE)	12,200	LFT	1.00	\$ 12,200
801-08840	CONSTRUCTION SIGN, A	25	EACH	150.00	\$ 3,750
801-08710	FLASHING ARROW SIGN	720	DAY	10.00	\$ 7,200
801-08775	MAINTAINING TRAFFIC	1	LS	100000.00	\$ 100,000
801-07118	BARRICADE, III-A	400	LFT	15.00	\$ 6,000
	BRIDGE OVER CREEK	1	EACH	1000000.00	\$ 1,000,000
	SIGNAL MODIFICATION	2	EACH	150000.00	\$ 300,000
	SIGNING & STRIPING	1	LS	50000.00	\$ 50,000
ROADWAY CONSTRUCTION SUBTOTAL:					\$ 10,738,188

ESTIMATE TOTAL: \$ 14,281,782

EXHIBIT A18: MORGANTOWN ROAD FROM COUNTY LINE ROAD TO SMITH VALLEY ROAD

Conceptual Cost Estimate
Revision Date: 3-21-18

INDIRECT COST ITEMS					
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
105-0807	ADDITIONAL (CONTINGENCY-25%)	1	L.S.	4441828	\$ 4,441,828
105-0845	CONSTRUCTION ENGINEERING 3%	1	L.S.	533031	\$ 533,031
110-01001	MOBILIZATION AND DEMOBILIZATION 5%	1	L.S.	888345	\$ 888,345
INDIRECT COST SUBTOTAL:					\$ 5,883,342
ROADWAY CONSTRUCTION ITEMS					
10,800 LFT					
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
201-52370	CLEARING RIGHT OF WAY	1	LS	100000.00	\$ 100,000
203-02000	EXCAVATION, COMMON	80,000	CYS	25.00	\$ 1,500,000
	BORROW	8,000	CYS	40.00	\$ 240,000
	EROSION CONTROL	1	LS	1750000.00	\$ 1,750,000
207-08264	SUBGRADE TREATMENT, TYPE II	1,853	SYS	10.00	\$ 18,533
207-08935	SUBGRADE TREATMENT, TYPE IC	55,440	SYS	20.00	\$ 1,108,800
211-08265	STRUCTURAL BACKFILL, TYPE 2	18,264	CYS	30.00	\$ 547,820
301-0744R	COMPACTED AGGREGATE, NO. 53, BASE - 3"	8,172	TON	30.00	\$ 185,170
	HMA SURFACE, TYPE C (1.5")	2,485	TON	85.00	\$ 237,008
	HMA INTERMEDIATE, TYPE C (2.5")	4,158	TON	85.00	\$ 353,430
	HMA BASE, TYPE C (4")	8,853	TON	75.00	\$ 488,880
	HMA INTERMEDIATE, TYPE C (2.5" - under C&G)	5,870	TON	85.00	\$ 411,850
	HMA BASE, TYPE C (3" - under C&G)	7,484	TON	75.00	\$ 561,330
	HMA SURFACE, TYPE C (1.5") Overlay	2,814	TON	85.00	\$ 248,292
	HMA INTERMEDIATE, TYPE C (2.5") Overlay	4,358	TON	85.00	\$ 370,280
	PUBLIC ROAD APPROACHES (12")	3,300	TON	150.00	\$ 485,000
401-1025R	JOINT ADHESIVE, SURFACE	21,800	LFT	1.00	\$ 21,800
401-1025R	JOINT ADHESIVE, INTERMEDIATE	43,200	LFT	1.00	\$ 43,200
401-11785	LIQUID ASPHALT SEALANT	21,800	LFT	1.00	\$ 21,800
408-05520	ASPHALT FOR TACK COAT	28.8	TON	500.00	\$ 14,400
804-08070	SIDEWALK, CONCRETE	14,400	SYS	80.00	\$ 884,000
805-08120	CURB, CONCRETE	2,000	LFT	23.00	\$ 46,000
805-08140	CURB AND GUTTER, CONCRETE	43,200	LFT	25.00	\$ 1,080,000
810-0910R	POCP FOR APPROACHES, 8 IN - COM.	933	SYS	75.00	\$ 70,000
	POCP FOR APPROACHES, 8 IN - RES.	720	SYS	80.00	\$ 43,200
	SEEDING - MULCH - FERTILIZER	10	ACRES	10000.00	\$ 100,000
	SODDING	13,200	SYS	6.00	\$ 78,200
82R-08401	FIELD OFFICE, A	24	MO8	2500.00	\$ 80,000
715-0504R	PIPE, TYPE 4 CIRCULAR 8 IN	43,200	LFT	12.00	\$ 518,400
715-0514R	PIPE, TYPE 2 CIRCULAR 12 IN	20,738	LFT	45.00	\$ 933,120
715-05152	PIPE, TYPE 2 CIRCULAR 18 IN	5,400	LFT	50.00	\$ 270,000
	PIPE, TYPE 2 CIRCULAR 24 IN	5,400	LFT	80.00	\$ 324,000
	PIPE, TYPE 2 CIRCULAR 36 IN	5,400	LFT	75.00	\$ 405,000
	PIPE, TYPE 2 CIRCULAR 48 IN	5,400	LFT	100.00	\$ 540,000
715-08084	VIDEO INSPECTION FOR PIPE	42,338	LFT	2.00	\$ 84,672
71R-52810	AGGREGATE FOR UNDERDRAIN	4,178	CYS	35.00	\$ 148,180
71R-89153	GEOTEXTILES FOR UNDERDRAIN	31,200	SYS	3.00	\$ 83,800
720-45410	MANHOLE, C4	218	EACH	4000.00	\$ 884,000
	MANHOLE, J4	218	EACH	5000.00	\$ 1,080,000
	INLET, B15	432	EACH	3000.00	\$ 1,286,000
R01-0430R	ROAD CLOSURE SIGN ASSEMBLY	20	EACH	400.00	\$ 8,000
R01-08203 (A)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID WHITE, REMOVABLE)	21,800	LFT	1.00	\$ 21,800
R01-08203 (C)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID YELLOW, REMOVABLE)	21,800	LFT	1.00	\$ 21,800
R01-08840	CONSTRUCTION SIGN, A	40	EACH	150.00	\$ 6,000
R01-08710	FLASHING ARROW SIGN	720	DAY	10.00	\$ 7,200
R01-08775	MAINTAINING TRAFFIC	1	LS	200000.00	\$ 200,000
R01-0711R	BARRICADE, III-A	700	LFT	15.00	\$ 10,500
	ROUNDBOUT MODIFICATION	1	EACH	1000000.00	\$ 1,000,000
	SIGNAL MODIFICATION	2	EACH	150000.00	\$ 300,000
	SIGNING & STRIPING	1	LS	75000.00	\$ 75,000
ROADWAY CONSTRUCTION SUBTOTAL:					\$ 17,787,703

ESTIMATE TOTAL: \$ 23,831,045

EXHIBIT A19: SMITH VALLEY ROAD FROM MORGANTOWN ROAD TO SR

Conceptual Cost Estimate
Revision Date: 3-21-18

INDIRECT COST ITEMS					
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
105-08#07	ADDITIONAL (CONTINGENCY-25%)	1	L.S.	4421328	\$ 4,421,328
105-08#45	CONSTRUCTION ENGINEERING 3%	1	L.S.	530558	\$ 530,558
110-01001	MOBILIZATION AND DEMOBILIZATION 5%	1	L.S.	884285	\$ 884,285
INDIRECT COST SUBTOTAL:					\$ 5,838,150
ROADWAY CONSTRUCTION ITEMS					
		10,800	LFT		
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
201-52370	CLEARING RIGHT OF WAY	1	LS	100000.00	\$ 100,000
203-02000	EXCAVATION, COMMON	80,000	CYS	25.00	\$ 1,500,000
	BORROW	8,000	CYS	40.00	\$ 240,000
	EROSION CONTROL	1	LS	175000.00	\$ 175,000
207-0#284	SUBGRADE TREATMENT, TYPE II	3,833	SYS	10.00	\$ 38,333
207-0#935	SUBGRADE TREATMENT, TYPE IC	55,440	SYS	20.00	\$ 1,108,800
211-0#285	STRUCTURAL BACKFILL, TYPE 2	18,284	CYS	30.00	\$ 547,820
301-0744#	COMPACTED AGGREGATE, NO. 53, BASE - 3"	8,172	TON	30.00	\$ 185,170
	HMA SURFACE, TYPE C (1.5")	2,485	TON	85.00	\$ 237,008
	HMA INTERMEDIATE, TYPE C (2.5")	4,15#	TON	85.00	\$ 353,430
	HMA BASE, TYPE C (4")	8,853	TON	75.00	\$ 498,980
	HMA INTERMEDIATE, TYPE C (2.5" - under C&G)	5,870	TON	85.00	\$ 481,850
	HMA BASE, TYPE C (3" - under C&G)	7,484	TON	75.00	\$ 561,330
	HMA SURFACE, TYPE C (1.5") Overlay	2,814	TON	85.00	\$ 248,282
	HMA INTERMEDIATE, TYPE C (2.5") Overlay	4,358	TON	85.00	\$ 370,280
	PUBLIC ROAD APPROACHES (12")	3,880	TON	150.00	\$ 584,000
401-1025#	JOINT ADHESIVE, SURFACE	21,800	LFT	1.00	\$ 21,800
401-1025#	JOINT ADHESIVE, INTERMEDIATE	43,200	LFT	1.00	\$ 43,200
401-117#5	LIQUID ASPHALT SEALANT	21,800	LFT	1.00	\$ 21,800
40#-05520	ASPHALT FOR TACK COAT	28.8	TON	500.00	\$ 14,400
804-08070	SIDEWALK, CONCRETE	14,400	SYS	80.00	\$ 864,000
805-08120	CURB, CONCRETE	2,000	LFT	23.00	\$ 46,000
805-08140	CURB AND GUTTER, CONCRETE	43,200	LFT	25.00	\$ 1,080,000
810-0810#	PCCP FOR APPROACHES, 8 IN - COM.	1,533	SYS	75.00	\$ 115,000
	PCCP FOR APPROACHES, 8 IN - RES.	2,400	SYS	80.00	\$ 144,000
	SEEDING - MULCH - FERTILIZER	10	ACRES	10000.00	\$ 100,000
	SODDING	13,200	SYS	8.00	\$ 79,200
82#-08401	FIELD OFFICE, A	24	MO#	2500.00	\$ 80,000
715-0504#	PIPE, TYPE 4 CIRCULAR 8 IN	43,200	LFT	12.00	\$ 518,400
715-0514#	PIPE, TYPE 2 CIRCULAR 12 IN	20,738	LFT	45.00	\$ 833,120
715-05152	PIPE, TYPE 2 CIRCULAR 1# IN	5,400	LFT	50.00	\$ 270,000
	PIPE, TYPE 2 CIRCULAR 24 IN	5,400	LFT	80.00	\$ 324,000
	PIPE, TYPE 2 CIRCULAR 3# IN	5,400	LFT	75.00	\$ 405,000
	PIPE, TYPE 2 CIRCULAR 4# IN	5,400	LFT	100.00	\$ 540,000
715-08084	VIDEO INSPECTION FOR PIPE	42,338	LFT	2.00	\$ 84,872
71#-52810	AGGREGATE FOR UNDERDRAIN	4,178	CYS	35.00	\$ 146,180
71#-89153	GEOTEXTILES FOR UNDERDRAIN	31,200	SYS	3.00	\$ 93,800
720-45410	MANHOLE, C4	218	EACH	4000.00	\$ 884,000
	MANHOLE, J4	218	CFT	5000.00	\$ 1,080,000
	INLET, B15	432	EACH	3000.00	\$ 1,296,000
801-0430#	ROAD CLOSURE SIGN ASSEMBLY	20	EACH	400.00	\$ 8,000
801-08203 (A)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID WHITE, REMOVABLE)	21,800	LFT	1.00	\$ 21,800
801-08203 (C)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID YELLOW, REMOVABLE)	21,800	LFT	1.00	\$ 21,800
801-08640	CONSTRUCTION SIGN, A	40	EACH	150.00	\$ 6,000
801-08710	FLASHING ARROW SIGN	720	DAY	10.00	\$ 7,200
801-08775	MAINTAINING TRAFFIC	1	LS	200000.00	\$ 200,000
801-0711#	BARRICADE, III-A	700	LFT	15.00	\$ 10,500
	RAILROAD CROSSING AT GRADE	1	EACH	500000.00	\$ 500,000
	SIGNAL MODIFICATION	3	EACH	150000.00	\$ 450,000
	SIGNING & STRIPING	1	LS	75000.00	\$ 75,000
ROADWAY CONSTRUCTION SUBTOTAL:					\$ 17,885,303

