NORTHEASTERN INDIANA REGIONAL COORDINATING COUNCIL

2045

TRANSPORTATION PLAN

Adopted July 2023

Illustrations of the transportation
network within the Metropolitan Planning Area.
Areas include portions of Allen, Whitley, and Huntington Counties,
the Cities of Fort Wayne and New Haven, and
the Towns of Grabill, Huntertown, and Leo-Cedarville.

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Chapter 1
INTRODUCTION

As changes occur in the Fort Wayne-New Haven-Allen County Metropolitan Planning Area, the transportation system must be improved to respond to new and increasing travel demands. This report is the culmination of a process that has resulted in the update of the current 2040 Transportation Plan which effectively responds to these changing needs. The update is titled the 2045 Transportation Plan and this technical report summarizes the work performed and the recommendations developed in the preparation of the transportation plan update.

Historical Background

The Fort Wayne Urbanized Area's geographical location is of prime importance to its significant role in providing a comprehensive transportation system. Located in the northeastern corner of Indiana, the urbanized area serves as the major transportation center for northeastern Indiana, northwestern Ohio and southern Michigan.

The importance of Fort Wayne's location was understood by the earliest settlers who took advantage of the access afforded them by the junction of three major rivers - the St. Mary's, St. Joseph, and Maumee. The early development of the transportation system in Fort Wayne focused on the utilization of the three rivers as the primary means of travel. The eventual development of canals through Fort Wayne in the early 1840's further solidified the transportation importance of this area. The river and canal systems attracted businesses and industries in search of affordable accessibility to existing and expanding markets.

When railroads were developed during the period from 1850 to 1870, they added a new dimension to travel. The use of the rivers and canals for transportation declined. The railroads began to take over as the major factor affecting commercial and industrial development as well as the growth of the urban area itself. During this period of the city's history, its population was growing by 35 percent every 10 years.

Although the central city was growing rapidly, the road network as developed in its earliest days remained basically the same, with transportation movement within the city aided by a light rail system. In the city's earliest days, the river and rail systems were an asset to its growth and development, but with the introduction of the automobile and truck, the very facilities which had once aided travel now hampered it with structures built for an earlier era.

The post-World War II era saw the establishment of federal loan mortgage insurance programs. The city then began to expand outward, pushing away from the solidarity of the central city. One response to the city's increasing size was to construct a bypass around the northern edge in the 1950's. The bypass re-

routed US 30, a historically important route originally developed as the Lincoln Highway. This route remains critically important not only to the local area, but also serves as a regionally significant corridor.

The bypass attracted many commercial and industrial developments north of the central city. This highway is known locally as Coliseum Boulevard (SR 930). Rural roads in the north quickly turned into major thoroughfares for residential and commercial traffic. This trend continues, although at a reduced pace.

The transportation plan for the Fort Wayne-New Haven-Allen County Transportation Planning Area is designed around a "bypass plus arterial" highway network and expansion of the radial transit system. In previous transportation plans, a major highway improvement project was proposed to develop a "bypass" around the eastern portion of the urbanized area. This project, now known as Interstate 469, was completed in 1995. The completion of Interstate 469 has significantly improved traffic flow around the urbanized area. The "arterial" component includes various improvements to the primary arterials such as Hillegas Road, Ardmore Avenue, Maplecrest Road and Adams Center Road.

Implementation of the "bypass plus arterial" concept has significantly reduced truck travel through the urban area and channeled vehicular traffic onto the arterial roadway system which is intended to carry the higher traffic volumes. The "bypass plus arterial" concept has reduced truck traffic within the urban core by diverting through trucks onto the interstate system. In fact, the interstate and expressway system now supports over 68% of the regional truck Vehicle Miles of Travel (VMT) and 29% of total Vehicle Miles of Travel. The arterial roadway system which once carried 70% of our regional truck VMT and 77% of total VMT now carries 30% truck and 54% total VMT. This correlates to over half of the truck traffic removed from the arterial system.

In addition to the reduction of truck traffic, the benefits of implementing the "bypass plus arterial" concept include: lower total vehicle miles of travel; improved mobility for passenger and transit vehicles; reduced congestion on the arterial system; lower vehicle emissions and improves our air quality; reduced energy consumption and costs; reducing the amount of traffic cutting through neighborhoods on local residential streets; encourages traffic to utilize the roads intended for heavier traffic; and makes our neighborhoods more livable.

In 2022, the Fort Wayne urbanized area continues to be faced with a variety of transportation problems associated with the growth of the past few decades. The street system within the urbanized area is located on narrow rights-of-way. An insufficient number of bridges combined with a predominantly radial thoroughfare system result in the majority of traffic traveling through the central business district of Fort Wayne. While the Ardmore-Hillegas and Maplecrest-Adams Center corridor improvements have served to augment the grid system, limitations on river crossings continues to place a substantial burden on the arterial roadway system.

The radial system also has created hazardous diagonal intersections with acute entry angles. There is a lack of continuity for many of the major arterials flowing north to south and east to west. Narrow bridges and narrow railroad underpasses have served to restrict traffic flow in the urbanized area. Acknowledged to be a major industrial center, Fort Wayne has a large number of heavy trucks and trucking terminals. The area is also emerging as a warehousing and distribution center. These types of facilities place additional burdens on the transportation system. Figure 1-1 displays the current railroad system and rivers that affect mobility in the Metropolitan Planning Area.

Several major socioeconomic changes occurred during the 1970s and 1980s in the Metropolitan Planning Area. The closing of two International Harvester production facilities that for years served as a major employment base for the Metropolitan Planning Area seriously affected the economic base. The International Harvester facility was a major anchor to the East End Industries located between the Cities of Fort Wayne and New Haven. In the mid 1980's, General Motors built a light duty truck assembly plant in southwest Allen County near the interchange of Interstates 69 and 469. This location was in an area where farming and other agriculturally related land uses were dominant. The facility has undergone multiple expansion totaling approximately 3.7 million square foot assembly plant and accessory developments quickly altered the surrounding landscape and impacted the transportation system.

The City of Fort Wayne continues to redevelop the central business district and surrounding area. Beginning in the early 1980's Fort Wayne's skyline changed with the construction of Summit Square, a multi-story office building. The Grand Wayne Convention Center and Allen County Public Library both underwent major expansion projects in downtown Fort Wayne. The Parkview Field and Harrison Square Project that included a new hotel, apartments, office space, commercial shops, and a new major league Class A baseball stadium has contributed to a more vibrant downtown. Several downtown housing projects in the Fort Wayne Central Business District have increased housing opportunities and served as a catalyst for additional housing projects. The downtown redevelopment efforts have gained additional momentum in the past few years with the completion of Promenade Park Phase I, there is a substantial amount of new development, office, retail and housing underway. The Indiana Institute of Technology continues to expand its campus towards the Central Business District spurring additional redevelopment projects. Renaissance Pointe is a housing project just south of the downtown area that is serving as a neighborhood revitalization project, and Electric Works, located on the southwest fringe of the CBD is repurposing an industrial campus to include office, entertainment, retail and housing opportunities.

Other significant developments within the Metropolitan Planning Area have also affected socioeconomic growth and travel patterns. The Allen County War Memorial Coliseum and Exhibition Center continues to expand in the number of events held each year. Purdue Fort Wayne and Ivy Tech campuses continue to expand their facilities and educational programs. Recent expansion projects on the North Campus of

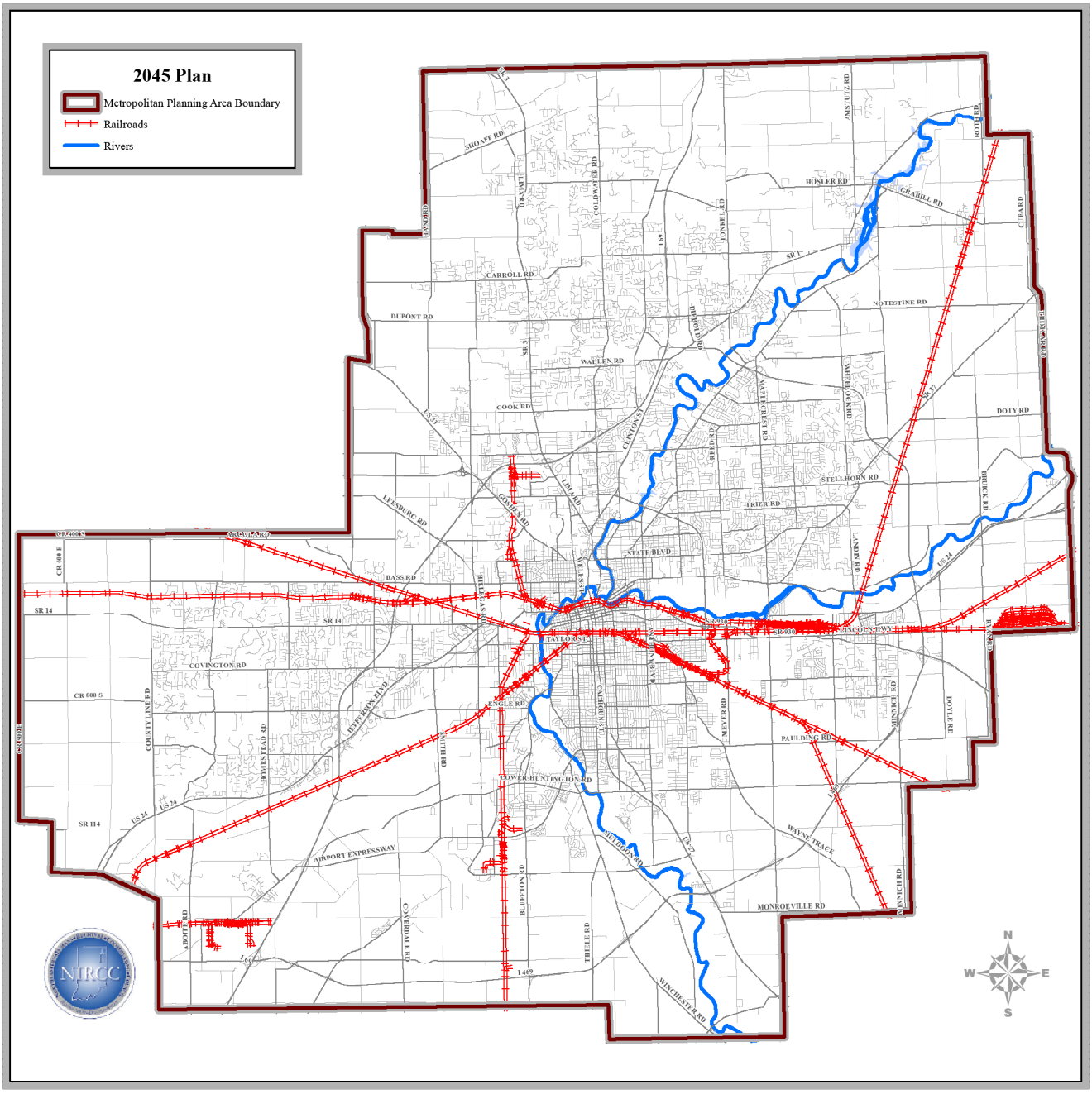

Figure 1-1

Railroad System and Rivers in the Metropolitan Planning Area

Ivy Tech have impacted travel in the area. A major regional retail center that includes Jefferson Pointe, Apple Glen and Park West located at the intersection of Jefferson Road and Illinois Road, west of the Fort Wayne Central Business District, has developed into a major traffic generator and has continued to expand.

The construction of new housing in southwest and northern Allen County has been significant. New industrial parks have developed in several areas including northwest Fort Wayne and Allen County, the City of New Haven, and around the Fort Wayne International Airport. Commercial and retail development has proliferated along Interstate 69 and continues to develop. A substantial commercial and retail area along Coliseum Boulevard (SR 930), Coldwater Road and Clinton Street, that includes Glenbrook Square, Northcrest, Coldwater Crossing, Glenbrook Commons and other shopping centers, continues to be a major shopping, entertainment, and employment destination. The Glenbrook Square Shopping Mall is under renovation and is expected to remain as a retail and entertainment site. The recent addition of a sports complex adjacent to the Glenbrook Shopping Area has influenced trip making characteristics.

Another notable change in the metropolitan area is the continued expansion of the medical centers at the Interstate 69 and US 24 interchange and the Interstate 69 and Dupont Road/State Road 1 interchange. The major investments by the medical facilities at these two locations have caused substantial changes to travel patterns and are anticipated to serve as catalysts for future growth. Parkview Regional Medical Center fully opened in 2012 with a 450-bed hospital and full-service emergency room. The Medical Center has expedited growth, both commercial and residential on the east side of Interstate 69 along the Dupont Road/State Road 1 Corridor. The hospital development is expected to influence a shift in land use development patterns and serve as a catalyst for growth in Northeast Allen County. Through Parkview's financial support, road and transit improvements have been implemented to help satisfy travel demands. A new interchange at Interstate 69 and Union Chapel Road will provide access to the northern portions of the hospital campus. These medical facilities and related medical support services are expected to substantially expand in the area surrounding the two interchanges.

The Community's vibrant growth and socioeconomic change fosters the need to reconsider and re-evaluate the future needs of the transportation system. A transportation plan serves as the dynamic tool necessary to guide decision making concerning project selection, implementation, and community growth. Therefore, it must be flexible enough to accommodate change, yet provide a solid base as decisions are made about our present and future transportation system. The long-range transportation planning process, as administered for the Fort Wayne/New Haven/Allen County Metropolitan Planning Area, strives to achieve such a balance between flexibility and commitment (see Figure 1-2).

The reality that limited resources and environmental concerns will not support massive highway improvement projects is a recognized concept of the transportation planning process. The emphasis on

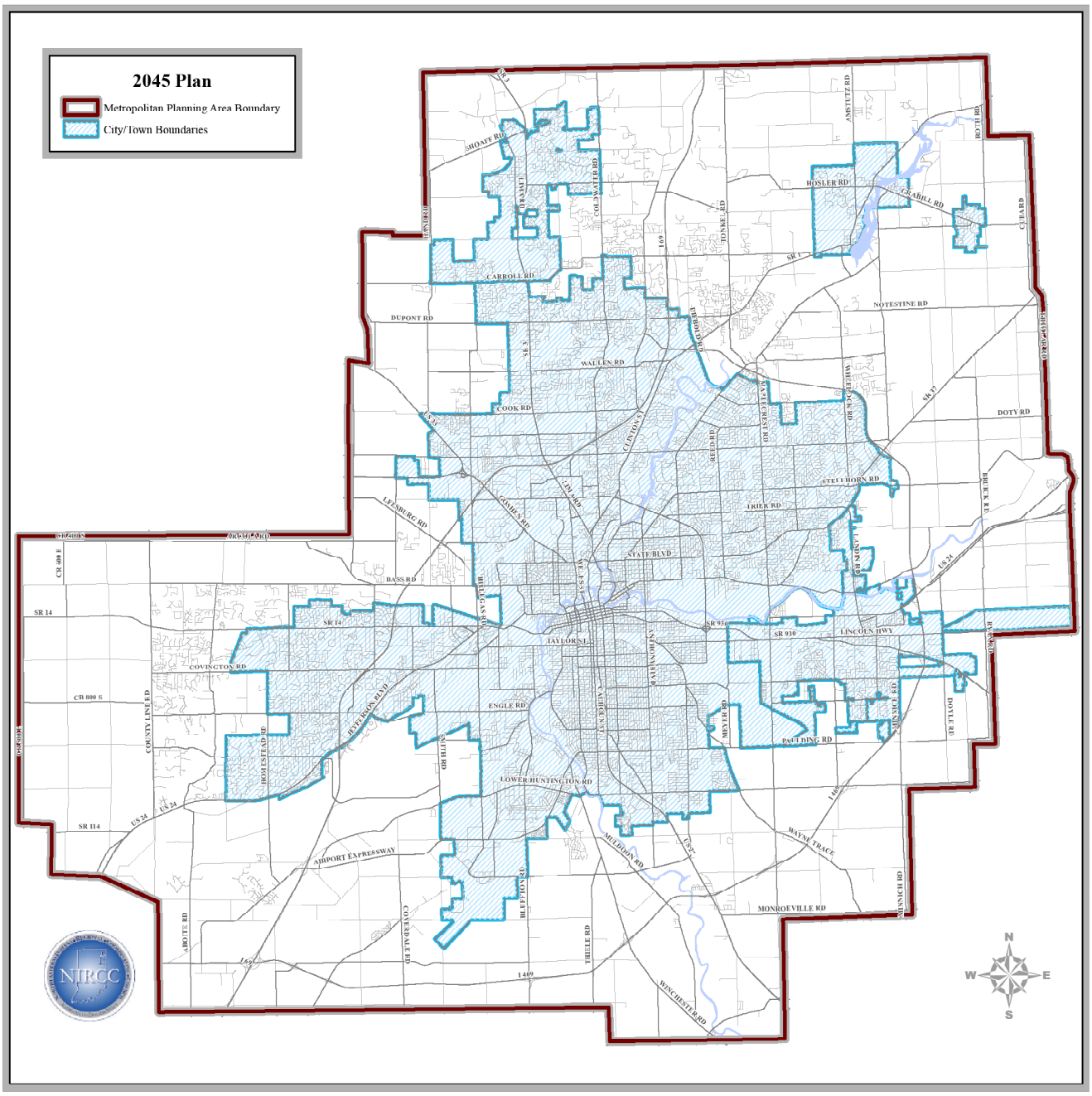

Figure 1-2

Fort Wayne/New Haven/Allen County Metropolitan Planning Area

maximizing the efficiency of the existing system is evident in the policies and programs resulting from such a process. The development and implementation of the 2035 Transportation Plan seriously considers transportation policies that reduce congestion and improve system efficiency through non-traditional measures. Policies aimed at reducing congestion through better management of traffic operations, access management, bicycle\pedestrian facilities, and enhanced transit services were formulated. These policies are components of the Congestion Management System.

A complete and comprehensive review of previous transportation plans was undertaken as a component of the 2045 Transportation Plan update. Each project was scrutinized on its own merit as well as its ability to contribute to the efficiency of the overall plan. The plan represents a cooperative effort by the state, local governments, public transportation, and area residents. We are proud to present the "2045 Transportation Plan."

Transportation Planning Requirements

The Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law, was signed into law on November 15, 2021. At this time, new planning regulations have not been issued, therefore the current regulations were issued May 27, 2016, based on the Fixing America's Surface Transportation Act (FAST Act). The Infrastructure Investment and Jobs Act provides long-term funding certainty for surface transportation infrastructure planning and investment. The Act maintains a focus on safety, with newer considerations for impacts on climate change, system resiliency, and transportation equity. The Act promotes a streamlined and performance-based surface transportation program and builds on many of the highway, transit, bike, and pedestrian programs and policies established in previous transportation bills.

The FAST Act supports the establishment of a performance-based planning process that includes the development of goals, objectives, performance measures and target setting. The 2045 Transportation Plan has been developed in accordance with performance planning concepts and the current metropolitan planning regulations. While performance measures have been components of the transportation planning process for the Fort Wayne-New Haven-Allen County Metropolitan Planning Area, they are now definitively identified in conjunction with the goals, objectives, and implementation strategies in this Plan. The inclusion of the performance measures, and adherence to the FASTAct planning regulations, ensures the metropolitan planning process establishes a cooperative, continuous, and comprehensive framework for making appropriate transportation investment decisions. The broad areas are discussed below.

1)The metropolitan transportation planning process shall include the development of a transportation plan addressing no less than a 20-year planning horizon as of the effective date. In non-attainment and maintenance areas, the effective date of the transportation plan shall be the date of a conformity determination issued by the FHWA and FTA.

The 2045 Transportation Plan was approved by the Urban Transportation Advisory Board in 2023 establishing a 22-year planning horizon as of the effective date.

2)The transportation plan shall include both long-range and short-range strategies/actions that provide for the development of an integrated multimodal transportation system (including accessible pedestrian walkways and bicycle transportation facilities) to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand.

The 2045 Transportation Plan includes both long- and short-range policies and projects integrating highway, transit, bicycle, and pedestrian facilities. The integration of air travel, motor freight and rail transportation are recognized by the transportation planning process and addressed in the Transportation Plan. Products of the planning process such as the congestion management program and transit development plan and their strategies, policies and projects are included as components of the Transportation Plan. Policies such as access management and transit coordination are on- going implementation activities. Chapter 6 provides information on the highway, transit, bicycle and pedestrian facilities, and Chapter 9 includes a discussion on freight.

3)The MPO shall review and update the transportation plan at least every 4 years in air quality nonattainment and maintenance areas and at least every 5 years in attainment areas to confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to at least a 20-year planning horizon.

The 2045 Transportation Plan was approved in 2023. The majority of the Metropolitan Planning Area is located in Allen County, and Allen County is an air quality maintenance area. The plan update meets the five year requirement.

4)In metropolitan areas that are in nonattainment for ozone or carbon monoxide, the MPO shall coordinate the development of the metropolitan transportation plan with the process for developing transportation control measures (TCMs) in a State Implementation Plan (SIP).

Allen County is referred to as an orphan maintenance area. Based on U.S. Environmental Protection Agency guidance regarding the South Coast II court decision, a Transportation Conformity Document is prepared and submitted for a conformity determination. The implementation of transportation control measures is not required.

5)The MPO, the State(s), and the public transportation operator(s) shall validate data used in preparing other existing modal plans for providing input to the transportation plan. In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO shall

approve transportation plan contents and supporting analyses produced by a transportation plan update.

The transportation planning process and development of the Transportation Plan includes participation by the State through representatives of the Indiana Department of Transportation and by the public transportation operator through representatives of Citilink. Representatives of these agencies are members of the Urban Transportation Advisory Board (UTAB), the Board that oversees the metropolitan transportation planning process and development of the Transportation Plan. The development of the 2045 Transportation Plan incorporates the latest available information for population, land use, travel, employment, congestion, and economic activity. The planning assumptions and socioeconomic data were presented to UTAB as part of the Transportation Plan development process. The data is well documented in the Plan. The MPO approved the planning assumptions as part of the development of the Transportation Plan, reference Chapter 5.

6)The metropolitan transportation plan shall, at a minimum, include:

a)The current and projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan.

The 2045 Transportation Plan utilizes land use development assumptions to forecast the 2045 socio-economic conditions to generate transportation demands of persons and goods in the metropolitan planning area. The demands are projected through a traditional travel demand forecasting model. Projects and strategies are developed to address future transportation demands within the requirements of fiscal constraint. See chapter 6 for the list of recommended projects and appendix F for project costs.

b)Existing and proposed transportation facilities (including major roadways, public transportation facilities, intercity bus facilities, multimodal and intermodal facilities, nonmotorized transportation facilities (e.g., pedestrian walkways and bicycle facilities), and intermodal connectors) that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that serve important national and regional transportation functions over the period of the transportation plan.

The 2045 Transportation Plan includes existing and proposed highway, transit, pedestrian and bicycle facilities to provide an integrated metropolitan transportation plan. Emphasis is placed on facilities that serve national and regional functions. Access to intermodal sites and intermodal connectors are addressed in the development of projects and strategies. See chapter 6.

c)A description of the performance measures and performance targets used in assessing the performance of the transportation system in accordance with § 450.306(d).

The performance measures and performance targets are presented later in this Chapter.

d)A system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets described in § 450.306(d), including.

i)Progress achieved by the metropolitan planning organization in meeting the performance targets in comparison with system performance recorded in previous reports, including baseline data; and

ii)For metropolitan planning organizations that voluntarily elect to develop multiple scenarios,an analysis of how the preferred scenario has improved the conditions and performance of the transportation system and how changes in local policies and investments have impacted the costs necessary to achieve the identified performance targets. The performance targets for safety were established for 2022. The safety targets represent the first set of performance targets that have been set by INDOT and supported by NIRCC. The targets are provided later in this chapter in the System Performance Report section. The System Performance Report will be augmented with additional information for the next Transportation Plan Update.

e)Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods;

The transportation planning process and development of the transportation plan includes provisions to promote efficient system management and operation. The process includes intelligent transportation strategies for both highway and transit systems, pavement management, transit operations and alternate transit service options, safety management, congestion management and access management programs. In addition, many of the projects selected in the Plan include maintenance components such as intersection improvements and adding center turn lanes to existing corridors.

The intelligent transportation system strategies include motorist information sites, traffic operation improvements, and transit vehicle locator system with internet connectivity. The motorist alert dynamic message signs have been strategically placed on Interstate 69 to provide motorist advanced warning of pending traffic congestion so that they may alter their route to avoid lengthy delays. The City of Fort Wayne is planning a major upgrade of their traffic signal operating system to improve efficiency. Projects continue to be developed to improve traffic flow through signal interconnection and intersection improvement. These types of projects promote transportation system efficiency and operation. See chapter 5.

The management systems including pavement, bridge, safety, and congestion all lend to improved system efficiencies. The Transit Development Plan, which serves as a transit management system, is a tool used to maximize system efficiency and improve transit operations. These programs are either administered directly through activities of the Metropolitan Planning Organization or conducted by the member local governments. The management systems attempt to maximize the efficiency of available resources by monitoring the condition of the transportation system, developing strategies to mitigate problems, and implementing solutions. The safety management system program, congestion management system and Transit Development Plan are two examples of how these systems improve efficiency.

The Congestion Management Process (CMP), and companion access management program, develop and implement strategies to mitigate congestion and maximize the efficiency of the existing system. The CMP includes conducting corridor studies and developing corridor protection plans. The congestion management strategies identified in these plans may include traffic operation and intersection modifications, transit usage, access management, and other transportation improvements. The access management program maintains transportation system travel efficiency and corridor preservation. See Appendix A.

The transit improvements identified through the Transit Development Plan accommodate the investigation of various types of transit service. Reviewing options for providing and expanding transit service allows for the evaluation of the most efficient method. Citilink has recently initiated service frequency improvement on selected routes and investigates methods to provide service to outlying suburban medical facilities and shopping centers. Citilink will continue to explore transit service provision options to improve transit service levels and maximize transit efficiency.

The safety management program monitors crash data and identifies hazardous locations through a process that incorporates both frequency and crash rates to identify and rank hazardous locations. Locations are reviewed by local officials, engineers, technical committees, and law enforcement officers. Safety improvements are identified and projects are initiated including the consideration of low-cost and/or short-term solutions. Scheduled improvements are also reviewed to ensure safety strategies are included. See chapter 7.

These programs implement transportation improvements and investigate new approaches to solving transportation problems by engaging technological advances. Through the implementation of the management systems, transit improvements, and intelligent transportation

technology, the transportation plan and planning process promotes safe and efficient system management and operation. See chapter 10.

f)Consideration of the results of the congestion management process in TMAs that meet the requirements of this subpart, including the identification of SOV projects that result from a congestion management process in TMAs that are nonattainment for ozone or carbon monoxide.

The results of the congestion management process are considered in the development of the Transportation Plan. The corridor protection plans, and corridor studies help to determine project need and project scope. Operational improvements are considered prior to added capacity. Single Occupancy Vehicle analysis was conducted on added capacity projects as part of the 2045 Transportation Plan. The Metropolitan Planning Area and Allen County were re-designated to “attainment” status in 2007.

g)Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure, provide for multimodal capacity increases based on regional priorities and needs, and reduce the vulnerability of the existing transportation infrastructure to natural disasters. The metropolitan transportation plan may consider projects and strategies that address areas or corridors where current or projected congestion threatens the efficient functioning of key elements of the metropolitan area’s transportation system.

The development of the Transportation Plan and selected projects include analyzing alternatives to determine the best capital investment. Operation and management strategies including ITS, traffic operation improvements, bridge management, pavement management, and transit operations are continually evaluated through the transportation planning process. Elements of this evaluation are incorporated into the Transportation Improvement program and Transportation Plan. Access management, bicycle and pedestrian facilities, transit service improvements and traffic operation improvements are examples of strategies and capital investments, decided by representatives throughout the Metropolitan Planning Area, based on regional priorities and needs. Land use development patterns and economic development activities directly influence the decisionmaking process. Commitments by local and state governments and transportation agencies to maintain and preserve existing infrastructure (i.e., bridge management, pavement management, transit fleet replacement, etc.) support the preservation of existing and projected infrastructure.

The focus of this plan includes discussion on a wide array of strategies for alleviating future congestion in addition to the traditional solutions of new road construction and widening projects. The new strategies include scaled-down widening projects, such as adding a third or fifth lane for left-turning traffic instead of widening to four or six lanes. Access control

measures and congestion management techniques are additional tools addressed as components of this plan. The inclusion of management systems projects and efforts to combine highway, land use and transit service together to relieve congestion and improve efficiency, represent additional strategies considered in the development of this plan, and are components of the planning process.

h)Transportation and transit enhancement activities, including consideration of the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost- effective manner and strategies and investments that preserve and enhance intercity bus systems, including systems that are privately owned and operated, and including transportation alternatives, as defined in 23 U.S.C. 101(a), and associated transit improvements, as described in 49 U.S.C. 5302(a), as appropriate;

The transportation planning process incorporates transportation and transit enhancement activities. NIRCC has prepared and documented a bicycle and pedestrian plan that provides the planning support to implement transportation enhancement activities. NIRCC supported the Transit Development Plan and incorporates the identified strategies and projects into the Transportation Plan. When practical, identified enhancement activities are incorporated with other transportation improvements. The Transportation Improvement Program includes enhancement activities including bicycle and pedestrian projects, transit improvements, and highway projects.

i)Design concept and design scope descriptions of all existing and proposed transportation facilities in sufficient detail, regardless of funding source, in nonattainment and maintenance areas for conformity determinations under the EPA's transportation conformity regulations (40 CFR part 93, subpart A). In all areas (regardless of air quality designation), all proposed improvements shall be described in sufficient detail to develop cost estimates;

All transportation projects in the 2045 Transportation Plan are defined in sufficient detail to perform the necessary analyses for conformity determinations and develop cost estimates.

j)A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The MPO shall develop the discussion in consultation with applicable Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable time frames for performing this consultation;

The 2045 Transportation Plan includes Chapter 8 that addresses potential environmental

mitigation activities that allowed for consultation with Federal, and State land management, wildlife, and regulatory agencies. This activity will be an on-going component of the transportation planning process.

k)A financial plan that demonstrates how the adopted transportation plan can be implemented;

i)For purposes of transportation system operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain the Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53).

Local governments predominantly rely on Motor Vehicle Highway (MVH), Local Roads and Streets (LRS), and local wheel tax funds for highway maintenance, administration, and construction expenditures. Additional funds such as Economic Development Income Tax (EDIT) and County Option Income Tax (COIT) are also used for highway maintenance and construction projects. The construction expenditures fund local construction and reconstruction projects and provide local-matching funds for federally funded projects. The remaining funds are for operation, administration, and maintenance costs.

A forecast of federal funding available to the Fort Wayne urbanized area for the next 22 years was also completed at this time. This estimate was based on historical federal funding practices. Currently, the Fort Wayne urbanized area receives approximately 14 million dollars in federal funds each year. This equates to approximately 228-302 million dollars in federal funds for the urban area throughout the span of the transportation plan depending on the funding growth scenario.

Local governments including Allen County, City of Fort Wayne, and City of New Haven have annual revenues of approximately 76 million dollars dedicated to transportation operations, maintenance, and construction. In addition, Economic Development Income Taxes generate millions of dollars each year of which a substantial portion is dedicated to highway construction projects. The amount of these funds spent on transportation projects varies from year to year. On average, local governments spend at least 25 million dollars a year on construction and reconstruction projects. Depending on the growth of these funds, this equates to approximately 550-764 million dollars for the twenty-three-year period of the plan. The majority of available funds (51 million annually) are utilized for maintenance and operation. These funds are sufficient to adequately maintain the existing and future infrastructure.

ii)For the purpose of developing the metropolitan transportation plan, the MPO, public

transportation operator(s), and State shall cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under § 450.314(a). All necessary financial resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan shall be identified.

NIRCC, Citilink, and the Indiana Department of Transportation work cooperatively on the development of the Transportation Plan. This includes the estimation of available funds and projects that can reasonably be implemented.

iii)The financial plan shall include recommendations on any additional financing strategies to fund projects and programs included in the metropolitan transportation plan. In the case of new funding sources, strategies for ensuring their availability shall be identified. The financial plan may include an assessment of the appropriateness of innovative finance techniques (for example, tolling, pricing, bonding, public private partnerships, or other strategies) as revenue sources for projects in the plan.

The financial plan for the 2045 Transportation Plan utilizes traditional sources of highway and transit revenues. Non-traditional funding sources of additional financing strategies are not currently contemplated as revenue sources for the transportation projects identified in the Plan.

iv)In developing the financial plan, the MPO shall take into account all projects and strategies proposed for funding under title 23 U.S.C., title 49 U.S.C. Chapter 53 or with other Federal funds; State assistance; local sources; and private participation. Revenue and cost estimates that support the metropolitan transportation plan must use an inflation rate(s) to reflect "year of expenditure dollars," based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s).

The financial plan for the 2045 Transportation Plan includes all proposed projects and strategies. The financial plan for the 2045 Transportation Plan identifies specific costs for each project and related phase of project development. The project costs and available revenues are developed utilizing current dollars. This process is considered understandable, reasonable, and defendable when compared to a financial plan that attempts to speculate future project costs and estimate future available revenues. The financial plan developed for future transportation plans will consider alternative revenue and cost estimation procedures that use an inflation rate(s) to reflect year of expenditure project costs and anticipated revenues.

v)For the outer years of the metropolitan transportation plan (i.e., beyond the first 10 years), the financial plan may reflect aggregate cost ranges/cost bands, as long as the future funding source(s) is reasonably expected to be available to support the projected cost ranges/cost bands.

The financial plan for the 2045 Transportation Plan identifies specific costs for each project

and related phase of project development. These include projects that will be designed and constructed utilizing local dollars. Projects under local governmental jurisdictions were identified and the cost of each project was developed. Costs were estimated for preliminary engineering, right-of-way acquisition, and construction activities. Projects were banded for the years of 2019 through 2025, 2026 through 2034 and 2035 through 2040. Project cost estimates were adjusted based upon an average annual growth rate of 1.6% for 2020 through 2034 and 1.5% for projects in the 2035 to 2040 band.

vi)For nonattainment and maintenance areas, the financial plan shall address the specific financial strategies required to ensure the implementation of TCMs in the applicable SIP.

The Metropolitan Planning Area is an attainment area. The State Implementation Plan does not include any specific TCMs for Allen County negating a need for addressing any specific financial strategies for implementation.

vii)For illustrative purposes, the financial plan may include additional projects that would be included in the adopted transportation plan if additional resources beyond those identified in the financial plan were to become available.

The 2045 Transportation Plan includes a list of illustrative projects and these projects are not included in the financial plan.

viii)In cases that the FHWA and the FTA find a metropolitan transportation plan to be fiscally constrained and a revenue source is subsequently removed or substantially reduced (i.e., by legislative or administrative actions), the FHWA and the FTA will not withdraw the original determination of fiscal constraint; however, in such cases, the FHWA and the FTA will not act on an updated or amended metropolitan transportation plan that does not reflect the changed revenue situation.

This situation is not currently applicable to the 2045 Transportation Plan.

k) Pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C. 217(g);

The Transportation Plan includes a conceptual Bicycle and Pedestrian Plan that supports the expansion of trails, sidewalks, and other bicycle facilities including the development of bike lanes. See chapter 6.

7)The MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve, as appropriate:

(1)Comparison of transportation plans with State conservation plans or maps, if available; or

(2)Comparison of transportation plans to inventories of natural or historic resources, if available.

The current planning regulations expand the environmental factor to "Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns." The goal of the 2045 Transportation Plan is to achieve an efficient and safe transportation system for the movement of people and goods while simultaneously improving the economic and environmental conditions of the community. The implementation of such a system will minimize energy consumption and reduce air pollution. Reductions in vehicle hours of delay, vehicle miles of travel, accident rates, and accident severity are measures by which the system can be evaluated. Energy conservation, protection of the environment and quality of life considerations are standard principles that guide project development and the decision-making process that's part of the transportation planning process. Engaging local land use planning and economic development agencies and ensuring consistency with land use and economic development plans, is established in the planning assumptions that serves as the foundation of the Transportation Plan. The consultation process and environmental mitigation strategies will build upon these relationships.

The Northeastern Indiana Regional Coordinating Council has developed a Participation Plan that includes a process for consulting with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The development of Transportation Plans has always included consultation with local land use management agencies and in consistent alignment with comprehensive plans. Transportation Plans have also been developed with due consideration for natural resources, environmental protection, conservation, and historic preservation. The planning process has been expanded to include opportunities for consultation and a documented discussion of environmental mitigation strategies. The environmental mitigation process includes the comparison of transportation plans with maps of conservation areas, inventories of natural and historic resources, and other potential environmental areas. The Participation Plan is documented in Appendix H in the 2045 Transportation Plan. The Environmental Mitigation process is discussed in Chapter 7.

8)The metropolitan transportation plan should include a safety element that incorporates or summarizes the priorities, goals, countermeasures, or projects for the MPA contained in the Strategic Highway Safety Plan, including the SHSP required under 23 U.S.C. 148, , the Public Transportation Agency Safety Plan required under 49 U.S.C. 5329(d), or an Interim Agency Safety Plan in accordance with 49 CFR part 659, as in effect until completion of the Public Transportation

Agency Safety Plan, and may incorporate or reference applicable emergency relief and disaster preparedness plans and strategies and policies that support homeland security, as appropriate, to safeguard the personal security of all motorized and non- motorized users.

The current planning regulations separate transportation safety and security into two distinct factors: 1) increase the safety of the transportation system for motorized and non-motorized users; and 2) increase the security of the transportation system for motorized and non-motorized users. NIRCC has initiated the separation of these factors in the transportation planning process.

The Northeastern Indiana Regional Coordinating Council maintains a Safety Management System/Process that collects and monitors crash information to develop strategies that improve transportation safety. The safety process is discussed in the 2045 Transportation Plan. See Chapter 7. The Safety Management System/Process is consistent with the Indiana Strategic Highway Safety Plan. The Indiana Strategic Highway Safety Plan contains statewide priorities and goals but does not identify specific priorities, goals, countermeasures, or projects for the Metropolitan Planning Area. NIRCC has developed a solid working relationship with the Indiana Department of Transportation on safety programs and implementing safety projects and policies.

The transportation planning process has consistently championed safety as a major concern. The Safety Management System (SMS) routinely reviews hazardous locations on the transportation system through cooperative efforts with local governments. Highway crash data is also obtained from the Indiana Department of Transportation to review and identify hazardous locations. Accident data is compiled from throughout the metropolitan area to determine high hazard locations. Accident studies are conducted for the high hazard locations, solutions developed, and recommendations are made to improve safety. Hazard elimination and safety funds (HSIP) are sought for the appropriate projects.

The SMS program also monitors rail-highway grade crossings and maintains an inventory of pertinent data for each location. This information supports the Indiana Department of Transportation rail-highway improvement program. Selected rail-highway crossing improvements in the metropolitan area are annually included in the Transportation Improvement Program. New rail- highway grade separation projects are also included in the transportation plan. These projects will improve safety for transit passenger, children riding school buses, passenger vehicles, pedestrians, and bicyclists.

The transportation planning process acknowledges the importance for improving pedestrian and bicycle safety. Projects developed in the Pedestrian and Bicycle Plan are designed to

improve the safety for these modes of transportation. Recently completed projects such as the Towpath Trail and pedestrian bridge over the St. Joseph River north of Coliseum Boulevard provide pedestrians and bicyclists new pathways eliminating the need to cross and travel along high volume roadways. Proposed pedestrian/bicycle projects will promote safety in similar fashion. A project proposed to extend the River Greenway from Johnny Appleseed Park to Shoaff Park will provide a safe pathway linking activity centers including parks, residential housing, Memorial Coliseum, Memorial Stadium, Indiana University Purdue University Fort Wayne, and athletic\soccer fields to each other and existing pedestrian\bicycle paths.

Safety improvements to the highway system have corresponding safety benefits to the transit system. In addition, Citilink addresses safety issues concerning the transit system and is aware of the importance safety plays in overall passenger comfort. The recently completed Citilink Transfer Center was designed with safety and security features. The perception of a safe transit system is a great marketing tool and Citilink strives to maintain a safe transit system.

The Northeastern Indiana Regional Coordinating Council has established a working relationship with the Fort Wayne-Allen County Office of Homeland Security. The Fort Wayne-Allen County Office of Homeland Security maintains, and reviews evacuation plans and identifies critical transportation infrastructure. NIRCC provides assistance as requested and incorporate emergency relief and disaster preparedness plans and strategies as appropriate into the Transportation Plan and planning process.

NIRCC has identified the National Highway System (NHS) and Strategic Highway Network (STRAHNET) within the Metropolitan Planning Area. The National Highway System includes all primary routes that will likely be used for evacuation purposes. Interstate 69 is the only highway facility in the MPA on the Strategic Highway Network. Due to the importance of these primary routes, they are adequately addressed in the Transportation Plan. NIRCC periodically reviews the NHS and Functional Classification System to ensure they remain up to date.

9)An MPO may, while fitting the needs and complexity of its community, voluntarily elect to develop multiple scenarios for consideration as part of the development of the metropolitan transportation plan.

a)An MPO that chooses to develop multiple scenarios under this paragraph (i) is encouraged to consider:

i)Potential regional investment strategies for the planning horizon;

ii)Assumed distribution of population and employment;

iii)A scenario that, to the maximum extent practicable, maintains baseline conditions for the performance areas identified in § 450.306(d) and measures established under 23 CFR part 490;
iv)A scenario that improves the baseline conditions for as many of the performance measures identified in § 450.306(d) as possible;
v)Revenue constrained scenarios based on the total revenues expected to be available over the forecast period of the plan; and
vi)Estimated costs and potential revenues available to support each scenario.

b)In addition to the performance areas identified in 23 U.S.C. 150(c), 49 U.S.C. 5326(c), and 5329(d), and the measures established under 23 CFR part 490, MPOs may evaluate scenarios developed under this paragraph using locally developed measures.

NIRCC utilizes the Comprehensive Land Use Plans for guidance on land use development. The development of the Comprehensive Plans investigate different development scenarios, and define the community vision based on the selected scenario.

10)The MPO shall provide individuals, affected public agencies, representatives of public transportation employees, public ports, freight shippers, providers of freight transportation services, private providers of transportation (including intercity bus operators, employer-based commuting programs, such as carpool program, vanpool program, transit benefit program, parking cashout program, shuttle program, or telework program), representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan using the participation plan developed under § 450.316(a).

The Northeastern Indiana Regional Coordinating Council maintains an open planning process that encourages citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan. The Participation Plan documents the process NIRCC will follow in administering the Metropolitan Transportation Planning Process including the development of the Transportation Plan and Transportation Improvement Program. All groups and interested parties are encouraged to attend and special efforts are directed at the identified groups above to ensure they are notified of opportunities to participate and comment. See chapter 9.

11)The MPO shall publish or otherwise make readily available the metropolitan transportation plan for public review, including (to the maximum extent practicable) in electronically accessible

formats and means, such as the World Wide Web.

The 2045 Transportation Plan is available in electronically accessible formats and posted on the NIRCC website. Maps and other supporting documents are also posted on the site. These documents, including the 2045 Transportation Plan, are posted in a manner that allows them to be easily downloaded.

12)A State or MPO is not required to select any project from the illustrative list of additional projects included in the financial plan under paragraph (f)(11) of this section.

The illustrative list of projects in the 2045 Transportation Plan is intended to demonstrate transportation need and gain public comment. The State or MPO will not be required to select and implement any project from the list.

13)In nonattainment and maintenance areas for transportation-related pollutants, the MPO, as well as the FHWA and the FTA, must make a conformity determination on any updated or amended transportation plan in accordance with the Clean Air Act and the EPA transportation conformity regulations (40 CFR part 93, subpart A).

Allen County was designated nonattainment for the 1997 ozone NAAQS and was redesignated to attainment for the pollutant ozone in February 2007, and guidance indicated that conformity determinations were no longer required for any Ozone NAAQS since the 1997 Ozone NAAQS was revoked in April 2015. Under the recent court decision, these areas, referred to as orphan areas rather than non-attainment or maintenance areas, necessitate new regional conformity determinations. A conformity determination will be made on the completed 2045 Transportation Plan and any subsequent amendments.

The formulation of goals, objectives and performance measures are intended to guide the development of the long-range transportation plan and influence the design and operation of the transportation system. The Transportation Plan addresses how the urban area can meet the mobility needs of our growing and changing population, make the economy more competitive, build a livable and sustainable community and preserve the human and natural environment. The goals and objectives are designed to ensure that our transportation system is safe and secure, and to provide guidance on how transportation investments should be focused, and how both public and private transportation partners can work collectively to achieve these goals. The goals and objectives have been developed in accordance with the ten planning factors identified in the FAST Act. The planning factors are requirements of the Metropolitan Transportation Planning Process and provide the basic tenets on which the Transportation Plan must be implemented.

Performance Based Planning and Programming

Performance-based planning and programming (PBPP) provides data to inform decisions aimed at achieving desired outcomes for the region's multimodal transportation systems. The Northeastern Indiana Regional Coordinating Council identified desired outcomes for each required planning factor in the 2045 Transportation Plan. Each outcome has associated objectives, actions and measures that support the specific planning factor. In addition, federal planning requirements include the development of transportation performance measures, performance target setting and system performance reporting. The federal transportation performance management procedures and the regional goals, objectives, actions and measures are the components that comprise NIRCC's performance-based planning and programming process and are described below.

The primary goal of the Transportation Planning Process is to develop a safe, cost-effective transportation system that ensures mobility to all persons, enhances the quality of life in the region, supports planned growth, promotes economic development, and preserves the integrity and enhances the vitality of the human and natural environment. The process includes engaging evolving technology to support safe and equitable mobility that promotes a sustainable, healthy, livable and economically vibrant region. The transportation planning process is primarily governed by the planning activities of the Unified Planning Work Program. Data collection, transportation analyses and sustainable program development are components of the planning activities.

The Transportation Plan serves as the basis for a twenty-year transportation infrastructure and capital investment portfolio from which projects and programs will be refined and implemented. As projects and programs are readied for implementation, the investments are programmed in the Transportation Improvement Program (TIP). The TIP presents a four-year capital improvement plan for transportation investment for transit, highway, and bicycle/pedestrian infrastructure. The TIP is updated bi-annually in accordance with the Indiana Statewide Transportation Improvement Program (INSTIP).

The Transportation Plan, Transportation Improvement Program and Unified Planning Work Program form the structure for a Performance Based Planning and Programming processes. While performance measures are not new to the transportation planning and programming processes and have been used for many years to guide investment decisions on project development and selection, there are new federal regulations that mandate specific performance measures, setting performance targets and reporting requirements. The performance-based planning process is cyclical in nature and generally includes setting goals and objectives; select performance measures and set targets for performance outcomes; gather data and information to monitor and analyze trends; incorporate performance measures into project selection and development; document decisions and project selection designed to achieve performance targets; document progress toward target attainment; reevaluate targets; and set new targets. The intent of the performance-based planning and programming (PBPP) process is to ensure investment in transportation infrastructure and programs is consistent with key national transportation goals.

The anticipated outcomes of utilizing a performance-based planning process, including the prescribed performance measures and INDOT/MPO target setting, is to achieve a higher level of system performance. The anticipated outcomes of the PBPP are numerous and while most are included in the following list, it is unlikely the list is all inclusive.

- Reduce number and severity of crashes, all modes
- Reduce serious injuries and fatalities from transportation

- Protect transportation customers and employees from safety and security threats
- Improve condition of on- and off-system bridges
- Improve pavement conditions on all roadways
- Maintain and modernize capital assets, including transit assets, throughout the system
- Prioritize projects that support a resilient and sustainable transportation system
- Promote the efficient transportation of freight within and through the region
- Improve transportation system reliability for transit and highway travel
- Implement roadway management and operations strategies
- Improve bicycle and pedestrian infrastructure
- Increase percentage of population and employment within one-quarter mile of transit service
- Increase percentage of population and places of employment with access to bicycle facilities
- Improve access to and accessibility of transit and active modes
- Support community-based and private-initiative services and programs to meet last mile, reverse commute and other non-traditional transit/transportation needs, including those of the elderly and persons with disabilities
- Eliminate bottlenecks on the freight network
- Enhance intermodal connections
- Emphasize capacity management through low-cost investments; give priority to projects that focus on lower-cost operations and management type improvements such as intersection improvements and Complete Streets solutions
- Reduce transportation-related pollutants
- Minimize negative environmental impacts of the transportation system
- Support land use policies consistent with smart growth
- Target investments to provide equitable benefits to all populations
- Minimize any burdens associated with MPO-funded projects in low-income and minority areas

Federal Transportation Performance Management

The Federal Transportation Performance Management (TPM) process encompasses performance-based planning and programming. It is a systematically applied, ongoing process that provides information to decision makers, so they understand the consequences of investment decisions across transportation assets or modes. The intent includes improving communication between decision makers, stakeholders, and the traveling public and ensuring targets and measures are developed in cooperative partnerships and based on data and objective information.

The key feature of TPM is the development and implementation of a performance- and outcome-based program to guide investment of federal funds toward the achievement of national policy objectives. These policy objectives are conveyed in the form of national transportation goals. The end result is for States and Metropolitan Planning Organizations to invest resources in projects that collectively make progress toward achieving the national goals, with an increased focus on accountability and transparency of the planning, programming and decision-making process.

The national performance goals are identified for seven areas including: 1) Safety, 2) Infrastructure Condition, 3) Congestion Reduction, 4) System Reliability, 5) Freight Movement and Economic Vitality, 6)Environmental Sustainability and 7) Reduce Project Delivery Delays. Additional information regarding the transportation goals for the highway network have been established. They include:

- Safety - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.

• Infrastructure Condition – To maintain the highway infrastructure asset system in a state of good repair.
• Congestion Reduction – To achieve a significant reduction in congestion on the National Highway System.
• System Reliability – To improve the efficiency of the surface transportation system.
• Freight Movement and Economic Vitality – to improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
• Environmental sustainability – To enhance the performance of the transportation system while protecting and enhancing the natural environment.
• Reduce Project Delivery Delays – To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

The national goals also relate to the transit system with similar considerations for safety and infrastructure condition. They include reducing the number of fatalities and serious injuries related to transit service and maintaining the condition of transit infrastructure in a state of good repair.

To ensure movement is made towards achieving the national goals, methods to measure performance need to be engaged. Performance measurement is the use of statistical evidence to determine progress toward specific defined organizational objectives. This includes both evidence of actual facts, such as measurement of pavement surface smoothness, and measurement of customer perception. The performance measurement process starts by defining the performance measures and desired service levels. Based on available resources, realistic targets are set to move the transportation service towards the desired goal, within a specific timeframe and with consideration of external factors. Transportation investments are programmed in accordance with achieving the performance targets. The transportation system is then monitored and evaluated to report progress for achieving established targets. Data, targets and performance measures provide information to managers about how well that bundle of services is being provided. Performance measures should reflect the satisfaction of the transportation service user, in addition to those concerns of the system owner or operator.

Highway Performance Measures

The transportation performance measures have been established for the highway system. Full implementation of the performance measures and target setting has been completed and is an on-going process. The implementation of the safety performance measures and target setting was completed first, followed by the system performance measures and infrastructure performance measures. NIRCC has collaborated with INDOT and other planning partners on the development of performance measure data and target setting. The three sets of highway performance measures are:

System Performance Measures

1. Percent of Person-Miles Traveled on the Interstate System that are Reliable (Interstate Travel Time Reliability measure)
2. Percent of Person-Miles Traveled on the Non-Interstate NHS that are Reliable (Non-Interstate Travel Time Reliability measure)
3. Percent Change in Tailpipe CO2 Emissions on the NHS (this system performance measure is currently suspended)

4. Percentage of Interstate System Mileage Providing for Reliable Truck Travel Times
5. Annual Hours of Peak-Hour Excessive Delay Per Capita
6. Percent of Non-Single Occupancy Vehicle Travel
7. Total Emissions Reduction

Infrastructure Performance Measures

1. Percentage of Pavements of the Interstate System in Good Condition
2. Percentage of Pavements of the Interstate System in Poor Condition
3. Percentage of Pavements of the Non-Interstate NHS in Good Condition
4. Percentage of Pavements of the Non-Interstate NHS in Poor Condition
5. Percentage of NHS Bridges Classified as in Good Condition
6. Percentage of NHS Bridges Classified as in Poor Condition

Safety Performance Measures

1. Number of fatalities
2. Rate of fatalities per 100 million miles traveled
3. Number of serious injuries
4. Rate of serious injuries per 100 million miles traveled
5. Number of non-motorized fatalities and non-motorized serious injuries

Transit Performance Measures

Under the final Transit Asset Management rule, transit providers must collect and report data for four performance measures, covering rolling stock, equipment, infrastructure, and facility condition. For these measures, transit providers are required to annually set targets for the fiscal year, develop a four-year Transit Asset Management Plan for managing capital assets, and use a decision support tool and analytical process to develop a prioritized list of investments. Each provider of public transportation is required to adopt targets for the performance of their transit assets. Subsequently, MPOs need to adopt transit asset targets for their metropolitan planning area.

Citilink, the transit operator in the metropolitan planning area, is considered a Tier 2 provider since they operate less than 100 transit vehicles in their regular service. There are four transit asset performance measures, two of which are age-based and two are condition based. The age-based measures apply to rolling stock (transit vehicles) and non-revenue generating equipment (service vehicles). Condition based measures apply to infrastructure (rail, fixed- guideway track, signals, and systems) and stations/ facilities (transfer stations, administrative buildings, garages, bus shelters). Citilink does not operate any rail, fixed-guideway track or signals. Within each performance measure, assets are further divided into asset classes. For example, distinct asset classes for buses can be 30-foot, 35-foot, 40-foot, articulated, etc. Each asset class is measured separately for performance and for target-setting. In addition, for the age-based performance measures, providers may set their own standard, the useful life benchmark (ULB), for each asset class.

Transit Asset Management Plan

The Federal Transit Administration (FTA) and the U.S. transit industry having been working to improve the understanding and practice of transit asset management. There is considerable evidence that this is a critical area of focus. Improving transit asset management is now a national policy.

Transit asset management (TAM) is a business model that prioritizes funding based on the condition of transit assets, in order to achieve or maintain transit networks in a state of good repair (SGR). Federal Transit Administration guidance requires transit agencies to maintain and document minimum transit asset management standards. The standards will help transit agencies keep their systems operating smoothly and efficiently.

Transit asset management is the strategic and systematic practice of procuring, operating, inspecting, maintaining, rehabilitating, and replacing transit capital assets to manage their performance, risks, and costs over their life cycles, for the purpose of providing safe, cost-effective, and reliable public transportation. Asset management processes are ongoing and involve evaluating and managing the relationships between costs, risks, and performance over the asset's lifecycle. Asset management addresses the two concepts of customer level of service and lifecycle management. Asset management can affect level of service by improving on-time performance and vehicle cleanliness and by reducing missed trips, slow orders, and service and station shutdowns. It also can improve safety, security, and risk management. Asset management provides accountability and communicates performance and asset condition to customers. The core of asset management is understanding and minimizing the total cost of ownership of an asset while maximizing its performance (lifecycle management). Transit asset management integrates activities across departments and offices in a transit agency to optimize resource allocation by providing quality information and well-defined business objectives to support decision-making within and between classes of assets.

Customer service levels and lifecycle management are addressed at the enterprise level and for each class of assets. Enterprise level refers to management or decision-making activities that occur at the higher levels of an organization and apply across the entire organization. Asset class-level activities, on the other hand, refer to the management activities that are associated with a particular asset class. Through asset management, Citilink can more effectively use available funds to improve the physical condition and performance of their system. This, in turn, has the potential to increase ridership.

Citilink, as a recipient of public transit funds, is required to establish performance targets for safety and state of good repair; develop a transit asset management and transit safety plans; and report on their progress toward achieving targets. Citilink is directed to share information with their MPO and states so that all plans and performance reports are coordinated. Citilink and NIRCC have collaborated on the development of a transit asset management plan (TAMP) and will continue working on this cooperative effort. Citilink has completed a safety report and set safety targets for their fixed-route and paratransit service. NIRCC has reviewed and endorsed the safety targets.

System Management Report

The FAST Act planning regulations direct MPOs to develop Transportation Plans and Transportation Improvement Programs through a performance-driven, outcome-based approach to planning. It requires states, MPOs, and operators of public transportation to establish targets for performance measures in key performance areas, and to coordinate and collaborate when setting these targets. NIRCC has collaborated with INDOT and Citilink to set targets for specific required performance measures and coordinate on performance-based planning process activities.

Target Setting

NIRCC is required to establish performance targets no later than 180 days after the state or public transportation operator sets their performance targets. For each roadway performance measure, NIRCC

can decide to support the INDOT target, Citilink target, or to establish a quantifiable target specific to the Metropolitan Planning Area. Highway safety targets are set annually. System performance and infrastructure performance are set at two-year and four-year intervals. NIRCC, INDOT and Citilink must coordinate their respective targets for performance measures to ensure consistency to the maximum extent practicable.

Reporting

NIRCC's and INDOT's Transportation Plans must describe the performance measures and targets used to assess system performance, evaluate the performance of the transportation system with respect to the federally required performance targets, and report on progress made. NIRCC's TIP and INDOT's Statewide Transportation Improvement Programs (STIPs) must link investment priorities to the targets in their respective Transportation Plans and describe, to the maximum extent practicable, the anticipated effect of the program toward achieving established targets. NIRCC must report baseline roadway transportation system condition and performance data and progress toward the achievement of targets to INDOT if regional targets are set. The Federal Highway Administration and Federal Transit Administration will determine whether INDOT and Citilink met or have made significant progress towards meeting targets for their respective systems. Progress would be considered significant if an actual outcome is either equal to or better than the established target, or better than the baseline condition. Federal Highway Administration and Federal Transit Administration will not directly assess MPO progress towards meeting targets for required performance measures. Instead, these agencies will review NIRCC's performance as part of ongoing transportation planning process reviews, including Transportation Management Area certification reviews.

The transportation performance target setting schedule was initiated with setting the Safety Performance Targets 2018 and developing a Baseline Transit Asset Targets. These have been followed by annual safety targets and transit asset targets, and two- and four-year system performance and infrastructure targets. NIRCC has elected to support the INDOT Statewide performance targets and has collaborated with Citilink on the development, setting and concurrence on the transit asset targets. The safety, infrastructure, system performance targets are provided on Tables 1-1 through 1-5. The transit asset and safety targets are provided on Tables 1-6 through 1-9. It's NIRCC's understanding that FHWA has certified that Indiana has met its safety targets.

Table 1-1: Statewide Safety Performance Targets

Measure	2018 Targets	2019 Targets	2020 Targets	2021 Targets	2022 Targets	2023 Targets	TIP Support FY2024-28
Number of Fatalities	814.9	889.6	907.7	817.3	876.0	894.2	**TIP Projects Programmed $100.9 million**
Fatality Rate per 100 million	1.036	1.087	1.097	1.006	1.076	1.088	
Number of Serious Injuries	3,479.8	3,501.9	3,467.4	3,311.4	2,998.2	3,348.1	
Serious Injury Rate per 100	4.347	4.234	4.178	4.088	3.675	4.068	
Number of Non-Motorized Fatalities and Serious Injuries	417	393.6	405.86	393.6	344.5	399.6	

Table 1-2: Statewide Bridge Performance Targets

Measure	Baseline	2-Year Target 2020	4-Year Target 2022	2-Year Target 2024	4-Year Target 2026	TIP Support FY2024-28
Percent NHS Bridges – by deck area in Good Condition	50.0%	48.3%	47.2%	49.0%	47.5%	**TIP Projects Programmed $129.6 million**
Percent NHS Bridges - by deck area in Poor Condition	2.3%	2.6%	3.1%	3.0%	3.0%	

Table 1-3: Statewide Pavement Performance Targets

Measure	Baseline	2-Year Target 2020	4-Year Target 2022	2-Year Target 2024	4-Year Target 2026	TIP Support FY2024-28
Interstate System-% of pavement in Good Condition	N/A	N/A	50.0%	60.0%	62.0%	**TIP Projects Programmed $122.6 million**
Interstate System-% of pavement in Poor Condition	N/A	N/A	0.8%	1.0%	1.0%	
Non-Interstate NHS-% of pavement in Good Condition	68.3%	78.7%	40.0%	50.0%	48.0%	
Non-Interstate NHS-% of pavement in Poor Condition	5.3%	3.1%	3.1%	1.5%	1.5%	

Table 1-4: Statewide System and Freight Performance Targets

Measure	Baseline	2-Year Target 2020	4-Year Target 2022	2-Year Target 2024	4-Year Target 2026	TIP Support FY2024-28
Interstate System-% of person-miles traveled that are reliable Level of Travel Time Reliability (LOTTR)	93.8%	90.5%	92.8%	93.0%	93.5%	**TIP Projects Programmed $103.5 million**
Non-Interstate NHS-% of person-miles traveled that are reliable Level of Travel Time Reliability (LOTTR)	N/A	N/A	89.8%	93.0%	93.5%	
Interstate System Level of Truck Travel Time Reliability Index (TTTR)	1.23	1.27	1.30	1.32	1.30	

Table 1-5: Statewide CMAQ Emission Reduction Performance Targets (kg/day

Measure	Baseline	2-Year Target 2020	4-Year Target 2022	2-Year Target 2024	4-Year Target 2026	TIP Support FY2024-28
Cumulative reduction – Particulate Matter (PM 2.5)	179.17	20.0	30.00	3.0	4.0	**TIP Projects Programmed $28.0 million**
Cumulative reduction – Particulate Matter (PM 10)	4.068	0.300	0.500	0.02	0.03	
Cumulative reduction – Nitrogen Oxide (NOx)	4,576.37	1,600.00	2,200.00	690.0	725.0	
Cumulative reduction – Carbon Monoxide (CO)	13,939.45	200.00	400.00	330.0	520.0	
Cumulative reduction – Volatile Organic Compound (VOC)	2,641.02	1,600.00	2,600.00	590.0	600.0	

The Transit Asset Management Plan for Citilink assessed the Useful Life Benchmarks (ULB) for the transit rolling stock and evaluated facilities utilizing the Transit Economic Requirements Model (TERM). TERM is a capital needs analysis tool developed by the Federal Transit Administration. It was developed to provide a consistent process to assess the current physical condition and future investment needs of a transit operators assets. TERM provides methodology for determining the State of Good Repair for rolling stock and transit facilities, asses the backlog of investment and provide a 20-year projection of reinvestment need, and evaluate the impact of variations in funding.

The process was initially applied to Citilink's rolling stock and facilities to establish a 2016 baseline. Subsequent targets have been set based on the previous year's performance. Tables 1-6 and 1-7 display the 2020-2023 targets for rolling stock and facilities. The rolling stock includes: large buses; medium and light duty buses; specialized vans used primarily by social service agencies for transporting elderly and/or disabled individuals; and non-revenue service vehicles. The amenities included in the facilities category are: administrative building; maintenance garage; storage barn; and passenger transfer station. A category for passenger bus shelters is provided independent of the other facilities.

Table 1-6: Citilink–Transit Rolling Stock Performance Targets

	Percent that Meet or Exceed Useful Life Benchmark				Percent in State of Good Repair				TIP Support FY2024-28
Rolling Stock	2020	2021	2022	2023	2020	2021	2022	2023	**$108.0 million programmed for operations** **$10.1million programmed for capital**
Large Buses	34%	31%	25%	5%	90%	90%	90%	90%	
Medium and Light Duty Buses	65%	65%	60%	35%	90%	90%	90%	70%	
Specialized Vans	0%	0%	20%	40%	90%	90%	90%	90%	
Non-Revenue Service Vehicles	81%	81%	100%	85%	80%	80%	80%	60%	

Table 1-7: Citilink–Facilities Performance Targets

	Percent Below Acceptable TERM Rating				Percent in State of Good Repair				TIP Support FY2024-28
Facilities	2020	2021	2022	2023	2019	2020	2021	2023	**$108.0 million programmed for operations** **$10.1 million programmed for capital**
Buildings	0%	0%	0%	0%	100%	90%	90%	90%	
Passenger Shelters	65%	0%	0%	Not Reported	100%	80%	80%	Not Reported	

The Citilink safety targets were designed utilizing data from 2019 through 2022 to establish a baseline. Targets were set for both the fixed-route and paratransit service. The targets include safety measures at their facilities, minor and major injuries, safety events, and minor and major system failures impacting reliability. The facilities, injury and safety event targets are based on a rate per 100,000 vehicle revenue miles (VRM), and system reliability is based on a VRM between failures. See Tables 1-8 & 1-9.

Table 1-8:Citilink Fixed Route Safety Performance Baseline and Targets

Safety Performance Category		2019-2022 Baseline	Target	TIP Support FY2024-28
Facilities	Total	0.3	0	**$108.0 million programmed for operations** **$10.1 million programed for capital**
	Rate per 100,000 VRM	0	0	
Injuries (Minor/Major)	Total	4.6	Reduction from Baseline	
	Rate per 100,000 VRM	0	0	
Safety Events (Minor/Major)	Total	8.3	Reduction from Baseline	
	Rate per 100,000 VRM	0	0	
System Reliability	VRM Between	43,652	Increase from Baseline	

Table 1-9:Citilink Paratransit Safety Performance Baseline and Targets

Safety Performance Category		2019-2022 Baseline	Target	TIP Support FY2024-28
Facilities	Total	0	0	**$108.0 million programmed for operations** **$10.1 million programed for capital**
	Rate per 100,000 VRM	0	0	
Injuries (Minor/Major)	Total	0.6	Reduction from Baseline	
	Rate per 100,000 VRM	0	0	
Safety Events (Minor/Major)	Total	1.3	0	
	Rate per 100,000 VRM	0	0	
System Reliability (Minor/Major	VRM Between Failures (Total)	67,427	Increase from Baseline	

The recommended projects and policies in the 2045 Metropolitan Transportation Plan are designed to improve safety; maintain infrastructure condition; reduce traffic congestion; improve system efficiency and freight movement; protect the environment; and reduce delays in project delivery and support the performance measures. Projects are selected for inclusion in the Transportation Improvement Program when ready for implementation. Projects are also identified through bridge, pavement, and transit asset management, and safety, mobility, and congestion management programs. The investment strategy in the Metropolitan Planning Area (MPA) is that locally derived

roadway revenue is used primarily for operations and maintenance including pavement and bridge management. Federal funds are primarily used for expansion projects, intersection improvements, and major roadway reconstruction projects. INDOT's program of projects primarily includes maintenance and preservation type of projects, but also contains intersection and interchange improvements. NIRCC's TIPs and INDOT's Statewide Transportation Improvement Programs (STIPs) link investment priorities to the targets in their respective Transportation Plans and describe, to the maximum extent practicable, the anticipated effect of the program toward achieving established targets.

The Federal Highway Administration and Federal Transit Administration determine whether the INDOT Statewide Targets and Citilink's Transit Targets are met or there is significant progress towards meeting the targets. Progress is considered significant if an actual outcome is either equal to or better than the established target, or better than the baseline condition. Federal Highway Administration and Federal Transit Administration will not directly assess MPO progress towards meeting targets for required performance measures. Instead, these agencies will review NIRCC's performance as part of ongoing transportation planning process reviews, including Transportation Management Area certification reviews.

The transportation performance target setting for all performance measures has been completed. NIRCC has elected to support the INDOT Statewide Targets and has collaborated with Citilink on the development and setting of Transit Asset Management and Public Transit Safety Targets. The initial performance targets for safety were set for calendar year 2018 and the FHWA safety performance target assessment is provided on Table 1-10. The FHWA significant progress determinations for pavement and bridge conditions is displayed in Table 1-11. Table 1-12 provides the FHWA significant progress determinations for travel time and freight reliability targets. The assessment for on-road emissions is not currently available. Future updates to the Transportation Plan and TIP will provide information on attaining performance targets and additional target setting activities.

Table 1-10: Indiana 2020 Safety Performance Target Assessment

Performance Measure	2016-2020 Target	2016-2020 Actual	2014-2018 Baseline	Met Target?
Number of Fatalities	907.7	862.4	833.4	Yes
Rate of Fatalities	1.100	1.064	1.030	Yes
Number of Serious Injuries	3,467.4	3,293.4	3,375.0	Yes
Rate of Serious Injuries	4.178	4.060	4.172	Yes
Number of non-motorized fatalities and non-motorized serious injuries	405.9	377.6	380.2	Yes

Table 1-11: Indiana 2020 Mid Performance Period Significant Progress Determination Results For Pavement and Bridge Conditions

Measure Area	Measure		Baseline	Target	Actual	Better than Baseline?	Achieved Target?	Made Significant Progress?	Consequences [23 CFR 490.109(f)]
The condition of pavements on the National Highway System (NHS) (excluding the Interstate)	Percentage of pavements of the non-Interstate NHS in Good condition	Based only on IRI	68.3	--	64.9	No	--	No	Additional Reporting
		Based on Full Distress + IRI	--	78.7	44.8	--	No		
	Percentage of pavements of the non-Interstate NHS in Poor condition	Based only on IRI	5.3	--	4.2	Yes	--	Yes	
		Based on Full Distress + IRI	--	3.1	0.9	--	Yes		
The condition of bridges on the National Highway System	Percentage of NHS bridges classified as in Good condition		50.0	48.3	48.0	No	No	No	Additional Reporting
	Percentage of NHS bridges classified as in Poor condition		2.3	2.6	2.6	No	Yes	Yes	

Table 1-12: Indiana 2020 Mid Performance Period Significant Progress Determination Results For Highway Reliability

Measure Area	Measure	Baseline	Target	Actual	Better than Baseline?	Achieved Target?	Made Significant Progress?	Consequences [23 CFR 490.109(f)]
The performance of the Interstate System	Interstate Travel Time Reliability Measure	93.8	90.5	93.7	No	Yes	Yes	None
Freight movement on the Interstate System	Freight Reliability Measure	1.23	1.27	1.25	No	Yes	Yes	None

Regional Goals, Objectives, Actions and Measures

NIRCC has engaged in activities that support a performance-based planning and programming process, and as the MPO, NIRCC has followed a collaborative process to set goals and objectives that align with national goals and utilizes the Transportation Plan and Transportation Improvement Program to integrate goals and objectives into planning and programming activities. The Congestion Management Process (CMP) and use of performance measures for planning and analysis is one application. Traffic and crash data collected and analyzed by NIRCC will assist in the monitoring and evaluation of performance measures. In conjunction with the federal performance management process, regional goals, objectives, actions, and measures have been in place for several years. The regional process was designed to be consistent with the national performance and current planning regulations.

Primary Goal of the Transportation Plan and Transportation Planning Process

> Develop a safe, cost-effective transportation system that ensures mobility to all persons, enhances the quality of life in the region, supports planned growth, promotes economic development, and preserves the integrity and enhances the vitality of the human and natural environment.

The primary goal is developed with recognition of the need for balance between safety, security, mobility, accessibility, cost, environmental impact, and equity in accordance with the prescribed planning factors. Planning and project development decisions will inevitably require the prioritization of goals and objectives through diverse methods to ensure consistency with preferred outcomes. Compromises and trade-offs will be necessary to achieve the desired balance of a safe and efficient multi-modal transportation system that provides equity in both the benefits and burdens of a transportation system and the services it provides.

Guiding principles with objectives and action items have been developed for each planning factor. Most of the guiding principles are transportation oriented, a number are directed at land use and economic development policies that influence the performance of the transportation system and how the community grows. While these policies are outside the jurisdiction of the Metropolitan Planning Organization, they are well within the jurisdiction of its member agencies. Following the principles, objectives and action items will lead to a more successful transportation system that meets existing and future travel demands in an effective and efficient manner.

Planning Factor 1:

Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency

Guiding Principal One

Provide Economic Development Opportunity Areas with site appropriate multi-modal transportation infrastructure that ensures safe and efficient access.

Objective 1:

Ensure efficient travel on preferred access routes connecting Opportunity Areas to one another and the Interstate System.

Actions:

- Evaluate signal timing and implement signal timing improvements where appropriate.
- Evaluate intersection radii and program intersection improvements as needed for safe and efficient truck turning movements.
- Assess need for additional capacity on access routes when acceptable service levels are not attainable through other congestion mitigation strategies.
- Assess the need for new roadways where necessary and appropriate to improve accessibility to Opportunity Areas.
- Evaluate and ensure the provision and enforcement of well-marked local truck delivery routes serving opportunity areas.
- Promote vehicular connectivity between developments within Opportunity Areas.

Objective 2:

Plan for and ensure multi-modal access to, and between, opportunity areas.

Actions:

- Encourage the establishment of public transit routes connecting developed and Opportunity Areas.
- Coordinate and plan for the provision of connecting rail infrastructure within Opportunity Areas adjacent to rail corridors.
- Evaluate and coordinate the provision of transportation infrastructure that provides efficient access between Opportunity Areas and the Fort Wayne International Airport.
- Encourage the provision of pedestrian and bike infrastructure connecting Opportunity Areas to adjacent residential areas.

Objective 3:

Provide well-marked local delivery truck routes to Opportunity Areas.

Actions:

- Review and revise truck routes that provide access to Opportunity Areas.

• Designate truck routes with proper signage.

Guiding Principle Two

Compact and mixed-use development supported by a multi-modal transportation network should be encouraged for new development and redevelopment projects in the urbanized area to promote a walkable, sustainable and efficient development patterns.

Objective 1:

Increase gross densities in urbanized areas by supporting and encouraging the establishment of compact mixed-use development and supportive multimodal transportation infrastructure within and between new and existing mixed-use developments.

Actions:

• Develop/promote new zoning, subdivision and traffic and street engineering standards which encourage compact mixed-use development and multi-modal transportation infrastructure within existing urbanized areas.

• Coordinate the establishment of street and traffic engineering standards which require the provision of multi-modal transportation infrastructure within existing urbanized areas.

• Encourage redevelopment and infill development projects in areas already supported by multi-modal infrastructure that include mixed uses and increased land use density.

• Encourage Transit Oriented developments.

• Promote new zoning and subdivision standards that incorporate transit friendly infrastructure.

Guiding Principle Three

Support and promote transportation improvements in central business districts that enhance livability, tourism, and other economic development opportunities.

Objective 1:

Encourage the maintenance and enhancement of existing public right of way infrastructure to align with existing plans and design standards.

Action:

• Ensure that transportation improvement plans and projects are consistent with downtown and business district plans and policies.

Objective 2:
Ensure that street improvement projects are designed to be consistent with and contribute to the economic vitality of downtown and business areas.

Action:
• Ensure that transportation improvement projects include elements that promote livability, are attractive, support pedestrian traffic, and provide for short-term on-street parking where possible.

Objective 3:
Encourage a balance of travel modes in the downtown and business areas.

Actions:
• Ensure that transportation improvement plan designs include appropriate speed control and traffic calming features such as lane widths and streetscape enhancements.
• Evaluate loading zone locations to improve freight distribution and efficiency.
• Ensure that transportation improvements plans and projects are reviewed in alignment with the goals and policies of downtown and business district plans.
• Continue building on-street bike facilities and enhancing pedestrian and transit friendly infrastructure.
• Analyze the need and potential market for transit improvements in downtown and business areas.

Planning Factor 2:

Increase the safety of the transportation system for motorized and non-motorized users

Guiding Principal One
Ensure transportation facilities for all modes of travel are safe

Objective 1:
Reduce the number of public roadway motor vehicle crashes.

Actions:
• NIRCC will maintain crash data and prepare crash analyses for problematic areas.
• High crash locations will be reviewed and evaluated for appropriate crash reduction strategies and strategies will be implemented through safety projects.
• Support improved driver education and safe driving campaigns.
• Implement systematic safety improvements at various locations in the metropolitan area to address safety issues that attribute to crashes.

• Develop/promote training for law enforcement officers to enhance data collection for crash incidents.

Objective 2:
Reduce the number of severe injury and fatal motor vehicle crashes.

Actions:
• NIRCC will maintain crash data and prepare crash analyses for serious injury and fatal crashes.
• Crash locations with unusually high serious injury and fatal crashes will be reviewed and evaluated for appropriate crash reduction strategies.
• Deploy safety improvements that show right-angle and head-on crash reduction attributes including cable barriers, center-line rumble strips, roundabouts and stronger enforcement of traffic control violations.

