2035 Transportation Plan

Technical Report
Fort Wayne-New Haven-Allen County
Metropolitan Planning Area

June 2013

Northeastern Indiana Regional Coordinating Council

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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 2030-II Transportation Plan which effectively responds to these changing needs. The update is titled the 2035 Transportation Plan and this technical report summarizes the work performed and the recommendations developed in the preparation of the transportation plan update. A 2035 Transportation Plan Brochure is also available for distribution.

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 65% of the regional truck Vehicle Miles of Travel (VMT) and 27% 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 32.5% truck and 60% 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 2013, 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 displays the current railroad system and rivers that affect mobility in the Metropolitan Planning Area.

Several major socioeconomic changes have occurred in the community during the 1970's and 1980's. 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 plan 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 has also, and continues to redevelop the downtown area through an Allen County / City of Fort Wayne Comprehensive Plan. Beginning in the early 1980's Fort Wayne's skyline changed with the construction of Summit Square, a multi-story office building. The downtown redevelopment efforts have gained additional momentum in the past few years. 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 housing projects in the Fort Wayne Central Business District will increase housing opportunities and hopefully serve as a catalyst for additional housing projects. 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 currently under development just south of the downtown area that is serving as a neighborhood revitalization project and the "Riverfront" development proposals for the northern edge of the CBD will also support continued redevelopment of the urban core.

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. The Indiana University Purdue University at Fort Wayne

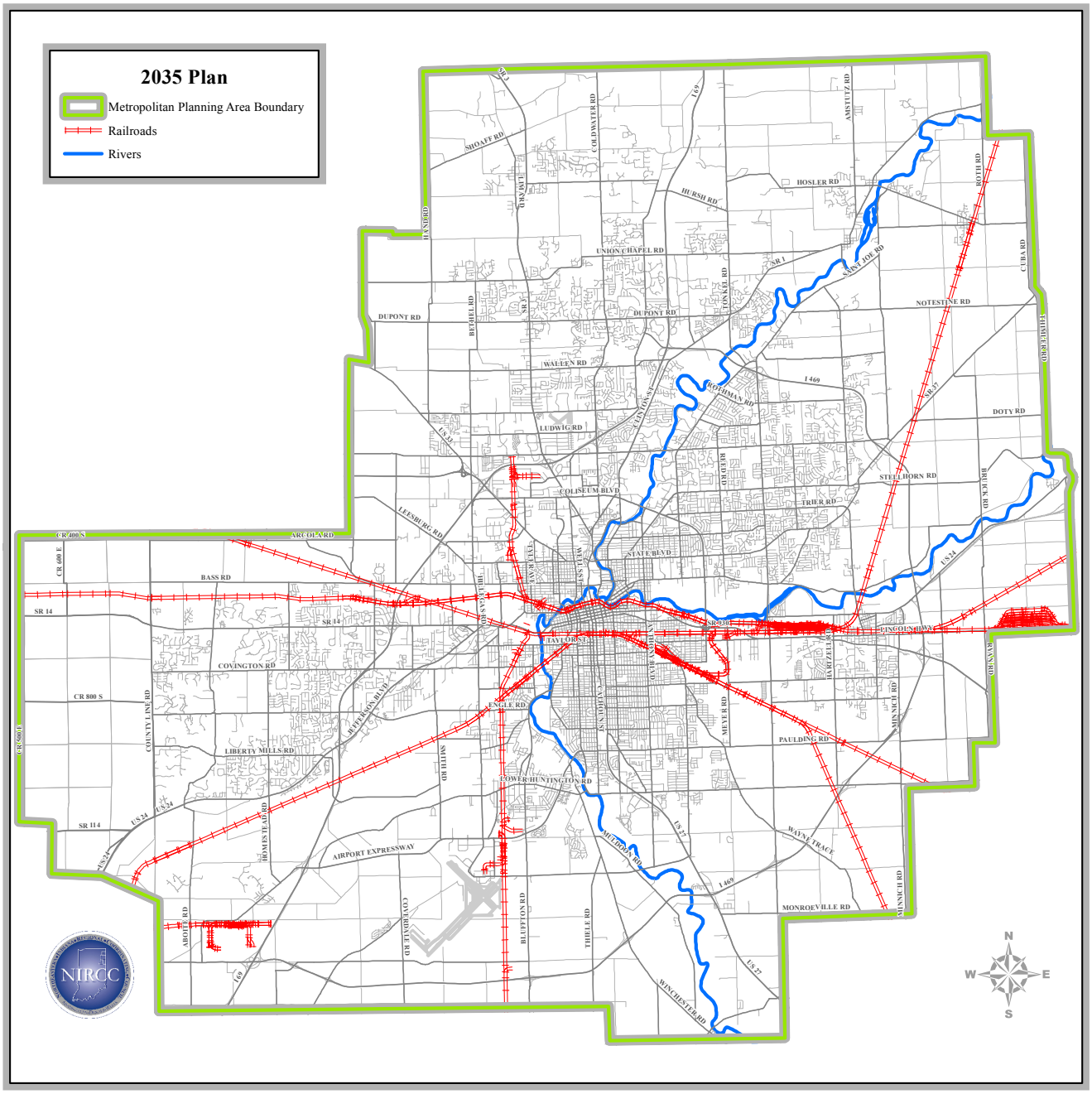

Figure 1

Railroad System and Rivers in the Metropolitan Planning Area

and Ivy Tech campuses continue to expand their facilities and educational programs. Recent expansion projects on the North Campus of 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 recent addition of a sports complex adjacent to the Glenbrook Shopping Area has influenced trip making characteristics.

The most notable changes 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 2).

The reality that limited resources and environmental concerns will not support massive highway

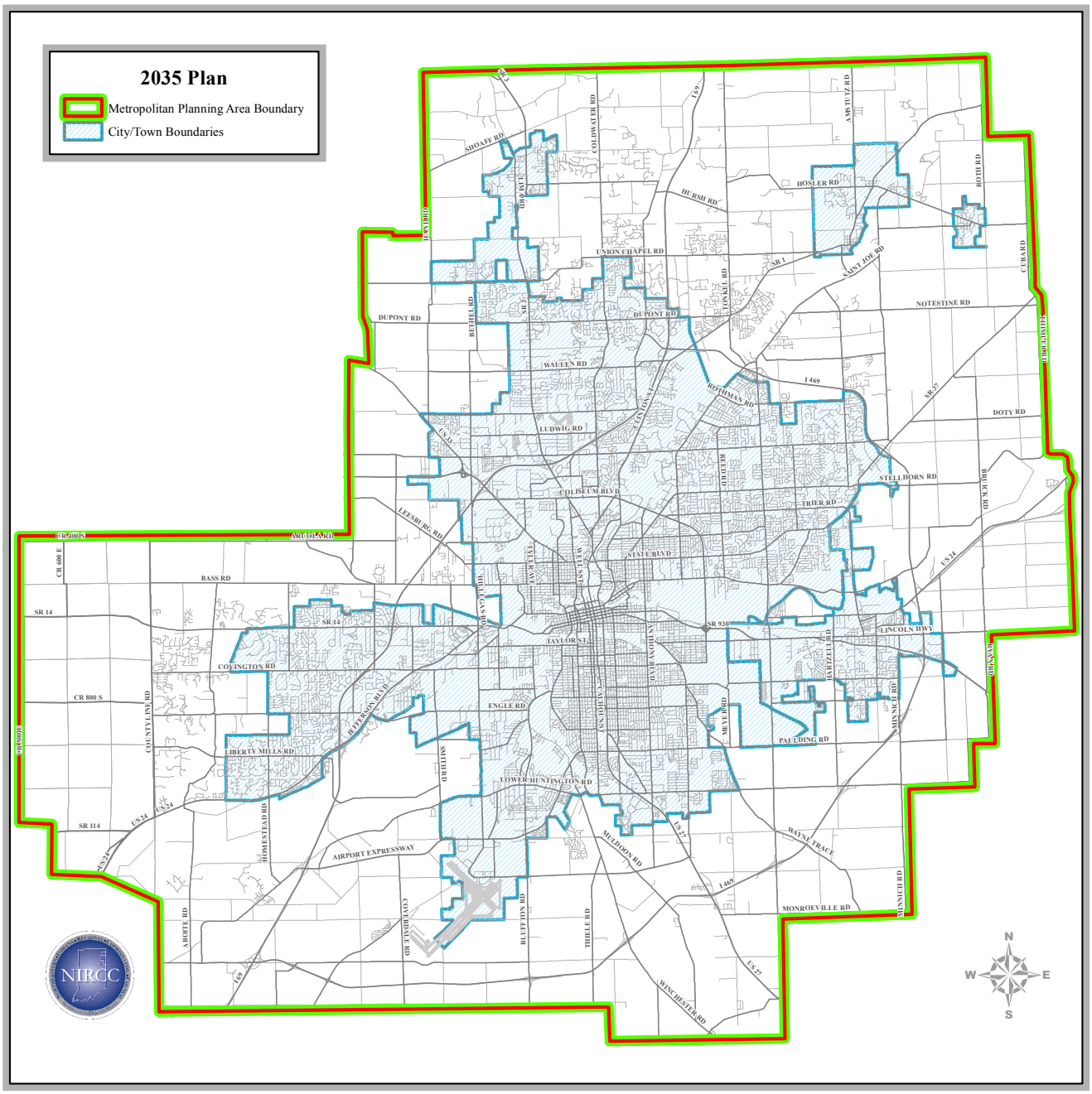

Figure 2

Fort Wayne/New Haven/Allen County Metropolitan Planning Area

improvement projects is a recognized concept of the transportation planning process. The emphasis on 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 2035 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 "2035 Transportation Plan."