ESTIMATE TOTAL: \$ 23,521,453

EXHIBIT A20: FAIRVIEW ROAD FROM MORGANTOWN ROAD TO SR 135

Conceptual Cost Estimate
Revision Date: 3-21-18

INDIRECT COST ITEMS					
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
105-08407	ADDITIONAL (CONTINGENCY-25%)	1	L.S.	4842359	\$ 4,842,359
105-08445	CONSTRUCTION ENGINEERING 3%	1	L.S.	561883	\$ 561,883
110-01001	MOBILIZATION AND DEMOBILIZATION 5%	1	L.S.	938472	\$ 938,472
INDIRECT COST SUBTOTAL:					\$ 6,180,714
ROADWAY CONSTRUCTION ITEMS					
		10,800	LFT		
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
201-52370	CLEARING RIGHT OF WAY	1	LS	100000.00	\$ 100,000
203-02000	EXCAVATION, COMMON	80,000	CYS	25.00	\$ 1,500,000
	BORROW	8,000	CYS	40.00	\$ 240,000
	EROSION CONTROL	1	LS	175000.00	\$ 175,000
207-08284	SUBGRADE TREATMENT, TYPE II	2,807	SYS	10.00	\$ 28,087
207-08935	SUBGRADE TREATMENT, TYPE IC	55,440	SYS	20.00	\$ 1,108,800
211-08285	STRUCTURAL BACKFILL, TYPE 2	14,284	CYS	30.00	\$ 547,820
301-07448	COMPACTED AGGREGATE, NO. 53, BASE - 3"	8,172	TON	30.00	\$ 245,170
	HMA SURFACE, TYPE C (1.5")	2,485	TON	85.00	\$ 237,008
	HMA INTERMEDIATE, TYPE C (2.5")	4,158	TON	85.00	\$ 353,430
	HMA BASE, TYPE C (4")	6,653	TON	75.00	\$ 498,980
	HMA INTERMEDIATE, TYPE C (2.5" - under C&G)	5,670	TON	85.00	\$ 481,950
	HMA BASE, TYPE C (3" - under C&G)	7,484	TON	75.00	\$ 561,330
	HMA SURFACE, TYPE C (1.5") Overlay	2,814	TON	85.00	\$ 248,282
	HMA INTERMEDIATE, TYPE C (2.5") Overlay	4,358	TON	85.00	\$ 370,280
	PUBLIC ROAD APPROACHES (12")	4,840	TON	150.00	\$ 728,000
401-10258	JOINT ADHESIVE, SURFACE	21,800	LFT	1.00	\$ 21,800
401-10259	JOINT ADHESIVE, INTERMEDIATE	43,200	LFT	1.00	\$ 43,200
401-11785	LIQUID ASPHALT SEALANT	21,800	LFT	1.00	\$ 21,800
408-05520	ASPHALT FOR TACK COAT	28.8	TON	500.00	\$ 14,400
804-08070	SIDEWALK, CONCRETE	14,400	SYS	80.00	\$ 884,000
805-08120	CURB, CONCRETE	2,000	LFT	23.00	\$ 48,000
805-08140	CURB AND GUTTER, CONCRETE	43,200	LFT	25.00	\$ 1,080,000
810-08108	POCP FOR APPROACHES, 8 IN - COM.	487	SYS	75.00	\$ 35,000
	POCP FOR APPROACHES, 8 IN - RES.	2,440	SYS	80.00	\$ 148,400
	SEEDING - MULCH - FERTILIZER	10	ACRES	10000.00	\$ 100,000
	SODDING	13,200	SYS	8.00	\$ 78,200
824-08401	FIELD OFFICE, A	24	MOB	2500.00	\$ 80,000
715-05048	PIPE, TYPE 4 CIRCULAR 8 IN	43,200	LFT	12.00	\$ 518,400
715-05149	PIPE, TYPE 2 CIRCULAR 12 IN	20,738	LFT	45.00	\$ 833,120
715-05152	PIPE, TYPE 2 CIRCULAR 18 IN	5,400	LFT	50.00	\$ 270,000
	PIPE, TYPE 2 CIRCULAR 24 IN	5,400	LFT	80.00	\$ 324,000
	PIPE, TYPE 2 CIRCULAR 38 IN	5,400	LFT	75.00	\$ 405,000
	PIPE, TYPE 2 CIRCULAR 48 IN	5,400	LFT	100.00	\$ 540,000
715-08084	VIDEO INSPECTION FOR PIPE	42,338	LFT	2.00	\$ 84,872
714-52810	AGGREGATE FOR UNDERDRAIN	4,178	CYS	35.00	\$ 148,180
714-98153	GEOTEXTILES FOR UNDERDRAIN	31,200	SYS	3.00	\$ 93,800
720-45410	MANHOLE, C4	218	EACH	4000.00	\$ 884,000
	MANHOLE, J4	218	CFT	5000.00	\$ 1,090,000
	INLET, B15	432	EACH	3000.00	\$ 1,288,000
801-04308	ROAD CLOSURE SIGN ASSEMBLY	20	EACH	400.00	\$ 8,000
801-08203 (A)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID WHITE, REMOVABLE)	21,800	LFT	1.00	\$ 21,800
801-08203 (C)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID YELLOW, REMOVABLE)	21,800	LFT	1.00	\$ 21,800
801-08840	CONSTRUCTION SIGN, A	40	EACH	150.00	\$ 6,000
801-08710	FLASHING ARROW SIGN	720	DAY	10.00	\$ 7,200
801-08775	MAINTAINING TRAFFIC	1	LS	200000.00	\$ 200,000
801-07118	BARRICADE, III-A	700	LFT	15.00	\$ 10,500
	ROUNDABOUT MODIFICATION	1	EACH	1000000.00	\$ 1,000,000
	RAILROAD CROSSING AT GRADE	1	EACH	500000.00	\$ 500,000
	RCBC EXTENSION	2	EACH	150000.00	\$ 300,000
	SIGNAL MODIFICATION	1	EACH	150000.00	\$ 150,000
	SIGNING & STRIPING	1	LS	75000.00	\$ 75,000
ROADWAY CONSTRUCTION SUBTOTAL:					\$ 14,728,438