Objective 3:
Reduce the number of fatal and serious injury crashes involving bicyclists and pedestrians.

Actions:
• NIRCC will maintain crash data and prepare crash analyses for crashes involving bicyclists and pedestrians.
• Crash locations with unusually high bicyclist and/or pedestrian crashes will be reviewed and evaluated for appropriate crash reduction strategies.
• Work with law enforcement agencies to address problem areas common violations that attribute to crashes involving bicyclist and pedestrians.
• Coordinate with local pedestrian and bicycle plans to close sidewalk and bicycle network gaps along major roadways.
• Support bicyclist and pedestrian safety education programs.
• Implement appropriate “complete street” concepts to provide safe bicycle and pedestrian facilities with roadway improvement projects.
• Support and promote the provision of adequate street lighting along streets in developed areas.
• Improve transit stops by provided adequate access and pedestrian facilities.
• Support and encourage sidewalk connectivity near schools and universities.
• Design street and intersection improvements with safety features to improve.

Planning Factor 3:

Increase the security of the transportation system for motorized and non-motorized users

Guiding Principle One

Develop a transportation system that remains secure ad operational during natural and man-made disasters.

Objective 1:

Include transportation related security projects in the regional ITS Architecture.

Actions:

- Continue implementation for the ITS Architecture.
- Consult with appropriate agencies to review and update ITS Architecture with appropriate security related projects.

Objective 2:

Work with area emergency preparedness and disaster response agencies to identify high priority emergency and evacuation routes.

Actions:

- Utilize travel demand modeling capabilities to help identify safe and efficient emergency and evacuation routes.
- Identify transportation improvements that will facilitate safe and efficient emergency and evacuation routes.

Objective 3:

Identify strategic transportation infrastructure and available resources needed to improve emergency preparedness.

Actions:

- Consult with transportation agencies, emergency responders and emergency preparedness agencies to identify strategic infrastructure and needed resources.
- Identify transportation projects that improve security of strategic infrastructure and support emergency response.

Planning Factor 4:

Increase the accessibility and mobility of people and freight

Guiding Principle One

Transportation system users will have convenient and efficient multi-modal access within and through the metropolitan area

Objective 1:
Maintain level of service “D” or better during peak travel periods on major traffic corridors.

Actions:

- Utilize Congestion Management Process to conduct systemic analyses on “major traffic corridors” to assess peak service levels.
- Implement signal upgrades, re-timings and coordination projects to improve traffic flow based on service level assessments that incorporate impacts on transit service and freight movement within the region.
- Encourage multiple modes of travel in place of personal vehicle use.
- Continue to expand network of bicycle and pedestrian infrastructure as a mechanism to reduce motor vehicle traffic.
- Provide additional travel lanes on major traffic corridors when additional capacity is warranted.

Objective 2:
Improve pedestrian facilities throughout the metropolitan area by expanding access to the transportation network in ways that respect the diverse levels of physical ability in the community.

Actions:

- Promote compliance with local development standards that require sidewalks as part of new development.
- Support development standards that require dedicated pedestrian facility infrastructure that connect the public right of way with building entrances.
- Continue to install and replace curb ramps in accordance with the Public Right of Way Accessibility Guidelines (PROWAG) standards.
- Fill gaps in the sidewalk and trail infrastructure and repair deteriorated and non- compliant sidewalks according to local and state pedestrian and trail plans.
- Install actuated count-down audible pedestrian signals with piano key style crosswalks at intersections with high traffic and pedestrian volumes.
- Prioritize the development of sidewalk and trail access to transit stops.

Objective 3:
Continue and improve reliable and convenient fixed-route and demand-response transit service in the Urban Area. Specific improvements include, reducing headways, expanding service hours, service distribution and improving transit stop facilities.

Actions:

- Construct bus shelters at high-use stops on fixed route transit lines with appropriate sidewalk

access

• Use smart-phone and other technology to provide real-time service information for fixed route transit service and explore application for demand response service.

• Identify and secure sustainable funding sources to reduce fixed-route headways, extend service hours, and expand service areas.

• Review and evaluate service delivery options to maximize service efficiency and coverage.

Objective 4:

Improve truck and freight mobility and distribution within the urban area that minimizes disruption to residential neighborhoods and reduces impacts to other modes of transportation.

Actions:

• Continue to provide a well-defined local truck route delivery system.

• Periodic review and evaluation of the truck route system.

• Evaluate loading zones in Central Business Districts to improve freight distribution and efficiency.

Objective 5:

Improve connectivity and access to the trail network, develop and maintain additional bicycle infrastructure to support active modes of travel.

Actions:

• Continue strategic expansion of trail system.

• Provide additional bike lanes, bike routes and shared lanes in the metropolitan area.

• Repair and maintain existing bicycle infrastructure.

• Measure intersection service levels for bicyclists and pedestrians at locations that relate to existing and planned bike facilities.

• Continue installing bike racks and other storage facilities at strategic destinations in the Metropolitan Area.

Planning Factor 5:

Protect the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns

Guiding Principle One

Improve the safety and convenience of multi-modal transportation options to reduce single occupancy vehicle trips.

Objective 1:
Increase the miles of bicycle and pedestrian facilities by 20% by 2045.

Actions:
- Construct new and maintain existing facilities and make provisions for future connectivity.
- Implement recommendations of state and local bike, trail, and pedestrian plans.
- Collaborate with Fort Wayne Trails and other private sector partners to promote bike- ped facilities.

Objective 2:
Provide transit service within ½ mile for 90% of the population within the Urban Area.

Actions:
- Encourage, compact redevelopment and infill within ½ mile of transit routes.
- Expand the Citilink service area to include the entire urban area.

Objective 3:
Ensure new developments within the Metropolitan Area provide sidewalks and/or trails along roadway frontages (internal and external) through construction of, or a reservation of land and funds for construction.

Actions:
- Support subdivision ordinances and enforcement of sidewalk or trail requirements in new commercial and residential developments.
- Encourage redevelopment and infill development adjacent to existing pedestrian facilities.

Guiding Principle Two
Apply sustainable aspects to transportation planning and engineering activities that promote environmental stewardship and energy conservation.

Objective 1:
Continue to maintain air quality attainment status and remain below the National Ambient Air Quality Standards.

Actions:
- Promote alternative transportation modes including transit, cycling and walking.
- Evaluate ridesharing, bike sharing, car sharing and park and ride programs in the urban area.
- Reduce vehicle emissions through intersection improvements and constructing roundabouts at appropriate locations.

Objective 2:
Support infill development and redevelopment efforts within the Urban Area.

Actions:
• Provide appropriate transit, bicycle, pedestrian and vehicular access to undeveloped sites in the Urban Area.
• Provide appropriate transit, bicycle, pedestrian and vehicular access for redevelopment of selected locations.

Objective 3:
Improve water quality by controlling highway run-off and mitigating salt, oil and fuel contamination.

Actions:
• Limit development and transportation projects that alter floodplains and wetland habitats.
• Reduce and mitigate non-point sources of roadway related pollution.
• Install green infrastructure (rain gardens etc.) into transportation design as a means to mitigate and control runoff.

Planning Factor 6:

Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight

Guiding Principle One
Provide transportation system users with an integrated transportation network that provides access to and between street, trail, transit, sidewalk, rail and air transportation infrastructure and ensure connectivity within, and between the various networks.

Objective 1:
Improve highway, trail, bicycle and sidewalk infrastructure by filling gaps and constructing new links to provide for system connectivity.

Actions:
• Identify and prioritize gaps and important links in accordance with local bicycle and pedestrian plans to improve system connectivity.
• Develop a schedule for construction of trail, bicycle and sidewalk infrastructure.
• Identify and secure funding to meet objectives.

Objective 2:
Provide safe and efficient highway access to truck, transit, air and rail terminals for freight and passenger service.

Actions:
• Review access to major truck, transit, air and rail terminals for accessibility and mobility issues and determine appropriate improvements.
• Build and modify transportation infrastructure to improve access and mobility.

Objective 3:
Provide a transportation system that integrates the needs of freight, transit, cycling, walking, passenger rail, and passenger vehicle travel.

Actions:
• Review programs, plans and projects for opportunities to integrate transportation systems.
• Develop and implement programs and projects that improve system integration.

Planning Factor 7:

Promote efficient system management and operation

Guiding Principle One
Minimize travel impedance and maximize available system capacity through well maintained infrastructure and efficient operations to ensure dependable and reliable service.

Objective 1:
Properly maintain transit, street, bridge, sidewalk, trail and bicycle infrastructure in safe operating conditions to prevent travel inefficiencies.

Actions:
• Maintain pavement and surface management for streets, sidewalks and bicycle systems.
• Ensure all bridges are in safe operating conditions for the intended users.
• Ensure regular transit vehicle inspections and appropriate maintenance.

Objective 2:
Minimize impacts of construction activities and non-reoccurring incidents to system users (transit, trail, sidewalk, bike, freight, rail and passenger vehicle).

Actions:

- Promote and implement incident management techniques such as quick clearance, work zones, weather management systems and traditional traffic operations and processes.
- Manage construction schedules within the region amongst state and local agencies to minimize transportation disruptions.

Objective 3:

Build sustainable infrastructure that is not prone to natural hazards and recurring maintenance/ construction activities.

Actions:

- Utilize modeling and analytical tools to determine cost effective and sustainable construction designs based on infrastructure type and use.
- Promote cost effective construction design that minimize maintenance and replacement costs.
- Promote cost effective capital procurement to minimize maintenance and replacement costs.

Objective 4:

Eliminate at-grade rail crossings along primary corridors and at other locations where conflicts exist.

Action:

- Work with cities, counties and rail companies to evaluate and propose improvements or elimination of at-grade crossings.

Objective 5

Promote the use of transit, rail, bike and walking to decrease congestion at peak hours.

Actions:

- Market the benefits of transit, bike, and walking versus passenger vehicle travel to the community.
- Encourage increased walking, transit and bike use through the installation of infrastructure such as transit stop improvements, bike racks and lanes, and sidewalks.

Selected Measure:

Number of transit stop improvements, bike racks, bike lanes and sidewalk infrastructure projects.

Objective 6:

Develop and deploy Intelligent Transportation System (ITS) technologies to improve system performance and traveler information.

Action:

• Utilize tools such as incident management, work zones, weather management systems and traditional traffic operations to improve efficiency

Planning Factor 8:

Emphasize the preservation of the existing transportation system

Guiding Principle One

Maintain the existing transportation infrastructure and capital resources to maximize and exceed their expected useful life.

Objective 1:

Rehabilitate, reconstruct and replace transit, street, bridge, sidewalk, trail and bicycle infrastructure and capital as appropriate to maintain safe and efficient operating conditions.

Actions:

• Pavement and surface management for streets, sidewalks and bicycle systems.
• Inspect and maintain all bridges to safe operating conditions for the intended users.
• Transit vehicle inspection, maintenance and repair program.

Objective 2:

Promote maintenance programs that extend the useful life of transportation capital and infrastructure.

Actions:

• Administer pavement and bridge preservation and maintenance programs.
• Administer sidewalk and trail preservation and maintenance programs.
• Administer transit vehicle maintenance and preservation programs.

Objective 3:

Maximize available highway capacity before considering adding travel lanes.

Actions:

• Signal improvements and modernization.
• Continue implementation of access management and control measures.

Objective 4:

Promote infill development in densely populated urban areas through infrastructure preservation projects.

Action:

• Identify and construct transportation improvement projects that support infill developments in the urban area.

Planning Factor 9:

Improve the resiliency and reliability of the transportation system and reduce or mitigate storm- water.

Guiding Principle One

Maintain the existing transportation infrastructure and capital resources to maximize and exceed their expected useful life, minimize damage from disasters and reduce storm water runoff and its environmental impacts.

Objective 1:

Promote pavement and bridge management plans infill development in densely populated urban areas through infrastructure preservation projects.

Action:

• Identify and construct transportation improvement projects that support road, bridge and trail maintenance.

Objective 2:

Promote the maintenance and preservation of transit vehicles.

Action:

• Identify and construct transportation improvement projects that support road, bridge and trail maintenance.

Objective 3:

Promote infrastructure investment that minimizes infrastructure damage from likely natural and manmade disasters.

Actions:

• Build and protect infrastructure from flooding events

• Maintain contingency plans for utilizing transit infrastructure for evacuation purposes

Objective 4:

Promote green infrastructure that reduces and treats storm water runoff.

Actions:

- Incorporate storm water management strategies into infrastructure design
- Properly manage storm water during infrastructure construction

Objective 5:
Maintain a Continuation of Operations Plan (COOP) to assist in disaster recovery efforts

Action:

- Ensure COOP is current and relevant to potential threats

Planning Factor 10:

Enhance travel and tourism.

Guiding Principle One
Maintain a multi-modal transportation system that affords mobility and access to alternative travel modes for visitors to the metropolitan area.

Objective 1:
Promote transit, pedestrian and bicycle accessibility and mobility to areas of interest to tourists visiting the metropolitan area.

Actions:

- Develop, enhance, and promote wayfinding signs and systems to direct residents and tourists to points of interest.
- Maintain information on transit system usage and routes that provide access to regional points of interests

The guiding principles associated with the ten planning factors serve to direct planning activities and studies, and project design and development.

Study Process

The study process used to develop the long-range transportation plan update follows sequential set of work phases that includes forecasting future socioeconomic data to the horizon year 2045; review existing traffic conditions and forecast future travel demands to the horizon year 2045; develop and evaluate alternative projects; and develop a set of fiscally constrained projects, programs and policies as the selected transportation plan.

An inventory and analysis were conducted of existing and future socioeconomic data necessary to initiate the process for plan development. The analysis of existing socioeconomic data and recent changes serves to establish planning assumptions based on the latest available estimates for population, land use, travel, employment, congestion, and economic activity. These planning assumptions provide a baseline for development of forecasted socioeconomic growth and economic activity that guides the analyses and development of the transportation plan update.

The projected socioeconomic data economic activity provides the basis for forecasting the future travel demands. These demands, coupled with data from the Congestion Management Process were collectively analyzed on the existing plus committed transportation system, and ultimately on the transportation system as proposed by the selected 2045 Transportation Plan. In addition, projects and policies included in the 2040 Transportation Plan as Amended were considered for inclusion in the updated plan based on the revised planning assumptions, projected development of the metropolitan planning area, and forecasted travel.

As a result of these analyses, projects and policies were identified to eliminate or significantly improve problems with congestion, mobility, and accessibility on the existing road and transit networks. The projects and policies were reviewed and screened by the Urban Transportation Advisory Board (UTAB). Alternative plans and concepts were developed and evaluated. Based upon the findings of this evaluation and the planning, policy, and engineering judgments of the Urban Transportation Advisory Board, a final plan was adopted.

The technical work phases of the 2045 Transportation Plan are documented more thoroughly in the following chapters. This report serves as a guide to, and a summary of, the technical background information produced during the plan update. As the transportation planning is based on a continuing, cooperative, and comprehensive (3-C) planning process, the 2045 Transportation Plan is derived in part, and built upon previous long-range transportation plans and studies. For a comprehensive review of the long-range transportation planning process as it has evolved for the Fort Wayne/New Haven/ Allen County area, please consult the 2040, 2035, 2030-II, 2030, 2025, 2015, 2010, 2005, 2000, and 1990 Metropolitan Transportation Plans. These plans and accompanying reports were prepared by the Northeastern Indiana Regional Coordinating Council as part of the metropolitan transportation planning process.

Report Organization

The technical report documents the process for the long-range transportation plan as well as the plan itself. The report is organized into nine additional chapters:

Chapter 2 – discusses the base year and planning year socioeconomic data used to forecast future transportation travel demands.

Chapter 3 – presents the travel forecasting procedures for the year 2045 transportation system. It

describes in detail how these travel forecasts were developed and the significance of the findings.

Chapter 4 – documents the evaluation of the alternative transportation sketch plans. This section includes a discussion of new road projects and transit proposals, and the results of the network testing of the alternatives.

Chapter 5 – discusses the public and government agency input obtained throughout the development of the plan update. Factors that affected the selection of the recommended plan are presented. This chapter includes sections on public participation, environmental justice, MAP-21 broad areas, and livable communities.

Chapter 6 – presents the selected 2045 long-range transportation plan and recommended policies and improvements. This chapter includes the Pedestrian and Bicycle Plan and a discussion on Intelligent Transportation System technology for the metropolitan area.

Chapter 7 – Safety Management

Chapter 8 – Environmental Mitigation

Chapter 9 – Freight Management

Chapter 10 – presents future implications and effects of the long-range transportation plan, status of previous plan implementation, and discusses new strategies for managing urban congestion.

Appendix A – Congestion Management Program
Appendix B – 2020 Socioeconomic Data
Appendix C – 2045 Socioeconomic Data
Appendix D – Access Standards Manual 2011
Appendix E – Roadway Design Standards
Appendix F – Local Project Cost
Appendix G – Bus Fort Wayne Plan
Appendix H – The Coordinating and Transportation Services Guide
Appendix I – Coordinated Public Transit-Human Services Transportation Plan for Allen County
Appendix J – Public Participation – Comments and Responses
Appendix K – Pedestrian component of the Transportation Plan\Bicycle Parking Recommendation Policy
Appendix L – Environmental Document Data Citations
Appendix M – Air Quality Conformity Determinationortation

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Chapter 2
BASE AND PLANNING YEAR SOCIOECONOMIC DATA

Reliable data for the base year (2020) and estimates of the planning year (2045) socioeconomic data are essential to the transportation planning effort. The travel demand models were initially tested and calibrated utilizing 1979 data. The model was subsequently re-evaluated for accuracy utilizing 1980, 1985, 1995, 2000 and 2010 socioeconomic conditions. As part of the development of the 2045 Transportation Plan, the model was evaluated using the 2020 base year data. Reasonable results were obtained from modeling the 2020 data.

The planning year estimates were used to forecast future transportation needs and to identify transportation improvements necessary to meet those needs. The socioeconomic data developed for this study included estimates of population, households, auto ownership, and employment. Existing and projected land uses are an important input to the transportation plan due to the close relationship between land use and travel demands. The All in Allen Comprehensive Plan development process combined with the New Haven Comprehensive Land Use and Strategic Economic Plan provide the vision of how the metropolitan area is desired to grow. These plans were utilized to identify where future economic activity and housing will occur. The growth and location of future employment was determined utilizing existing employment as a base, then projecting future growth on economic development areas identified in the comprehensive plans. The location of employment is one of the critical pieces of demographic information used for transportation planning purposes. The 2019 employment data was obtained from data axle. The 2019 data was determined to be the best available data due to uncertainty of how the COVID Pandemic impacted employment due to business shutdowns and temporary closures in 2020 and 2021.

The aggregate socioeconomic estimates were made for small areas within the Metropolitan Planning Area for planning purposes. These areas are referred to as traffic analysis zones (TAZs). Traffic analysis zones are designed to represent similar land uses and are utilized for travel demand forecasting. The traffic analysis zones are displayed in Figure 2-1. There is a total of 564 traffic zones in the Metropolitan Planning Area (MPA). In addition, there are 31 external stations that represent points of entry and exit around the perimeter of the MPA.

The structure of the traffic analysis zones was based upon the following criteria:

1. The location and concentration of population and employment.
2. The availability of demographic, economic, land use and natural resource data.
3. The ability of the traffic zone boundary alignment to conform to major street alignments.
4. The direct allocation of complete census block data without a need for splitting census data.

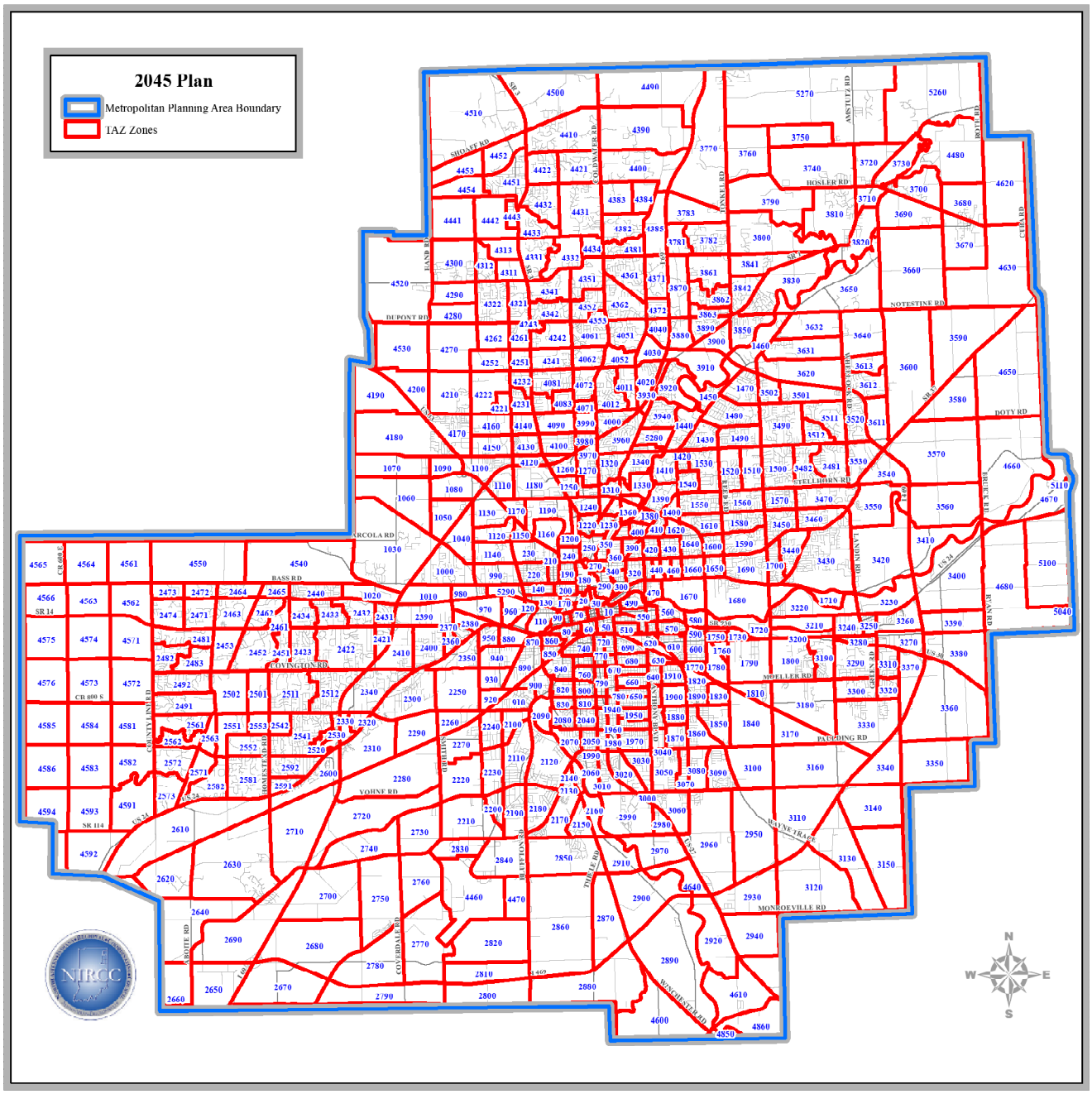

Figure 2-1

Traffic Analysis Zones

The accuracy and level of detailed socioeconomic estimates ensure that reliable and efficient transportation service plans can be provided to meet future needs of the metropolitan area.

Base Year 2020 Estimates

Data from 2019 and 2020 were used to established base year information for this transportation plan update. The 2020 Census was used to obtain population and housing data. The housing data was backchecked utilizing building permit information. Employment data was derived for 2019 from data axle information and housing characteristics are based on 2019 American Community Survey data. Comprehensive socioeconomic data including population, households, automobile ownership, household income, school enrollments and employment data. The socioeconomic data has been collected and monitored since the early 1970's based upon Census information and other data sources. This information is useful in monitoring recent trends and projecting future socioeconomic conditions.

The 2020 Census information provides the most comprehensive and accurate population and housing data available. Based on Census Tract and Census Block statistics, data for both Allen County and the Metropolitan Planning Area can be obtained. The MPA is primarily within the geographical area of Allen County and is mainly influenced by the development activity in Fort Wayne and Allen County. The portion of the Metropolitan Planning Area in Allen County includes approximately 95% of the total population and 96% of the total housing units within Allen County.

The 2000 Census information indicated that the Fort Wayne Urbanized Area in Allen County had expanded west to the boundary with Whitley County. In addition, Census criteria designated a small portion of Huntington County in the Fort Wayne Urbanized Area. This area is actually rural in nature but due to the population density and proximity to the adjacent urban area, it was defined as urban. Therefore, portions of Whitley and Huntington County have been included in the MPA for analysis purposes.

Recent trends in population growth estimated by the U.S. Census Bureau shows Allen County with a 2020 population of 385,424, an increase of over 30,000 people from the 355,329 population in 2010. This represents an 8.5% increase over the ten-year period and correlates to an average annual growth rate of approximately 0.92%. The number of housing units increased from 152,184 in 2010 to 162,431 in 2020 representing a 6.7% increase over the ten-year period and an average annual growth rate of approximately 0.66%. During this same time the occupancy rate rose from 90.6% in 2010 to 93.4% in 2020. Population per housing unit remained relatively stable at 2.34 persons per housing unit in 2010 and 2.37 in 2020.

The 2010 Census reported 135,807 households in Allen County, and in 2020 the household number rose to 147,043, an increase of 11,236 new households over the ten-year period. This represents an 8.3% increase and an average annual growth rate of approximately 0.83 percent. The overwhelming majority

of housing growth was in new suburban subdivisions and apartment complexes within the MPA, but there has been a notable increase of housing options in central business district of Fort Wayne. The estimates of the 2020 socioeconomic variables for each traffic zone are presented in Appendix B. The methodology used for preparing these estimates is discussed in the following narrative.

Population

The population figures for base year 2020 were derived from 2020 census redistricting block statistics estimates for the Metropolitan Planning Area. The 2020 census block statistics estimates were aggregated to represent the population of individual traffic zones within the Metropolitan Planning Area. Figure 2-2 displays the 2020 population density.

Housing Units and Households

The primary source for base year housing unit data for the Metropolitan Planning Area was 2020 census redistricting block information. This data was compiled exactly like the population figures to determine the extent of housing activity within each traffic zone. As a secondary check, the number of new housing units based on Improvement Location Permits (ILP's) were added to the 2010 Census data, and demolitions were subtracted. The ILP data was obtained from the Allen County Department of Planning Services. Household related data such as household income was derived from the 2019 Census American Community Survey. Figure 2-3 displays the housing unit density.

Vehicle Ownership

Vehicle ownership information for metropolitan area was derived from 2019 Census American Community Survey data. The number of automobiles per traffic zone was calculated using vehicle per household information and deriving an average ratio of vehicles to housing units. The ratios were reviewed and refined based on the relationship of household incomes specific to individual traffic zones and automobile ownership.

Employment

The primary source of 2019 employment data was information obtained from data axle (formerly InfoUSA) data that was provided through the Indiana Department of Transportation (INDOT). The employment locations were allocated to the appropriate traffic analysis zone. A list of employment by category and by traffic zone was derived from this inventory for the Metropolitan Planning Area. The employment data was further stratified by North American Industry Classification System (NAICS) Codes. Based on these codes, employment was grouped into four major categories: industrial, service, retail and office. Industrial employment includes construction, manufacturing, warehousing, and wholesale trades. The service category employment includes education, administration, accommodations, eating and drinking establishments, and arts and entertainment. The retail category includes food, bakery, and dairy stores;

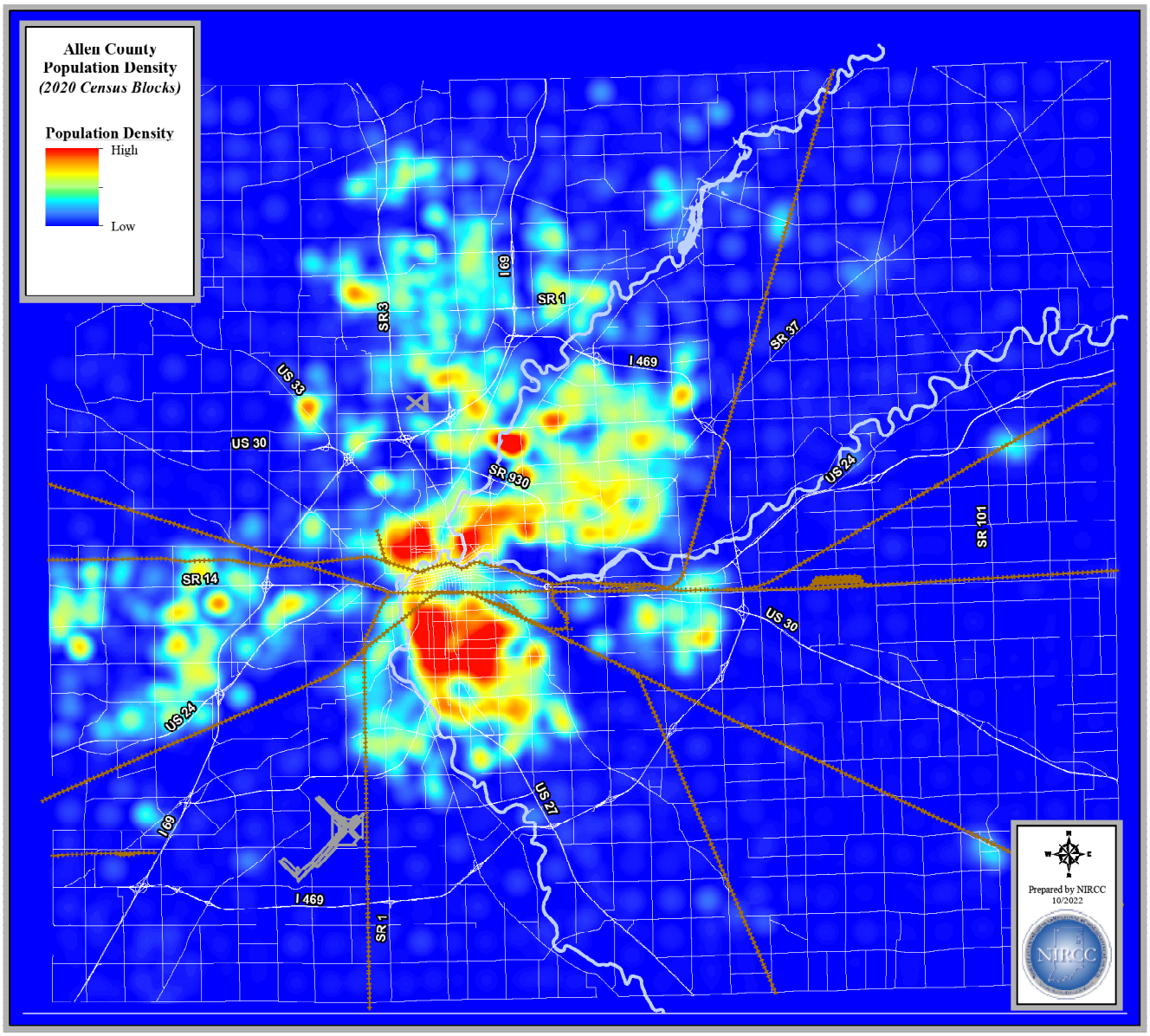

Figure 2-2

2020 Population Density

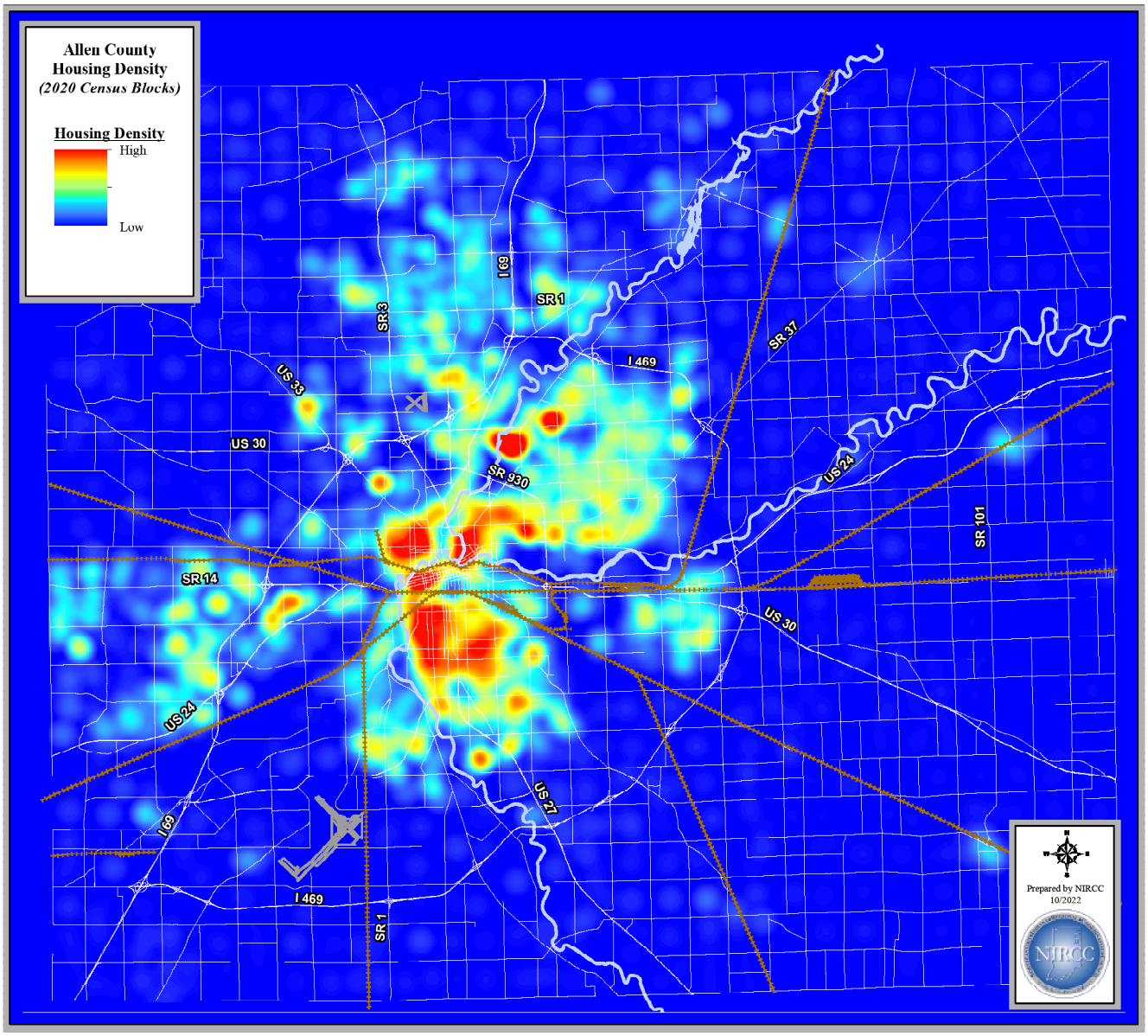

Figure 2-3

2020 Housing Density

general merchandise retailing; motor vehicle retailing; service stations and repair services; and other retail trades. The office category employment includes: finance, real estate, health care, and public administration. Figure 2-4 displays the 2019 employment density.

Table 2-1 displays the base year population, housing unit and employment data for the Metropolitan Planning Area.

Table 2-1: Metropolitan Planning Area Data

	Allen County	Huntington County	Whitley County	Total MPA
2020 Population	365,190	133	1,439	366,762
2020 Housing Units	154,714	63	598	155,375
2019 Employment	199,293	15	372	199,680

Planning Year 2045 Projections

In addition to the socioeconomic data, general planning guidelines are developed based upon current and historical trends to assist with socioeconomic conditions for the horizon year. Planning assumptions were utilized in estimating the socioeconomic conditions for all previously developed Transportation Plans. Similar assumptions have been developed to predict how the metropolitan area will grow and change based on current data and recent trends.

The Northeastern Indiana Regional Coordinating Council transportation planning staff met with various planning groups and reviewed demographic data to assist in drafting the planning assumptions. Areas of discussion and review included: downtown Fort Wayne re-development efforts; area housing plans and neighborhood revitalization efforts; economic development activities, issues, and target areas; socioeconomic forecasts; utility infrastructure plans; housing and business development trends; floodplain, wetland, and ground water concerns; and land use development strategies. The comprehensive development plans, re-development plans, and economic development plans were reviewed as part of this process and provided direction in the distribution of socioeconomic data. This process helps to reinforce and/or re-write the planning guidelines and assumptions for the transportation plan. The following narrative describes the basic assumptions governing the anticipated growth and change in the metropolitan area during the next 20 plus years.

1. Historical information from the U.S. Bureau of the Census indicates that nationally, the average number of persons per household steadily decreased through the 1980s and 1990s in Allen County until 2000. From 2000 to 2020 average household size has been relatively steady ranging between 2.52 to 2.55. The average number of persons per housing unit is lower, as it includes both occupied

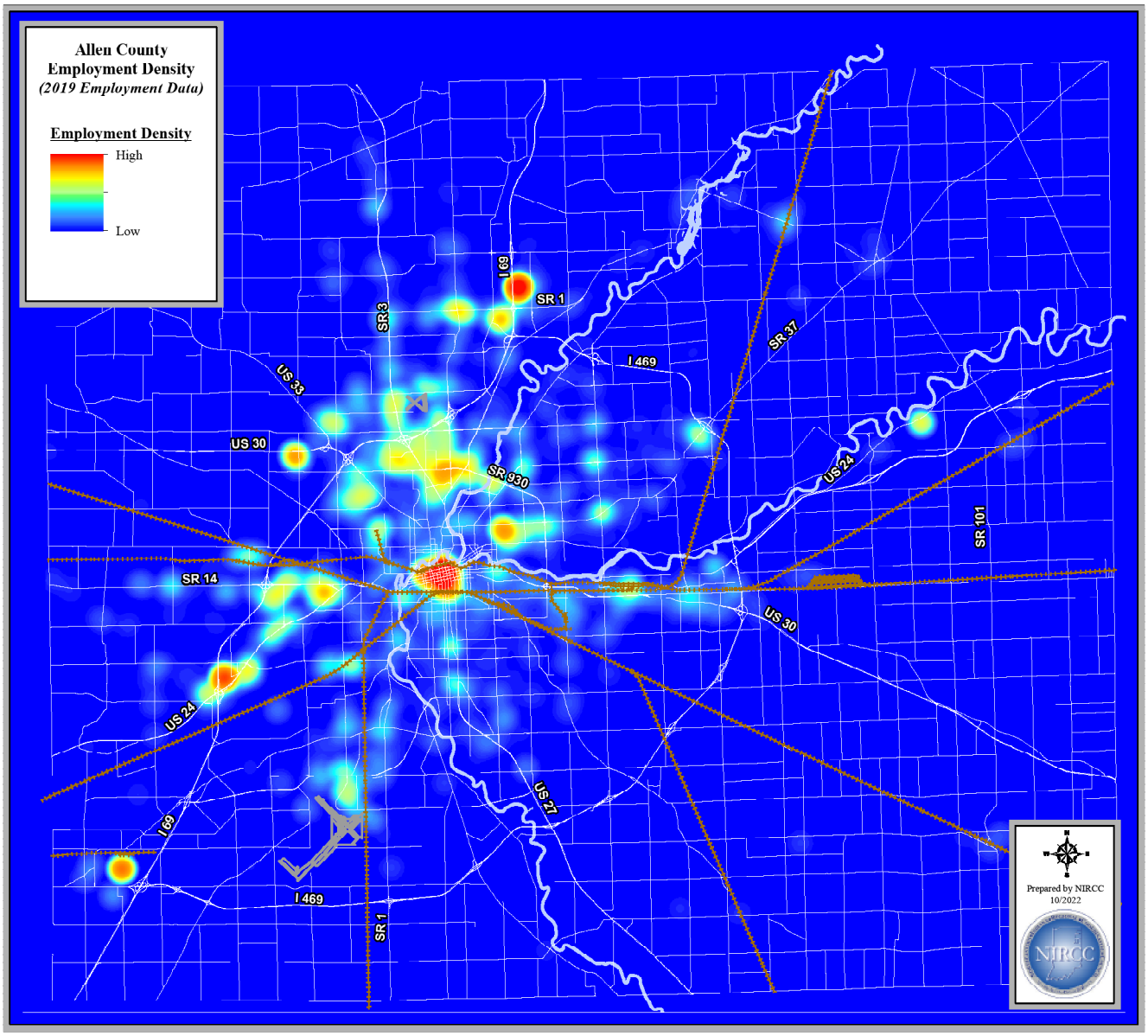

Figure 2-4

Employment Density 2019

and unoccupied units. The average ratio of persons per housing unit for Allen County was 2.34 in 2010 and 2.37 in 2020. The ratio for the Metropolitan Planning Area is slightly lower for 2020 at 2.36 per housing unit. As the population ages household size and persons per housing unit are expected to diminish slightly. The estimated persons per household ratio for the year 2045 in the MPA is 2.5 and persons per housing unit is 2.33. For Allen County, the estimated persons per household 2.51 and persons per housing unit is 2.36.

2. Planning efforts within Allen County including the Cities of Fort Wayne and New Haven will be able to influence the direction and magnitude of development. The communities of Grabill, Huntertown, and Leo-Cedarville will also impact development in the Metropolitan Planning Area. Most of the new development will occur in, or immediately adjacent to the urban area. This pattern of urban development will serve to limit sprawl and help preserve prime agricultural land. Development will take place in areas with suitable soil types. This expectation is consistent with the policies of the All in Allen Comprehensive Plan.

3. Through the development of the All in Allen Comprehensive Plan, three potential growth scenarios were considered. These include an infill scenario, an outward growth scenario, and an infill and targeted outward growth scenario. The preferred approach in the latter scenario, infill coupled with targeted growth in the peripheral areas, adjacent to existing development. The transportation plan is designed to support the preferred growth approach. Figure 2-5 displays Future Land Uses based on the Comprehensive Plan.

4. Population growth within the current corporate limits of Fort Wayne will occur primarily in areas currently undeveloped and zoned for residential use. There is also a considerable amount of housing currently under construction in the central business district, and additional housing is being planned. Moderate population growth is anticipated in neighborhoods where revitalization actions are being implemented. Recent changes to permitted density and lot size is intended to facilitate in-fill development.

5. Downtown Fort Wayne revitalization efforts will continue throughout the central business district and surrounding area, with substantial activity on the northern and southern fringes. The Riverfront Fort Wayne Development is on the northern fringe that includes a considerable amount of apartment and condominium development coupled with office and retail space. The southern fringe area is home to the Electric Works campus, a mixed-use district that includes office and co-working space; entertainment, food and neighborhood commercial; a range of residential opportunities; daycare and education offerings; and health and fitness centers. In addition, residential development and re-development within the central business district will continue. The New Haven downtown business district will continue to provide business and retail opportunities.

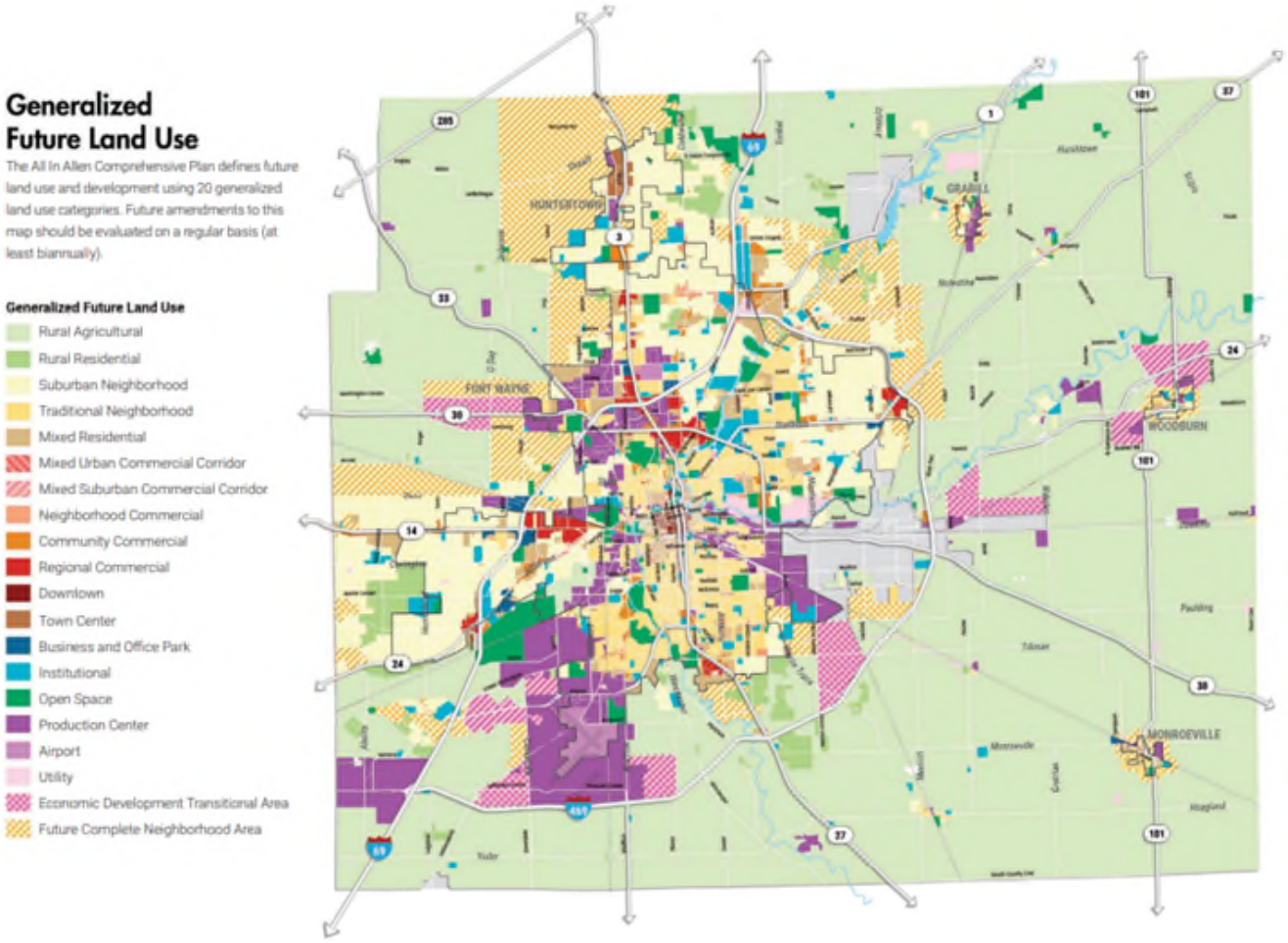

Figure 2-5

Future Land Use

6. A decline in population and housing due to restrictions on construction and reconstruction coupled with flood buy out programs in floodplain area. Local floodplain management activities will conform to the federal specifications and limited development will occur in floodplain areas. A floodplain map is displayed on Figure 2-6.

7. The limited amount of available land in St. Joseph Township will be developed for residential and commercial purposes. Aboite Township will continue to grow with new residential and limited commercial development in the western portion of Allen County, and in Lafayette Township near the IU Health Medical Campus. Cedar Creek and Perry Townships in the northern and northwestern sections of the urban area have recently experienced intense residential development. It is anticipated that these two townships will continue to have housing growth that will be followed with commercial development. Residential development will also occur in the southern portion of Lake Township south of the US 30 corridor and the northern section of St Joseph Township. Figure 2-7 displays recent residential building permits and rezonings.

8. Several areas have been targeted through the comprehensive plan for commercial and employment growth. These include the US 30 corridor west of Interstate 69; the area surrounding Fort Wayne International Airport and Airport Expressway corridor; southeast Fort Wayne and southwest New Haven along the South Maplecrest Road and Adams Center Road corridor and the eastern portion of New Haven between US 24 and US 30. In addition, development will continue to occur in designated Industrial Parks. The Metropolitan Area will continue to attract new industry and growth will also occur from the expansion of existing facilities. Industrial Parks and Industrial Sites are displayed on Figure 2-8.

9. The interchange of Interstate 69 and Lower Huntington Road is anticipated to be a focal point for new development. IU Health has a sizeable medical campus including a hospital planned in the northwest quadrant and some buildings are currently under construction. Ancillary medical office development is anticipated in the area along with commercial establishments that provide retail and support services for employees, patients, families, and visitors.

10. Residents and businesses will be more energy and environmentally conscious and utilize vehicles that are more fuel efficient and yield lower emissions. It is evident that electric and other alternative fuel vehicles will become more prevalent in the regional fleet mix. The average ratio of automobiles per household increased significantly throughout the 1980's and 1990's and then began to level off. It is expected that the ratio will remain stable and remain fairly constant. The Census American Community Survey data is used to estimate vehicle ownership. The current ratio for Allen County is 1.84, and the Metropolitan Planning Area is 1.85. The anticipated ratios for the year 2045 will remain the same.

11. The Metropolitan Planning Area will continue to be the focal point for residential, commercial, and industrial growth. It is anticipated that the urban area population will continue to grow at a higher rate than the surrounding rural portions of Allen County. Census population data has shown the percent of Allen County's population residing in the MPA has increased from 92 percent in

Figure 2-6

Floodplains

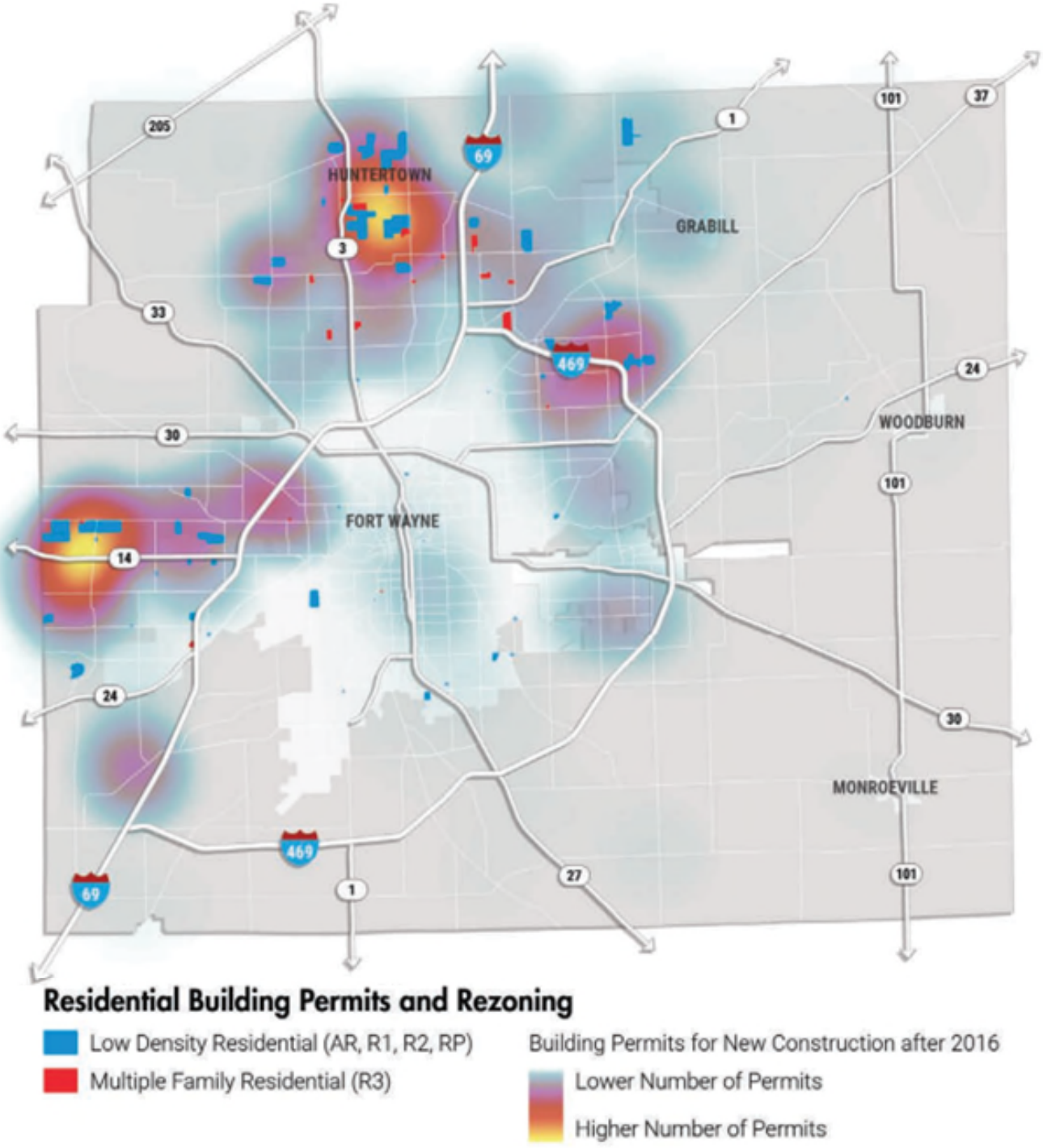

Figure 2-7

Residential Building Permits and Rezoning from 2016 to 2021

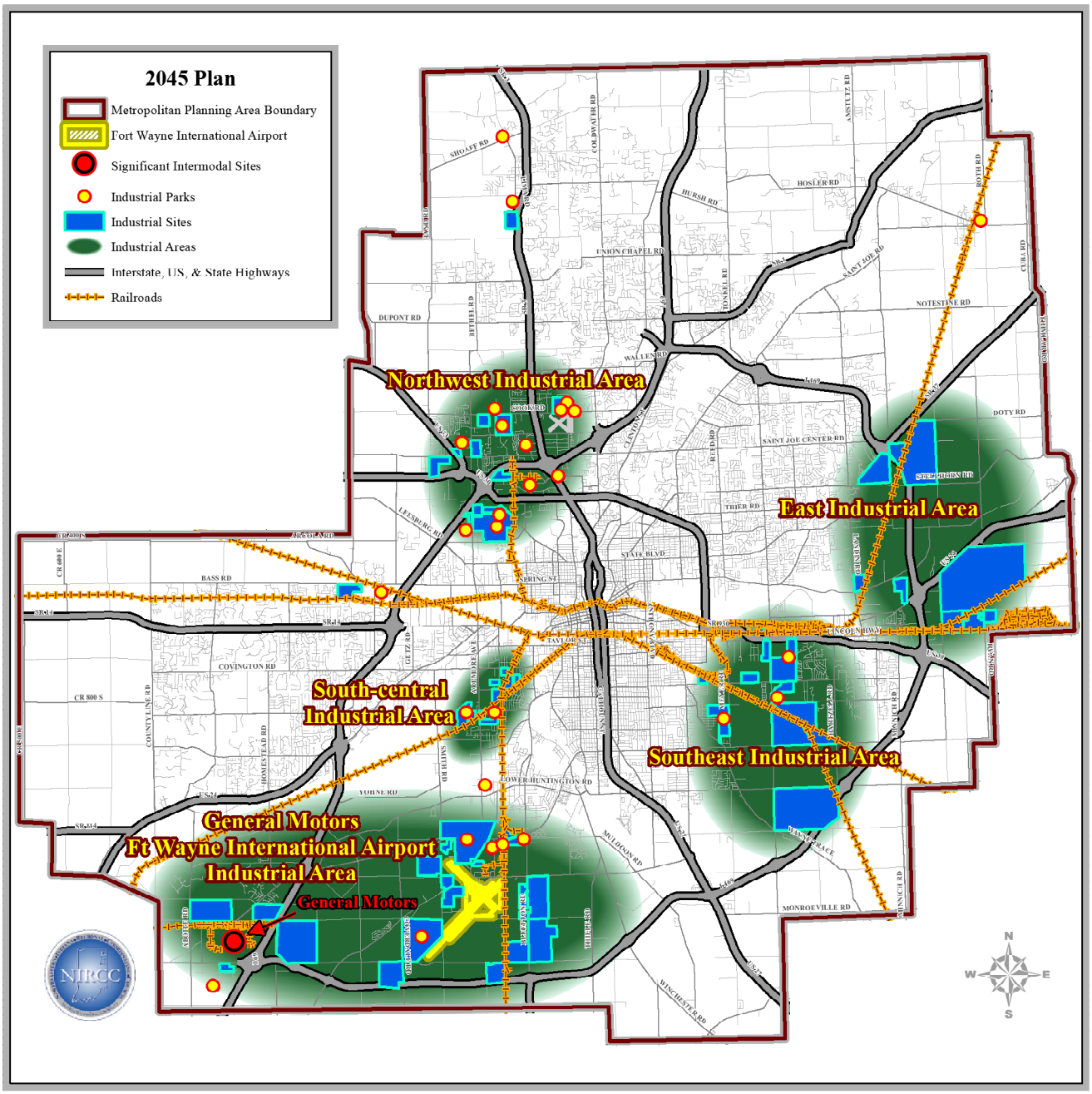

Figure 2-8

Industrial Parks and Sites

1990, 93 percent in 2000, and 94 percent in 2010, and 95% in 2020. The urban area share of total population will continue to increase slightly through the year 2045, when it's estimated 97% of Allen County's population will reside in the MPA.

12. Development will occur along Interstate 469, with concentrations of intense development near the major interchanges. The accessibility afforded by Interstate 469 is attractive for business development. The projected development along this corridor is associated with interstate type facilities. The availability of utilities, primarily water and sanitary sewer will be a limiting factor.

The 2045 socioeconomic conditions for the Metropolitan Planning Area were developed following these basic assumptions. The preliminary projections of future conditions were developed for the planning period with a horizon year of 2045. Control totals were established as reasonable ceilings for socioeconomic variables such as population, households, vehicle ownership, and employment. The projections were adjusted to reflect the characteristics of individual areas within the Metropolitan Planning Area. The methodology for preparing these projections is contained in the following discussion. The distribution of future socioeconomic data throughout the MPA followed guidance of future growth form the Comprehensive Plan and displayed in Figure 2-9. A table displaying the year 2045 socioeconomic data for each traffic analysis zone is provided in Appendix C.

Population

The history of establishing population control totals for the transportation plans provides some insight into the methods and modifications that have transcended from plan to plan. The development of a population control total for the Year 2000 Plan was conducted using the Cohort Survival method. This process was jointly completed in the late 1970's by the Allen County Plan Commission, Fort Wayne Community Development and Planning Department, and Northeastern Indiana Regional Coordinating Council. Through these efforts, a year 2000 population control total of 388,953 was established for the metropolitan area. Upon completion of the 1980 census, the population projection was revised due to less than anticipated growth. The control total was scaled down to 338,313.

A population control total of 340,492 was developed in 1986 for preparation of the Year 2005 Transportation Plan. This figure was considered somewhat conservative at this time estimating an average yearly population growth of approximately 1.3 percent. The 1990 census information indicated population growth in the metropolitan area had diminished further than anticipated. In 1992, the need to further scale down future population projections led to the development of a year 2010 population control total of 315,289 for the Metropolitan Planning Area. The population control total of 347,916, set for 2015, followed the assumption of moderate growth. This assumption provided for a relatively stable conservative growth rate of less than one percent per year.

The population projection for the 2045 Transportation Plan employed the same basic assumption that results in a conservative estimate. After the release of actual 2020 Census population numbers, a review of the MPA population indicated that it was approximately 366,760. Population projections were obtained from

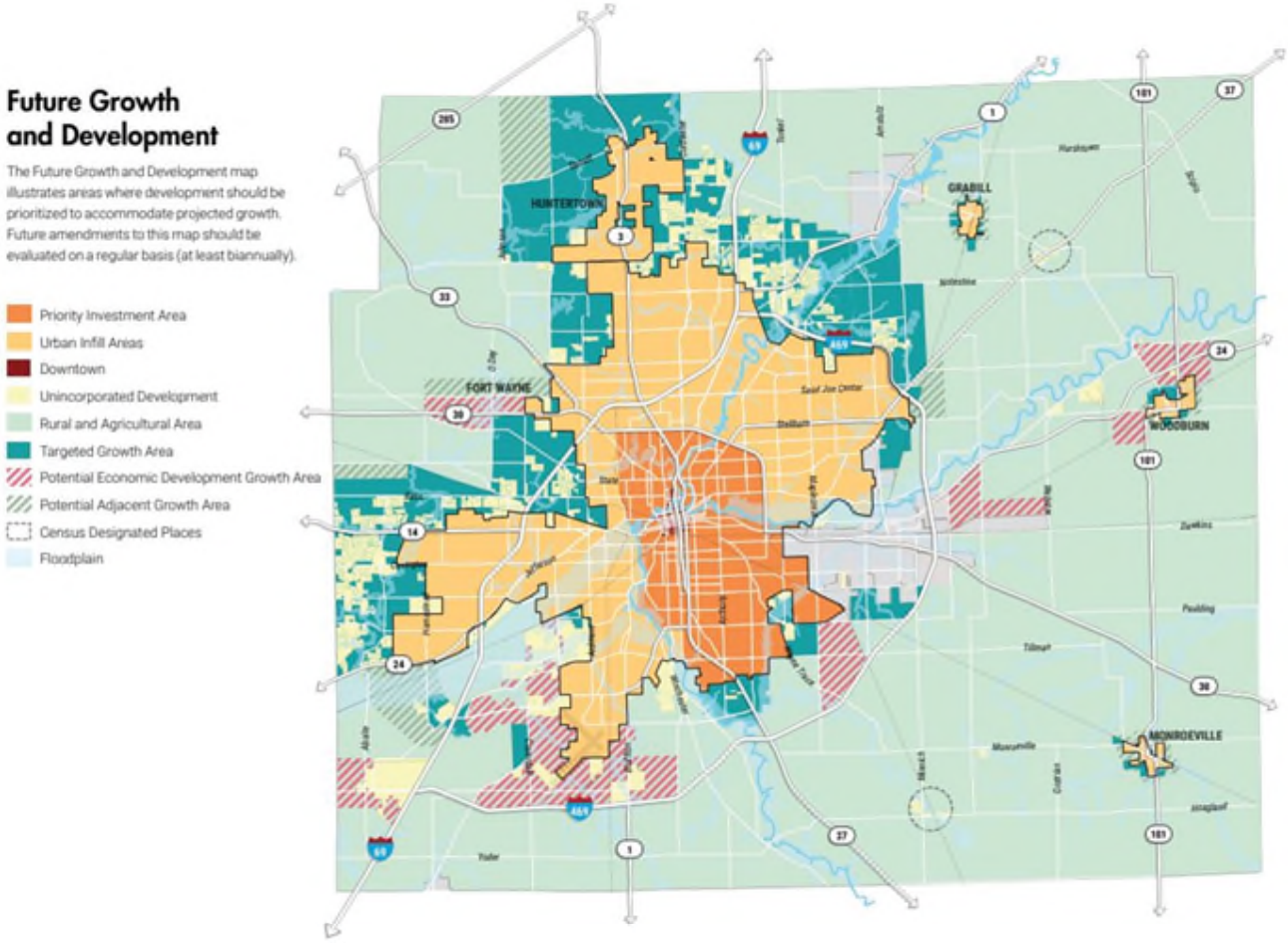

Figure 2-9

Future Growth and Development

STATS Indiana for the purpose of estimating the population for the 2045 horizon year. STATA Indiana uses data from the Indiana Business Research Center, IU Kelley School of Business. The methodology for these projections is described below.

The Indiana population projections were produced using the cohort-component method, with the U.S. Census Bureau's population estimates for 2015 (Vintage 2016) by age and sex for Indiana and its counties serving as the benchmark population figures. This method projects individual age-sex cohorts forward while applying specific mortality and migration rates. In addition, fertility rates are applied to the appropriate female cohorts to generate the number of births during each projection period. These projections follow the standard format of five-year age cohorts carried over five-year projection periods. The five-year cohorts begin with the 0-4 age group and extend through 80-84, with the final age group including all individuals age 85 and above.

Based on the projected population growth for Allen County, a 0.51% annual growth rate was derived establishing a 2045 population control total of 416,340 for the MPA. This represents a relatively conservative rate. Current Census Data shows Allen County grew 1.4% from 2020 to 2022.

The population distribution within the MPA to traffic analysis zones was conducted by first reviewing housing growth from 2015 to 2020. The recent housing growth was then compared to the projections developed for the 2040 MTP. Through assistance from staff of the land-use division of the Allen County Department of Planning Services and Fort Wayne Community Development and Planning Department, zones were individually analyzed for their development potential. Each zone was judged for its suitability for development based upon criteria such as land availability, access to utilities (water, sanitary sewer, etc.), current rates of development, density thresholds, soil types, and topography. Guidance was also obtained from local residential developers to gain insight on locations in the MPA likely to see residential growth. In addition, the Comprehensive Plan was used to guide housing growth.

The analysis yielded the expected number of new housing units to be constructed by the year 2045 for each zone. The persons per household ratios were applied to calculate the additional population for each traffic analysis zone. The additional population was added to the base year 2020 figures to gain a 2045 population estimate. Final adjustments were made to match the population projections with the control total. Special attention was placed on traffic zones which may reach their density thresholds, and individual zones with unusual characteristics such as floodplain zones, central business district zones, and zones in high growth townships.

Households

Housing projections were determined through the process described above for population estimates.

Each zone was individually analyzed for its residential development potential based upon criteria such as available land, public and private water/sewer utilities, and current housing development. Once estimated households were established, a ratio of persons per households was used to help establish zonal population projections. Checks were then made by aggregating the zonal population against the control total. Adjustments were made and figures were rechecked until a balance of households and population estimates was obtained. The average persons per household ratio is 2.33, lower ratios were used in zones where apartments and senior housing is anticipated and higher ratios for zones where traditional single-family homes are planned.

Vehicle Ownership

Vehicle ownership projections were derived by applying ratios of automobiles per household to the 2045 household figures. The expectation is these ratios will remain relatively constant through the year 2045 in the Metropolitan Planning Area. The average ratio of 1.87 automobiles per household was used as a guide, with certain zones receiving a higher or lower value depending on individual characteristics and historical information. The 2019 Census American Communities Survey data, including vehicles per household and average household income, guided the allocation of vehicles for each traffic analysis zone.

Employment

A land-use estimation process was used to derive the projections of employment for each zone in the metropolitan area. The staff of the Allen County Department of Planning Services, Fort Wayne Economic Development, Fort Wayne Re-Development and Alliance evaluated the Metropolitan Planning Area for development potential. Based upon this information, each zone was analyzed for potential commercial development and employment growth. The employment projections were divided into four major categories: industrial, retail, service, and office.

The estimations were based on recent trends and specific characteristics of each zone. Soil type, topography, zoning restrictions, access to utilities, and surrounding land uses were the major criteria used to evaluate the potential for development. The control guide for estimating future land development was based upon the assumptions discussed earlier in this chapter.

The 2019 employment data served as the base for the zonal employment estimates. The 2019 employment data was sourced from data axle information provided by INDOT. The 2019 data axle data included sole proprietor data that wasn't available in past estimates. Due to the increase in contractual, freelance and home-based employment for both primary and supplemental employment, this employment was included in the base data. The employment data was allocated to traffic zones.

STATS Indiana employment forecast for 2045 was utilized to determine a growth rate to establish an

employment control total. STATS Indiana basis the labor force projections on the Indiana Business Research Center's population projections, and age and sex-specific labor force participation rates (LFPR) for the state and each county derived from the U.S. Census Bureau's 2015 and 2016 American Community Surveys (ACS).

The targeted growth areas identified in the Comprehensive Plan served as a guide for allocating future employment. The additional employment figures were added to the base 2019 figures to derive zonal employment data for the year 2045.

Other Trends Affecting Travel

The American Community Survey data provides information on the mode of transportation used by workers over the age of 16 to commute to their jobs. A comparison of the 2015 one-year data to the 2019 one-year data is provided in Table 2-2. Shifts between modes were subtle between 2015 and 2019 showing a slight decrease in drive alone work commute coupled with a slight increase in carpool and public transit. The percentage of residents that reported they worked at home also saw a slight increase. The mean travel time to work also increased by 1.2 minutes.

Table 2-2: 2015 and 2019 Mode of Travel to Work Data

Mode of Travel to Work	2015	2019
Drive Alone	83.9%	82.4%
Carpool	9.3%	10.0%
Public Transit	0.7%	1.0%
Walk	1.6%	1.5%
Other	0.6%	0.8%
Worked at Home	3.9%	4.3%
Mean Travel Time (minutes)	20.8	22

NIRCC calculates a statistically valid estimate of annual average weekday vehicle miles of travel (VMT) derived from its traffic counting program and reporting process. Table 2-3 displays the weekday VMT for the years 2015 through 2022. The trend has been a gradual but slow growth increase in weekday VMT prior to the COVID pandemic. Since the pandemic, the VMT has been fairly steady but displays a slight

decline. It's difficult to predict at this time if the decline in VMT is a short-term outcome of the pandemic and rampant inflation, or if permanent impacts of remote working and other cultural shifts will continue to impact VMT.

Table 2-3: 2015-2022 Weekday Vehicle Miles of Travel

Year	Weekday Vehicle Miles of Travel	Percent Change
2015	8,875,806	-
2016	8,954,884	.89%
2017	9,078,230	1.4%
2018	9,065,958	-.14%
2019	9,315,817	2.8%
2020	9,070,242	-2.6%
2021	9,022,747	-0.53%
2022	8,943,999	-0.87%

Citilink, the transit operator in the Fort Wayne Urbanized Area maintains ridership information. Annual transit ridership for 2015 through 2019 is displayed in Table 2-4. The annual ridership has trended down from 2015 to 2019.

Table 2-4. 2015-2019 Total Annual Transit Ridership

Year	Annual Transit Ridership	Percent Change
2015	1,960,578	-
2016	1,860,413	-5.11%
2017	1,768,318	-4.95%
2018	1,767,067	-.07%
2019	1,676,800	-5.11%

Summary

The socioeconomic data for the base year coupled with historic and recent trends provides for reliable estimates of the 2045 horizon planning year socioeconomic activity. The planning year estimates were

used to forecast future transportation needs and to identify transportation improvements necessary to meet those needs. The socioeconomic data developed for this study included estimates of population, households, vehicle ownership, and employment. Existing and projected land uses are an important input to the transportation plan due to the close relationship between land use and travel demands. The 2020 year and projected 2045 horizon year socioeconomic variables are provided in Table 2-5. The MPA socioeconomic data by county is displayed in Tables 2-6 and 2-7.

Table 2-5: Summary of Base Year and Horizon Year Socioeconomic Variables

Socioeconomic Variable	2020 Base Year MPA	2045 Horizon Year MPA
Population	366,762	416,340
Housing Units	155,375	178,302
Vehicles	286,672	333,847
Ownership Per Household	1.85	1.87
Employment		
Retail	30,213	32,034
Industrial	63,732	67,615
Office	88,340	92,962
Service	60,454	63,488
Total	242,739	256,099

Table 2-6: MPA 2020 Base Year Data by County

Year 2020	Allen County	Huntington County	Whitley County	Total MPA
Population	365,190	133	1,439	366,762
Housing Units	154,714	63	598	155,375
Employment	242,352	15	372	242,739

Table 2-7: MPA Projected 2045 Horizon Year Data by County

Year 2045	Allen County	Huntington County	Whitley County	Total MPA
Population	413,884	150	2,306	416,340
Housing Units	177,312	70	920	178,302
Employment	255,712	15	372	256,099

The COVID Pandemic impacted the local economy and travel during 2020 and 2021, therefore assumptions are based on 2019 employment data and American Community Survey Data. Population and housing unit data were derived from the 2020 Census redistricting block data. In 2022 and 2023 the economy appears to be rebounding and vehicular traffic is relatively stable. Transit ridership is lower in 2022 that during pre-COVID years but appears to be steadily increasing.

Consideration of available housing, land use, redevelopment, recreation, and economic development plans and efforts supports the comprehensive approach encompassed throughout the development of the transportation plan. This atmosphere sets the stage for the formulation of planning assumptions guiding the transportation planning process that is consistent with the vision established by the All In Allen Comprehensive Plan. The MTP is designed to support this vision and implementation of the Comprehensive Plan. The forecast of future travel demands is built upon this foundation of solid socioeconomic guidelines.

Chapter 3
TRAVEL FORECAST: 2045 TRAVEL DEMANDS

The principal function of the year 2045 transportation plan update is to develop forecasts of the 2045 travel demands in the Fort Wayne-New Haven-Allen County region. The travel demands are based upon the projected socioeconomic data representing future activity within the Metropolitan Planning Area. The existing highway system was utilized for the initial evaluation of capacity deficiencies. The existing highway system includes several completed projects that were constructed during the tenure of the 2040 Transportation Plan.

The Congestion Management Process (CMP) (see Appendix A) provided the basis for the initial assessment. The CMP includes a systematic data collection and analysis feature that evaluates highway performance based on hourly volumes and available capacity. The volume to capacity ratios provides sufficient information to assess corridor performance during peak periods and estimate the duration of any congested conditions. Through this series of analyses, future deficiencies were analyzed and evaluated, and project justification was developed.

Travel Forecasting Process

The NIRCC Travel Demand Model (TDM) is a data-driven, trip-based model that predicts short- and long-distance passenger and commercial vehicle flows. The model combines travel demand model techniques with observed flows from passively collected data ("big data") to produce more robust trip tables for the base- and future-year scenarios.

Big data ensures the NIRCC TDM forecasts are grounded in the reality of current travel patterns. Big data also permits more frequent updates as new data becomes available. Data-driven models are growing in popularity in response to the availability of big data. In this modular, data-driven framework, all the forecasts pivot off current actual traffic patterns observed in the big data, with synthetic models only providing growth and changes.

The model was overhauled from an older version of the TransCAD model and calibrated to match observed travel patterns for the base year of 2019. Model outputs from the updated 2019 model include trip flows, traffic volumes, volume-to-capacity ratios, speeds and delays, and vehicle miles traveled by mode, both metropolitan and split out by roadway class and volume groupings.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation Act (FAST) emphasized performance-based planning. This emphasis required a shift to more data-driven development of performance measures and targets and models. Big data is making this

increasingly possible. However, it is important to reconcile these new data sources with traditional data sources such as traffic counts. This is because the new data constitutes a convenience sample that is not evenly representative of the whole population.

The shift to data-driven forecasting methods is motivated and rooted in an understanding of and respect for the limits of synthetic modeling. The data-driven method of the NIRCC uses models to predict likely changes in new travel patterns while relying more on the actual data of travel patterns than on models.

The modeling system was implemented using an incremental forecasting process (Figure 3-1). This process applies the forecast and base year models to produce synthetic travel patterns for each year. This growth in travel is then added to the observed travel patterns to produce the forecast travel pattern that is built on the foundation of observed data.

Figure 3-1

Incremental Forecasting Process

The NIRCC TDM represents and predicts the equilibrium between travel demand and network supply. At a high level, the model design has four basic groups of components: an initial data processing stage focused primarily (but not exclusively) on network supply variables, passenger demand models, commercial vehicle demand models, and final processing and network equilibrium models. Figure 3-2 illustrates these basic groupings and model flow and sequence.

At the next level, the passenger demand models comprise short- and long-distance resident daily trip models. The commercial vehicle models comprise single- and multi-unit truck models and a light commercial vehicle model. The NIRCC travel demand model uses a data-driven approach, pivoting off base year travel demand patterns derived from location-based services (LBS) passenger data from Streetlight Data. The pivoting occurs in the assignment preprocessing steps.