Transportation Planning Requirements

The Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law on July 6, 2012. MAP-21 is a milestone for the U.S. economy and the Nation's surface transportation program. By transforming the policy and programmatic framework for investments to guide the system's growth and development, MAP-21 creates a streamlined and performance-based surface transportation program and builds on many of the highway, transit, bike, and pedestrian programs and policies established in 1991 through the Intermodal Surface Transportation Efficiency Act, and supported in the Transportation Equity Act for the 21st Century and Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users.

MAP-21 places an emphasis on the establishment of a performance based planning process that includes the development of goals, objectives, and performance measures. Although formal federal planning regulations incorporating these emphasis areas have not been approved, the 2035 Transportation Plan has been developed in accordance with performance planning concepts and the current SAFETEA-LU 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 SAFETEA-LU 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 2035 Transportation Plan was approved by the NIRCC board in 2013 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 lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand.

The 2035 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 is 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. See chapter 6 for the highway, transit, bicycle and pedestrian facilities, and chapter 9 for the discussion of freight.

3) The MPO shall review and update the transportation plan at least every four years in air quality non-attainment and maintenance areas and at least every five 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 2035 Transportation Plan was approved in 2013. 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 non-attainment 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 a maintenance area for the pollutant ozone. The Transportation Plan is able to meet conformity without the implementation of transportation control measures.

5) The MPO, the State(s), and the public transportation operator(s) shall validate data utilized in preparing other existing modal plans 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 including the 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 the Fort Wayne Public Transportation Corporation. 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 2035 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. See chapter 5.

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

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

The 2035 Transportation Plan utilizes land use development assumptions to forecast the 2035 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, transit, multimodal and intermodal facilities, 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 2035 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) 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 planed 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 recently completed 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.

d) 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 non-attainment 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 2035 Transportation Plan. The Metropolitan Planning Area and Allen County were re-designated to "attainment" status in 2007.

e) Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure and provide for multimodal capacity increases based on regional priorities and needs. 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 decision making 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

f) Design concept and design scope descriptions of all existing and proposed transportation facilities in sufficient detail, regardless of funding source, in non-attainment and maintenance areas for conformity determinations under the EPA's transportation rule (40 CFR part 93). 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 2035 Transportation Plan are defined in sufficient detail to perform the necessary analyses for conformity determinations and develop cost estimates.

g) 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 shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation.

The 2035 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.

h) 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.

i) Transportation and transit enhancement activities, 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.

j) 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 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 9.9 million dollars in federal funds each year. This equates to approximately 228 million dollars in federal funds for the urban area throughout the span of the transportation plan.

Local governments including Allen County, City of Fort Wayne, and City of New Haven have annual revenues of approximately 34 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 11.2 million dollars a year on construction and reconstruction projects. This equates to approximately 258 million dollars for the twenty-three year period of the plan. The majority of available funds 22.5 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. A major component of the 2035 Transportation Plan is a list of projects on the INDOT system based on revised project costs and revenue projections.

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 for the 2035 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. Starting December 11, 2007, 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 principals and information, developed cooperatively by the MPO, State(s), and

public transit operator.

The financial plan for the 2035 Transportation Plan includes all proposed projects and strategies. The financial plan for the 2035 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 sources(s) is reasonably expected to be available to support the projected cost ranges/cost bands.

The financial plan for the 2035 Transportation Plan identifies specific costs for each project and related phase of project development. 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 2013 through 2015, 2016 through 2020, 2021 through 2030, and 2031 through 2035. Project cost estimates for the years 2013 through 2015 are based on current costs, developed for the Transportation Improvement Program (TIP) utilizing a 2-3% annual inflation rate to the year of expenditure. Projects cost estimates for the years 2016 through 2035, were adjusted based upon an average annual growth rate of 2.8 percent for each band. The rate is based on a historical trend for construction cost developed by the American Road and Transportation Builders Association, a leading source of transportation construction market research.

vi) For non-attainment 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 a maintenance 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 (but is not required to) 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 2035 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 2035 Transportation Plan.

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 2035 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 2035 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 required under 23 U.S.C. 148, as well as (as appropriate) emergency relief and disaster preparedness plans and strategies and policies that support homeland security (as appropriate) and 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 2035 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 is 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) The MPO shall provide 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 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.

10) The metropolitan transportation plan shall be published or otherwise made readily available by the MPO for public review, including (to the maximum extent practicable) in electronically accessible formats and means, such as the World Wide Web.

The 2035 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 2035 Transportation Plan, are posted in a manner that allows them to be easily downloaded.

11) A State or MPO shall not be required to select any project from the illustrative list of additional projects included in the financial plan under paragraph (f) (10) of this section.

The illustrative list of projects in the 2035 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.

12) In non-attainment 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).

The Northeastern Indiana Regional Coordinating Council has prepared an air quality conformity analysis for the 2035 Transportation Plan. A conformity determination has been made in accordance with the Clean Air Act and the EPA transportation conformity regulations (40 CFR part 93). See appendix B.

Goal, Objectives and Performance Measures

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 eight planning factors identified in SAFETEA-LU and supported through approval of MAP-21. The planning factors are requirements of the Metropolitan Transportation Planning Process and provide the basic tenets on which the Transportation Plan must be implemented.

In conjunction with the goals and objectives, strategies for implementation and performance measures for evaluation have been identified. These strategies and performance measures were designed to be consistent with the national performance goals for Federal highway programs documented in MAP-21 and the planning regulations consistent with the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The national goals include:

1) **Safety**—To achieve a significant reduction in traffic fatalities and serious injuries on all public roads;

2) **Infrastructure condition**—To maintain the highway infrastructure asset system in a state of good repair;

3) **Congestion reduction**—To achieve a significant reduction in congestion on the National Highway System;

4) **System reliability**—To improve the efficiency of the surface transportation system;

5) **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;

6) **Environmental sustainability**—To enhance the performance of the transportation system while protecting and enhancing the natural environment; and

7) **Reduced 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.

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.

Individual goals have been developed with recognition of the need for balance between safety, security, mobility and accessibility, cost, and environmental impact 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. The strategies and measures of effectiveness require additional thought and refinement. The Transportation Technical Committee, as part of the on-going transportation planning process, will provide more explicit details on the strategies and measures of effectiveness, including benchmark values and definitive standards for evaluating success.

Goals for each planning factor were developed in conjunction with objectives, implementation strategies, performance measures and the appropriate/responsible parties. While most of the goals and objectives 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. These policies are outside the jurisdiction of the Metropolitan Planning Organization, they are well within the jurisdiction of its member agencies. The performance measures will be monitored to evaluate the success of each objective towards achieving the stated goal. Collectively, the more successful the region is in attaining the stated objectives and implementation strategies, the more successful the transportation system will

be in meeting 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

PF1 – GOAL 1

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.

Strategies:

1A – Map preferred access routes connecting economic development opportunity areas and the Interstate System.
1B - Evaluate signal timing on preferred access routes and implement signal timing improvements where appropriate.
1C - Evaluate intersection radii on preferred access routes and implement intersection improvements as needed for safe and efficient truck turning movements.
1D – Assess need for additional travel lanes on preferred access routes when acceptable service levels cannot be attained through other strategies, consider their provision where necessary and appropriate.
1E-Assess need for new roadways where necessary and appropriate to improve accessibility to Opportunity Areas.
1F – Evaluate and ensure the provision and enforcement of well-marked local truck delivery routes serving opportunity areas.
1G – Promote vehicular connectivity between developments within opportunity areas.

Measures:

a.Travel time on access routes between Opportunity Areas and Interstate System.
b.Travel time on access routes between opportunity areas.

Responsible Parties:

Cities and Towns, Counties, INDOT and NIRCC

Objective 2:

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

Strategies:

2A – Encourage the establishment of public transit routes connecting developed areas and opportunity areas.

2B – Coordinate and plan for the provision of connecting rail infrastructure within opportunity areas adjacent to rail corridors.
2C – Evaluate and coordinate the provision of transportation infrastructure that provides efficient access between opportunity areas and the Fort Wayne International Airport.
2D – Encourage the provision of pedestrian and bike infrastructure connecting opportunity areas to adjacent residential areas.

Measure:
a.Increase of opportunity areas with efficient multi-modal access.

Responsible Parties:
Cities, Towns, Citilink, Countilink, Counties, INDOT and NIRCC

Objective 3:

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

Strategies:
3A - Review and revise truck routes that provide access to Opportunity Areas.
3B - Designate truck routes with proper signage.