ESTIMATE TOTAL: \$ 24,810,150

EXHIBIT A21: MORGANTOWN ROAD FROM SMITH VALLEY ROAD TO STONES CROSSING ROAD

Conceptual Cost Estimate
Revision Date: 3-21-18

INDIRECT COST ITEMS					
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
105-08407	ADDITIONAL (CONTINGENCY-25%)	1	L.S.	4380341	\$ 4,380,341
105-08445	CONSTRUCTION ENGINEERING 3%	1	L.S.	525841	\$ 525,841
110-01001	MOBILIZATION AND DEMOBILIZATION 5%	1	L.S.	878088	\$ 878,088
INDIRECT COST SUBTOTAL:					\$ 5,782,051
ROADWAY CONSTRUCTION ITEMS					
		10,200	LFT		
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
201-52370	CLEARING RIGHT OF WAY	1	LS	100000.00	\$ 100,000
203-02000	EXCAVATION, COMMON	58,887	CYS	25.00	\$ 1,418,887
	BORROW	5,887	CYS	40.00	\$ 228,887
	EROSION CONTROL	1	LS	175000.00	\$ 175,000
207-04284	SUBGRADE TREATMENT, TYPE II	4,840	SYS	10.00	\$ 48,400
207-08935	SUBGRADE TREATMENT, TYPE IC	52,380	SYS	20.00	\$ 1,047,200
211-08285	STRUCTURAL BACKFILL, TYPE 2	17,248	CYS	30.00	\$ 517,480
301-07448	COMPACTED AGGREGATE, NO. 53, BASE - 3"	5,828	TON	30.00	\$ 174,882
	HMA SURFACE, TYPE C (1.5")	2,358	TON	85.00	\$ 223,838
	HMA INTERMEDIATE, TYPE C (2.5")	3,827	TON	85.00	\$ 333,785
	HMA BASE, TYPE C (4")	6,283	TON	75.00	\$ 471,240
	HMA INTERMEDIATE, TYPE C (2.5" - under C&G)	5,355	TON	85.00	\$ 455,175
	HMA BASE, TYPE C (3" - under C&G)	7,089	TON	75.00	\$ 530,145
	HMA SURFACE, TYPE C (1.5") Overlay	2,488	TON	85.00	\$ 234,488
	HMA INTERMEDIATE, TYPE C (2.5") Overlay	4,114	TON	85.00	\$ 348,880
	PUBLIC ROAD APPROACHES (12")	1,780	TON	150.00	\$ 284,000
401-10258	JOINT ADHESIVE, SURFACE	20,400	LFT	1.00	\$ 20,400
401-10258	JOINT ADHESIVE, INTERMEDIATE	40,800	LFT	1.00	\$ 40,800
401-11785	LIQUID ASPHALT SEALANT	20,400	LFT	1.00	\$ 20,400
408-05520	ASPHALT FOR TACK COAT	27.2	TON	500.00	\$ 13,800
804-08070	SIDEWALK, CONCRETE	13,800	SYS	80.00	\$ 816,000
805-08120	CURB, CONCRETE	2,000	LFT	23.00	\$ 48,000
805-08140	CURB AND GUTTER, CONCRETE	40,800	LFT	25.00	\$ 1,020,000
810-08108	POCP FOR APPROACHES, 8 IN - COM.	800	SYS	75.00	\$ 80,000
	POCP FOR APPROACHES, 8 IN - RES.	4,040	SYS	80.00	\$ 242,400
	SEEDING - MULCH - FERTILIZER	10	ACRES	10000.00	\$ 100,000
	SODDING	12,487	SYS	8.00	\$ 74,800
828-08401	FIELD OFFICE, A	24	MOB	2500.00	\$ 80,000
715-05048	PIPE, TYPE 4 CIRCULAR 8 IN	40,800	LFT	12.00	\$ 488,800
715-05148	PIPE, TYPE 2 CIRCULAR 12 IN	18,584	LFT	45.00	\$ 881,280
715-05152	PIPE, TYPE 2 CIRCULAR 18 IN	5,100	LFT	50.00	\$ 255,000
	PIPE, TYPE 2 CIRCULAR 24 IN	5,100	LFT	80.00	\$ 308,000
	PIPE, TYPE 2 CIRCULAR 38 IN	5,100	LFT	75.00	\$ 382,500
	PIPE, TYPE 2 CIRCULAR 48 IN	5,100	LFT	100.00	\$ 510,000
715-08084	VIDEO INSPECTION FOR PIPE	38,884	LFT	2.00	\$ 78,888
718-52810	AGGREGATE FOR UNDERDRAIN	3,844	CYS	35.00	\$ 138,040
718-88153	GEOTEXTILES FOR UNDERDRAIN	28,487	SYS	3.00	\$ 88,400
720-45410	MANHOLE, C4	204	EACH	4000.00	\$ 816,000
	MANHOLE, J4	204	EACH	5000.00	\$ 1,020,000
	INLET, B15	408	EACH	3000.00	\$ 1,224,000
801-04308	ROAD CLOSURE SIGN ASSEMBLY	20	EACH	400.00	\$ 8,000
801-08203 (A)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID WHITE, REMOVABLE)	20,400	LFT	1.00	\$ 20,400
801-08203 (C)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID YELLOW, REMOVABLE)	20,400	LFT	1.00	\$ 20,400
801-08840	CONSTRUCTION SIGN, A	40	EACH	150.00	\$ 8,000
801-08710	FLASHING ARROW SIGN	720	DAY	10.00	\$ 7,200
801-08775	MAINTAINING TRAFFIC	1	LS	200000.00	\$ 200,000
801-07118	BARRICADE, III-A	700	LFT	15.00	\$ 10,500
	RCBC EXTENSION	3	EACH	150000.00	\$ 450,000
	BRIDGE OVER CREEK	1	EACH	1000000.00	\$ 1,000,000
	SIGNAL MODIFICATION	3	EACH	150000.00	\$ 450,000
	SIGNING & STRIPING	1	LS	75000.00	\$ 75,000
ROADWAY CONSTRUCTION SUBTOTAL:					\$ 17,521,388

ESTIMATE TOTAL: \$ 23,303,418

EXHIBIT A22: MORGANTOWN ROAD FROM STONES CROSSING ROAD TO CR 144

Conceptual Cost Estimate
Revision Date: 3-21-18

INDIRECT COST ITEMS					
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
105-06807	ADDITIONAL (CONTINGENCY-25%)	1	L.S.	4873045	\$ 4,873,045
105-06845	CONSTRUCTION ENGINEERING 3%	1	L.S.	584785	\$ 584,785
110-01001	MOBILIZATION AND DEMOBILIZATION 5%	1	L.S.	874808	\$ 874,808
INDIRECT COST SUBTOTAL:					\$ 6,432,418
ROADWAY CONSTRUCTION ITEMS					
		12,200	LFT		
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
201-52370	CLEARING RIGHT OF WAY	1	LS	100000.00	\$ 100,000
203-02000	EXCAVATION, COMMON	87,778	CYS	25.00	\$ 1,894,444
	BORROW	8,778	CYS	40.00	\$ 271,111
	EROSION CONTROL	1	LS	175000.00	\$ 175,000
207-0K264	SUBGRADE TREATMENT, TYPE II	3,080	SYS	10.00	\$ 30,800
207-08835	SUBGRADE TREATMENT, TYPE IC	82,827	SYS	20.00	\$ 1,252,533
211-08285	STRUCTURAL BACKFILL, TYPE 2	20,832	CYS	30.00	\$ 618,847
301-07448	COMPACTED AGGREGATE, NO. 53, BASE - 3"	8,872	TON	30.00	\$ 209,173
	HMA SURFACE, TYPE C (1.5")	2,818	TON	85.00	\$ 287,728
	HMA INTERMEDIATE, TYPE C (2.5")	4,887	TON	85.00	\$ 398,245
	HMA BASE, TYPE C (4")	7,515	TON	75.00	\$ 583,840
	HMA INTERMEDIATE, TYPE C (2.5" - under C&G)	8,405	TON	85.00	\$ 544,225
	HMA BASE, TYPE C (3" - under C&G)	8,455	TON	75.00	\$ 634,085
	HMA SURFACE, TYPE C (1.5") Overlay	2,852	TON	85.00	\$ 280,478
	HMA INTERMEDIATE, TYPE C (2.5") Overlay	4,821	TON	85.00	\$ 418,257
	PUBLIC ROAD APPROACHES (12")	1,880	TON	150.00	\$ 297,000
401-10258	JOINT ADHESIVE, SURFACE	24,400	LFT	1.00	\$ 24,400
401-10259	JOINT ADHESIVE, INTERMEDIATE	48,800	LFT	1.00	\$ 48,800
401-11785	LIQUID ASPHALT SEALANT	24,400	LFT	1.00	\$ 24,400
408-05520	ASPHALT FOR TACK COAT	32.5	TON	500.00	\$ 16,287
804-08070	SIDEWALK, CONCRETE	18,287	SYS	80.00	\$ 978,000
805-08120	CURB, CONCRETE	2,000	LFT	23.00	\$ 46,000
805-08140	CURB AND GUTTER, CONCRETE	48,800	LFT	25.00	\$ 1,220,000
810-08108	POCP FOR APPROACHES, 8 IN - COM.	1,000	SYS	75.00	\$ 75,000
	POCP FOR APPROACHES, 8 IN - RES.	2,080	SYS	80.00	\$ 124,800
	SEEDING - MULCH - FERTILIZER	12	ACRES	10000.00	\$ 120,000
	BODDING	14,811	SYS	8.00	\$ 89,487
828-08401	FIELD OFFICE, A	24	MOE	2500.00	\$ 80,000
715-05048	PIPE, TYPE 4 CIRCULAR 8 IN	48,800	LFT	12.00	\$ 585,800
715-05148	PIPE, TYPE 2 CIRCULAR 12 IN	23,424	LFT	45.00	\$ 1,054,080
715-05152	PIPE, TYPE 2 CIRCULAR 18 IN	8,100	LFT	50.00	\$ 305,000
	PIPE, TYPE 2 CIRCULAR 24 IN	8,100	LFT	80.00	\$ 388,000
	PIPE, TYPE 2 CIRCULAR 36 IN	8,100	LFT	75.00	\$ 457,500
	PIPE, TYPE 2 CIRCULAR 48 IN	8,100	LFT	100.00	\$ 810,000
715-08084	VIDEO INSPECTION FOR PIPE	47,824	LFT	2.00	\$ 95,848
718-52810	AGGREGATE FOR UNDERDRAIN	4,717	CYS	35.00	\$ 185,107
718-88183	GEOTEXTILES FOR UNDERDRAIN	35,244	SYS	3.00	\$ 105,733
720-45410	MANHOLE, C4	244	EACH	4000.00	\$ 978,000
	MANHOLE, J4	244	CFT	5000.00	\$ 1,220,000
	INLET, B15	488	EACH	3000.00	\$ 1,484,000
801-04308	ROAD CLOSURE SIGN ASSEMBLY	20	EACH	400.00	\$ 8,000
801-08203 (A)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID WHITE, REMOVABLE)	24,400	LFT	1.00	\$ 24,400
801-08203 (C)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID YELLOW, REMOVABLE)	24,400	LFT	1.00	\$ 24,400
801-08840	CONSTRUCTION SIGN, A	40	EACH	150.00	\$ 6,000
801-08710	FLASHING ARROW SIGN	720	DAY	10.00	\$ 7,200
801-08775	MAINTAINING TRAFFIC	1	LS	200000.00	\$ 200,000
801-07118	BARRICADE, III-A	700	LFT	15.00	\$ 10,500
	RCBC EXTENSION	0	EACH	150000.00	\$ -
	ROUNDABOUT MODIFICATION	1	EACH	1000000.00	\$ 1,000,000
	SIGNAL MODIFICATION	1	EACH	150000.00	\$ 150,000
	SIGNING & STRIPING	1	LS	75000.00	\$ 75,000
ROADWAY CONSTRUCTION SUBTOTAL:					\$ 18,482,178