The passenger models are of a general trip-based design that predicts demand for a typical weekday (spring/fall) to represent an average annual daily demand for travel. Development of additional models

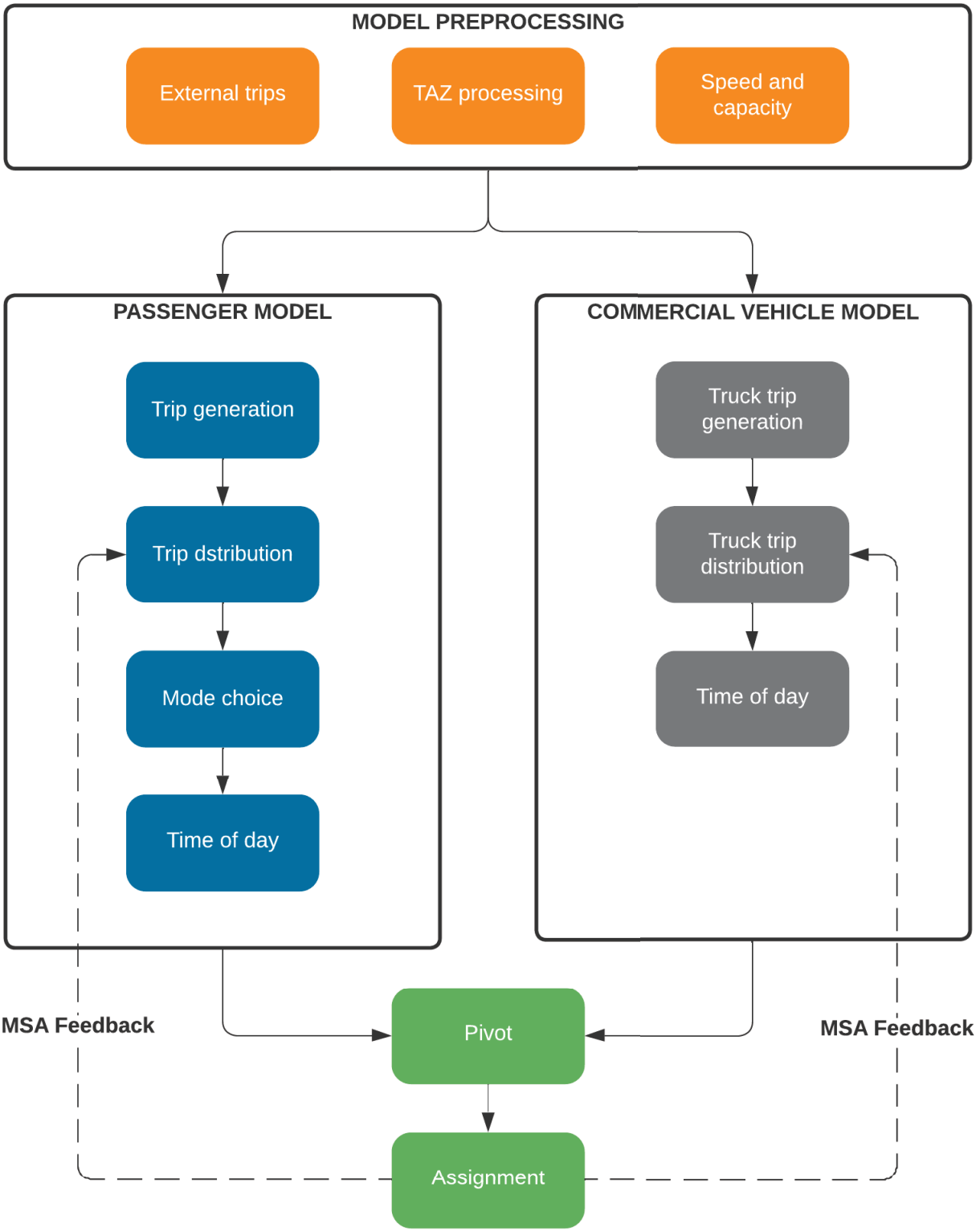

Figure 3-2

Travel Forecasting Procedure

representing weekend or seasonal travel can be considered for future model improvements. Vehicle assignments produce link volumes for autos (passenger vehicles + four tire commercial vehicles) and trucks (single-unit and multi-unit trucks).

Travel Forecasting Procedure

The travel demand-forecasting model used for the Metropolitan Planning Area follows standard guidelines, yet it is specially tailored for this area. The NIRCC model utilizes a GIS-based travel demand modeling software, TransCAD offers sophisticated and robust modeling procedures and powerful customization through its proprietary software language, GISDK, all built on top of a modern Geographic Information System (GIS). The underlying NIRCC TDM models are implemented in the GISDK code and are accessible through a custom-built model user interface. Peak-period modeling capabilities are also embedded in this model through time-of-day (TOD) models. The NHTS Add-On and NIRCC's 2012 household survey together with a Citilink transit on-board survey was fully analyzed to derive key modeling components such as trip generation rates, trip length frequency distributions, mode shares, time-of-day distributions and vehicle occupancy rates. Trips are loaded onto the highway system with a capacity restraint trip assignment procedure. This procedure replicates how drivers choose an alternative route when their preferred route becomes congested. Only the general approach to the modeling process will be described in this section to set the context for discussions regarding results of the travel forecasting procedure.

Major features of the NIRCC TransCAD model are summarized as follows:

Study Area. The model study area previously only covered the NIRCC planning area (portions of Allen and Whitley Counties), the new network and TAZ structure covers the NIRCC planning area, plus it has been expanded to fully cover Allen County. Trips external to this study area (i.e., external-internal or external-external trips) are captured by 31 external stations.

TAZ Development. TAZs were appropriately defined throughout the study area to be bounded by the modeled roadway network with a minimum of network passing through any zone. Each TAZ is populated by demographics and employment attributes not only for the 2020 base year but also for 2045. There are a total of 620 internal TAZs in the MPA.

Network Update and Transit Route Development. The highway network was updated with more roadway data sources and the current traffic count data. The network includes extensive geometric and operational link attributes. Traffic signals were also coded in the network to estimate delays associated with this control device. Consistent with the new TAZs, network details with proper centroid connectors were appropriately added throughout the study area. The transit route component has been developed concurrently with the development of the roadway network and TAZ's, so that any special considerations

needed for transit modeling are accommodated in the design of the new TAZ structure and/or road network. The development is done for all fixed bus service routes.

Improved Estimation of Free-Flow Speeds and Link Capacity. Instead of using posted speed limits as a surrogate for free-flow speeds, free-flow speeds were estimated based on a tool developed by Corradino. The new tool was developed from GPS and other speed surveys conducted in the NIRCC and other areas. Based on the speed surveys, the relationship between free-flow speeds and several determining factors such as posted speed, access control and area type were identified for each facility type. This relationship was expressed in various forms of nonlinear regression models. Geometric and operational link data were utilized for improved estimation of link capacities. It calculates the speed and capacities based on the concepts presented in the HCM2010. This methodology derives various capacity adjustment factors from bi-factor nonlinear regression formula. The estimated peak-hour capacities were then converted to peak and off-peak period capacities.

Intersection Delays. Delays associated with traffic signals were estimated to adjust directional link free-flow speeds and capacities. The HCM 2010 method of calculating vehicle delay that takes into consideration green time and progression effect was adopted.

External Trip Estimation. External travel to the model area was estimated by assigning traffic counts to external gates and identifying external to external (X-X) and external to internal/internal (X-I) to external trips. Utilizing the available observed passive data, the traffic counts at external gateways are split into the portion of the traffic count by classification representing X-X and X-I. Once the traffic count is split, then iterative proportional fitting (IPF) is utilized to ensure that the external observed passive data origins and destinations were scaled exactly to match the classified traffic counts at external gateways to the model.

Trip Generation Model. Simply speaking, travel demand modeling is the process of translating different types of trips into vehicular traffic on the network. Trip production and attraction models were developed for each of these trip purposes through various statistical analyses using trip data from the NHTS Add-On and NIRCC's Household Travel Survey data.

Trip Distribution Model. The updated NIRCC travel demand model uses a destination choice modeling process for trip distribution, replacing the previous gravity model approach. The destination choice model takes into consideration the built environment and better accounts for travel by all modes of transportation. Destination choice models belong to the family of discrete choice models and are derived from the principle of utility-maximizing choice. Destination choices of individual travelers are described by a function of the attractiveness of destinations, origin-destination travel conditions, and personal characteristics that influence the response to the attractiveness and travel conditions. Travel conditions between an origin and

a destination may be measured by travel time and cost for one or more modes available to the traveler. Personal characteristics that influence the choices may include a variety of socioeconomic variables.

Mode Choice Model. The NIRCC travel demand model mode choice model is a nested logit model implemented entirely within TransCAD. The mode choice model for the 2019 base year is significantly different than one developed for the previous version of the model. Major changes include setting the coefficients to values within the range recommend in current FTA guidance, and application of separate mode choice models by market segments related to auto availability.

Time-of-Day Models. The model consists of four time-of-day (TOD) models: morning peak, midday, evening peak, and night. Modeling factors that are unique to each time period were derived from the NHTS Add-On and NIRCC's Household Travel Survey data. Compared to a single daily model, the TOD modeling generates a more accurate travel model by treating each period uniquely.

Truck Model. Travel patterns of trucks are different from those of passenger cars, thus it is desirable to have a separate truck mode in the model. The Commercial Vehicle Model generates commercial vehicle trips in four-tire commercial vehicles, single-unit trucks, and multi-unit trucks. The model was previously adapted from the Quick Response Freight Manual (QRFM). The trip generation rates were recalibrated based on passive data using the previous models' rates as a starting point. Commercial vehicle trip distribution was calibrated as part of this model update to resemble the passive data.

Pivot Procedure. The travel demand model features a pivot procedure whereby observed passive data passenger vehicle and commercial vehicles are directly integrated into the model workflow. With pivoting enabled the model generates an O-D matrix for the two vehicle classes that is a function of the observed passive data and base and future synthetic matrixes. This method leverages the availability of big data and allow the model to reproduce observed travel more faithfully since the forecasts stem from current traffic conditions.

Vehicle Trip Assignment and Feedback Loop. Link free-flow speeds derive the first phase of the model run, or initial assignment. It is used for network skimming, trip distribution and route choice. Following the first phase, link congested speeds are estimated and used to redistribute trips in subsequent model runs, or feedback assignments. The final assignment results are obtained from the feedback assignment.

Transit Trip Assignment. The link congested speeds and travel time are used to assign the transit passengers onto the transit routes. The assignment rule is to find the shortest path of the general cost for passengers. The generalized costs are a combination of travel time, cost and other factors.

Analysis of Regional Activity Forecasts

Regional control totals were established for each variable as the first step in the projection of year 2045 socioeconomic conditions. Table 3-1 compares base year (2020) and forecast year (2045) regional control totals for each of the key variables influencing travel demands.

Table 3-1. Summary of Regional Socioeconomic Variables

Socioeconomic Variable	2020 Base Year	2045 Forecast Year	Percent Increase	Annual Percent Rate
Population	386,996	439,334	13.52%	0.51
Housing Units	163,096	186,923	14.61%	0.55
Automobiles				
Ownership	304,250	353,501	16.19%	0.60
Per Household	1.87	1.89		
Employment				
Retail	30,541	32,442	6.22%	0.24
Industrial	67,479	72,144	6.91%	0.27
Office	89,248	94,039	5.37%	0.21
Service	61,763	64,986	5.22%	0.20
Total	249,031	263,611	5.85%	0.23

The socioeconomic projections reveal modest increases in all the major socioeconomic variables for the Metropolitan Planning Area. The projections for population and households indicate relatively steady and comparable growth. The projected housing growth slightly out-paces the population growth. This is due primarily to new housing starts growing at a faster rate than the population in the MPA from 2010 to 2020. It is assumed that these growth rates will stabilize.

The overall population and housing assumption reflects a stabilization of average persons per household. Population growth has gradually slowed since 1970 within the Metropolitan Planning Area. Housing growth has remained fairly consistent with some short periods of slow growth during the past twenty years. Since 1985 the area has experienced active housing development. The 2020 Census indicated that the ratio of persons per housing unit was 2.37 for the Metropolitan Planning Area. The 2045 persons per housing unit ratio is 2.35 indicating the stabilization of this value.

In the late seventies and early eighties assumptions concerning auto ownership, based on recent fuel

shortages, anticipated that limited energy resources and increasing costs would induce a reduction in automobile ownership. This phenomenon never occurred. Automobiles became more fuel-efficient and their size was reduced. Fuel prices dropped and stabilized. Auto ownership continued to rise. It is anticipated that this trend will stabilize in the near future as we reach saturation levels of vehicles per household and as households decrease in size. The forecasted automobile ownership values for 2045 are consistent with the existing ratio of automobiles per household.

Retail employment has been the fastest growing source of employment in the Fort Wayne area since the 1970's. A steady growth rate in this employment category is expected to continue but will level off and begin to increase more gradually. The employment figures indicate continued growth in retail employment.

Industrial employment has remained consistent over time with a conservative growth pattern. The loss of International Harvester and related industrial employment in the early eighties was partially offset by the new General Motors assembly plant and associated manufacturing facilities built in the mid nineteen-eighties. Warehousing and distribution centers have also contributed to continued growth in this category.

Office employment has remained fairly consistent with respect to its rate of growth over the years. This category is expected to be slightly lower than the retail sector for new growth in upcoming years. The finance, real estate, and health care trades are represented by this category. Service employment has also remained consistent with respect to its rate of growth over the years. This category will see a slightly lower growth rate than the other categories. The accommodation, restaurants, education, and administration trades are represented by this category.

The general growth patterns of the socioeconomic variables indicate that existing travel corridors will remain important to the basic travel patterns of the year 2045. The northern and northwest areas of the region will remain active in terms of socioeconomic growth, especially along the State Road 1 corridors. The areas around major interchanges of Interstates 69 and 469 remain attractive for development.

The new residential and employment centers will intensify the travel demands on existing corridors and create the need for managing congestion through traffic operation improvements, widening facilities, extending new roads, improving transit service, implementing intelligent transportation system strategies, and controlling access more efficiently. There is a resurgence of development within the downtown core, with planned commercial, residential, and recreational areas. These include the Riverfront area, the Landing, and the Electric Works developments. Development is becoming more balanced between the urban and suburban areas.

Trip Generation

The trip generation model used population, employment, household size, workers and vehicles per household, and household income to estimate the number of trips starting and ending (trip ends) in each zone. The socioeconomic data utilized for trip generation is provided in Appendix's B & C. Trip ends were estimated for eight different internal purposes: Home Based Work Low Income, Home Based Work High Income, Home Based Shopping, Home Based Other, Home Based School, Home Based Univ/ College, Non Home Based Work, and Non Home Based Other trips.

Table 3-2 summarizes the regional level results of the application of the trip generation models to the projected socioeconomic characteristics. The productions and attractions by trip purpose are provided for the years 2020 and 2045. The relative proportion of trips by purpose show little change between the forecasted years.

Table 3-2. Travel Demand Forecast Regional Summary

	Productions					Attractions			
Trip Purpose	2020 Trips	2020 Percent	2045 Trips	2045 Percent	Trip Purpose	2020 Trips	2020 Percent	2045 Trips	2045 Percent
HBWLO	70,423	5.1%	78,688	5.0%	HBWLO	70,405	5.1%	74,582	5.0%
HBWHI	109,434	7.9%	131,730	8.3%	HBWHI	109,395	7.9%	115,932	7.8%
HBS	173,841	12.6%	199,908	12.6%	HBS	173,822	12.6%	184,623	12.4%
HBO	405,746	29.5%	469,454	29.6%	HBO	405,667	29.5%	447,046	30.0%
HBSCH	150,445	10.9%	174,658	11.0%	HBSCH	150,480	10.9%	165,904	11.1%
HBU	18,191	1.3%	21,437	1.4%	HBU	18,176	1.3%	19,996	1.3%
NHBW	64,989	4.7%	75,498	4.8%	NHBW	64,989	4.7%	68,787	4.6%
NHBO	248669	18.2%	288,445	18.2%	NHBO	248,509	18.2%	271,278	18.1%
TRK	135,429	9.8%	144,300	9.1%	TRK	135,429	9.8%	144,300	9.7%
Total	1,377,167	100.0%	1,584,118	100.0%	Total	1,376,872	100.0%	1,492,448	100.0%

HBWLo= Home-Based Work Low Income Trips
HBWHi= Home-Based Work High Income Trips
HBS= Home-Based Shopping Trips
HBO= Home-Based Other Trips
HBSCH= Home Based School - K12
HBU= Home Based Univ/College
NHBW= Non Home Based Work
NHBO= Non Home Based Other

The number of trip productions and attractions for 2045 are logically higher than those forecasted for 2020. This increase in trips is directly attributed to the increase in socioeconomic variables. The primary variables affecting the increased number of trips include households, automobile ownership, and employment.

Trip Distribution

The shortest path between zones is an input to the logsums for the Destination Choice models. Logsums are commonly used in travel demand modeling as a combined impedance across multiple modes rather than using travel time by a singular mode between an OD pair. The TransCAD pathbuilder utility identifies the shortest route between origin-destination pairs by minimizing a term called impedance. Impedance

in the context of travel demand models can be defined as the general cost associated with travel between an origin-destination pair. The general cost (impedance) is a compound function representing travel time, distance, and other travel related costs. Skims provide impedances between zones; and there are skim matrices for specific modes like highways (vehicles), transit (buses), non-motorized (walk and bike). Travel time skims represent the shortest path between each zone pair in the model network. Travel time skims are sensitive to mode and link-based restrictions.

The productions and attractions by trip purpose and auto sufficiency are balanced and organized into separate market segment files. These values are the output of trip generation and market segmentation steps mentioned previously. The destination choice models are used to predict the amount of travel interaction between zones for a given trip purpose. The updated Destination Choice Model was validated against observed spatial travel behavior. One measure of goodness of fit, used the aggregate vehicle flows between different districts in the model and compared to those derived from expanded passive data. The modeled district to district trip interaction is tracking very closely to the expanded passive data OD table.

The results of the 2045 trip distribution of forecasted travel desires indicate an increase over the current distribution. This is expected due to the increase in socioeconomic activity. The general trends appear similar with suburban-to-suburban activity continuing to increase. The attractiveness between suburban areas and the central urban core will remain important and increase proportionately with redevelopment activity.

Evaluation of the Transportation System

The travel demands are based upon the projected socioeconomic data representing future activity within the Metropolitan Planning Area. The existing highway system was utilized for the initial evaluation of capacity deficiencies. The existing highway system includes a number of completed projects that were constructed during the tenure of the 2035 Transportation Plan.

Existing Highway System

The existing highway system was utilized for the initial evaluation of capacity deficiencies. The recently completed projects are displayed in Figure 3-3. The Congestion Management Process (CMP) (see Appendix A) provided the basis for the initial assessment. The CMP includes a systematic data collection and analysis feature that evaluates highway performance based on hourly volumes and available capacity. The volume to capacity ratios provides sufficient information to assess corridor performance during peak periods and estimate the duration of any congested conditions.

The lane capacities utilized in the CMP are designed to represent the practical capacity based on a Level-of-Service D. The basic lane capacities are based on a relationship of facility type (i.e. freeway, arterial,

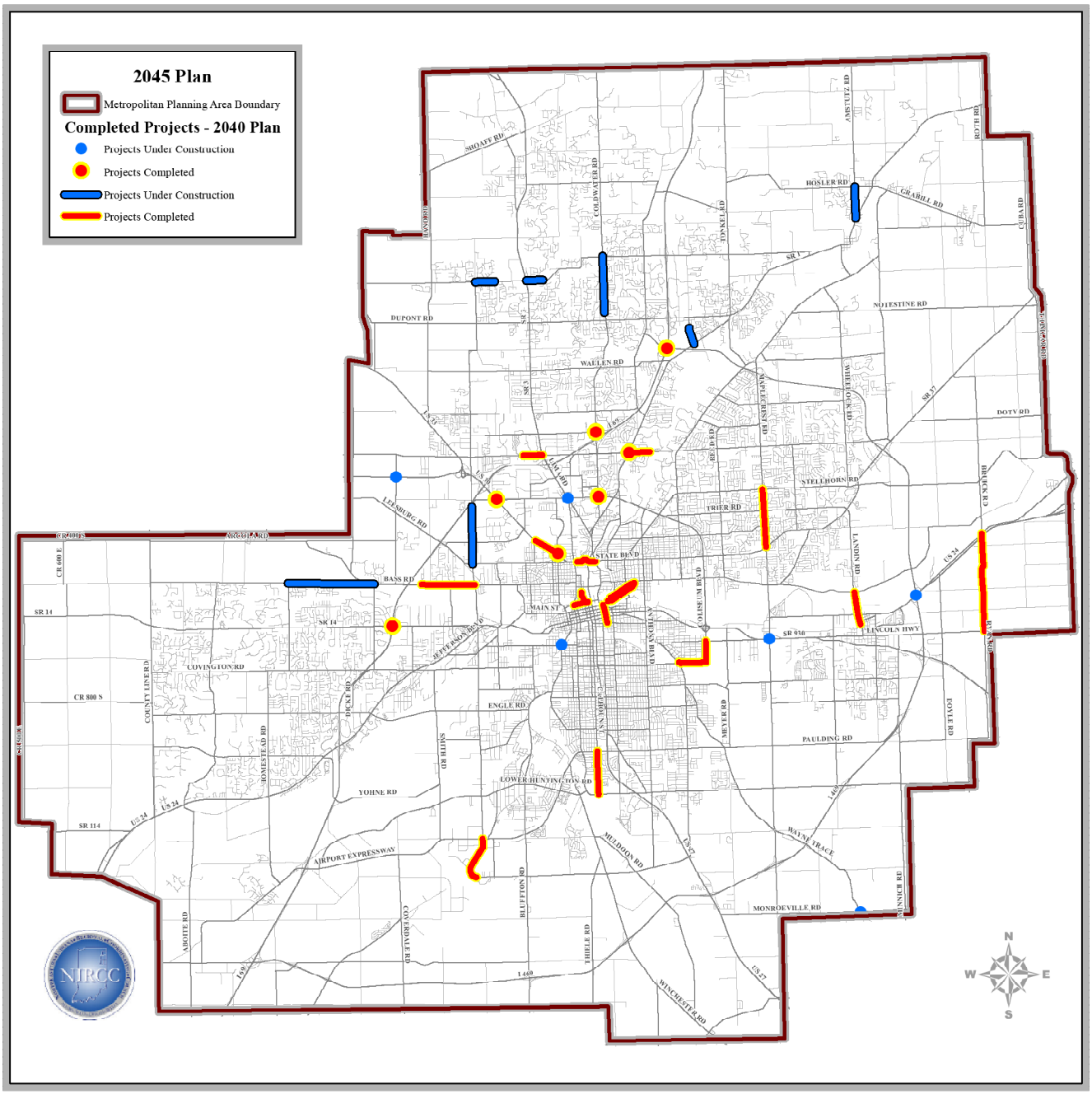

Figure 3-3

Completed Projects from the current 2040 Plan

collector, etc.) and geographic area that reflects the land use and travel characteristics (i.e. central business district, suburban, rural, etc.). These two criteria are important determinates of lane capacity. Table 3-3 displays the basic lane capacities used for the CMP evaluation process. Exceeding the level-of-service D lane capacities (defined as a ratio of volume to capacity greater than 1.0) indicates situations of levels of service "E" or "F" exist on a corridor or section of roadway. Levels of service "E" and "F" represent congested conditions and failure of the system to efficiently meet travel demands.

Table 3-3 Lane Capacities

	Highway Class				
Land Use	**Interstate**	**Expressway**	**Two-Way Arterial**	**One-Way Arterial**	**Collector**
CBD	1800	745	605	650	480
CBD Fringe	1800	790	715	715	575
Suburban	1800	865	715	805	575
Rural	1800	820	590	n/a	540
Outlying CBD	1800	790	715	715	575

The deficient corridors currently operating under congested conditions are displayed in Figure 3-6. These corridors served as the initial assessment for identifying strategies to reduce and eliminate congested conditions. The CMP evaluates a variety of improvement strategies including transit; bicycle and pedestrian; management and operations; and minor roadway improvements before considering added capacity projects. The CMP evaluation is also validated through the travel forecasting process which furthers the evaluation of congested conditions to the horizon year of the plan. This evaluation is based on the projected socio-economic conditions for the region.

The lane capacities utilized for the travel forecasting process represent Initial Vehicles per Lane per Hour Assumption (VPHPL) for the various facility types. The VPHPLs are provided in Table 3-4. These capacities are then adjusted within TransCAD based on operational and geometric characteristics such as the number of lanes, types of shoulders, and location. The use of vehicles in this situation includes a mixture of passenger cars, light-duty trucks, heavy-duty trucks, tractor-trailers, buses, and recreational vehicles. The capacities established represent travel characteristics within and near the urban area and are more sophisticated than the capacities utilized in the CMP. The travel demand forecasting process utilizes a capacity restraint and equilibrium assignment process that adjusts route selection based of congestion and travel time replicating typical human travel behavior. This process allows for the identification of highway corridors where capacity problems will arise in the future. These locations will be referred to as capacity deficient or deficient corridors. Simply stated this translates into congestion and congested corridors. This evaluation is conducted using a link-by-link analysis. The results of this evaluation will be discussed in the conclusion of this chapter.

Table 3-4: ICAP - Initial Vehicles per Lane per Hour Assumption								
		Speed						
FACILITY	Decription	<45	45	50	55	60	65	70
1L1W_rur	One lane one way, rural	1900	2000	2100	2200	2200	2200	2200
1L1W_sub	One lane one way, suburban	1900	2000	2000	2250	2250	2250	2250
1L1W_urbcbd	One lane one way, all urban	1900	2000	2000	2250	2250	2250	2250
2d_rur_pa	Principal arterial, two-way, rural	1900	1900	1900	2200	2200	2200	2200
2d_sub_pa	Principal arterial, two-way, suburban	1900	1900	1900	2200	2200	2200	2200
2d_urbcbd_pa	Principal arterial, two-way, rural	1900	1900	1900	2200	2200	2200	2200
2xd_rur	Two lane, two direction, rural	1700	1700	1700	1700	1700	1700	1700
2xd_sub	Two lane, two direction, suburban	1700	1700	1700	1700	1700	1700	1700
2xd_urbcbd	Two lane, two direction, all urban	1700	1700	1700	1700	1700	1700	1700
ML1W_rur	Multilane, one-way, rural	1900	2000	2100	2200	2275	2350	2400
ML1W_sub	Multilane, one-way, suburban	1900	2000	2100	2100	2250	2350	2400
ML1W_urbcbd	Multilane, one-way, all urban	1900	1900	2100	2100	2250	2350	2400
mld_fa	Multilane, undivided, two-way, fringe area	1900	1900	2000	2100	2250	2350	2400
mlxd_rur	Multilane, undivided, two-way, rural	1900	2000	2100	2200	2250	2350	2400
mlxd_sub	Multilane, undivided, two-way, suburban	1900	1900	2000	2000	2250	2350	2400
mlxd_urbcbd	Multilane, undivided, two-way, all urban	1900	1900	2000	2100	2250	2350	2400
connector	Centroid connector	20000	20000	20000	20000	20000	20000	20000

NOTE: Model period capacities are a function of the initial capacity, but then modified for a variety of factors, such as;Lane width, shoulder width, number of lanes, percent heavy vehicles, driver population, and intersection control effects.

Transit System

The public transit system was included as part of the travel forecasting process for this transportation plan update. The public transit system currently carries less than eight thousand trips per day and approximately two million trips per year. This accounts for less than one percent of the total trips within the region. At this performance level, it is difficult for travel forecasting and modeling procedures to accurately replicate transit usage. Meaningful results from the forecasting procedures for transit trips are limited in their value to the decision-making process. However, the forecasting process can assist in determining preferred transit strategies and assess ridership increases.

The evaluation of the public transit system and recommendations for future improvements are primarily based upon historical trends and recent transit studies. The existing transit system and route structure serves as the base for the evaluation process. Recommended improvements are derived from the results of the transit studies and surveys. These studies identify deficiencies of the transit system, assess the level of unmet needs, and include comments and suggestions for transit improvements. This process is documented in the Citilink 2030 Transit Development Plan Final Report completed in January 2020 and the Coordinated Public Transit – Human Services Transportation Plan for Allen County Update completed in Fiscal Year 2017 (update initiated in 2023). The projects identified in the 2030 Transportation Development Plan and the strategies identified in the 2017 Coordinated Plan are included as a component of this plan. As noted, NIRCC initiated an update of the Coordinated Public Transit – Human Services Transportation Plan (CTP) for Allen County in early 2023 with completion anticipated in December 2023. Strategies and recommendations from the CTP that are endorsed and approved by the Urban Transportation Advisory Board (UTAB) will be amended into this plan.

Currently there are urban and rural transit systems operating within the MPA. Fort Wayne Public Transportation Corporation (d.b.a. Citilink) is the urban transit provider, providing fixed route service and complementary demand response paratransit service. Their current service area is the incorporated boundaries of the City of Fort Wayne and the City of New Haven, as well as a very small portion of northern Allen County near Parkview Regional Medical Center. There are two (2) rural transit providers within the MPA. The Whitley County Council on Aging (dba Whitley County Transit (WCT)) is the rural transit provider in Whitley County. Their service area includes all of Whitley County, including a small portion on the western edge of the MPA. The Huntington County Council on Aging (dba Huntington County Transportation (HAT)) is the rural transit provider in Huntington County. Their service area includes all of Huntington County, including a small portion on the southwestern edge of the MPA. Aging and In-Home Services of Northeast Indiana (dba Countilink) ceased operations as the rural transit provider in Allen County at the end of 2013. Between 2009 and 2013, Countilink provided demand response public transit service anywhere within Allen County as long as the trip origin or destination is outside the incorporated boundaries of the Cities of Fort Wayne and New Haven. Allen County no longer has a rural public transit

provider. Citilink is the primary transit provider within the MPA.

Citilink currently provides bus service on thirteen (13) fixed routes and two (2) point-deviation routes throughout Fort Wayne and New Haven at thirty (30) and sixty (60) minute frequencies (headways), dependent upon the route and time of day. Buses operate between 5:45 AM and 9:30 PM on weekdays and 7:45 AM and 6:15 PM on Saturdays. Most of the routes utilize the Fort Wayne Central Business District as a hub and transfer point. However, in 2013, a route known as MedLink (Route 15) was established to provide a link between the Parkview North and the Parkview Randallia locations. The two (2) point-deviation routes (Routes 21 and 22) currently operate to provide access to suburban medical and retail facilities. The existing Citilink transit route network is displayed in Figure 3-4. Until the summer of 2008, the majority of the routes ran on thirty (30) minute headways, however funding issues resulted in several of the routes reducing service frequency to headways to sixty (60) minutes. Currently, twelve (12) routes run on sixty (60) minute headways, and three (3) run on thirty (30) minute headways. Citilink intends to restore the thirty (30) minute service as funding is made available to provide more frequent service on heavily used routes.

In addition, Citilink also provides complementary demand response paratransit service, known as ACCESS, for the entire city limits of the City of Fort Wayne and within a ¾ mile radius of Route 10-New Haven and Route 15-MedLink. This is a significant service for the area. Many public transit providers only provide this service within a ¾ mile radius of their fixed routes, as required. Citilink exceeds this requirement by providing paratransit service to a substantial portion of the urban population. This significantly reduces the burden on other specialized transportation providers and ensures a high degree of mobility to area residents.

Citilink's service area (incorporated boundaries of the City of Fort Wayne and the City of New Haven, as well as a very small portion of northern Allen County near Parkview Regional Medical Center) currently contains approximately 71% of all households, 69% of the population, and 87% of the employment opportunities within the Metropolitan Planning Area. If the service area does not expand, by 2045 it is estimated that these numbers will decrease to account for approximately 73% of all households, 61% of the population, and 82% of the employment opportunities within the MPA. Citilink transit routes do not fully serve their entire service area. Portions in the northeast, southwest, and surrounding the Fort Wayne International Airport do not currently receive transit service. An analysis of Citilink service indicates that approximately 52% of the households, 50% of the population, and 75% of employment opportunities are currently within a ½ mile of a transit route. Utilizing the current route network, a similar analysis for socioeconomic conditions projected for 2045 indicates approximately 46% of the households, 44% of the population, and 71% of the employment opportunities will be located within ½ mile of a transit route. Recommended expansion of the Citilink service area will help to address this service reduction.

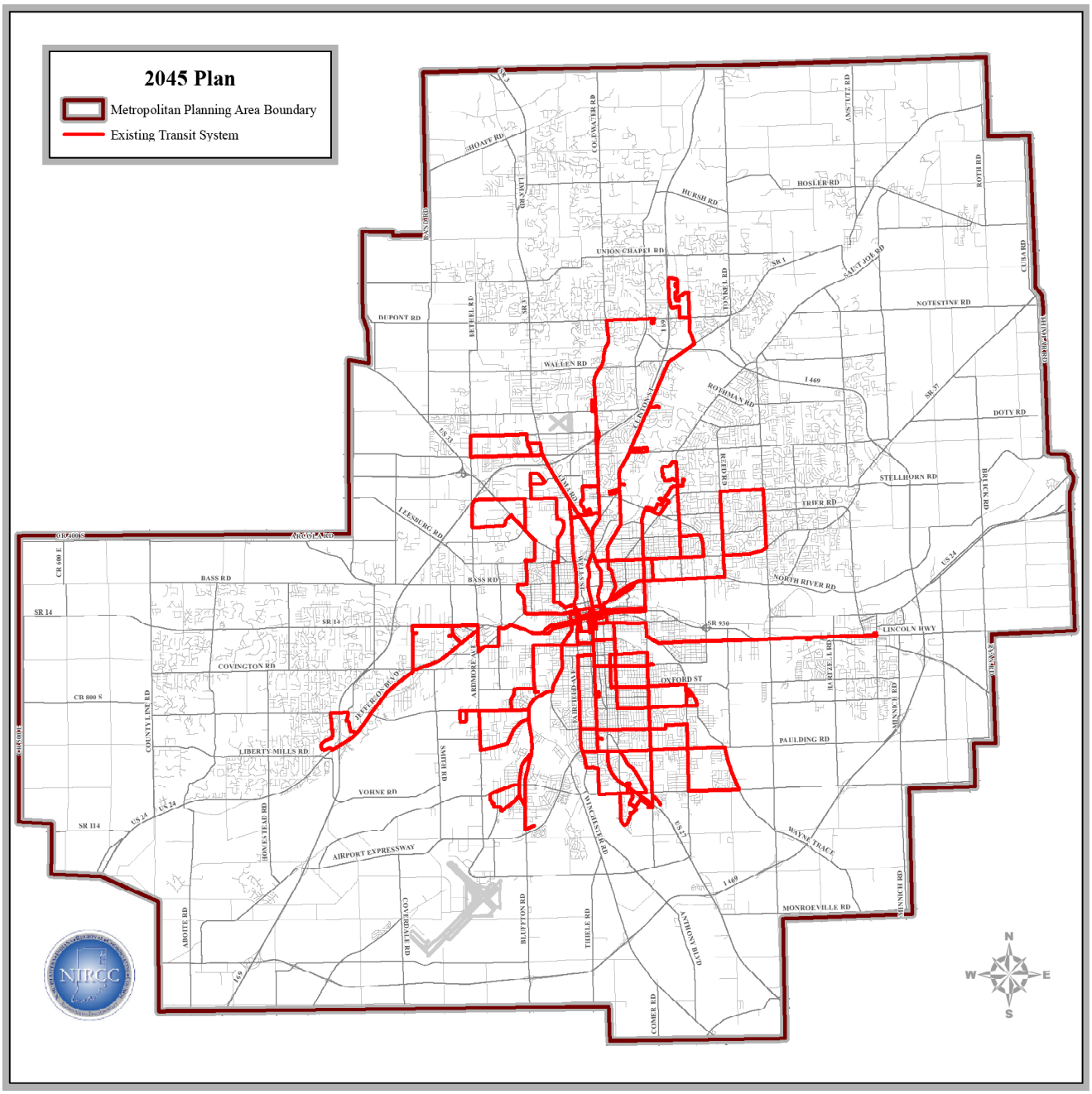

Figure 3-4

Existing Transit System

The service area of the rural transit providers within the MPA currently contains approximately .5% of all households, .5% of the population, and .2% of the employment opportunities within the MPA. By 2045 it is estimated that these numbers will increase to approximately 1.1% of the households, 1% of the population, and .3% of the employment opportunities. Since WCT and HAT both operate demand response systems, transit service is available to 100% of their service area including those portions within the MPA.

Collectively, the three (3) transit providers currently provide transit service to approximately 56% of all households, 54% of the population, and 73% of the employment opportunities within the MPA. These numbers are projected to remain relatively constant for the projected 2040 socioeconomic conditions with transit reaching approximately 50% of all households, 47% of the population, and 70% of the employment opportunities. The coverage area of transit service within the MPA is displayed in Figure 3-5.

Conclusion

The evaluation of the existing highway system was utilized for the initial evaluation of capacity deficiencies when burdened with the 2045 travel demands. The CMP includes a systematic data collection and analysis feature that evaluates highway performance based on hourly volumes and available capacity. The volume to capacity ratios provides sufficient information to assess corridor performance during peak periods and estimate the duration of any congested conditions. The deficient corridors currently operating under congested conditions are displayed in Figure 3-6.

The analysis of the travel demand forecast indicates that additional improvements are necessary to meet the projected 2045 travel demands. Highway and transit system improvements will need to be implemented to mitigate congestion and maintain desirable traveling conditions. This analysis sets the stage for developing and analyzing alternative strategies for improving the deficient corridors. The evaluation of the existing plus committed transportation system establishes the foundation for developing alternative scenarios of highway and transit improvements designed to maintain acceptable levels-of-service and meet the projected year 2045 travel desires.

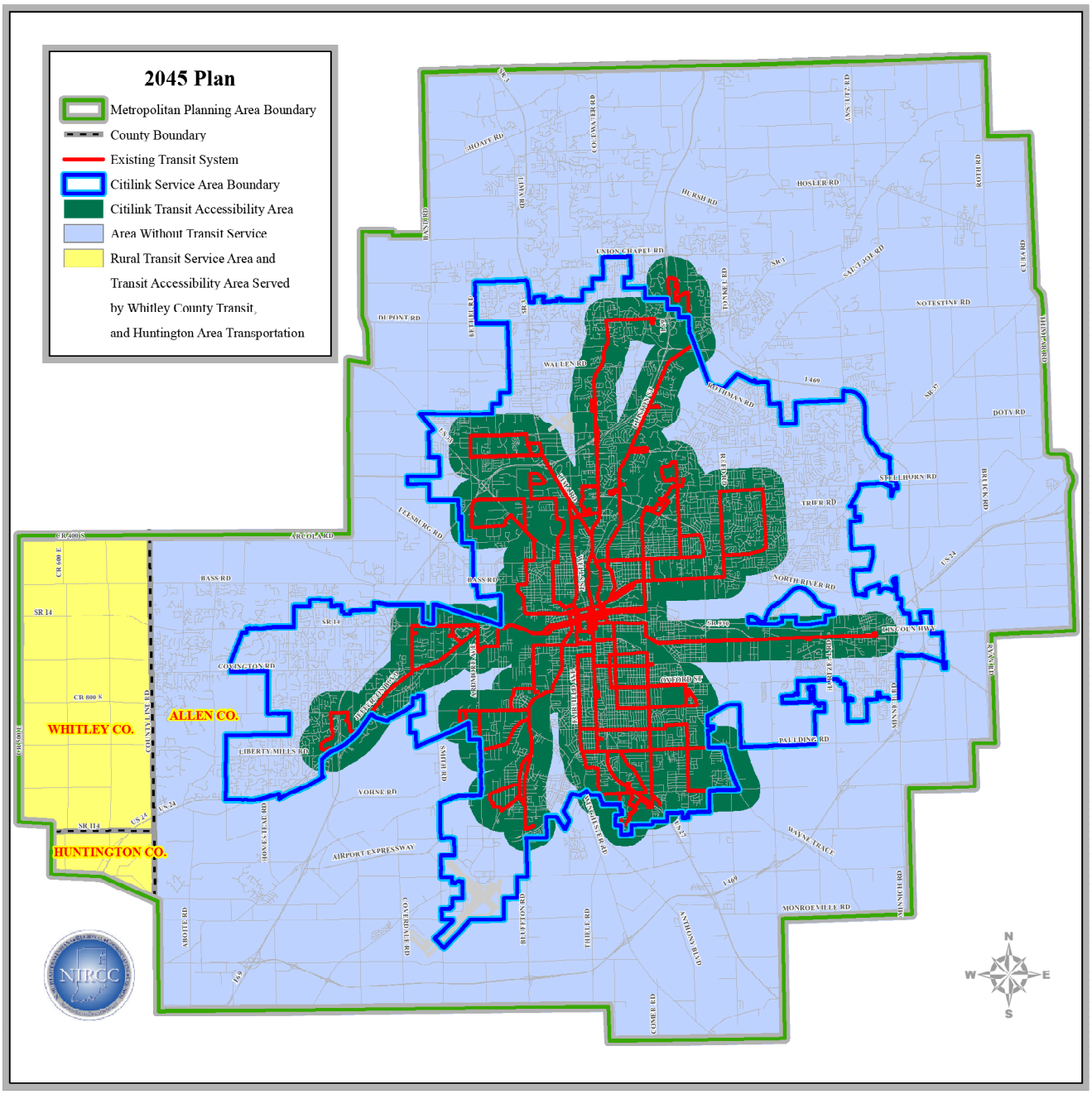

Figure 3-5

Transit System Accessibility

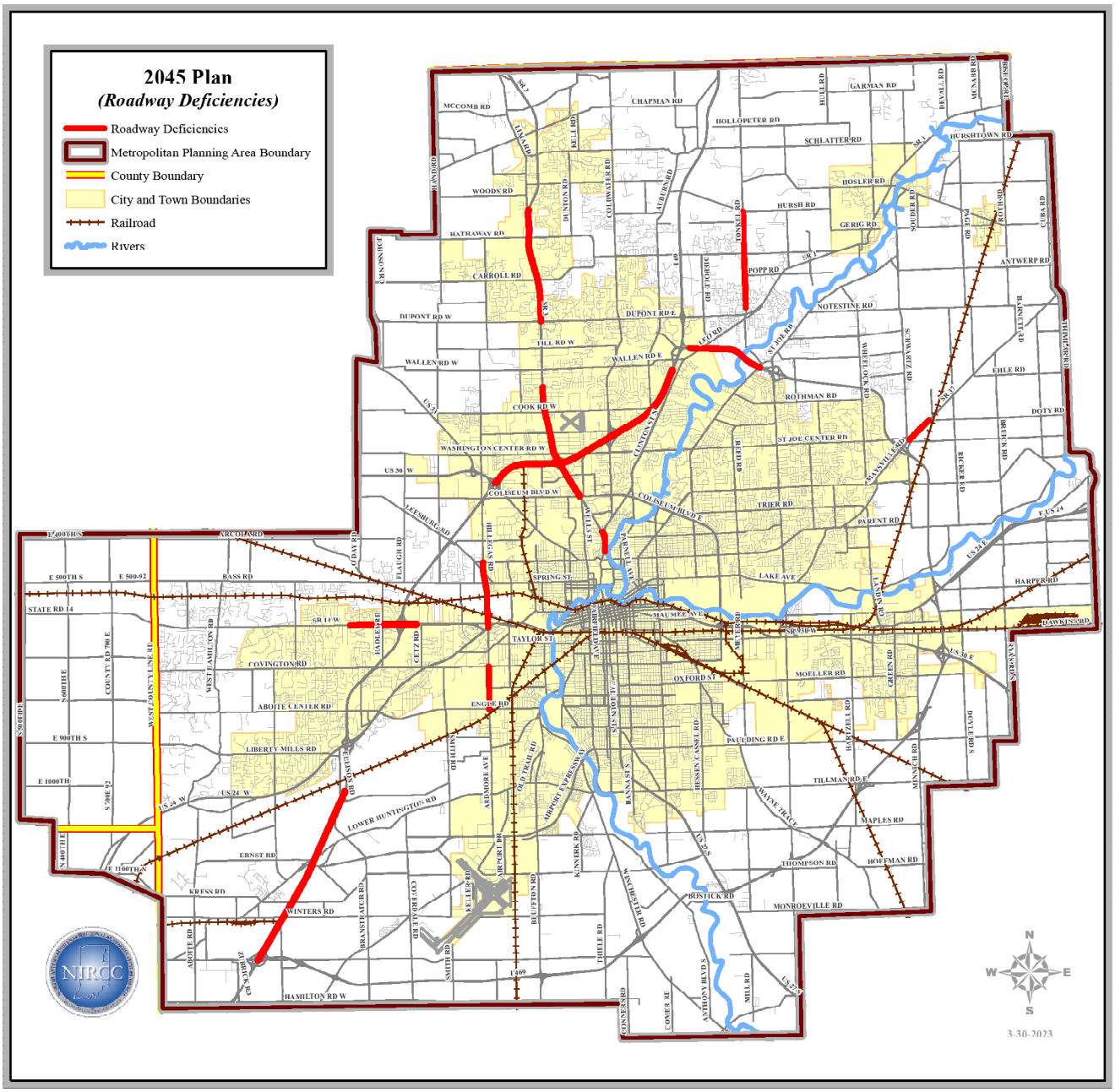

Figure 3-6

Network Deficiencies if no Projects were completed

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Chapter 4
EVALUATION OF ALTERNATIVE TRANSPORTATION SKETCH PLANS

Chapter 4 discusses the development and evaluation of alternative transportation sketch plans for the target year 2045. The highway and transit alternatives considered as the 2045 plan evolved are presented along with the results of the analytical evaluations. The evolution and evaluation of the alternative plans were formulated through extensive interaction between the public, the Urban Transportation Advisory Board, Transportation Technical Committee, Transit Planning Committee, and Northeastern Indiana Regional Coordinating Council staff members. The result of this process is the selection of a fiscally constrained transportation plan that effectively responds to the regional travel needs and desires for the year 2045.

The recommended Transportation Plans for the Fort Wayne-New Haven-Allen County Metropolitan Area have been based upon a combined arterial roadway improvement concept with a high-level bypass facility. The transit component of these plans has been developed and recommended as a radially oriented bus route network. These two systems were designed to complement each other through improvements to the existing highway system and the level of transit service provided.

The development and testing of the transportation alternative sketch plans were based on these previously adopted plans and policies. The completion of Interstate 469 (the high-level bypass facility) in 1995 has shifted the highway planning focus for development of the 2025 and 2030 transportation plans away from the bypass concept. The new highway-oriented focus is on improving the arterial system. The transit planning effort has also been tempered to establish realistic strategies and levels of service for the 2045 target year. The priority for transit is focused on improving service for transit dependent populations while maintaining reliable and efficient service to the urbanized area. Consideration is given to identifying transit corridors that will provide a higher level of transit service through amenities and travel speed. The transit provider, Citilink, is also exploring non-traditional non-fixed route service delivery strategies to improve service. These suppositions guided the formation of the sketch plans.

Alternative Network Testing

The travel demands are based upon the projected socioeconomic data representing future activity within the Metropolitan Planning Area. The evaluation of the existing highway system under 2045 travel demands provided for the selection of specific alternatives aimed at relieving deficient corridors and increasing transit ridership. The deficient corridors (see Figure 3-6) exceeding the level-of-service D lane capacities (defined as a ratio of volume to capacity greater than 1.0) indicates situations of levels of service “E” or “F” exist on a corridor or section of roadway. Levels of service “E” and “F” represent congested conditions and failure of the system to efficiently meet travel demands.

Transit improvements were directed at reinforcing current strengths of the local transit system and developing strategies to enhance service efficiency. The evaluation process included a review of the current 2040 Transportation Plan recommendations to assess their continued viability.

Roadway Design Standards

The roadway design standards documented in previous Transportation Plans were modified in conjunction with the revision of the Access Standards Manual (see appendix D) utilized for the Congestion Management System Access Management Program (see appendix A). The revised roadway design standards were maintained in the development of this plan and are provided in Appendix E. The roadway design standards have been formulated to meet future highway requirements.

Highway Alternatives

The highway alternatives, as developed through a consorted effort of public participation and decisions of the Urban Transportation Advisory Board, were intended to improve mobility, accessibility, and/or alleviate congestion on the highway system. The alternatives evolved as packages of specific projects aimed at meeting these objectives. The improvements were stratified into project categories including system modifications, congestion management strategy implementation, and other highway improvements. The project categories do not represent independent improvement strategies but are complementary towards maximizing efficiency on the highway system and mitigating congestion.

The identification of deficient corridors stimulated discussion of strategies to meet the future travel demands. The system modifications category represents projects that enhance mobility through new road construction or capacity expansion through road widening projects. The congestion management strategy implementation projects represent improvements to the existing highway system to improve safety and mitigate congestion. These include projects that preclude expansion type projects such as center turn lanes, intersection improvements, road realignment, and intelligent transportation system projects. Railroad grade separation projects and interchange construction/modification are included in the other highway improvement category.

The focus of this plan includes discussion on a wide array of strategies for alleviating future congestion in addition to the traditional solutions of new road construction and widening projects. The new strategies include scaled-down widening projects, such as recommending an additional fifth lane for left-turning traffic instead of widening to six lanes, or similarly a three-lane road project instead of a four lane facility. Access control measures and congestion management techniques are additional tools addressed as components of this plan. The inclusion of management systems projects and efforts to combine highway, land use and transit service together to relieve congestion and improve efficiency, represent additional strategies considered in the development of this plan, and are components of the planning process.

The evaluation of the current 2040 transportation system identified additional deficiencies on the highway network. Viable solutions and strategies were developed to address selected deficiencies. In addition, suggested improvements from citizens, local elected officials and appointed officials were considered during the testing and evaluation of alternatives.

The evaluation considered the entire proposed current 2040 Plan projects to determine if they remained practical under the 2045 travel demands. Remaining deficiencies from the 2040 travel demands on the existing plus committed system were identified. Solutions were developed and reviewed, including policies and projects, to determine feasible options addressing the remaining deficiencies. As a result of this process, scenarios were developed, tested, and evaluated. Several current 2040 Plan projects were modified or removed as a result of policy changes or changes in travel demands.

Extensive testing of the arterial system was evaluated and re-evaluated as the process moved toward preparing a final list of highway modifications to provide congestion relief. Three, four, five, and six lane highway improvements were considered to determine their ability to solve the corridor deficiencies. Strategies such as access control and congestion management solutions (i.e. intersection improvement, traffic operation improvements, intelligent transportation system improvements, etc.) were also considered. These types of strategies, when implemented properly can solve congestion problems along specific corridors and avoid the need for widening projects. A complete list of the highway projects is provided in Chapter 6.

A comparison of the existing plus committed transportation system and the recommended 2045 transportation system yields positive results. The comparison utilizes the 2045 travel demands. Table 4-1 presents a comparison of the two systems. The data is reported for the federal functional class system only. The existing plus committed transportation system will carry an estimated 11.95 million vehicle miles of travel (VMT) on a daily basis. Under the identical travel demands, the recommended 2045 system will carry an estimated 11.91 million vehicle miles of travel.

Table 4-1. VMT and VHT Comparison

Transportation System	Weekday Vehicle Miles of Travel	Yearly Weekday Vehicle Miles of Travel	Weekday Vehicle Hours of Travel	Yearly Weekday Vehicle Hours of Travel
Existing /Committed	11,947,775	3,106,421,500	277,765	72,218,900
Recommended 2045	11,910,088	3,096,622,880	276,261	71,827,860

Equally important is the comparison of vehicle hours of travel for the two systems. The existing plus committed transportation system will induce an estimated 277,765 vehicle hours of travel (VHT) on a

daily basis. The same estimate for the recommended 2045 system is 276,261 vehicle hours. Table 4-2 shows the VMT per-capita for the existing/committed network and the 2045 analysis year.

Table 4-2. VMT Per-Capita

Transportation System	Existing /Committed	2045
VMT	11,947,775	11,910,088
Population	416,340	416,340
VMT/Capita	28.70	28.61

The amount of vehicle miles of travel and vehicle hours of travel can directly relate to a community's standard of living and quality of life. The most significant ramification of the transportation system performance is the impacts on safety, air quality, and energy consumption. Air quality is directly affected by the level-of-service and extent of congestion on the highway system.

As the recommended 2045 plan began to solidify, testing continued to reveal deficiencies for which feasible solutions are difficult to develop. Previous plans had similar difficulties, partially due to narrow rights-of-way and a reluctance to disturb viable neighborhoods. In certain cases, solutions are difficult or too expensive to be practical. The primary area of such deficiencies occur in the Fort Wayne Central Business District, the north central section of Fort Wayne, and the intense concentration of commercial and retail development along certain sections of Coliseum Boulevard (SR 930). Traffic operation improvements, intelligent transportation systems, and improved transit service may help alleviate some travel pressure in this area. These areas will continue to be studied to determine what are the most feasible solutions. Figures 4-1 shows the remaining deficiencies after the 2045 funded projects are in place, and Figure 4-2 shows the remaining deficiencies after the 2045 funded and illustrative projects are constructed.

The deficient locations on the recommended 2045 plan will require further analysis to determine if viable solutions can be developed to help mitigate congestion. It is of course apparent, that the transportation system is not likely to ever be totally congestion free. A certain level of congestion is expected and will have to be tolerated. The objective is to reduce congestion to acceptable levels and provide for a safe and efficient system.

The final result of the highway alternative evaluation process is a comprehensive list of system modification projects, congestion management strategy implementation, other highway improvements, and policy options. With these tools, the community has the planning support necessary to implement projects and administer policies that will provide for an efficient transportation system for future travel demands within the limitations of fiscal constraint.

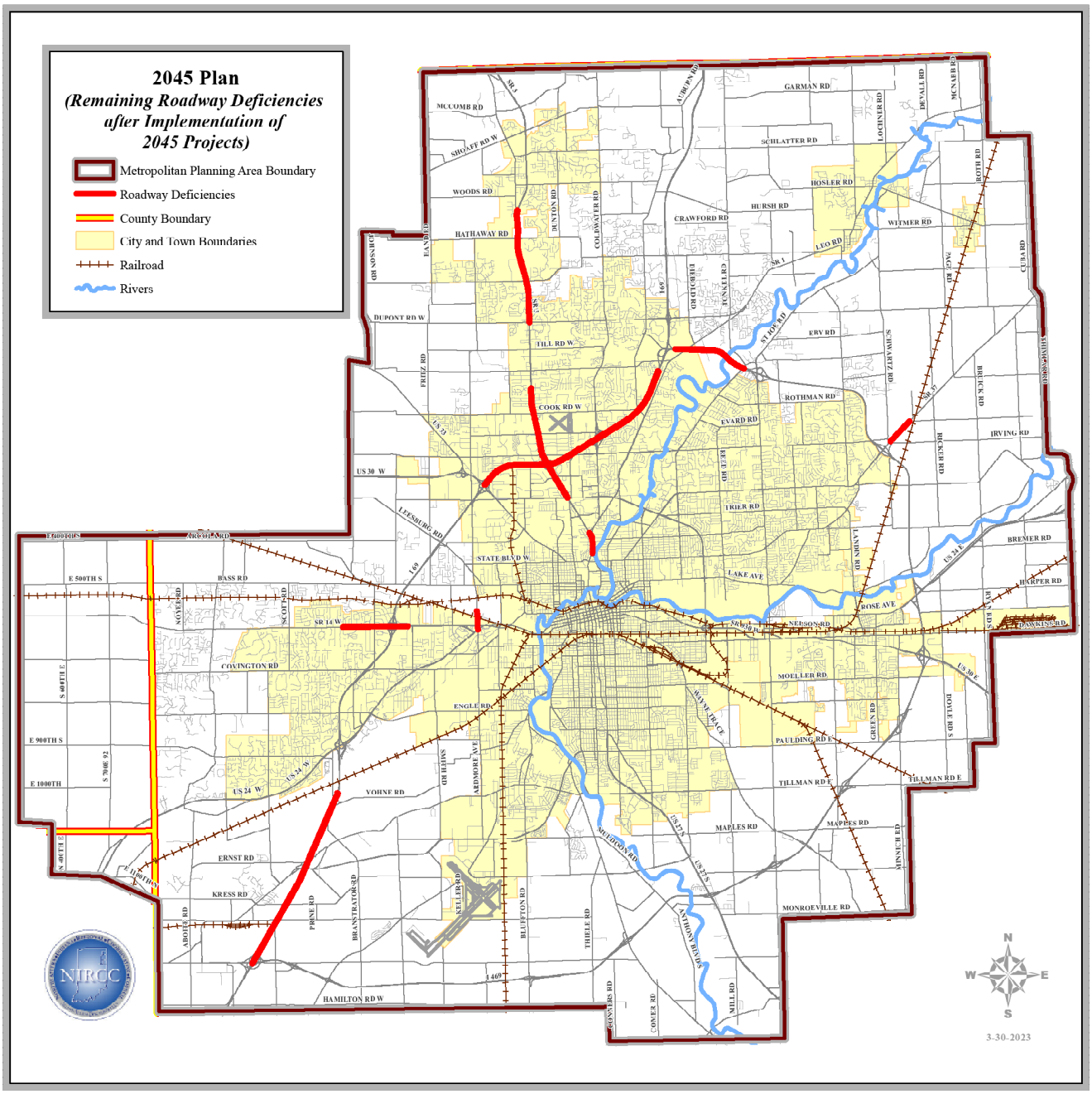

Figure 4-1

Network Deficiencies after 2045 Funded Projects

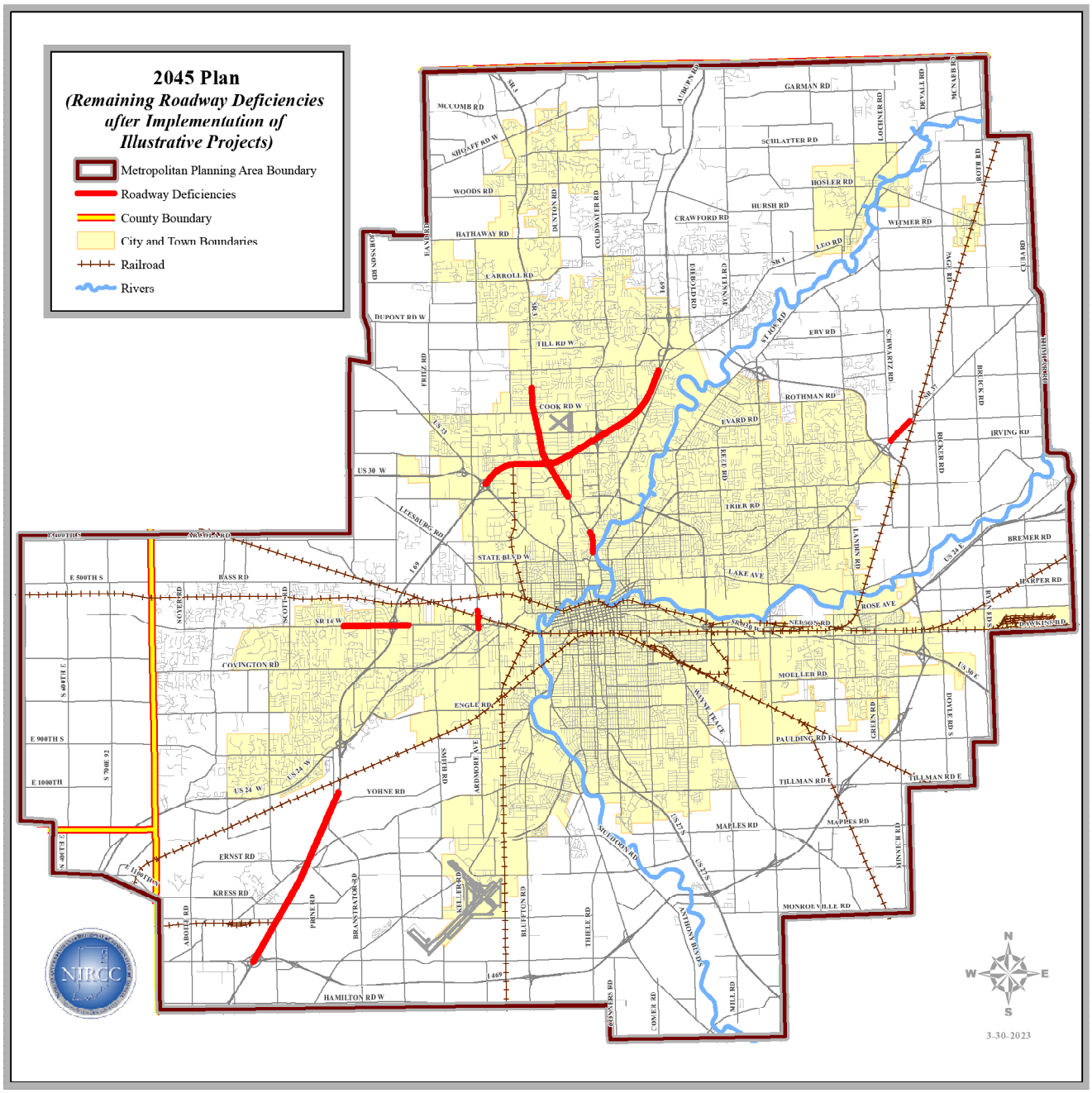

Figure 4-2

Network Deficiencies after 2045 Funded and Illustrative Projects

Transit Alternatives

Transit alternatives were developed and evaluated through a consorted effort of public participation, Fort Wayne Public Transportation Corporation (dba Citilink) staff, Transit Planning Committee, and the Urban Transportation Advisory Board. Many of the proposed projects are recommendations from the Citilink 2030 Transit Development Plan (TDP) Final Report completed in January 2020. The intentions of all alternatives presented are to improve mobility and accessibility on the transit system through improved transit service. The highway and transit systems are complementary and mutually dependent. Highway system improvements increase transit mobility and efficiency. Improving transit mobility and efficiency increases transit ridership. Increased transit ridership reduces demands on the highway system helping to mitigate congestion.

The fixed-route transit service is based upon a radially oriented configuration of transit routes. This type of system is often described by comparing its design to a wagon wheel. The Fort Wayne Central Business District represents the hub of the wheel, and the transit lines radiate out from the CBD like spokes. The transit alternatives concerning route expansion and modifications are based upon general assumptions for potential improvements. Areas in the Metropolitan Planning Area have been identified where housing and commercial growth indicates the potential for expanding transit service. These areas will be monitored for their transit propensity. The effect of the aging population, access to education and employment centers, and reverse commute issues will guide transit expansion in the Metropolitan Planning Area.

In addition to the Citilink 2030 TDP, three (3) additional transit related studies / documents / plans have been completed for the Metropolitan Area. The Bus Fort Wayne Plan was completed in 2013 (Appendix G) by the City of Fort Wayne under their "Active Transportation" initiative that also includes the Bike Fort Wayne and the Walk Fort Wayne Plans. The Bus Fort Wayne Plan is a ten-year plan that lays the groundwork for establishing public transit as a preferred transportation choice for the Fort Wayne and Allen County community. Since its completion, several of the plan's tasks listed in its implementation matrix have been initiated and/or completed. The Coordinating Development and Transportation Services Guide Update was completed in 2014 (Appendix H) to encourage the coordination of land use developments and transit services. The information provided in the guide is intended to help developers, architects, engineers, plan commission members, and planning staffs accommodate transit service in the design of new and existing developments. The Coordinated Public Transit – Human Services Transportation Plan (CTP) for Allen County Update was completed in 2017 (Appendix I). Please note, NIRCC initiated an update of the CTP for Allen County in early 2023 with completion anticipated in December 2023. Strategies and recommendations from the CTP that are endorsed and approved by the Urban Transportation Advisory Board (UTAB) will be amended into this plan. The CTP is required to satisfy funding requirements for the Federal Transit Administration's Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Program for both Capital and Operational funding. This program is vital to transit and human

service transportation in the Metropolitan Area. All projects selected for funding from these FTA programs must be derived from this coordinated plan and be competitively selected. The plan developed strategies to address the identified transportation needs and gaps within Allen County (2017 strategies listed below). Local projects must meet at least one of the strategies identified for each program or project type.

Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Program – Capital Funding Strategies:

- Maintain existing service / fleets
- Maintain and increase coordination / efficiency between all transportation providers
- Expand existing service / fleets
- Increase public awareness of available services and programs offered by providers that are available to them

Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Program – Operational Funding Strategies:

- Provide transportation above and beyond existing complementary paratransit service
- Provide transportation outside current service areas
- Provide transportation within and outside current service schedules

Citilink continues to improve transit service by implementing strategies identified in their 2030 TDP. These improvements include reducing headways from sixty minutes to thirty minutes on selected routes and extending service hours as funding allows. These modifications have improved service and provide a more flexible operating system. Additional headway reductions for selected routes are under consideration. Through improved transit service, ridership is anticipated to increase. The increase in estimated ridership will correlate to an improved level of transit service and enhanced mobility for the entire community.

Citilink completed the Hanna Creighton Neighborhood Transit Facility in 2005 to serve as a satellite bus stop facility with a customer waiting area in conjunction with a neighborhood redevelopment project in the Hanna Creighton Neighborhood. The 2010 Transit Development Plan and Update included a new centralized transfer facility that was constructed and completed in 2012. The new Citilink Central Station is located at the corner of Calhoun and Baker streets. Citilink installed Wi-Fi service for their customers at the Central Station in 2017 and as of 2023, all fixed route buses are equipped with Wi-Fi service. In addition to these projects, Citilink continues to upgrade bus shelters, benches, and other customer amenities throughout their service area. Other capital improvements include the replacement of transit coaches, para-transit coaches, and support/service vehicles as part of a regular vehicle replacement program.

In addition to the transit service and capital improvements, policies were adopted by the Urban

Transportation Advisory Board in support of improving transit service in the metropolitan area. These policies are presented in Chapter 6. The transit improvements are derived from the policies. Augmenting these policies will include continued efforts to explore a wide realm of transit options and incorporate land use and highway design features that compliment transit service. The future transportation system will efficiently serve the community through cooperative and complementary highway and transit networks.

The financial constraint requirement also effects the selection of viable transit solutions. Proposed improvements to the transit system must indicate the financial support for implementation. Due to the uncertainty of transit funding some of the proposed solutions as outlined in this plan may result in trade-offs from service modifications. In essence, this means that less efficient service may be replaced with efforts aimed at improving ridership and mobility with minimal increases in overall operating cost.

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Chapter 5
SELECTION OF THE RECOMMENDED PLAN

The Northeastern Indiana Regional Coordinating Council has delegated the responsibility for selecting and adopting the transportation plan that best meets the future travel needs of the Fort Wayne-New Haven-Allen County Metropolitan Planning Area to the Urban Transportation Advisory Board (UTAB). The development of the plan involved a magnitude of local, state, and federal governmental agencies plus considerable public participation. The factors and events that led to the selection of the plan are the subject of discussion within this chapter.

Documentation of Public Participation

Public officials and local citizens of the metropolitan area have historically provided valuable and comprehensive input throughout the development of transportation plan updates. The development of the 2045 transportation plan also proactively encouraged public input and participation. Local elected and appointed officials were included in meetings and discussions concerning the transportation plan. Presentations were made to the Urban Transportation Advisory Board, and input from the Transportation Technical Committee and Transit Planning Committee was incorporated into the transportation plan. Discussion at these meetings is intended to inform, stimulate participation, and obtain policy guidance at all stages of plan development. A list of the Urban Transportation Advisory Board meetings where topics concerning the plan update were discussed is provided in Table 5-1. These meetings are open to the public. Notices are sent to all interested persons including the media, the local Chapter of the NAACP, the Fort Wayne Urban League, and the Benito Juarez Cultural Center.

The Urban Transportation Advisory Board began discussing the merits of the current Year 2045 Transportation Plan in mid-2022 in preparation of the 2045 update. This discussion familiarized the members to the planning process for developing a transportation plan. Subsequent meetings involved productive dialogue between members and staff, and exceptional policy formulation throughout the evolution of the 2045 plan update. The Transportation Technical Committee, Feasibility Subcommittee, and Transit Planning Committee were also involved in the development of the plan. Through their assistance, a comprehensive plan was developed to meet the future transportation needs of the community.

In addition, numerous other efforts were made to inform and involve the public in developing the 2045 plan update. Citizens are encouraged to attends NIRCC's Transportation Open House, visit the office, mail in comments, or contact us by telephone to discuss development of the plan and provide suggestions. Planning materials are also routinely posted on the NIRCC Website at www.NIRCC.com for review and informational purposes. The planning process received coverage by local news media including

Table 5-1. Urban Transportation Advisory Board Meetings*

May 10, 2022
November 11, 2022
December 6, 2022
January 3, 2023
February 7, 2023
March 7, 2023
April 4, 2023
May 16, 2023
June 6, 2023
July 11, 2023

*These meetings were all open to the public

television, radio, and newspaper. Presentations were also made to groups and committees associated with the Greater Fort Wayne Chamber of Commerce as part of an on-going working relationship with the business community.

The comments received from the participation meetings were documented. The comments are combined with those received by telephone, mail, or e-mail. The comments are reviewed by the Urban Transportation Advisory Board and related subcommittees. The staff, working with the Board, prepared responses to the citizen comments. The comments received as part of the development of the 2045 Transportation Plan along with the responses are provided in Appendix J.

Environmental Justice Outreach

Additional provisions are undertaken to provide outreach to traditionally underserved and potentially disadvantaged populations residing in the metropolitan area. Potentially disadvantaged populations include minority, low-income, elderly, and disabled individuals, and those with Limited English Proficiency (LEP). These populations may have been excluded from previous outreach efforts and underrepresented in the transportation planning process. In accordance with federal regulations, NIRCC utilizes Census and American Community Survey data to identify areas within the metropolitan area where potentially disadvantaged populations reside and has developed outreach procedures to increase participation of these individuals in the transportation planning process.

NIRCC evaluates census tracts for specific socio-economic characteristics. These characteristics include persons 65 years old and older, minorities, Hispanic, low-income households, disabled people, households

with no vehicle; and LEP individuals. Census tracts that exceed the regional average for each characteristic are selected and mapped. Census tracts are prioritized based on a cumulative presence of these socio-economic characteristics. Areas have been identified for targeting additional outreach strategies to seek input and participation from potentially disadvantaged populations.

American Community Survey Data 2015-2019 was utilized to evaluate each tract. A region-wide percentage was calculated for each of the seven socio-economic characteristics to establish a potentially disadvantaged threshold. The thresholds for the Census Tracts in the Metropolitan Planning Area are provided in Table B-1. Census tracts that display percentages higher than the threshold were identified. These census tracts become focus areas for that characteristic. Census tracts were then prioritized based on the number of characteristics that exceeded their respective thresholds. Based on the number of characteristics that exceeded their threshold, census tracts were prioritized as Tier 1, 2, 3 or General Outreach EJ Areas. Table 5-2 displays the Census Tract thresholds for each socio-economic characteristic.

Tier 1 EJ Area-exceeds 6-7 Thresholds
Tier 2 EJ Area-exceeds 4-5 Thresholds
Tier 3 EJ Area-exceeds 2-3 Thresholds
General Outreach EJ Area-exceeds 0-1 Threshold

Table 5-2 Metropolitan Planning Area Census Tract Thresholds

Socio-economic Characteristic	Metropolitan Planning Area Census Tract Thresholds
Persons 65 years old and older	14.12%
Minority population	22.19%
Hispanic population	7.80%
Individuals below poverty	13.61%
Persons with a disability	12.50%
Households with no vehicle	5.81%
Individuals with Limited English Proficiency	4.31%

Figure 5-1 displays the census tracts with socio-economic characteristics that exceed regional averages.

Focused Outreach Efforts

The outreach strategies to encourage participation from traditionally disadvantaged groups include the standard techniques of open policy board and committee meetings, meetings, transportation planning newsletter and annual summary report, information sharing and website, open houses, and public meetings and hearings. Additional focused outreach strategies will be utilized in areas meeting multiple disadvantaged thresholds. The goal of these strategies is to seek out the needs and concerns of Environmental Justice Populations, so they are taken into consideration throughout the planning and decision-making process. These strategies include timely notice of participation opportunities to civic and advocacy groups working with disadvantaged populations; direct communication and notices to representatives of neighborhood groups and homeowner associations in Environmental Justices Areas; and holding planning and project input meetings at locations within EJ Areas exceeding multiple thresholds.

NIRCC staff utilized the Quadrant Area Partnership Meetings to share information on the development of the MTP and seek input and discussion. The Area Partnership Meetings bring local leaders, elected and appointed officials, and neighborhood representatives together to discuss issues, problems, and concerns. They also celebrate accomplishments and provide input to various planning processes. Staff attended nine meetings throughout the development of the transportation plan, attending four meetings of the Southeast Quadrant with the highest concentration of environmental justice population.

Title VI, Environmental Justice and Limited English Proficiency

The Northeastern Indiana Regional Coordinating Council values everyone's civil rights and strives to provide equal opportunity and equitable service to all citizens in compliance with Title VI of the Civil Rights Act of 1964 (Title VI) and all related statutes, regulations, and directives, which provide that no person shall be excluded from participation in, denied benefits of, or subjected to discrimination under any program or activity on the grounds of race, color, age, sex, sexual orientation, gender identity, disability, national origin, religion, income status or limited English proficiency.

Executive Order 12898 addresses Environmental Justice with a focus on the environmental and human health conditions in minority and low-income communities, enhances efforts to assure nondiscrimination in Federal programs affecting human health and the environment, and promotes meaningful opportunities for access to public information and for public participation in matters relating to minority and low-income communities and their environment. Executive Order 13166 ensures that, consistent with Title VI, persons with Limited English Proficiency (LEP) have meaningful access to federally conducted and funded programs and activities. Pursuant to the requirements of Section 504 of the Rehabilitation Act of 1973, NIRCC assures that no qualified disabled person shall, solely by reason of disability, be excluded

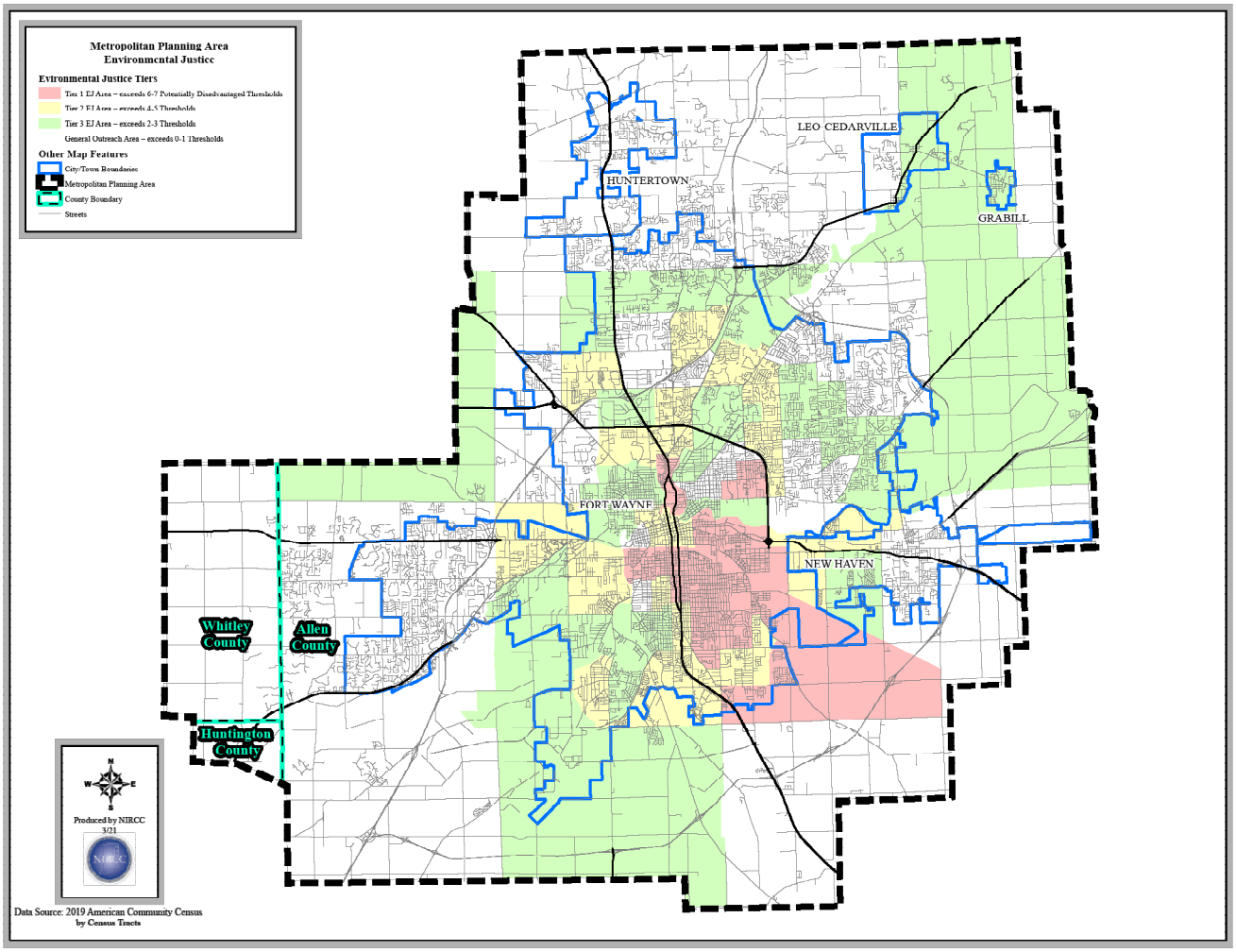

Figure 5-1

Census Tracts with Characteristics that Exceed Regional Averages

from participation in, be denied the benefits of or otherwise be subjected to discrimination, including discrimination in employment, under any program or activity.