Measure:
a. Provide local delivery truck routes to primary access points of all Opportunity Areas.

Responsible Parties:
Cities and Towns, Counties, INDOT & NIRCC

PF1 – GOAL 2

Compact and mixed-use development supported by a multi-modal transportation network should be principal considerations 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.

Strategies:
1A - 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.
1B – Coordinate the establishment of street and traffic engineering standards which require the provision of multi-modal transportation infrastructure within existing urbanized areas.
1C - Encourage redevelopment and infill development projects in areas already supported

by multi-modal infrastructure that include mixed uses and increased land use density.
1D – Encourage Transit Oriented developments.
1E – Promote new zoning and subdivision standards that incorporate transit friendly infrastructure.

Measures:
a. Increase in gross density in urbanized areas by 2025.
b. Increase in number of mixed use areas and transit oriented developments.

Responsible Parties:
Cities and Towns, Counties, Plan Commissions, INDOT and NIRCC

PF1 – GOAL 3

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.

Strategy:
1A – Ensure that transportation improvement plans and projects are consistent with downtown and business district plans and policies.

Measure:
a.Number of projects in the downtown and business areas that have been reviewed and constructed in accordance with the goals and policies of relevant plans.

Responsible Parties:
Cities and Towns, Counties, INDOT and NIRCC

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

Strategy:
2A – 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.

Measure:
a. Increase in assessed value of proprieties adjacent to a completed downtown transportation projects.

Responsible Parties:
Cities and Towns, Counties, INDOT and NIRCC

Objective 3:

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

Strategies:
3A – Ensure that transportation improvement plan designs include appropriate speed control and traffic calming features such as lane widths and streetscape enhancements.
3B – Evaluate loading zone locations to improve freight distribution and efficiency.
3C – Ensure that transportation improvements plans and projects are reviewed in alignment with the goals and policies of downtown and business district plans.
3D – Continue building on-street bike facilities and enhancing pedestrian and transit friendly infrastructure.
3E – Analyze the need and potential market for transit improvements is downtown and business areas.

Measures:
a. Reduction of vehicle speeds on selected streets.
b. Number of completed bike and pedestrian infrastructure projects.
c. Completion of transit improvements studies for downtown and business areas.

Responsible Parties:
Cities and Towns, Counties, Citilink, Countilink, INDOT and NIRCC

Planning Factor 2:

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

PF2 - GOAL

Ensure transportation facilities for all modes of travel are safe

Objective 1:

Reduce the number of public roadway motor vehicle crashes per VMT by 5% by 2020.

Strategies:
1A - NIRCC will maintain crash data and prepare crash analyses for problematic areas.
1B - High crash locations will be reviewed and evaluated for appropriate crash reduction strategies, strategies will be implemented through safety projects.
1C - Support improved driver education and safe driving campaigns.
1D - Implement systematic safety improvements at various locations in the metropolitan area to address safety issues that attribute to crashes.
1E – Develop/promote training for law enforcement officers to enhance data collection for crash incidents.

Measure:
a.Total motor vehicle crashes per 100 million VMT.

Responsible Parties:

Cities and Towns, Counties, INDOT, Law Enforcement & NIRCC

Objective 2:

Reduce the number of severe injury and fatal motor vehicle crashes by 5% by 2020.

Strategies:
2A - NIRCC will maintain crash data and prepare crash analyses for serious injury and fatal crashes.
2B - Crash locations with unusually high serious injury and fatal crashes will be reviewed and evaluated for appropriate crash reduction strategies.
2C - 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.

Measures:
a.Total serious injury crashes per 100 million VMT.
b.Total fatal crashes per 100 million VMT.
c.Number of right-angle and head-on crashes

Responsible Parties:

Cities and Towns, Counties, INDOT, Law Enforcement & NIRCC

Objective 3:

Reduce the number of crashes involving bicyclists and pedestrians by 5% by 2020.

Strategies:
3A - NIRCC will maintain crash data and prepare crash analyses for crashes involving bicyclists and pedestrians.
3B - Crash locations with unusually high bicyclist and/or pedestrian crashes will be reviewed and evaluated for appropriate crash reduction strategies.
3C - Work with law enforcement agencies to address problem areas common violations that attribute to crashes involving bicyclist and pedestrians.
3D - Coordinate with local pedestrian and bicycle plans to close sidewalk and bicycle network gaps along major roadways.
3E – Support bicyclist and pedestrian safety education programs.
3F – Implement appropriate "complete street" concepts to provide safe bicycle and pedestrian facilities with roadway improvement projects.
3G – Support and promote the provision of adequate street lighting along streets in developed areas.
3H – Improve transit stops by provided adequate access and pedestrian facilities.

3I – Support and encourage sidewalk connectivity near schools and universities.
3K – Design street and intersection improvements with safety features to improve.

Measures:
a.Total number of crashes involving pedestrians.
b.Total number of crashes involving bicyclists.

Responsible Parties:
Cities and Towns, Counties, Citilink, Countilink, INDOT, Law Enforcement & NIRCC

Planning Factor 3:

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

PF3 - GOAL

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.

Strategies:
1A - Continue implementation for the ITS Architecture.
1B - Consult with appropriate agencies to review and update ITS Architecture with appropriate security related projects.

Measure:
a.Number of security related ITS projects implemented.

Responsible Parties:
Cities and Towns, Citilink, Counties, INDOT, NIRCC, Emergency Responders & Emergency Preparedness Agencies.

Objective 2:
Work with area emergency preparedness and disaster response agencies to identify high priority emergency and evacuation routes.

Strategies:
2A - Utilize travel demand modeling capabilities to help identify safe and efficient emergency and evacuation routes.
2B - Identify transportation improvements that will facilitate safe and efficient emergency and evacuation routes.

Measure:
a. Identify and map high priority emergency and evacuation routes

Responsible Parties:
Cities and Towns, Counties, INDOT, NIRCC, Emergency Responders & Emergency Preparedness Agencies

Objective 3:

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

Strategies:
3A - Consult with transportation agencies, emergency responders and emergency preparedness agencies to identify strategic infrastructure and needed resources.
3B - Identify transportation projects that improve security of strategic infrastructure and support emergency response.

Measure:
a. Maintain lists of available resources and identify strategic infrastructure.

Responsible Parties:
Cities and Towns, Citilink, Counties, INDOT, NIRCC, Emergency Responders & Emergency Preparedness Agencies

Planning Factor 4:

Increase the accessibility and mobility of people and freight

PF4 – GOAL 1

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.

Strategies:
1A – Utilize Congestion Management Process to conduct systemic analyses on "major traffic corridors" to assess peak service levels.
1B – 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.
1C - Encourage multiple modes of travel in place of personal vehicle use.
1D - Continue to expand network of bicycle and pedestrian infrastructure as a mechanism

to reduce motor vehicle traffic.
1E– Provide additional travel lanes on major traffic corridors when additional capacity is warranted.

Measures:
a. Level of Service at primary intersections and on major traffic corridors as developed through the Congestion Management Process.
b. Duration of unacceptable service levels and
c. Peak hour travel times on defined "major traffic corridors."

Responsible Parties:
Cities and Towns, Counties, Citilink, Countilink, INDOT & NIRCC

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.

Strategies:
2A – Promote compliance with local development standards that require sidewalks as part of new development.
2B – Support development standards that require dedicated pedestrian facility infrastructure that connect the public right of way with building entrances.
2C – Continue to install and replace curb ramps in accordance with the Public Right of Way Accessibility Guidelines (PROWAG) standards.
2D - Fill gaps in the sidewalk and trail infrastructure and repair deteriorated and non-compliant sidewalks according to local and state pedestrian and trail plans.
2E - Install actuated count-down audible pedestrian signals with piano key style crosswalks at intersections with high traffic and pedestrian volumes.
2F – Prioritize the development of sidewalk and trail access to transit stops.

Measures:
a. Number of constructed developments with complete pedestrian infrastructure.
b. Number of replacement and new curb ramps constructed.
c. Number of accessible sidewalk and trail improvements.
d. Number of transit stop improvements that include sidewalk facilities to the stop, shelters and/or pedestrian facilities to the curb.
e. Linear feet of newly constructed sidewalk and trail.
f. Number of intersections improved by building actuated count-down audible pedestrian signals and piano-key style crosswalk markings.

Responsible Parties:
Cities and Towns, Citilink, Countilink, Counties, INDOT & NIRCC

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.

Strategies:
3A – Construct bus shelters at high-use stops on fixed route transit lines with appropriate sidewalk access
3B - Use smart-phone and other technology to provide real-time service information for fixed route transit service and explore application for demand response service.
3C - Identify and secure sustainable funding sources to reduce fixed-route headways, extend service hours, and expand service areas.
3C – Review and evaluate service delivery options to maximize service efficiency and coverage.

Measures:
a. Number of transit trips per different service provider
b. On-time service performance by route.
c. Transit headways by route.
d. Number of service hours per week.
e. Number of high-use bus shelter improvements
f. Percentage of urban population within ½ mile of the fixed-route transit network.