ESTIMATE TOTAL: \$ 25,824,588

EXHIBIT A23: FAIRVIEW ROAD TO SMITH VALLEY ROAD FRONTAGE ROAD COST ESTIMATES

Conceptual Cost Estimate
Revision Date: 5-4-18

INDIRECT COST ITEMS					
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
105-08807	ADDITIONAL (CONTINGENCY-25%)	1	L.S.	1651119	\$ 1,651,119
105-08845	CONSTRUCTION ENGINEERING 3%	1	L.S.	198134	\$ 198,134
110-01001	MOBILIZATION AND DEMOBILIZATION 5%	1	L.S.	330224	\$ 330,224
INDIRECT COST SUBTOTAL:					\$ 2,179,477
ROADWAY CONSTRUCTION ITEMS					
Pay Item	Item Description	6,000		LFT	
		Total Quantity	Unit	Unit Price	Subtotal
201-52370	CLEARING RIGHT OF WAY	1	LS	200000.00	\$ 200,000
203-02000	EXCAVATION, COMMON	26,667	CYS	25.00	\$ 666,667
	BORROW	26,667	CYS	40.00	\$ 1,066,667
	EROSION CONTROL	1	LS	70000.00	\$ 70,000
207-08264	SUBGRADE TREATMENT, TYPE II	2,000	SYS	10.00	\$ 20,000
207-09935	SUBGRADE TREATMENT, TYPE IC	30,800	SYS	20.00	\$ 616,000
211-09265	STRUCTURAL BACKFILL, TYPE 2	369	CYS	30.00	\$ 11,667
301-07448	COMPACTED AGGREGATE, NO. 53, BASE - 3"	3,919	TON	30.00	\$ 117,568
	HMA SURFACE, TYPE C (1.5")	1,936	TON	95.00	\$ 183,920
	HMA INTERMEDIATE, TYPE C (3")	3,872	TON	85.00	\$ 329,120
	HMA BASE, TYPE C (5.5")	7,099	TON	75.00	\$ 532,400
	HMA INTERMEDIATE, TYPE C (2.5" -)	0	TON	85.00	\$ -
	HMA BASE, TYPE C (3")	0	TON	75.00	\$ -
	HMA SURFACE, TYPE C (1.5") Overlay	0	TON	95.00	\$ -
	HMA INTERMEDIATE, TYPE C (2.5") Overlay	0	TON	85.00	\$ -
	PUBLIC ROAD APPROACHES (12")	1,100	TON	150.00	\$ 165,000
401-10258	JOINT ADHESIVE, SURFACE	18,000	LFT	1.00	\$ 18,000
401-10259	JOINT ADHESIVE, INTERMEDIATE	36,000	LFT	1.00	\$ 36,000
401-11785	LIQUID ASPHALT SEALANT	18,000	LFT	1.00	\$ 18,000
408-05520	ASPHALT FOR TACK COAT	8.0	TON	500.00	\$ 4,000
604-06070	SIDEWALK, CONCRETE	0	SYS	60.00	\$ -
605-06120	CURB, CONCRETE	0	LFT	23.00	\$ -
605-06140	CURB AND GUTTER, CONCRETE	0	LFT	25.00	\$ -
610-07488	HMA FOR APPROACHES, TYPE C	684	TON	150.00	\$ 102,667
610-09108	PCCP FOR APPROACHES, 9 IN	0	SYS	75.00	\$ -
	SEEDING - MULCH - FERTILIZER	9	ACRES	10000.00	\$ 90,000
628-09401	FIELD OFFICE, A	24	MOS	1800.00	\$ 43,200
715-05048	PIPE, TYPE 4 CIRCULAR 6 IN	12,000	LFT	12.00	\$ 144,000
715-05149	PIPE, TYPE 2 CIRCULAR 12 IN	800	LFT	45.00	\$ 36,000
715-05152	PIPE, TYPE 2 CIRCULAR 18 IN	200	LFT	50.00	\$ 10,000
	PIPE, TYPE 2 CIRCULAR 24 IN	0	LFT	80.00	\$ -
	PIPE, TYPE 2 CIRCULAR 36 IN	0	LFT	75.00	\$ -
	PIPE, TYPE 2 CIRCULAR 48 IN	0	LFT	100.00	\$ -
	PIPE, TYPE 3 CIRCULAR 18 IN	700	LFT	75.00	\$ 52,500
715-09064	VIDEO INSPECTION FOR PIPE	1,000	LFT	2.00	\$ 2,000
718-52610	AGGREGATE FOR UNDERDRAIN	1,180	CYS	35.00	\$ 40,600
718-99153	GEOTEXTILES FOR UNDERDRAIN	8,667	SYS	3.00	\$ 26,000
	OUTLET PROTECTORS	30	EACH	500.00	\$ 15,000
720-45410	MANHOLE, C4		EACH	4000.00	\$ -
	MANHOLE, J4	10	EACH	5000.00	\$ 50,000
	INLET, B15	20	EACH	3000.00	\$ 60,000
801-04308	ROAD CLOSURE SIGN ASSEMBLY	10	EACH	400.00	\$ 4,000
801-08203 (A)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID WHITE, REMOVABLE)	0	LFT	1.00	\$ -
801-08203 (C)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID YELLOW, REMOVABLE)	0	LFT	1.00	\$ -
801-06640	CONSTRUCTION SIGN, A	50	EACH	150.00	\$ 7,500
801-06710	FLASHING ARROW SIGN	0	DAY	10.00	\$ -
801-06775	MAINTAINING TRAFFIC	1	LS	100000.00	\$ 100,000
801-07118	BARRICADE, IIIA	400	LFT	15.00	\$ 6,000
	RAILROAD CROSSING	0	LS	250000.00	\$ -
	ADJUST CASTINGS TO GRADE	0	EACH	500.00	\$ -
	SIGNING & STRIPING	1	LS	80000.00	\$ 80,000
	BRIDGE OVER CRREK	1	EACH	1500000.00	\$ 1,500,000
	POND RECONSTRUCTION	1	LS	200000.00	\$ 200,000
ROADWAY CONSTRUCTION SUBTOTAL:					\$ 6,604,475

ESTIMATE TOTAL: \$ 8,783,951

EXHIBIT A24 STONES CROSSING ROAD TO OLIVE BRANCH ROAD FRONT-AGE ROAD COST ESTIMATES

Conceptual Cost Estimate
Revision Date: 5-4-18

INDIRECT COST ITEMS					
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
105-08807	ADDITIONAL (CONTINGENCY-25%)	1	L.S.	931405	\$ 931,405
105-08845	CONSTRUCTION ENGINEERING 3%	1	L.S.	111789	\$ 111,789
110-01001	MOBILIZATION AND DEMOBILIZATION 5%	1	L.S.	186281	\$ 186,281
INDIRECT COST SUBTOTAL:					\$ 1,229,455
ROADWAY CONSTRUCTION ITEMS					
		6,200	LFT		
Pay Item	Item Description	Total Quantity	Unit	Unit Price	Subtotal
201-52370	CLEARING RIGHT OF WAY	1	LS	25000.00	\$ 25,000
203-02000	EXCAVATION, COMMON	27,556	CYS	25.00	\$ 688,889
	BORROW	13,778	CYS	40.00	\$ 551,111
	EROSION CONTROL	1	LS	40000.00	\$ 40,000
207-08264	SUBGRADE TREATMENT, TYPE II	0	SYS	10.00	\$ -
207-09935	SUBGRADE TREATMENT, TYPE IC	31,827	SYS	20.00	\$ 636,533
211-09265	STRUCTURAL BACKFILL, TYPE 2	213	CYS	30.00	\$ 6,400
301-07448	COMPACTED AGGREGATE, NO. 53, BASE - 3"	4,050	TON	30.00	\$ 121,487
	HMA SURFACE, TYPE C (1.5")	2,001	TON	95.00	\$ 190,051
	HMA INTERMEDIATE, TYPE C (3")	4,001	TON	85.00	\$ 340,081
	HMA BASE, TYPE C (5.5")	7,335	TON	75.00	\$ 550,147
	HMA INTERMEDIATE, TYPE C (2.5" -)	0	TON	85.00	\$ -
	HMA BASE, TYPE C (3")	0	TON	75.00	\$ -
	HMA SURFACE, TYPE C (1.5") Overlay	0	TON	95.00	\$ -
	HMA INTERMEDIATE, TYPE C (2.5") Overlay	0	TON	85.00	\$ -
	PUBLIC ROAD APPROACHES (12")	0	TON	150.00	\$ -
401-10258	JOINT ADHESIVE, SURFACE	18,800	LFT	1.00	\$ 18,800
401-10259	JOINT ADHESIVE, INTERMEDIATE	37,200	LFT	1.00	\$ 37,200
401-11785	LIQUID ASPHALT SEALANT	18,800	LFT	1.00	\$ 18,800
408-05520	ASPHALT FOR TACK COAT	8.3	TON	500.00	\$ 4,133
804-08070	SIDEWALK, CONCRETE	0	SYS	80.00	\$ -
805-08120	CURB, CONCRETE	0	LFT	23.00	\$ -
805-08140	CURB AND GUTTER, CONCRETE	0	LFT	25.00	\$ -
810-07488	HMA FOR APPROACHES, TYPE C	0	TON	150.00	\$ -
810-09108	PCCP FOR APPROACHES, 9 IN	0	SYS	75.00	\$ -
	SEEDING - MULCH - FERTILIZER	9	ACRES	10000.00	\$ 90,000
828-09401	FIELD OFFICE, A	12	MOS	1800.00	\$ 21,600
715-05048	PIPE, TYPE 4 CIRCULAR 6 IN	12,400	LFT	12.00	\$ 148,800
715-05149	PIPE, TYPE 2 CIRCULAR 12 IN	0	LFT	45.00	\$ -
715-05152	PIPE, TYPE 2 CIRCULAR 18 IN	0	LFT	50.00	\$ -
	PIPE, TYPE 1 CIRCULAR 24 IN	240	LFT	60.00	\$ 14,400
	PIPE, TYPE 1 CIRCULAR 36 IN	240	LFT	75.00	\$ 18,000
	PIPE, TYPE 2 CIRCULAR 48 IN	0	LFT	100.00	\$ -
	PIPE, TYPE 3 CIRCULAR 18 IN	100	LFT	75.00	\$ 7,500
715-09084	VIDEO INSPECTION FOR PIPE	480	LFT	2.00	\$ 960
718-52810	AGGREGATE FOR UNDERDRAIN	1,199	CYS	35.00	\$ 41,953
718-99153	GEOTEXTILES FOR UNDERDRAIN	8,958	SYS	3.00	\$ 26,867
	OUTLET PROTECTORS	31	EACH	500.00	\$ 15,500
720-45410	MANHOLE, C4	0	EACH	4000.00	\$ -
	MANHOLE, J4	0	EACH	5000.00	\$ -
	INLET, B15	0	EACH	3000.00	\$ -
801-04308	ROAD CLOSURE SIGN ASSEMBLY	2	EACH	400.00	\$ 800
801-08203 (A)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID WHITE, REMOVABLE)	0	LFT	1.00	\$ -
801-08203 (C)	TEMPORARY PAVEMENT MARKING, 4 IN (SOLID YELLOW, REMOVABLE)	0	LFT	1.00	\$ -
801-08640	CONSTRUCTION SIGN, A	20	EACH	150.00	\$ 3,000
801-08710	FLASHING ARROW SIGN	0	DAY	10.00	\$ -
801-08775	MAINTAINING TRAFFIC	1	LS	15000.00	\$ 15,000
801-07118	BARRICADE, III-A	200	LFT	15.00	\$ 3,000
	RAILROAD CROSSING	0	LS	250000.00	\$ -
	ADJUST CASTINGS TO GRADE	0	EACH	500.00	\$ -
	SIGNING & STRIPING	1	LS	30000.00	\$ 30,000
	PIPE, TYPE 1 CIRCULAR 120 IN	80	LFT	1000.00	\$ 80,000
ROADWAY CONSTRUCTION SUBTOTAL:					\$ 3,725,822
ESTIMATE TOTAL:					\$ 4,955,077