NIRCC assures that every effort will be made to prevent discrimination through the impacts of its programs, policies and activities for all individuals and groups. The participation process includes specific outreach efforts to engage minority and low-income populations in the transportation planning process. Reasonable steps are taken to provide meaningful access to services for persons with limited English proficiency (LEP). NIRCC will, where necessary and appropriate, revise, update and incorporate nondiscrimination requirements into appropriate manuals and directives. NIRCC's Title VI Documentation is located on the NIRCC website at www.nircc.com.

Environmental Justice

The concept of environmental justice means identifying and addressing disproportionately high and adverse effects of policies, programs, projects and activities on minority and low-income populations to achieve an equitable distribution of benefits and burdens. The provisions of Title VI of the Civil Rights Act of 1964, Executive Order 12898 on Environmental Justice, and other statutes, orders, policies, and guidelines affect planning and project decisions undertaken by Metropolitan Planning Organizations (MPO), public transportation agencies, State Departments of Transportation (DOT), and other transportation providers. Executive Order 12898 on Environmental Justice amplifies the provisions of Title VI of the 1964 Civil Rights Act that states "No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

There are three fundamental principals at the core of environmental justice:

To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects including social and economic effects, on minority populations and low-income populations.

To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The implementation of Environmental Justice Order in the transportation planning process should assure public involvement of low-income and minority groups in planning activities and decision-making, prevent disproportionately high and adverse impacts of decisions on minority and low-income populations, and

assure low-income and minority populations receive a proportionate share of transportation benefits.

The Northeastern Indiana Regional Coordinating Council, the Metropolitan Planning Organization of the Fort Wayne-New Haven-Allen County Urban Area, has developed a process for addressing environmental justice issues in transportation planning activities and plan development. The process includes defining and identifying minority and low-income populations, public involvement strategies to engage minority and low-income groups and individuals in the transportation planning process, and measures for evaluating the benefits and burdens of transportation plans and projects.

Public Involvement Strategies for Engaging Minority and Low- Income Populations

The transportation planning process for the Fort Wayne-New Haven-Allen County has a long-established public participation program that has evolved since the development of the first transportation plan in the late 1970's. The current public participation program involves a variety of strategies to inform citizens of transportation planning issues and encourage their participation. These strategies include public meetings, open board meetings, transportation planning briefs, press releases to local media, and information exchanged through telephone calls, mail, e-mail and visits to our offices.

Figures 5-2 to 5-9 portrait the identified environmental justice areas for each measured socio-economic characteristic including population age 65 and older, minority population, Hispanic population, low-income households, disabled population, households without access to a vehicle, and LEP populations. Census tracts that exceed the regional average for each characteristic are selected and mapped.

Meetings of the Urban Transportation Advisory Board are open to the public. This is the policy body for the transportation planning process. Meeting notices and agendas are provided to groups representing minority and low-income populations such as the Fort Wayne Urban League, local Chapter of the NAACP, and Benito Juarez Cultural Center.

Public meetings are conducted at various times throughout the year to solicit citizen input to the transportation planning process and on specific improvement projects. One public meeting always coincides with the development of the Transportation Improvement Program. This meeting is used to present the proposed improvement program and gain citizen feedback. All comments are welcome at this meeting. In addition, public information meetings are held for major improvement projects and opportunities for public hearings are afforded to the public as required.

Notices for the public meetings are mailed to all known neighborhood association presidents or representatives. The neighborhood association representatives are well dispersed throughout the metropolitan area including areas where high concentrations of low-income, minority, and Hispanic

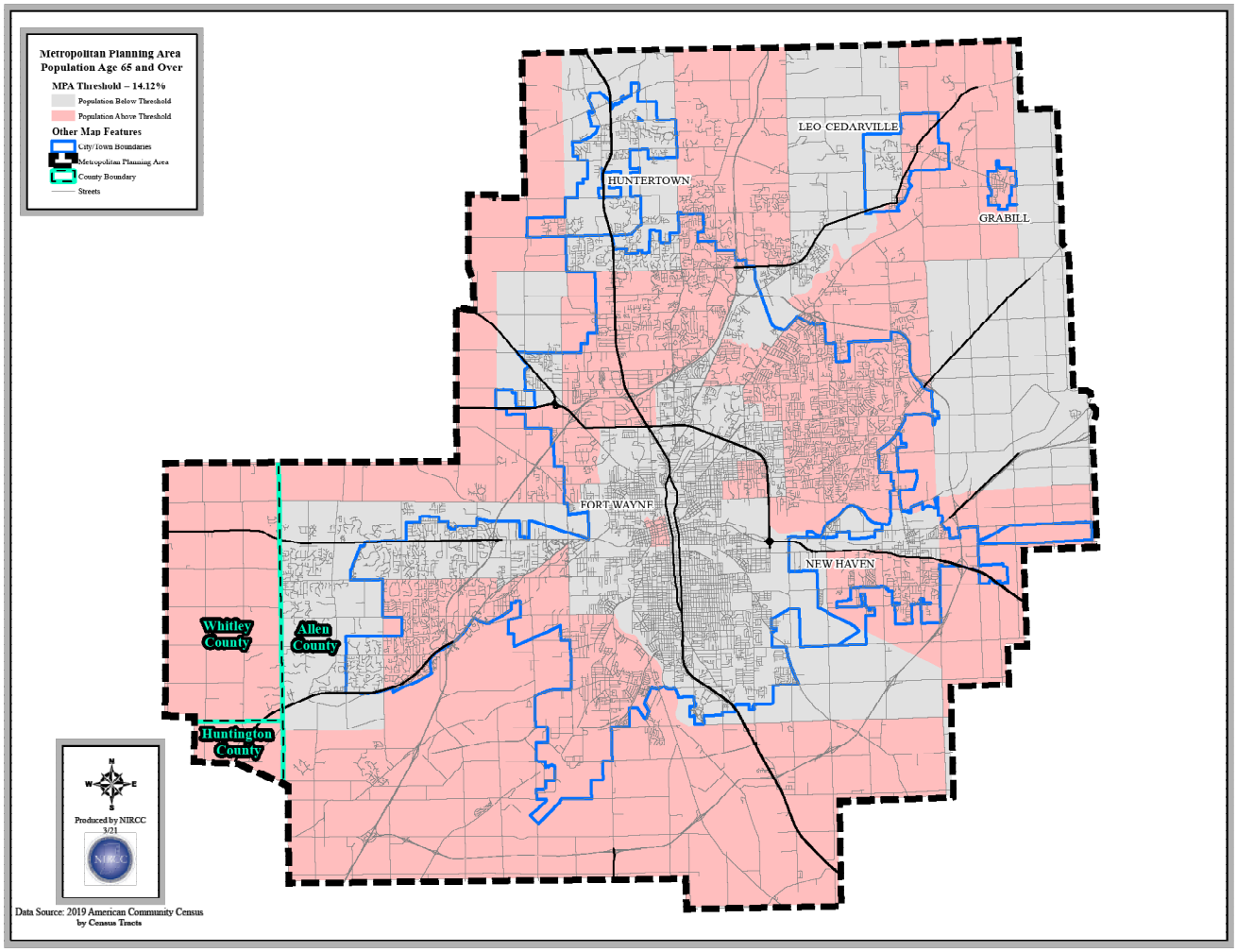

Figure 5-2

Population Age 65 and Over Profile

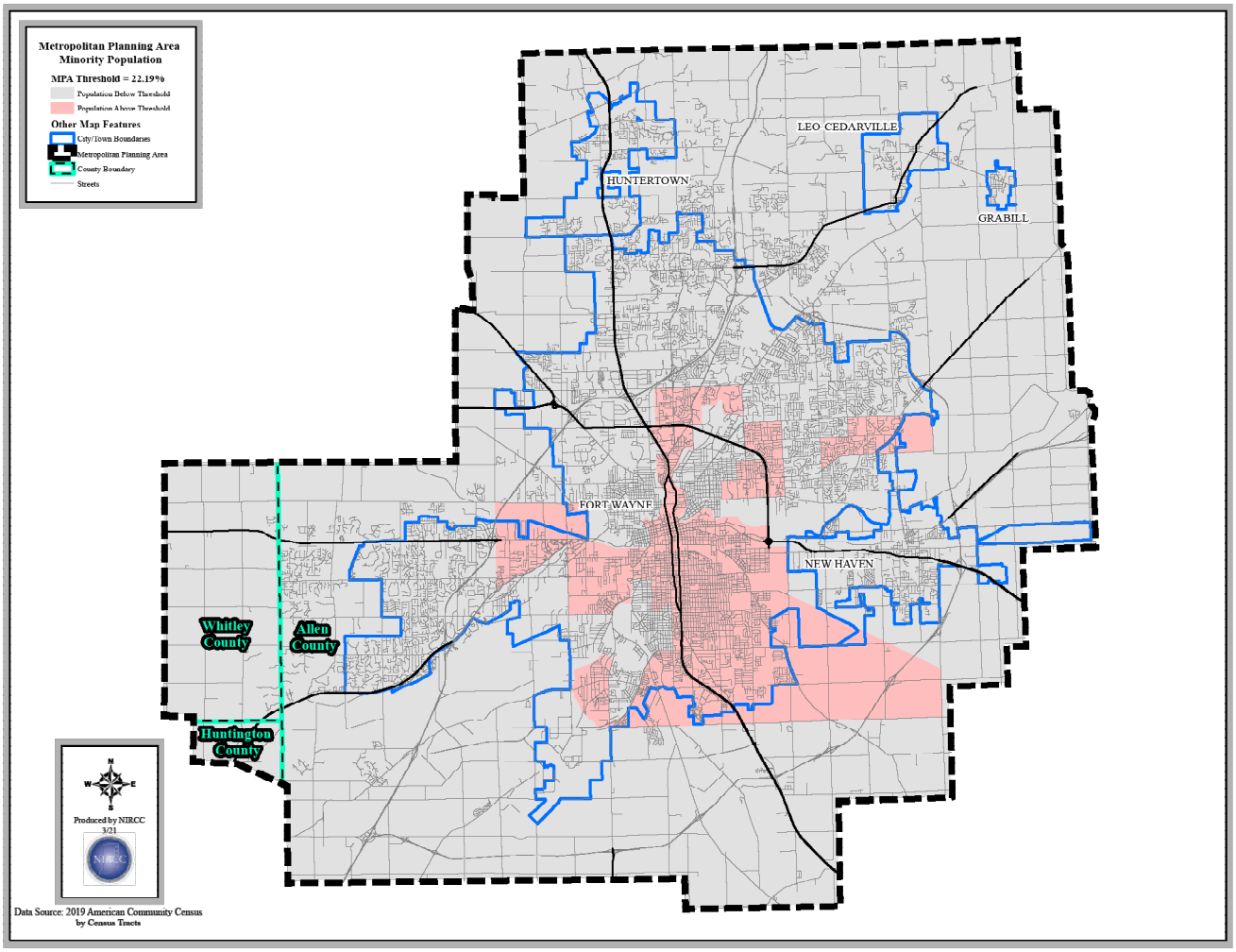

Figure 5-3

Minority Population Profile

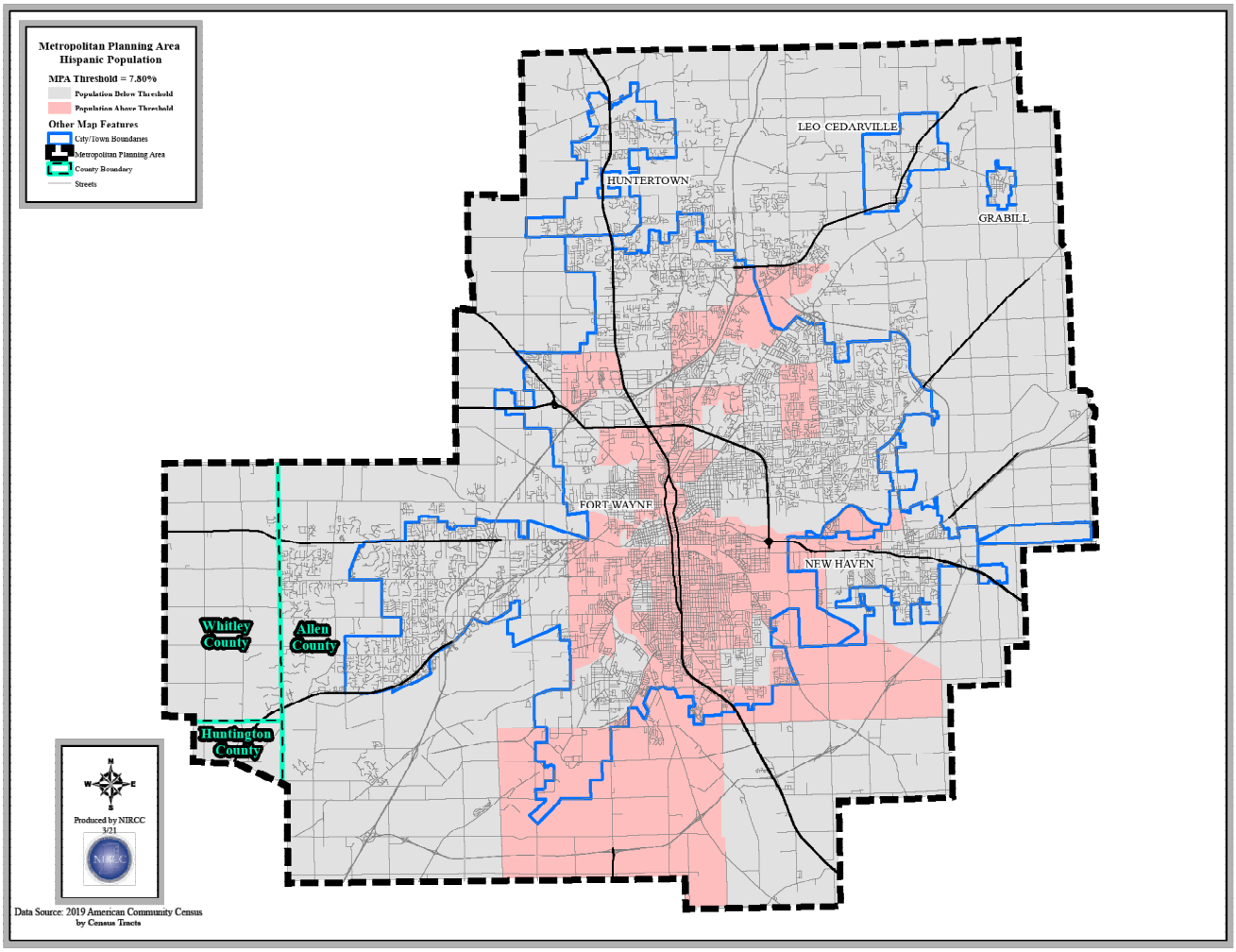

Figure 5-4

Hispanic Population Profile

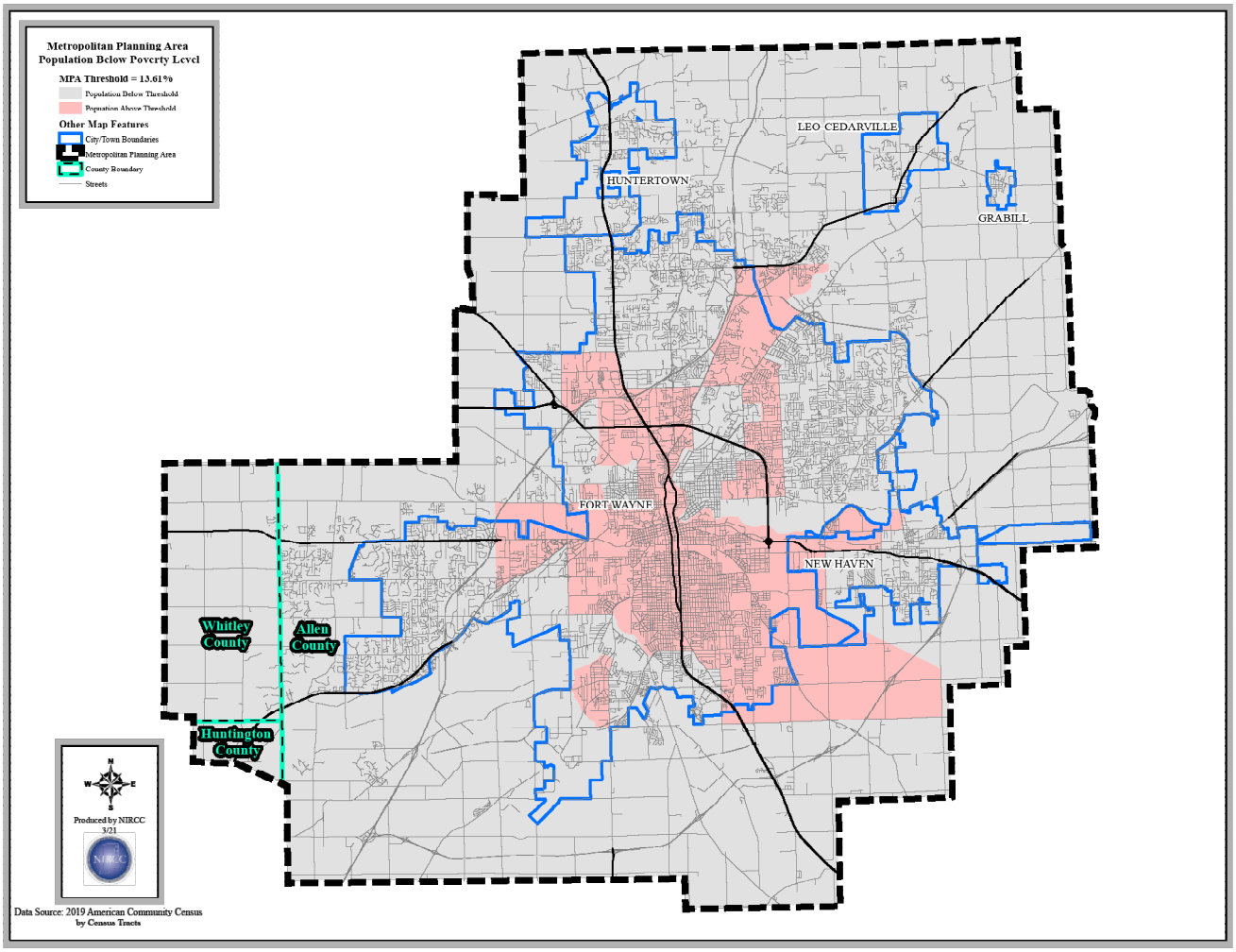

Figure 5-5

Low-Income Population Profile

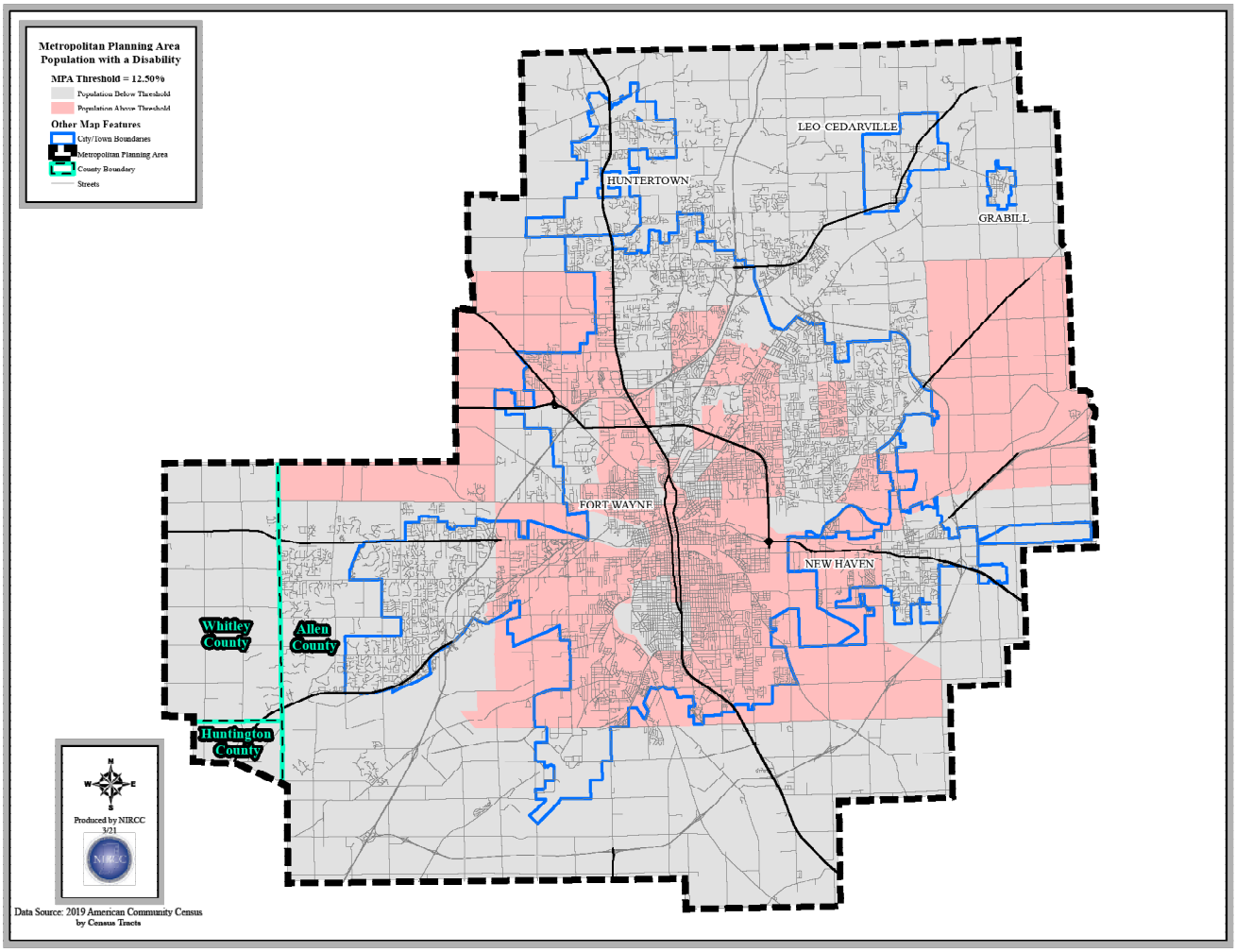

Figure 5-6

Disabled Population Profile

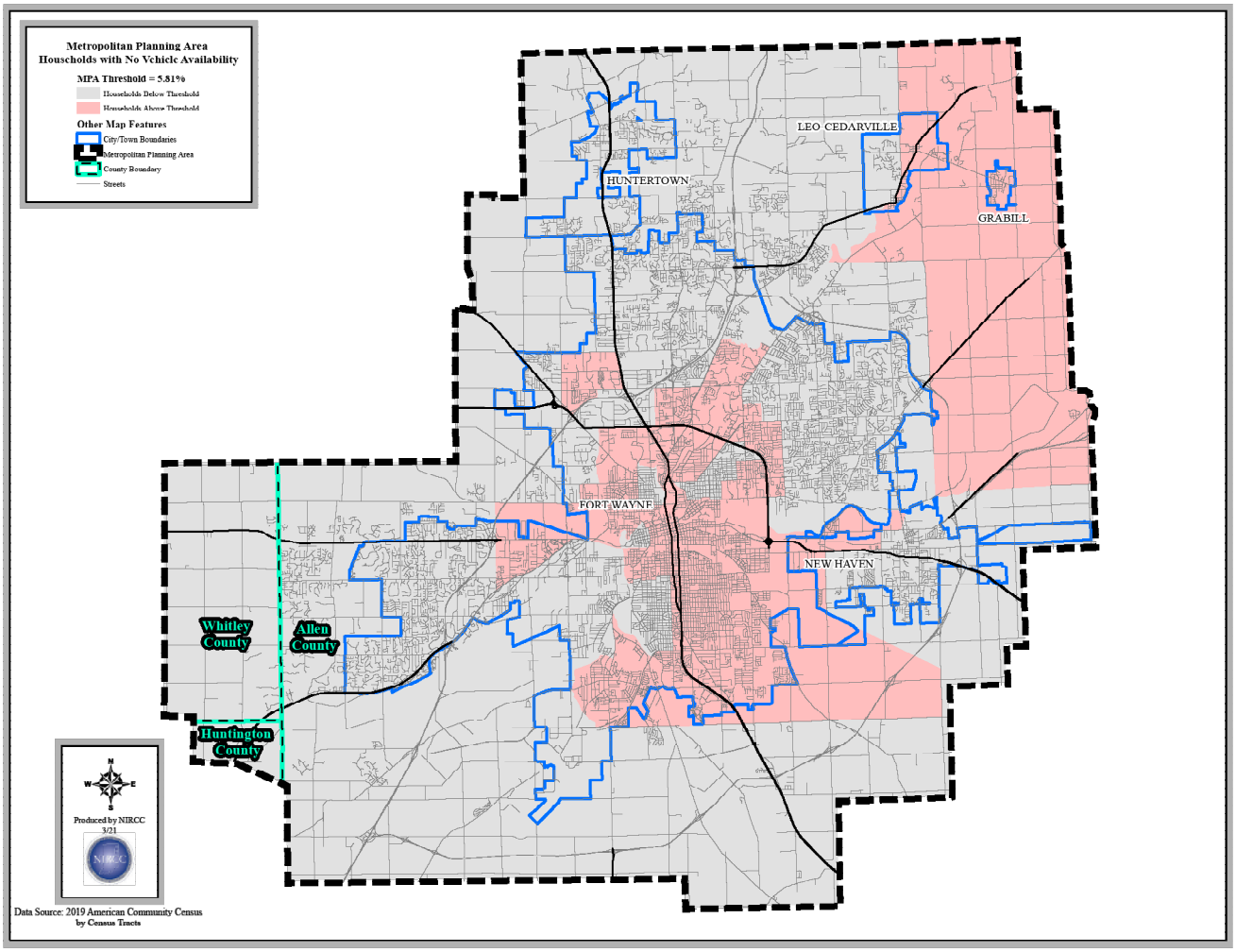

Figure 5-7

Households without Access to a Vehicle Profile

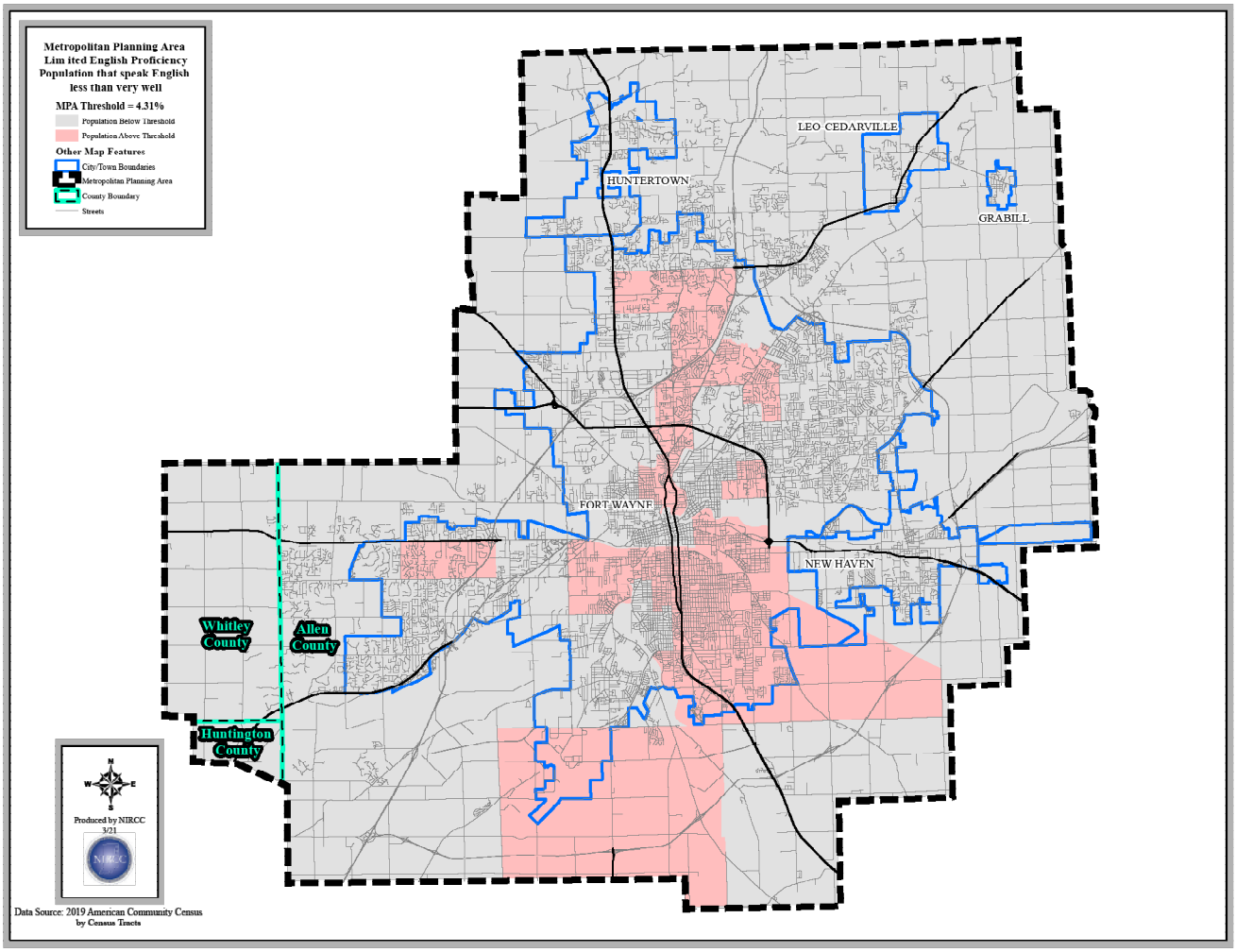

Figure 5-8

Limited English Proficiency Population Profile

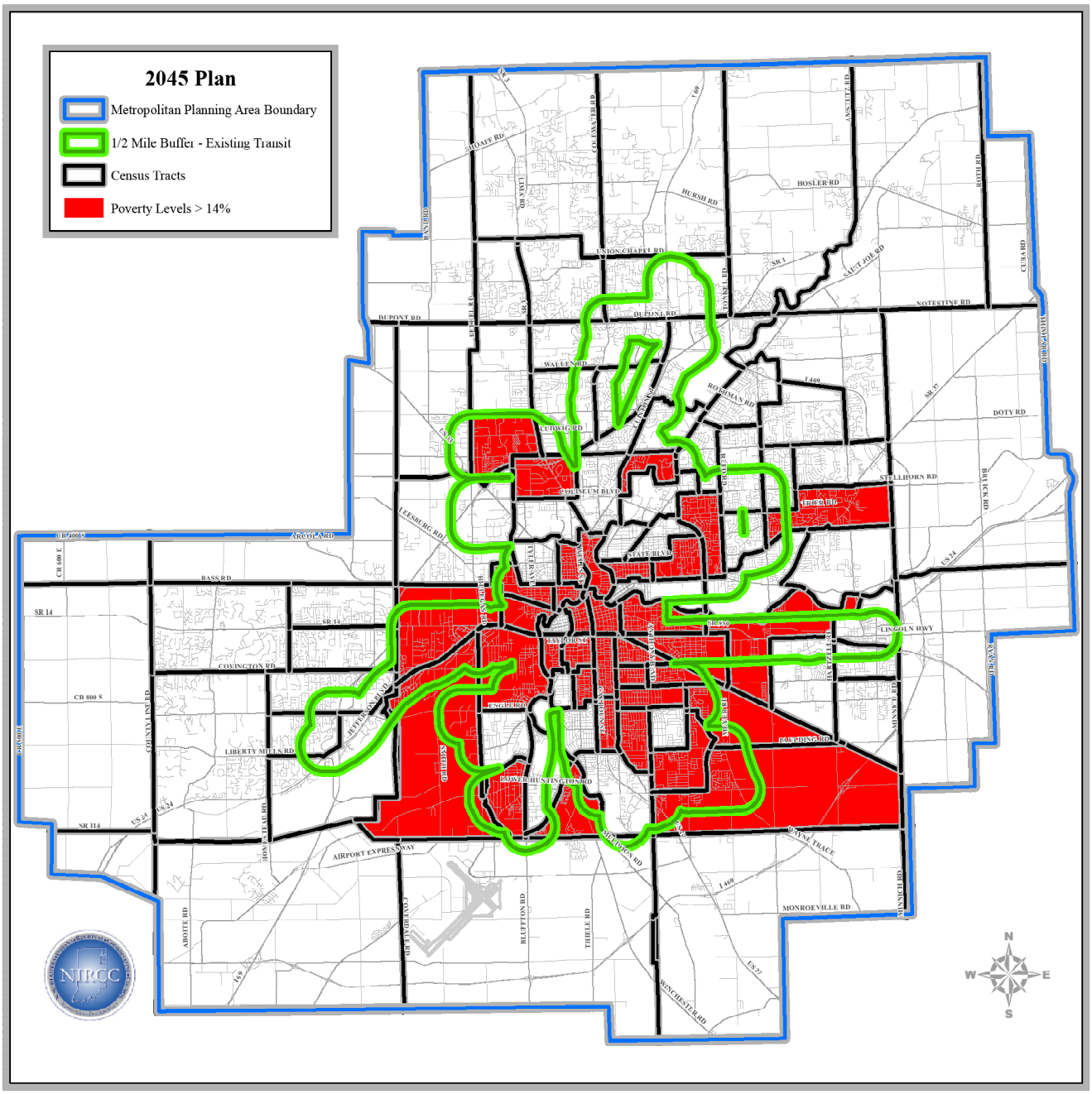

Figure 5-9

Transit Routes 1/2 mile buffer

populations have been identified. Figure 5-10 displays the location of neighborhood associations. In addition, a separate mailing is made for any other interested citizens or group that has expressed an interest in participating. This includes organizations representing low-income and minority groups, environmental groups, business groups, and other interested citizens. The news media is also notified to help publicize the meetings. The meetings are held at accessible sites and at times convenient for the public.

The meeting notices include a comment form that is designed to be easily returned to the NIRCC office. Comments are encouraged through use of the form, telephone calls, e-mails, office visits, or through attending the public meetings. The citizen comments presented at the public meetings and through the other various channels are documented by planning staff. The comments are presented to the policy board. The staff works with the policy board and related subcommittees to prepare responses to the comments. Once prepared, the comments and responses are sent to those who attended the citizen meeting. In addition, staff attends meetings of special groups when requested.

An Open House style meeting was held on June 28, 2023, to present the Draft 2045 Metropolitan Transportation Plan and corresponding Air Quality Conformity Documents and solicit input. The meeting was held at One Citizens Square. Comments are documented, and responses are prepared to ensure all comments are considered as input to the transportation planning process. The meetings allowed for the exchange of information and generated many good ideas. The concerns include mobility issues, intersection improvement, transit improvements, and bicycle/pedestrian safety. Improvement projects addressing these types of transportation problems were developed and are included in the Transportation Plan. These projects represent the responsive nature of the transportation planning process for all areas of the community, including low-income and minority areas.

Measures for Evaluating Benefits and Burdens of Transportation Plans and Projects

The evaluation of benefits and burdens is conducted at both a Transportation Plan level and a project level basis. The planning process, including development of the Transportation Plan, utilizes a total assessment of the transportation system for the entire Metropolitan Planning Area. Data collection and analysis is performed on the entire system utilizing uniform performance standards and analytical tools. The transportation plan is developed through an analytical process of identifying existing and future deficiencies of the transportation system. The quantitative analysis that is a part of this process is applied consistently and unilaterally to the transportation system. This ensures that the entire Metropolitan Planning Area is treated equitably in the deficiency assessment process. The deficiency assessment process drives the development of transportation policies and projects.

The quantitative measures include volume to capacity ratios, level of service, travel time and delay, transit headways, and transit service routes. See Appendix A: “Congestion Management Process”. These criteria

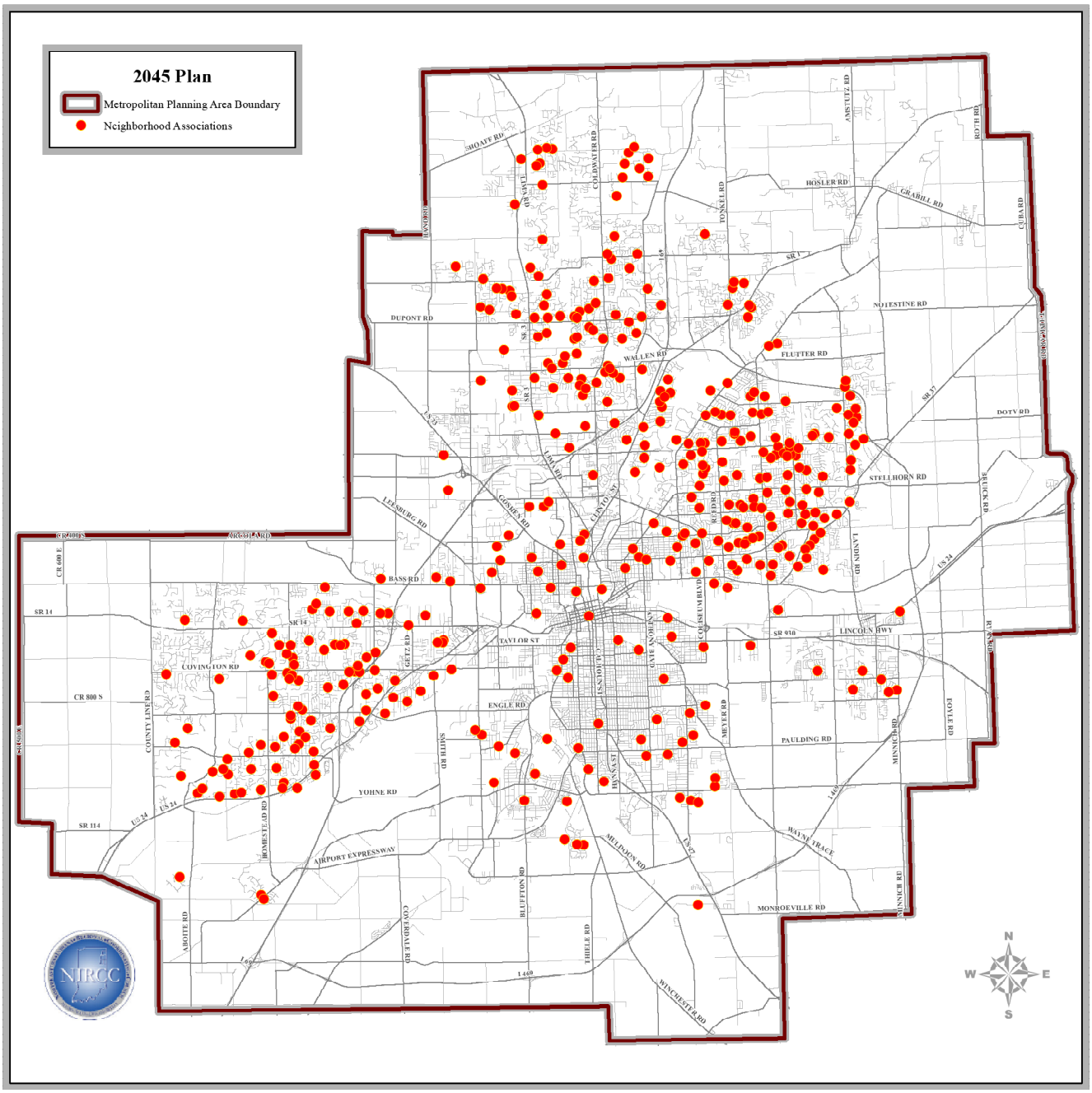

Figure 5-10

Neighborhood Associations

provide performance measures for evaluating the efficiency of the highway and transit systems. Factors affecting evaluation of highway performance utilizing volume to capacity ratios, level of service, and travel time and delay are based on area type and facility type regardless of the socioeconomic variables of the surrounding population. Performance measures of the transit system using headways and location of service routes also provide a unilateral evaluation tool unbiased to the environmental justice populations (See earlier in Chapter 5).

A qualitative evaluation of the Transportation Plan and associated transportation planning process is also utilized to measure benefits. A qualitative assessment identifies the distribution of the proposed projects and corresponding benefits. As part of this evaluation, the location of deficient areas as defined by quantitative analysis procedures must be considered. Improvements planned for the highway system are identified and overlaid on maps that identify the locations of the environmental justice populations. The transit route system and other system improvements identified in the Transportation Plan are also overlaid on maps identifying locations of environmental populations. Headways, route saturation, and improvement projects can be measured for equitable distribution (See earlier in Chapter 5).

A historical look at the implementation of projects through the transportation planning process has shown a fair distribution of projects and benefits throughout the entire metropolitan planning area. See Figure 5-11. The transit system is responsive to the needs of low-income and minority groups. The transit system has concentrated transit service in low-income neighborhoods based upon identified transit needs and transit propensity. Citilink also provides shorter headways on several of the busiest transit routes serving environmental justice areas. The standard headway for Citilink routes is sixty minutes. Decisions to improve transit service are based upon anticipated increases in ridership and where increased service will maximize public benefit. This is typically in the low-income neighborhoods.

The proposed improvements in the Transportation Plan are designed to improve safety, mitigate congestion, increase accessibility and mobility, and support economic growth through feasible strategies which minimize impacts on residential neighborhoods and are environmentally sensitive. Individual projects are designed to meet one or more of these objectives and their corresponding benefits measured. The regional benefits of the transportation plan are measured in vehicle miles of travel and vehicle hours of delay. These assessments are evaluated on the total package of projects proposed in the transportation plan.

Individual projects are also evaluated for burdens and benefits on environmental justice populations as part of the community and environmental analysis studies conducted as part of project development. The primary concern at the project level is identifying adverse impacts such as noise, traffic, and relocations. Mitigation strategies are included in the project development and design to minimize adverse impacts to all population groups, including low-income and minority populations. Context-sensitive design practices

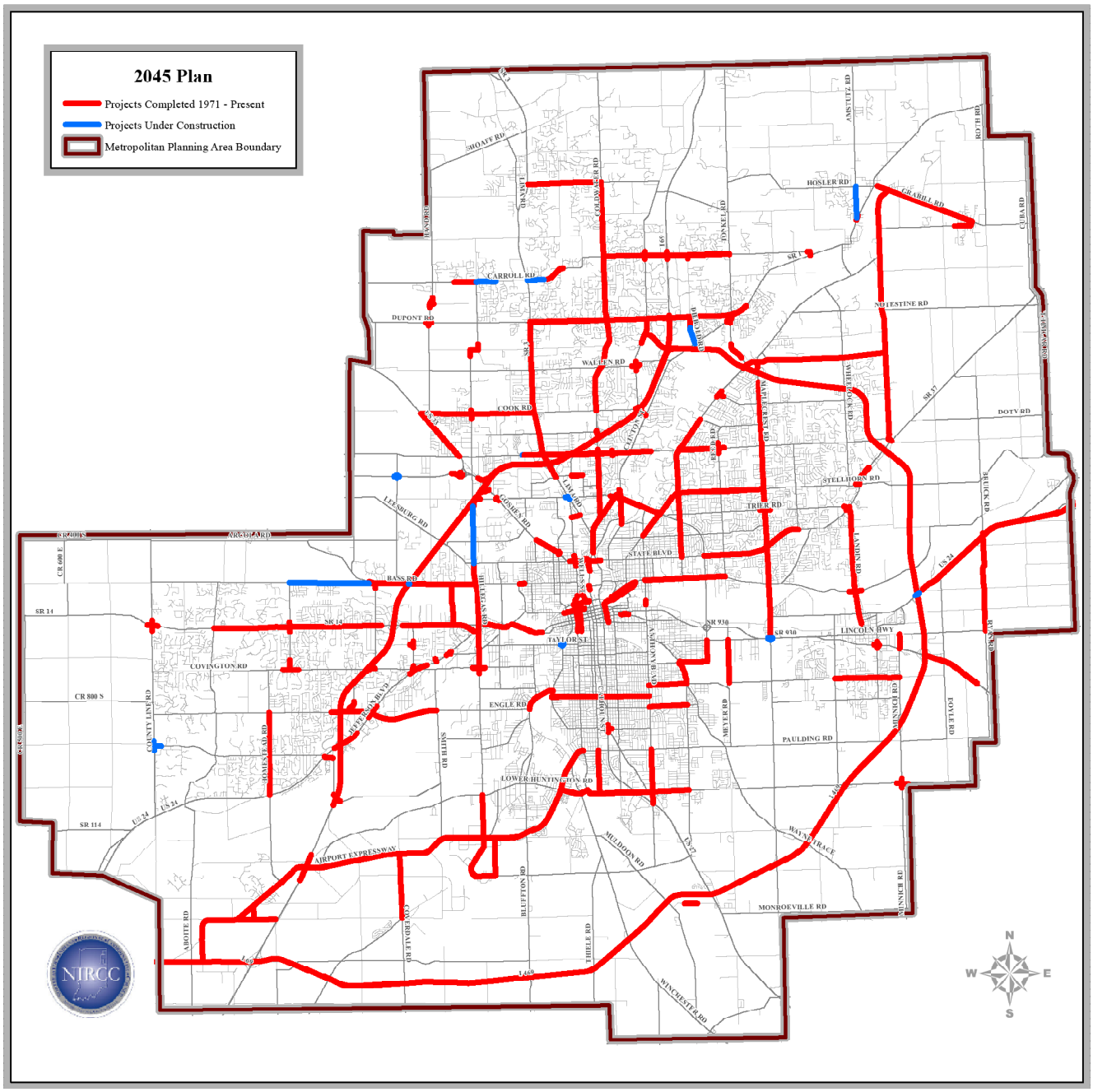

Figure 5-11

Implementation of Transportation Plans (1971-present)

are beginning to be incorporated in the project development activities.

The transportation planning process includes assessment techniques through the development of the Transportation Plan and related improvement projects. The primary goal of a transportation plan is to achieve an efficient and safe transportation system for the movement of people and goods, while simultaneously improving the economic and environmental conditions of the community. The desire for an efficient transportation system includes accountability for environmental and social costs. The result is a plan that preserves neighborhood tranquility, minimizes environmental disruption, and is sensitive to its effect on minority and low-income populations.

Factors Influencing Plan Selection

The development of the Year 2000 Transportation Plan included the establishing of evaluation methodology for comparing alternative transportation plans. The ideals and concepts of this methodology have remained throughout the development of the 2005, 2010, 2015, 2025, 2030, 2030-II, 2035 and the 2040 plans. These concepts continuously guide transportation planning decisions within the metropolitan area. Three of the major factors influencing such decisions include reduced congestion, economic advantages, and land use concerns.

Reducing traffic congestion within the Metropolitan Planning Area will result in a number of distinct advantages. Less congestion equates to reductions in noise, air pollution, travel times, energy consumption and accident rates. Reducing accident rates and improving safety has always been the highest priority influencing transportation decisions. Reduced congestion also improves accessibility, provides safer

streets, and improves the response time of essential emergency services such as medical, fire, and police.

Economic advantages of a well-designed transportation plan include enhanced regional accessibility, especially to areas zoned for future industrial and commercial developments. An efficient transportation system minimizes the travel times required to transport goods and services providing a direct economic benefit to area businesses. Improved accessibility significantly assists economic development activities for the Fort Wayne area, stimulating the economy and generating new employment opportunities.

Land use concerns were also considered throughout the development of the transportation plan. Protecting prime agricultural land and rural areas while providing sufficient access to commercial and industrial developments is a delicate procedure necessary to balance all interests involved. The outcome of this process is a transportation plan that promotes orderly growth and protects prime agricultural land.

The collaborative effort among local residents; public officials; federal, state, and local governmental

agencies; and local boards, commissions, and committees, was the solidifying and driving force behind the 2045 transportation plan. The update incorporates positive impacts such as safety and efficiency on the transportation system with less congestion and improved accessibility. The plan serves as a guide for directing and establishing transportation policy and policy decisions to ensure that the transportation system meets the travel demands of future generations.

Livable Communities

The Livable Communities is a federal initiative designed to provide communities with tools, information, and resources they can use to enhance their quality of life, ensure their economic competitiveness, and build a stronger sense of community. The transportation planning process and resulting transportation plan incorporates many transportation-related activities associated with the Livable Communities initiative. The transportation plan has as its goal to develop a safe, cost-effective transportation system that ensures mobility to all persons, enhances the quality of life in the region, supports planned growth, promotes economic development, and preserves the integrity and enhances the vitality of the human and natural environment. The implementation of such a system will minimize energy consumption and reduce air pollution. Reductions in vehicle hours of delay, vehicle miles of travel, accident rates, and accident severity are measures by which the system can be measured. Achieving this goal will enhance quality of life in the Metropolitan Planning Area and ensure that it remains as a "Livable Community."

In pursuit of this goal, the transportation plan and planning process have identified improvement strategies and projects designed to improve the quality of life for area residents and people visiting the community. Including a variety of travel modes as components of the transportation system improves accessibility and mobility while reducing the dependency on the private automobile. Promoting and expanding transit

service in the metropolitan area is an important policy objective of the plan. Improving and extending the pedestrian and bicycle pathway system to reach more neighborhoods and activity centers will be achieved through the implementation of the transportation plan. These types of projects encourage the use of alternative travel modes.

The transportation plan includes many transit related projects and policy guidance to improve transit service within the community. Reducing headways, expanding service hours, and providing service on Sundays are transit service level improvements designed to increase the attractiveness of the transit system. To ensure transit issues are considered as new development occurs in the community, the transportation plan recommends that land use policies address transit needs for accessibility to private developments through street and subdivision design. It further states that the land use planning approval process should include pedestrian and public transit issues. Incorporating these policies into the land use planning process will be an objective of the transportation planning process.

The pedestrian\bikeway plan is another component of the transportation planning process that will encourage walking and bicycling and support the livable community agenda. This plan includes interconnecting the New Haven bicycle and pedestrian trail system with the Fort Wayne River Greenway system. The combining of these two systems will improve accessibility and mobility on both systems. Additional projects to expand the system and develop new trails will further improve pedestrian/bicycle opportunities in the Metropolitan Planning Area. The pedestrian\bicycle plan also supports the requirements for sidewalks in all new developments and ensuring they interconnect with adjacent developments. This process will ensure a growing network of sidewalks throughout the community.

The transportation planning process includes a traffic-calming program initiated by the City of Fort Wayne. Through this process, neighborhood associations can request that a study be conducted to develop traffic calming strategies. Through a collaborative process, the Metropolitan Planning Organization collects data and provides information to the Fort Wayne Traffic Engineering Department to assist in the study. The Fort Wayne Traffic Engineering Department makes the final decision and implements the selected strategy. The MPO staff provides similar assistance to other local governments upon request.

The access management program, a component of the congestion management program, is an extremely successful program enhancing the community's quality of life. The access management program controls driveway and public street connections to the roadway system. The access management process utilizes access standard design and access control to minimize traffic impacts to the transportation system from new developments. The access management program supports corridor preservation, leads to air quality improvements, prolongs the functional life of existing highways, maintains travel efficiency for economic prosperity, saves lives by reducing the frequency of accidents, applies uniform standards and promotes

fair and equal application to the development community and requires cooperation among all agencies that make land use and transportation decisions thereby achieving improved planning and transportation integration. These benefits, of a well-developed and administered access management program, directly support the many facets of the "Livable Communities" initiative.

Financial Analysis

An important factor affecting the selection of the 2045 Transportation Plan is the financial revenues available to support the implementation of the improvement projects. The plan is required to include a financial analysis that demonstrates the consistency of proposed transportation investments with available and projected sources of revenue. The plan selection was developed within this framework. The selection of proposed transportation investments for inclusion in the plan occurred after financial analysis was complete and projected revenue was earmarked for project implementation. Only those projects for which funding is reasonably expected to be available were included in the plan.

Other Planning Processes

In addition to transportation planning activities, there are numerous planning and economic activities that influence the development of the MTP. Many of these activities include transportation ideas, concepts, and recommendations for improvements. The preparation of these plans and documents includes public participation opportunities. NIRCC supports these activities by providing data and technical assistance. Below is a list of some recent and relevant activities with hyperlinks.

All-In Allen Comprehensive Plan
http://allinallen.com/

Packard Park Plan
http://www.packardplan.org/

Southeast Strategy
https://www.fwcommunitydevelopment.org/images/community_planning/docs/SOUTHEAST_STRATEGY_Update-Final_Draft_2-23-21_Reduced.pdf

Downtown Plan
https://www.fwcommunitydevelopment.org/images/community_planning/Fort_Wayne_Public_Realm_Action_Plan_2-compressed.pdf

Historic Northeast Neighborhood Plan
http://www.historicnortheast.com/

Downtown Design Guidelines
https://www.fwcommunitydevelopment.org/images/reports_studies/FW_design_manual_book_1-11-11_-_WEB.pdf

Bluffton/Lower Huntington Corridor Improvement Plan
https://www.fwcommunitydevelopment.org/images/reports_studies/Bluffton_Lower_Huntington_Plan_Reduced_Size.pdf

Other Neighborhood Plans
https://www.fwcommunitydevelopment.org/area-plans

Sustaining Fort Wayne
https://sustainingfortwayne.org/

Allen County Together (Economic Development)
https://www.greaterfortwayneinc.com/wp-content/uploads/2021/11/allen-county-together-economic-development-action-plan-web.pdf

Draft Lincoln Highway Corridor Plan (New Haven)
https://www.newhaven.in.gov/DocumentCenter/View/1352/NewHaven_LincolnHwy-Draft

Citilink 2030 Transit Development Plan
Executive Summary
https://drive.google.com/file/d/1GHCOoCAOyCp5YtWeKfFGm8ZAcaloQVUY/view?usp=sharing
Complete Report
https://drive.google.com/file/d/1FWE4MQ6qz-WuvLRRYrxQ99yLYWzxEju-/view?usp=sharing

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Chapter 6
THE SELECTED PLAN

The culmination of the long-range planning process is the selected transportation plan titled "2045 Transportation Plan." The plan is a combination of transportation improvement projects and policies for the highway, transit, and pedestrian/bicycle systems. The proposed highway improvements are displayed in Figure 6-1. A complete highway improvement project listing is provided as a part of this chapter. The illustrative/unfunded projects are shown in Figure 6-2. These are locations that show a need for improvements but no funding is availible at this time. The transit system, including potential areas for future transit service, is displayed in Figure 6-3. The Pedestrian and Bicycle Plans are displayed in Figures 6-4 and 6-5. Potential areas for future transit service are also identified and discussed in this chapter. Collectively, these distinctive yet mutually dependent systems form the transportation plan.

Specific projects and capital improvements form one component of the plan, and equally important, is the set of policies directed at preserving the integrity of the transportation system through the encouragement of wise decision-making. These policies aspire to promote highway, transit, and pedestrian/bicycle efficiency including specific strategies incorporating each system. The policies address non-traditional strategies for mitigating congestion including interchange reviews, access management, project implementation and transit recommendations.

The transportation plan includes all regionally significant transportation improvements but does not include bridge, pavement, or other transportation system maintenance type projects. These types of projects are developed through data driven bridge and pavement asset management programs. Projects developed through these programs do not include added travel lanes but serve to maintain the existing system and are consistent with the policies of the Transportation Plan. When the scope of an added travel lane project traverses a bridge, the bridge is considered a component of that project. If the bridge project is rehabilitating or replacing a bridge, and the number of travel lanes prior to construction will remain static after construction, the project is not generally listed in the plan.

Goal of the Transportation Plan

Develop a safe, cost-effective transportation system that ensures mobility to all persons, enhances the quality of life in the region, supports planned growth, promotes economic development, and preserves the integrity and enhances the vitality of the human and natural environment.

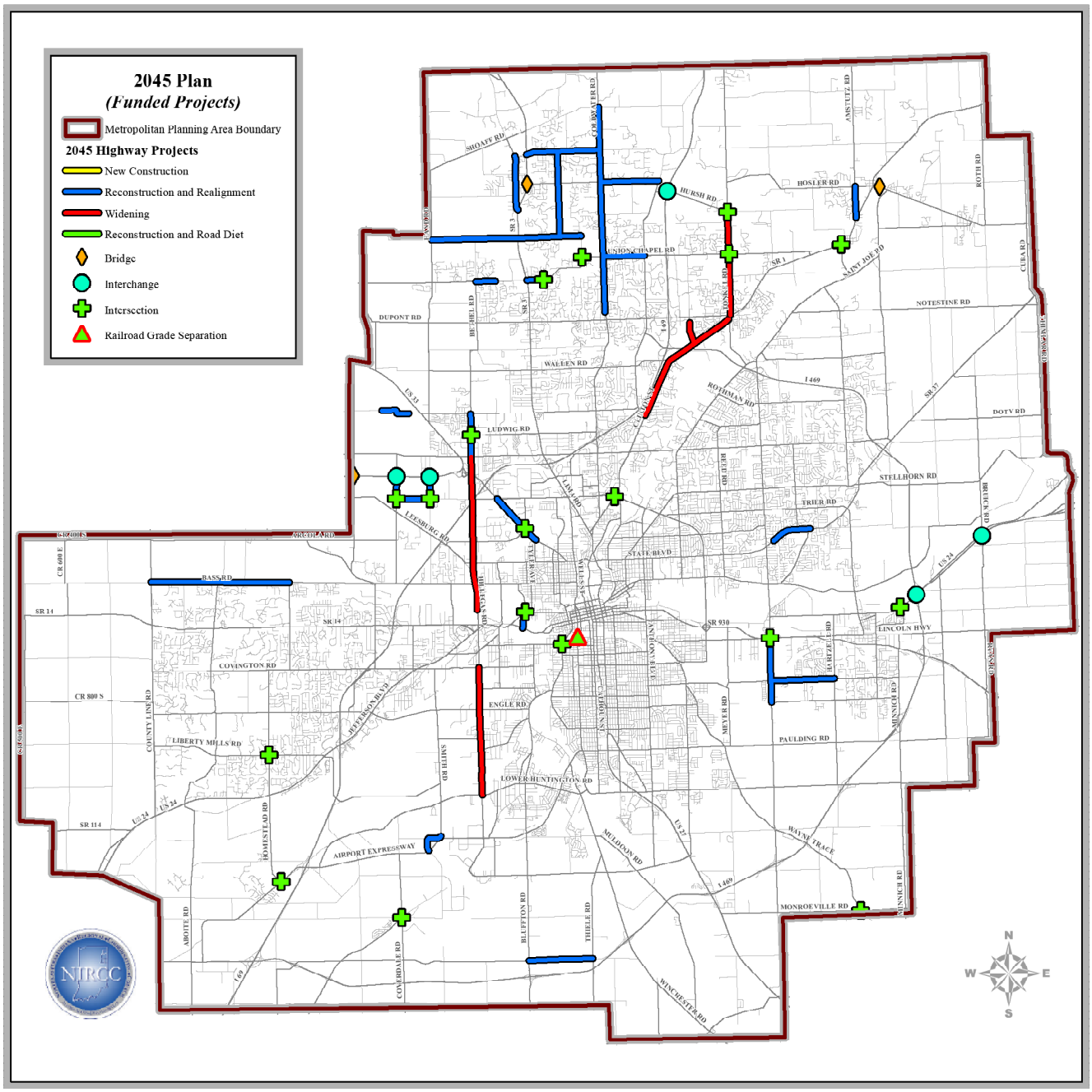


Figure 6-1

Recommended 2045 Transportation Plan

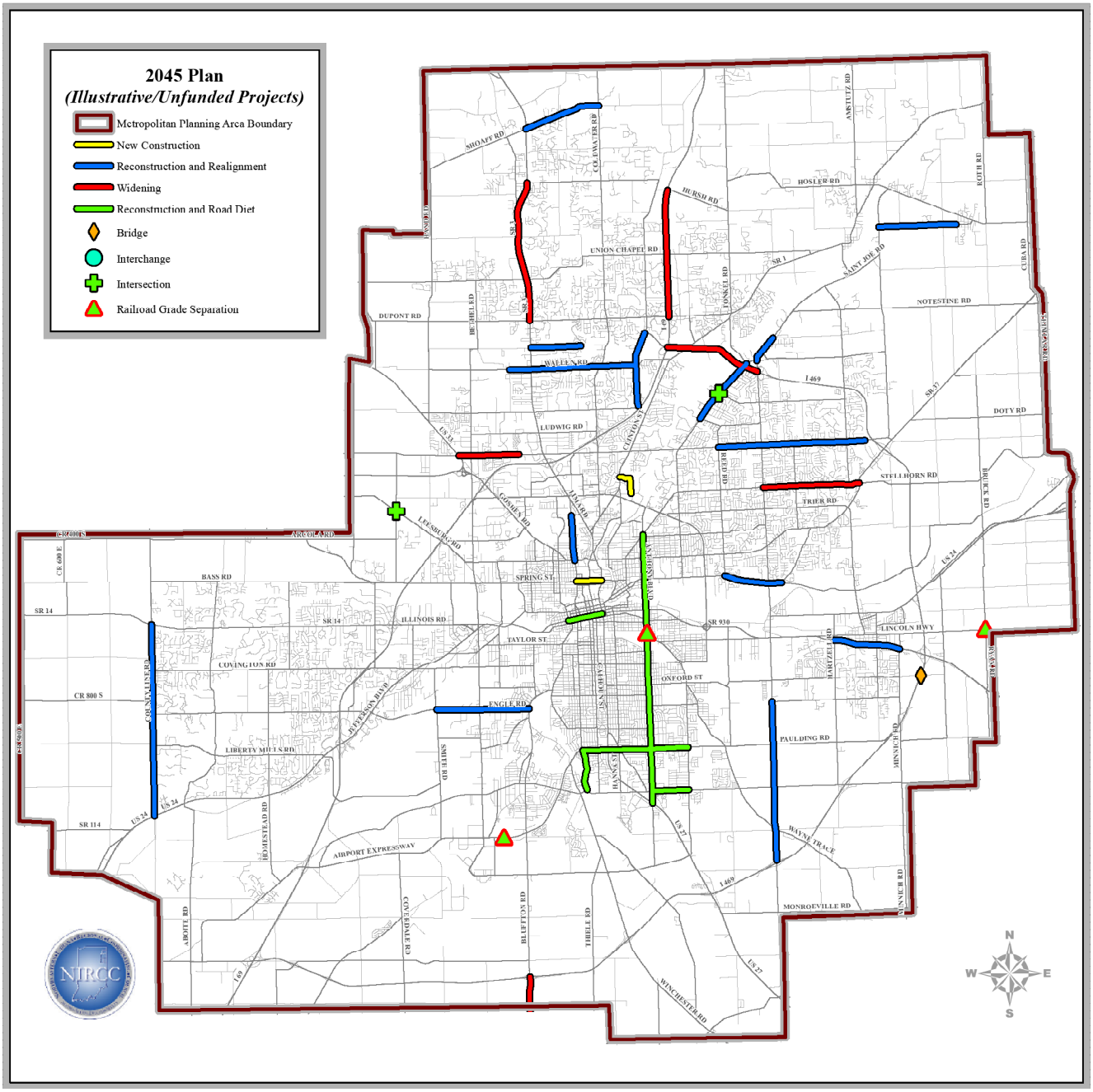


Figure 6-2

2045 Plan Illustrative and Unfunded Projects

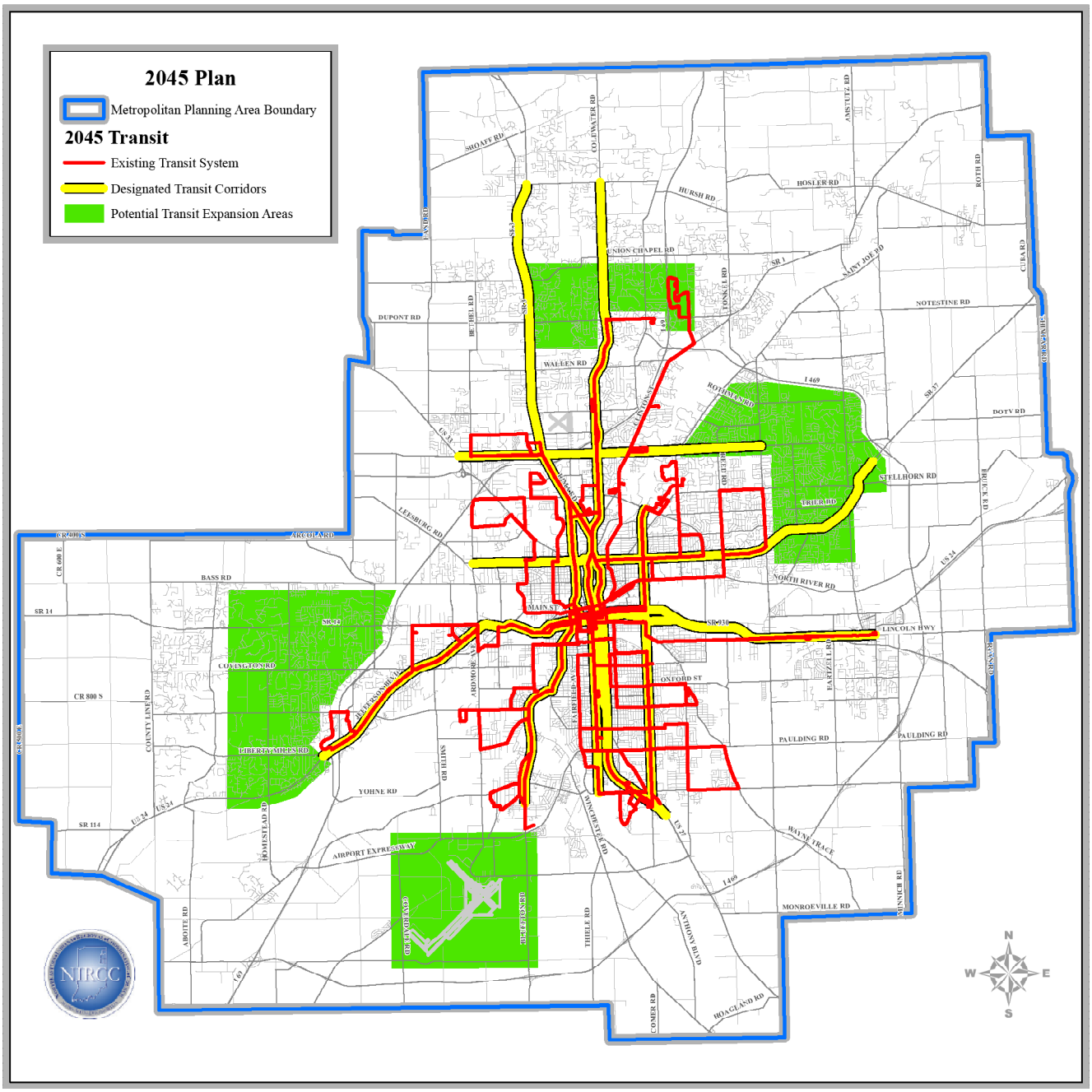


Figure 6-3

Recommended 2045 Transit Syatem

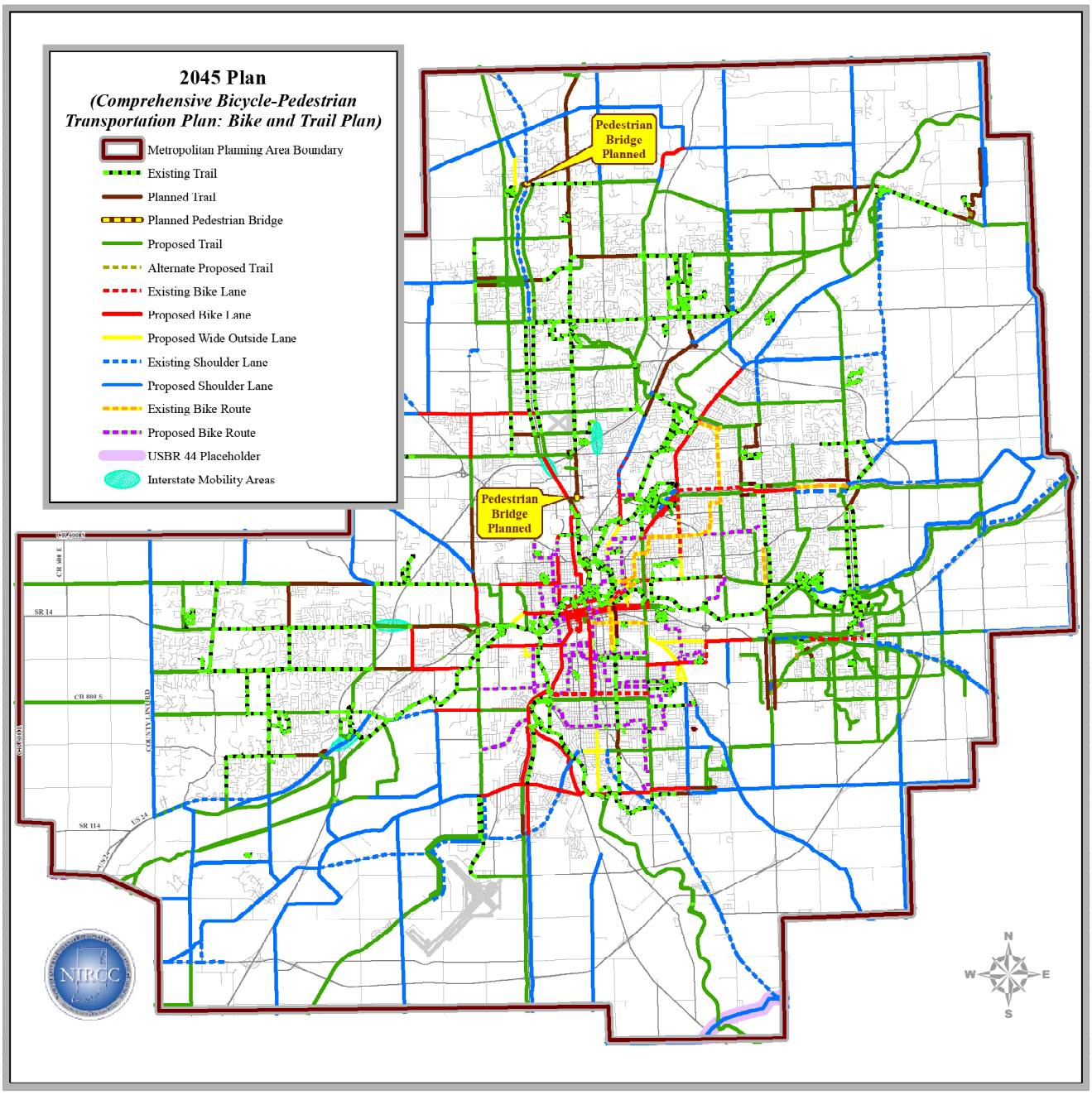


Figure 6-4

Recommended 2045 Bicycle and Trail Plan

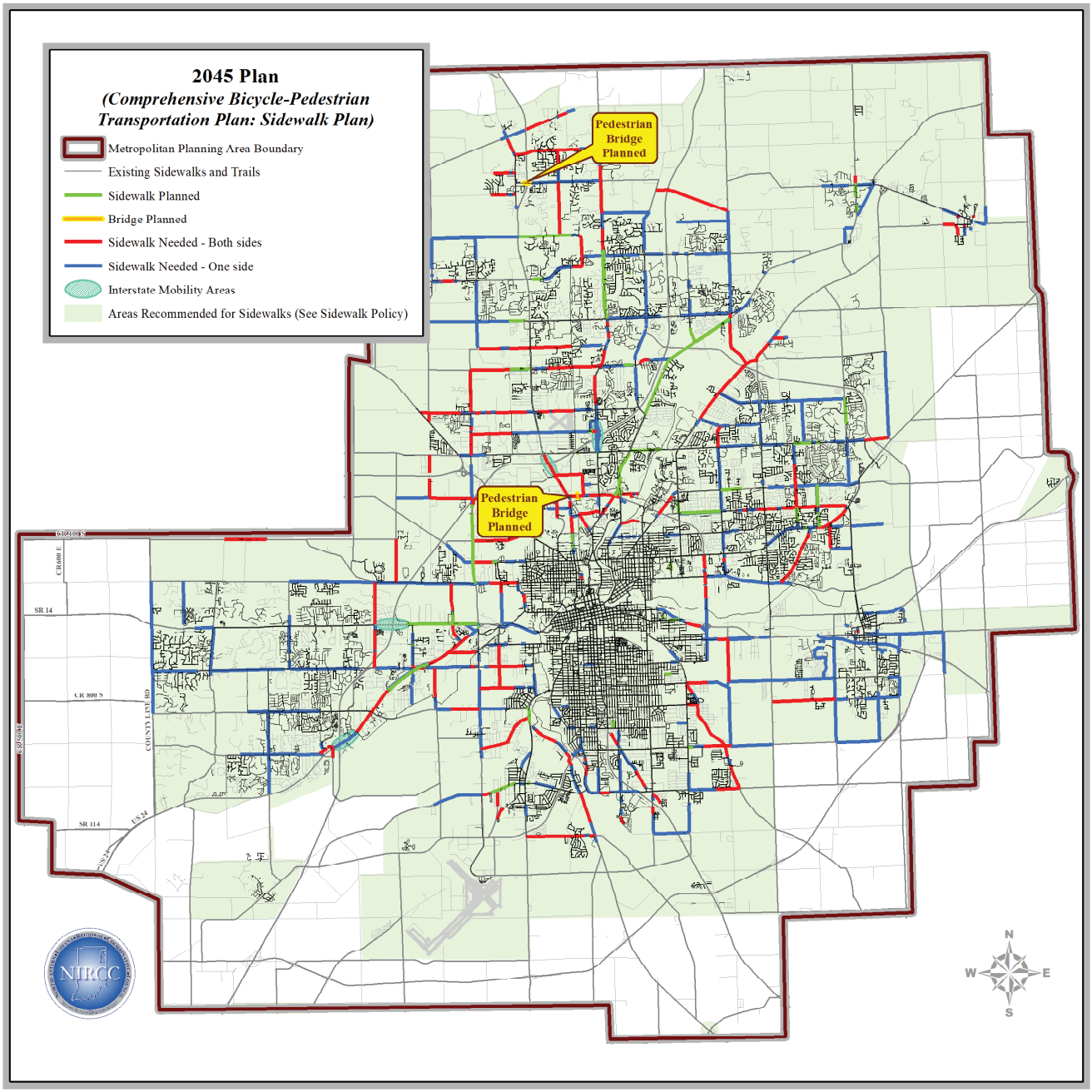


Figure 6-5

Recommended 2045 Sidewalk Plan

The Recommended Plan

The recommended plan is a comprehensive list of transportation projects and policies carefully developed to meet future travel demands. The policies and projects were selected on their potential for mitigating safety concerns, easing congestion and improving mobility throughout the metropolitan area. A safe and efficient transportation system is the primary goal of the recommended plan.

Highway Improvements

New Construction

These projects enhance the mobility of drivers in areas that become increasingly important as the community grows. A more efficient system allows the traveler to take a quicker route reducing vehicle miles of travel, air pollution, energy consumption and travel delay.

Widening Projects

Widening projects improve the accessibility of the area, add to street continuity, and provide relief in congested areas. Relieving congestion also equates to a reduction in travel time, lower accident potential and improved air quality. Widening projects expand the capacity of the selected roadway by providing additional travel lanes. Added travel lanes are considered when less evasive congestion management strategies can no longer satisfy the travel demands.