Responsible Parties:
Cities and Towns, Citilink, Countilink, Counties & NIRCC

Objective 4:
Improve transportation network efficiency and reduce travel delay through adherence to the guidelines established in the Access Standards Manual.

Strategies:
4A - Work with property owners and developers to eliminate unnecessary and/or unsafe access locations.
4B – Use the Access Standards Manual to evaluate access locations and traffic circulation patterns for new developments as part of the plan review process.
4C - Continue implementation of the guidelines of the Access Standards Manual.

Measures:
a. Number of developments (site plans) constructed with access in accordance with the Access Standards Manual.
b. Number of access point consolidations or removals that resolve safety problems and/or traffic flow efficiency.

Responsible Parties:
Cities and Towns, Counties, Plan Commissions, INDOT & NIRCC

Objective 5:

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.

Strategies:
5A - Continue to provide a well-defined local truck route delivery system.
5B - Periodic review and evaluation of the truck route system.
5C - Evaluate loading zones in Central Business Districts to improve freight distribution and efficiency.

Measure:
a. Truck volumes and truck percentages on selected corridors.

Responsible Parties:
Cities and Towns, Counties & NIRCC

Objective 6:

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

Strategies:
6A - Continue strategic expansion of trail system.
6B - Provide additional bike lanes, bike routes and shared lanes in the metropolitan area.
6C - Repair and maintain existing bicycle infrastructure.
6D – Measure intersection service levels for bicyclists and pedestrians at locations that relate to existing and planned bike facilities.
6E – Continue installing bike racks and other storage facilities at strategic destinations in the Metropolitan Area.

Measures:
a. Miles of new bicycle infrastructure.
b. Miles of repaved and repaired bicycle infrastructure (trails and bike lanes).
c. Number of major destinations that provide secure bike storage.
d. Improved bike/pedestrian service levels at strategic intersections.

Responsible Parties:
Cities and Towns, Counties, INDOT & NIRCC

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

PF5 – GOAL 1

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 2020.

Strategies:

1A – Construct new and maintain existing facilities and make provisions for future connectivity.
1B - Implement recommendations of state and local bike, trail, and pedestrian plans.
1C - Collaborate with Fort Wayne Trails and other private sector partners to promote bike-ped facilities.

Measures:

a. Miles of trails.
b. Miles of bike lanes.

Responsible Parties:

Cities and Towns, Counties, INDOT, NIRCC & Fort Wayne Trails

Objective 2:

Increase public awareness of the health and economic benefits of walking, bicycling, and public transit as active transportation modes.

Strategies:

2A – Support implementation of state and local public information campaigns to promote active transportation.
2B – Collaborate with local organizations that have an interest in promoting active transportation.
2C – Organize, sponsor and participate in events that promote and increase public awareness of multi-modal transportation options.

Measures:

a. Number of times that multi-modal transportation advocacy messages are featured in mainstream media.
b. Number of organizations that incorporate multi-modal transportation advocacy in their promotional material.
c. Number of events that include information about the benefits of multi-modal transportation.

Responsible Parties:

Cities and Towns, Counties, Citilink, Countilink, INDOT, NIRCC, health agencies, neighborhood organizations, Fort Wayne Trails, & local businesses

Objective 3:

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

Strategies:

3A - Encourage, compact redevelopment and infill within ½ mile of transit routes.
3B - Expand the Citilink service area to include the entire urban area.

Measures:

a. Population, households and employment within ½ mile of transit routes.
b. Number of new or expanded transit routes.

Responsible Parties:

Citilink, Countilink , Cities and Towns, Counties & NIRCC

Objective 4:

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.

Strategies:

4A - Support subdivision ordinances and enforcement of sidewalk or trail requirements in new commercial and residential developments.
4B - Encourage redevelopment and infill development adjacent to existing pedestrian facilities.

Measure:

a. Miles of new sidewalks and trails constructed.

Responsible Parties:

Cities and Towns, Counties, INDOT, Plan Commissions & Developers

PF5 – GOAL 2

Apply sustainable principals 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.

Strategies:

1A - Promote alternative transportation modes including transit, cycling and walking.
1B - Evaluate ridesharing, bike sharing, car sharing and park and ride programs in the urban area.

1C - Reduce vehicle emissions through intersection improvements and constructing roundabouts at appropriate locations.

Measure:
a. Number of annual occurrences where regional air pollutants exceed the National Ambient Air Quality Standards.

Responsible Parties:
Cities and Towns, Citilink, Countilink, Counties, INDOT, IDEM, USEPA & NIRCC

Objective 2:

Support infill development and redevelopment efforts within the Urban Area.

Strategies:
2A - Provide appropriate transit, bicycle, pedestrian and vehicular access to undeveloped sites in the Urban Area.
2B - Provide appropriate transit, bicycle, pedestrian and vehicular access for redevelopment of selected locations.

Measure:
a. Number of transportation projects associated with Infill and redevelopment projects.

Responsible Parties:
Cities and Towns, Counties, Plan Commissions, Redevelopment Commissions, INDOT & NIRCC

Objective 3:

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

Strategies:
3A - Limit development and transportation projects that alter floodplains and wetland habitats.
3B - Reduce and mitigate non-point sources of roadway related pollution.
3C – Install green infrastructure (rain gardens etc.) into transportation design as a means to mitigate and control runoff.

Measures:
a. Water Quality Reports and impaired waterways.
b. Number of transportation projects that implement "green" runoff control infrastructure.

Responsible Parties:
Cities and Towns, Counties, INDOT, IDEM & NIRCC

Planning Factor 6:

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

PF6 – GOAL

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.

Strategies:

1A - Identify and prioritize gaps and important links in accordance with local bicycle and pedestrian plans to improve system connectivity.
1B - Develop a schedule for construction of trail, bicycle and sidewalk infrastructure.
1C - Identify and secure funding to meet objectives. .

Measure:

a. Number of system gaps removed.

Responsible Parties:

Cities and Towns, Counties, INDOT & NIRCC

Objective 2:

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

Strategies:

2A - Review access to major truck, transit, air and rail terminals for accessibility and mobility issues and determine appropriate improvements.
2B - Build and modify transportation infrastructure to improve access and mobility.

Measures:

a. Corridor and intersection level of service near terminals.
b. Number of accidents along primary access routes.

Responsible Parties:

Cities and Towns, Citilink, Countilink, Counties, Airport Authority, Freight Industry, Railroads & NIRCC

Objective 3:

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

Strategies:

3A - Review programs, plans and projects for opportunities to integrate transportation systems.

3B - Develop and implement programs and projects that improve system integration.

Measure:

a. Number of projects that integrate multiple transportation modes.

Responsible Parties:

Cities and Towns, Counties, INDOT & NIRCC

Planning Factor 7:

Promote efficient system management and operation

PF7 – GOAL

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.

Strategies:

1A – Maintain pavement and surface management for streets, sidewalks and bicycle systems.

1B - Ensure all bridges are in safe operating conditions for the intended users.

1C – Ensure regular transit vehicle inspections and appropriate maintenance.

Measures:

a. Pavement Conditions (streets, sidewalks and trails).

b. Bridge Inventory and Sufficiency Rating.

c. Transit vehicle breakdowns.

Responsible Parties:

Cities and Towns, Citilink, Countilink, Counties, INDOT & NIRCC

Objective 2:

Minimize impacts of construction activities and non-reoccurring incidents to system users (transit,

trail, sidewalk, bike, freight, rail and passenger vehicle).

Strategies:
2A - Promote and implement incident management techniques such as quick clearance, work zones, weather management systems and traditional traffic operations and processes.
2B - Manage construction schedules within the region amongst state and local agencies to minimize transportation disruptions.

Measures:
a. Number of road closures due to crash incidents.
b. Duration of road closure due to crash incidents.
c. Number of multiple construction detours on parallel arterials.
d. Number of multiple construction detours impacting transit routes, trails, bike lanes and sidewalks.

Responsible Parties:
Cities and Towns, Citilink, Countilink, Counties & NIRCC

Objective 3:

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

Strategies:
3A – Utilize modeling and analytical tools to determine cost effective and sustainable construction designs based on infrastructure type and use.
3B - Promote cost effective construction design that minimize maintenance and replacement costs.
3C - Promote cost effective capital procurement to minimize maintenance and replacement costs.

Measure:
a.Compare average life expectancy of transportation infrastructure and capital with actual number of useful years of acceptable condition.

Responsible Parties:
Cities and Towns, Citilink, Countilink, Counties, INDOT & NIRCC

Objective 4:

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

Strategy:
4A – Work with cities, counties and rail companies to evaluate and propose improvements or elimination of at-grade crossings.

Measure:
a. Number of at-grade crossings improved or eliminated.

Responsible Parities:
Cities and Towns, Counties, Railroads, INDOT and NIRCC.

Objective 5

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

Strategies:
5A – Market the benefits of transit, bike, and walking versus passenger vehicle travel to the community.
5B – Encourage increased walking, transit and bike use through the installation of infrastructure such as transit stop improvements, bike racks and lanes, and sidewalks.