JOHNSON COUNTY CORRIDOR OVERLAY DISTRICT ORDINANCE

1. Purpose, Intent, and Applicability

a. **Purpose.** It is the purpose of this district to establish standards for the design of sites, buildings, structures, plantings, signs, street hardware and such other improvements that are visible to the public and affect the physical development of land within the State Route 37, State Route 135 (within White River Township), and Interstate 65 corridors. See attached Exhibit A which defines the geography of the Corridor Overlay District. The following standards shall be considered in evaluating projects proposed within a Corridor Overlay District:

i. All structures will be evaluated on the overall appearance of the project and shall be based on the quality of its design and its relationship to the surrounding area.

ii. The quality of design goes beyond the materials of construction to include scale, mass, color, proportion, and compatibility with adjoining developments.

iii. Building components, such as windows, doors, eaves, and parapets, shall have good proportions and relationships to one another.

iv. Monotony of design in single or multiple building projects shall be avoided. Variation of detail, form, and siting shall be used to provide visual interest. In multiple building projects, variable siting of individual buildings may be used to prevent a monotonous appearance.

b. **Intent.** These standards are intended to promote high-quality creative development that will combine imagination, innovation, and variety in the appearance of buildings and sites in the overlay district. These standards are further intended to preserve and enhance property values and to promote the public health, safety and welfare by providing for consistent and coordinated treatment of the property encompassed by the established corridors. The impact of new development upon these corridors creates a setting that commands the highest

standards of development which encourages efficient use of land, promotes coordinated development, permits innovative site designs, establishes development standards and preserves the integrity of the roadways within the corridors.

c. **Applicability.** This district shall apply in the following instances:

i. The boundaries of the State Route 37 and State Route 135 Corridor Overlay Districts are hereby established for an area within 500 feet from and on either side of the centerline of said routes in White River Township only.

ii. The boundaries of the Interstate 65 Corridor Overlay District are hereby established for an area within 600 feet from and on either side of the centerlines of the outermost traveled lanes of the Interstate.

iii. This district shall apply to any development within the Corridor Overlay.

iv. To the extent the provisions of this district conflict with provisions established elsewhere in this Ordinance, the stricter provisions shall supersede and apply.

d. **Exceptions.** This district shall not apply to agricultural operations, as defined in this Ordinance, or to the sale of produce from land on which the agricultural operation takes place.

e. **Administrative Waiver for Existing Developments.** The Director is hereby authorized to determine whether the standards of this district shall apply to the entire lot or be limited to the proposed improvements for parcels that were developed or improved prior to the effective date of this district. The following factors shall be taken into consideration:

i. The extent and location of the proposed improvements (e.g. buildings, parking, landscaping, drainage, etc.) on the lot.

ii. The extent of conflicts in applying the standards of this district with existing and/or planned improvements.

2. Uses

a. **Permitted Uses.** All uses permitted in the underlying zoning district, as set forth in the Permitted Use Table, shall be permitted except as otherwise excluded and prohibited in Section 2.b. below.

b. **Prohibited Uses.** The following uses are prohibited within the Corridor Overlay District:

- i. Adult-oriented businesses
- ii. Automobile sales
- iii. Mobile home parks
- iv. Open industrial uses
- v. Salvage and wrecking
- vi. Storage and warehouse uses

c. **Outside Storage Prohibited.** No outside, unenclosed storage shall be permitted on any lot unless otherwise specifically permitted by this ordinance. All storage shall be contained in enclosed facilities.

d. **Outside Sales Display.** Outside sales displays, including vending machines, kiosks, and outdoor point of sale items (e.g. flowers, propane, salt, firewood), shall be permitted in accordance with the following standards:

i. The outside sales display area shall not exceed fifty percent (50%) of the gross floor area of the principal building on the lot.

ii. Outside sales display areas shall be located immediately adjacent to the principal building, shall not encroach into any required front, side, or rear yard setback, and shall be delineated on an approved site plan.

iii. The site plan shall include the types of merchandise and/or finished products, location, landscaping, and other improvement of the outside sales display area.

iv. Pedestrian circulation areas shall not be obstructed and enhancements may be required by the Plan Commission or Director to ensure safe pedestrian movements.

v. The Plan Commission or Director may

require enhanced site design features to ensure that outside sales display areas are delineated and that such areas are compatible with the design of the building and site context.

vi. The Plan Commission or Director may require enhanced screening or landscaping to ensure the compatibility of the proposed use with adjoining areas.

vii. Once approved, the outside sales display area shall not be materially or substantially changed or altered without the approval of an amendment to a site plan.

e. **Outdoor Eating Areas.** All outdoor cafes and eating areas shall conform to all State and County Health Department regulations and codes. Music and other audio devices shall be maintained at a level (a) not audible from 40-feet from the source, or (b) 90 decibels or less when measured 6 feet from source on a dB(A) meter. Outdoor eating areas shall not impede pedestrian traffic nor force pedestrians into vehicular travel lanes in accordance with the following:

i. A 5-foot pedestrian access area shall be provided on the perimeter of the outdoor eating area. The pedestrian access area shall be clear and free of obstructions.

ii. Outdoor eating areas that would occupy or extend into public rights-of-way may not be located in a manner that renders any right-of-way, sidewalk, or path non-compliant with Federal, State, or local codes.

f. **Accessory Uses.** All accessory uses which are permitted in the underlying zoning district shall be permitted within the Corridor Overlay District.

3. Access Standards

a. **Access to Individual Sites.** The following standards shall apply; however, the Plan Commission, County Commissioners or County Engineer may approve access points if deemed appropriate to improve traffic circulation in the area or due to the size of the development:

i. The purpose of this section is to make the

closing of all private curb cuts along State Route 37 and State Route 135 possible by establishing a common access road to provide access to and through lots abutting State Route 37 and State Route 135.

ii. New curb cuts shall not be permitted unless specifically approved by the County Commissioners and the Indiana Department of Transportation prior to installation.

iii. Access roads shall be provided for lots along State Route 37 and State Route 135. The access road may be dedicated right-of-way or remain private if constructed to County standards and public access provided through the use of cross access easements.

iv. Approval of a zoning petition containing an illustrative concept plan showing vehicular drive cuts shall not constitute approval of curb cuts by the County Commissioners.

v. New curb cuts shall not be permitted on State Route 37 and State Route 135 where lots or parcels can be accessed via a connection to an arterial, collector, frontage road, or adjoining parking area.

vi. Developments shall provide for vehicular and pedestrian connectivity between adjacent lots or parcels in order to encourage and facilitate circulation without directly accessing State Route 37 and State Route 135.

vii. If alternative vehicular access is available, any existing curb cuts along State Route 37 and State Route 135 and/or Corridor Streets shall be vacated and removed as a condition of any discretionary approval for use or development of land where such curb cuts are present.

viii. Curb cuts shall be established no closer than 1 for each 400 feet of frontage. No curb cuts shall be allowed within 200 feet of any intersection of public roads. Opposing curb cuts shall align squarely or be offset no less than 200 feet.

ix. Only 1 street, driveway, or point of vehicle access shall be permitted from a development

onto and Arterial or Collector.

x. The primary access for a multifamily development shall be from an Arterial, if available, and at least 2 access points shall be provided for adequate accessibility for emergency vehicles and school buses.

xi. Developments shall not be designed to permit direct access by a driveway to any Arterial or Collector, unless such design accommodates the Lot's only means of access.

b. State Road 135 Corridor Access to Potential Development Sites. Stub streets shall be built in all cases where adjacent lots have reasonable potential for development. Reasonable potential shall include any adjacent lot of adequate size for commercial or residential development or any adjacent lot so determined by the Plan Commission or Director.

c. Vision Clearance. No sign, fence, wall, landscaping, public utility installations, or other improvement that obstructs sight lines between 3 and 9 feet above the street shall be permitted on a corner lot, unless otherwise approved in writing by the Director, within the triangular area formed by the right-of-way line and a line connecting points:

i. Fifteen (15) feet from intersections of Collectors, Private, or Local Streets.

ii. Thirty (30) feet from intersections of Expressways or Arterials.

iii. Five (5) feet from intersections of Driveways or alleys.