Congestion Management Strategy Implementation

Congestion Management Strategies include improvements aimed at maximizing existing highway capacity. The construction of a center turn lane to allow left-turning vehicles to exit the busy through lanes resulting in less traffic conflicts and reduced accident potential. This category of projects may also include a turn lane extension for intersection or ramp movements where congestion is occurring. The extended turn lanes allow turning traffic to exit the through lanes improving flow and maximizing capacity. Intersection reconstruction projects improve intersection capacity and flow, negating the need to widen long sections of roadway. These projects may include adding turn lanes or realigning intersections to improve traffic flow. The reconstruction and realignment of roadway segments will improve safety and traffic flow. Certain roadway sections have varying lane configurations due to egress lanes, left turn lanes, and passing blisters. These projects will establish a consistent roadway design reducing motorist confusion and improving traffic flow. This category of projects also includes intelligent transportation system improvements such as signal modernization/interconnection and motorist information systems.

Other Highway Improvements

This category of highway improvements includes the construction and reconstruction of railroad grade separations, interchange construction, and modifications. These improvement projects will improve safety while increasing mobility and accessibility for transit, freight movement, and passenger vehicles.

Funded Projects

Widen to four lanes

Ardmore Avenue - Covington Road to Engle Road
Ardmore Avenue - Engle Road to Lower Huntington Road
Clinton Street - Auburn Road to Wallen Road
Clinton Street - Wallen Road to Diebold Road
Clinton Street – Diebold Road to Mayhew Road
Diebold Road - Clinton Street to Meijer Entrance Roundabout
Hillegas Road - s/o Bass Road to s/o State Boulevard
Hillegas Road - s/o State Boulevard to Coliseum Boulevard
Hillegas Road - Coliseum Boulevard to Washington Center Road
Tonkel Road - Dupont Road/State Road 1 to Hursh Road

Center Turn Lane Improvement

Coldwater Road – Mill Lake Road to Union Chapel
Gump Road - Coldwater Road to Auburn Road (3-lane)
Maplecrest Road South – State Road 930 to Seiler Road (3-lane)

Intersection Reconstruction

Broadway and Taylor Street
Butler Road, Goshen Road and Harris Road
California Road and Flaugh Road
California Road and Kroemer Road
Carroll Road and Coral Springs Drive/Shearwater Run
Clay Street and SR 1/Leo Road
Clinton Street and SR 930/Coliseum Boulevard
Corbin Road and Union Chapel Road
Coverdale Road, Winters Road and Indianapolis Road
Homestead Road and Liberty Mills Road
Homestead Road and Lower Huntington Road
Hursh Road and Tonkel Road
Leesburg Road and Main Street
Linden Road and Rose Avenue
Ludwig Road and Huguenard Road
Maplecrest Road and SR 930

Tonkel Road and Union Chapel Road
Wayne Trace and Monroeville Road

Reconstruction and Realignment
Amstutz Road - Hosler Road to State Road 1/Leo Road
Bass Road – Scott Road to Allen/Whitley County Line Road
California Road – Flaugh Road to Kroemer Road
Carroll Road – State Road 3 to Coral Springs Drive
Carroll Road – e/o Bethel Road to Millstone Drive
Cedar Canyons Road – SR 3/Lima Road to Coldwater Road
Coldwater Road – Union Chapel Road to Gump Road
Coldwater Road – Gump Road to Shoaff Road
Cook Road - US 33 to O'Day Road
Dunton Road - Hathaway Road to Gump Road
Dunton Road – Gump Road to Cedar Canyons Road
Flaugh Road – s/o US 30 to California Road
Goshen Avenue – Cambridge Boulevard to Butler Road/Harris Road
Goshen Avenue – Butler Road/Harris Road to Coliseum Boulevard/State Road 930
Hathaway Road - Corbin Road to State Road 3
Hathaway Road - State Road 3 to Hand Road
Huguenard Road - Washington Center Road to Cook Road
Kroemer Road – s/o US 30 to California Road
Leesburg Road from Main Street to Jefferson Boulevard
Moeller Road - Hartzell Road to Adams Center
Old Lima Road – SR 3/Lima Road to Cedar Canyons Road
Pleasant Center Road from Bluffton Road to Thiele Road
Smith Road – realignment with Airport Expressway
State Boulevard - Maysville Road to Georgetown North Boulevard
Union Chapel – Coldwater Road to Auburn Road

Reconstruct Railroad Grade Separation
Fairfield Avenue and CSX Railroad

Bridge Reconstruction
Grabill Road Bridge over St. Joseph River

New Bridge Construction
Butt Road over US 30
O'Day Road over US 30

New Pedestrian Bridge Construction
Gump Road – Pedestrian Bridge over State Road 3

Interchange-New Construction
Felger Road/Leesburg Road and US 30
Flaugh Road and US 30
Kroemer Road and US 30 (restricted access interchange)
Interstate 69 at Hursh Road (implemented when I-69 and Dupont Road, and I-69 and Union Chapel Road interchanges fail)

Interchange/Ramp-Modification
Interstate 469 and US 24 Interchange
US 24 and Ryan Road/Bruick Road Interchange

Identified Needed Improvements without funding-Illustrative

New two-lane construction
Connector Street - Wells Street to Spy Run Avenue
Paul Shaffer Drive - California Road to Clinton Street

Widening Projects - six lanes
Interstate 69 - Dupont Road/State Road 1 to Hursh Road
Interstate 469 - Maplecrest Road to Interstate 69
State Road 3/Lima Road - Dupont Road to Gump Road

Widening Projects - four lanes
State Road 1/Bluffton Road - Interstate 469 to State Road 116/124
Stellhorn Road - Maplecrest Road to Maysville Road
Washington Center Road – West Creek Boulevard/Country Forest Drive to US 33

Center Turn Lane Improvement
Auburn Road - Cook Road to Interstate 469 Exit Ramp (3-lane)
Engle Road - Bluffton Road to Smith Road (3-lane)

Saint Joe Center Road - Reed Road to Maplecrest Road (3-lane)
Saint Joe Center Road - Maplecrest Road to Meijer Drive (3-lane)
State Road 930 – Hartzell Road to Minnich Road

Road Reconstruction-Lane Reduction
Anthony Boulevard – Lafayette Street/US 27 to Oxford Street
Anthony Boulevard – Pontiac Street to Oxford Street
Anthony Boulevard – Pontiac Street to Wayne Trace
Anthony Boulevard – Wayne Trace to Crescent Avenue
Fairfield Avenue – Paulding Road to Lower Huntington Road
Paulding Road – Fairfield Avenue to US 27/Lafayette Street
Paulding Road – US 27/Lafayette Street to Anthony Boulevard
Paulding Road – Anthony Boulevard to Hessen Cassel Road
Tillman Road – Lower Huntington Road to Anthony Boulevard
Tillman Road – Anthony Boulevard to Hessen Cassel Road
Washington Boulevard– Lafayette Street to Van Buren Street

Intersection Reconstruction
Flaugh Road and Leesburg Road
Rothman Road and Saint Joe Road

Reconstruction and Realignment
Adams Center Road – Seiler Road to Paulding Road
Adams Center Road - Paulding Road to Interstate 469
Allen County/Whitley County Line Road - US 24 to SR 14
Lake Avenue - Reed Road to Maysville Road
Saint Joe Road - Evard Road to Mayhew Road
Saint Joe Road - Maplecrest Road to Eby Road
Shoaff Road – SR 3/Lima Road to Coldwater Road
Till Road - Lima Road to Dawson Creek Boulevard
Wallen Road - Hanauer Road to Auburn Road
Wells Street - State Boulevard to Fernhill Avenue
Witmer Road - Schwartz Road to County Shoals Lane

New Railroad Grade Separation
Airport Expressway and Norfolk Southern Railroad

Anthony Boulevard and Norfolk Southern Railroad
Ryan Road and Norfolk Southern Railroad

New Bridge Construction
Moeller Road over Interstate 469

Highway Policies

Interchange Review

As areas adjacent to interchanges on Interstates 69 and 469 develop, access at these locations must be carefully planned to preserve the ability of the interchanges to function safely and efficiently. It is recommended that the Northeastern Indiana Regional Coordinating Council, local government, and Indiana Department of Transportation carefully review these developments and their corresponding impacts on the interchange. In addition, as traffic volumes increase at interchange locations, the interchange performance should be periodically reviewed to determine if modifications are necessary to maintain acceptable levels of service.

Access Management Policies

The lack of access management of the roadway system is a major contributor to accidents and has been a leading cause behind the functional deterioration of our region's roads. As new accesses are built and traffic signals installed, speed and capacity on roadways decrease, and congestion and hazards increase. NIRCC will continue its access management program following guidelines as established in the Access Standards Manual and Site Impact Analysis Guide. The access management guidelines will be implemented to help preserve the integrity of the region's road system. Corridors will continue to be identified where access management guidelines should be used and specific techniques and strategies will be developed for each corridor.

Right of Way Acquisition Policies

The acquisition of right of way is an important part of meeting future travel needs. As travel patterns change, corridors and intersections must be upgraded to handle new demands. Local efforts will continue to identify locations where sufficient right of way should be acquired to accommodate future increases in travel demand.

Planning Process Policies

To ensure that the long-range goals of the community are realized, it is necessary that there exist an interaction between transportation planners and the implementing agency during project design. Efforts will continue to formalize the coordination between transportation planning and project implementation.

Transit Improvements

Transit projects and policies are derived from the Citilink 2030 Transit Development Plan Final Report, January 2020 and Citilink Board of Directors approved transit improvements to guide future transit growth, methods of service delivery, and transit efficiency. Recommended public transit policies and improvements are provided later in this chapter. This category of transit improvements includes route modifications, capital projects, and service modifications designed to increase transit efficiency and improve transit service. Increasing bus frequency by reducing headways, adding service on Sundays and potential transit expansion areas are examples of these projects. Strategies for improving paratransit service as identified in the Coordinated Public Transit – Human Services Transportation Plan for Allen County 2017 Update are also listed.

The Transit Development Plan addresses the importance of employment and housing density and the distribution of transit-dependent populations in providing efficient and effective transit service. Transit-dependent populations including seniors, youth, persons with disabilities, low-income and poverty households, households with zero vehicles, and persons with limited English proficiency. The impact of employment and household density on transit service is discussed, with a critical component to providing cost effective service directly relating to increasing contiguous areas with high-density employment and households. Transit supportive areas (TSA)were identified and concluded:

> **Most of the Fort Wayne core area of service area reflects continuous density that exceeds the TSA threshold. These areas would represent the highest level of productivity potential.**
>
> **The outer service area of most routes extends into areas where less than 50 percent of the area meets or exceeds the TSA density threshold. These areas are generally lower productivity segments.**
>
> **There are relatively few areas outside the Citilink fixed route service area that currently have a development density that would reasonably support fixed route service. Additionally, providing service to most of these areas would require extending routes by one or more miles through low density areas.**

Citilink Services and Organization Structure

Citilink provides a range of services including fixed-route service through the Central Station hub, flexible service routes that provide opportunity for deviation to locations off the route, and complementary paratransit service in Fort Wayne and New Haven. Citilink's paratransit (demand-response) service is designed to provide persons who are unable to use the fixed route system with an equivalent level of service to that provided by Citilink fixed route service.

Based on community input, potential improvements to Citilink services noted most often were:

Serve new destinations/areas of the community.

Operate earlier and/or later in the day.

Provide service on Sunday.

Provide more frequent service (less time between buses).

As there is a finite budget for transit service, it is critical to connect service to where the customers are or may be located. For Citilink services, characteristics incorporated into service area prioritization include:

Where development density (residential and employment-based developments) will support transit.

Where populations most in need of public transportation live.

Where key generators (large employment centers, grocery stores, medical centers) that support transit service are located.

Path that best connect generators and transit supportive areas and provide the pedestrian infrastructure to connect origins and destinations with transit service.

Types of proposed service changes include:

Increases in service span. Increasing the span of service means that bus routes operate for more hours. Increasing the hours means that destinations are accessible to transit users for a longer portion of the day and that transit is a transportation option for more trips in the early morning, evening and late night.

Enhancing service frequency on routes. Increasing the frequency, or number of buses per hour, improves convenience and increases capacity along a route. Shortening the time between buses makes the route more attractive and useful by reducing wait times at bus stops. Long waits, especially at night or in inclement weather, can be a barrier to using transit.

Adding Sunday service. Many current riders getting to/from retail jobs also have work hours on Sundays. Not having service on Sundays hinders travel not only for people who desire or need transit to get to/from church, it negatively impacts the ability of transit dependent populations from getting to/from work or other social activities on Sundays.

Extending routes or adding new routes. Extending a route or adding new routes are generally

targeted to increasing the area served to include new residents and destinations. Route extensions also expand the overall area served by the transit network. This means that residents in other parts of the network can reach more places and people by transit. Potential future transit expansion areas are displayed in Figure 6-6.

Relocating routes or route segments. In portions of the existing service area multiple routes share a similar path or are located in closely spaced parallel corridors. In other areas, routes travel through areas that do not generate ridership needed to defend the service investment. In these areas, current routes/paths were reviewed and where warranted, paths were modified to retain coverage to areas supporting service and relocated unproductive miles to areas likely to generate more use.

Understanding that increasing operating and capital budgets for transit is a challenging task and understanding the need to address current service gaps and area productivity issues, two approaches to service modification recommendations were provided:

1) Revenue Neutral Alternative: This approach worked within the current revenue hour budget in allocation of service. Adding service in the revenue neutral scenario required identifying logical and supported reductions in other routes or hours of service. The revenue neutral alternative proposed modifications on spacing between routes and directness of routes to major destinations tempered with ensuring equity in access. The modifications reviewed include:

   Retain saved revenue hours as a reserve

   Develop a new route

   Establish flexible zone(s) Convert one 60-minute route to 30-minute service

   Expand daily service hours

   North Transfer Hub

   Park and Ride Opportunities

   Coordinating with Regional Providers and Intercity Carriers

2) Revenue Enhancement Alternative: As the Transit Development Plan is a future planning tool, this approach developed a process to evaluate potential service improvements based on three revenue enhancement scenarios. The improvements selected were based on public and stakeholder input. With this evaluation, community leaders and transit advocates can understand the budget needs and work to identify additional funding for identified improvements. The modifications reviewed include:

   Providing service to currently unserved areas

   Increasing system frequency/reducing headways

   Extending hours of service

   Adding Sunday service

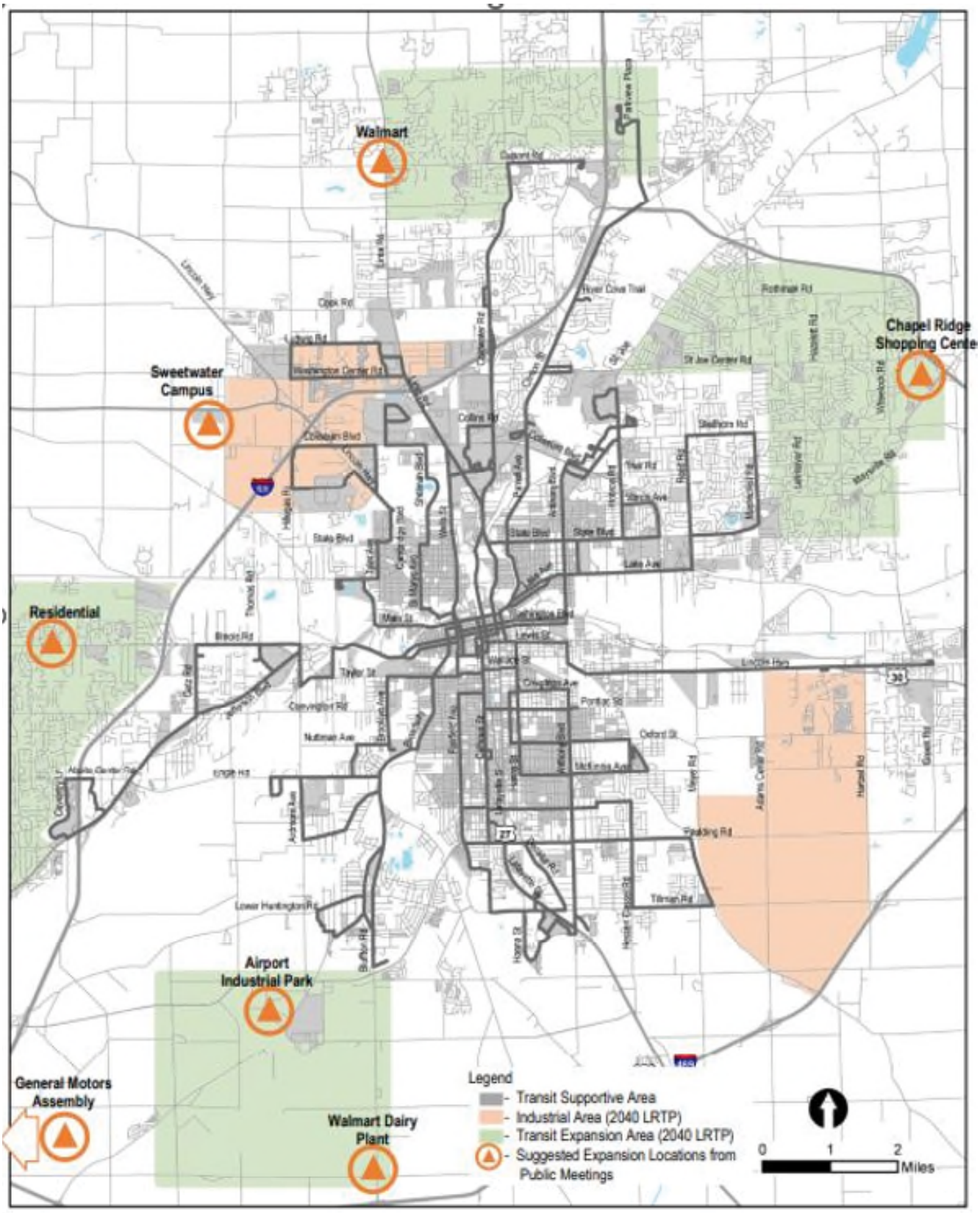


Figure 6-6

Potential Future Transit Expansion Areas

In addition to service modifications designed to improve transit service, Citilink is engaging in multiple projects and programs to ease the use of transit, enhance mobility, reduce transit operating costs and improve system sustainability. These programs include employing technological innovations to enhance consumer service, improve energy efficiency and reduce vehicle emissions, and augment mobility options for employment opportunities.

Automatic Vehicle Location

The Automatic Vehicle Location (AVL) system provides continuous communication as to where every service vehicle is located. Citilink has implemented an automatic vehicle location (AVL) system on the fixed route and Access fleet that connects vehicles seamlessly with scheduling and dispatching software. The AVL also provides customers with real time information through mobile applications on the location of their bus. In addition, the benefits for Citilink are much broader in that the data is used by dispatchers to monitor schedule adherence status, breakdowns, and emergencies. The AVL system can also integrate with other on-board systems to improve the convenience of information sharing while on the bus. AVL systems can be tied to head signs and automatically change them. It can connect with systems (annunciator systems) to announce the next stop, taking that role out of the operator's hands.

Automatic Passenger Counters

Citilink has been implementing an Automatic Passenger Counter (APC) System to install and gather passenger boarding data. APC systems are electronic units mounted at bus doors capable recording activity of people getting on or off. This access information gathering can be connected to the automatic vehicle location (AVL) and farebox collection systems to provide a powerful integrated passenger analysis system. The interconnected APC/AVL/farebox network provides Citilink with a continuous method of collecting information about passenger numbers at a variety of service levels, including route, route segment, or specific transit stops by time of day and by day of the week.

Electronic Ticketing and Transit Trip Planner

There are two main mobile applications utilized by Citilink that allows riders to purchase and store passes for use on board transit vehicles. There is no cost to the user for the Token Transit application and users can purchase one or multiple tickets or passes. Citilink also subscribes to Google Transit to support trip planning for riders. The online application includes both computer and mobile device format to allows users to see Citilink trip options. The application combines schedule and route data in Google Maps. Customers can input their origin and destination (either the addresses or as landmarks) and receive a description and map of where to access their best option, where to transfer if needed, and where to get off. Included are all walk distances and schedule times.

Low/Zero Emission Propulsion/Alternative Fuel Study

Citilink is embarking on a low- and zero-emission bus propulsion technology study to identify

available alternatives, the costs, benefits, risks, and timelines, to assess existing infrastructure and identify needs and capabilities for various powering/fueling options. The study will include the development of a transition plan. An analysis of viable technologies including diesel, CNG, hybrid, battery electric, hydrogen fuel cell and other alternatives. Existing and new infrastructure needed to support low- or zero-emissions solutions will be assessed. The study will provide projected costs and expected return on investment.

Joblink Vanpool Program
Citilink is launching a new public-private partnering vanpool program called Joblink. The program will provide assistance for residents getting to and from work. Citilink will partner with area businesses to provide a way for employees to get to work using a van, through a carpool-like system. The employer and vanpool participants will select the drivers and choose different options for their van. Costs such as gas, insurance and maintenance will be provided through the program by Citilink, the employer, and vanpool participants paying a monthly fee. There will also be a website where participants can log in, register, schedule their ride and manage costs.

Public Transit Policies

**Policies are numbered for identification purposes only, not by priority*

Policy 1 In the urbanized portion of the Metropolitan Planning Area where fixed route transit service is the most efficient means of providing public transit, Citilink fixed route transit service will remain as the service of choice. Where fixed route transit service cannot meet established performance standards, other types of transit service will be considered. Opportunities for service coordination and connectivity should be explored by Citilink and other service providers.

Policy 2 As the urbanized area grows; transit service should be expanded to meet the transit demands of the community. Increase frequency on routes where demand warrants.

Policy 3 Enhance public transportation to support clean air strategies, energy conservation, congestion management, transportation choice and meet the needs of transit dependent populations.

Policy 4 Land use policies should address the transit need for accessibility to private development through street and subdivision design. This is crucial to providing access to employment, senior housing, low-income housing, medical services, quality food, and other daily essential needs. The land use planning approval process should include pedestrian and public transportation issues and recommendations from appropriate providers and committees. Land use policies and recommendations should be consistent with the guidelines provided in the Coordinated Development and Transportation Services Guide.

Policy 5 Citilink will have a role in urban core redevelopment. Mobility afforded by transit service and utilization of the Central Station can complement and encourage redevelopment activities.

Policy 6 Continue to implement appropriate nontraditional transit services and evaluate vehicle type, design, and propulsion when purchasing new capital equipment. Citilink and other providers are encouraged to expand and replace their fleets with low or no emission vehicles.

Policy 7 Citilink, Community Transportation Network, and other providers should be partners in the provision of specialized transportation services and access all potential financial resources to meet these specialized transportation needs.

Policy 8 Investigate the provision of non-fixed route transportation services in the Metropolitan Planning Area.

Policy 9 Consider opportunities for service integration with human service providers, taxi, and other private sector providers. In addition, investigate involvement in ridesharing type services.

Policy 10 Transportation services should be coordinated with all providers (public, human service, and private) to maximize efficiency of available resources.

Policy 11 Evaluate alternative route structures to improve transit service efficiency.

Policy 12 Consider service connectivity with other providers operating in Allen County and the surrounding region that travel to and from the Metropolitan Area.

Public Transit Improvement Projects

**Projects are numbered for identification purposes only, not by priority*

Project 1 Expanded transit service in the growing urbanized area where ridership warrants. Potential locations include the Fort Wayne International Airport and surrounding area, Chapel Ridge and surrounding area, and Aboite, Perry, and Cedar Creek Townships. Types of service will be determined based upon projected demands and proposed service levels.

Project 2 Replacement of transit coaches and service vehicles as necessary to maintain a dependable transit fleet.

Project 3 Install and upgrade bus shelters, benches, and other customer amenities by both Citilink and other entities (public and private). Placement of shelters (Bus Huts) should be consistent with Citilink service, accessible, and have sidewalk connectivity.

Project 4 Reduce headways on selected routes where current and potential ridership levels warrant.

Project 5 Expand service hours into the evening and provide Sunday service through fixed route and other types of transit services.

Project 6 Provide customer access to innovative technology to promote and sustain transit ridership.

Project 7 Design and construct a satellite transfer center to serve the northern portion of the service area.

Project 8 Encourage the construction of accessible pedestrian facilities to and from bus stop locations, within developments, and in areas where pedestrian facilities currently do not exist (sidewalk placement and connectivity).

Project 9 Designate high priority corridors to include amenities that allow busses and para-transit vehicles to safely load and unload passengers.as well as provide safe pedestrian facilities. Corridors for consideration include Broadway, Wells Street, Lima Road, Calhoun Street, Lafayette Street/Spy Run Avenue, Clinton Street, Anthony Boulevard, Washington Boulevard, Jefferson Boulevard/Maumee Avenue, State Boulevard, and Washington Center Road.

Project 10 Review and update the Comprehensive Operations Analysis / Transit Development Plan on a four-year cycle.
- Establishing Evaluation Markers
- Establishing Performance Measures
- Providing continuous monitoring and evaluation

Project 11 Complete a regional connectivity study that identifies and recommends connection opportunities between transit and paratransit providers operating in Allen County and the surrounding region.

Identified Transportation Strategies from Coordinated Transit Plan

Strategies Applicable to All Programs and Providers:

1. Identify new revenue sources to increase operating budgets necessary to expand and maintain services and fleets
2. Keep costs low/maintain affordable rates

Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Program – Capital Funding

1. Maintain existing service and vehicle fleets
2. Maintain and increase coordination between all transportation providers
3. Expand existing service and vehicle fleets
4. Increase public awareness of available services and programs offered by providers that are available to them

Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities Program – Operational

1. Provide transportation above and beyond existing complimentary paratransit service
2. Provide transportation outside current service areas
3. Provide transportation within and outside current service schedules

Bicycle, Pedestrian and Enhancement Improvements

Current / Planned Projects

- Bass Rd Trail - Scott Rd to Hadley Rd
- Buckner Park Trail - Trail constructed from the Bass Rd trail heading north into the park
- Carroll Rd Trail – Both sides from Bethel Rd to Millstone Dr/Allen County Fairgrounds
- Carroll Rd Trail - SR 3 to Shearwater Run
- Covington Rd Trail - Hadley Rd to Getz Rd
- Diebold Rd Trail - .25 miles s/o SR 1 to Clinton St
- Grabill Rd Bridge - Bridge over the St Joe River
- Gump Rd Trail Pedestrian Bridge - Pedestrian Bridge over SR 3
- Hanna St Trail - Berry St to Wallace St
- Hanna St Trail - Pettit Ave to Decatur Rd
- Hanna St Trail - Decatur Rd to Burns Blvd
- Liberty Mills Rd Trail - Middle Grove to Falls Dr
- Ludwig Rd Trail - Fishing Line Trail to SR 3
- Monroeville Trail and Pedestrian Bridge - Former Conservation Club to CME and Monroeville Road
- Northeast Trail - Stellhorn Rd to Evard Rd using AEP RW, connecting to the YMCA and St Joe Township park.
- Pufferbelly Trail (Poka-Bache Connector) - Lima Rd to Washington Cntr Rd
- Pufferbelly Trail (Poka-Bache Connector) - Pedestrian Bridge over Coliseum Blvd
- Pufferbelly Trail (Poka-Bache Connector) - Life Bridge Church to Fitch Rd
- Summit Park Project, Phase 1 D Trail - Trail on Ludwig from RR corridor to Lima
- Union Chapel Rd Trail - Pufferbelly Trail at Life Bridge Church to West of Auburn Rd
- Pufferbelly Trail at Life Bridge Church to West of Auburn Rd - West side from Mill Ridge Run to Stellhorn Rd
- Woodburn Rd Trail - From 1365 feet West of Becker Road to 22031 Main Street (Bob’s Restaurant)

Financial Plan

Assuring fiscal constraint of the Transportation Plan is based on a reasonable estimation of both federal and local revenues dedicated to operating, maintaining, and improving the transportation system. The first step is to prepare an estimate of the amount of funds available for the next 22 years. This was completed for the anticipated federal funds and for the Local Public Agencies. The estimate was based on each jurisdiction’s historical funding practices for operations, maintenance, and construction activities.

Concurrent with the financial resources forecast, the local projects in the Selected Plan were identified and the type of improvement necessary was determined. These include the highway projects incorporated in the Transportation Plan that are the responsibility of local governments to implement.

The projects in the plan that are the responsibility of the Indiana Department of Transportation are consistent with the State of Indiana Long-Range Transportation Plan. It is assumed that the State of Indiana and the Indiana Department of Transportation will have sufficient funds to implement projects on State Roads, US Routes, and Interstates as identified in this plan. The Indiana Department of Transportation and Northeastern Indiana Regional Coordinating Council collaborated on the proposed project list. Projects that cannot be assured funding are identified in a separate illustrative project list.

The highway system under INDOT's jurisdiction is an integral part of the transportation system in the Metropolitan Planning Area. For the state to assist local government in the implementation of the transportation plan, it is incumbent on the state to develop a long-range strategy addressing the construction and maintenance of the transportation system. This strategy should be independent, yet complementary to federal funding policies. Such a strategy will contribute to economic health and development of communities within the state. Areas should receive a fair share of state and federal funds proportional to their population, vehicle ownership, and tax contributions.

Projects under local governmental jurisdiction were identified and the cost of each project was developed. Costs were estimated for preliminary engineering, right-of-way acquisition, and construction activities. The cost estimates are elevated due to the recent volatility in highway construction costs due to inflation and supply-chain issues. Project cost estimates for the years 2024 through 2028 are based on current development and construction estimates and hedged for a 3% annual rate of inflation. It's anticipated that construction costs will adjust and may trend down as supply-chain issues resolve and inflation slows. The inflation factor was used to adjust project cost developed utilizing 2019 costs for project development and construction. Project cost estimates for the years 2029 through 2045 were also adjusted based upon a continual, cumulative average annual inflation rate of 1.5%.

Local Funding

Local governments predominantly rely on Motor Vehicle Highway (MVH), Local Roads and Streets (LRS), and local wheel tax funds for highway maintenance, administration, and construction expenditures. Additional funds such as County Economic Development Income Tax (CEDIT) and County Option Income Tax (COIT) are also used for highway maintenance and construction projects. Indiana also provides State Funds through a Community Crossing grant program that funds transportation maintenance and reconstruction projects. Several projects within the Metropolitan Planning Area are eligible for Federal Aid Group IV funds. The construction expenditures fund local construction and reconstruction projects

and provide local matching funds for federal-aid projects. The remaining funds are used for operations and maintenance.

Local governments including Allen County, Cities of Fort Wayne and New Haven, and towns of Grabill, Huntertown, and Leo-Cedarville collectively have an estimated 2024 combined revenue amount over 165 million dollars available for transportation operations, maintenance, and construction. Allowing for conservative growth of 0.5 percent, the combined total local funds available from 2024 to 2045 is over 3.8 billion dollars. Some of the transportation projects in the Plan will be funded solely with local revenues and will not include federal assistance. Table 6-1 displays the local revenues.

Table 6-1. Local Revenues 2024-2045

Municipality	Available Local Funds 2024-2045 (in millions)	Federal Match and Locally Funded Projects (in millions)	Revenues Available for Operations and Maintenance (in millions)
Allen County	$2,241	$40.2	$2,200.8
Fort Wayne	$1,268	$25.1	$1,242.9
Grabill	$19	$0	$19.0
Huntertown	$86	$13.9	$72.1
Leo-Cedarville	$62	$4.0	$58.0
New Haven	$152	$8.1	$143.9

Federal Funding

An estimate of federal funds available to the urbanized area for the 22-year plan was developed. The forecast of available federal funds was based on historical federal funding revenues to the Urban Area. Under the FAST Act appropriations, the Urban Area received approximately $10.5 million annually. The Appropriations under the Infrastructure Investment and Jobs Act (IIJA) increased the annual amount to approximately $13.7 million, representing a thirty-percent increase in federal funds to support highway construction projects. The federal funds are provided through several core programs including Surface Transportation Block Grant (STBG); Highway Safety Improvement Program (HSIP); Congestion Mitigation and Air Quality (CMAQ); Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) Program; Carbon Reduction Program (CRP); and Transportation Alternatives Program (TAP).

Historically, over the last 40 years the allocation to the Urban Area has increased at an average annual rate of 6.63 percent. Therefore, the fiscal analysis assumes it is reasonable that federal funds allocated to the Urban

Area will continue to increase throughout the duration of the Transportation Plan. Using a conservative 1.5 percent annual growth after the termination of IIJA, the urban area will receive $347,081,695 in federal funds for the years 2024-2045. Table 6-2 displays the anticipated federal revenues for 2024 to 2045.

Table 6-2. Estimated Federal Revenues 2024-2045

STBG	CMAQ	HSIP	TAP	CRP	PROTECT	Total
$208,395,940	$38,030,545	$36,107,490	$28,974,460	$26,230,760	$9,342,500	$347,081,695

The estimated combined federal and local dollars available for supporting development and construction of the local projects in the plan and covering operations and maintenance costs is over 4 billion dollars. A list of the local projects and their estimated costs for preliminary engineering, right-of-way and construction is provided in Appendix F. The project development and construction costs were adjusted for inflation. The total estimated cost for the preliminary engineering, right-of-way acquisition, and construction phases for all local projects, adjusted to year of expenditure is approximately 414 million dollars, of which 80 percent will be the federal share. Table 6-3 displays the available revenues and total federal share for the time periods 2024-2030, 2031-2040, and 2041 to 2045. Table 6-4 displays projects scheduled to be funded locally for the time periods 2024-2030 and 2031-2040. At this time no locally funded projects are scheduled for 2041-2040. Based on the federal and local funds available for programming projects, there are sufficient funds available for the highway projects included in the 2045 Transportation Plan. Therefor the highway component of the 2040 Transportation Plan is financially reasonable.

Table 6-3: Project Federal Share and Available Federal Revenue

Table 6-3: Project Cost Estimates and Available Revenue Summary

Time Period	Project Costs	Available Revenue
2024-2030	$97,704,600	$98,476,845
2031-2040	$159,218,330	$159,496,855
2041-2045	$76,443,150	$89,107,995
Total	$333,366,080	$347,081,695

Table 6-4. Locally Funded Projects

Table 6-4: Project Cost Estimates and Available Revenue Summary

Time Period	Project Costs	Available Revenue
2024-2030	$38,580,000	$1,172,913,180
2031-2040	$56,695,000	$1,748,245,060
Total	$95,275,000	$2,921,158,240

Transit

The key to understanding sources of revenue available to Citilink (formerly the Fort Wayne Public Transportation Corporation-FWPTC) in the future is to comprehend the current funding available and what the growth has been of these funds in the past. Citilink receives operating and capital subsidies from three primary sources: the Federal Transit Administration; the State of Indiana's Public Mass Transportation Fund (PMTF); and local funds including taxes and miscellaneous revenues.

Federal Funding

Since 1995, operating and capital funds allocated at the federal level have fluctuated. Federal operating funds allocated in 1995 were 955,204 dollars. In 1998, the last year Citilink received Federal operating assistance, they received 92,844 dollars. Since 1998, Citilink has not received any dedicated Federal operating assistance. The apportionment of Federal capital assistance funds has fluctuated from a high of 4.5 million dollars in 2023, to a low of 642,613 dollars in 1995. Please note that per FTA approval, Citilink converts a portion of their capital dollars to be utilized for operations. The combination of Federal operating and capital subsidies under the Section 5307 (formerly Section 9) have generally increased since 1995. Citilink received a total of 1.6 million dollars in 1995, and currently receives 4.5 million in Federal funds for capital equipment and capitalization activities. This represents an increase of 3.7% each year.

It is anticipated that Citilink will continue to receive Federal Capital assistance and the amount will increase slightly each year by approximately 2 percent. Over the duration of the planning period of the Transportation Plan, Citilink will have approximately 128 million dollars in federal assistance for capital projects. Assuming the 80:20 percent ratio of federal to local funds remains, 32.5 million dollars in local matching funds will be needed. These local matching funds will come primarily from the cumulative capital fund, local tax dollars and funds raised from the sale of obsolete equipment. The combination of federal and local dollars for capital projects totals 160.5 million dollars.

State Funding

The State of Indiana Public Mass Transportation Funds (PMTF) can be used for capital or operating assistance. In the past, the source of these funds were a fixed percentage of the Indiana State sales tax. However, the State Legislature changed the PMTF from a fixed percentage of the Indiana State sales tax to a bi-annual line item in the State budget. These funds are allocated based on a performance-based formula with an emphasis on system efficiency. As of 2023, there is State Legislation that could impact PMTF funding, however it is assumed for planning purposes that PMTF will remain consistent with the 2023 levels throughout the planning period.

Citilink has historically used state funding for operating purposes. The allocation of State funds increased over time from 1.25 million dollars in 1995 to 2.1 million dollars in 2018. However, there has been

minimal increase or decrease since 2018, the State funding has remained consistent with 2.1 million in 2023. As stated above, for planning purposes, State funding is assumed to remain relatively consistent and stable. During the planning period of the plan, the state funds will provide approximately 44 million dollars for operating expenses.

Local Funding

The FWPTC receives local funds from the following sources: local taxes, municipal garage, fare box, miscellaneous income, demand response, and bus lease. Revenue from these sources utilized for general-operating costs was approximately 10.3 million dollars in 2023. These funds, primarily obtained from property taxes, and due to recent legislative mandates to local units of government, the ability of these funds to increase over time is currently under assessment. However, as the community grows it is expected that revenues from local sources will increase at a modest rate and innovative financing methods and cost efficiencies will need to be employed. For these reasons, a conservative annual increase of 2% throughout the duration of the Transportation Plan was utilized to estimate local revenues. At this rate, Citilink will have access to approximately 287 million dollars over the planning period of the plan. These funds will be used primarily for operating funds.

Transit Operating Costs

The detailed transit financial information is provided in Tables 6-5 through 6-9. The fiscal analysis is based on maintaining the current level of transit service. Expanding service will require additional revenue that is not anticipated at this time. New revenue sources were not identified by Citiilink that would enhance the level of transit service. Additional revenue will be needed to implement additional service. A replacement schedule for transit buses is displayed in Appendix F, Table F-2. The table indicates the useful life of each vehicle and the year when replacement is expected to occur. The estimated cost of the replacement vehicle is also displayed. Please note that the replacement schedule included in this plan is to serve as a guide, all replacements will be subject to available funding and Citilink's approved annual budgets.

Table 6-5 displays the general 2023 revenue sources used to support Citilink's Transit operations. The sources include fares, local property taxes, state assistance, federal assistance, and other revenues. The total amount of revenue needed to provide transit service in 2023 is approximately 18.5 million dollars. Table 6-6 contains the estimated 2023 revenues for capital expenditures. Citilink anticipates that operating revenues will increase at an average of 4% per year and capital revenues will increase at an average rate of 3% per year. The cost of operations are estimated to increase at an average rate of 4% per year while capital projects are estimated to increase at an average rate of 7% through 2026 and then increase at an average rate of 3% after 2026.

Table 6-5 Citilink Operating Revenue 2023

Table 6-5 Citilink Operating Revenue-2018

Revenue Item	2023 Revenue
Fare Revenue	$1,895,362
Other Revenue	$219,700
Local Property Taxes	$8,203,444
State Assistance-PMTF	$2,152,745
Federal Assistance	$6,062,555*
Total	$18,533,806

*Includes special apportionments

Table 6-6 Citilink Annual Capital Revenue Estimates

Table 6-6 Citilink Annual Capital Revenue Estimates

Federal Revenue	Local Revenue	Total Revenue
$4,500,000	$300,000	$4,800,000

The Citilink operating cost estimates and anticipated operating revenues are provided on Table 6-7. As displayed in this table, operating costs and operating revenues are anticipated to increase at an average annual rate of two percent. If for some reason revenues are insufficient to meet operating costs, Citi;ink will diminish service or secure additional funds. The cost and revenue for operating Citilink's Transit service is provided for 2018 through 2040. Table 6-8 contains a summary of the operating costs and revenues by three time periods utilized for highway projects costs. Table 16 indicates sufficient revenues will be available to support transit operations, but virtually every dollar obtained will be used to provide service and Citilink will not maintain an operating revenue reserve.

Based on the vehicle replacement schedule provided in Table F-2 in appendix F, the capital costs anticipated to maintain existing service are displayed in Table 6-9 for each time period. As previously mentioned, Citilink capital revenues will increase at an average rate of 3% per year, while capital projects are estimated to increase at an average rate of 7% through 2026 and then increase at an average rate of 3% after 2026. As the table indicates, at specific time periods Citilink will operate with a reserve of capital funds, however the reserve is earmarked for future procurements and will not truly function as a long term surplus. Please note, for planning purposes, only the capital costs associated with vehicle purchases were included in the estimates.

The transit capital and operating information demonstrates that the current level of transit service can be maintained through the duration of the transportation plan. In order to implement additional transit services, new and/or increase revenue sources will need to be secured. The anticipated cost for implementing several new service options is provided below.

Table 6-7 Citilink Annual Operating Costs and Revenue Forecasts

Year	Operating Costs	Operating Revenue
2023	$18,533,806	$18,533,806
2024	$19,275,158	$19,275,158
2025	$20,046,165	$20,046,165
2026	$20,848,011	$20,848,011
2027	$21,681,932	$21,681,932
2028	$22,549,209	$22,549,209
2029	$23,451,177	$23,451,177
2030	$24,389,224	$24,389,224
2031	$25,364,793	$25,364,793
2032	$26,379,385	$26,379,385
2033	$27,434,560	$27,434,560
2034	$28,531,943	$28,531,943
2035	$29,673,221	$29,673,221
2036	$30,860,149	$30,860,149
2037	$32,094,555	$32,094,555
2038	$33,378,338	$33,378,338
2039	$34,713,471	$34,713,471
2040	$36,102,010	$36,102,010
2041	$37,546,090	$37,546,090
2042	$39,047,934	$39,047,934
2043	$40,609,851	$40,609,851
2044	$42,234,245	$42,234,245
2045	$43,923,615	$43,923,615

Table 6-8 Citilink Operating Revenue and Expenditure Estimates

Time Period	Operating Costs	Operating Revenue	Surplus
2024-2030	$152,240,876	$152,240,876	$0
2031-2040	$304,532,425	$304,532,425	$0
2041-2045	$203,361,736	$203,361,736	$0

Table 6-9 Citilink Capital Revenue and Expenditure Estimates

Time Period	Capital Costs*	Available Revenue	Surplus
2024-2030	$16,919,377	$35,028,382	$18,109,005
2031-2040	$27,791,437	$59,092,336	$31,300,899
2041-2045	$24,070,050	$34,235,010	$10,164,960

*Vehicle replacement costs only

Summary of Transit Financial Plan

The majority of the transit improvements proposed in the Transportation Plan are relatively minor modifications to the existing system. The costs for implementing these service improvements may be attainable with modest increases in operating revenue; however revenue increases are uncertain at this time. The anticipated primary capital investment over the duration of the Transportation Plan will be fleet replacement. The anticipated revenue stream coupled with cost containment will provide the necessary resources to finance these improvements. Citilink will be able to maintain transit service for the duration of the Transportation Plan.

Other Transportation Modes

Pedestrian Walkway and Bicycle Transportation Facilities

The transportation planning process administered by NIRCC has over the years included pedestrian and bicycle transportation facilities. These components were typically included as part of the Transportation System Management Program or covered under specific projects and programs. The 2015 Transportation Plan was the first transportation plan to formally include pedestrian walkway and bicycle facilities. The transportation planning efforts have continued and improved for pedestrian and bicycle facilities as a component of the planning process. The 2045 Transportation Plan supports these efforts with a significant emphasis on pedestrian and bicycle facilities.

Bicycle and Pedestrian Plan

The four county region represented by NIRCC has many individuals and organizations advocating improvements to the existing bicycle-pedestrian transportation system. To coordinate these efforts, in 2002 NIRCC sponsored the Northeastern Indiana Regional Bicycle and Pedestrian Forum made up of governmental parks, planning and highway agencies, advocacy groups, and special project organizations. The task force was assembled with the purpose of developing and maintaining a bicycle and pedestrian plan which later became the “Comprehensive Bicycle-Pedestrian Transportation Plan” and the “Northeast Indiana Regional Bicycle and Pedestrian Plan”.

One of the goals for creating the Forum was to develop a bicycle and pedestrian plan for the region. The Forum began this effort early in calendar year 2003 by focusing on Allen County’s rural areas. By the end of fiscal year 2005 the Forum had completed the planning process for the Fort Wayne area, the rural areas of Allen County, and the connectivity with surrounding counties such as Adams, DeKalb, and Wells Counties. The Forum had officially met from May of 2002 until August of 2007. Since 2007 NIRCC has relied on the Greenway Coalition for guidance as well as governmental plans and public input towards bicycle and pedestrian planning. The coalition, which is also made up of governmental parks, planning and highway agencies, advocacy groups, and special project organizations has been meeting since April

of 2005 and continues to meet presently but only on a biannual basis.

In 2006 the Indiana Department of Natural Resources (IDNR) in partnership with the Indiana Department of Transportation (INDOT) unveiled “Hoosiers on the Move - The Indiana State Trails, Greenways and Bikeways Plan”. At that time there was a push by public and private groups across the region to create a regional trail system and two trail corridors were identified as priorities on the statewide trail plan in northeast Indiana. The Upstate Indiana Trail (now named the “Poka-Bache Connector”) from Ouabache State Park to Pokagon State Park was listed as a state priority and the Wabash River / Maumee River corridor was listed as a potential state priority.

In order to provide planning support for assessing transportation enhancement projects and ensuring the coordination and connectivity throughout the region for bicycle and pedestrian projects, NIRCC initiated the process of developing a regional system for northeast Indiana. As the state priority trails were major priorities for northeast Indiana, there were many other trail opportunities throughout the region that public and private groups were advocating for. A regional bicycle and pedestrian plan would help coordinate these trail opportunities and ensure that the implementation of them would strengthen the overall regional system.

In Fiscal Year 2007 NIRCC and Region III-A Economic Development District and Regional Planning Commission began the regional bicycle and pedestrian planning effort for 11 counties in northeast Indiana. These counties included Adams, Allen, DeKalb, Grant, Huntington, Lagrange, Noble, Steuben, Wabash, Wells, and Whitley. In July of 2006 staff had begun planning and organizing “The Northeast Indiana Regional Trails and Greenways Charrette” for the purpose of producing a regional bicycle and pedestrian plan for northeast Indiana. The Bicycle-Pedestrian Transportation Plan for Allen County served as a hub for the regional bicycle and pedestrian plan and planning effort.

The charrette took place on November 17, 2006 at the World War II Victory Museum in Auburn, Indiana. There where over 100 people who participated and had input on what was to become the regional bicycle and pedestrian plan for northeast Indiana (figure 6-6). The Bicycle-Pedestrian Transportation Plan for Allen County was fully integrated into the regional bicycle and pedestrian plan. The regional plan was adopted by NIRCC as well as Region III-A Economic Development District and Regional Planning Commission in 2007.

In Fiscal Year 2016 NIRCC facilitated another trail planning charrette. In 2015 NIRCC recognized the need for the Northeast Indiana region to come together and discuss trail plans as well as regional priorities. With help from NIRCC’s partners, which included Region 3A Development and Regional Planning Commission, East Central Indiana Regional Planning District (ECIRPD), Michiana Area Council of

Governments (MACOG), and the National Park Service, an event was planned to bring together 12 counties for a one-day trail planning event. The event titled "Connecting Communities – The Northeast Indiana Trail Plan" was held on November 6, 2015 at the Eagle Glen Event Center in Columbia City, IN.

This one day planning event included several guest speakers, free food, and trail planning exercises to identify regional priorities and help update the Northeast Indiana Bicycle and Pedestrian Plan. Over 100 people from 12 counties and representatives from state, federal, and regional planning agencies participated in the event. Participating counties included Adams, Allen, DeKalb, Grant, Huntington, Kosciusko, LaGrange, Noble, Steuben, Wabash, Wells, & Whitley.

With The Regional Cities Initiative (RCI) on the horizon NIRCC and its partners realized the importance of updating the current plan and prioritizing regional corridors to create another tool for continuing the momentum that Northeast Indiana has generated over the past 10 years. The number of trail miles more than doubled between 2006 and 2015. With Northeast Indiana being selected as one of the winners of the RCI and receiving up to $42 million in state matching funds, trail development would continue to expand across the region. If you would like to see more information on the RCI for Northeast Indiana visit "https://neindiana.com/news/a-million-reasons".

The comprehensive Bicycle-Pedestrian Transportation Plan for Allen County represents a combination of plans completed by local groups (Aboite New Trails, Greenway Consortium, Northwest Allen Trails, Fort Wayne Trails Inc, Little River Wetlands, City of Fort Wayne, City of New Haven, Town of Leo-Cedarville, and City of Woodburn) and selected routes identified by the original Northeastern Indiana Regional Bicycle and Pedestrian Forum. During the FY 13 plan update the Comprehensive Bicycle-Pedestrian Transportation Plan was updated using the City of Fort Wayne's "Bike Fort Wayne Plan", "Walk Fort Wayne Plan", and information gathered through the production of the draft "Trails Fort Wayne Plan" as well as the Leo-Cedarville Sidewalk Committee Report and the Woodburn Strategic Plan. Recommendations from these plans, along with other public input and comments, were incorporated into the Comprehensive Bicycle-Pedestrian Transportation Plan wherever applicable.

With the 2035 Transportation Plan update the comprehensive Bicycle-Pedestrian Transportation Plan took what used to be one map, which included all bicycle and pedestrian infrastructure, and separated it into three individual maps. These three maps consist of a bike and trail plan (figure 6-8) which includes trails and on-street bike infrastructure, a trail plan (figure 6-9), and a sidewalk plan (figure 6-10). The combination of these three maps must be used to find out what is planned, proposed, or already exists for each corridor or alignment identified. For example, some corridors may only include proposed sidewalks while others may propose bike lanes in the street, a sidewalk on one side, and a trail on the other. Some corridors in the plan also identify which side of the street sidewalks and/or trails are proposed for.

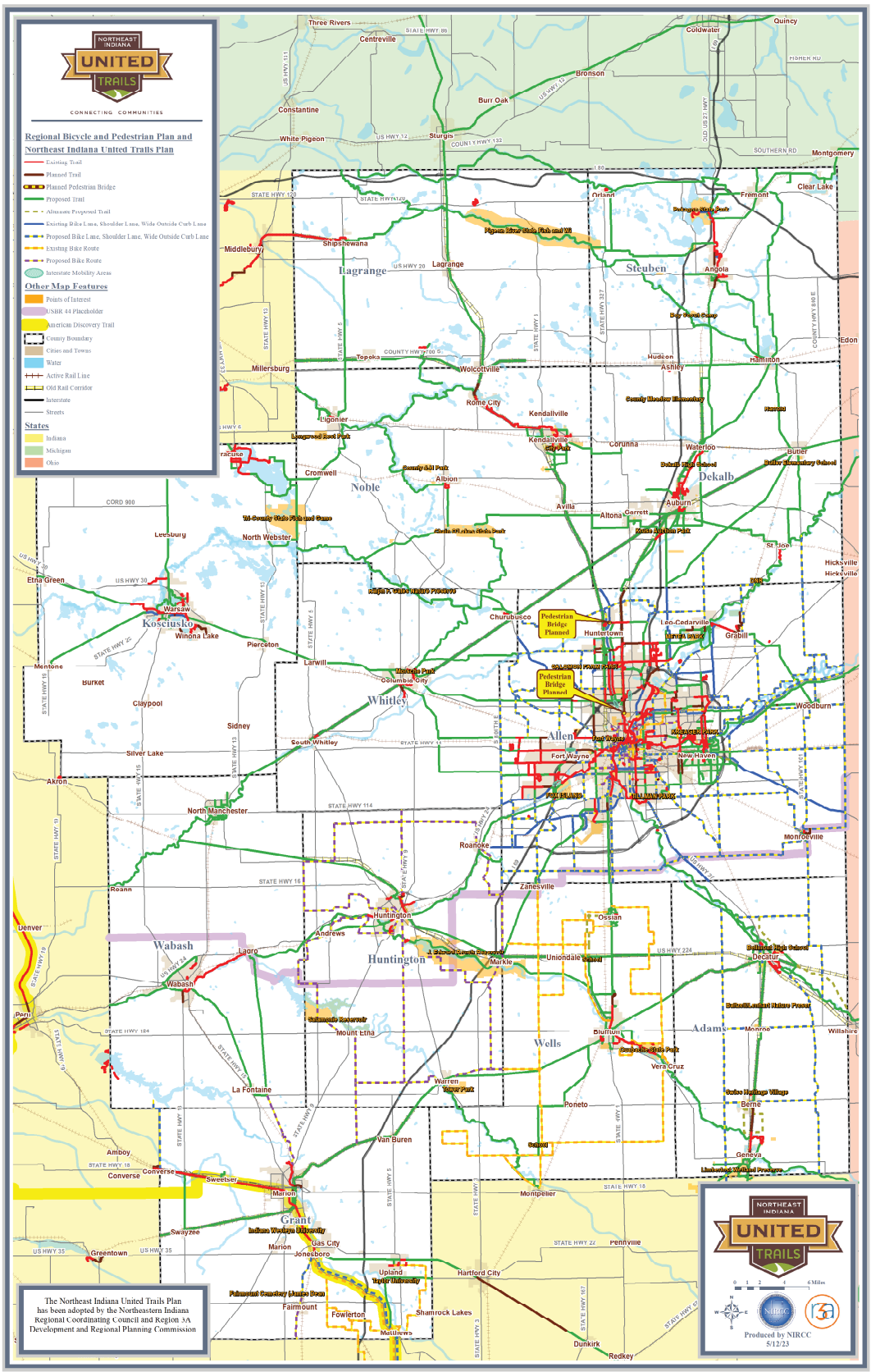


Figure 6-7

Regional Bicycle and Pedestrian Plan for Northeast Indiana

Before the plan update, the Bicycle-Pedestrian Transportation Plan incorporated all bicycle and pedestrian facilities in one map. The plan represented trails and on-street bike infrastructure appropriately but lacked consistency when it came to sidewalk infrastructure. A few local plans that were initially incorporated into the bicycle and pedestrian plan included sidewalks while others did not. In order to create consistency for sidewalk improvements, NIRCC had created a sidewalk policy which referred to a shaded area on the Bicycle-Pedestrian Transportation Plan. This policy made recommendations for sidewalk improvements within this shaded boundary shown on the plan map. This shaded boundary was first created by using a combination of the 2000 Federal Urban Boundary, city and town boundaries, and some areas identifying development around smaller rural cities and towns.

The current Bicycle-Pedestrian Transportation Plan now has a sidewalk map that identifies sidewalk needs along all major roadways in the urban area. This map identifies specific corridors or sections of roadways that need sidewalks on one side or both sides and also identifies all existing sidewalks within Allen County (figure 6-10). The sidewalk needs identified on the map will be used to prioritize sidewalk improvements and identify the need for sidewalks as development spreads throughout the urban area. The map also includes a green shaded area that refers to the sidewalk and bicycle parking recommendations policy in Appendix K. This area was reshaped in some areas to reflect the 2010 Federal Urban Area and has been updated again in 2022 to adequately cover new development in the area and updated Census demographics.

A new emphasis has been placed on barriers created by our Interstate system. Emphasis areas have been identified and added to the Bicycle and Pedestrian Transportation Plan to ensure that bicycle and pedestrian infrastructure is incorporated with improvements made to interchange or bridge structures at our interstate junctions. Bridge or interchanges are not just significant to the motor vehicle network, but usually these can be the only options for connecting other modes of travel from one side of the interstate to the other. Once improvements are made at interstate bridges or interchanges, there is very little that can be done to bridge that gap in the bicycle and pedestrian network if those facilities were not included in the project.

While every bridge and interchange project should be analyzed for all modes of travel to ensure our transportation network is complete, NIRCC has identified four key areas or corridors at interstate junctions that warrant special prioritization due to the surrounding infrastructure, development patterns, and their importance in providing connectivity in the bicycle and pedestrian network. These corridors currently create significant barriers in the bicycle and pedestrian transportation network and are identified in the Bicycle Pedestrian Transportation Plan as “Interstate Mobility Areas”. Although the Bicycle Pedestrian Transportation Plan identifies specific infrastructure needs at a number of interstate bridges and interchanges, the Interstate Mobility Areas identify the need for possibly having a higher level of

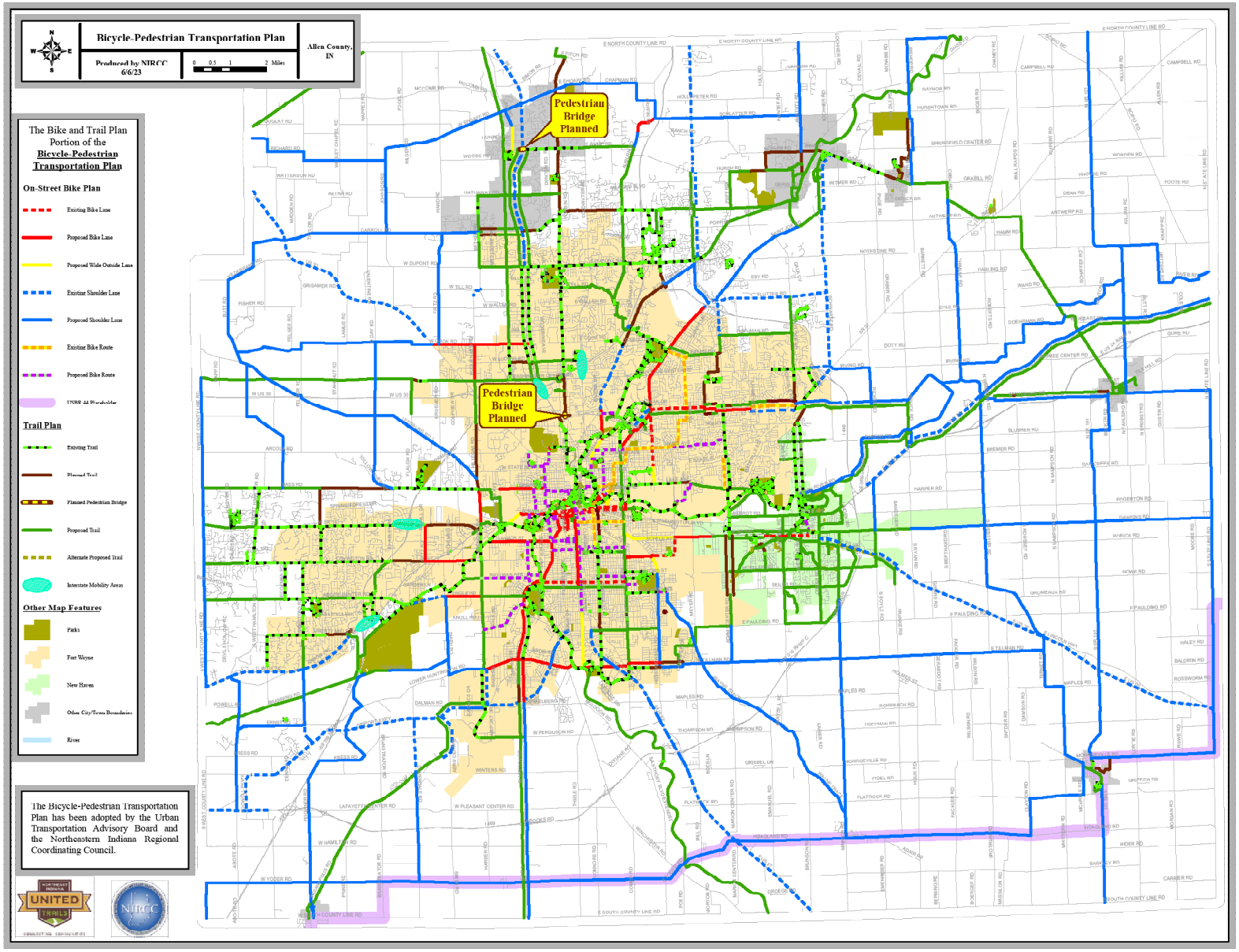


Figure 6-8

Bike and Trail Plan

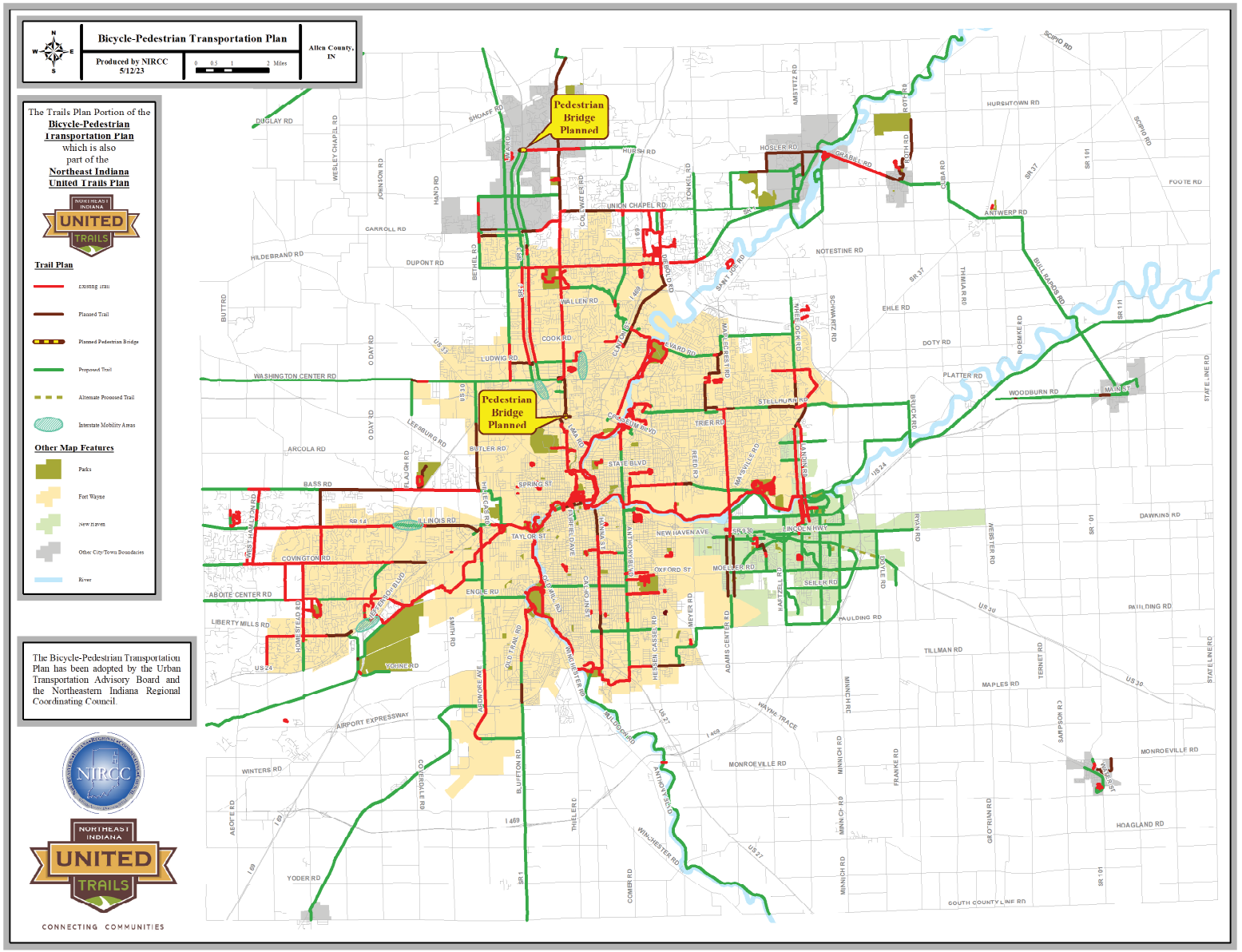


Figure 6-9

Trail Plan

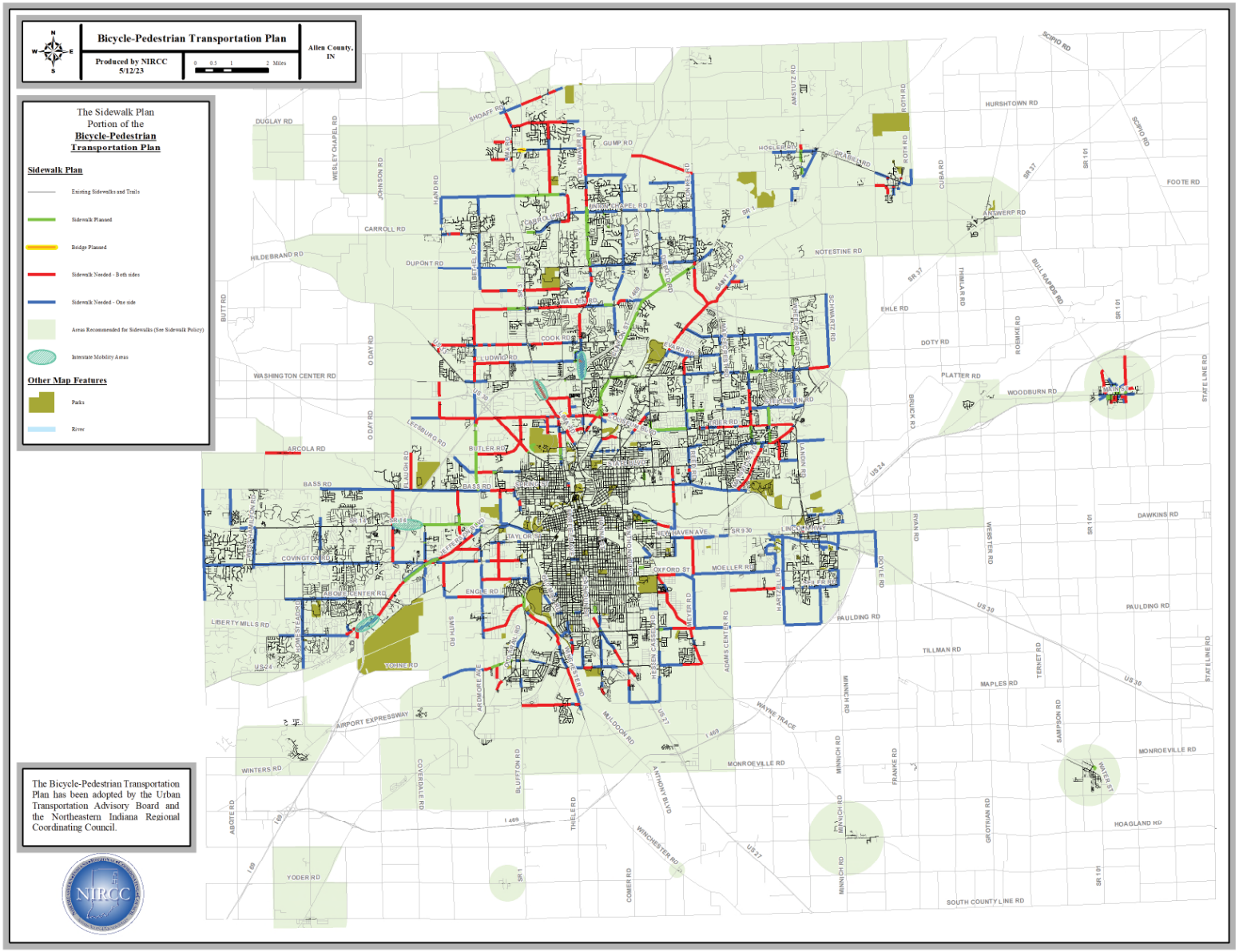


Figure 6-10
Sidewalk Plan

pedestrian and/or bicycle infrastructure and safety needs addressed. Listed below are the four Interstate Mobility Areas currently identified in the Bicycle and Pedestrian Transportation Plan:

Interstate Mobility Areas

- Jefferson Blvd/US 24 at I-69 (Lutheran Hospital Entrance to Coventry Ln)
- Illinois Rd/SR 14 at I-69 (Magnavox Way to Hadley Rd)
- Lima Rd/SR 3 at I-69 (Ley Rd to Washington Center Rd)
- Coldwater Rd at I-69 (Washington Center Rd to Ludwig Rd)

A design classification system, initially created by the Forum, is used to identify types of bicycle and/or pedestrian infrastructure recommended for the identified routes on the plan. These design classifications follow what is recommended by "AASHTO's (American Association of State Highway and Transportation Officials) 2012 Guide for the Development of Bicycle Facilities". By using a design classification system, planners and highway officials have recommended design standards to follow as they coordinate them with present and future road projects and developments. By mapping out these design classifications there is an assurance of having the appropriate continuity throughout the identified system.

The design classification system used for the on-street component of the plan consists of five different classes. There are bike lanes, wide outside curb lanes, shoulder lanes, sharrows, and bike routes. The off street design classification system consists of sidewalks and shared use paths, or trails. The design classifications NIRCC uses for the plan are listed on the following pages with an example shown for each.

Design Classification for Routes

Trail: Shared use paths that are physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Trails are recommended to be a minimum of 10 feet wide but may vary from 8 feet to 14 feet depending on type of usage.

Examples of a Trail

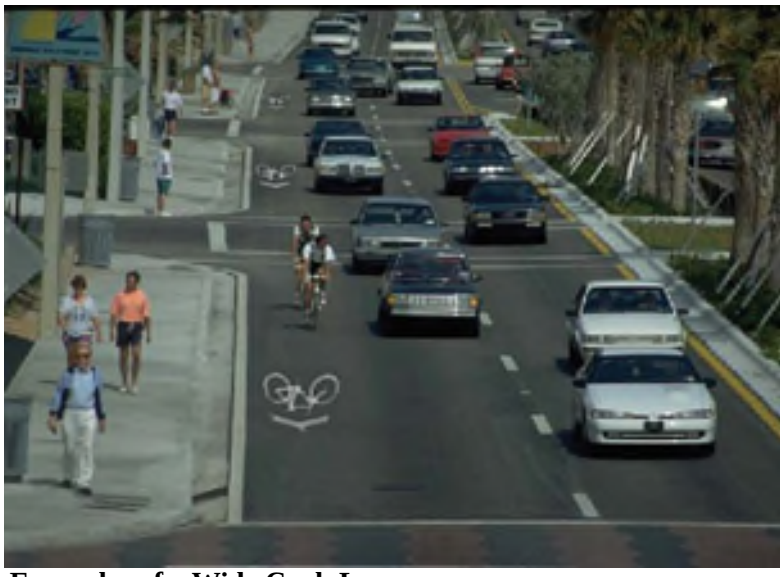
Sidewalk: The portion of the thoroughfare right-of-way designed for and used primarily by pedestrians, typically constructed of a five foot wide concrete passageway.

Examples of a Sidewalk

Bike Lane: A portion of the road that is designated by pavement striping for preferential use by bicyclists. Bike lanes are on-way facilities that typically carry bicycle traffic in the same direction as adjacent motor vehicle traffic. Bike lanes are recommended to be at least five feet wide on a curbed section of roadway and at least four feet wide on a shoulder section of roadway.

Examples of a Bike Lane

Wide Curb Lane: A widened paved outer curb lane of 14-15 feet wide can accommodate bicycles in the same lane as motor vehicles. The lane width should not be greater than 16 feet wide as it may encourage two motor vehicles to travel in the same lane. Sharrows are also recommended to provide added safety for cyclists.



Examples of a Wide Curb Lane

Shoulder Lane: A lane contiguous to the traveled way but separated by a stripe. It's most common in rural areas or on rural designed roadways and typically shared with pedestrians and occasional emergency vehicle access. The minimum width of a shoulder lane is 4 feet wide.

Examples of a Shoulder Lane

Sharrow: In shared roadways, the lanes have special arrow markings within to help alert cars to take caution and allow cyclists to safely travel in these lanes when striping is not possible.

Examples of a Sharrow

Bike Route: A bikeway or street which has been specifically designated for bicycle travel by signage. These are usually low volume streets where cyclists share the road with motor vehicles.

Examples of a Bike Route Sign

The current trail systems (seen in figure 6-8) have increased in recent years. There are now 95.1 miles of trails in Fort Wayne, 23.7 miles in Allen County, 7.3 miles in New Haven, 0.6 miles in Grabill, 1.5 miles in Leo-Cedarville, 2.4 miles in Huntertown, and 0.1 miles in Monroeville. Planned additions to these trail systems will add about 18.6 miles of trails to Fort Wayne, 5.3 miles of trails to Allen County, 5.3 miles to New Haven, and 1.1 miles of trails to Monroeville. These planned additions are trail projects that have been committed to, partly constructed, already have sources of funding, or are partly finished and are scheduled for an approximate completion date and do not include the rest of the proposed system.

Table 6-10 gives a summary of projects that are in some stage of implementation or have been completed in recent years. These projects utilize a variety of local, state, and federal fund types as well as combinations of the three. Some projects get funded along with road projects while others may receive their funding from local advocacy groups and foundations, local government agencies, or various types of federal funds.

A significant amount of time during FY 2017 was spent on the Northeast Indiana Trail Branding and Wayfinding Initiative. The Regional Trail System for Northeast Indiana needed a name and a brand. We needed something to call our system that would speak to the residents and visitors of Northeast Indiana. Part of this not only required names and logos, but also required a common signage and wayfinding system to capture visually the message of our trails. It had to be unique, and allude to Northeast Indiana's cohesiveness and future connectivity of trails and communities throughout the region. Just like new trails, there are many existing trails throughout our region with different "owners" and different "names" that while needing to maintain their identities, there was also a need for consistent signage and information regarding regional identification, visual branding, directions and destinations, and other trail related information. A named and branded system provides a simple way to market our trail system to users and potential funding partners, thereby playing a crucial role in the development of our trail system and solicitation of private investment.

Table 6-10. Bicycle - Pedestrian Projects

Bicycle-Pedestrian Facility	Description	Status
*Aboite Center Rd Trail	1100 ft w/o Coventry Ln to Jefferson Blvd	Completed 2010
****Aboite Center Rd Trail	Homestead Rd to Westlakes Dr	Completed 2014
*Amber Rd Trail	Liberty Mills Rd to Ivanhoe Ln; just north of US 24	Completed 2008
*Anthony Blvd Bridge Bike Lanes	Bridge over Maumee River	Completed 2014
*Anthony Blvd Bridge Trail	Bridge over Maumee River	Completed 2014
*Ardmore Ave Trail	Covington Rd to north of Taylor St	Completed 2009
*Ardmore Ave Trail	North of Taylor St to Jefferson Blvd	Completed 2010
*Ardmore Ave Trail	Airport Expressway to Second St (airport)	Completed 2020
*Ardmore Ave Extension Trail	Lower Huntington Rd to Airport Expressway	Completed 2006
*Auburn Rd Trail	Cook Rd to Clinton St	Completed 2012
*Auburn Rd Trail	Auburn Rd/Wallen Rd Roundabout and Bridge	Completed 2015
*Auburn Rd/Union Chapel Trail	At Roundabout	Completed 2014
****Bass Rd Trail	.3 miles west to .26 miles east of West Hamilton Rd	Completed 2019 and 2020
*Bass Rd Trail	Scott Rd to Hadley Rd	Approximate Completion 2024
*Bass Rd Trail	Hadley Rd to Clifty Pkwy	Completed 2018
*Bass Rd Trail	Clifty Pkwy to Thomas Rd	Completed 2022
*Bass Rd Trail	Thomas Rd to Hillegas Rd	Completed 2021
Becketts Run Trail Phase 1	Along Becketts Run from St Joe Center to Clinton	Completed 2021
Beckett's Run Trail Phase 3	Dawsons Creek Blvd to Pufferbelly (Poka-Bache Connector)	Completed 2014
Bethel Rd Trail	Sections along west side of Bethel Rd north and south of Carroll Rd along School Properties	Completed 2009
Bethel Rd/Till Roundabout Shoulder Lanes (not signed)	Intersection of Bethel/Till/Huguenard	Completed 2017
Bluffton Rd (Poka-Bache Connector)	Bluffton Rd from Lwr Huntington Rd to Old Trail Rd and extension to West Foster Park	Completed 2017
*Bostick Rd Bridge	New road/bridge. Old Bridge preserved for bicycle/pedestrian use	Completed 2010
Buckner Park Trail	Trail constructed from the Bass Rd trail heading north into the park	Approximate Completion 2023
*Carroll Rd Trail	Bethel Rd to Millstone Dr/Allen County Fairgrounds	Approximate Completion 2023
*Carroll Rd Trail	SR 3 to Shearwater Run	Approximate Completion 2023-24
****Carroll Rd Trail	Shearwater Run to 0.5 miles east of Shearwater Run	Completed 2018
Carroll Rd Trail	0.5 miles east of Shearwater Run to the Pufferbelly Trail	Completed 2022
**Cedar Creek Parks Trail (Grabill Rd Trail)	Trail from Leo-Cedarville to Grabill	Completed 2006

* Project that is combined with a road improvement project.
** Project utilizes Transportation Enhancement Funds (TE Funds).
*** Project utilizes Transportation Alternative Funds (TA Funds) and may be combined with a road improvement project.
**** Project utilizes private funds through new development infrastructure.