Measures:
a. Number of marketing instruments such as ads, billboards, and media advocacy.
b. Number of transit stop improvements, bike racks, bike lanes and sidewalk infrastructure projects.

Responsible Parties:
Cities and Towns, Counties, Citilink, Countilink and other transit providers, INDOT and NIRCC.

Objective 6:

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

Strategy:
6A – Utilize tools such as incident management, work zones, weather management systems and traditional traffic operations to improve efficiency

Measure:
a. Travel time along primary corridors.

Responsible Parties:
Cities and Towns, Counties, INDOT and NIRCC

Planning Factor 8:

Emphasize the preservation of the existing transportation system

PF8 - GOAL

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.

Strategies:

1A - Pavement and surface management for streets, sidewalks and bicycle systems.
1B - Inspect and maintain all bridges to safe operating conditions for the intended users.
1C - Transit vehicle inspection, maintenance and repair program.

Measures:

a. Miles of repaved and reconstructed roadways.
b. Number of rehabilitated and replaced bridge structures.
c. Increase in number of transit vehicles in-service hours.
d. Miles of trail and sidewalk repaired/replaced.

Responsible Parties:

Cities and Towns, Citilink, Countilink, Counties & NIRCC

Objective 2:

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

Strategies:

2A - Administer pavement and bridge preservation and maintenance programs.
2B - Administer sidewalk and trail preservation and maintenance programs.
2C - Administer transit vehicle maintenance and preservation programs.

Measures:

a. Age and mileage of replaced transit vehicles.
b. Bridge age and sufficiency rating.
c. Age and condition of roadway surface at time of resurface/replacement.
d. Age and condition of trail/sidewalk surface at time of resurface/replacement.

Responsible Parties:

Cities and Towns, Citilink, Countilink, Counties, INDOT & NIRCC

Objective 3:

Maximize available highway capacity before considering adding travel lanes.

Strategies:

3A - Signal improvements and modernization.
3B - Continue implementation of access management and control measures.

Measures:

a. Peak period level of service.

b. Volume to capacity ratio.
c. Reclaimed roadway and intersection capacity.

Responsible Parties:
Cities and Towns, Counties, INDOT & NIRCC

Objective 4:

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

Strategy:
4A – Identify and construct transportation improvement projects that support infill developments in the urban area.

Measure:
a. Increase in property values in urban areas.
b. Number of transportation projects in densely populated areas.

Responsible Parties:
Cities and Towns, Counties, INDOT & NIRCC

Study Process

The study process used to develop the long-range transportation plan update was based upon the following work phases.

1. Forecast of Socioeconomic Data - Year 2035
2. Forecast Year 2035 travel Demand
3. Develop and Evaluate Alternative Projects
4. Refine the Selected Plan
5. Selection of the Recommended Plan

An inventory and analysis was conducted of existing and future socioeconomic data necessary to set the stage for plan development. The projected socioeconomic data allowed for the forecasting of future travel demands. These demands were analyzed on the transportation system as adopted in the current 2030-II Transportation Plan and ultimately on the transportation system as proposed by the selected 2035 Transportation Plan.

As a result of these analyses, projects were identified which would eliminate or significantly improve problems with the existing road and transit networks. The list of projects 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, Transportation Technical Committee, and Transit Planning

Committee, a final plan was selected.

The technical work phases of the 2035 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. 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 2030-II Transportation Plan, 2030 Transportation Plan, 2025 Transportation Plan, Technical Report for the Fort Wayne-Allen County-New Haven Planning Area, May 2000, 2015 Transportation Plan, Technical Report for the Fort Wayne-Allen County-New Haven Planning Area, June 1996; Allen County 2010: A Transportation Plan for the Metropolitan Area, Technical Report, May 1992; Fort Wayne/New Haven/ Allen County Long-Range Transportation Study Update(2005 Plan), Final Report, June 1986; Fort Wayne/New Haven/ Allen County Long-Range Transportation Study Update (2000 Plan), Final Report, April 1981; and the Fort Wayne-New Haven-Allen County Transportation Study,(1990 Plan), 1971. All of these 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 chapters:

Chapter 2 – discusses the base year and planning year socioeconomic data used to forecast future transportation needs and to identify improvements to meet those needs.

Chapter 3 – presents the travel forecasting procedures for the year 2035 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 2035 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 some 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 – Air Quality Transportation Conformity Analysis/Determination
Appendix C – 2010 Socioeconomic Data
Appendix D – 2035 Socioeconomic Data
Appendix E – Roadway Design Standards
Appendix F – Local Project Cost
Appendix G – Coordinated Public Transit-Human Services Transportation Plan for Allen County
Appendix H – Public Participation – Comments and Responses
Appendix I – Pedestrian component of the Transportation Plan\Bicycle Parking Recommendation Policy

Chapter 2
BASE AND PLANNING YEAR SOCIOECONOMIC DATA

Reliable data for the base year (2010) and estimates of the planning year (2035) 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 and 2000 socioeconomic conditions. As part of the development of the 2035 Transportation Plan, the model was evaluated using the 2010 base year data. Reasonable results were obtained from modeling the 2010 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 growth and location of future employment was determined utilizing existing employment as a template. The location of employment is one of the critical pieces of demographic information used for transportation planning purposes. The location of 2000 employment from Indiana Business Research Center - Kelley School of Business. is shown in Figure 3. The location of 2010 employment from Indiana Business Research Center - Kelley School of Business. is shown in Figure 4.

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 5. There are a total of 462 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. See figure 5.

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.

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.