In the case of rounded lot lines, the distances shall be measured from the point at which the right-of-way lines would intersect if they were not to have been rounded at the corner.

d. Dedication of Right-of-Way. In developments that adjoin or include existing streets that do not conform to the minimum Right-of-way dimensions established in the Thoroughfare Plan, the Developer shall dedicate additional width along either one or both sides of such streets sufficient to meet the requirements

of the Thoroughfare Plan. If the Developer only controls the property on one (1) side of the street, then sufficient right-of-way shall be dedicated to bring the half right-of-way up to the dimensions required in the Thoroughfare Plan.

4. Site Design Standards

a. Relationship of Buildings to Site. The following standards shall be considered in evaluating projects proposed within a Corridor Overlay District:

i. The site shall be planned to accomplish a desirable transition with the streetscape and provide for adequate planting, safe pedestrian movement, and parking area.

ii. Site planning in which setbacks and yards are in excess of zoning requirements is encouraged to provide an interesting relationship between buildings.

iii. Parking areas shall be treated with decorative elements, building wall extensions, plantings, beams, or other innovative means so as to attractively landscape and/or screen parking areas from view from public ways.

iv. Without restricting the permissible limits of the applicable zoning district, the height and scale of each building shall be compatible with its site and existing (or anticipated) adjoining buildings.

v. Newly installed utility services, and service revisions necessitated by exterior alterations, shall be underground.

b. Building Orientation. All structures shall be sited to front onto Corridor Streets or give the appearance of a front-like facade on Corridor Streets.

c. Street Network.

i. Private Streets. Private streets are permitted, but shall conform to the street and right-of-way standards of this Ordinance and shall be constructed in accordance with the County's Construction Standards. Private streets shall be established in access easements that may

be placed in common area, rather than within rights-of-way. Access easements shall comply with Section 11. When a private street easement appears on a Secondary Plat, then a private streets certificate shall be printed on the plan or plat.

ii. General Street Layout. Street and alley layout shall provide access to all lots and parcels of land within the development, and where streets cross other streets, jogs shall not be created. Streets shall be laid out on the parent tract (a) in a manner that creates conditions favorable to health, safety, convenience, and the harmonious development of the community; (b) in an orderly and logical manner; (c) with concern for connectivity to adjacent parcels; (d) with concern for pedestrian and vehicular safety; and (e) to provide reasonably direct access to the primary circulation system.

iii. Connectivity. Streets shall align and connect with existing or planned streets and provide for connections with adjacent property. Proposed streets, where appropriate, shall be extended to the boundary line of the tract to be developed so as to provide for normal circulation of traffic within the vicinity. Regard shall be given to the Thoroughfare Plan and Comprehensive Plan. Cul-de-sacs are discouraged and shall only be permitted where such street continuation is prevented due to topography or other physical condition, or unless such extension is found by the Plan Commission to be unnecessary for the coordination of development within the development or between the development and adjoining property.

d. Pedestrian Network

i. All developments shall integrate an interior and exterior pedestrian network comprised of sidewalks or asphalt paths for pedestrian transportation and recreation, which shall be depicted on the Site plan, Primary Plat, or Secondary Plat.

ii. All pedestrian network improvements shall be constructed per the County's Construction Standards and shall comply with the requirements

of the Americans with Disabilities Act (ADA). Curb ramps complying with ADA standards shall be provided at all intersections of streets, alleys, and non-residential drives.

iii. When a sidewalk, pedestrian path, jogging path, and/or bicycle way crosses a street intersection with an Arterial within or adjacent to a development, then safety devices (e.g. painted crosswalks, signs, or other traffic control devices) shall be installed at the Developer's expense as deemed appropriate by the County Engineer. The Director or Plan Commission may require crosswalks to be marked at other intersections or pedestrian crossing points as may be deemed appropriate. All traffic control devices shall comply with guidelines and requirements of the current edition of the Indiana Manual on Uniform Traffic Control Devices.

iv. The minimum sidewalk width shall be the greater of (a) the width as indicated in the Comprehensive Plan or (b) 5 feet (6 feet if immediately abutting the curb).

v. Sidewalks shall be required on both sides of internal streets (public or private) in all developments.

vi. When a proposed development is adjacent to an existing development with sidewalks, the sidewalks within the proposed development shall align to connect with the existing sidewalks.

vii. Connector sidewalks shall be provided from the sidewalk or path adjacent to the street to the front entrance of all non-residential structures. Where the sidewalk intersects driving lanes or parking aisles, then crosswalks and ramps shall be installed in accordance with ADA requirements.

viii. All developments shall participate in the establishment or improvement to the pedestrian network along streets adjacent to the perimeter of the development. Where a proposed development abuts an existing right-of-way, then pedestrian paths, jogging paths, and bicycle paths shall be provided along the perimeter street(s) or private street(s) in accordance with

the Comprehensive Plan.

ix. Generally, all required pedestrian facility improvements shall be located within the right-of-way. Required improvements located outside of the right-of-way shall be located within an easement approved by the Director or County Engineer.

x. The Plan Commission or Director may require developers, at their expense, to construct off-site pedestrian facilities adjacent to the proposed development to respond to the proposed development's impact and infrastructure demands.

e. Fence Standards

i. Location. No fence shall be erected or altered on a corner or other lot in such a manner that obstructs or in any way hinders the vision of a vehicle driver (see Section 3.a. Vision Clearance). Fences may be built directly along lot lines, however, fences shall not encroach into the right-of-way, nor into easements that otherwise prohibit the installation of fences (e.g. drainage and utility easements). A survey drawing or survey of the site prepared by a licensed surveyor shall be provided with applications.

ii. Height Limitations. Fence height is measured from the topmost point of the fence to the grade of the ground adjacent to the fence. Any fence placed upon an erected mound or berm or masonry wall must govern its total height to the limitations herein.

iii. Fences located within a required side yard or rear yard of a residential lot shall not exceed 6 feet in height. Fences located within a required front yard of a residential lot shall not exceed 42 inches in height.

iv. Open wire mesh fences surrounding tennis courts that only enclose a regulation court area and standard apron areas may be erected to a height of 16 feet.

v. Fences shall be installed so the finished side of the fence is facing outward (e.g. toward the lot line). Fences on a lot line in which 2 or

more property owners share in the expense of the fence shall not be subject to this provision.

vi. Chain link fencing, barbed wire, and razor wire are prohibited within the Corridor Overlay district.

vii. Fences shall be maintained in good condition and operating order at all times.

viii. Temporary fences for safety and construction are permitted and shall be exempted from the standards of this section.

f. Loading Berths. Loading berths shall be oriented in a manner so they are not visible from State Route 37, State Route 135, Interstate 65 and Corridor Streets and their visibility from all other rights-of-way and adjacent properties is minimized. The use of loading berth enclosures shall be utilized where appropriate in order to accomplish the design objectives of this subsection. All loading berths shall be screened to the extent reasonably necessary by installing solid, opaque fences or walls. Chain link and similar style fences shall not be permitted. Mounds or berms may also be used in solitary or in combination with fence or wall enclosures to provide screening. The area adjacent to loading berth fences and walls shall be landscaped at a rate of 1 ornamental tree and 5 shrubs for every 30 linear feet of enclosure, excluding access doors or gates.

g. Drive-thrus. Drive-thru windows and lanes shall not be permitted in between the right-of-way line of State Road 37, State Road 135, or Interstate 69 and the building façade nearest to said right-of-way.

h. Fueling Stations. Vehicular fuel pumps and canopies shall be setback a minimum of 30 feet farther from the Corridor right-of-way line than the principal building to which the fuel pumps or canopies are appurtenant or associated.

5. Building Design

a. Architectural Design Theme. These architectural requirements are intended to provide consistent quality and cohesiveness of design among buildings and other improvements

within the corridor while providing flexibility that permits a variety of architectural design styles. All structures shall be thoughtfully designed in a manner that visually and functionally complements the character of the corridor.

b. Building Mass. Multiple stories are encouraged, but not required. Building mass should be arranged to draw attention to main entrances and focal points of the building.

c. Building Facades.

i. All building facades shall have a defined base or foundation, a middle or modulated wall, and a top formed by a pitched roof or articulated, three-dimensional cornice. Building facades over 90 feet in length shall have projecting or recessed offsets at intervals not exceeding 60 feet. Buildings less than 10,000 square feet in gross floor area shall be designed with offsets at intervals not exceeding 40 feet. Offsets shall extend the entire vertical plane of the building façade with a minimum depth of 4 feet. The aggregate length of the offset planes shall be a minimum of 20% of the length of the façade. Architectural elements, such as arcades, columns, or piers, may satisfy this requirement if they meet the minimum offset requirements.

ii. Buildings shall be constructed with the same building material quality and level of architectural detail on all building facades (e.g. 360-degree architecture).

iii. Design elements of the building façade shall be organized such that openings (including windows, doors, loading berths, faux windows and architectural or painted elements resembling openings) shall line up horizontally and vertically with other openings.

iv. Openings in a building façade shall be arranged in a balanced, relatively uniform fashion.

v. Exceptions may be permitted if openings are organized in an aesthetically pleasing manner and constitute an essential artistic design element appropriate for the building type, scale, orientation, location, and site.