Table 6-10 Continued next page...

Table 6-10. Bicycle - Pedestrian Projects - Continued

Bicycle-Pedestrian Facility	Description	Status
*Clinton St Bridge Trail (Martin Luther King Bridge)	Trails on both sides of the new bridge	Completed 2012
Clinton St Shoulder Lanes (not signed)	Parnell Ave to Auburn Rd	Completed 2016 and 2017
Coliseum Blvd Trail Spur	The Rivergreenway to Carrington Field baseball diamond	Completed 2009
*Columbia Ave and Lake Ave Bike Lanes	St Joe Blvd to Crescent Ave	Completed 2021
*Columbia Ave, Delta Blvd, Lake Ave Bike Route	Crescent Ave to Lake Ave/Delta Blvd	Completed 2021
Cook Rd Trail	Tangerine Lane to Auburn Rd	Completed 2011
Coverdale Rd Shoulder Lanes (not signed)	Winters Rd to Airport Expressway	Completed 2015
Covington Rd Trail	e/o Greys Oaks Blvd to West Hamilton Rd	Completed 2007
**Covington Rd Trail Phase 2-B	West Hamilton Rd to Beal-Taylor Ditch	Completed 2016
**Covington Rd Trail Phase 2-A	Beal-Taylor Ditch to Eggeman Rd	Completed 2010
Covington Rd Trail Phase 1	Eggeman Rd to Scott Rd	Completed 2010
**Covington Rd Trail Phase 3	Scott Rd to Ladue Ln	Completed 2010
Covington Rd Trail	Ladue Ln to I-69 bridge	Completed 2013
*Covington Rd Trail	Bridge over I-69 to Hadley Rd (including bridge)	Completed 2013
Covington Rd Trail	Hadley Rd to Getz Rd	Approximate Completion 2023
*Dickie Rd Trail	Aboite Center Rd to 1400 ft north of Aboite Center Rd	Completed 2010
*Diebold Rd Trail	SR 1 to Union Chapel Rd	Completed 2012
*Diebold Rd Trail	SR 1 to .25 miles s/o SR 1	Completed 2016
*Diebold Rd Trail	.25 miles s/o SR 1 to Clinton St	Approximate Completion 2023-24
***Dupont Rd Trail	Lima Rd (SR 3) to Coldwater Rd	Completed 2019
Dupont Rd Trail	Coldwater Rd to Pine Mills Rd	Completed 2021
*Dupont Rd Trail	Pine Mills Rd to just west of Auburn Rd	Completed 2007
Dupont Rd Trail	West of Auburn Rd to Auburn Rd	Completed 2016
Dupont Rd Trail	Auburn Rd to I-69 Interchange	Completed 2011
***Dupont Rd Trail	Diverging Diamond Interchange at Dupont Rd and I-69	Completed 2014
Dwenger Ave Trail	Trail in front of the Water Pollution Control Facility	Completed 2008
Eggeman Rd (Vann Family Trail)	Covington Rd to Aboite Center Rd	Completed 2007
Engle Rd Trail	Jefferson Blvd to Towpath Trail	Completed 2014
*Ewing St/Wells St Bike Lanes	Commerce Dr to Berry St and Brackenridge St to Lewis St	Completed 2015
*Fairfield Ave Bike Lanes	Main St to Jefferson Blvd	Completed 2018
*Fairfield Ave/Wells St Bike Lanes	Commerce Dr to Main St and Jefferson Blvd to Hendricks St	Completed 2015
**Fishing Line Trail	Ludwig Rd to Cook Rd	Completed 2022

* Project that is combined with a road improvement project.
** Project utilizes Transportation Enhancement Funds (TE Funds).
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**** Project utilizes private funds through new development infrastructure.

Table 6-10 Continued next page...

Table 6-10. Bicycle - Pedestrian Projects - Continued

Bicycle-Pedestrian Facility	Description	Status
Flutter Rd Shoulder Lanes (not signed)	Maplecrest Rd to Schwartz Rd	Completed 2015
**Fort Wayne Urban Trails Project Phase 1	Barr St from Wayne St to Main St	Completed 2008
Foster Park Trail	Park entrance connection to the greenway	Completed 2017
*Grabill Rd Bridge	Bridge over the St Joe River	Approximate Completion 2025-2026
***Gump Rd Trail Pedestrian Bridge	Pedestrian Bridge over SR 3	Approximate Completion 2031
*Gump Rd Trail	West of SR 3 to west of Coldwater Rd	Completed 2017
Hanna St Bike Route	Berry St to Buchanan St	Completed 2012
Hanna St Trail	Berry St to Wallace St	Approximate Completion 2024
Hanna St Trail	Wallace St to Pontiac St	Completed 2015
Hanna St Trail	Pontiac St to Rudisill Blvd	Completed 2018
Hanna St Trail	Rudisill Blvd to Pettit Ave	Completed 2022
Hanna St Trail	Pettit Ave to Decatur Rd	Approximate Completion 2023
Hanna St Trail	Decatur Rd to Burns Blvd	Approximate Completion 2023-24
Hanna St Trail	Burns Blvd to US 27	Completed 2017
Hanna St Trail	US 27 to Tillman Rd and Southtown Center	Completed 2019
*Hobson Rd Bike Lanes	State Blvd to Coliseum Blvd	Completed 2017
*Hobson Rd Bike Lanes	Coliseum Blvd to Stellhorn Rd	Completed 2021
Homestead Rd Trail	Liberty Mills Rd to Summit Middle School	Completed 2008
Homestead Rd Trail	Trail along Summit Middle School property to Aboite Center Rd	Completed 2006
**Homestead Rd Trail	Aboite Center Rd to Covington Rd	Completed 2010
Huntertown Community Park Trail	Park Loop Trail	Completed 2015
****Illinois Rd Trail	Magnavox Way to Getz Rd	Completed 2015
*Jefferson Pointe Trail Spur Phase 1	Lindenwood Ave to Illinois Rd	Completed 2007
**Johnny Appleseed to Shoaff Park Trail Phase 1A	Johnny Appleseed Park to the eastern side of the new IPFW pedestrian bridge	Completed 2010
Johnny Appleseed to Shoaff Park Trail	Bridge over St Joe River	Completed 2012
**Johnny Appleseed to Shoaff Park Trail Phase 1B	Section of trail west of IPFW Bridge to Ditch and Northern section of trail to and along St Joe Center Rd	Completed 2013
**Johnny Appleseed to Shoaff Park Trail Phase 1C	Section connecting trail ending at the ditch north towards St Joe Center Rd	Completed 2017
Johnny Appleseed to Shoaff Park Trail Phase 2	Upper St Joe Center Rd to Shoaff Park	Completed 2010
Lafayette Center Rd Shoulder Lanes (not signed)	Zubrick Rd to US 24	Completed 2018
****Lake Ave Trail	East of Coliseum in front of Concordia Lutheran School	Completed 2015

* Project that is combined with a road improvement project.
** Project utilizes Transportation Enhancement Funds (TE Funds).
*** Project utilizes Transportation Alternative Funds (TA Funds) and may be combined with a road improvement project.
**** Project utilizes private funds through new development infrastructure.

Table 6-10 Continued next page...

Table 6-10. Bicycle - Pedestrian Projects - Continued

Bicycle-Pedestrian Facility	Description	Status
****Lake Ave Trail	Carew St to Beacon St	Completed 2019
Lake Ave Trail	Pemberton Levee (Randallia) to Hobson Rd	Completed 2018
Lake Ave Trail	Hobson Rd to Coliseum Blvd	Completed 2022
*Landin Rd Trails	North River Rd to Maysville Rd	Completed 2016
*Landin Rd/Broadway St Phase 1	North River Rd to Powers St	Completed 2022
*Landin Rd/Broadway St Phase 2	North River Rd to Powers St	Construction 2020-2023
Lewis St Bike Route	Calhoun St to Anthony Blvd	Completed 2017
Liberty Mills Rd Trail	Amber Rd to Homestead Rd	Completed 2007
Liberty Mills Rd Trail	Homestead Rd to Middle Grove	Completed 2016
Liberty Mills Rd Trail	Middle Grove to Falls Dr	Approximate Completion 2024
*Lincoln Hwy Bike Lanes	SR 930 to Broadway St	Completed 2021
*Ludwig Rd Realignment w/Trail	Ludwig Rd and Coldwater Rd intersection realignment with connection to Northrop HS	Completed 2022
Ludwig Rd Trail	Fishing Line Trail to SR 3	Approximate Completion 2024
Lutheran Loop Trail	Hospital Loop, Connects the Aboite Trails with the Towpath Trail	Completed 2008
*Main St Bike Lanes	Jackson St to Maiden Ln	Completed 2015
*Maplecrest Rd Trail	SR 930 to Lake Ave	Completed 2012
*Maplecrest Rd Bike Route	Lake Ave to State Blvd	Completed 2015
*Maplecrest Rd Trail	Lake Ave to State Blvd	Completed 2015
*Maplecrest Rd Trail	State Blvd to Stellhorn Rd	Completed 2021
*Maysville Road	Stellhorn to Meijer Dr	Completed 2018
*Maysville/Trier/Landin Roundabout	Trails part of the roundabout	Completed 2017
*McKinnie Ave	Anthony Blvd to Hessen Cassel Rd	Completed 2016
Meadowbrook Trail (NH)	Genie Row to New Haven Communtiy Center	Completed 2022
Meijer Drive Trail	Maysville Rd to St Joe Center Rd	Completed 2011
Monroeville Park Trail	Loop in Monroeville Community Park	Completed 2019
Monroeville Trail and Pedestrian Bridge	Former Conservation Club to CME and Monroeville Road	Approximate Completion 2023
New Haven Community Center Trail	Trail around the New Haven Community Center and connection to the neighborhood	Completed 2017
**New Haven Depot and Corridor Project	Restore Train Depot next to Moser Park and improved sidewalk/trail connections	Completed 2012
New Haven Pedestrian Walkways 3 & 5	Sidewalks along Rose Ave, West St, & Main St to Moser Park and sidewalk along SR 930 between Isenbarger Plaza and Delmart Plaza	Completed 2011
**New Haven Rivergreenway Extension	From w/o Kreager Park to Moser Park in New Haven along the Maumee River	Completed 2006

* Project that is combined with a road improvement project.
** Project utilizes Transportation Enhancement Funds (TE Funds).
*** Project utilizes Transportation Alternative Funds (TA Funds) and may be combined with a road improvement project.
**** Project utilizes private funds through new development infrastructure.

Table 6-10 Continued next page...

Table 6-10. Bicycle - Pedestrian Projects - Continued

Bicycle-Pedestrian Facility	Description	Status
North Anthony Blvd Trail	Crescent Ave to the "Johnny Appleseed to Shoaff Park trail" at Coliseum Blvd	Completed 2010
Northeast Trail	Stellhorn Rd to Evard Rd using AEP RW, connecting to the YMCA and St Joe Township park	Approximate Completion 2024-25
****Noyer Rd Trail	from s/o Brafferton Pkwy to railroad s/o Bass Rd	Completed 2018 and 2021
Old US24 Shoulder Lanes (not signed)	Doyle Rd to Webster Rd	Completed 2006
*Oxford Street Trail	Anthony Blvd to Turpie Ave	Completed 2015
Parkview North (Norarrow Dr)	Diebold Rd to Parkview Plaza Dr	Completed 2011
Parkview North (Parkview Plaza Dr)	Norarrow Dr to Union Chapel Rd	Completed 2012
Payton County Park Loop	Park Loop Trail	Completed 2022
Pemberton Levee Trail	Rivergreenway to intersection of Lake and Randallia	Completed 2017
**PFW (IPFW) Bridge	Pedestrian Bridge over St Joe River at IPFW	Completed 2009
**PFW (IPFW) Bridge	Pedestrian Bridge over Coliseum Blvd	Completed 2021
PFW Bridge to Anthony Blvd Trail	Trail from Pedestrian Bridge to Anthony Blvd Trail	Completed 2021
Pufferbelly Trail (Poka-Bache Connector)	Fourth St to North of State Blvd	Completed 2018
**Pufferbelly Trail Phase 1 (Poka-Bache Connector)	North of State Blvd to Franke Park and Fernhill Ave	Completed 2017
Pufferbelly Trail (Poka-Bache Connector)	Ice Way Drive from Fernhill Ave to Lima Rd	Completed 2017
Pufferbelly Trail (Poka-Bache Connector)	Lima Rd to Washington Cntr Rd	Approximate Completion 2023-24
Pufferbelly Trail (Poka-Bache Connector)	Pedestrian Bridge over Coliseum Blvd	Approximate Completion 2028-30
Pufferbelly Trail (Poka-Bache Connector)	Washington Cntr Rd to Ludwig Rd	Completed 2018
Pufferbelly Trail (Poka-Bache Connector)	Ludwig Rd to Cook Rd	Completed 2017
Pufferbelly Trail (Poka-Bache Connector)	Cook Rd to Wallen Rd	Completed 2017
Pufferbelly Trail (Poka-Bache Connector)	Wallen Rd to Dupont Rd	Completed 2010
Pufferbelly Trail (Poka-Bache Connector)	Dupont Rd to Carroll Rd	Completed 2014
Pufferbelly Trail (Poka-Bache Connector)	Carroll Rd to Life Bridge Church	Completed 2015
Pufferbelly Trail (Poka-Bache Connector)	Life Bridge Church to Fitch Rd	Approximate Completion 2023-24
Randallia Dr	Lake Ave to St Anne's Home	Completed 2013
Reed Rd Bike Route	Evard Rd to Greenway at Tennessee Ave	Completed 2009

* Project that is combined with a road improvement project.
** Project utilizes Transportation Enhancement Funds (TE Funds).
*** Project utilizes Transportation Alternative Funds (TA Funds) and may be combined with a road improvement project.
**** Project utilizes private funds through new development infrastructure.

Table 6-10 Continued next page...

Table 6-10. Bicycle - Pedestrian Projects - Continued

Bicycle-Pedestrian Facility	Description	Status
Renaissance Pointe Trail	Lafayette St to Hanna St and Hanna St to alley between Gay St and Smith St	Completed 2008
Renaissance Pointe Trail	alley between Gay St and Smith St to the new YMCA (Bowser Ave)	Completed 2016
Renaissance Pointe Trail	Bowser Ave to Holton Ave	Completed 2011
*Rudisill Blvd Bike Lanes	Old Mill Rd to Anthony Blvd	Completed 2010
Salomon Farm Trail	Trail along Dupont Rd and around Salomon Farm and YMCA	Completed 2007
Scott Rd Trail	SR 14 to Covington Rd	Completed 2007
*Sherman Blvd Bike Lanes	Bridge over Spy Run Creek	Completed 2008
**Six Mile Creek Trail phase 1	From Southtown Centre to Lemar Dr (entire trail will be from Southtown Centre to Moser Park)	Completed 2017
Southtown Centre Rivergreenway extension Phase 1	Tillman Park to public safety academy	Completed 2009
Southtown Centre Rivergreenway extension Phase 2	public safety academy to Anthony Blvd	Completed 2017
*SR 1 Trail	I-69 to east of Tonkel Rd	Completed 2011
*SR 3 Trail	Ludwig Rd to Dupont Rd	Completed 2011
****SR 3 Trail	At Winnsboro Pass	Completed 2017
*SR 14 Trail	I-69 to Scott Rd	Completed 2010
*SR 14 Trail	Scott Rd to West Hamilton Rd	Completed 2015
SR 101	North St to Railroad St	Completed 2016
St Joe Center Rd Trail	Meijer Drive to Chiswell Run	Completed 2020
St Joe Center Rd Trail	Chiswell Run to Arlington Parkway	Completed 2021
St Joe Rd	Connection to Shoaff Park Entrance	Completed 2010
*State Blvd Trail	Spy Run Ave to Cass St	Completed 2020
*Stellhorn Rd Bike Lanes	Hobson Rd to Oakhurst Dr	Completed 2018
*Stellhorn Rd Trail	Maysville Rd to Wheelock Rd	Completed 2019
Stellhorn Rd Bike Route/Shoulder Lanes	5' shoulder lanes from Laymeyer Rd to Wheelock Rd. "Bike route" signs and "share the road" signs have been added.	Completed 2011
Summit Park Project, Phase 1 Trail (Fishing Line Trail)	Trail along RR corridor from Washington Cntr to Ludwig Rd	Completed 2019
Summit Park Project, Phase 1 D Trail	Trail on Ludwig from RR corridor to Lima	Approximate Completion 2023
Superior St/Ewing St/ Fairfield Ave roundabout	Sections of trail built with roundabout to connect with Greenway	Completed 2014
Superior St/Ewing St/ Fairfield Ave roundabout	Sections built with roundabout to connect with Wells St	Completed 2014
Towpath Trail Phase 1	Rockhill Park to Ardmore Ave @ Taylor St	Completed 2009
Towpath Trail Phase 2	Ardmore Ave @ Taylor St to Smith Rd	Completed 2009
Towpath Trail Phase 3	Smith Rd to north of Engle Rd	Completed 2011
**Towpath Trail Phase 4	North of Engle Rd to Jefferson Blvd @ Lutheran Hospital Entrance	Completed 2011

* Project that is combined with a road improvement project.
** Project utilizes Transportation Enhancement Funds (TE Funds).
*** Project utilizes Transportation Alternative Funds (TA Funds) and may be combined with a road improvement project.
**** Project utilizes private funds through new development infrastructure.

Table 6-10 Continued next page...

Table 6-10. Bicycle - Pedestrian Projects - Continued

Bicycle-Pedestrian Facility	Description	Status
Union Chapel Rd Trail	Pufferbelly Trail at Life Bridge Church to West of Auburn Rd	Approximate Completion 2023-24
***Union Chapel Rd Trail**	West of Auburn Rd to East of Diebold Rd	Completed 2014
***Union Chapel Rd Trail**	Union Chapel Rd Interchange @ I-69	Completed 2012
Van Buren St Trail	Bridge over the St Mary's River with connection to Superior St and the Rivergreenway	Completed 2021
Vesey Park Trail	Trail connection with the Pufferbelly Trail (Poka-Bache Connector)	Completed 2017
Washington Center Rd Trail	Flaugh Rd to 0.42 miles e/o Flaugh Rd	Completed 2022
Wayne St and Berry St Bike Lanes	Van Buren St to Coombs St	Completed 2010
Wayne St and Berry St Bike Lanes	Coombs St to Anthony Blvd	Completed 2015
Werling Park Trail Loop	Park Trail Loop	Completed 2009
****West Hamilton Rd Trail**	Bass Rd to the Railroad s/o Bass Rd	Completed 2019

* Project that is combined with a road improvement project.
** Project utilizes Transportation Enhancement Funds (TE Funds).
*** Project utilizes Transportation Alternative Funds (TA Funds) and may be combined with a road improvement project.
**** Project utilizes private funds through new development infrastructure.

A significant amount of time during FY 2017 was spent on the Northeast Indiana Trail Branding and Wayfinding Initiative. The Regional Trail System for Northeast Indiana needed a name and a brand. We needed something to call our system that would speak to the residents and visitors of Northeast Indiana. Part of this not only required names and logos, but also required a common signage and wayfinding system to capture visually the message of our trails. It had to be unique, and allude to Northeast Indiana's cohesiveness and future connectivity of trails and communities throughout the region. Just like new trails, there are many existing trails throughout our region with different "owners" and different "names" that while needing to maintain their identities, there was also a need for consistent signage and information regarding regional identification, visual branding, directions and destinations, and other trail related information. A named and branded system provides a simple way to market our trail system to users and potential funding partners, thereby playing a crucial role in the development of our trail system and solicitation of private investment.

To accomplish this NIRCC contracted the consultant firm Merje to provide services that assisted in preparing a comprehensive branding initiative for the Northeast Indiana Regional Trail System which is now called the "Northeast Indiana United Trails". Merje traveled to Fort Wayne several times during FY 2017 and conducted public meetings throughout the region. The services they provided resulted in this new regional trail system name (Northeast Indiana United Trails), a new name and logo for our state priority trail from Pokagon State Park to Ouabache State Park (Poka-Bache Connector), and a draft of the brand and wayfinding signage guidelines manual to follow for design and implementation. This manual

provides details for designs, materials, dimensions, and location guidelines to allow communities to choose the signs needed for their unique situations.

Many existing or planned trails already have names or identities. The United Trails brand and Poka-Bache Connector brand does not intend to change unique identities already established but rather mark these trails as part of the regional system or state priority trail that can be recognized no matter what part of the Northeast Indiana Region an individual may be in. The consistent use and design of wayfinding signs will allow residents and visitors to our region to easily recognize and become familiar with our vast regional trail system. The brand and wayfinding signage guidelines that Merje has produced for our region provides a manual that gives a number of options that trail owners can choose from if they decide to identify their trails as part of the United Trails regional system. These options range from simple placards that can be installed on a sign post to a complete trailhead kiosk. The brand and wayfinding signage guidelines manual has been produced and is available to the public on our website at https://www.nircc.com/bicycle--pedestrian.html.

Transportation Alternatives (TA)

Transportation Enhancement (TE) activities represented non-traditional highway and transit projects for which special funding was originally authorized under the Intermodal Surface Transportation and Efficiency Act of 1991 (ISTEA). The transportation enhancement activities were continued with support from the Transportation Equity Act for the 21st Century (TEA-21) in 1998 and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005. Such projects included bicycle and pedestrian facilities, roadside landscaping, water run-off mitigation, and historic preservation of transportation facilities. In 2012 MAP-21, the Moving Ahead for Progress in the 21st Century Act, eliminated the TE program and replaced it with what is called Transportation Alternatives (TA) which is a part of the Transportation Alternatives Program (TAP). MAP-21 made use of the phrase "Transportation Alternatives" with two different meanings. First, Transportation Alternatives referred to

the 9 eligible definitions, which were a recasting of the former Transportation Enhancement program. The term Transportation Alternatives Program (TAP) was an umbrella term used to refer to the total reservation of funding for the Safe Routes to School (SRTS) and Recreational Trails (RTP) programs which were consolidated into one funding source with the 9 eligible TA activities.

The Fixing America's Surface Transportation (FAST) Act eliminated the MAP-21 Transportation Alternatives Program (TAP) in 2015 and replaced it with a set-aside of Surface Transportation Block Grant (STBG) funding for Transportation Alternatives (TA). These set-aside funds include all projects and activities that were previously eligible under TAP, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity. The FAST Act set aside an average of $844 million per year for TA. Unless a State opts out, it must use a specified portion of its TA funds for recreational trails projects.

Similar to MAP-21, after the set-aside for the Recreational Trails Program, the FAST Act requires FHWA to distribute 50 percent of TA funds to areas based on population (suballocated), with the remainder available for use anywhere in the State. States and Metropolitan Planning Organizations (MPOs) for urbanized areas with more than 200,000 people are supposed to conduct a competitive application process for the use of TA funds; eligible applicants include tribal governments, local governments, transit agencies, school districts, and a new eligibility for nonprofit organizations responsible for local transportation safety programs. The Act also newly allows each urbanized area of this size to use up to half of its sub-allocated TA funds for any STBG-eligible purpose (but still subject to the TA-wide requirement for competitive selection of projects).

Since passage of the FASTAct, a select number of projects have utilized TA funds to help construct bicycle and pedestrian facilities along with Federal Aid Road projects. With the amount of TA funds available for the Fort Wayne Urbanized Area practically cut in half compared to previous TE funds, using TA funds to construct standalone projects have become very difficult to fund. For this reason, NIRCC utilized TA funds to help construct bicycle and pedestrian facilities that were combined with Federal Aid road projects rather than using them on standalone projects.

On November 15, 2021, the Infrastructure Investment and Jobs Act (IIJA) (Public Law 117-58, also known as the "Bipartisan Infrastructure Law") was signed into law. The Bipartisan Infrastructure Law is the largest long-term investment in our infrastructure and economy in our Nation's history. It provides $550 billion over fiscal years 2022 through 2026 in new Federal investment in infrastructure, including in roads, bridges, and mass transit, water infrastructure, resilience, and broadband. The new Bipartisan

Infrastructure Law nearly doubled funding for the Transportation Alternatives (TA) Set-Aside, from $850 million annually for fiscal years 2018 through 2020 to an average annual amount of $1.44 billion from 2022 through 2026. TA funds under the new Bipartisan Infrastructure law continue to be used for a variety of projects including pedestrian and bicycle facilities, recreational trails, Safe Routes to School projects, road safety assessments, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity. To see the current status of projects that have utilized, or are currently using, combinations of TE funds, TA funds, private investments, and Local Funds see Table 16. Under Transportation Alternatives, and a number of other new funding opportunities outlined in the Bipartisan Infrastructure Law, staff will continue to work with community groups and local government agencies to identify potential projects, incorporate selected projects into the transportation plan, and pursue implementation of selected projects as many of these projects are components of the Bicycle-Pedestrian Transportation Plan and the Northeastern Indiana United Trails Plan.

Intelligent Transportation System (ITS)

The Intelligent Transportation System (ITS) represents the modernization of the transportation system through the application of new technology. The new technology includes the latest in computers, electronics, communication, and safety systems. ITS can be applied to the transportation infrastructure including highways, streets, and bridges. Technology is also being developed for vehicles including cars, buses, trucks, and trains. The information and computer technologies can be used to better manage the transportation system. The Fort Wayne-New Haven-Allen County Metropolitan Planning Area has completed the regional ITS architecture. A document titled “Allen County Regional ITS Architecture” was first completed in 2005. The document was updated in 2008, 2012, 2017and then again in 2023. This document covers a ten year period and serves as the planning tool for ITS programs and projects in the Metropolitan Planning Area.

The Northeastern Indiana Regional Coordinating Council sponsored several special sessions of the Transportation Technical Committee to discuss ITS options. During the development and update of the architecture, meetings were held to familiarize the members with ITS strategies and begin discussing coordination issues between the traffic-engineering specialist from local government and the District office of the Indiana Department of Transportation. As new technology becomes available and strategies have been identified to improve the transportation system. ITS will play an increasing role for traffic management in the metropolitan area. The Transportation Technical Committee will continue to review strategies and work to refine a coordinated intelligent transportation system for the metropolitan planning area.

ITS Completed and Planned Improvement Projects

Five primary project areas have been identified for ITS strategy implementation for the transportation

system in the metropolitan area. These project areas include dynamic message signs (DMS), surveillance and detection, signalization, automatic vehicle location (AVL) and automatic passenger counters (APC) for Transit.

One project area includes the installation and maintenance of dynamic message signs (DMS) on major corridors in the metropolitan area. Two DMSs have been installed on Interstate 69, one north of Dupont Road/SR 1 interchange (mile 317.1) and one south of the Interstate 469/Lafayette Center Road interchange (mile 294.2). Four additional DMSs have been proposed for the metropolitan area: two along Interstate 69, one north of the Coldwater Road interchange (mile 313.4) and one north of the Airport Expressway interchange (mile 300.3); and two along Interstate 469, one east of the Maplecrest Road interchange (mile 27.0) and one east of the Indianapolis Road interchange (mile 3.7). These signs alert motorist coming into the metropolitan area to possible delays on the highway system. Motorist will then have the option of selecting an alternate route to circumvent the congestion. The Indiana Department of Transportation is responsible for installing and operating this project.

Another project area includes the installation of CCTV cameras and vehicle detection devices along Interstate 69 and Interstate 469 within the metropolitan area. The CCTV cameras and vehicle detection devices will be located along Interstate 69 from Yoder Road to the Allen / DeKalb County line and Interstate 469 from Feighner Road to ¾ mile east of Leo Road. The CCTV cameras and vehicle detection will be monitored at the Borman Traffic Management Center. Traffic images will be available to other centers, agencies, and the public via INDOT's Traffic Wise website. The CCTV cameras and vehicle detection devices will be a vital tool in addressing congestion management and incident management along Interstate 69 and Interstate 469.

Another project area includes the installation of CCTV cameras around the City of Fort Wayne.. These CCTV cameras will be monitored at the Fort Wayne Traffic Management Center as well as other local agencies that have granted access to them. The CCTV cameras will be utilized to address congestion management, incident management and for safety analysis.

Another project area includes signalization activities. The City of Fort Wayne operates a computerized traffic control system to monitor and communicate with several hundred traffic control signals. The system is currently hard-wired but is capable of upgrading to fiber optics. The system has sufficient capacity for expansion to include additional signals. The system is also capable of adding video surveillance to assist in congestion management and incident management. This project will improve the ability of local traffic engineers to manage traffic control devices to maximize traffic flow.

Citilink has adapted ITS technology for the transit fleet. The transit operator has equipped all transit

coaches with automatic vehicle locators (AVL). This project has provided the transit dispatchers with the ability to track each vehicle throughout the system. This information will assist in dispatching vehicles, monitoring performance, and improving system efficiency. An expansion of this program has been completed to allow the vehicle location information to be sent to the Internet through Citilink's website and smart phone applications to provide transit customers with real time information on the status of the transit buses. Transit customers now have the ability to more efficiently determine when to meet their bus and minimize wait time.

Another project that Citilink has added to the transit fleet is the automatic passenger counters (APC). This technology allows Citilink to get real time data regarding the number of passengers entering and exiting the vehicle. This information will assist in monitoring the utilization of routes and stops which can then be used to analyze the system and implement any changes needed.

A newer ITS technology is the Connected (CV) and Autonomous Vehicles (AV), which has the potential to eliminate all accidents caused by human error. The technologies are being developed, tested, and deployed by a variety of private companies and public agencies. CVs and AVs may improve safety, reduce emissions, and improve the efficiency and reliability of the transportation system. Connected Vehicles are able to communicate with other vehicles and the world around them providing useful information to the driver and vehicle to help safer and more informed decisions. Autonomous Vehicles are able to perceive its surroundings, identify objects, make decisions real-time and communicate with other vehicles and Intelligent Transportation Systems.

The transportation planning process will continue to explore and coordinate ITS strategies. As new technology becomes available, feasible strategies will be implemented to improve the efficiency of the transportation system. Highway and transit systems will both benefit from ITS applications. The ITS architecture will be reviewed and revised on a periodic basis.

Summary of Selected Plan

The plan represents a dynamic process whereby evaluation and analysis is a continuous effort of fine tuning and harmonizing the various components. The implementation of the plan requires a constant level of initiative among government agencies, local businesses, and area residents. The plan requires cultivation and considerable attention to ensure the improvements and policies are achieved. Chapter 10 will address particular activities necessary to strengthen the plan and achieve the stated objectives for the community.

Chapter 7
Safety Management in Transportation Planning

Overview - the Safety Management System

Introduction

Transportation planning activities involve numerous components of traffic data and analyses. Incorporating safety as a component of planning requires detailed information to be effective in the process. The primary element in safety management is the identification of problem areas or types. To be successful in this objective accurate data is required. With this information it is possible to identify problem areas and work toward finding solutions to mitigate or eliminate crashes. The Northeastern Indiana Regional Coordinating Council (NIRCC) has established a safety management system structured around accurate data. The system has been designed to provide a variety of informational data sets to various users from planners, engineers, law enforcement agencies and even social advocacy groups.

Source of Data

NIRCC obtains all crashes that occur in Allen County on an annual basis from the Automatic Record Information Exchange System (ARIES). This database contains all crashes that occur in the state of Indiana. Crash reports from all law enforcement agencies are required to be provided and included to the Indiana State Police through this system. In February of each year NIRCC retrieves all the data reported in Allen County and saves the data in a database for analysis.

Quality of Data

The Indiana State Police continue to improve crash reporting in Indiana. The process for crash location information updated in a new version of software in 2021. Crash locations are reported by latitude and longitude format. Officers can also improve the written location description for each crash. Staff can extract all reported crashes and geocode them into our GIS software. Once the geocoding is complete the mapped data is reviewed to identify crashes that do not appear to be mapped properly. All private property crashes are also removed from the reported location and placed in a specific location to ensure they are not included in public roadway analyses.

NIRCC works directly with the law enforcement agencies in Allen County to address any reporting issues and provide suggestions on how to improve the reporting process. Information is shared with patrol officers and special investigation units such as the Fatal Alcohol Crash Team to improve the data before it is submitted in final form.

Analysis of Data

A complete data set for one calendar year is saved into a database and information related to the “unique”

location for each crash is geo-coded into a geographic information system (GIS) for analysis. The GIS software gives planners the ability to evaluate crash data in an infinite number of ways. NIRCC provides each jurisdiction within Allen County an annual "Crash Summary Report" which is provided to the respective law enforcement agencies, engineering departments, elected officials and used for statistical purposes by planners. The report summarizes crashes by location, types, contributing circumstances, individual information, environmental impacts and a variety of other data items.

High crash locations are often defined as locations that are "hazardous". NIRCC worked with law enforcement agencies and engineers to define "hazardous" locations. Safety in transportation planning often defines high crash locations by frequency of crashes because of the impacts on the transportation network resulting in congestion and excessive delay. For other users high crash locations are those where more crashes occur per million vehicles. NIRCC developed a process to identify high crash locations or, hazardous locations, which considers and balances both of these definitions. NIRCC's process was developed through a cooperative effort with FHWA, INDOT and the Transportation Technical Committee (TTC).

The process incorporates both frequency and crash rates to identify and rank hazardous locations in a fair and responsive manner. A listing of crash locations is review that includes the crash frequency of the locations. Locations from this listing that meet or exceed seven crashes in a single year are then given a crash rate. A second listing is then created that includes only the locations identified from the frequency standards. This procedure is the most cost efficient and accurate method at this time. The principle of using a minimum frequency threshold and a RMV is a simple method to determine the safety of a location.

The next evaluation step is to incorporate crashes resulting in injuries or fatalities (I/F). The percentage of I/F is used to identify locations where severity is greater than expected. There are two processes that are followed to evaluate two strata of data. Crash locations with an annual frequency equal to or greater than 7 will be reviewed in one stratum and crash locations with an annual frequency greater than two and less than 6 follow a second process.

Process for locations with frequency >2; < 6 crashes per year

1. A density analysis will be completed using a 250' radius to identify crash locations.
2. Crash locations with a frequency of 6, 5, 4 or 3 must have a minimum of one I/F crash to be included in the listing.
3. Locations then must meet one of the following two criteria;

A. Frequency Percentage of I/F

6	100% to 33 %
5	100% to 40%
4	100% to 50%
3	100 % to 66%

B. Locations with a RMV equal or greater than 1.00 will be included in the analysis.

Process for locations with FREQUENCY > 7 crashes per Year

1. A density analysis will be completed using a 250' radius to identify crash locations.
2. All crash locations with a RMV > 2.00 will be selected.
3. All locations with a RMV between 1.00 and 1.99 and have a percent of I/F between 100% and 66%.

The final step is to calculate a severity index for each location. Planners utilize specialized software developed by Purdue University in conjunction with the Indiana Department of Transportation called Hazard Analysis Tool, HAT. Severity index values (ICC) aid planners in determining how many standard deviations from a 'typical' or 'similar' intersections the location being evaluated is performing. A value of 1.00 standard deviation or higher indicates the location is experiencing a higher level of injury or fatal crashes that other similar locations throughout the State of Indiana.

Uses of Data

NIRCC uses the data for various planning activities in addition to providing crucial information to other agencies and users. The use of the data supports the Indiana Strategic Highway Safety Plan. The data is used in conjunction with data from previous years. Analysis of crash data for planning purposes relies on data from three or more years to support most decisions. The primary use of the data is the identification of high crash locations or hazardous crash locations. It provides planners the necessary resource to aid local officials in addressing citizen comments for education of drivers. As the program continues to grow the various uses of the data also increases.

The Indiana Strategic Highway Safety Plan identifies emphasis areas listed below.

Safe Road Users

At Risk Users

Older Drivers

Younger Drivers

Motorcyclists

- Vulnerable Road Users
  - Other Non-Motorized (i.e. buggies)
  - Pedestrians
  - Bicyclists
  - Micromobility Users
- Impaired Users
  - Alcohol
  - Drug
  - Distracted
  - Drowsy

Safe Vehicles
- Large Vehicles/Commercial Vehicles

Safe Roads
- Intersections
- Rail Grad Crossings
- Roadway Departures

Safe Speeds
- Speeding
- Speed Management
- Work Zones

Post-Crash Care
- Emergency Response
- Golden Hour Treatment and In-time Response

Project Selection and Prioritization

The process of selecting projects encompasses a variety of contributing factors. Locations identified through NIRCC's evaluation process and deemed "hazardous", are carefully reviewed to determine what solution or action to implement. The annual data is reviewed by planners by using the new data in combination with the previous two years resulting in a listing of locations identified from three years of data. This listing of locations is provided to a committee of local engineers called the Transportation Technical Committee (TTC). TTC reviews the listing to inform planners of issues regarding specific locations they have already addressed or have plans to address. Potential causes for problems at the identified locations are also discussed and documented. This information is then forwarded to the local Transportation Safety

Forum for further review.

The Transportation Safety Forum is comprised of representatives from each local law enforcement agency and engineering agency. Attendees include representatives from the following agencies; Indiana Department of Transportation, Indiana State Police, Allen County Highway Department, Allen County Sheriff's Department, Fort Wayne Engineering Department, Fort Wayne Police Department, New Haven Engineering Department, and New Haven Police Department. The safety forum provides a unique opportunity for law enforcement representatives and engineers to share with one another important issues regarding the locations identified. NIRCC facilitates the meetings, providing the data and documenting the issues shared by each of the representatives. Law enforcement representatives see the crashes first hand and can provide inviolable information that cannot always be documented in individual reports. Local engineering department representatives can share potential improvement ideas with law enforcement representative to get feedback on the potential effectiveness. The forum has benefited the safety process in Allen County by improving communication between various stakeholders and provided each of the participating agency's insight to what one another is doing to improve the safety of the roadways in Allen County.

The listing of projects identified by NIRCC is updated again with the comments from the Transportation Safety Forum. Planners review the locations where specific improvements were suggested. The projects identified from the listing are then forwarded to the local public agency responsible for the location for further consideration. Locally approved projects are then pursued by the local engineering departments for implementation of the construction process or forwarded to NIRCC for consideration of federal funding. NIRCC provides the listing of identified hazardous locations and the specific projects selected by local agencies for improvements to the Urban Transportation Advisory Board. This board approves projects for federal funding based on the benefit of each project and available funding. Larger projects may be approved for future funding if current conditions do not permit programming of the project. Smaller projects are often funded locally.

Existing Project Analysis

The ability to easily obtain crash records has allowed planners a new opportunity to review existing roadway projects being developed for construction. Projects that are in their infancy of preliminary design are reviewed to identify all safety deficiencies. This information serves to provide the designers of the project necessary information to ensure the deficiencies are addressed. Planners also provide this review to elected officials to support the needs of the project. The analysis may also warrant safety funding that can assist in the cost of the project.

Bicycle & Pedestrian Safety

A process to evaluate bicycle and pedestrian safety has been established by the Northeastern Indiana Regional Coordinating Council. The process involves an annual summary of all related crashes throughout Allen County. Each crash is evaluated to determine where the crashes are occurring and why. Planners determine what contributing circumstances are involved with each collision and search for patterns that can aid in future improvements to address identified deficiencies.

Transit Safety

Safety of residents that utilize the local transit system is very important to the success of the service. Safety improvements to the highway system have corresponding safety benefits to the transit system. The safety management system is structured in a manner that provides planners the ability to track elements of safety other than locations. Crash types involving pedestrians and buses can be identified and reviewed to address existing issues. The data can also support bus stop safety to assist the transit provider in route selections.

In addition to the efforts NIRCC provides, Citilink addresses safety issues concerning the transit system and is aware of the importance safety plays in overall passenger comfort. Several projects to improve security on buses and customer safety at the transfer facility have been made. Drivers are also provided training to address safety, terrorism, and security. The perception of a safe transit system is a great marketing tool. Citilink strives to maintain a safe transit system.

Conclusion

NIRCC has progressed in the development of a useful safety management program and continues to look for ways to improve data and expand the use of the information. The process of evaluating crash locations continues to evolve with the introduction of new unique situations and challenges. The information serves in meeting the goal of safer and more efficient roadways in our area.

Chapter 8
Environmental Mitigation

Planning regulations specify that metropolitan transportation plans must include a discussion of potential environmental mitigation activities, to be developed in consultation with Federal, State and Tribal wildlife, land management, and regulatory agencies. The mitigation activities are to be at the policy and/or strategic levels, not project specific. The Northeastern Indiana Regional Coordinating Council has prepared this chapter in consultation with the appropriate federal, state, and local agencies to address the environmental mitigation activities. This document maps the common environmental issues, discusses mitigation strategies, and includes some analysis of the number of specific projects near various features.

The Northeastern Indiana Regional Coordinating Council (NIRCC) is the lead agency for the development of the Transportation Plan for the Fort Wayne-New Haven-Allen County Metropolitan Planning Area. As part of the Participation Plan for the transportation planning process, NIRCC has identified environmental and cultural resource agencies that have been invited to consult on the environmental mitigation discussion. The agencies have been provided access to the 2045 Transportation Plan and proposed plan modifications. The additional information and discussion in this chapter has been provided to the resource agencies and the public for review and comment. NIRCC will consult with the agencies further to address any issues that may arise.

Methodology

There are three components to NIRCC's methodology to address the environmental mitigation requirement. First, through consultation with various agencies and staff review of published materials, maps of the most common environmental features have been developed. These maps display features from our area consistent with INDOT's Environmental Red Flag Investigation Template and other sensitive features and sites identified by NIRCC. Second, a discussion of these is provided including general strategies that are applied when a project is implemented that impacts a particular environmental resource or feature. Third, in aggregate, the number of projects that could impact the various resources have been summarized. It should be noted that the projects are very conceptual at the Transportation Plan stage and specific environmental mitigation strategies will occur as part of the environmental review and preliminary engineering activities. As projects advance to implementation, additional study and design will be conducted. For projects that use state or federal funds, environmental studies in compliance with NEPA and other state and federal requirements will be performed.

Common Environmental Issues

With following a similar format as INDOT's Red Flag Investigation Template NIRCC has identified five common groups of environmental issues for discussion in this 2045 Transportation Plan. The groups of environmental issues include:

- Water Resources
- Threatened and Endangered Species
- Section 4(f) Land
- Cultural Resources
- Other environmentally Sensitive Areas

The following sections provide a brief description of each of these issues, map the items for the NIRCC Metropolitan Planning Area, and discuss mitigation when projects may impact the environmental feature.

Streams and Wetlands

The NIRCC Metropolitan Planning Area (MPA) includes numerous water resources including rivers, streams and potential wetlands as shown in Figures 8-1 and 8-2. Two streams in the NIRCC MPA are identified on the Indiana Listing of Outstanding Rivers and Streams. The Cedar Creek in Northern Allen County is one of three streams in Indiana that made the list as a Natural, Scenic and Recreational River System and is considered to have outstanding ecological importance with high quality water. The Little River, as a tributary to the Wabash River, is part of the Wabash River Heritage Corridor. These waterways are designated on Figure 32. In addition to these designations other water resources that often require special considerations are INDR trout streams and USACE Section 10 streams. These water resources include the Little River (USACE Section 10), Maumee River – Hosey Dam in Fort Wayne (USACE Section 10), Schoaff Park (Trout 2017), and Spy Run Creek (Trout 2017).

The Indiana Department of Environmental Management (IDEM) maintains a list of impaired waters. Figure 8-3 displays the surface waters in Allen County identified by IDEM as impaired and Table 8-1 and Table 8-2 include a listing of Category 4 and 5 waterways along with the cause of impairment. These lists are used to identify impairments for which a Total Maximum Daily Load (TMDL)" study is needed. The Total Maximum Daily Load (TMDL) Program's primary purpose is to assess streams, rivers and lakes that are considered impaired by the Indiana Department of Environmental Management and develop reports that identify the causes of the impairment, the reductions of pollutants needed, and the actions needed to improve water quality. Impaired waters do not meet designated water quality standards and do not support one or more designated uses, such as recreational, protection of aquatic life, drinking water, and fish consumption. Section 303(d) of the Clean Water Act established authority for the TMDL Program and guides states on how to develop these plans for waters that do not meet water quality standards.

Many transportation projects may cross or run alongside a stream or river or touch a wetland area.

In these cases the goal is to avoid, to the fullest extent practicable, any activity that adversely impacts streams or wetlands during the design, construction, or maintenance of the transportation facility to protect water quality. As nearly all of the projects in the Transportation Plan will use state or federal funds, project design will follow state and federal design procedures and strive to achieve this goal.

Project design will take the appropriate action to avoid, minimize, and mitigate impacts as required by federal, state, and local law. In the event that impacts to streams and wetlands are unavoidable, a wide variety of mitigation strategies will be considered beginning with on-site mitigation opportunities. Once on-site opportunities are exhausted, the search for mitigation strategies will shift to off-site locations. Mitigation strategies may include but are not limited to: mitigation banking; stream and wetland creation; sediment/run-off control and water quality monitoring; restoration; and/or preservation. In general, the Indiana Department of Environmental Management requires that impacted wetlands be replaced with wetlands of the same type at specific mitigation ratios. Applicants may be allowed to create or restore a different type of wetland if it provides better water quality and/or habitat value. Where practical, wetland mitigation/replacement will occur close to the original site and within the same Hydrologic Unit Watershed (see Figure 8-4).

Impact analysis and mitigation are integral parts of the project development process. Early review and analysis of project alternatives by regulatory and resource agencies combined with effective inter-office coordination are required to develop successful transportation projects. Projects will follow guidelines for the development of mitigation as required by the U.S. Army Corps of Engineers (USACE), the Indiana Department of Natural Resources (IDNR), and the Indiana Department of Environmental Management (IDEM).

Mitigation may be needed if a construction project is likely to reduce or degrade an existing habitat in a floodway or floodplain according to the IDNR (see Figure 34). An information bulletin is provided for guidance in the assessment and determination of compensatory mitigation associated with an application to the IDNR for a permit under IC 14-28-1 (the “Flood Control Act”) or under IC 14-29-1 (the “Navigable Waters Act”). These IDNR mitigation guidelines are outlined in their “Information Bulletin #17 Fifth Amendment”.

The USACE mitigation guidelines are outlined in the latest USACE Regulatory Guidance Letter (RGL) 02-02, dated December 24, 2002. The US Army Corps of Engineers requested recognition of the flood control projects within the MPA. Transportation projects will be reviewed to insure they have no adverse effects on the flood control projects or affect water levels in the flood control project area. The flood control projects are displayed in Figure 8-5.

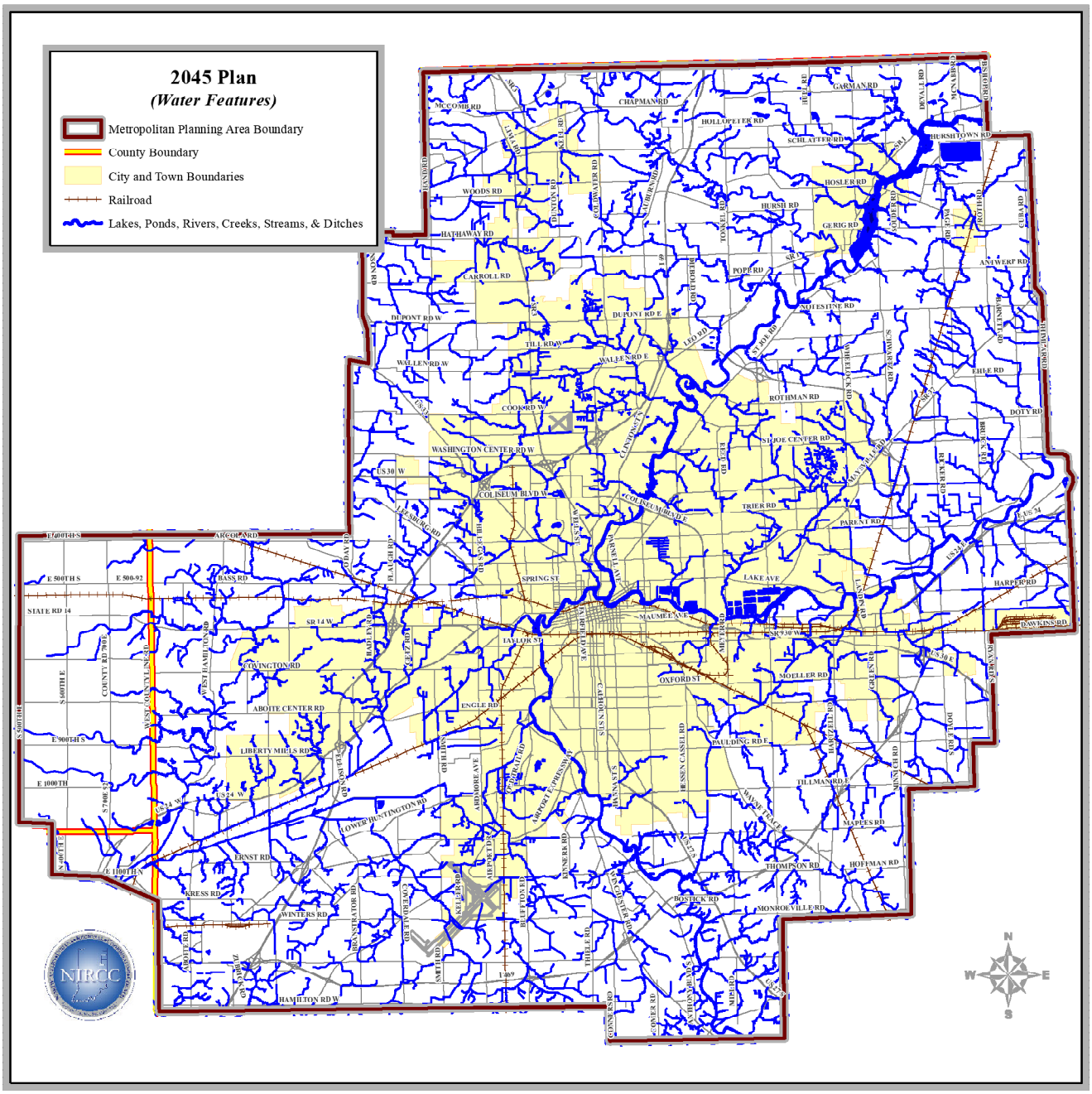

Figure 8-1

Water Features

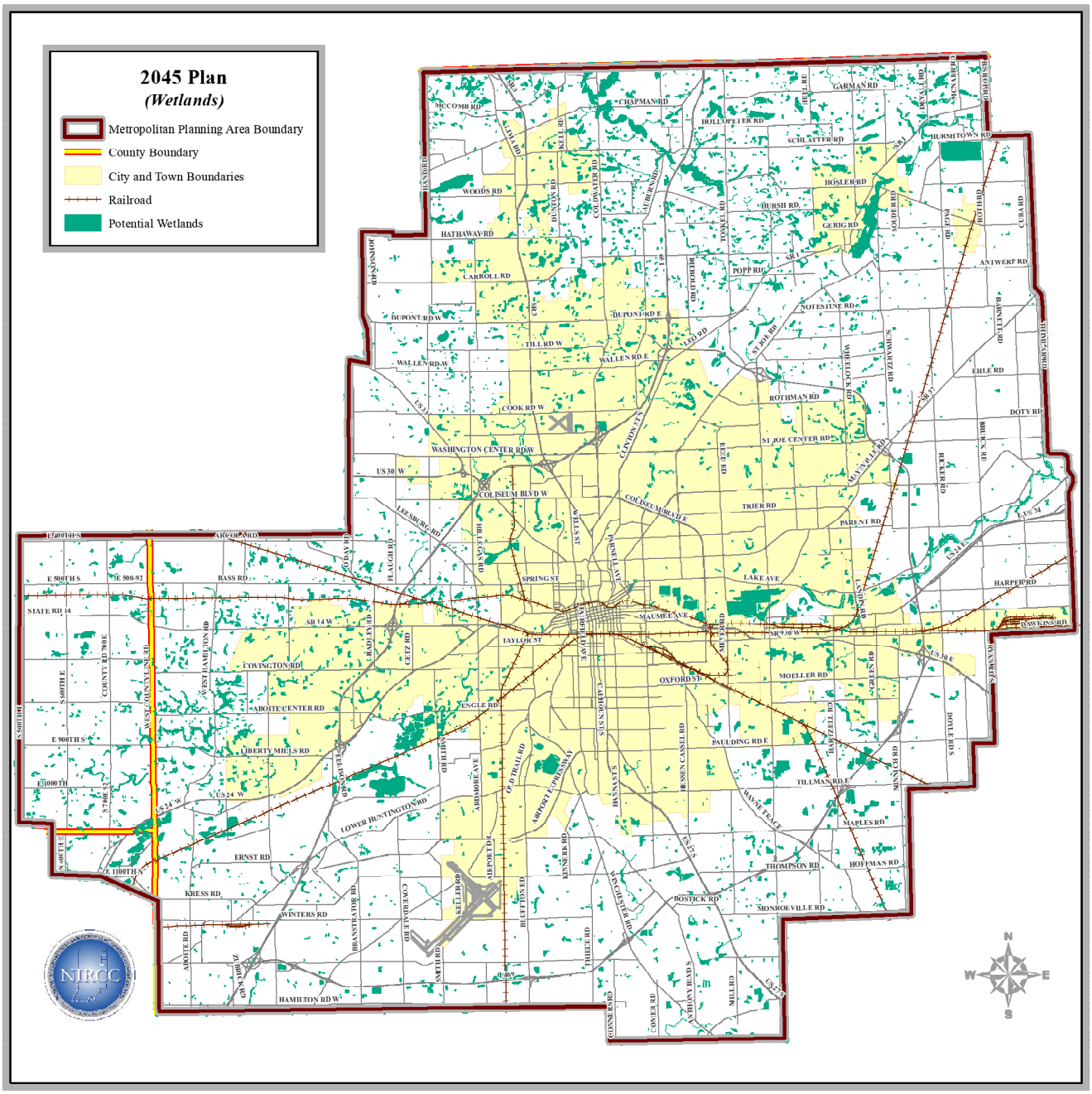

Figure 8-2

Potential Wetlands

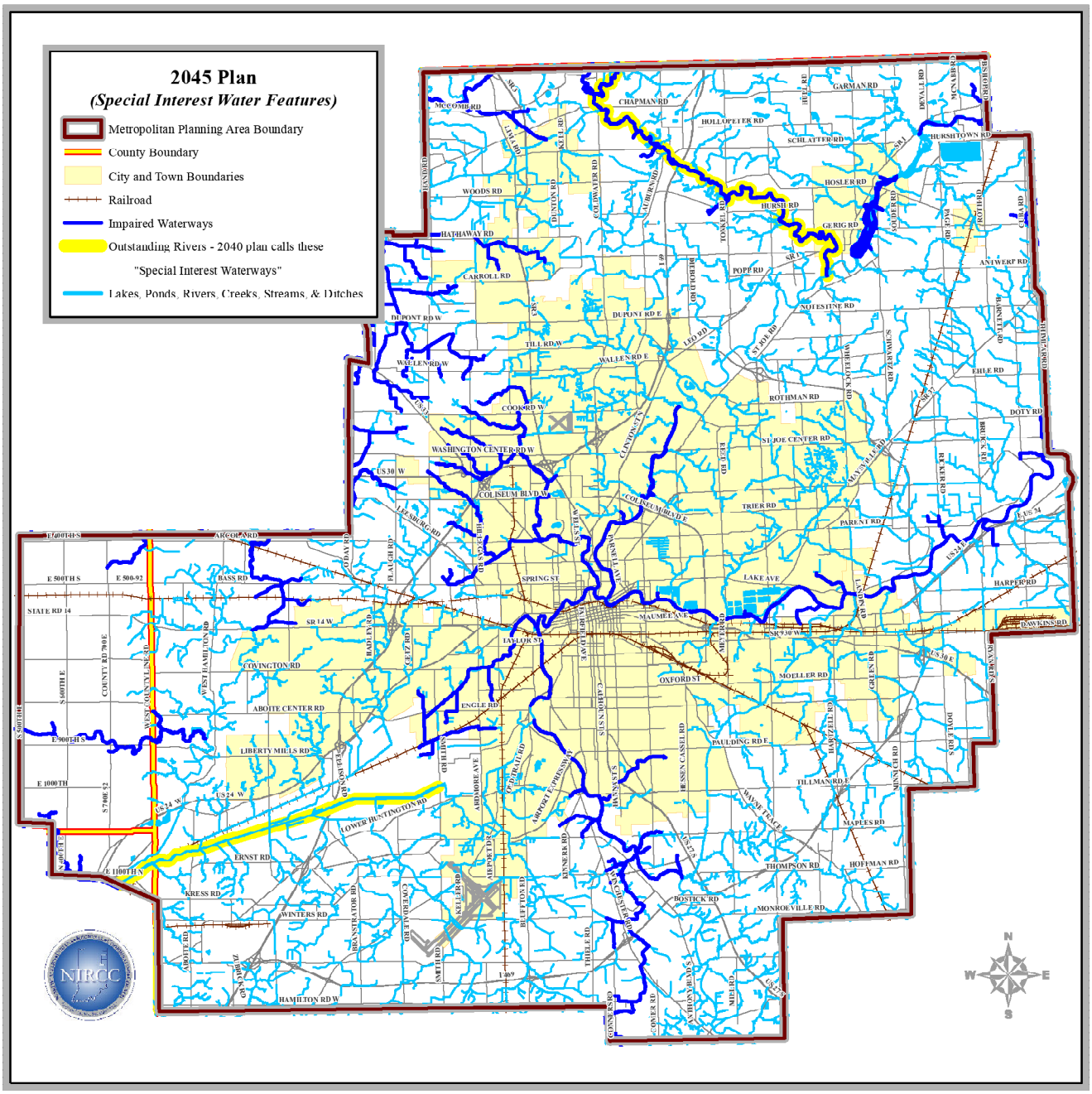

Figure 8-3

Water Features and Impaired Streams

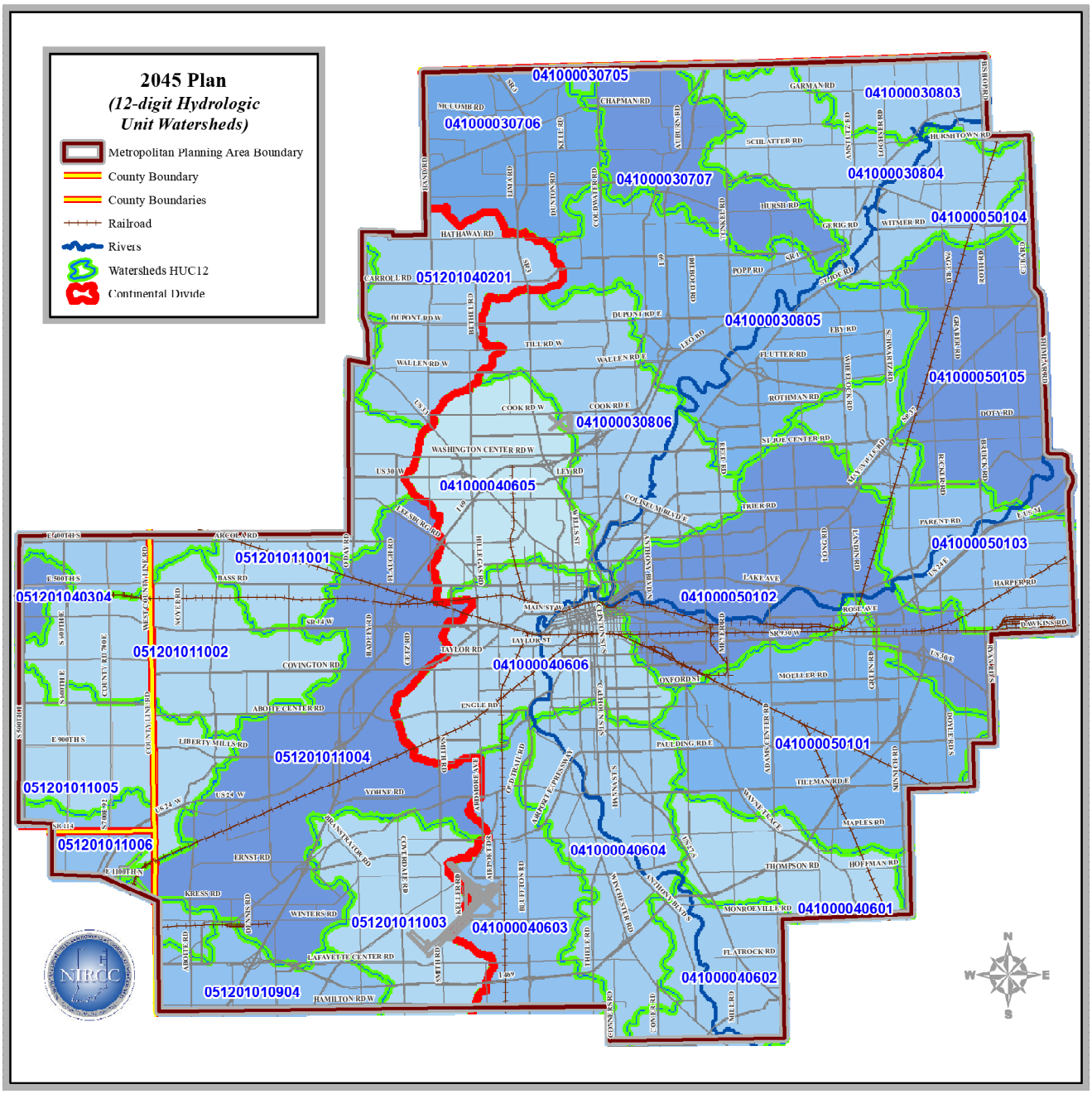

Figure 8-4

Watersheds

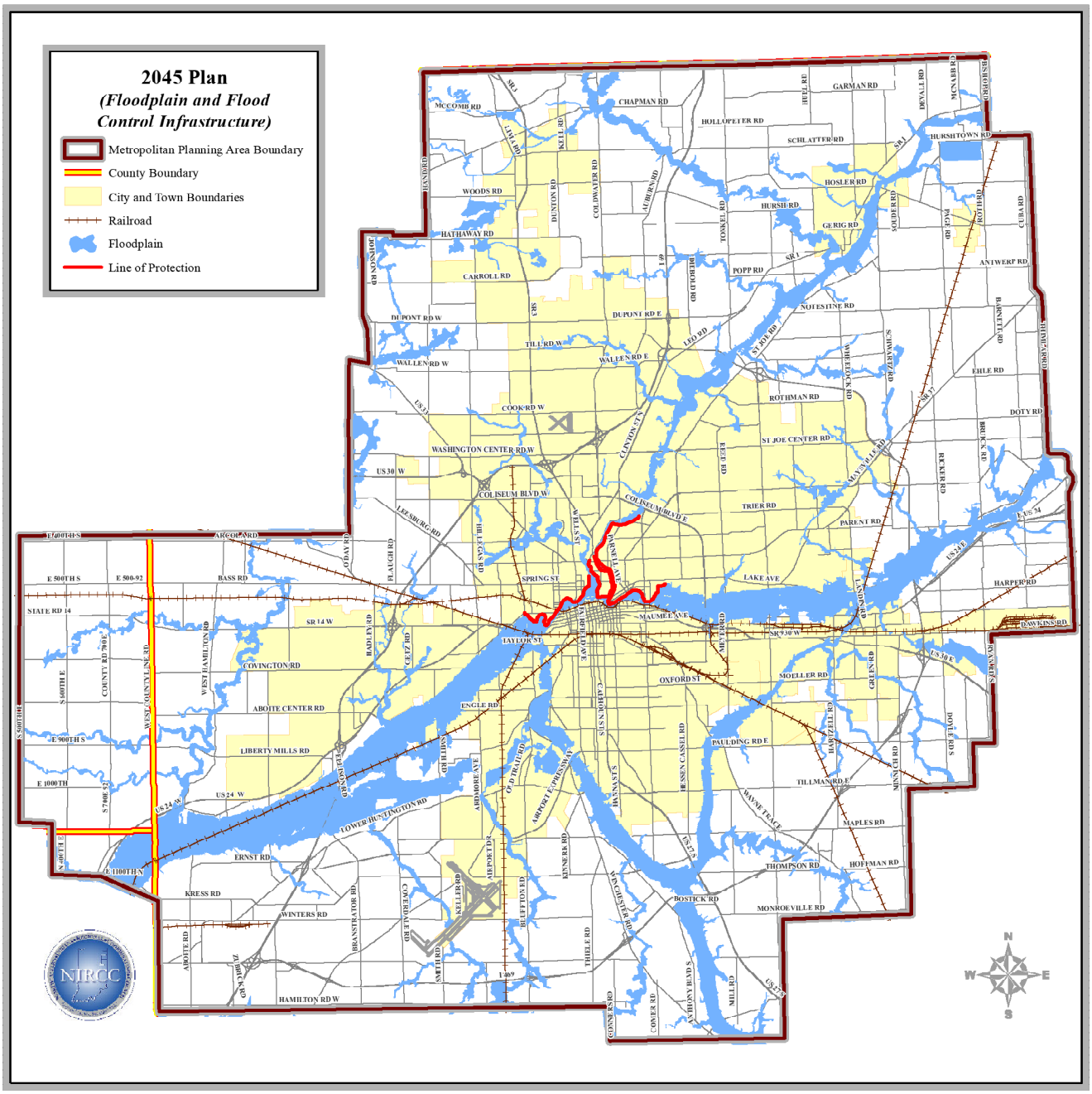

Figure 8-5

Flood Control Projects

Table 8-1. 2022 Category 5 Impaired Waters in Allen County

2022 303(d) List of Category 5 Impaired Waters Submitted to U.S. EPA

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	WATER TYPE	SIZE	UNITS	PARAMETER	DESIGNATED USE	IR CATEGORY
UPPER WABASH	51201011005	Allen	INB01A5_04	ABOITE CREEK	STREAM	6.25	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
UPPER WABASH	51201011005	Allen/Huntington	INB01A5_05	ABOITE CREEK	STREAM	2.98	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
GREAT LAKES	41000050101	Allen	INA0511_T1002	BENDER DITCH	STREAM	14.77	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
GREAT LAKES	41000050101	Allen	INA0511_T1002	BENDER DITCH	STREAM	14.77	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050101	Allen	INA0511_T1002	BENDER DITCH	STREAM	14.77	Miles	PH	Warm Water Aquatic Life	5A
UPPER WABASH	51201040201	Allen	INB0421_T1001	BENWARD DITCH	STREAM	14.87	Miles	AMMONIA, UN-IONIZED	Warm Water Aquatic Life	5A
UPPER WABASH	51201040201	Allen	INB0421_T1001	BENWARD DITCH	STREAM	14.87	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
UPPER WABASH	51201040201	Allen	INB0421_T1001	BENWARD DITCH	STREAM	14.87	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
UPPER WABASH	51201040201	Allen	INB0421_T1001	BENWARD DITCH	STREAM	14.87	Miles	DISSOLVED OXYGEN	Warm Water Aquatic Life	5A
UPPER WABASH	51201011005	Allen/Whitley	INB01A5_T1007	BIG INDIAN CREEK	STREAM	11.21	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
UPPER WABASH	51201011005	Allen/Whitley	INB01A5_T1007	BIG INDIAN CREEK	STREAM	11.21	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050104	Allen	INA0514_03	BLACK CREEK	STREAM	3.7	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
GREAT LAKES	41000050104	Allen	INA0514_T1001	BLACK CREEK	STREAM	4.3	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
GREAT LAKES	41000050104	Allen	INA0514_02	BLACK CREEK	STREAM	8.3	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
GREAT LAKES	41000050104	Allen	INA0514_03	BLACK CREEK	STREAM	3.7	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050104	Allen	INA0514_03	BLACK CREEK	STREAM	3.7	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050104	Allen	INA0514_02	BLACK CREEK	STREAM	8.3	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050104	Allen	INA0514_02	BLACK CREEK	STREAM	8.3	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050104	Allen	INA0514_02	BLACK CREEK	STREAM	8.3	Miles	PH	Warm Water Aquatic Life	5A
GREAT LAKES	41000050104	Allen	INA0514_02	BLACK CREEK	STREAM	8.3	Miles	DISSOLVED OXYGEN	Warm Water Aquatic Life	5A
GREAT LAKES	41000050104	Allen	INA0514_T1002	BLACK CREEK - UNNAMED TRIBUTARY	STREAM	1.48	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
GREAT LAKES	41000071204	Allen	INA07C4_T1003	BROWN DITCH	STREAM	1.44	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000071204	Allen	INA07C4_T1004	BROWN DITCH	STREAM	6.56	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000030707	Allen	INA0377_T1009	CEDAR CREEK - UNNAMED TRIBUTARY	STREAM	0.6889	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000030707	Allen	INA0377_T1010	CEDAR CREEK - UNNAMED TRIBUTARY	STREAM	0.6001	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000030707	Allen	INA0377_T1011	CEDAR CREEK - UNNAMED TRIBUTARY	STREAM	0.1988	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000030707	Allen	INA0377_06	CEDAR CREEK (OSRW)	STREAM	0.4555	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000030707	Allen	INA0377_07	CEDAR CREEK (OSRW)	STREAM	11.134	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000030707	Allen/DeKalb	INA0377_05	CEDAR CREEK (OSRW)	STREAM	3.08	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000030804	Allen	INA03P1024_00	CEDARVILLE RESERVOIR	LAKE, FRESHWATER	408	Acres	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
GREAT LAKES	41000030804	Allen	INA03P1024_00	CEDARVILLE RESERVOIR	LAKE, FRESHWATER	408	Acres	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000030804	Allen	INA03P1024_00	CEDARVILLE RESERVOIR	LAKE, FRESHWATER	408	Acres	TASTE	Public Water Supply	5A
GREAT LAKES	41000030804	Allen	INA03P1024_00	CEDARVILLE RESERVOIR	LAKE, FRESHWATER	408	Acres	ALGAE	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen	INB0422_02	EEL RIVER	STREAM	3.33	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
UPPER WABASH	51201040202	Allen	INB0422_02	EEL RIVER	STREAM	3.33	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
UPPER WABASH	51201040201	Allen	INB0421_03	EEL RIVER	STREAM	2.87	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen	INB0422_02	EEL RIVER	STREAM	3.33	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
UPPER WABASH	51201040203	Allen/Whitley	INB0423_01	EEL RIVER	STREAM	8.12	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
UPPER WABASH	51201040203	Allen/Whitley	INB0423_01	EEL RIVER	STREAM	8.12	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
UPPER WABASH	51201010904	Allen/Wells	INB0194_01	EIGHTMILE CREEK	STREAM	7.45	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000071204	Allen	INA07C4_01	FLATROCK CREEK	STREAM	5.08	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000071204	Allen	INA07C4_03	FLATROCK CREEK	STREAM	7.19	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000071204	Allen	INA07C4_03	FLATROCK CREEK	STREAM	7.19	Miles	DISSOLVED OXYGEN	Warm Water Aquatic Life	5A
UPPER WABASH	51201040201	Allen	INB0421_02	GELLER DITCH	STREAM	4.39	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000071203	Allen	INA07C3_T1006	GROMEAUX DITCH	STREAM	4.48	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050203	Allen	INA0523_T1007A	HAMM DITCH	STREAM	0.28	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
GREAT LAKES	41000050203	Allen/DeKalb	INA0523_T1007	HAMM DITCH	STREAM	9.6	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
GREAT LAKES	41000050202	Allen	INA0522_T1002	HAMM INTERCEPTOR DITCH	STREAM	4.9	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050202	Allen	INA0522_T1002	HAMM INTERCEPTOR DITCH	STREAM	4.9	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050203	Allen	INA0523_01	HAMM INTERCEPTOR DITCH	STREAM	6.38	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050203	Allen	INA0523_01	HAMM INTERCEPTOR DITCH	STREAM	6.38	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050203	Allen	INA0523_T1003	JACKSON DITCH	STREAM	2.49	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050203	Allen	INA0523_T1003	JACKSON DITCH	STREAM	2.49	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050203	Allen/DeKalb	INA0523_T1002	JACKSON NUMBER TWO DITCH	STREAM	6.77	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050203	Allen/DeKalb	INA0523_T1002	JACKSON NUMBER TWO DITCH	STREAM	6.77	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen	INB0422_T1002	JOHNSON DITCH	STREAM	6.34	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen	INB0422_T1002	JOHNSON DITCH	STREAM	6.34	Miles	DISSOLVED OXYGEN	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen	INB0422_T1006	JOHNSON DITCH	STREAM	5.82	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen	INB0422_T1006	JOHNSON DITCH	STREAM	5.82	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen	INB0422_T1006	JOHNSON DITCH	STREAM	5.82	Miles	DISSOLVED OXYGEN	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen	INB0422_T1006A	JOHNSON DITCH	STREAM	0.85	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen	INB0422_T1006A	JOHNSON DITCH	STREAM	0.85	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen	INB0422_T1006A	JOHNSON DITCH	STREAM	0.85	Miles	DISSOLVED OXYGEN	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen	INB0422_T1004	JOHNSON DITCH - UNNAMED TRIBUTARY	STREAM	4.93	Miles	DISSOLVED OXYGEN	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen/Whitley	INB0422_T1005	JOHNSON DRAIN	STREAM	12.29	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen/Whitley	INB0422_T1005	JOHNSON DRAIN	STREAM	12.29	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
UPPER WABASH	51201040202	Allen/Whitley	INB0422_T1005	JOHNSON DRAIN	STREAM	12.29	Miles	DISSOLVED OXYGEN	Warm Water Aquatic Life	5A
GREAT LAKES	41000050203	Allen	INA0523_T1005	KNAPP DITCH	STREAM	2.6	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050203	Allen	INA0523_T1005	KNAPP DITCH	STREAM	2.6	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050102	Allen	INA0512_02	MAUMEE RIVER	STREAM	1.21	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000050102	Allen	INA0512_05	MAUMEE RIVER	STREAM	0.26	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000050103	Allen	INA0513_01	MAUMEE RIVER	STREAM	6.42	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000050105	Allen	INA0515_01	MAUMEE RIVER	STREAM	4.19	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000050105	Allen	INA0515_02	MAUMEE RIVER	STREAM	6.97	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000050202	Allen	INA0522_03	MAUMEE RIVER	STREAM	0.91	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000050202	Allen	INA0522_04	MAUMEE RIVER	STREAM	1.7	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000050102	Allen	INA0512_04	MAUMEE RIVER	STREAM	0.73	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000050102	Allen	INA0512_01	MAUMEE RIVER	STREAM	2.11	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000050102	Allen	INA0512_03	MAUMEE RIVER	STREAM	6.31	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000050106	Allen	INA0516_01	MAUMEE RIVER	STREAM	5.85	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000050102	Allen	INA0512_02	MAUMEE RIVER	STREAM	1.21	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A

Table 8-1 Continued next page...