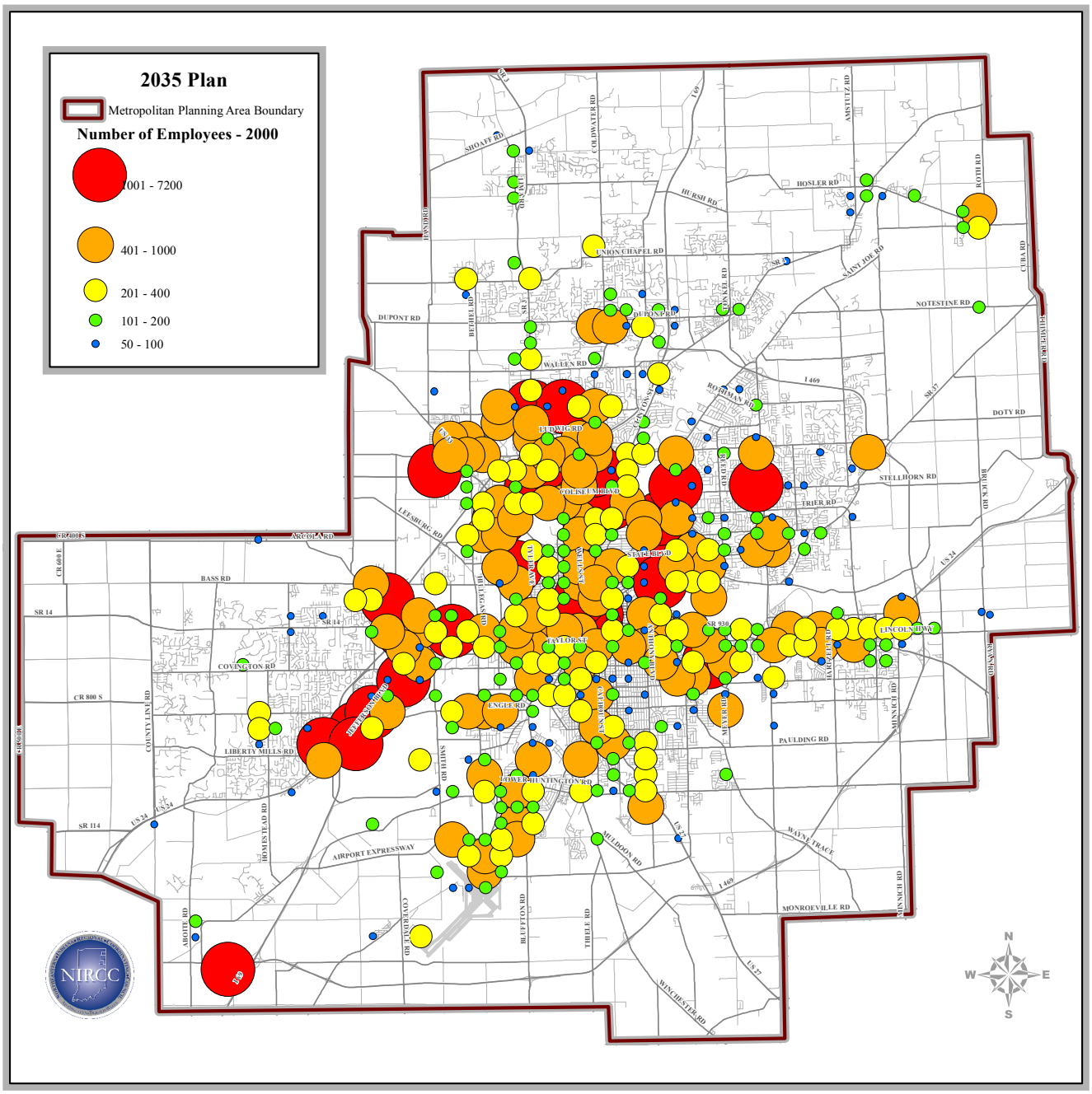

Figure 3

Employment Locations for 2000

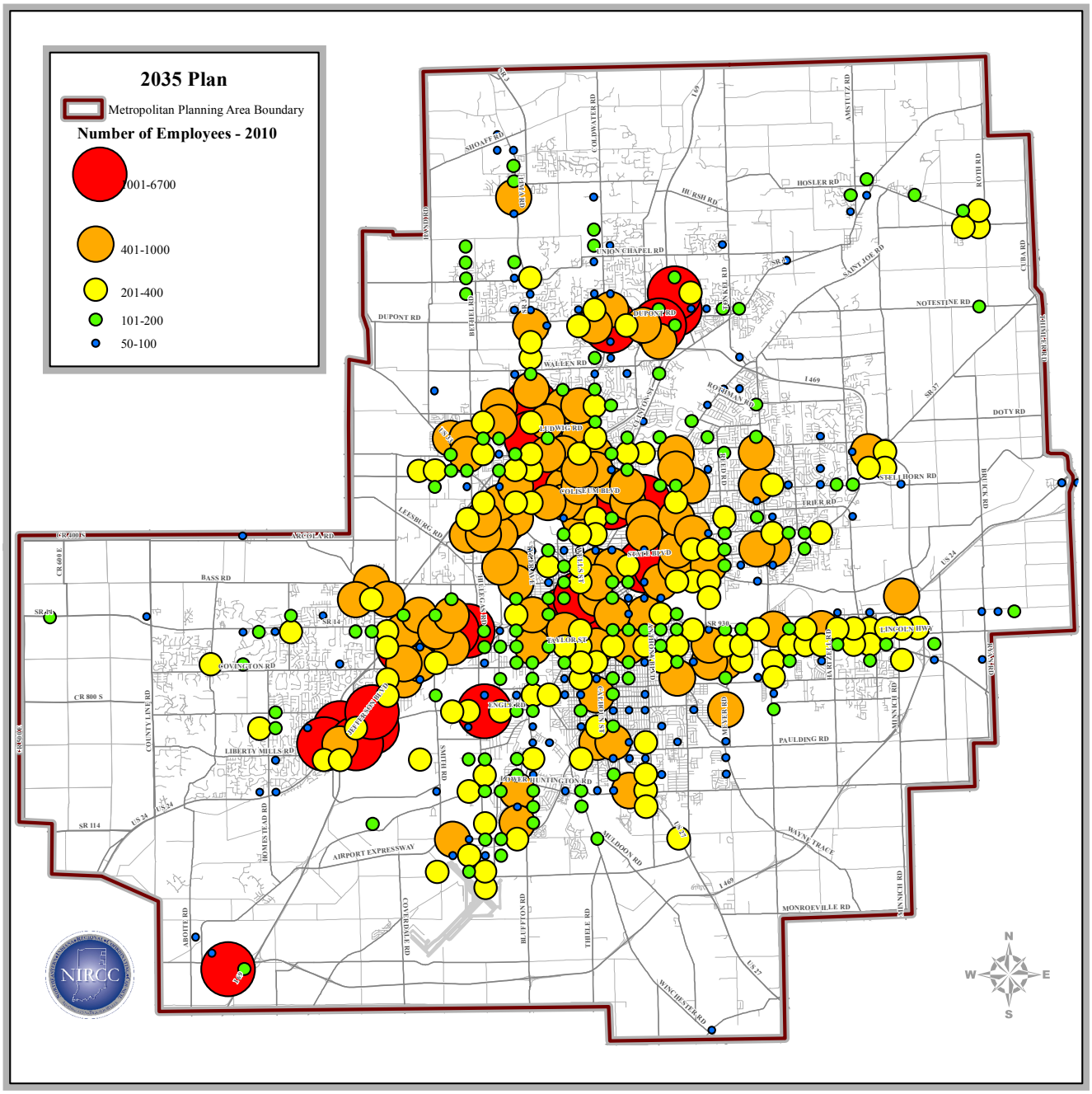

Figure 4

Employment Locations for 2010

Figure 5

Traffic Analysis Zones

Base Year 2010 Estimates

The year 2010 was established as the base year for this transportation plan update. Comprehensive socioeconomic data including population, households, automobile ownership, and employment data was established for 2010. 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 2010 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 94% of the total population and households residing 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 very 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.

Census data served as the foundation for developing reliable population, housing and automobile ownership estimates for the 2010 base year. Recent trends in population growth estimated by the U.S. Census Bureau shows Allen County with a 2010 population of 355,329, and increase of 23,480 from the 331,849 population in 2000. This represents a 7.1% increase over the ten-year period and correlates to an average annual growth rate of approximately 0.69%.

The 2010 Census reported 137,851 households in Allen County. This represents an increase of 9,106 new households over the ten-year period from 2000. This represents a 7% increase that correlates to an average annual growth rate of 0.69 percent. The overwhelming majority of housing growth was in new suburban subdivisions and apartment complexes within the MPA. The estimates of the 2010 socioeconomic variables for each traffic zone are presented in Appendix C. The methodology used for preparing these estimates is discussed in the following narrative.

Population

The population figures for base year 2010 were derived from 2010 census block statistics for the Metropolitan Planning Area. The 2010 census block statistics were aggregated to represent the population of individual traffic zones within the Metropolitan Planning Area.

Households

The primary source for base year household data for the Metropolitan Planning Area was the 2010 census block information. This data was compiled exactly like the population figures to determine the extent of housing activity within each traffic zone.

Automobile Ownership

Vehicle ownership information for metropolitan area was obtained from the Indiana Bureau of Motor Vehicles for the 2010 base year. The number of automobiles per traffic zone was calculated using vehicle per household ratios based on historical data and census information. The ratios were reviewed and refined based on the relationship of household incomes specific to individual traffic zones and automobile ownership. Each zone was evaluated and compared to an aggregate control total to ensure a fair distribution of vehicles.

Employment

The primary source of 2010 employment data was information obtained from the Indiana Business Research Center Kelley School of Business. Indiana Business Research Center Kelley School of Business assisted in obtaining this information for planning purposes. The employment locations were allocated to the proper traffic 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, and arts and entertainment. The retail category includes: food, bakery, and dairy stores; eating and drinking establishments; 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.

Planning Year 2035 Projections

General planning assumptions based upon current and historical trends are developed to guide the projected socioeconomic conditions for the horizon year, 2035. 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 through the year 2035.

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 22 years.

1. Information released from the U.S. Bureau of the Census indicates that nationally, the average number of persons per household has steadily decreased over the last thirty years. As the nation slows in population growth, it is assumed that the ratio will level off and remain fairly constant. The 1990 census revealed a ratio with the City of Fort Wayne reporting in at 2.43, the City of New Haven at 2.73, and the remainder of Allen County at 2.92. The 2000 census shows the ratio for Fort Wayne at 2.41, New Haven at 2.51, and the remainder of Allen County at 2.80. The 2010 census shows the ratio for Fort Wayne at 2.44, New Haven at 2.52, and the remainder of Allen County at 2.83. It is anticipated that the persons per household ratio is beginning to stabilize. The average ratio for Allen County is estimated to be 2.44 in 2035. The ratio for the Metropolitan Planning Area will be slightly lower. The persons per household ratio for the year 2035 will be approximately 2.42 for the Metropolitan Planning Area.

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. The majority of all 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.

3. Population growth within the current corporate limits of Fort Wayne will occur primarily in areas currently undeveloped and zoned for residential use. Moderate population growth is also anticipated in neighborhoods where revitalization actions are implemented. It is assumed that all usable residentially zoned property currently within Fort Wayne will be developed by the year 2035.

4. Downtown Fort Wayne revitalization efforts will continue throughout the central business district and surrounding area. The Fort Wayne Downtown Development Plan provides the blueprint for how new and revitalized development will occur. Residential development and re-development will be encouraged in specific areas of the central business district and central city. The New Haven downtown business district will continue to provide business and limited retail opportunities.

5. A decline in population and housing due to federal restrictions on construction and reconstruction in floodplains will affect areas adjoining the rivers. Local floodplain management activities will conform to the federal specifications. Limited development will occur in floodplain areas. A

floodplain map is displayed on Figure 6.

6. 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. Cedar Creek and Perry Townships in the northern and northwestern sections of the urban area are expected to experience intense development through the year 2035. Residential development will also occur in the southern portion of Lake Township and the northern section of St Joseph Township.

7. The majority of new industrial development will occur in designated Industrial Parks, identified Industrial Sites, and Economic Development Areas. This includes significant industrial development on available land adjacent to and surrounding the Fort Wayne International Airport. Other areas where significant industrial development is anticipated to occur include: southeast of the east-end industries along Adams Center Road; northwest of Interstate-69 in the Huguenard Road/Cook Road area; and east of New Haven and Interstate 469 along the Dawkins Road Corridor. The Metropolitan area will continue to attract new industry; however growth will also occur from the expansion of existing facilities. Industrial Parks and Industrial Sites are displayed on Figure 7.