- d. **Main Entrances.** All buildings shall be designed with a main entrance and at least 2 window openings associated with the main entrance. Building entrances shall be clearly defined and articulated by multiple architectural elements such as lintels, pediments, pilasters, columns, awnings, porticos, and other design elements appropriate to the architectural theme and detailing of the building as a whole. The orientation, location, proportion, and style of the doors shall be cohesive with the architectural theme of the building.
- e. **Building Height.** All principal structures within the Corridor Overlay District shall have a minimum building height of 18 feet. There is no maximum building height.
- f. **Pitched Roofs.** Pitched roofs shall be simply and symmetrically pitched and only in the configuration of gables and hips, with pitches ranging from 4:12 to 14:12. If standing seam panels are used then they shall be (1) gray, black, dark blue, dark green, barn red, or dark brown and (2) made of a non-reflective material.
- g. **Flat Roofs.** Flat roofs are permitted if edged by a parapet wall with an articulated, three-dimensional cornice. Parapet walls shall be fully integrated into the architectural design of the building to create seamless design transitions between the main building mass and roof-mounted architectural elements (which may include screening elements for roof-mounted equipment).
- h. **Roof Modulation.** Modulation of the roof planes and/or rooflines shall be required in order to eliminate the appearance of box-shaped buildings. Buildings shall comply with at least one of the following:
- i. A building with a flat roof shall have varying roof height sections. A varied roof section shall have a minimum roof height difference of 5 feet from an adjacent roof section. The maximum horizontal roofline length without variation shall be 60 percent of the total length of the building facades roof line.
 - ii. A roofline modulation shall include a vertical change in the visible roofline of at least 4 feet with a minimum aggregate modulation length of 40 percent of each building façade. The maximum horizontal roofline length without modulation shall be 60 feet, or 40 feet for buildings with a gross floor area less than 10,000 square feet.
- i. **Roof Elements.** Dormers and cupolas shall be designed with appropriate details, proportion, and style consistent with the overall building theme and roofed with symmetrical gable, hip, or barrel roofs. All visible vents, attic ventilators, turbines, flues, and other visible roof penetrations shall be either (1) painted to match the color of the roof or flat black, or (2) oriented to minimize their visibility from adjacent lots or rights-of-way.
- j. **Gutters and Downspouts.** Gutters and downspouts shall be visually integrated with the architectural style of the structure. The color of gutters and downspouts shall be selected to complement or to be consistent with the building materials.
- k. **Windows.** All window designs shall be compatible with the architectural theme of the building.
- i. The quantity of window panes and window openings, window trim detailing, and other design elements used to accent the windows shall be consistent with and complementary to the architectural theme of the building.
 - ii. Window trim and other architectural enhancements designed to accent the windows shall be required for all windows. Acceptable design elements include shutters, keystones, masonry arches, awnings, decorative stone frames, masonry rowlock frames, or other trim or design elements as approved by the Plan Commission or Director.
- l. **Awnings.** Fixed or retractable awnings are permitted if they are compatible with the architectural theme of the building. Awnings shall be made of a non-reflective material and kept in good repair. Awnings used to comply with the architectural requirements of this district

shall not be removed unless the building façade would otherwise comply with the architectural requirements without the awnings.

m. Mechanical Screening. Roof-mounted equipment on exposed roofs shall be screened from view. The appearance of roof screens shall be coordinated with the building to maintain a unified appearance. All building mechanical and electrical equipment located adjacent to the building and visible from a public right-of-way or a residentially zoned area shall be screened from view. Such screens and enclosures shall be treated as an integral element of the building's appearance.

n. Accessory Buildings. All accessory buildings which are permitted in the underlying zoning district shall be permitted within the Corridor Overlay District, except that any detached accessory building on any lot shall be designed to be architecturally compatible with the primary structure with which it is associated. All accessory buildings shall have a roof.

6. Building Materials

a. Permitted Materials. Building facades may be constructed from masonry or glass, as defined below, or other materials or products which provide the same desired stability and quality, such as composite stone, plaster, or "EIFS." Products other than those listed must be approved by the Plan Commission or Director.

i. Masonry includes all masonry construction which is composed of solid, cavity, faced, or veneered-wall construction, unless otherwise approved by the Plan Commission or Director. Stone material used for masonry construction may consist of granite, sandstone, slate, limestone, marble, or other hard or durable all-weather stone. Ashlar, cut stone, and dimensioned stone construction techniques are acceptable. Brick material used for masonry construction shall be composed of hard fired (Kiln-fired) all-weather standard size brick or other all-weather facing brick. Fiber cement siding is not here considered masonry.

ii. Glass includes glass curtain walls or glass block construction. A glass curtain wall shall be defined as an exterior wall which carries no floor or roof loads, and which may consist of a combination of metal, glass and other surfacing materials supported in a metal framework.

b. Prohibited Materials. Exterior metal walls, vinyl siding, and aluminum siding shall be prohibited on all buildings within the Corridor Overlay District.

c. Material Proportions. Masonry materials are the preferred and primary building material used on buildings within the district. A minimum of 60 percent of each building façade exclusive of doors, windows (including faux windows and glazing), and loading berths, shall be covered with masonry. No more than 25 percent of each building façade exclusive of doors, windows (including faux windows and glazing), and loading berths, shall be covered with fiber cement siding, polymeric cladding, E.I.F.S., or stucco.

d. Building Maintenance. The exposed walls and roofs of buildings shall be maintained in a clean, orderly, and attractive condition, free of cracks, dents, punctures, breakage, and other forms of visible marring. Materials that become excessively faded, chalked or otherwise deteriorated shall be refinished, repainted or replaced.

7. Signage

a. All freestanding signs shall be architecturally compatible with the primary structure with which they are associated, in terms of materials and design.

b. Off-premises signs shall be prohibited within the Corridor Overlay District.

8. Landscaping

a. Areas to be Landscaped

i. Greenbelt. The greenbelt shall be suitably landscaped and shall be otherwise unoccupied except for steps, walks, terraces, driveways, lighting standards, and other similar structures, but excluding private parking areas. The

greenbelt width is as defined by this Ordinance. Mounding and other innovative treatments are to be especially encouraged in this area.

ii. **Parking Lot Perimeter.** A minimum 6-foot-wide landscaping strip shall be provided around the perimeter of the parking lot. The landscaping strip shall be planted with canopy trees, ornamental trees, and low shrubs. A minimum of 1 canopy tree or ornamental tree per every 40 feet of perimeter shall be provided within the landscaping strip, along with a minimum of 1 shrub per every 4 feet.

iii. **Parking Lot Interior.** All parking lot landscaping shall be of a quality to improve and enhance the site and its surrounding area. Effective use of mounding and existing topography is encouraged. Landscaping and planting areas shall be reasonably dispersed throughout the parking area, and not less than 5 percent of a private parking lot shall be landscaped. (For purposes of this computation, landscaping in the Greenbelt, adjacent to buildings, and on the periphery of the lot shall not be included.) Landscaping shall be specifically provided at the ends of parking rows and as a means of separating parking from major circulation aisles within lots. One shade tree shall be provided for every 120 square feet of this interior parking lot landscaping area. Plant material within parking lots shall provide for safe visibility and maintain clear sight lines between 2 and 8 feet from the top of the curb. Such landscaping shall be provided in any combination of planting islands, planting peninsulas, and entrance ways, and shall be dispersed so as to define aisles and limit unbroken rows of parking to 150 lineal feet.

b. **Landscaping Standards**

i. The interior dimensions, specifications and design of any planting area or planting medium proposed to be constructed shall be sufficient to protect the landscaping materials planted therein and to provide for proper growth.

ii. Primary landscaping materials used in the Greenbelt shall consist of one or a combination

of the following: shade trees, ornamental trees, and shrubs.

iii. The primary landscaping materials used in and around private parking areas shall be trees which provide shade at maturity. Shrubbery, hedges, and other planting material may be used to compliment tree landscaping, but shall not be the sole contribution to the landscaping.

iv. All shade trees proposed to be used in accordance with any landscaping plan shall be a minimum of 8 feet in overall height and have a minimum trunk diameter of 2½ inches at a height 12 inches above ground at planting. They should be of a variety which will attain an average mature spread greater than 20 feet.

v. Landscaping materials selected should be appropriate to local growing and climatic conditions. Wherever appropriate, existing trees should be conserved and integrated into the landscaping plan. Plant material shall be selected for interest in its structure, texture, color and for its ultimate growth. Indigenous and other hardy plants that are harmonious to the design, and of good appearance, shall be used.

vi. The landscaping plan shall ensure that sight distance is not obstructed for drivers of motor vehicles.

vii. Where natural or existing topography patterns contribute to beauty and utility of a development, they shall be preserved and developed. Modification to topography shall be permitted where it contributes to good appearance.

viii. Landscape treatment shall be provided to enhance architectural features, strengthen vistas and important axes, and provide shade.

ix. In locations where plants will be susceptible to injury by pedestrians or motor traffic, they shall be protected by appropriate curbs, tree guards, or other devices.

x. Where building sites limit planting, the placement of trees in parkways or paved areas is encouraged.

xi. In areas where general planting will not prosper, other materials such as fences, walls, and pavings of wood, brick, stone, gravel, and cobbles shall be used. Carefully selected plants shall be combined with such materials where possible.

c. Landscaping Installation and Maintenance. All landscaping required by the approved landscaping plan shall be installed prior to the issuance of a building occupancy permit if said permit is to be issued during a planting season, or within 6 months of the date an occupancy permit is issued during a non-planting season. It shall be the responsibility of the owners and their agencies to ensure proper maintenance of the landscaping, in accordance with the standards set by this Ordinance and as indicated on the landscaping plan which has been approved by the Director. This is to include, but not be limited to, replacing dead plantings with identical varieties or a suitable substitute, and keeping the area free of refuse and debris.

d. Landscape Plan Approval. A landscape plan shall be submitted to the Director for approval at the same time other plans (i.e. architectural design, lighting, parking, signage, and site plans) are submitted. This plan shall be drawn to scale, including dimensions and distance, shall delineate all existing and proposed structures, private parking areas, walks, handicap ramps, terraces, driveways, signs, lighting standards, steps and other similar structures; and shall delineate the location, size, and description of all landscape materials. Landscape treatment for plazas, roads, paths, and service and private parking areas shall be designed as an integral and coordinated part of the landscape plan for the entire lot.

e. Changes after Approval. Any change or deviation to an approved landscaping plan shall require the approval of the Director. Changes that do not conform to this Section shall be subject to the procedures for a variance as established in Section 6-101-2.E of this Ordinance. Landscaping improvements made on a site that are not in conformance with the approved landscaping or site plan shall be considered a violation

of this Section and subject to the fines and penalties established in this Ordinance. However, landscaping improvements may exceed the minimum requirements shown on the approved plan.

f. Inspection. The Director, or a duly appointed representative, shall have the authority to visit any lot within a Corridor Overlay District to inspect the landscaping.