TTable 8-1. 2022 Category 5 Impaired Waters in Allen County

2022 303(d) List of Category 5 Impaired Waters Submitted to U.S. EPA

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	WATER TYPE	SIZE	UNITS	PARAMETER	DESIGNATED USE	IR CATEGORY
GREAT LAKES	41000050102	Allen	INA0512_02	MAUMEE RIVER	STREAM	1.21	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050102	Allen	INA0512_05	MAUMEE RIVER	STREAM	0.26	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050103	Allen	INA0513_01	MAUMEE RIVER	STREAM	6.42	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050105	Allen	INA0515_02	MAUMEE RIVER	STREAM	6.97	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050202	Allen	INA0522_03	MAUMEE RIVER	STREAM	0.91	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050202	Allen	INA0522_04	MAUMEE RIVER	STREAM	1.7	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050102	Allen	INA0512_04	MAUMEE RIVER	STREAM	0.73	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050102	Allen	INA0512_01	MAUMEE RIVER	STREAM	2.11	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050102	Allen	INA0512_01	MAUMEE RIVER	STREAM	2.11	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050102	Allen	INA0512_03	MAUMEE RIVER	STREAM	6.31	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050106	Allen	INA0516_01	MAUMEE RIVER	STREAM	5.85	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
UPPER WABASH	51201040205	Allen/Whitley	INB0425_T1001	REHLING DITCH	STREAM	3.61	Miles	DISSOLVED OXYGEN	Warm Water Aquatic Life	5A
UPPER WABASH	51201011001	Allen	INB01A1_01	SEEGAR DITCH	STREAM	14.06	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
UPPER WABASH	51201011001	Allen	INB01A1_01	SEEGAR DITCH	STREAM	14.06	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
UPPER WABASH	51201011001	Allen	INB01A1_01	SEEGAR DITCH	STREAM	14.06	Miles	DISSOLVED OXYGEN	Warm Water Aquatic Life	5A
UPPER WABASH	51201011001	Allen	INB01A1_T1001	SEEGAR DITCH - UNNAMED TRIBUTARY	STREAM	1.45	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
UPPER WABASH	51201011001	Allen	INB01A1_T1002	SEEGAR DITCH - UNNAMED TRIBUTARY	STREAM	1.4	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
UPPER WABASH	51201040201	Allen	INB0421_T1002	SHOAFF DAWSON DITCH	STREAM	4.21	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
UPPER WABASH	51201040204	Allen/Whitley	INB0424_T1005	SOLON DITCH	STREAM	9.93	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050203	Allen	INA0523_T1001	SOWERS DITCH	STREAM	2.17	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000050203	Allen	INA0523_T1001	SOWERS DITCH	STREAM	2.17	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000040605	Allen	INA0465_03	SPY RUN CREEK	STREAM	1.85	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000040605	Allen	INA0465_01	SPY RUN CREEK	STREAM	8.26	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000040605	Allen	INA0465_T1003	SPY RUN CREEK - UNNAMED TRIBUTARY	STREAM	7.47	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000030806	Allen	INA03P1044_00	ST. JOSEPH RESERVOIR	LAKE, FRESHWATER	30	Acres	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
GREAT LAKES	41000030806	Allen	INA03P1044_00	ST. JOSEPH RESERVOIR	LAKE, FRESHWATER	30	Acres	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000030806	Allen	INA0386_06	ST. JOSEPH RIVER	STREAM	1.4331	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000030806	Allen	INA0386_03	ST. JOSEPH RIVER	STREAM	1.57	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000030806	Allen	INA0386_04	ST. JOSEPH RIVER	STREAM	1.1005	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000030806	Allen	INA0386_05	ST. JOSEPH RIVER (PWS)	STREAM	0.1761	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000040606	Allen	INA0466_02	ST. MARYS RIVER	STREAM	1.09	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000040606	Allen	INA0466_03	ST. MARYS RIVER	STREAM	0.64	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000040606	Allen	INA0466_04	ST. MARYS RIVER	STREAM	0.34	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000040606	Allen	INA0466_05	ST. MARYS RIVER	STREAM	1.12	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000040606	Allen	INA0466_06	ST. MARYS RIVER	STREAM	0.72	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000040606	Allen	INA0466_08	ST. MARYS RIVER	STREAM	0.89	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000040606	Allen	INA0466_07	ST. MARYS RIVER	STREAM	0.43	Miles	PCBS IN FISH TISSUE	Human Health and Wildlife	5B
GREAT LAKES	41000040604	Allen	INA0464_02	ST. MARYS RIVER	STREAM	3.28	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000040604	Allen	INA0464_03	ST. MARYS RIVER	STREAM	3.07	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000040606	Allen	INA0466_02	ST. MARYS RIVER	STREAM	1.09	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000040606	Allen	INA0466_03	ST. MARYS RIVER	STREAM	0.64	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000040606	Allen	INA0466_04	ST. MARYS RIVER	STREAM	0.34	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000040606	Allen	INA0466_05	ST. MARYS RIVER	STREAM	1.12	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000040606	Allen	INA0466_06	ST. MARYS RIVER	STREAM	0.72	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000040606	Allen	INA0466_08	ST. MARYS RIVER	STREAM	0.89	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000040602	Allen	INA0462_01	ST. MARYS RIVER	STREAM	10.06	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000040606	Allen	INA0466_07	ST. MARYS RIVER	STREAM	0.43	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000040606	Allen	INA0466_01	ST. MARYS RIVER (FOSTER PARK)	STREAM	0.37	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000050203	Allen	INA0523_T1008	WANN DITCH	STREAM	10.85	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
GREAT LAKES	41000030706	Allen	INA0376_T1001	YANT DITCH	STREAM	1.46	Miles	ESCHERICHIA COLI (E. COLI)	Full Body Contact	5A
GREAT LAKES	41000030706	Allen	INA0376_T1001	YANT DITCH	STREAM	1.46	Miles	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	5A
GREAT LAKES	41000030706	Allen	INA0376_T1001	YANT DITCH	STREAM	1.46	Miles	NUTRIENTS	Warm Water Aquatic Life	5A
GREAT LAKES	41000030706	Allen	INA0376_T1001	YANT DITCH	STREAM	1.46	Miles	DISSOLVED OXYGEN	Warm Water Aquatic Life	5A

Table 8-2. 2022 Category 4 Impaired Waters in Allen County

2022 303(d) List of Category 4 Impaired Waters Submitted to U.S. EPA

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	WATER TYPE	SIZE Miles	PARAMETER	DESIGNATED USE	IR CATEGORY	CATEGORY 4A TMDL KEY
GREAT LAKES	41000030803	Allen	INA0383_T1003	BOGER DITCH	STREAM	1.71	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	51
GREAT LAKES	41000030707	Allen	INA0377_T1009	CEDAR CREEK - UNNAMED TRIBUTARY	STREAM	0.6889	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	4A	51
GREAT LAKES	41000030707	Allen	INA0377_T1009	CEDAR CREEK - UNNAMED TRIBUTARY	STREAM	0.6889	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	51
GREAT LAKES	41000030707	Allen	INA0377_T1010	CEDAR CREEK - UNNAMED TRIBUTARY	STREAM	0.6001	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	4A	51
GREAT LAKES	41000030707	Allen	INA0377_T1010	CEDAR CREEK - UNNAMED TRIBUTARY	STREAM	0.6001	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	51
GREAT LAKES	41000030707	Allen	INA0377_T1011	CEDAR CREEK - UNNAMED TRIBUTARY	STREAM	0.1988	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	4A	51
GREAT LAKES	41000030707	Allen	INA0377_T1011	CEDAR CREEK - UNNAMED TRIBUTARY	STREAM	0.1988	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	51
GREAT LAKES	41000030707	Allen	INA0377_06	CEDAR CREEK (OSRW)	STREAM	0.4555	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	51
GREAT LAKES	41000030707	Allen	INA0377_07	CEDAR CREEK (OSRW)	STREAM	11.134	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	4A	51
GREAT LAKES	41000030707	Allen	INA0377_07	CEDAR CREEK (OSRW)	STREAM	11.134	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	51
GREAT LAKES	41000030707	Allen/DeKalb	INA0377_05	CEDAR CREEK (OSRW)	STREAM	3.08	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	4A	51
GREAT LAKES	41000030707	Allen/DeKalb	INA0377_05	CEDAR CREEK (OSRW)	STREAM	3.08	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	51
GREAT LAKES	41000040606	Allen	INA0466_T1001	JUNK DITCH	STREAM	7.84	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040606	Allen	INA0466_T1003	JUNK DITCH	STREAM	2.17	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000030706	Allen	INA0376_T1004	KRUMLAUF BRANCH	STREAM	1.57	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	51
GREAT LAKES	41000030705	Allen/DeKalb	INA0375_06	LITTLE CEDAR CREEK	STREAM	2.32	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	51
GREAT LAKES	41000050102	Allen	INA0512_01	MAUMEE RIVER	STREAM	2.11	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000050102	Allen	INA0512_02	MAUMEE RIVER	STREAM	1.21	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000050102	Allen	INA0512_03	MAUMEE RIVER	STREAM	6.31	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000050102	Allen	INA0512_04	MAUMEE RIVER	STREAM	0.73	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000050102	Allen	INA0512_05	MAUMEE RIVER	STREAM	0.26	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000050103	Allen	INA0513_01	MAUMEE RIVER	STREAM	6.42	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000050105	Allen	INA0515_01	MAUMEE RIVER	STREAM	4.19	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000050105	Allen	INA0515_02	MAUMEE RIVER	STREAM	6.97	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000050106	Allen	INA0516_01	MAUMEE RIVER	STREAM	5.85	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000050202	Allen	INA0522_03	MAUMEE RIVER	STREAM	0.91	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040604	Allen	INA0464_T1001	SNYDER DITCH	STREAM	10.22	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040605	Allen	INA0465_01	SPY RUN CREEK	STREAM	8.26	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040605	Allen	INA0465_01	SPY RUN CREEK	STREAM	8.26	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040605	Allen	INA0465_01	SPY RUN CREEK	STREAM	8.26	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040605	Allen	INA0465_02	SPY RUN CREEK	STREAM	0.86	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040605	Allen	INA0465_02	SPY RUN CREEK	STREAM	0.86	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040605	Allen	INA0465_03	SPY RUN CREEK	STREAM	1.85	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040605	Allen	INA0465_T1001	SPY RUN CREEK - UNNAMED TRIBUTARY	STREAM	5.86	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040605	Allen	INA0465_T1003	SPY RUN CREEK - UNNAMED TRIBUTARY	STREAM	7.47	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000030803	Allen	INA0383_02	ST. JOSEPH RIVER	STREAM	6.73	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	51
GREAT LAKES	41000030806	Allen	INA0386_04	ST. JOSEPH RIVER	STREAM	1.1005	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	4A	51
GREAT LAKES	41000040504	Adams/Allen	INA0454_03	ST. MARYS RIVER	STREAM	9.8614	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040504	Adams/Allen	INA0454_03	ST. MARYS RIVER	STREAM	9.8614	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040602	Allen	INA0462_01	ST. MARYS RIVER	STREAM	10.06	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040604	Allen	INA0464_01	ST. MARYS RIVER	STREAM	2	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040604	Allen	INA0464_01	ST. MARYS RIVER	STREAM	2	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040604	Allen	INA0464_02	ST. MARYS RIVER	STREAM	3.28	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040604	Allen	INA0464_02	ST. MARYS RIVER	STREAM	3.28	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040604	Allen	INA0464_03	ST. MARYS RIVER	STREAM	3.07	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040604	Allen	INA0464_03	ST. MARYS RIVER	STREAM	3.07	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040606	Allen	INA0466_02	ST. MARYS RIVER	STREAM	1.09	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040606	Allen	INA0466_03	ST. MARYS RIVER	STREAM	0.64	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040606	Allen	INA0466_04	ST. MARYS RIVER	STREAM	0.34	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040606	Allen	INA0466_05	ST. MARYS RIVER	STREAM	1.12	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040606	Allen	INA0466_06	ST. MARYS RIVER	STREAM	0.72	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040606	Allen	INA0466_07	ST. MARYS RIVER	STREAM	0.43	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040606	Allen	INA0466_08	ST. MARYS RIVER	STREAM	0.89	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040504	Allen	INA0454_T1006	ST. MARYS RIVER - UNNAMED TRIBUTARY	STREAM	9.2	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040504	Allen	INA0454_T1006	ST. MARYS RIVER - UNNAMED TRIBUTARY	STREAM	9.2	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040504	Allen	INA0454_T1006	ST. MARYS RIVER - UNNAMED TRIBUTARY	STREAM	9.2	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040504	Allen	INA0454_T1006	ST. MARYS RIVER - UNNAMED TRIBUTARY	STREAM	9.2	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	4A	25
GREAT LAKES	41000040504	Allen	INA0454_T1006	ST. MARYS RIVER - UNNAMED TRIBUTARY	STREAM	9.2	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	4A	25
GREAT LAKES	41000040504	Allen	INA0454_T1006	ST. MARYS RIVER - UNNAMED TRIBUTARY	STREAM	9.2	BIOLOGICAL INTEGRITY	Warm Water Aquatic Life	4A	25
GREAT LAKES	41000040604	Allen	INA0464_T1002	ST. MARYS RIVER - UNNAMED TRIBUTARY	STREAM	1.61	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040604	Allen	INA0464_T1004	ST. MARYS RIVER - UNNAMED TRIBUTARY	STREAM	0.75	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040604	Allen	INA0464_T1005	ST. MARYS RIVER - UNNAMED TRIBUTARY	STREAM	0.42	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040604	Allen	INA0464_T1006	ST. MARYS RIVER - UNNAMED TRIBUTARY	STREAM	1.11	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000040606	Allen	INA0466_01	ST. MARYS RIVER (FOSTER PARK)	STREAM	0.37	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000050202	Allen	INA0522_02	WABASH AND ERIE CANAL	STREAM	1.75	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	24
GREAT LAKES	41000030706	Allen	INA0376_02	WILLOW CREEK	STREAM	9.32	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	51
GREAT LAKES	41000030706	Allen	INA0376_03	WILLOW CREEK	STREAM	2.94	ESCHERICHIA COLI (E. COLI)	Full Body Contact	4A	51

Threatened and Endangered Species

The State of Indiana harbors a great diversity of wildlife and plant communities. Many species receiving federal or state protection are tied closely to their habitats. Land-use change has been the most common cause for decline in species range and diversity. Contamination and degradation of natural waters has also contributed to loss of habitat. The Indiana Natural Heritage Data Center lists over 50 species as endangered, threatened or rare within Allen County. These species include a variety of mammals, birds, reptiles, amphibians, mollusks, insects, fish and plants (see Table 8-3). Species included in the list as federally Endangered in Allen County include the White Catspaw mussel, Northern Riffleshell mussel, Clubshell mussel, and Rayed Bean mussel. Also in Allen County, the Rabbitsfoot mussel and Eastern Massasauga reptile species are listed as federally threatened. Species in Allen County that are candidates for potential future listing as either federally threatened or endangered include the Round Hickorynut mussel, Spotted Turtle reptile, and Blanding's Turtle reptile. Due to the sensitive nature of identifying locations of threatened and endangered species, maps of these specific habitats are not provided. In general, small stream corridors with well-developed riparian woods, upland forested areas, wetlands and portions of the St. Joseph River have been identified as potential habitat sites to threatened and endangered species.

Projects going through the development process are planned and designed to comply with the National Environmental Policy Act, Endangered Species Act, Clean Water Act and appropriate Indiana rules and regulations. In the early coordination phase of a project, potential impacts to specific endangered or threatened species will be assessed. Avoidance and mitigation strategies will be developed for specific projects as needed. The mitigation strategies may include but are not limited to: restricting clearing of trees and vegetation; relocation of listed mussel and plant species from the construction site; strict erosion control; measures to allow terrestrial species to pass unharmed through construction areas; seasonal construction restrictions; limit construction noise; and limit hours of construction activity.

Table 8-3. Endangered, Threatened or Rare Species within Allen County

Indiana County Endangered, Threatened and Rare Species List

Indiana Department of Natural Resources

Species Name	Common Name	FED	STATE	GRANK	SRANK
Allen					
Mollusk: Bivalvia (Mussels)					
Alasmidonta viridis	slippershell mussel		SSC	G4G5	S3
Epioblasma perobliqua	white catspaw	E	SE	G1	SX
Epioblasma rangiana	northern riffleshell	E	SE	G1	S1
Lampsilis fasciola	wavyrayed lampmussel		SSC	G5	S3
Ligumia recta	black sandshell		SSC	G4G5	S2
Obovaria subrotunda	round hickorynut	PT	SE	G4	S1
Pleurobema clava	Clubshell	E	SE	G1G2	S1
Ptychobranchus fasciolaris	Kidneyshell		SSC	G4G5	S2
Theliderma cylindrica	Rabbitsfoot	T	SE	G3G4	S1
Toxolasma lividus	Purple Lilliput		SSC	G3	S2
Villosa fabalis	Rayed Bean	E	SE	G2	S1
Insect: Odonata (Dragonflies & Damselflies)					
Gomphurus fraternus	Midland Clubtail			G5	S2
Tachopteryx thoreyi	Gray Petaltail		WL	G4	S3
Fish					
Moxostoma valenciennesi	Greater Redhorse		SE	G4	S2
Percina evides	Gilt Darter		SE	G4	S1
Amphibian					
Acris blanchardi	Blanchard's cricket frog		SSC	G5	S4
Ambystoma laterale	blue-spotted salamander		SSC	G5	S2
Hemidactylium scutatum	four-toed salamander		SSC	G5	S3
Reptile					
Clemmys guttata	spotted turtle	C	SE	G5	S2
Clonophis kirtlandii	Kirtland's snake		SE	G2	S3
Emydoidea blandingii	Blanding's turtle	C	SE	G4	S2
Sistrurus catenatus	eastern massasauga	T	SE	G3	S2
Bird					
Accipiter striatus	Sharp-shinned Hawk		SSC	G5	S2B
Asio flammeus	Short-eared Owl		SE	G5	S2
Bartramia longicauda	Upland Sandpiper		SE	G5	S3B
Buteo platypterus	Broad-winged Hawk		SSC	G5	S3B
Certhia americana	Brown Creeper			G5	S2B
Chordeiles minor	Common Nighthawk		SSC	G5	S4B
Circus hudsonius	Northern Harrier		SE	G5	S2
Cistothorus palustris	marsh wren		SE	G5	S3B
Falco peregrinus	Peregrine Falcon		SSC	G4	S2B
Haliaeetus leucocephalus	bald eagle			G5	S3
Helmitheros vermivorus	worm-eating warbler		SSC	G5	S3B

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

Fed: E = Endangered; T = Threatened; C = candidate; PDL = proposed for delisting

State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant; WL = watch list

GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long-term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank

SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; S4 = widespread and abundant in state but with long-term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

Table 8-3 Continued next page...

Table 8-3. Endangered, Threatened or Rare Species within Allen County -Continued

Indiana County Endangered, Threatened and Rare Species List

DNR Indiana Department of Natural Resources

Species Name	Common Name	FED	STATE	GRANK	SRANK
Ixobrychus exilis	Least Bittern		SE	G4G5	S3B
Lanius ludovicianus	loggerhead shrike		SE	G4	S2B
Mniotilta varia	Black-and-white Warbler		SSC	G5	S1S2B
Nyctanassa violacea	Yellow-crowned Night-heron		SE	G5	S2B
Nycticorax nycticorax	Black-crowned Night-heron		SE	G5	S1B
Phalaropus tricolor	Wilson's Phalarope		SSC	G5	SHB
Setophaga cerulea	Cerulean Warbler		SE	G4	S3B
Setophaga citrina	Hooded Warbler		SSC	G5	S3B
Sturnella neglecta	Western Meadowlark		SSC	G5	S2B
Tyto alba	Barn Owl		SE	G5	S2
Vermivora chrysoptera	Golden-winged Warbler	C	SE	G4	S1B
Mammal					
Lasionycteris noctivagans	Silver-haired Bat		SSC	G3G4	SU
Lasiurus borealis	Eastern red bat		SSC	G3G4	S4
Myotis septentrionalis	Northern Long Eared Bat	T; PE	SE	G2G3	S2S3
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					
Andromeda glaucophylla	bog rosemary		ST	G5T5	S2
Carex cephaloidea	thinleaf sedge		WL	G5	S2
Carex decomposita	cypress-knee sedge		ST	G3G4	S2
Carex trichocarpa	hairy-fruit sedge		WL	G4	S3
Chelone obliqua var. speciosa	rose turtlehead		WL	G4T3	S3
Circaea alpina	small enchanter's nightshade		SX	G5	SX
Crataegus succulenta var. succulenta	fleshy hawthorn		ST	G5T5	S3
Cypripedium acaule	pink lady's-slipper		SE	G5	S1
Cypripedium parviflorum var. pubescens	large yellow lady's-slipper		WL	G5T5	S3
Dactylorhiza viridis	long-bract green orchid		SE	G5	S1
Hydrastis canadensis	golden seal		WL	G3G4	S3
Panax quinquefolius	American ginseng		WL	G3G4	S3
Phlox ovata	mountain phlox		SE	G4	S1
Platanthera psycodes	small purple-fringe orchid		ST	G5	S3
Poa alsodes	grove meadow grass		WL	G4G5	S3
Pyrola elliptica	elliptical-leaf wintergreen		WL	G5	S3
Rorippa aquatica	lake cress		SE	G4?	S1
Scutellaria parvula var. parvula	small skullcap		SE	G4T4	S1
Spiranthes lucida	shining ladies'-tresses		ST	G4	S3
Spiranthes magnicamporum	Great Plains ladies'-tresses		SE	G3G4	S2S3
Symphyotrichum boreale	rushlike aster		ST	G5	S2
High Quality Natural Community					
Forest - flatwoods black swamp	Black Swamp Flatwoods		SG	GNR	S1

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Table 8-3 Continued next page...

Table 8-3. Endangered, Threatened or Rare Species within Allen County -Continued

Indiana County Endangered, Threatened and Rare Species List

Indiana Department of Natural Resources

Species Name	Common Name	FED	STATE	GRANK	SRANK
Forest - flatwoods central till plain	Central Till Plain Flatwoods		SG	G3	S2
Forest - floodplain mesic	Mesic Floodplain Forest		SG	G3?	S1
Forest - floodplain wet-mesic	Wet-mesic Floodplain Forest		SG	G3?	S3
Forest - upland dry Central Till Plain	Central Till Plain Dry Upland Forest		SG	GNR	S1
Forest - upland dry-mesic Central Till Plain	Central Till Plain Dry-mesic Upland Forest		SG	GNR	S2
Forest - upland mesic Central Till Plain	Central Till Plain Mesic Upland Forest		SG	GNR	S3
Lake - pond	Pond		SG	GNR	SNR
Prairie - dry-mesic	Dry-mesic Prairie		SG	G3	S2
Wetland - marsh	Marsh		SG	GU	S4
Wetland - swamp forest	Forested Swamp		SG	G2?	S2
Wetland - swamp shrub	Shrub Swamp		SG	GU	S2
Other Significant Feature					
Geomorphic - Nonglacial Erosional Feature - Water Fall and Cascade	Water Fall and Cascade			GNR	SNR

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GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long-term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank

SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; S4 = widespread and abundant in state but with long-term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

Section 4(f) Mitigation

Section 4(f) of the Department of Transportation Act of 1966 requires that special effort be made to preserve public park and recreation land, wildlife and waterfowl refuges, and historic sites. In general, Section 4(f) specifies that federally funded transportation projects requiring the use of land from a public park, recreation area, wildlife and waterfowl refuge or land of significant historical value can only occur if there is no feasible and prudent alternative. Using Section 4(f) land requires all possible planning to minimize harm. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), provided the first substantive revision to Section 4(f) to simplify the process and approval of projects that have only de minimis impacts on lands impacted by Section 4(f). Under the new provisions, once the US DOT determines that a transportation use of Section 4(f) property results in a deminimis impact, analysis of avoidance alternatives are not required and the Section 4(f) evaluation process is complete.

The NIRCC Metropolitan Planning Area contains a number of local parks; wildlife and waterfowl refuges; and sites listed on the national registry and are identified on Figures 8-6, 8-7 and 8-8. Additional historic locations including local districts and the Wabash-Erie Canal alignment are also identified on Figures 8-7 and 8-8. It is important to acknowledge that the identification of historic and cultural resources is a dynamic process and is therefore impossible to identify an exhaustive list of sites. These sites are important to the environmental integrity and heritage of our communities. However, there are times when transportation projects impact Section 4(f) resources and require measures to minimize potentially adverse impacts. The development and implementation of such measures involve close coordination with officials that have jurisdiction of the specific resources.

Investigation of Section 4(f) resources and investigation of potential impacts occur throughout the project planning and development. The intent of evaluating resources near project development sites helps guide projects toward practical solutions while minimizing impacts. This also applies to situations where no feasible or prudent alternative exists. The availability of detail during the project development of the preferred alternative allows for closer examination of the potential for Section 4(f) impacts and a clearer determination of how impacts should be processed. Once this is known, project sponsors and officials that own the resources can follow a process for mitigation.

The development process for the Transportation Plan is cognizant of and accounts for regional Section 4(f) resources that are important for preservation and community cohesion. Other resources may not be well known, but are afforded the same protection under Section 4(f). While the transportation planning process can account for well-known Section 4(f) resources that would pose a significant loss if impacted, it is premature to analyze individual impacts from projects at this stage in the planning process.

In cases where projects do have Section 4(f) impacts and there is no feasible and prudent alternative to avoid use of the resource, the project development process requires consideration of all possible actions to minimize harm. Minimization of harm may entail both alternative design modifications that lessen the impact and mitigation measures that compensate for residual impacts. Minimization and mitigation measures should be determined through consultation with the official or agency owning or administering the resource. Neither the Section 4(f) statute nor regulation requires the replacement of Section 4(f) resources used for transportation projects, but this option is appropriate

as a mitigation measure for direct project impacts.

Mitigation measures involving public parks, recreation areas, or wildlife and waterfowl refuges may involve a replacement of land and/or facilities of comparable value and function, or monetary compensation, which could be used to enhance the remaining land. Mitigation of historic sites usually consists of those measures necessary to preserve the historic integrity of the site. In any case, the cost of mitigation should be a reasonable public expenditure in light of the severity of the impact on the Section 4(f) resource in accordance with Federal requirements. Mitigation for common Section 4(f) resource impacts may include: landscaping or other screening techniques; context sensitive design refinements; maintenance of traffic accommodations to minimize impacts; minimize noise and/or limit duration of construction; and direct compensation for improvements to on-site resources.

Cultural Resources

Cultural resource reviews during the project development phase are designed to comply with the National Environmental Policy Act, the National Historic Preservation Act, the Department of Transportation Act and applicable Indiana codes and regulations. These laws and regulations require that cultural resources be considered during the development of transportation projects. An element of that consideration involves consulting with various entities including the Federal Highway Administration (FHWA), Advisory Council on Historic Preservation (ACHP), State Historic Preservation Office (SHPO), local historic preservation groups, local public officials, and the public.

Mitigation measures developed through a Section 106 Memorandum Of Agreement (MOA) consultation process provide ways to avoid, minimize, or mitigate adverse effects to historic properties impacted by projects. Historic properties include those listed, or are eligible for listing in the National Register of Historic Places (NRHP). These mitigation measures are carried through as environmental document commitments and must be completed and accounted for with SHPO and FHWA. The MOA will not be closed until all stipulations are fulfilled. A failure to meet all stipulations can potentially jeopardize a project sponsor's funding or other agreements or projects.

A plan for mitigating an adverse effect is site/property specific and requires a separate research design or approach for each historic property impacted by the project. It should be based on the context development and refinement through the environmental assessment and preliminary project design/engineering.

Mitigation measures may involve a variety of methods including, but not limited to: aesthetic treatments; avoidance; archaeological data recovery; creative mitigation; salvage and re-use of historic materials; informing/educating the public; and Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) documentation. Approaches vary widely depending on the type of historic property, the qualities that enable the property to meet

the NRHP Criteria of Eligibility, the location of the historic property with respect to the project and other criteria specific to the site. Mitigation plans are developed in consultation with Indiana Department of Transportation, State Historic Preservation Office, Federal Highway Administration,

local public officials, local historic preservation groups, and the public. In special circumstances consultation may include the Advisory Council on Historic Preservation.

Using INDOT's Red Flag Investigation Template NIRCC has identified a number of other cultural resources and infrastructure that may impact transportation projects. Figure 8-9 identifies the following sites, facilities, and infrastructure: Cemeteries, railroads, pipelines (containing natural gas, crude oil, and refined oil), airports, hospitals, religious centers, recreational facilities, museums, and schools. Further investigation at a project development stage needs completed in order to know if there will be issues that need addressed or some type of mitigation that may be required. Mitigation for these types of issues may include alternative alignments or treatments, context-sensitive design, noise barriers, or other enhancements depending on the affect and proximity of a project to these types of features.

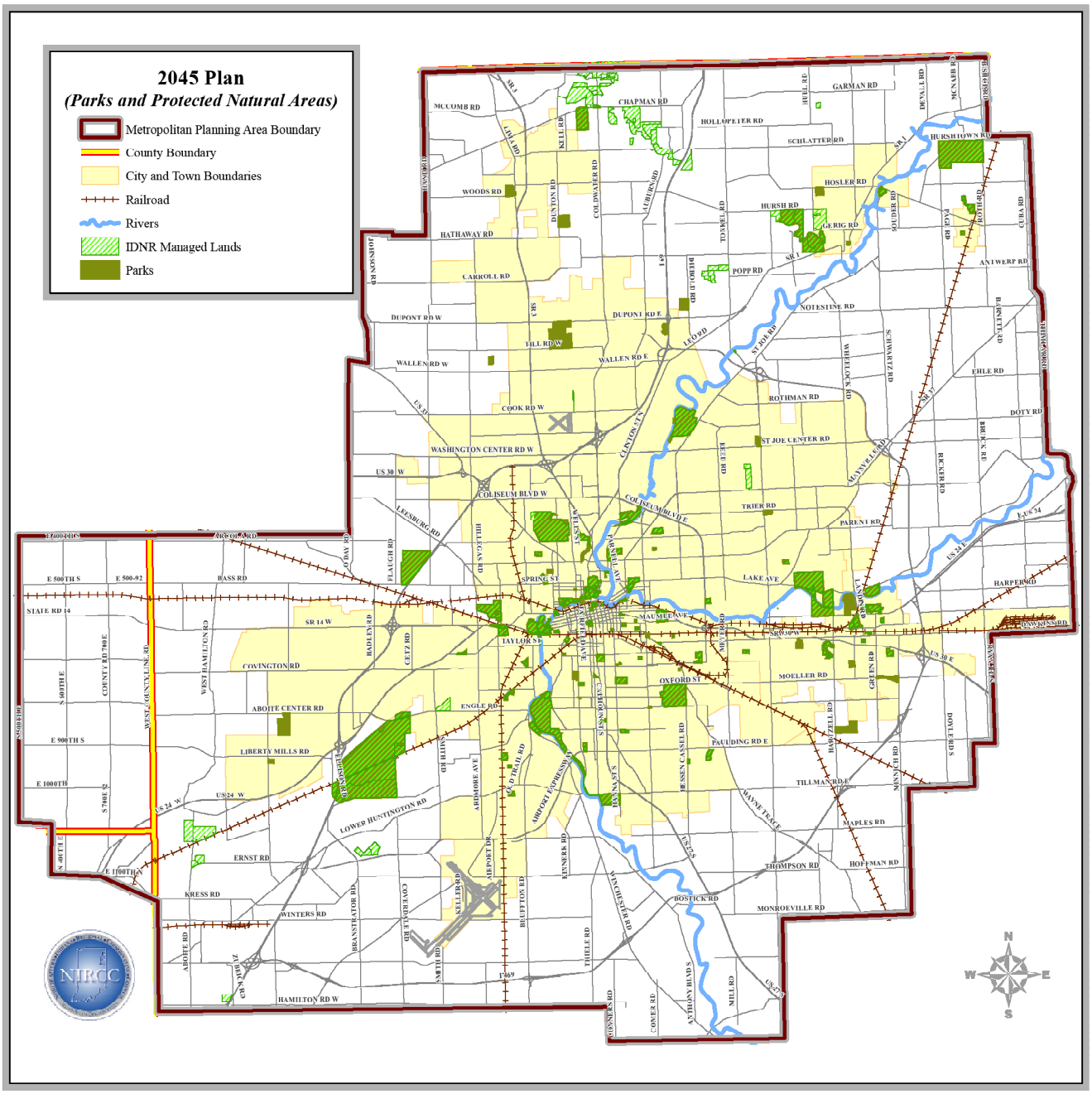


Figure 8-6

Parks and Significant Protected Natural Areas

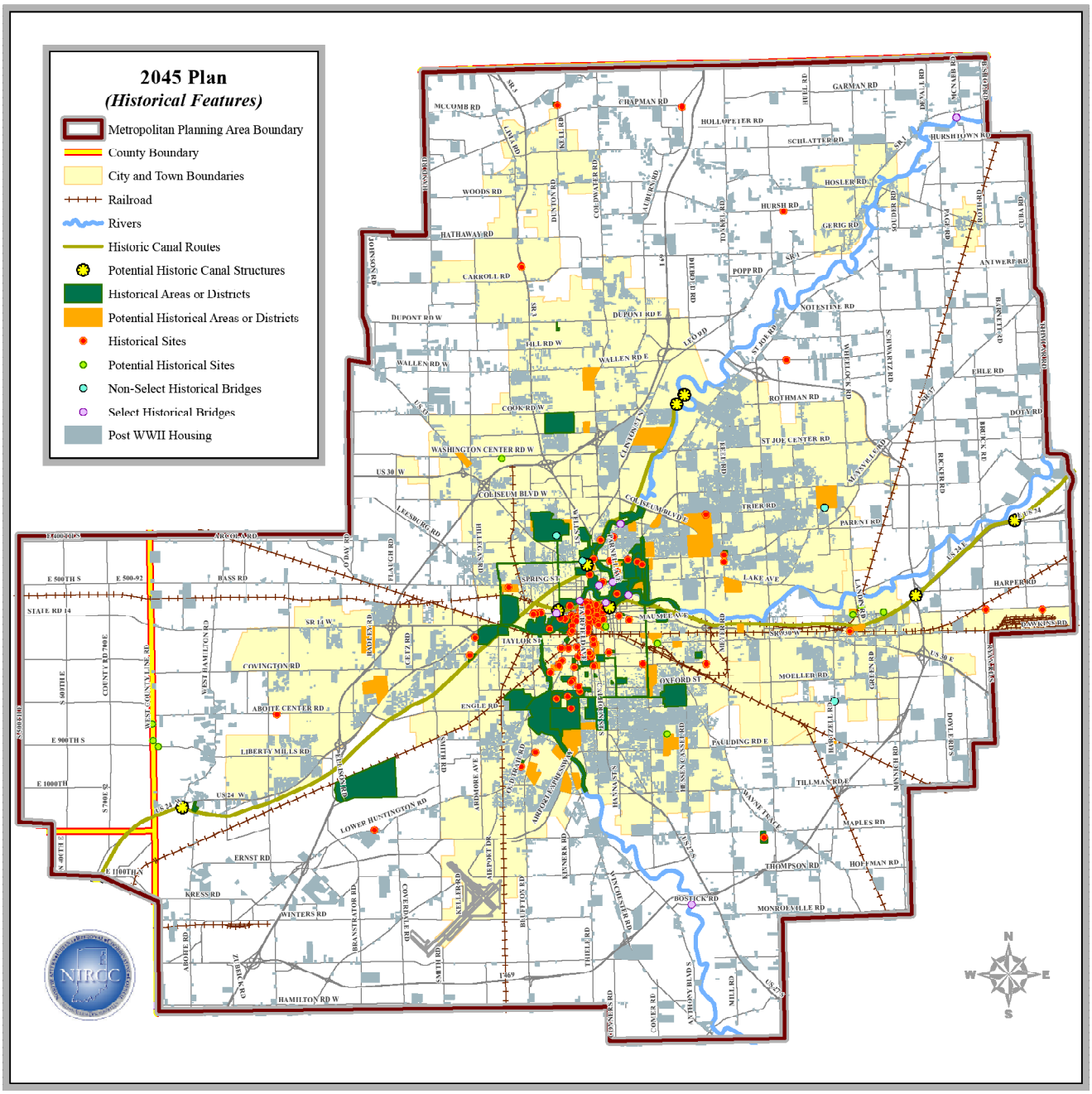
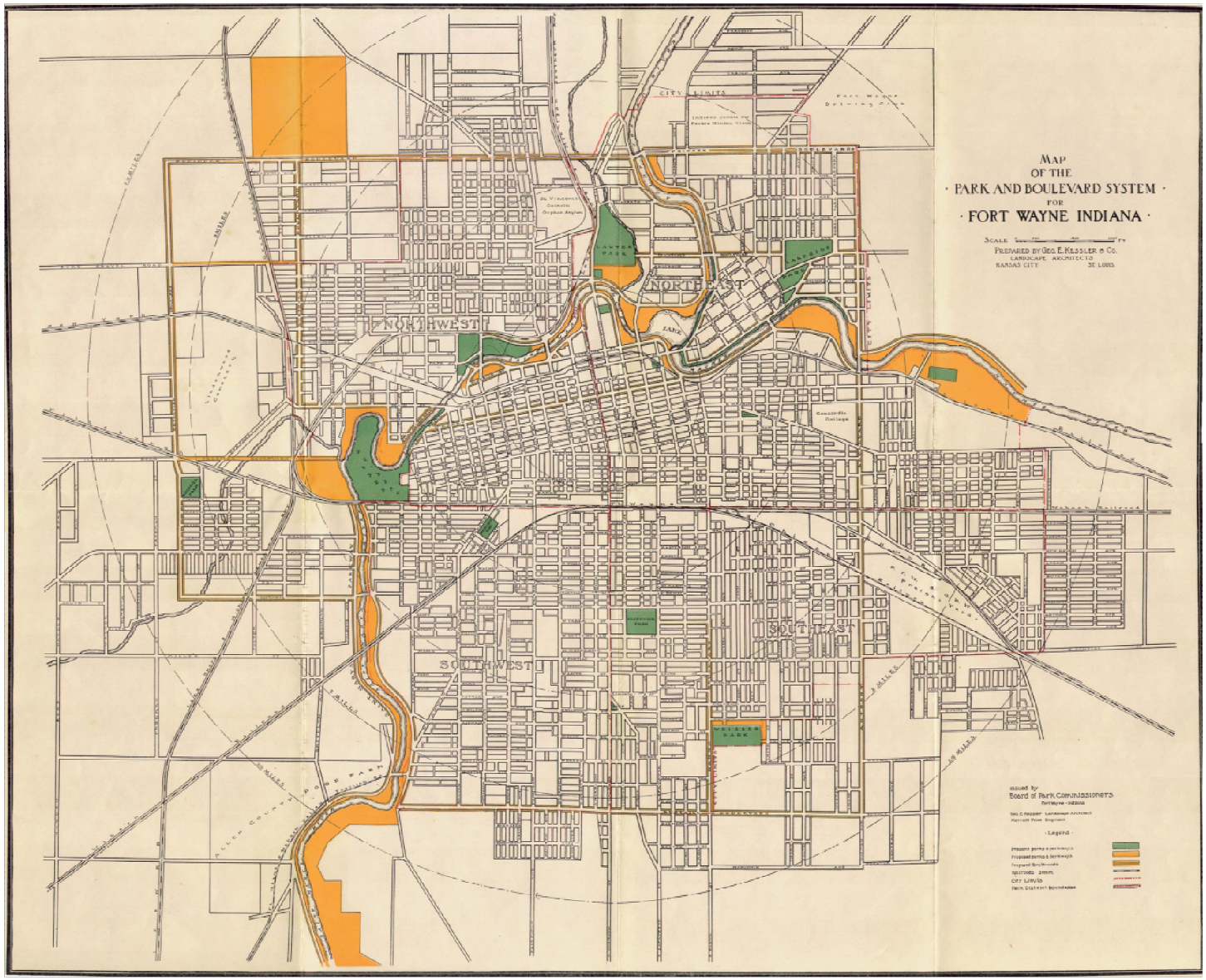


Figure 8-7

Historic Features



Attachment

2

Multiple Property Document

Map of the
Park and Boulevard System
City of Fort Wayne, Indiana
George Kessler, 1912

PREPARED BY:
TINA JONES
CHRISTOPHER BAAS
MALCOLM CAIRNS

PREPARED FOR:
ARCH
437 EAST BERRY STREET, SUITE 204
FORT WAYNE, INDIANA 46802
(260)426-5117

ARCH
1975 - 2005
30 YEARS OF HISTORIC PRESERVATION

Figure 8-8

Kessler Plan - Park and Boulevard System

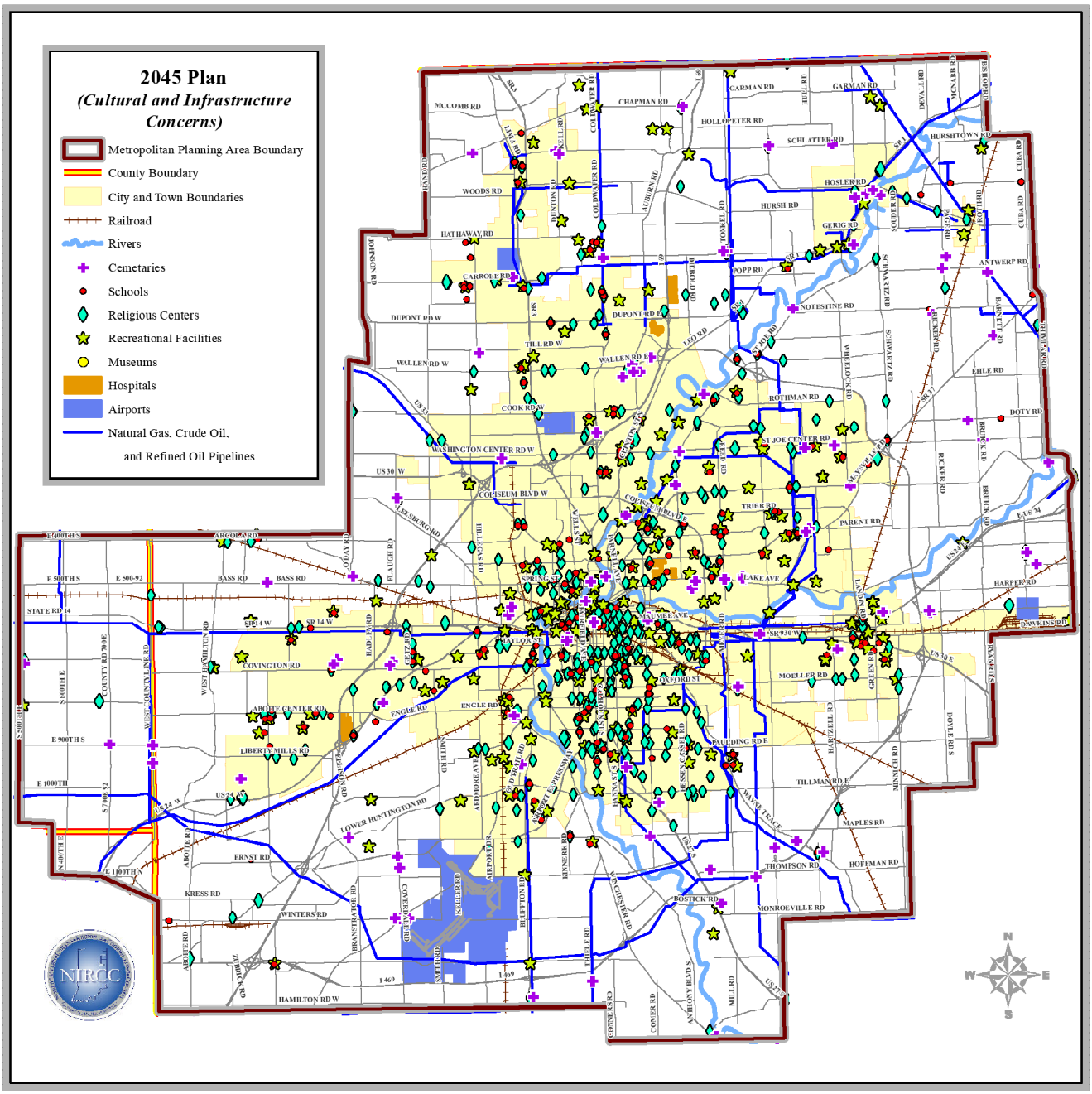


Figure 8-9

Cultural and Infrastructure Concerns

Other Environmentally Sensitive Sites

The Northeastern Indiana Regional Coordinating Council has identified other potential sites that have varying degrees of environmental sensitivity and may impact project development. Using a similar format as INDOT's Red Flag Investigation Template NIRCC has identified the following environmentally sensitive sites (see Figures 8-10 through 8-13): Confined feeding operations, open dump waste sites, waste treatment storage and disposal sites, tire waste sites, construction and demolition waste sites, solid waste sites active and permitted, NPDES (National Pollutant Discharge Elimination System) facilities and pipes, notice of contamination sites, superfund sites, brownfield sites, cleanup sites, VRP (Voluntary Remediation Program) sites, institutional controls, underground storage tanks, and manufactured gas plants. These locations will be treated on a project by project basis by avoidance or mitigation strategies. Projects impacting these sites will incur additional expense to dispose or treat contaminated soils and materials.

Public water source wellhead protection/influence areas are not displayed due to security issues. To evaluating potential impacts from specific projects or groups of projects NIRCC uses IDEM's Source Water Proximity Determination Tool available on IDEM's website. Appropriate mitigation activities will be implemented in wellhead influence areas as deemed necessary by IDEM. Mitigating, controlling and containing highway run-off and potential hazardous roadway spills are examples of strategies to protect wellhead sites.

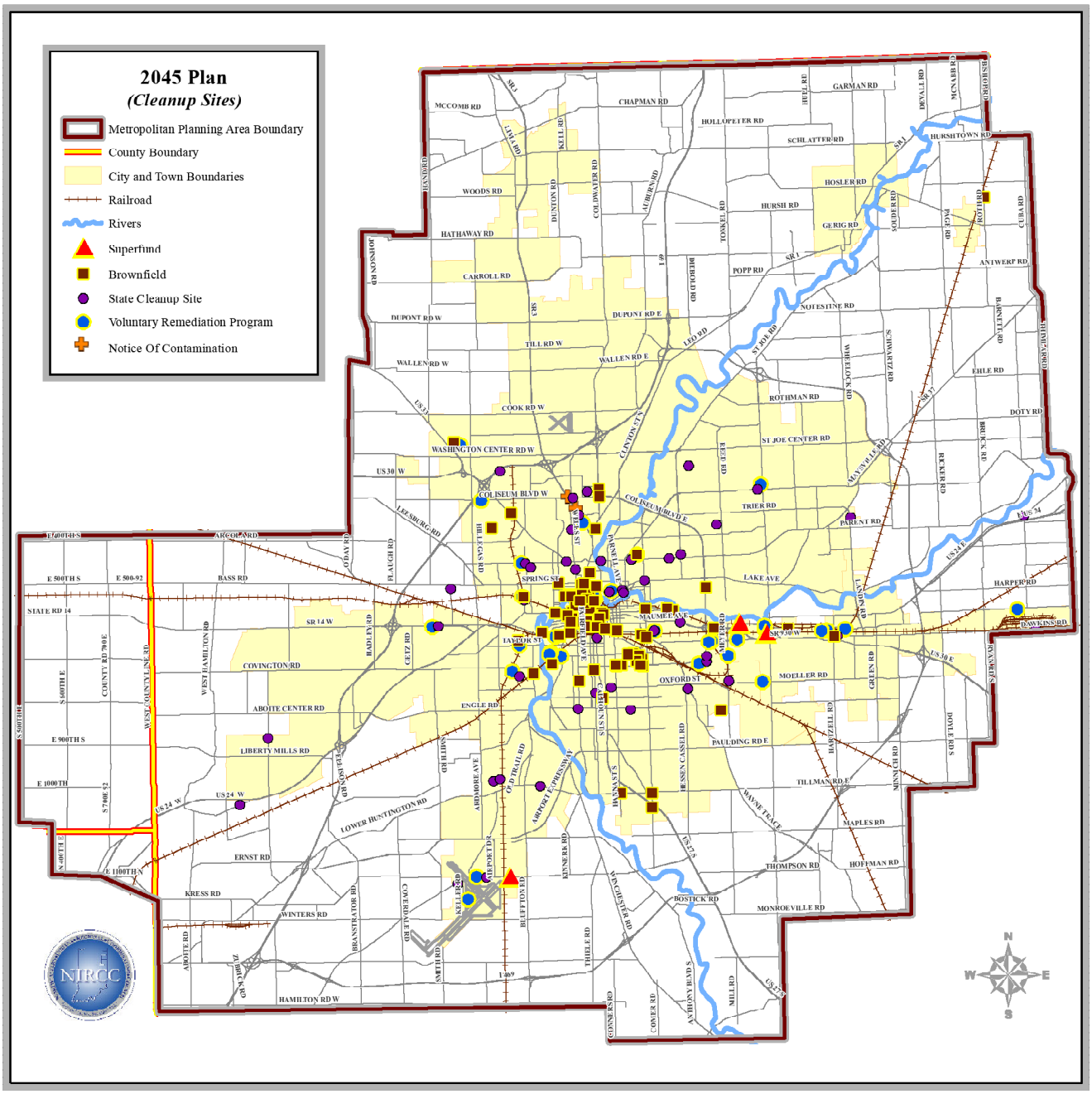


Figure 8-10

Cleanup Sites

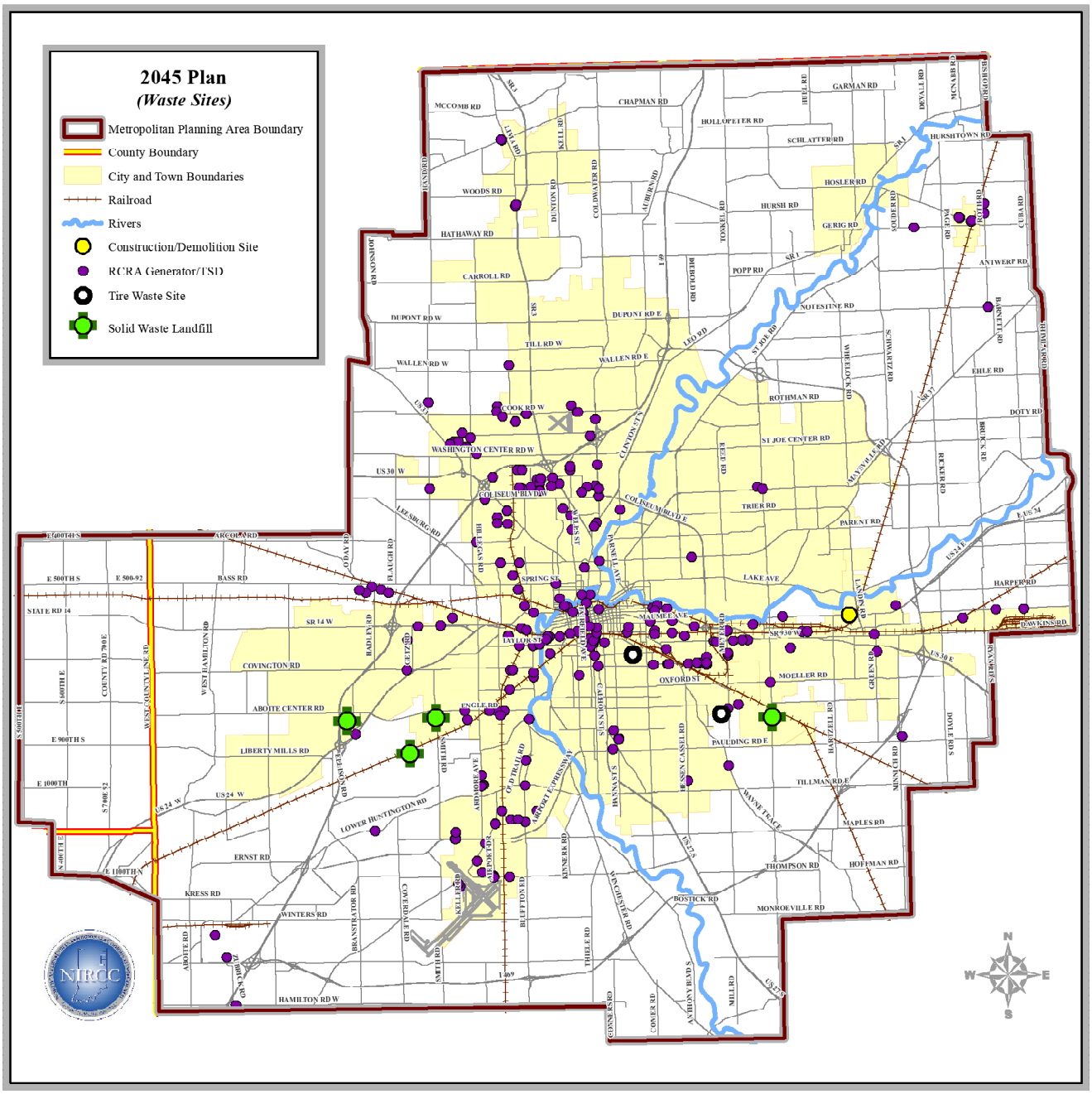


Figure 8-11

Waste Sites

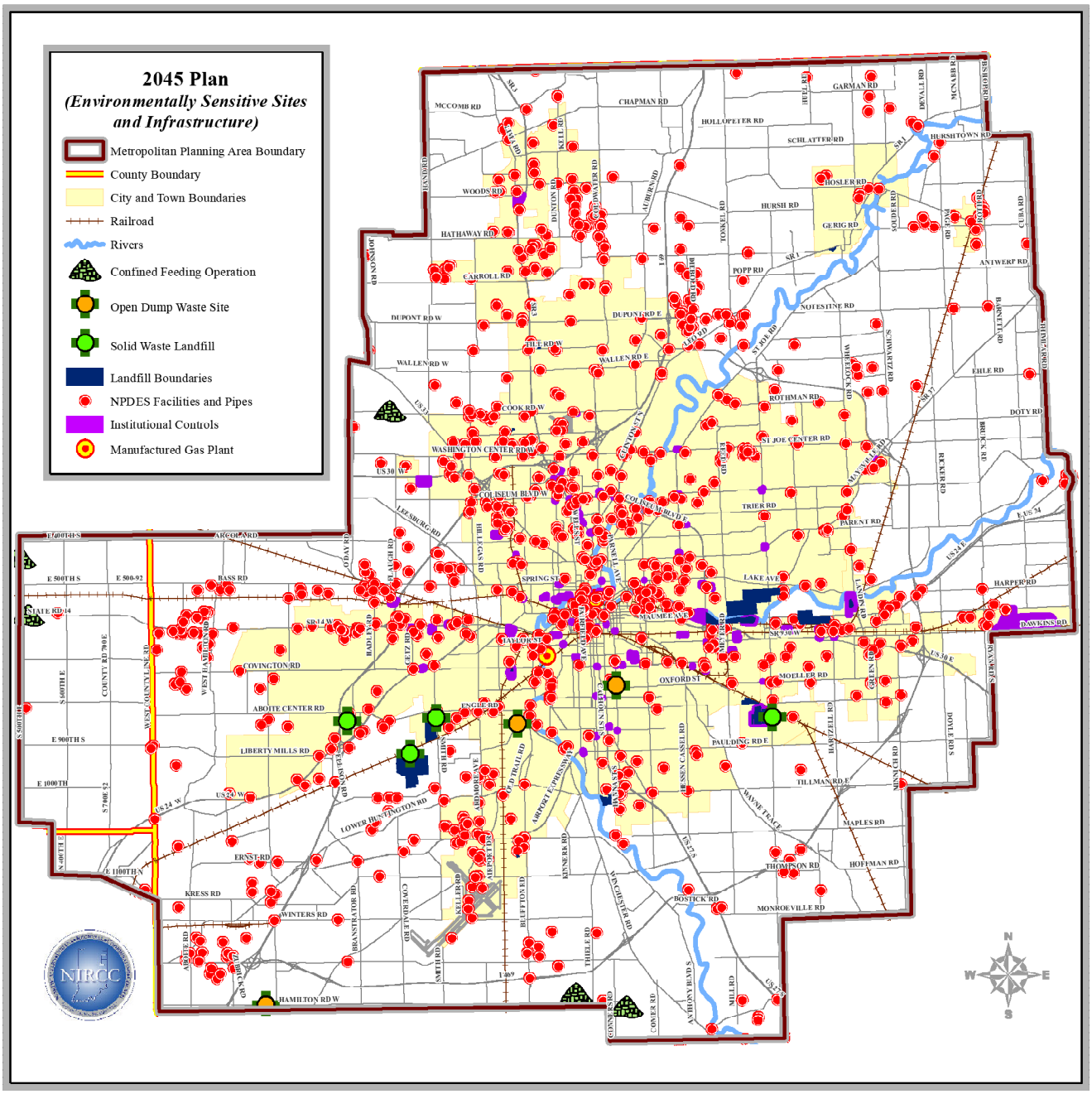


Figure 8-12

Enviromentally Sensitive Sites And Infrastructure

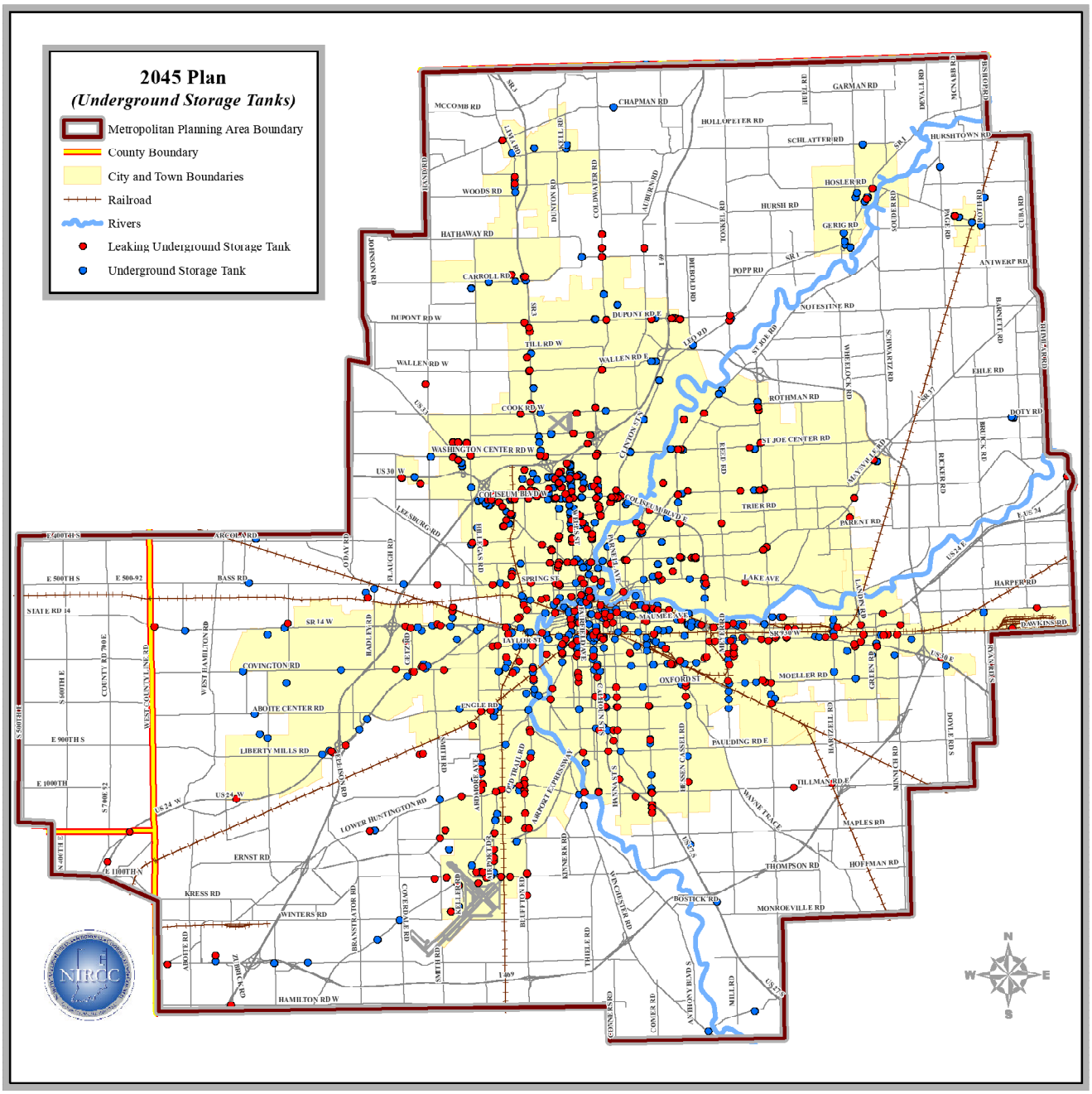


Figure 8-13

Underground Storage Tanks

Transportation Plan Analysis Summary

The maps provided in this document show the locations of various environmentally sensitive sites within the NIRCC Metropolitan Planning Area. The 2045 Transportation Plan includes 67 individual projects throughout the region. This section summarizes how many of these projects are near the environmentally sensitive locations. This information is only provided to show how common it is that an environmental issue is expected to be addressed and mitigated as projects from the Transportation Plan progress through the project development process.

The following method was used to summarize the number of projects near common environmental issue locations. Buffers were developed around the transportation projects at 100 feet, 500 feet, and 1,000 feet. Depending on the environmental issue and the limited certainty of some site locations or area boundaries, the 1,000 foot buffer distance may be the best option for knowing the potential needs of addressing impacts to a project. Features like special interest waterways and oil or gas mines are examples of projects that may need to use these 1,000 foot buffer distances because locations may be approximate and because the environmental sensitivity to these areas may not be well known. Other environmental issues identified such as parks and significant natural areas, historic sites, potential wetlands, brownfields, landfills, Superfund sites, etc. may be adequately served by the 100 foot and 500 foot buffers.

Table 8-4 summarizes the number of projects from the 2045 Transportation Plan that are near each type of environmental issue within the selected buffer criteria. All Environmental Document Data Citations are listed in Appendix L.

Table 8-4. Summary of number of Projects within Environmental Points of Interest

Environmental Points of Interest Near Transportation Projects	Number of Projects within 100 ft	Number of Projects within 500 ft	Number of Projects within 1,000 ft
Hazmat Concerns			
Confined Feeding Operations	1	1	1
Waste Sites (industrial waste sites, waste treatment storage and disposal sites, septage waste sites, tire waste sites, construction and demolition waste sites, solid waste sites active and permitted)	6	9	14
Landfill Sites (composting facilities, open dumps, old landfill sites, landfill sites)	0	0	2
NPDES (National Pollutant Discharge Elimination System) (NPDES facilities and pipes)	13	25	35
Cleanup Sites (corrective action sites, superfund sites, brownfield sites, cleanup sites, VRP sites)	0	1	4
Institutional Controls	8	11	15
Underground Storage Tanks (underground and leaking underground storage tanks)	18	32	38
Manufactured Gas Plants	0	0	0
Water Resources			
Water Features (lakes, ponds, creeks, streams, ditches)	42	56	62
Wetlands (wetland areas, wetland streams, wetland points)	30	45	56
Floodplain	22	31	34
Line of Protection	1	2	2
Special Interest Water Features/Resources (impaired lakes and streams, national river inventory (NRI, NPS), Outstanding Rivers)	12	16	20

Table 8-4 Continued next page...

Table 8-4. Summary of number of Projects within Environmental Points of Interest - Continued

Environmental Points of Interest Near Transportation Projects	Number of Projects within 100 ft	Number of Projects within 500 ft	Number of Projects within 1,000 ft
Infrastructure			
Cemeteries	6	14	16
Railroads	7	10	13
Pipelines	17	25	31
Airports and Hospitals	2	2	2
Cultural and Recreational Facilities (religious centers, recreational facilities, museums)	13	26	36
Schools	14	19	21
Existing or Potential Trails	43	45	47
Historical Features, Parks, and Significant Protected Natural Areas			
Historical Canal (potential historic canal routes and structures)	4	5	5
Historical Bridges (select and Non-Select)	0	0	0
Historical Sites and Districts	3	4	9
Parks and Significant Protected Natural Areas	5	7	12
Mining and Mineral Exploration			
Oil or Gas Wells, Mineral Resources, Mines	2	4	4

Climate Change: Resilient and Sustainable Transportation

The Purdue Climate Change Research Center has prepared a report titled Indiana's Past & Future Climate: A Report from the Indiana Climate Change Impacts Assessment (March 1, 2018). The report documents how climate change is affecting Indiana and the corresponding impacts of extreme events. The report indicates that the trends are clear, Indiana's temperatures are rising, and precipitation is increasing. Of specific concern is the speed in which these trends appear to be changing and the effect on public infrastructure and urban environments.

Extreme Events

For Indiana, including Allen County, the effect of climate change will be extreme temperature events and precipitation extremes that affect stormwater resulting in stream and river flooding. Extreme cold events are anticipated to decrease, and the last frost of the spring will occur earlier in the year. And while the trend data for extreme hot temperature days is somewhat skewed from 1925 to present from the 1930s drought years, as average temperatures warm, the number of extreme heat events is expected to rise.

The risk to roadway pavement as elevated temperatures may impact the amount of warping and buckling during extreme heat events is noted in the report. Modifications to pavement materials to improve tolerance of high heat conditions should be considered as the number of extreme heat events increase.

An extreme rainfall event is defined as "having a daily rainfall total in the top 1 percent of all events." Statewide, this is represented when 0.86 inches of rain falls in one day. A notable increase in the number of days experiencing extreme rainfall has occurred since 1990. Extreme rainfall affects roadway infrastructure with stormwater retention and runoff, roadway flooding, and potential damage to bridges.

The report states that in the Midwest, extreme events are occurring more frequently and exhibiting higher rainfall totals during these events. Within the Midwest, the average increase of precipitation during the top 1 percent of events from 1958 to 1016 is 42 percent. The measured increase validates what has been observed in Indiana.

As temperatures rise, the extreme rainfall events are expected to intensify throughout the remainder of this century. Scientists anticipate the average number of days that experience extreme precipitation events will increase by one or two days each year. In addition, the Midwest should anticipate more severe storm events.

Indiana has an approximately 15 tornadoes per year that rate at least EF1 on the Enhanced Fujita scale. The Enhanced Fujita scale rates tornadoes from an EF1 to an EF5. An EF1 tornado has winds between 86 and 110 miles per hour and EF5 tornadoes exhibit winds in excess of 200 miles per hour. While tornadoes can occur in any month, they are more likely to occur in April through June. Tornado activity varies year to year so a trend cannot be established.

The report suggests that warming temperatures may lengthen the storm season, but predicting increased or more severe storms is difficult. There is evidence the components that lead to storm development, such as instability and vertical wind shear, are likely to increase. Based on recent models, early results indicate that storm frequency and intensity is likely, but more study is needed, and research is underway.

The important takeaways from the research included in Indiana's Past & Future Climate: A Report from the Indiana Climate Change Impacts Assessment (March 1, 2018) are that Indiana's climate has been changing for over a hundred years, and more rapidly over the past few decades. The change is likely to accelerate as temperatures rise primarily impacting summer weather events. Hot days with record breaking temperatures are expected to increase. The winter and spring are expected to be wetter with more intense and frequent precipitation events. Additional research and data is required to enhance the climate change

models and produce more reliable predictions of the impacts. The report and additional climate change information and related data is available at IndianaClimate.org.

This leads us to several questions relevant to the transportation planning process and transportation plan. First, how to adapt our transportation system to mitigate and recover from the adverse impacts of climate change and secondly, how to reduce greenhouse gas emissions from transportation to slow the rate of climate change? The answer to these questions is to incorporate greenhouse gas reduction and resiliency strategies into transportation policies and the design, construction, and placement of transportation infrastructure. These actions will encourage sustainable travel and a resilient transportation network.

Recognizing hotter summer days and increased frequency and intensity of storms with extreme precipitation events are the primary impacts of climate change in Northeast Indiana, mitigating the adverse effects of excessive heat, stormwater runoff, flooding, snowfall, and storm damage are important to address. Impacts to the transportation system include more frequent flooding events that potentially shorten the life of bridges, culverts, drainage structures, and roadways. Hotter temperatures can impact thermal expansion of pavement causing degradation and reduced service life, shortening replacement cycles. Storms and extreme precipitation events can impact roadway safety and increase the risk of vehicle crashes.

Resilient and Sustainable Infrastructure Policies

- Prioritize vulnerable critical infrastructure for adverse impacts of climate change with appropriate attention to environmental justice areas.
- Adjust stormwater flow calculations to account for increased rainfall events, appropriately size stormwater infrastructure and detention to accommodate additional flow and implement stormwater control measures that improve water quality.
- Continue to expand the number of publicly available electric vehicle charging stations.
- Where practical, convert municipally owned vehicle fleets to electric vehicles.
- Support Citilink's conversion to an energy efficient transit fleet with low or no emissions.
- Promote carpooling, other shared ride options, and car share programs.
- Continue the conversion of streetlights to low energy consuming, light-emitting diodes (LED).
- Incorporate streetscapes that support a robust urban tree canopy to reduce heat islands and mitigate stormwater runoff.
- Promote high density land uses and transit friendly development designs to encourage transit ridership.
- Encourage mixed-use developments that blend housing, retail stores, and businesses in neighborhoods to reduce vehicle trips.
- Construct trails and sidewalks to promote a multi-modal transportation network.
- Expand the network of active transportation infrastructure (sidewalks, trails, bike lanes, etc.).
- Adapt bridge structures and roadway approaches to prevent closure during flooding events.
- Identify infrastructure designs that tolerate higher temperatures and more frequent freeze-thaw events.
- Support the implementation and expansion of the City of Fort Wayne Climate Action and Adaptation Plan (April 2023).
- Continue implementing complete streets.
- Analyze implementation of methods and upgrades to ensure improvements are distributed in a fair and equitable manner.

List of Consulting Agencies

ARCH - Historic Preservation
Allen County Parks Department
Allen County Soil and Water Conservation District
Department of the Army, Detroit District, Corps of Engineers Environmental
Department of the Army, Detroit District, Corps of Engineers Environmental - Analysis Branch
Department of the Army, Louisville Corps of Engineers
Federal Highway Administration - Indiana Division
Fort Wayne Community Development-Historic Preservation
Fort Wayne Parks Department
Indiana Department of Environmental Management
Indiana Department of Natural Resources
Indiana Department of Natural Resources - Division of Fish and Wildlife
Indiana Department of Natural Resources - Division of Historic Preservation and Archaeology
Indiana Department of Natural Resources - Division of Nature Preserves
Indiana Department of Natural Resources - NE Region Ecologist
Indiana Department of Transportation - Fort Wayne District
Indiana Department of Transportation - Central Office
Indiana Geological Survey
Indiana Natural Resources Conservation Services
Maumee River Basin Commission
U.S. Department of Housing and Urban Development
U.S. Department of the Interior, National Park Service - Regional Director
U.S. Environmental Protection Agency - Region V
U.S. Environmental Protection Agency - Region V-Superfund
U.S. Fish and Wildlife Service

Input on 2045 Metropolitan Transportation Plans by the Consulting Agencies

Opportunity to comment on the Environmental Mitigation Activities and 2045 Metropolitan Transportation Plan was afforded to the consulting agencies. Comments were received from the Indiana Department of Natural Resources, Division of Fish and Wildlife. The comments and reactions to the comments are provided below.

Indiana Department of Natural Resources, Division of Fish and Wildlife
Comment: Regarding endangered, threatened, or rare species. The lists of species have been recently updated. Please look at links provided here: https://www.in.gov/dnr/fish-and-wildlife/nongame-and-endangered-wildlife/.
Response: The list of endangered, threatened, or rare species has been updated.

Comment: Regarding LED Lighting. Most transportation corridor designers and municipalities are trending toward LED lighting. Certain types of LED lighting can have negative impacts on both human and wildlife health and safety. Scientific evidence suggests that artificial light at night has negative and deadly effects on many organisms including amphibians, birds, mammals, insects and plants (https://www.darksky.org/light-pollution/wildlife/). A June 2016 American Medical Association (AMA) report, "Human and Environmental Effects of Light Emitting Diode Community Lighting," concluded that "white LED street lighting patterns may contribute to the risk of chronic disease in the populations of cities in which they have been installed."

The International Dark-Sky Association has developed recommendations (https://www.darksky.org/our-work/lighting/lighting-for-citizens/led-guide/) for communities choosing LED lighting systems that will aid in the selection of lighting that is energy and cost efficient, yet ensures safety and security, protects wildlife, and promotes the goal of reducing light pollution:

- Always choose fully shielded fixtures that emit no light upward.
- Use "warm-white" or filtered LEDs (CCT < 3,000 K; S/P ratio < 1.2) to minimize harmful blue light emission.
- Look for products with adaptive controls like dimmers, timers, and motion sensors.
- Consider dimming or turning off lights during non-peak overnight hours.
- Avoid the temptation to over-light because of the higher luminous efficiency of LEDs.
- Only light the exact space and in the amount required for particular tasks.

Response: NIRCC will encourage state and local project designers to incorporate the International Dark-Sky Association recommendations for lighting into their projects.

Comment: Regarding Drainage and Stormwater Management. The Division of Fish & Wildlife recommends considering a more sustainable approach to stormwater management. The traditional model of stormwater management aims to drain runoff as quickly as possible with the help of channels and pipes, which increases peak flows and costs of stormwater management. This type of solution only transfers drainage problems from one section of a basin to another. A more sustainable approach should aim to rebuild the natural water cycle by using storage techniques (retention basins, constructed wetlands, raingardens, etc.) and recharging groundwater using infiltration techniques (infiltration basins or trenches, pervious pavement, etc.). The following links give a good overview of traditional and sustainable stormwater management systems and their pros and cons for consideration during the design of the proposed project: https://www.epa.gov/greeningepa/epa-facility-stormwater-management; https://www.epa.gov/greeningepa/stormwater-management-practices-epa-facilities.
Response: Stormwater management and mitigation are designed into our urban projects in accordance with IDEM and EPA regulations. Additional efforts will be made to encourage green infrastructure that reduce runoff and improve water quality.

Comment: Regarding landscaping on roadway projects. Consider using native plants for any proposed on-site landscaping and revegetation. While trees were specifically mentioned in the plan, utilizing native grasses and forbs (flowers) can be beneficial and in some cases have much greater benefits to combating the urban heat index and slowing stormwater runoff than trees alone. Further, habitat loss is the number 1 reason for loss of wildlife globally followed by invasive species. Planting native species can help to provide habitat to many species of wildlife, including those that are threatened and endangered. The following is a link to information on landscaping with native plants on the Indiana Native Plant Society (INPS) website: https://indiananativeplants.org/landscaping/.
Response: NIRCC will encourage state and local project designers to incorporate native plants including grasses and forbs into their landscape designs.

Input on previous Metropolitan Transportation Plans by the Consulting Agencies

Opportunity to comment on the Environmental Mitigation Activities was afforded to the consulting agencies on two separate occasions. Input from this process was used to modify and improve this section of the Transportation Plan. Comments were received from the Indiana Department of Natural Resources, State Historical Preservation Office; Indiana Department of Natural Resources, Division of Fish and Wildlife; Indiana Department of Transportation, Environmental Services, Fort Wayne District; Architecture and Community Heritage-ARCH, Incorporated or Fort Wayne; and United States Department of Army, Detroit District, Corps of Engineers. The comments and reactions to the comments are provided below.

United States Department of Army, Detroit District, Corps of Engineers
Comment: A portion of the Metropolitan Planning Area (west of I-69) is within the boundaries of the Corps Louisville District. When individual projects are coordinated, please send those projects within the Louisville District to: U.S. Army Corp of Engineers, Louisville District, ATTN: Chief Regulatory Branch (CELRL-OR-L), P.O. Box 59, Louisville, Kentucky 40201-0059. Please send projects within the Detroit District area to: U.S. Army Corp of Engineers, Detroit District, Planning Office-Environmental Analysis Branch, 477 Michigan Avenue, Detroit, Michigan 48226-2550.

Comment: The Detroit District Corps has a major flood control project in Fort Wayne that several of the projects in the transportation plan will intersect. These include:
New Construction: Spring Street –Wells Street to Spy Run Avenue Road Widening: State Boulevard-Clinton Street to Cass Street
In addition projects upstream and downstream could affect water levels in flood control project area. We will need to review more specific information for these projects that directly affect or may indirectly affect the Flood Control Project in order to ensure that the project plans do not compromise the Flood Control Project.

Comment: Many of the Transportation Plan projects cross waterways, we recommend that you coordinate with local officials and with the Indiana Department of Natural Resources regarding the applicability of a floodplain permit prior to construction. This coordination would help insure compliance with local and state floodplain management regulations and acts, such as the Indiana Flood Control Act (IC 13-2-22). Additionally, the Federal Emergency Management Agency Flood Insurance Rate Maps provide a good source of floodplain information. If you obtain any informa- tion that any part of you project would in fact impact the flood plain, you should consider other sites. This would be consistent with current Federal policy to formulate projects that, to the extent possible, avoid or minimize adverse impacts associated with use of the floodplain.