8. People will be more energy and environmentally conscious and purchase vehicles that yield higher mile per gallon fuel efficiency ratios and lower emissions. The national average ratio of automobiles per household increased significantly throughout the 1980's and 1990's. It is expected that this ratio will soon stabilize and remain fairly constant. The current ratio for the Metropolitan Planning Area as a whole is approximately 1.91 vehicles per household. The anticipated ratio for the year 2035 will remain basically the same.

9. The urbanized 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. Population statistics show that 92 percent in 1990, 93 percent in 2000, and 94 percent in 2010 lived within the MPA. The urban area share of total population will continue to increase slightly through the year 2035.

10. 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. Development will also occur along the Airport Expressway corridor and near the Fort Wayne International Airport. Development will be attracted to this area to take advantage of the Airport and Interstate accessibility.

The 2035 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 2035. 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. A table displaying

the year 2035 socioeconomic data is provided in Appendix D.

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 333,724, 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 2035 Transportation Plan employed the same basic assumption that resulted in a fairly conservative estimate. After the release of actual 2010 Census population numbers, a review of the MPA population indicated that it was approximate 337,000. This represented less population growth than what had been anticipated, over a ten- percent increase from 2000. For purposes of estimating the population growth to the 2035 horizon year, a 0.64% annual growth rate was derived from historical trend data and population estimates. This represents a relatively consistent and conservative rate. The established population control total for 2035 is 394,629.

Population projections for individual traffic zones within the MPA were developed by first comparing current demographic data based upon housing growth from 2000 to 2010. The recent housing growth was then compared to the current 2035 traffic zone population estimates. 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 utility availability (water, sewer, etc.), current rates of development, density thresholds, soil types, and topography.

Figure 6

Floodplains

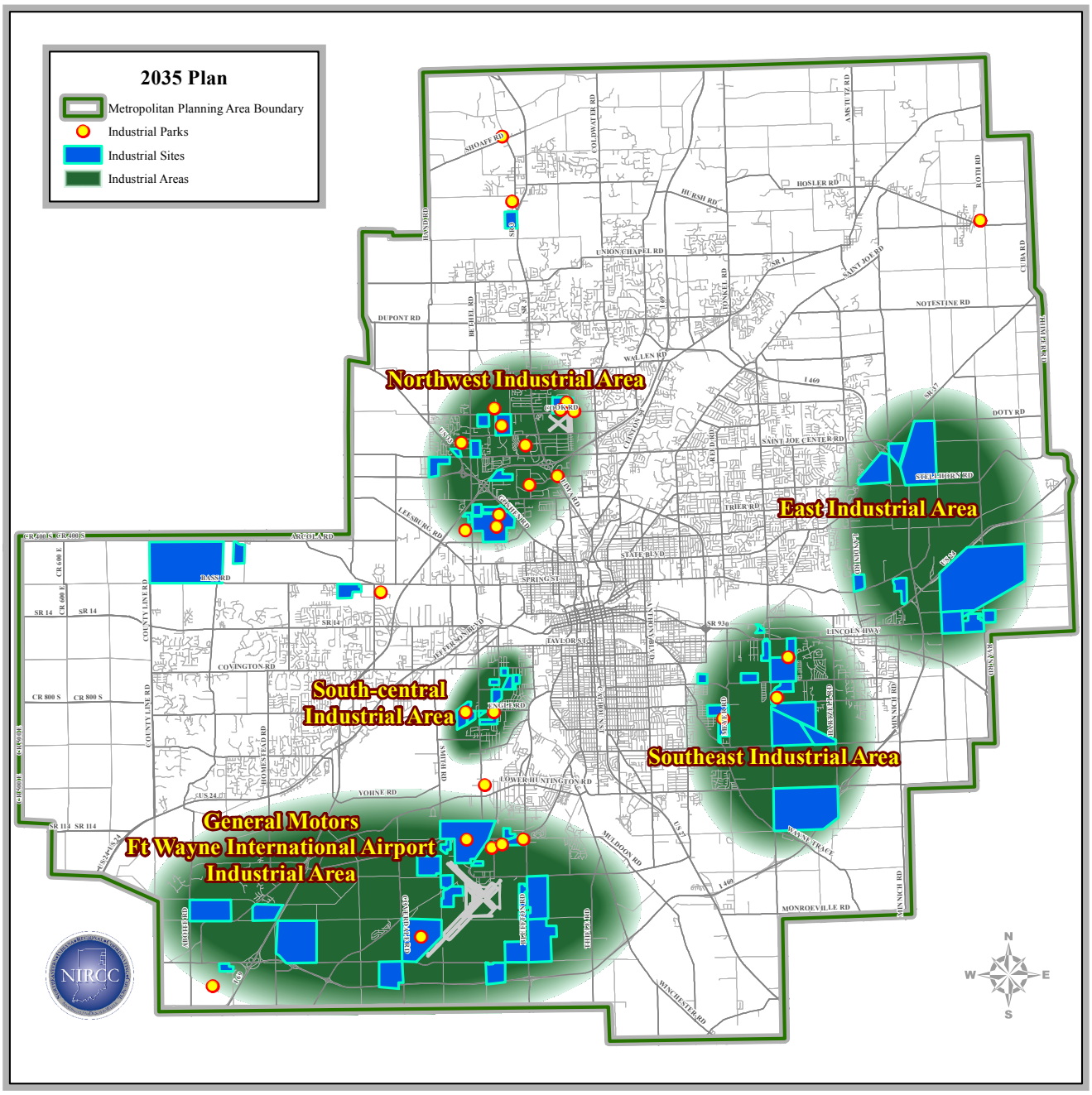

Figure 7

Industrial Parks and Sites

This analysis yielded the expected number of new house holds to be constructed by the year 2035 for each zone. The persons per household's factors were applied to calculate the additional population per zone for the entire metropolitan area. The additional population figures were added to the base year 2010 figures to gain a 2035 projected population total for each traffic zone. 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

Household figures were determined through a similar process as described for the 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 figures and then checks were made against control totals. Adjustments were made and figures were rechecked until a balance of households and population estimates was obtained. In general, the average ratio of 2.42 was used for city zones and 2.81 for the zones outside the City of Fort Wayne.

Automobile Ownership

Automobile ownership projections were derived by applying ratios of automobiles per household to the 2035 household figures. The assumption was made that these ratios would remain fairly constant through the year 2035 in the Metropolitan Planning Area. An average ratio of 1.91 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 2010 census 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 upon past development 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. Control totals for employment estimates

were based on employment projections provided by the Indiana Business Resource Center based upon U.S. Bureau of Labor Statistics utilizing Current Employment Statistics (CES), Quarterly Census of Employment and Wages (QCEW) and Moody's Analytics for Allen County.

The 2010 employment data served as the base for the zonal employment estimates. The 2010 data was obtained from the and allocated to traffic zones. The additional employment figures were added to the base 2010 figures to derive zonal employment data for the year 2035.

Summary

The socioeconomic data for the base year coupled with historic trends provides for reliable estimates of the 2035 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, 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 2010 base year socioeconomic data and the projected 2035 data provided for the interpolation of socioeconomic data necessary for air quality analysis. The socioeconomic data for the baseline 2010 and analysis years 2015, 2020, and 2030 were interpolated based on in fill and contiguous growth scenarios consistent with the Comprehensive Plan. The individual variables including population, households, automobiles, and employment data were interpolated for each traffic analysis zone. This information was used to forecast travel for the analysis years and develop vehicle miles of travel.

Consideration of available housing, land use, redevelopment, recreation, and economic development plans and efforts supports the comprehensive approach encompassed throughout the development of this transportation plan. This atmosphere sets the stage for the formulation of planning assumptions guiding the transportation planning process and development of the plan. The forecast of future travel demands is built upon this foundation of solid socioeconomic guidelines.

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Chapter 3
TRAVEL FORECAST: 2035 TRAVEL DEMANDS

The principal function of the year 2035 transportation plan update is to develop forecasts of the 2035 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 a number of completed projects that were constructed during the tenure of the 2030-II 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 provide 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 methodology used to forecast travel demands for the year 2035 has been updated and enhanced from what was used for all previous Transportation Plans. Figure 8 displays a flow chart that schematically describes the forecasting process. The forecasting or modeling process used for this study and all previous studies follows a standard transportation/planning forecasting approach.

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. Using TransCAD's GIS techniques, the model incorporates extensive geographic and traffic operational databases into the highway network and the traffic analysis zone (TAZ) GIS layer for use in the modeling process. 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.