9. Parking

a. Loading Berth Requirements. Loading berth requirements shall be as specified in the underlying zoning district, except that any loading or unloading berth or bay shall be screened from view beyond the site by landscaping or other screening. Loading berths and exterior work areas shall be screened from view from public ways. Screening shall be accomplished by use of walls, fencing, planting, or combinations of these, and shall be equally effective in winter and summer.

b. Paving Requirements. All parking areas shall be finished with a hard surface such as asphalt or concrete.

c. Parking Requirements. Parking is to be discouraged between the required front setback and the building(s) when other suitable areas for parking exist on the property; however, a maximum of 20 percent private parking may be permitted in the area between the front yard setback and the building(s). Efforts to break up large expanses of pavement are to be encouraged by the interspersing of appropriate planting areas wherever possible. The number of parking spaces required is as established in Section 6-101-7.D of this Ordinance, depending upon the zoning and the intended land use.

d. Shared Parking: Groups of users requiring parking spaces may join in establishing a group parking area if all of the following criteria are met, with the approval of the Plan Commission or Director:

i. The off-site, off-street parking facilities are within 300 feet of the property.

- ii. The shared parking spaces shall provide at least 80 percent of the cumulative minimum off-street parking spaces required for each use.
 - iii. A written reciprocal parking agreement or other similar document with a minimum duration of 20 years, signed by all property owners involved is required and shall include provisions concerning at least the following items: easements (if applicable), maintenance, snow removal, ownership, and liability. The agreement shall be recorded in the County Recorder's office and a copy shall be provided to the Department. Should the reciprocal parking agreement expire or otherwise terminate, the uses for which the off-site parking was provided shall be considered non-conforming and any and all approvals shall be subject to revocation. Continuation or expansion of the uses shall be prohibited unless the use is brought into compliance with the parking regulations of this article.
10. Lighting
- a. Applicability. These requirements shall be applicable to all outdoor lighting sources which: (1) are newly designed, constructed, erected, or placed into operation after the effective date of this chapter; and (2) require the relocation or replacement of existing lighting fixtures commenced after the effective date of this chapter.
 - b. Exceptions. Exceptions to these requirements shall include the following:
 - i. All outdoor light fixtures permitted prior to the adoption of these regulations shall be exempt from the shielding requirements of this subsection, except that when an outdoor light fixture becomes inoperable, the replacement light fixture shall comply with the standards of this subsection.
 - ii. All hazard warning lighting required by Federal and State regulatory agencies.
 - iii. All temporary emergency lighting required by local law enforcement, emergency service and utility department(s).
 - iv. All traffic control and directional lighting.
 - v. All underwater lighting used for the illumination of swimming pools and water features shall be exempt from the lamp type and shielding standards of this subsection.
 - vi. All lighting for temporary festivals and carnivals.
 - vii. All low wattage residential accent and landscape lighting fixtures having a maximum output of 1600 lumens (equal to one 100-watt incandescent light) per fixture.
 - c. Prohibitions. The following shall be prohibited:
 - i. The installation, sale, lease, or purchase of any mercury vapor lamp or low-pressure sodium lamp.
 - ii. The use of laser source light or other similar high-intensity light for outdoor advertising, except when otherwise permitted in conjunction with an Electronic Sign, when projected above the horizontal.
 - iii. The operation of searchlights and floodlights for advertising purposes.
 - iv. The use of any lighting source on towers shall be prohibited except as required by the Federal Aviation Administration.
 - v. The illumination of off-site advertising signs.
 - d. General Lighting Standards: The following standards shall apply:
 - i. All Light Fixtures, except for internally-illuminated signs or Electronic Signage, shall be Fully Shielded and direct light downward toward the earth's surface.
 - ii. All lighting sources shall be directed away from reflective surfaces to minimize glare upon adjacent Lots and Rights-of-way.
 - iii. All lighting sources, except for internally-illuminated signage or Electronic Signage, shall be positioned in such a manner as to direct light away from adjacent Lots and Rights-of-way.

iv. Light pole height shall not exceed 25 feet. All Light Fixtures in Parking areas shall be designed and located to confine emitted light to the Parking Area.

v. All Light Fixtures shall meet County Building Code requirements for their appropriate construction class.

e. Multi-Family Residential, Business and Industrial Standards. The following shall apply to all Multi-family, Business, and Industrial Uses:

i. All Light Fixtures, except for internally-illuminated signage or Electronic Signage, shall be positioned in such a manner so that no light emitting surface is visible from a residential Lot or Right-of-way when viewed at ground level.

ii. Light meter readings shall not exceed 0.2 foot-candle at the Lot Lines. It should be understood that, with all of these measurements, light will still be visible at or beyond Lot Lines.

iii. All lights on poles, stands, or mounted on a building shall have a shield, adjustable reflector, and non-protruding diffuser.

iv. All canopy structures shall have lights with diffusers which are recessed, and which do not extend below the surface of the canopy as measured on a plane parallel to the earth's surface.

v. Lighting under awnings and canopies shall only illuminate a Front Building Facade, a sign under an awning or canopy, or the sidewalk, but shall not illuminate the awning or canopy itself.

vi. All Parking Area lighting for nonresidential uses shall be reduced (e.g., turned off or dimmed) by a minimum of 30 percent within 30 minutes of closing of the last business or no later than 11:00 p.m.

vii. No outdoor sports or Recreational Facilities shall be illuminated after 11:00 p.m., except to conclude a scheduled recreational or sporting event in progress prior to 11:00 p.m.

viii. The off-street Parking areas and service facility areas for multi-family residential uses shall have sufficient lighting facilities, which shall be

located and adjusted so that the glare or beam is directed away from any adjoining property, Street or Multi-family Dwelling window.

f. Sign Lighting

i. Light Fixtures used to illuminate an outdoor advertising sign, other than a Monument Sign or an internally-illuminated sign, shall be mounted on top of or above the sign structure and shall comply with the shielding requirements of this Article.

ii. Light Fixtures used to illuminate ground mounted or Monument Signs may be illuminated with a ground mounted or bottom mounted Light Fixture, provided that the Light Fixture is Fully Shielded and all light output is directed onto the sign surface.

iii. Lamps utilized for the internal illumination of Wall Signs shall be turned off at 11:00 p.m. or when business closes.

g. Lighting Plans. The Applicant for any permit required by this Ordinance that proposes outdoor lighting shall submit a Lighting Plan which includes:

i. A site plan indicating the location of all lighting structures, supports and Light Fixtures, including those Light Fixtures which presently exist on site and those which are proposed for the site.

ii. A graphic and/or textual description of all lighting fixtures, both proposed and existing on-site. The description may include, but is not limited to cut sheets and illustrations by the manufacture, lamp types, wattages, and lumen outputs.

iii. A site plan with illuminance levels superimposed on the site plan in the form of an iso foot-candle diagram or point-by-point grid diagram.

iv. All plot lighting levels shall be depicted at ten-foot intervals or less.

v. The iso foot-candle diagram shall plot foot-candle increments of 0.5 foot-candle or less.

- vi. Photometric data depicting the angle of cut off of light emissions.
 - vii. Any other information that the Director determines necessary to ensure compliance with the provisions of this subsection.
11. Easements Standards
- a. Cross-Access Easements. When required by this district, each property owner (“grantor”) shall execute a cross-access easement instrument in favor of the adjoining property owner (“grantee”). The instrument shall:
 - i. Specify the docket numbers of the petitions and/or the project numbers of the permits with which the easement is associated.
 - ii. Grant the public the right to utilize the easement for purposes of accessing adjoining parking areas.
 - iii. Prohibit the property owners or any other person from placing any obstruction within the easement.
 - iv. Be binding on all heirs, successors, and assigns to the properties on which the easement is located.
 - v. Be enforceable by each party to the easement and by the County.
 - vi. Be cross-referenced to the most recently recorded deeds to the properties on which the easement is to be established.
 - vii. Include a metes and bounds description of the easement.
 - viii. Be signed by a duly authorized representative of each property owner granting the easement and by duly authorized representatives of each property owner accepting the easement.
 - b. Private Street Easements. When required by this district, each property owner (“grantor”) shall execute a private street easement instrument in favor of the owner of the lot (“grantee”) to which the private street provides access. The instrument shall:
 - i. Specify the docket numbers of the petitions and/or the project numbers of the permits with which the easement is associated.
 - ii. Grant the public the right to utilize the easement for purposes of accessing adjoining properties.
 - iii. Specify the grantee’s financial responsibilities with respect to the alteration, repair, maintenance, and removal of the improvements.
 - iv. Prohibit the property owners or any other person from placing any obstruction within the easement.
 - v. Require the private street to be built to the standards of the County.
 - vi. Be binding on all heirs, successors, and assigns to the properties on which the easement is located.
 - vii. Be enforceable by each party to the easement and by the County.
 - viii. Be cross-referenced to the most recently recorded deeds to the properties on which the easement is to be established.
 - ix. Include a metes and bounds description of the easement.
 - x. Include language stating the property owner expressly covenants and warrants on behalf of itself and all future owners that all maintenance and repairs of the private streets shall be undertaken at the expense of the owners and that no governmental entity has any duty or responsibility to maintain or repair any private street.
 - xi. Be signed by a duly authorized representative of each property owner granting the easement and by duly authorized representatives of each property owner accepting the easement.
12. Approval Process
- Approval by the Plan Commission, or Director, shall be required for any proposed or revised site plan, structure or structural alteration in a Corridor

Overlay District. Plan Commission approval of the architectural design, landscaping, drainage, sewerage, parking, signage, lighting, and access to the property shall be necessary prior to: (1) the establishment of any use of the land; (2) the issuance of any improvement location permit; (3) the erection, construction or structural alteration of any building(s); or (4) modification or revision of any site plan. The Plan Commission, in reviewing applications, shall examine factors concerning the site, site plan, and the surrounding area, which include but are not limited to the following items:

- a. Topography;
- b. Zoning on site;
- c. Surrounding zoning and existing land use;
- d. The character of adjacent buildings;
- e. Streets, curbs, gutters, and sidewalks;
- f. Access to public streets;
- g. Driveway and curb cut locations in relation to other sites;
- h. General vehicular and pedestrian traffic;
- i. Internal site circulation;
- j. Special and general easements for public or private use;
- k. On-site and off-site surface and subsurface storm and water drainage;
- l. On-site and off-site utilities;
- m. The means and impact of sanitary sewage disposal and water supply technique;
- n. Dedication of streets and rights-of-way;
- o. Protective restrictions or covenants and/or recorded commitments;
- p. Provisions for adequate and acceptable setbacks, lighting, signage, screening, landscaping, and compatibility with existing platted residential uses; and
- q. Effects the proposed project may have on the entire Corridor Overlay District.