Indiana Department of Natural Resources, State Historical Preservation Office
Comment: Pursuant to the National Environmental Policy Act , Section 6002 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act, and Section 106 of the National Historic Preservation Act, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has reviewed your letter dated October 4, 2012 and received on October 9, 2012 regarding the development of a transportation plan for the New Haven-Fort Wayne-Allen County Metropolitan Area in Allen, Huntington and Whitley counties, Indiana. Thank you for the notification of updates to the 2030-II Transportation Plan and invitation to discuss and consult on the plan development.

It is our understanding that cultural resource reviews will be conducted as necessary during the project development phase. The Indiana SHPO wished to consult on the specific projects for which our office has jurisdiction, as they develop under the plan.

Indiana Department of Natural Resources, Division of Fish and Wildlife
The agency responded with acknowledgement of receiving the request to participate and would review the draft document. No additional comments were submitted from the IDNR-Division of Fish and Wildlife.

Architecture and Community Heritage-ARCH, Incorporated of Fort Wayne
NIRCC staff met on several occasions with representative of ARCH during the development of the Transportation Plan. ARCH was extremely helpful in identifying existing and potential historic and cultural resources within the metropolitan planning area. Work continues on developing an updated inventory of historic resources within Allen County. NIRCC will continue to meet with ARCH representatives as the inventory is completed to update maps with the best available infor- mation. NIRCC intends to include ARCH representatives in the review process for Environmental Red Flag Surveys to gain their input at the earliest stages of project development. ARCH did not submit any formal comments, but provided valuable information and has agreed to work with NIRCC on the Red Flag Analyses.

Indiana Department of Transportation, Environmental Services, Fort Wayne District
In addition to the inclusion of "Indiana Listing of Outstanding Rivers and Streams," you could include IDNR trout stream and USACE Section 10 stream, which usually require special consid- erations. The following is a list of the rivers which fall in these categories:

Cedar Creek from river mile 13.7 to St. Joseph River (IDNR Scenic; IDEM)
Cedar Creek (IDNR Outstanding)
Little River (IDNR Outstanding; Sect 10)
Maumee River- Hosey Dam in Ft. Wayne (USACE Sect 10)
Shoaff Park (Trout 2017)
Spy Run Creek (Trout 2017)
Wabash from IN/OH line to Ohio River (IDNR Outstanding)

In the last paragraph under the Streams and Wetland sections, I believe it would be useful to include IDNR and their mitigation requirements as well. If a project is taking place in an IDNR regulated floodplain, then mitigation specific to the IDNR may be required. I see that this was also a comment from the United States Department of Army, Detroit District, Corps of Engineers. IDNR's mitigation guidelines are outlined in their "Information Bulletin #17 Third Amendment."

Chapter 9
FREIGHT

Freight Movement in Allen County

The Northeastern Indiana Regional Coordinating Council (NIRCC) recognizes the importance of freight transportation in contributing to the economic vitality of Allen County. Freight movement in Allen County occurs over a number of transportation modes including rail, air and truck. Figure 9-1 illustrates the transportation infrastructure and facilities located in Allen County.

The term multimodal indicates that freight is moved using a variety of modes, which may include trucks, trains, aircraft, and sea going vessels. Within the metropolitan area, roadways, railways, and air facilities support the multimodal distribution of freight. While there are no ports in the area, access to the Port of Toledo, Burns Harbor and others located in the Midwest is critical to the distribution of goods. Most freight is moved across the country and around the world using some combination of these modes. Defining strategies for improving the effectiveness of these modal interactions and evaluating and implementing these strategies to enhance the overall performance of the transportation system is essential to the process. NIRCC has identified the major modal activity centers and connectors to ensure access and mobility issues are considered as a component of the transportation planning process, see Figure 9-2.

Transportation staff works with the Fort Wayne Chamber of Commerce; Pavers, Excavators, Truckers, and Suppliers (PETS); and other freight companies to identify problems, address safety concerns and issues affecting the business community with a special emphasis on trucking and freight distribution. Together, solutions are developed, and viable projects are incorporated into the planning process. Transportation facilities and major industrial sites are scrutinized to ensure access to these areas is safe and efficient. The transportation planning process continues to pursue projects conceived to improve access and connectivity. These projects will benefit travel for the distribution and mobility of goods and services throughout the region.

Rail

Allen County is served by three railroad companies. Figure 9-3 illustrates the railroad lines in Allen County. The three railroad companies are the Chicago, Fort Wayne & Eastern Railroad (CFER), the Michigan Southern Railroad (MSO), and the Norfolk Southern Railroad (NS). The Chicago, Fort Wayne & Eastern Railroad runs from Tolleston, Indiana (west of Gary, Indiana) to Crestline, Ohio (north central Ohio). CFER, which is owned by Genesee & Wyoming Railroad Services, Inc., runs 5 trains per day and 4 trains per night on this line. CFER also has a line that runs to Decatur, Indiana carrying approximately 2 trains in a 24-hour period.

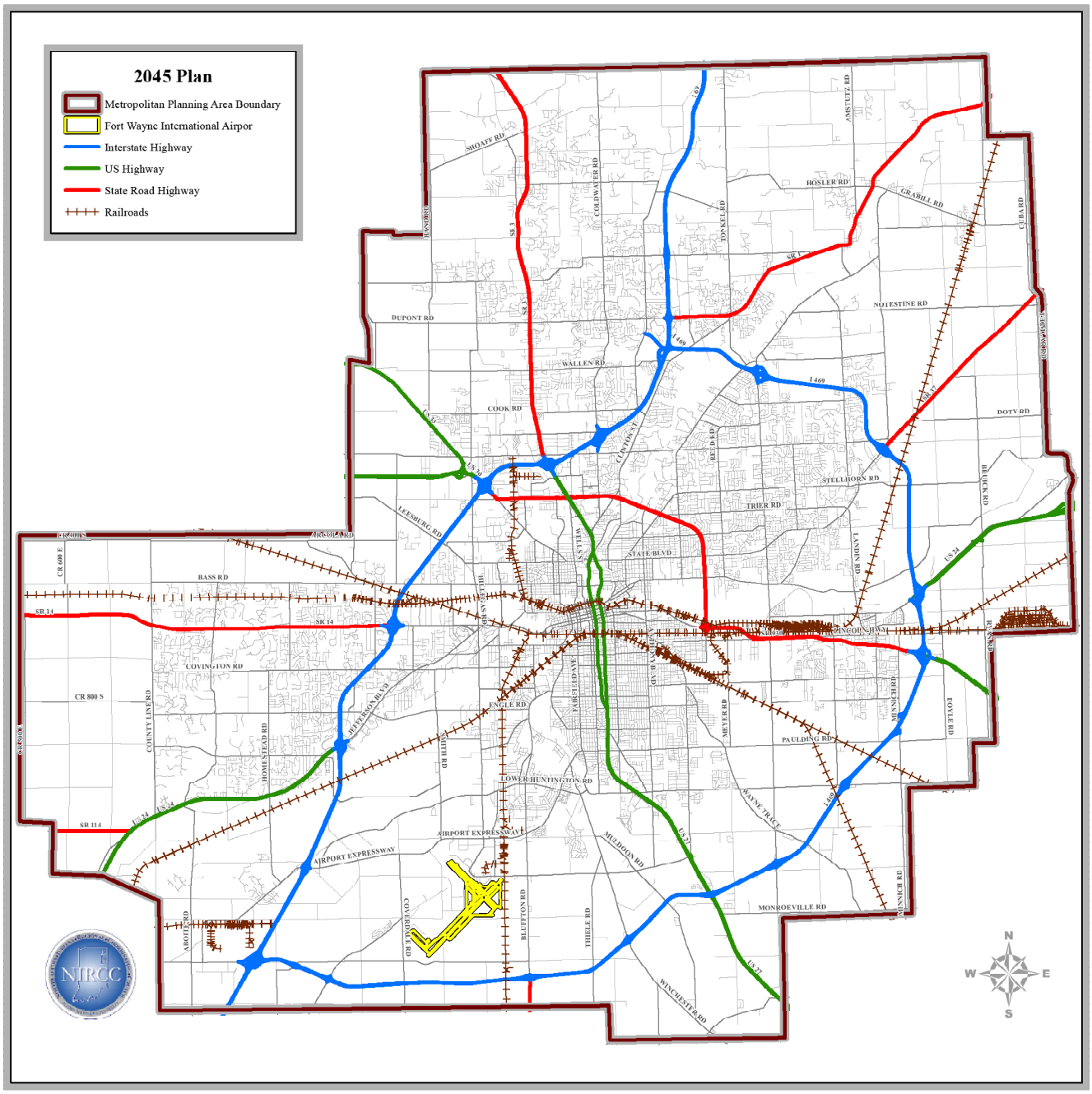


Figure 9-1

Transportation Infastructure

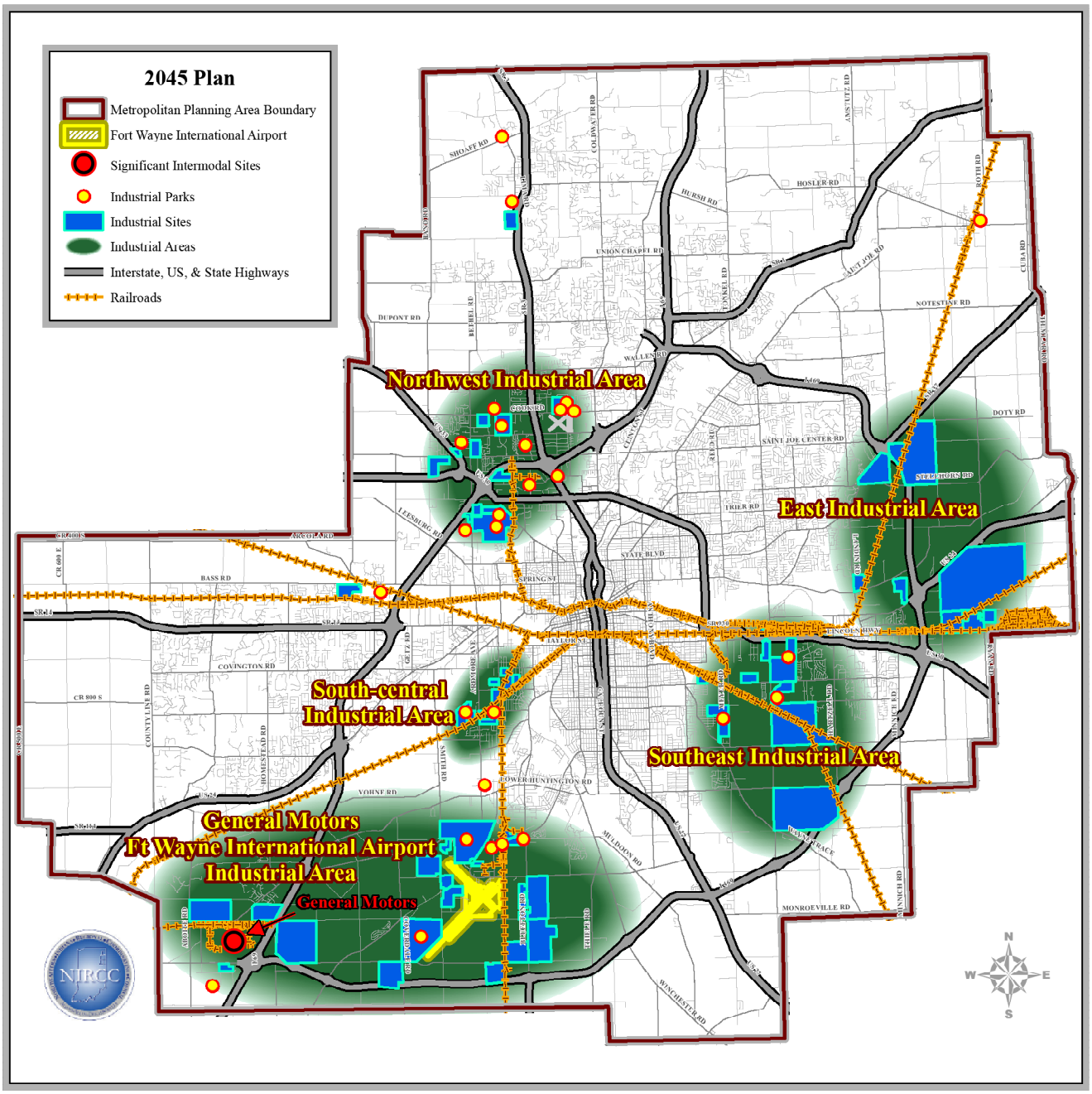


Figure 9-2

Major Modal Activity Centers

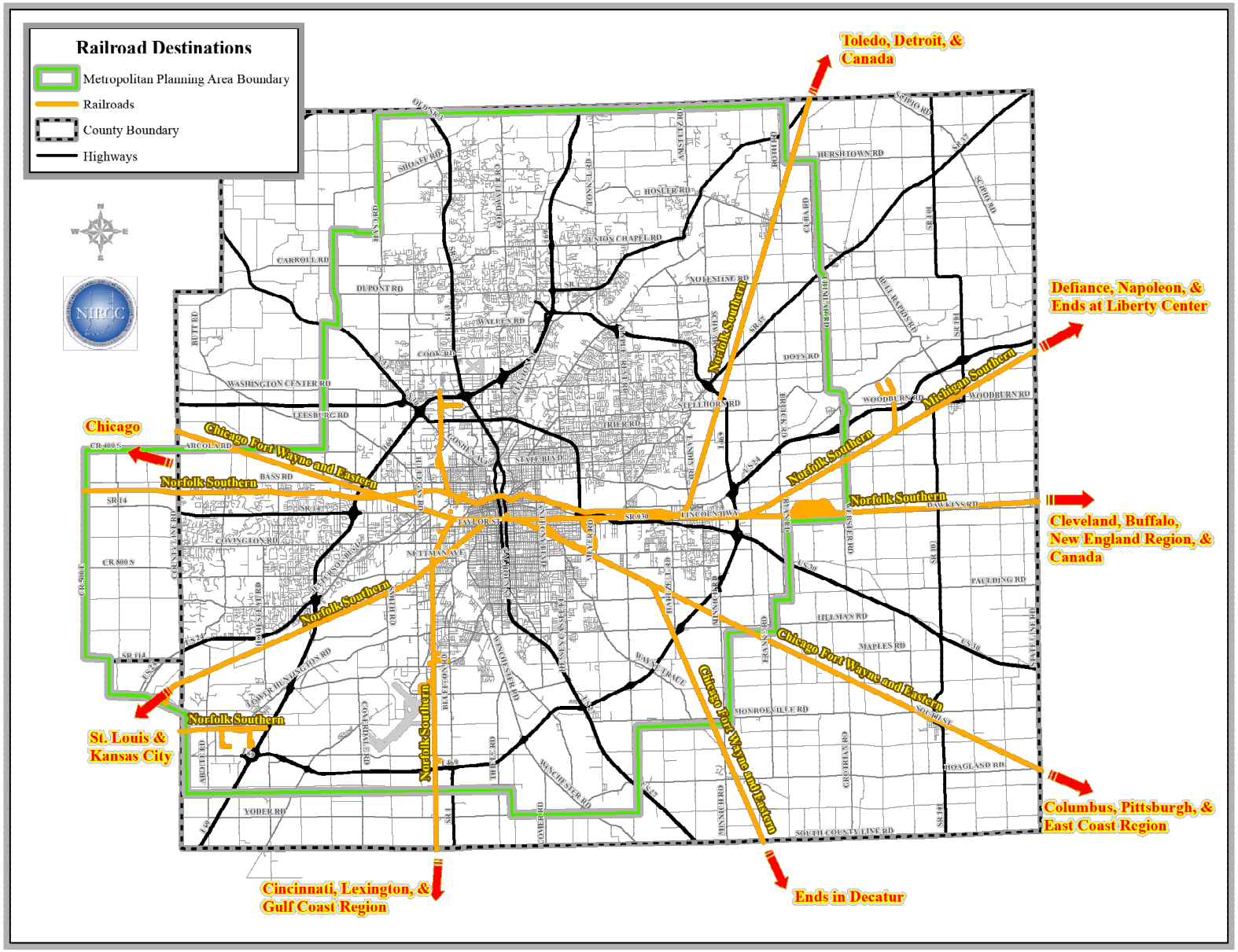


Figure 9-3

Railroad Destinations

The Michigan Southern (MSO) Railroad is a subsidiary of Pioneer Railcorp. MSO operates 51 route miles between Woodburn, Indiana, and Liberty Center, Ohio via Defiance, Ohio. MSO operates 3.1 miles within Indiana and has one train per week on this rail line. Principal products shipped include grain, aggregates and food products. MSO interchanges with Norfolk Southern at Woodburn and CSXT at Defiance, OH.

The Allen County area is also served by the Norfolk Southern Railroad. It has three lines that cross the county. The east-west line connects to Chicago and east to Ohio, this line carries 12-16 trains per day (6am to 6pm) and 11-12 per night (6am to 6pm). The line that runs northeast connecting Allen County to Toledo handles approximately 18 trains per day and 13 per night. The NS line running southwest to Central Illinois carries approximately 20 trains a day and 12 trains per night. The last line going through Muncie and then to southwest Ohio handles 15 trains a day and 10 trains per night. Norfolk Southern also operates an automotive distribution facility in Allen County at the General Motors Plant. This plant is located in the southwest part of the county adjacent to Interstate 69.

Air

Fort Wayne International Airport is owned and operated by the Fort Wayne-Allen County Airport Authority. Fort Wayne International Airport (FWA) is considered a medium sized airport. The Air Trade Center located on Coverdale Road at the end of the southwest runway of the airport offers 450 acres of industrial space. It also has ten T-hangars available to small single or light twin engine planes. In 2021, the Fort Wayne International Airport was ranked 99th in the United States for air cargo weight, handling 13,354 tons of cargo.

The construction of Airport Expressway from Dalman Road to Huntington Road in the late 1990's made the connection of FWA to Interstate 69 more accessible. With the addition of the Air Trade Center, road improvement projects have been implemented. The Coverdale Road project, which included two bridges, was completed in 2015. This road project included lane widening to 12' with 6' shoulders along with the bridge widenings. City of Fort Wayne improved Ardmore Avenue and Ferguson Road providing better access to the Terminal Area. The MTP identifies the need to construct a grade separation taking Airport Expressway over the Norfolk Southern railway to improve access and reliable travel to the airport. An improvement is being designed for the Coverdale Road, Indianapolis Road, and Winters Road intersection.

Roadways

Trucks are economically important as most consumer goods, such as food, furniture, automobiles and appliances are reliant on trucks for delivery and distribution. Allen County is strategically located within a one-day drive of approximately 80% of the U.S. population, attractive for warehousing, distribution, logistics, and e-commerce. Approximately 14% or 43.9 million of the total United States population reside within a 250-mile radius of Fort Wayne, and about 32% are within 500 miles (see Figure 9-4). In

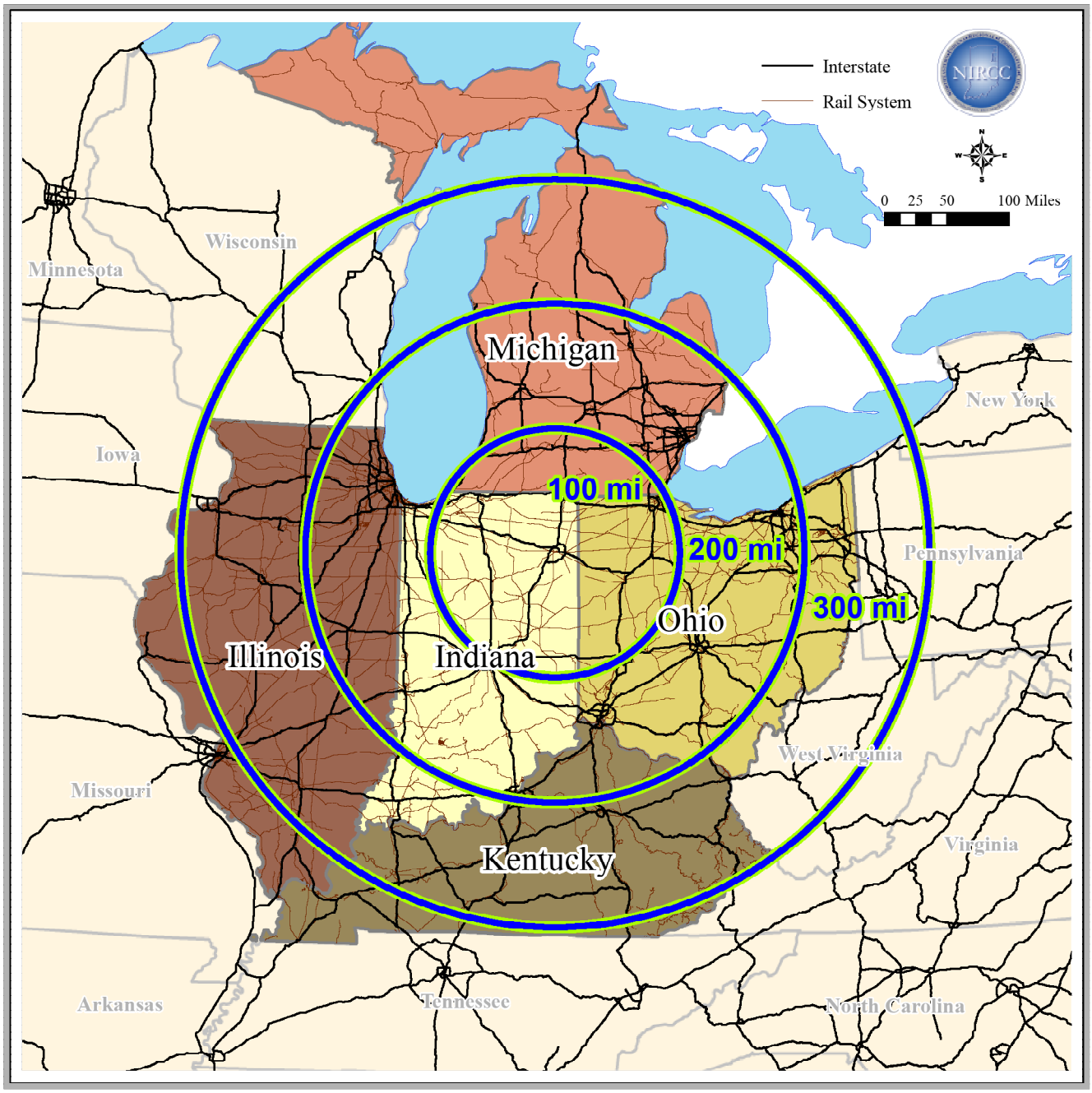


Figure 9-4

Regional Hub

addition, Allen County is centrally located and nearly equal distance to 6 major economic centers including Chicago, Cincinnati, Cleveland, Columbus, Detroit, and Indianapolis.

NIRCC, as the responsible agency for transportation planning in Allen County, strives to improve the mobility and accessibility of freight movement. These planning efforts are conducted with sensitivity to safety concerns and adverse impacts to residential areas. In support of this effort a truck route system has been established within Allen County through a collaborative effort of the Cities of Fort Wayne and New Haven, and Allen County. The truck route system is displayed in Figure 9-5. The truck routes are designated into two different categories: "Local Delivery Routes" and "Through Routes". The "Local Delivery Routes" are designated for trucks with an origin or destination within the respective jurisdiction. The "Through Truck Routes" are intended for truck traffic that must pass through the region. For local deliveries and pick-ups, truck drivers are encouraged to use the Through Truck Route system to the maximum extent possible, and then only deviate on the Local Delivery Route system to follow the shortest path available to and from their destinations. This process improves safety and reduces truck traffic near residential neighborhoods.

The intent of the transportation planning process including implementation of the "Bypass plus Arterial" concept has been two-fold: 1) improve the mobility of freight passing through the region by creating alternative routes away from the urban core; and 2) provide an efficient delivery system for goods and services within the urban area. The completion of Interstate 469 and improvements to major freight corridors such as Interstate 69 and US 24 have provided safer and more efficient routes around the urban area. The percentage of trucks using the local arterial roadway system has diminished. This serves to protect our urban area and residential neighborhoods from the adverse impacts associated with truck traffic. Recognizing that the health and economic prosperity of the urban area is dependent on truck traffic, the "Bypass plus Arterial" concept has also included improvements to the arterial system to promote safe and efficient access to locations within the urban area. Corridors that have been improved in part to facilitate local truck traffic include Lafayette Center Road / E 900 N, Airport Expressway, Hillegas Road and Ardmore Road. The plan includes additional improvements on several select corridors such as Maplecrest Road South, Adams Center Road, Ardmore Avenue, and Hillegas Road that will facilitate freight distribution.

Freight mobility is monitored and analyzed through data collection efforts that include truck volumes, identifying freight activity centers, and meeting with business groups engaged in trucking and distribution. Several tools are employed to achieve this, including corridor studies, intersection and arterial analyses and road improvement projects. The analysis of this information receives special attention to ensure mobility and accessibility needs are met for freight movement. An element that is used to help determine which corridors need improvement or should be addressed to facilitate truck freight movement are the truck volumes that are collected, see Figure 9-6. Trucks are competing with passenger vehicles for capacity on

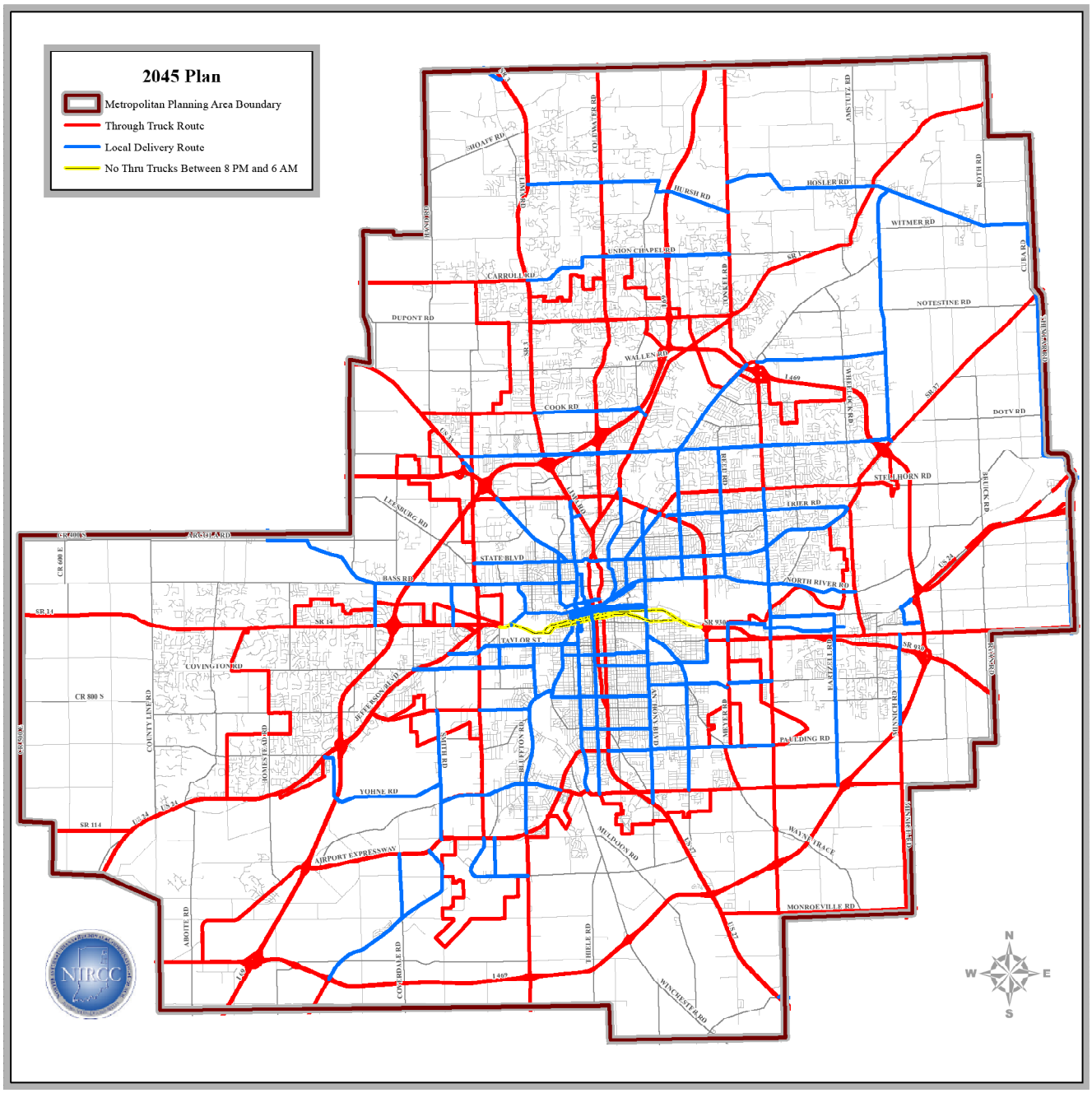


Figure 9-5

Truck Route System

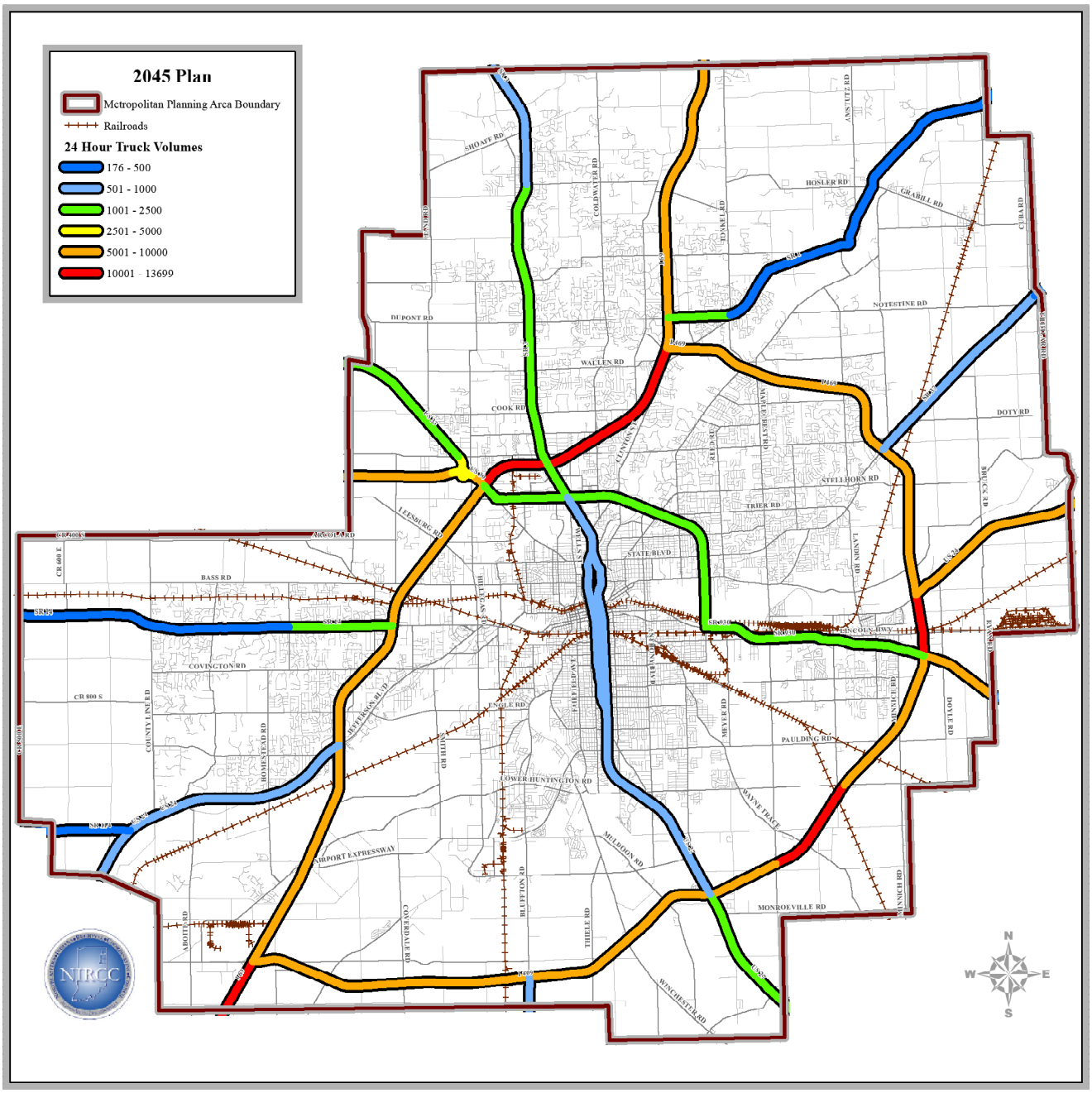


Figure 9-6

Truck Volumes

major roadways, particularly in urban areas. As displayed on the truck volumes map the interstates and some US routes have very high truck volumes. One of the reasons for constructing Interstate 469 was to divert truck traffic around Fort Wayne rather than forcing trucks through the urban core. This also alleviates congestion through Fort Wayne. Other projects that were programmed to facilitate truck freight traffic include the added travel lanes to I-69, US 24 East and I-469 interchange, Maplecrest Road extension, Diverging Diamond at Dupont Road and I-69, and construction of Airport Expressway.

The freight profile of the Allen County area provides an assessment of current freight movement practices, including highway, railway and air infrastructure, principal manufacturing facilities and industrial parks. Networks of railroads and roadways along with facilities such as the Fort Wayne International Airport, the Air Trade Center, and truck terminals support the efficient movement of raw materials and finished goods throughout the area. The NIRCC staff will continue to monitor freight movement in Allen County and seek ways to improve the overall system.

NIRCC has made investments in passively collected big data to gain a better understanding of the movements of both people and truck freight into, out of, through, and within Northeastern Indiana. Big data is collected and processed to provide trip origin and destination (OD) information. The completed report contains the selection, processing, and analysis of this data and what it reveals about travel patterns in Northeast Indiana. Passively collected big data presents a valuable and powerful new source of data for travel modeling and forecasting. Passive OD data include information from observations of millions of individual trips that can be harnessed for travel modeling and forecasting. The outcome is understanding travel patterns in Northeast Indiana. Moreover, passive data collection can provide OD data more cost effectively than traditional household travel surveys.

Daily trips between selected communities within an 11-county region were analyzed. NIRCC staff identified 12 primary communities and 8 secondary communities for analysis. Since Fort Wayne/New Haven is the main community in the region, its interactions with Huntertown and Leo-Cedarville are greater than other communities which is plausible given their proximity. Flows on key facilities in the region were also analyzed to understand the origins and destinations they serve. A total of 60 gates on 9 major corridors were defined. Gates are enter/exit location on the road network. The major corridors in the region included Interstate 69, 80/90, and 469, and US 6, 20, 24, 27, 30, and 33.

Figure 9-7 shows one example of truck flows passing through a primary gate. The gate is located on US 24 west of the Indiana / Ohio State Line. The percentage of these flows are displayed to/from each community and major external stations such as I-69 north and south, I-80/I-90 east and west, US30 east and west, and US24 west. The figure shows that approximately 50% of truck trips pass through the region via Interstate 469. It also shows that 8.5 percent of truck trips passing through this gate are bound to/from the Fort

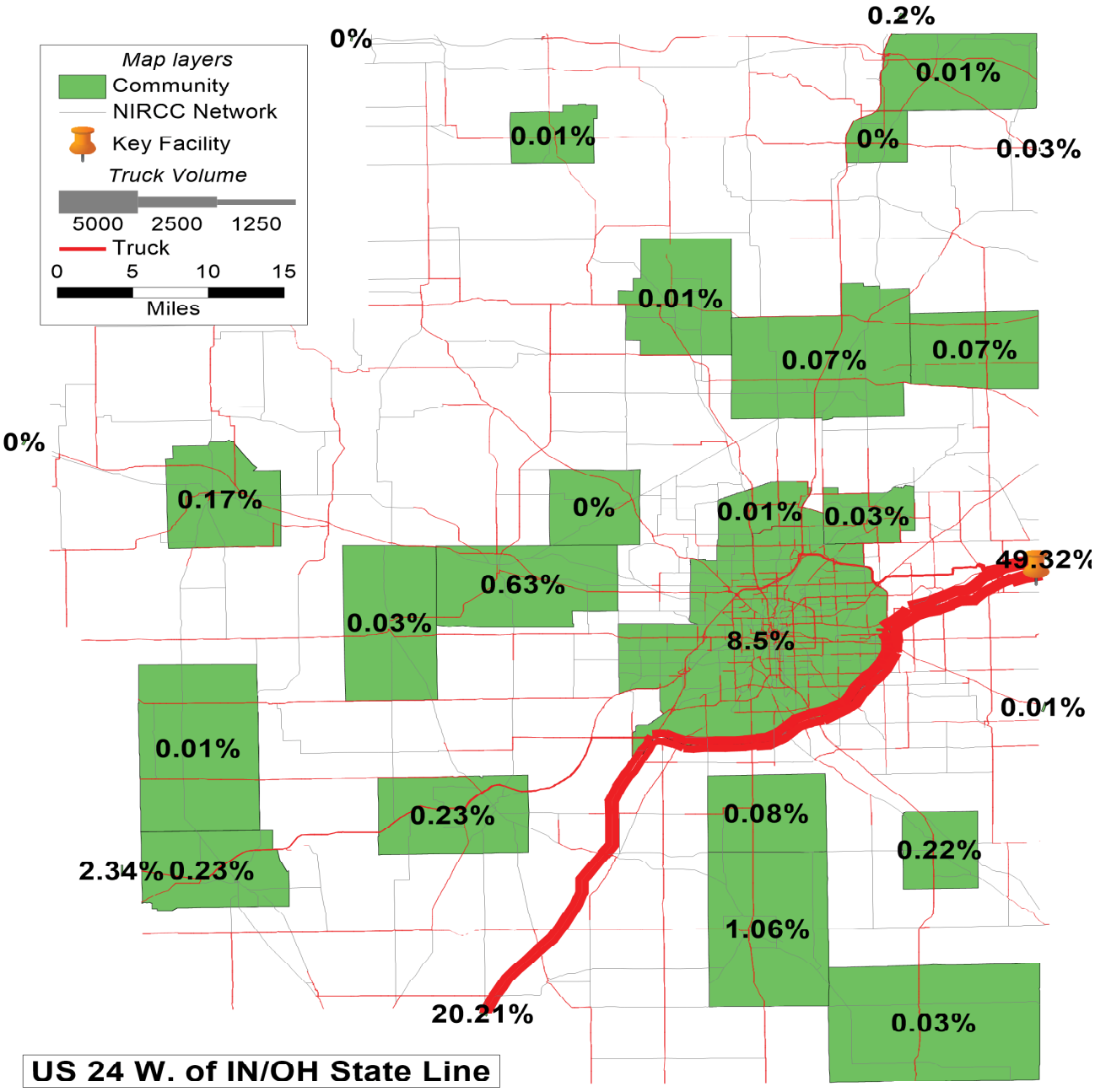


Figure 9-7

Big Data - US 24 w/o Indiana/ Ohio State Line

Wayne/New Haven area, and 20.2% are bound to/from Interstate 69 south. Fort Wayne/New Haven has the highest share of truck trips among communities in the region. It should be mentioned that rural areas are also included in the community share calculation although their shares are not shown on the map.

Chapter 10
FUTURE EFFORTS AND IMPLEMENTATION

The dynamic characteristic of a transportation plan necessitates the continuous implementation, re-evaluation, and assessment of its policies and improvement projects. This process is probably the most important aspect of the plan, otherwise it quickly becomes obsolete. Continual attention to the plan by the community, the Urban Transportation Advisory Board, the Cities of Fort Wayne and New Haven, Allen County, and the State of Indiana, is essential to meet the desired objectives. In this manner, the plan will guide transportation investment and service decisions in support of a transportation system that will meet existing and future travel desires.

The implementation of transportation policies and improvement projects documented in the transportation plan require a consorted interest and level of commitment necessary to make them reality. In support of this approach, there are several specific endeavors that will be pursued to ensure the policies and improvement projects are gradually implemented. These areas include but are not limited to some of the following plans and studies aimed at supporting the objectives of the transportation plan.

Status of Previous Transportation Plans

The transportation planning process was initiated in the late 1960's for the Fort Wayne-New Haven-Allen County Metropolitan Planning Area. Since the inception of the transportation planning process, numerous highway and transit improvements have been implemented based upon the recommendations of transportation plans. Completed highway improvements are shown in Figure 10-1. Many transit improvements have also been made which increase the mobility of area citizens.

The current 2040 Transportation Plan was adopted in May 2018. In the five years since adoption, numerous highway and transit projects have been implemented or are ready for implementation. The following list provides a status report on the recommended transportation improvements from the current 2040 Transportation Plan. Following each project is an indication of the project status. Projects that have not been started and remain as projects in the 2045 Transportation Plan are followed by a (2045 Plan).

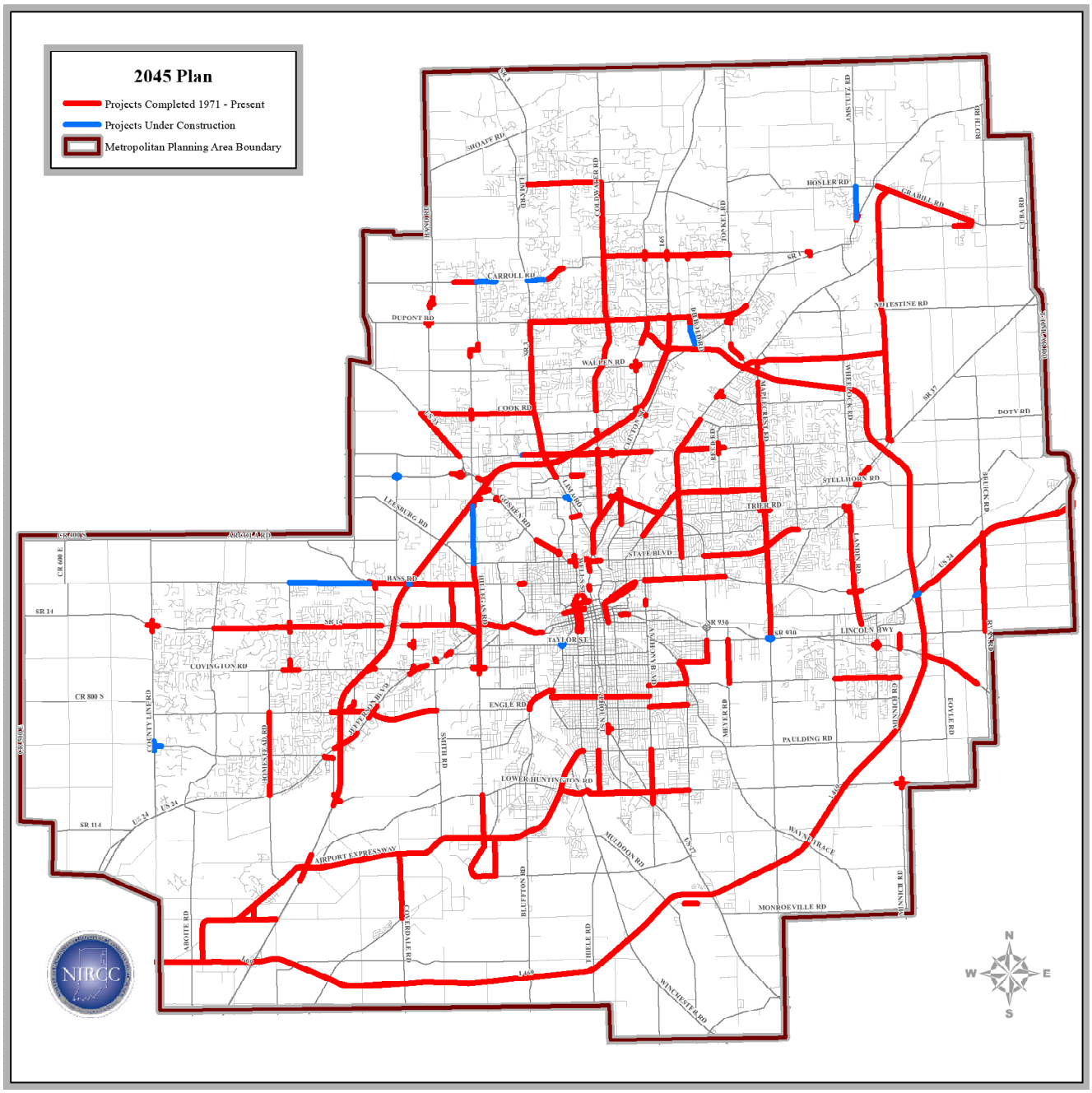


Figure 10-1

Implementation of Transportation Plans (1971-present)

Current 2040 Transportation Plan

New two-lane construction
Connector Street – Wells Street to Spy Run Avenue (2045 Plan Illustrative)
Paul Shaffer Drive – Clinton Street to California Road (2045 Plan Illustrative)

Widen to four lanes
Adams Center Road – State Road 930 to Moeller Road (2045 Plan-name changed)
Ardmore Avenue – Covington Road to Engle Road (2045 Plan)
Ardmore Avenue – Engle Road to Lower Huntington Road (2045 Plan)
Clinton Street – Auburn Road to Wallen Road (2045 Plan)
Clinton Street – Wallen Road to State Road 1/Dupont Road (2045 Plan)
Diebold Road – Clinton Street to State Road 1/Dupont Road (partial completed)
Hillegas Road – s/o Bass Road to Washington Center Road (2045 Plan)
Maplecrest Road – State Boulevard to Stellhorn Road (completed)
State Boulevard – US 27/Clinton Street to Cass Street (completed)
Stellhorn Road – Maplecrest Road to Maysville Road (2045 Plan Illustrative)
Tonkel Road – State Road 1/Dupont Road to Hursh Road (2045 Plan)
Washington Center Road – State Road 3/Lima Road to US 33/Goshen Road (2045 Plan Illustrative)

Center Turn Lane Improvement
Auburn Road – Cook Road to Interstate 469 Exit Ramp (2045 Plan Illustrative)
Coldwater Road – Dupont Road to Union Chapel Road (2045 Plan)
Coldwater Road – Union Chapel Road to Gump Road (2045 Plan)
Engle Road – Bluffton Road to Smith Road (2045 Plan Illustrative)
Gump Road – Coldwater Road to Auburn Road (2045 Plan)
Saint Joe Center Road – Clinton Street to River Run Trail (completed)
Saint Joe Center Road – Reed Road to Maplecrest Road (2045 Plan Illustrative)
Saint Joe Center Road – Maplecrest Road to Meijer Drive (2045 Plan Illustrative)

Turn Lane Extension
Jefferson Boulevard – Lutheran Hospital Entrance to Interstate 69 Ramps (removed)

Road Reconstruction – Road Diet
Anthony Boulevard – Tillman Road to Rudisill Boulevard (2045 Plan Illustrative)
Anthony Boulevard – Rudisill Boulevard to Pontiac Street (2045 Plan Illustrative)
Anthony Boulevard – Pontiac Street to Wayne Trace (2045 Plan Illustrative)
Anthony Boulevard – Wayne Trace to Crescent Avenue (2045 Plan Illustrative)
Broadway Street - Bell Avenue to North River Road (completed)
Calhoun Street – Paulding Road to Tillman Road (completed)
Clay Street – Main Street to Lewis Street (completed)
Coliseum Boulevard/Pontiac Street – New Haven Avenue to Wayne Trace (completed)
Columbia Street – Saint Joe Boulevard to Lake Avenue (completed)
Harrison Street – Superior Street to Second Street (completed)
Lake Avenue – Saint Joe Boulevard to Delta Boulevard (completed)
Paulding Road – US 27/Lafayette Street to Anthony Boulevard (2045 Plan Illustrative)

Paulding Road – Anthony Boulevard to Hessen Cassel Road (2045 Plan Illustrative)
Superior Street – Calhoun Street to Wells Street (completed)
Tillman Road – Anthony Boulevard to Hessen Cassel Road (2045 Plan Illustrative)
Washington Boulevard– Lafayette Street to Van Buren Street (2045 Plan Illustrative)

Bridge Reconstruction/Modification
Anthony Boulevard Bridge over the Maumee River (completed)
Bass Road over Interstate 69 (completed)
Washington Center Road Bridge over Spy Run Creek (completed)

Intersection Reconstruction
Broadway and Taylor Street (2045 Plan)
California Road and Flaugh Road (2045 Plan)
California Road and Kroemer Road (2045 Plan)
Clinton Street and Wallen Road (committed)
Clinton Street and Washington Center Road/St. Joe Center Road (completed)
Coldwater Road and Union Chapel Road (committed)
Coldwater Road and Ludwig Road, Coldwater Road and Interstate 69 Interchange Modification (completed)
Corbin Road and Union Chapel Road (2045 Plan)
Coverdale Road, Winters Road, and Indianapolis Road (2045 Plan)
Flaugh Road and Leesburg Road (2045 Plan Illustrative)
Goshen Road, Lillian Avenue and Sherman Boulevard (completed)
Homestead Road and Lower Huntington Road (2045 Plan)
Leesburg Road and Main Street (2045 Plan)
Ludwig Road and Huguenard Road (2045 Plan)
Rothman Road and St Joe Road (2045 Plan Illustrative) Ryan Road and Dawkins Road (committed)
SR 930 and Coldwater Road (completed)
SR 930 and Goshen Road (completed)
SR 930 and Lima Road (committed)
SR 930 and Maplecrest Road (2045 Plan)
US 30 and Kroemer Road (2045 Plan)
US 30 and O'Day Rad (closing) (2045 Plan)
Wayne Trace and Monroeville Road (committed)

Reconstruction and Realignment
Adams Center Road – Moeller Road to Paulding Road (2045 Plan Illustrative)
Adams Center Road – Paulding Road to Interstate 469 (2045 Plan Illustrative)
Allen County/Whitley County Line Road – US 24 to State Road 14/Illinois Road (2045 Plan Illustrative)
Amstutz Road – Hosler Road to State Road 1/Leo Road (2045 Plan)
Bass Road – Clifty Parkway to Thomas Road (completed)
Bass Road – Thomas Road to Hillegas Road (completed)
Bass Road – Hadley Road to Scott Road (completed)
California Road – Flaugh Road to Kroemer Road (2045 Plan)
Carroll Road – State Road 3 to Coral Springs Drive (2045 Plan)
Carroll Road – e/o Bethel Road to Millstone Drive (2045 Plan)
Coldwater Road - Gump Road to Allen County Line (2045 Plan)

Cook Road – US 33/Goshen Road to O'Day Road (2045 Plan)
Crescent Avenue – Sirlin Drive to State Road 930/Coliseum Boulevard (removed)
Dunton Road - Hathaway Road to Gump Road (2045 Plan)
Flaugh Road from California Road to US 30 (2045 Plan)
Goshen Avenue – Sherman Boulevard to State Road 930/Coliseum Boulevard (2045 Plan)
Hathaway Road - Corbin Road to State Road 3 (2045 Plan)
Hathaway Road - State Road 3 to Hand Road (2045 Plan)
Huguenard Road - Washington Center Road to Cook Road (2045 Plan)
Kroemer Road from s/o US 30 to California Road (2045 Plan)
Lake Avenue – Reed Road to Maysville Road (2045 Plan Illustrative)
Leesburg Road – Main Street to Jefferson Boulevard (2045 Plan)
Maplecrest Road - State Boulevard to Stellhorn Road (completed)
Moeller Road – Hartzell Road to Adams Center (2045 Plan)
Ryan Road – Dawkins Road to US 24 (completed)
State Boulevard - Maysville Road to Georgetown North Boulevard (2045 Plan)
Saint Joe Road - Evard Road to Mayhew Road (2045 Plan Illustrative)
Saint Joe Road - Maplecrest Road to Eby Road (2045 Plan Illustrative)
Till Road – State Road 3/Lima Road to Dawson Creek Boulevard (2045 Plan Illustrative)
Wallen Road – Hanauer Road to Auburn Road (2045 Plan Illustrative)
Wells Street – State Boulevard to Fernhill Avenue (2045 Plan Illustrative)
Witmer Road – Schwartz Road to Country Shoals Lane (2045 Plan Illustrative)

New Railroad Grade Separation
Anthony Boulevard and Norfolk Southern Railroad (2045 Plan Illustrative)
Airport Expressway and Norfolk Southern Railroad (2045 Plan Illustrative)
Ardmore Avenue and Norfolk Southern Railroad (removed)

New Bridge Construction
O'Day Road over US 30 (2045 Plan)
O'Day Road over Seeger Ditch (2045 Plan)

Reconstruct Railroad Grade Separation
Anthony Boulevard and CSX Railroad (removed)

Interchange-New Construction
Interstate 69 at Hursh Road (2045 Plan)
US 30 and Flaugh Road (2045 Plan)

Interchange-Modification
Interstate 69 and State Road 14/Illinois Road Interchange (WB to NB Ramp) (completed)
Interstate 469 and Interstate 69 Interchange (mm 315) (2045 Plan)
Interstate 469 and US 24 Interchange (2045 Plan)
US 24 and Bruick/Ryan Road (2045 Plan)

Projects in Allen County-Outside the Metropolitan Planning Area Intersection Improvement/ Modification
US 30 and Stahlhut Road (Closed) (2045 Plan)
US 30 and Solon Road (Closed) (2045 Plan)
US 30 and Butt Road (Closed) (2045 Plan)

New Bridge Construction
Butt Road over US 30 (2045 Plan)

New Interchange Construction
US 30 and Leesburg/Felger Roads (2045 Plan)

Transit Improvements
System Modifications

Expanded transit service in the growing urbanized area. Potential locations include the Fort Wayne International Airport and surrounding area, Chapel Ridge and surrounding area, and Aboite, Perry, and Cedar Creek Townships. Types of service will be determined based upon projected demands and proposed service levels. (Partially implemented-included in 2045 Plan)

Replacement of transit coaches and service vehicles as necessary to maintain a dependable transit fleet. (Complete and on-going-included in 2045 Plan)

Install and upgrade bus shelters, benches, and other customer amenities. Placement of shelters (Bus Huts) should be consistent with Citlink service, accessible, and have sidewalk connectivity.
(Complete and on-going-included in 2045 Plan)

Reduce headways on selected routes where ridership warrants. (Partially complete and on-going-included in 2045 Plan)

Expand service hours into the evening and provide Sunday service through fixed route and other types of transit services. (Partially complete and on-going-included in 2045 Plan)

Provide customer access to innovative technology to promote and sustain transit ridership. (Partially complete and on-going-included in 2045 Plan)

Design and construct a satellite transfer center to serve the northern portion of the service area. (Not implemented -included in 2045 Plan)

Future Efforts

Congestion Management System

A Congestion Management Process (CMP) has been developed and adopted for the Metropolitan Planning Area and is designed to support the efforts of the transportation plan. The congestion management process is a program or process that identifies strategies relevant to the transportation system (highway and transit) for mitigating existing congestion and preventing future congestion. The strategies consider

both the supply and demand sides of urban travel, land use policies, transit operations, traffic operations, intelligent transportation systems, bicycle/pedestrian facilities and engineering improvements. The CMP represents a multi-jurisdictional approach with a regional perspective including both public and private sector involvement. The Congestion Management Process Plan is provided in Appendix A.

As previously mentioned, the program focuses on mitigating existing congestion and averting future impediments to efficient corridor and transit performance. The products of the CMP process include strategies, policies, and improvement projects. These products are implemented as components of the transportation plan. One important policy of the CMP that is applicable to the entire system is the access management program.

Access Management

The access management program has been in force for a number of years in the metropolitan planning area. The program has emphasized driveway (street access) and site plan review since the mid 1960's. Through the administration of this program, a number of accessory plans and studies have been developed and implemented. In the 1980's a frontage road plan was developed. This plan identified corridors in the Metropolitan Planning Area where access roads should be implemented to preserve the corridor performance. The activities of this program have included the development of an Access Standards Manual as well as several revisions. The program has also developed interchange and corridor protection plans identifying Congestion Management Strategies for specific corridors. The program will continue to support these activities, strengthen their enforcement, and investigate new strategies for access management. This program has become a major tool for preserving the integrity and efficiency of the arterial highway system.

Alternative Travel Methods

The transportation plan cannot and does not address every transportation problem that will affect system efficiency. Traffic congestion, increased commute times, and air quality problems will continue to afflict transportation systems of the future. Communities facing these challenges must find creative means to reduce low occupancy automobile usage. Actions and ideas will be explored to reduce automobile usage. These strategies will be evaluated for their feasibility of use in the metropolitan area. Alternative transit services will be a focus of this endeavor.

Corridor, Site Impact, Intersection Analysis and Feasibility Studies

The transportation plan deals with the transportation system at a macroscopic level. Corridor, site impact, intersection analysis, and feasibility studies examine specific areas of the system at more refined levels. The emphasis of corridor studies is to estimate travel demands and develop alternative strategies for mitigating congestion from new developments. Site impact analyses are a component of the access management program and evaluate the traffic impacts from specific developments on the transportation

system. Intersection analyses evaluate the performance or level of service of intersections. Based upon the analysis, problems are identified and solutions tested to recommend improvement projects. Feasibility studies assist in the decision making process by evaluating alternatives and determining the most viable solution. The integration of these studies provides for continuous evaluation of the system with special attention to potential problem areas.

Security

NIRCC has been working with the Fort Wayne/ Allen County Office of Homeland Security on planning efforts. The Fort Wayne/ Allen County Office of Homeland Security priority has been more directed to the development of a disaster response document that doesn't connect directly with the transportation network. Although they have worked with the local transit and para-transit providers to determine the number of available vehicles in case an emergency evacuation is necessary. See Figures 10-2 & 10-3 for locations of Hospitals, Fire Stations and critical infrastructures.

Passenger Rail

There exists a significant interest in establishing a Chicago-Fort Wayne-Columbus passenger rail corridor to provide citizens in Northern Indiana and Central Ohio with a high quality passenger rail service. The preferred system would provide safe, comfortable and reliable service using state of the art (110-130 mph) equipment. The proposed system will connect 4,000 miles of regional rail system to link 100 Midwest cities. The rail will integrate with the proposed Midwest Regional Rail Initiative and the Ohio Hub systems that are currently being built from Chicago to St. Louis, to Detroit, to Milwaukee and the Twin Cities, to Kansas City, and to Iowa City and Omaha. The rail system will provide access to major economic opportunities for both small and large businesses by a modern rail system operated on a private (franchise) basis that will provide the latest train technology, modern stations and amenities, and a high level of on-board comfort.

The development of the route will result in significant economic benefits for system users and the communities linked by the system in terms of strengthening the region's service, manufacturing, and tourism industries, while protecting the environment.

The Northeast Indiana Passenger Rail Association in collaboration with local governments has initiated a Feasibility Study and Business Plan for the Columbus to Chicago corridor. The study includes a comprehensive market analysis, operations planning, conceptual engineering, and detailed financial and economic analysis to assess the value of the proposed project.

The high-speed rail system will produce significant benefits for those who ride the train as well as those who continue to use alternative travel modes. The benefits include: reduced travel times between cities

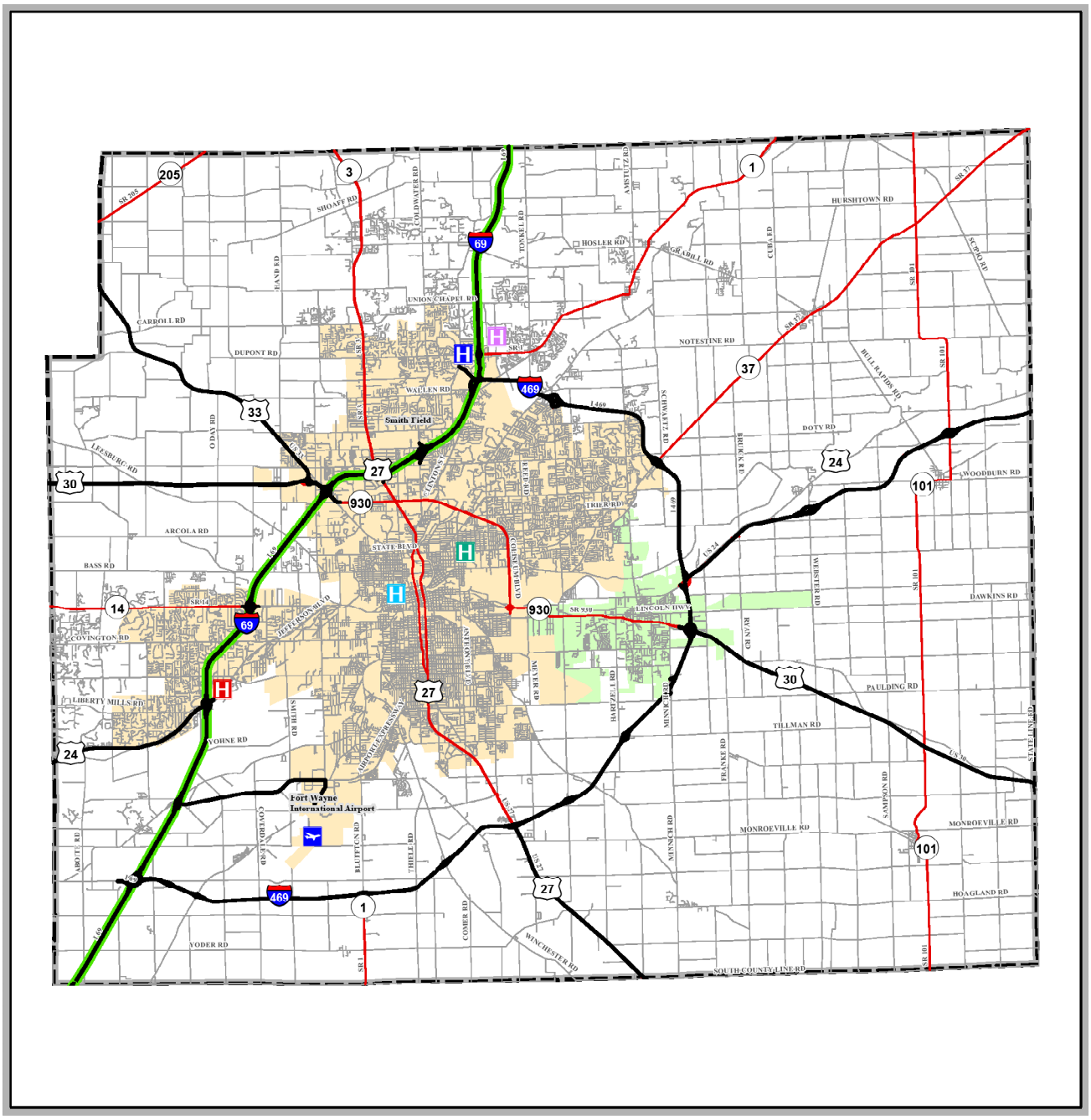


Figure 10-2

Allen County NHS and Hospitals

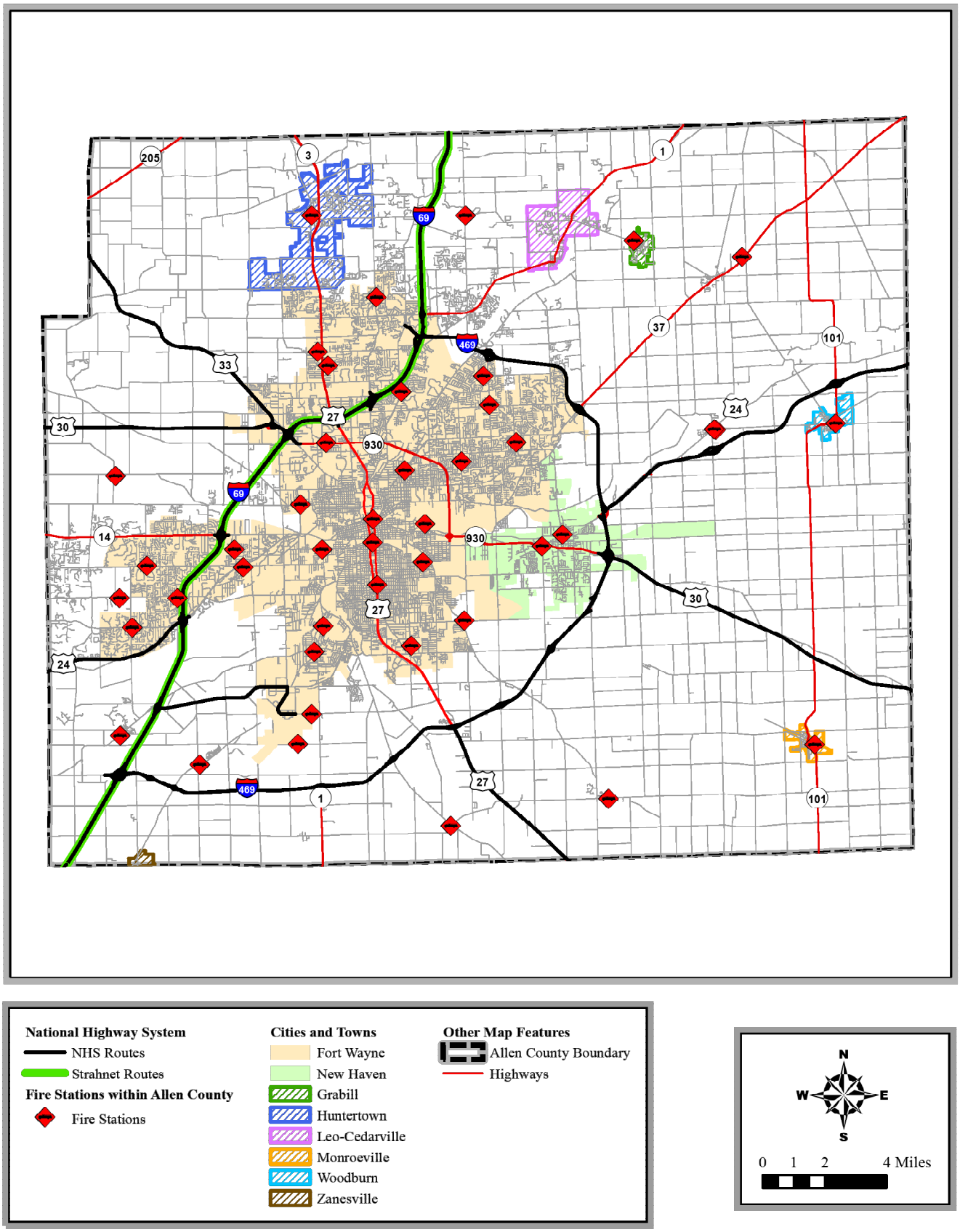


Figure 10-3

Allen County NHS and Fire Stations

such as Fort Wayne to Chicago; reduced congestion on highways for auto and bus riders that improve the trips by these modes; and reduced travel costs due to competitive rail fares and rising gasoline prices.

The development of the passenger rail corridor will also significantly expand the region's economy in a manner similar to that provided by the creation of the interstate highway system. It will create new (small) business and grow existing businesses due to the improved economic opportunities the corridor will provide. The community benefits will include: new full and part-time jobs; new revenue and extra household income along the corridor; and increase opportunities for joint development projects amongst the corridor communities.

Gateway Plan – City of Fort Wayne

Front Door Fort Wayne was developed to enhance Fort Wayne's major points of entry into the City. Developed Community Development Division with assistance of an advisory committee, the plan provides a framework for improving the appearance of major gateways into the City of Fort Wayne. The plan also provides recommendations which increase the ease and understandability for visitors navigating the city. These improvements will assist with marketing and promoting the city, enhancing public pride, and fostering continued investment in our local economy. This will be achieved through a number of policy recommendations and projects identified in the gateway plan.

Front Door Fort Wayne includes both long range and short-term recommendations to improve the function

and aesthetics of existing and future points of entry and gateway corridors into the city and downtown. Policy recommendations, developed with the assistance of the advisory committee, discuss the need for a comprehensive maintenance policy for new and existing public infrastructure. Specific project recommendations have been developed for each gateway corridor and interchange. The recommendations

provide solutions to aesthetic and design issues. These solutions include roadway design changes to incorporate bicyclists, pedestrians, and transit users in addition to automobiles. Recommendations also include the addition of better directional signage to major attractions and aesthetic improvements such as landscaping, lighting, and public art which promotes and celebrates Fort Wayne.

The gateway plan was developed following several guiding principles. The guiding principles include: gateways should communicate a positive and distinctive identity reflective of the excellent quality of life that Fort Wayne offers; gateways should be aesthetically pleasing; gateway infrastructure should be exceptionally well maintained and sustainable; gateway improvements should enhance and respect their surroundings; gateways should facilitate all modes of travel into the community; and gateways should communicate direction to key destinations.

Gateway Corridors

The Front Door Fort Wayne Plan identified nine primary gateway corridors that bring visitors from Interstate 69 into the heart of Fort Wayne. The design and function of our major corridors is important not only for moving visitors to their destination, but also for supporting and enhancing the land uses that are found along these roadways. The roadway design should consider all modes of transportation and reflect the urban, suburban, and rural character of the surrounding environment. The corridors identified in the plan include:

1) Coliseum Boulevard/SR930 from Goshen Road to Crescent Avenue
2) US27/ Lafayette Street and S. Clinton Street from I-469 to Lewis Street
3) Coldwater Road / N. Clinton Street from I-69 to Fourth Street
4) Jefferson Boulevard from I-69 to Garden Street (at Swinney Park)
5) Lima Road/US27 from I-69 to Clinton
6) Washington Boulevard from Meyer Road to Lafayette Street
7) Illinois Road from I-69 to West Jefferson Boulevard
8) Maysville/Stellhorn/Crescent from I-469 to Coliseum Boulevard
9) Ardmore Avenue from Ferguson Road to Jefferson Boulevard
10) Airport Expressway from I-69 to US27

Gateway Interchanges

In addition to corridors, Front Door Fort Wayne focused on eleven interchange areas. Enhancements to

these interchanges should reflect the surrounding context. Furthermore, design recommendations for interchange areas have to take into consideration issues of perception, function and safety. The identified interchanges include:

1) Interstate 69 and Union Chapel Road
2) Interstate 69 and Dupont Road/State Road 1
3) Interstate 69 and Coldwater Road
4) Interstate 69 and Lima Road/US 27/State Road 3
5) Interstate 69 and US 30/33
6) Interstate 69 and Illinois Road/State Road 14

7) Interstate 69 and Jefferson Boulevard/US 24
8) Interstate 69 and Airport Expressway
9) Interstate 469 and Maysville Road/State Road 37
10) Interstate 469 and US 27
11) Coliseum Boulevard/State Road 930 and Washington Boulevard

The importance of acknowledging the Front Door Fort Wayne Plan is fairly straight forward, as road improvements are planned, designed and implemented, practical features of the gateway plan should be considered and incorporated into the improvement project. Please refer to the Figure 10-4.

Implementation

The transition from a selected plan of recommended transportation policies and improvements to implemented services and facilities requires cooperation and commitment from the entire community. This includes federal, state, and local governments with “grass roots” support of the local residents. The planning process represents the first stage of implementation.

Following the planning process, implementation for specific improvements is introduced to the Transportation Improvement Program (TIP). The TIP is a four-year capital improvement plan for highway, transit, and enhancement projects. Improvement projects are selected from the transportation plan including the various Management Systems for inclusion in the TIP.

Planning support must accompany each project in the TIP for it to be eligible for state and federal assistance. The TIP tracks projects through various stages of implementation including preliminary engineering, right-of-way acquisition, and construction. The TIP is a valuable tool governing project implementation. Its status is gaining importance due to recent federal legislation.

Implementation will be assisted through a process of phasing large-scale transportation projects. This

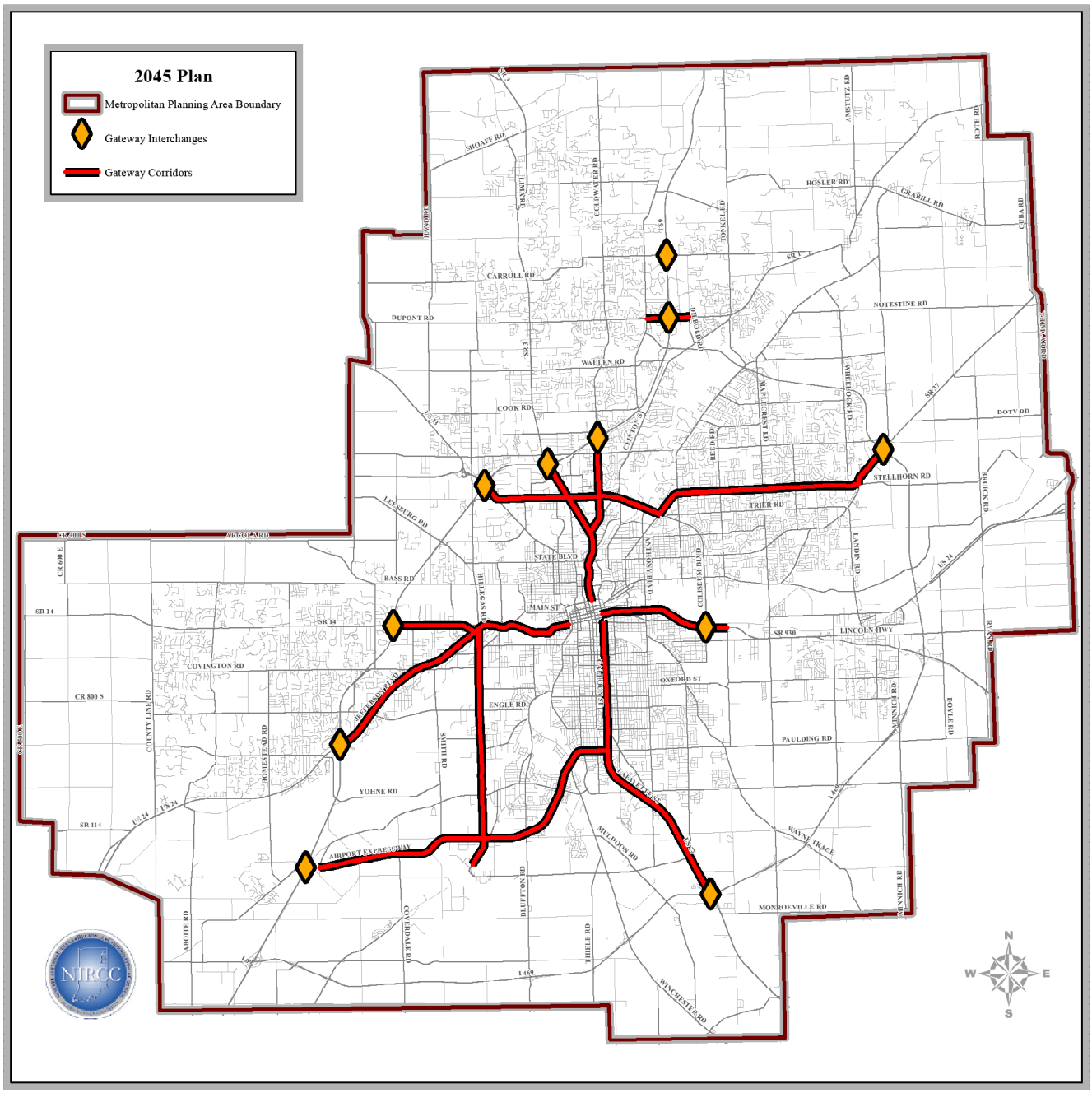


Figure 10-4

Gateway Plan Corridors and Interchanges

process simply segments large improvements into several manageable projects allowing the gradual disbursement of resources. While this practice has not been used extensively in the past, it will become necessary in this area for implementing capital intensive projects.

The transportation planning process included participation from citizens, local implementing agencies, and state and federal officials. This participation process is an on-going activity conducted by NIRCC as part of the transportation planning process. The implementation process requires the same collaborative commitment. This consolidated effort at every phase of the planning process has established a solid platform from which implementation of the selected plan can begin. The plan will serve as a guide for transportation investments and service decisions shaping the future transportation system.