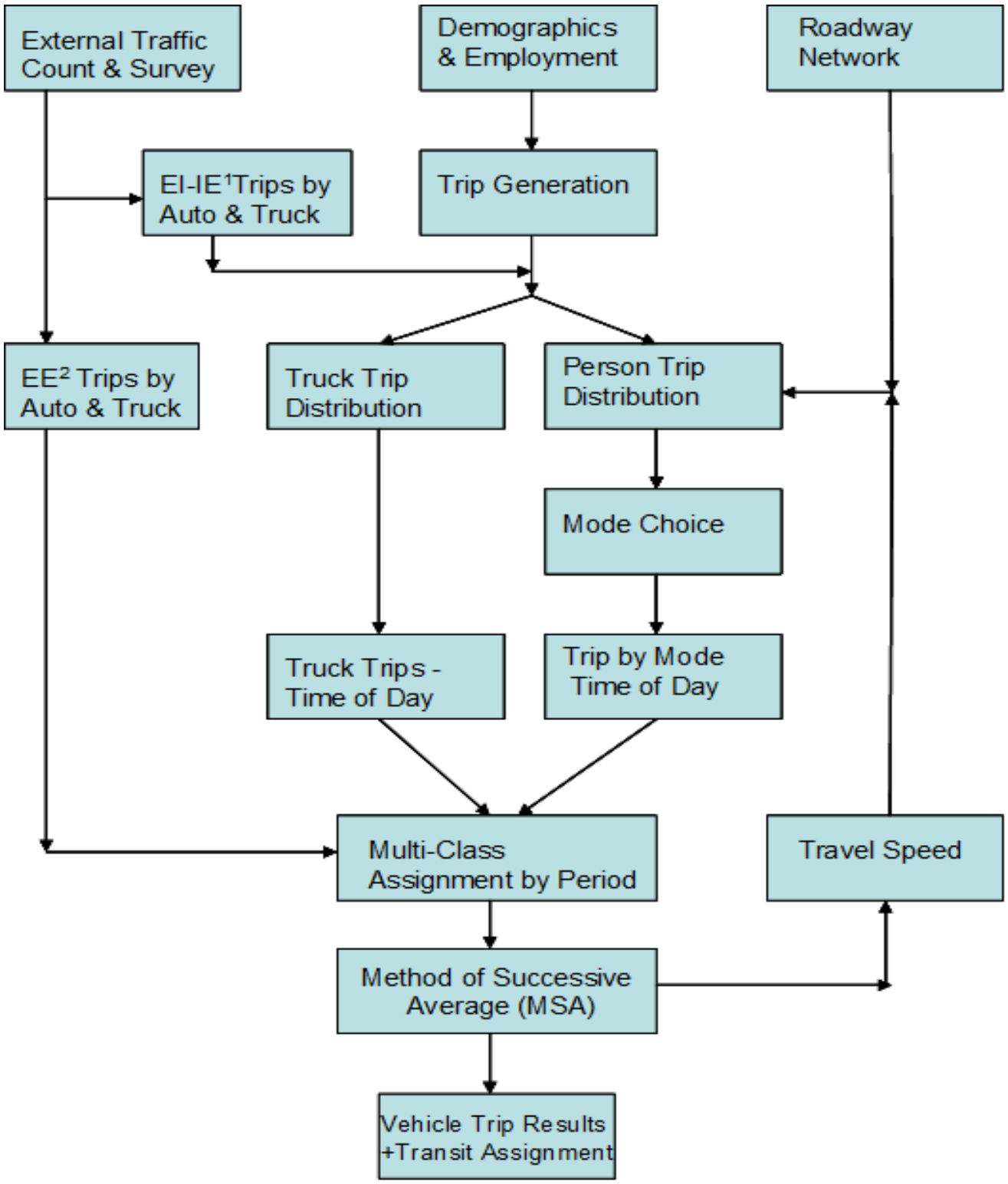

Figure 8

Travel Forecasting Procedure

The NIRCC model is structured to implement "four-step" processes with a travel time feedback loop. The four steps are trip generation, trip distribution, mode choice and trip assignment. Based on this structure, the model runs a four-step assignment initially, and then "feedback" the congested travel time from assignments back to trip distribution and starts subsequent model runs. With the feedback routine, trips are distributed and assigned on the network in a more effective and realistic manner since trip destination and route choices are determined based on congested network condition. In addition, the transit trip assignment is based on the congested travel time from the last iteration of model runs.

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 Whitely 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 2010 base year but also for the future years. There are a total of 471 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 traffic analysis zones (TAZ), 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 was 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 2000 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 using the Indiana Statewide Travel Demand model (ISTDM) version 6. Each external station corresponds to a link in the ISTDM. The base year external to external trip matrix was derived via sub-area extraction from the ISTDM. Base year 2010 External-Internal and Internal-External total demand was also derived from the ISTDM. Rates of growth at each external were also developed from the ISTDM.

- **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.** During the development of the model, unique friction factor tables were calibrated to survey data for each of the trip purposes, including truck trips.

- **Mode Choice Model.** The model takes account of auto, transit, bike and pedestrian. This mode choice model has the factors for daily only and are derived from the NHTS Add-On and NIRCC's Household Travel Survey data and the Citilink transit on-board survey.

- **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. In each of the four step processes, the model maintains a separate truck model to address the unique travel characteristics of trucks. Truck trips are separately generated and distributed. Then, they are assigned to the network for each TOD simultaneously with the corresponding passenger car assignments.

- **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 is 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 2035 socioeconomic conditions. Table 1 compares base year (2010) and forecast year (2035) regional control totals for each of the key variables influencing travel demands. Socioeconomic data was interpolated from these forecasts to establish the socioeconomic variables for the analysis years needed for the air quality analysis. Table 2 provides the interpolated socioeconomic conditions for the base year 2010 and analysis years 2015, 2020, 2030 and 2035.

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 2000 to 2010. 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 2010 Census indicated that the ratio of persons per household was 2.51 for the Metropolitan Planning Area. The 2035 persons per household ratio is 2.42 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 2035 are

Table 1. Summary of Regional Socioeconomic Variables

Socioeconomic Variable	2010 Base Year	2035 Forecast Year	Percent Increase	Annual Percent Rate
Population	336,211	394,629	17.38%	0.64
Households	132,683	162,859	22.74%	0.82
Automobiles				
Ownership	253,680	311,370	22.74%	0.82
Per Household	1.91	1.91		
Employment				
Retail	25,332	28,487	12.45%	0.47
Industrial	51,229	58,993	15.16%	0.57
Office	59,372	67,817	14.22%	0.53
Service	53,322	61,757	15.82%	0.59
Total	189,255	217,054	14.69%	0.55

Table 2. Summary of Regional Socioeconomic Variables-Air Quality Analysis Years

Socioeconomic Variable	2010 Baseline Year	2015 Analysis Year	2020 Analysis Year	2030 Analysis Year	2035 Horizon Year
Population	336,211	347,916	359,141	382,957	394,629
Households	132,683	138,760	144,291	156,808	162,859
Automobiles					
Ownership	253,680	265,299	275,874	299,702	311,370
Per Household	1.91	1.91	1.91	1.91	1.91
Employment					
Retail	25,332	25,839	26,474	27,730	28,487
Industrial	51,229	53,442	54,789	57,492	58,993
Office	59,372	60,908	62,595	65,965	67,817
Service	53,322	54,820	56,510	59,890	61,757
Total	189,255	195,009	200,368	211,077	217,054

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 2010 employment figures indicate continued growth in retail employment.

Industrial employment has remained fairly 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 higher 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 fairly consistent with respect to its rate of growth over the years. This category will see a slightly higher 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 2035. The northern and southwest areas of the region will remain active in terms of socioeconomic growth, especially along the Dupont Road/ State Road 1 corridors. The areas around major interchanges of Interstate 469 remain attractive for development. Major housing and retail developments have been constructed near the Interstate 469 and SR 37/Maysville Road Interchange.

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. It is apparent that travel will become less oriented to the central urban core as major suburban activity centers continue to be developed. Travel patterns will become less dependent on the radial highway system.

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 C & D. 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 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 2010, 2015, 2020, 2030, and 2035. The relative proportion of trips by purpose show little change between the forecasted years.

The number of trip productions and attractions for 2035 are logically higher than those forecasted for 2015 2020, and 2030. 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.

Table 3. Travel Demand Forecast Regional Summary

Productions

Trip Purpose	2010 Trips	2010 Percent	2015 Trips	2015 Percent	2020 Trips	2020 Percent	2030 Trips	2030 Percent	2035 Trips	2035 Percent
HBWLO	64,127	5.6%	66,946	5.6%	69,726	5.6%	75,510	5.6%	78,412	5.6%
HBWHI	98,956	8.6%	103,779	8.7%	108,368	8.7%	118,265	8.8%	123,148	8.9%
HBS	143,035	12.5%	149,591	12.5%	155,643	12.6%	169,126	12.6%	175,688	12.7%
HBO	329,864	28.8%	345,026	28.9%	359,314	29.0%	390,504	29.2%	405,827	29.2%
HBSCH	119,293	10.4%	124,761	10.4%	130,189	10.5%	141,412	10.6%	147,074	10.6%
HBU	14,304	1.2%	14,963	1.3%	15,622	1.3%	16,981	1.3%	17,668	1.3%
NHBW	27,155	2.4%	27,983	2.3%	28,751	2.3%	30,285	2.3%	31,146	2.2%
NHBO	197,244	17.2%	204,520	17.1%	211,763	17.1%	227,232	17.0%	235,164	16.9%
TRK	151,872	13.3%	156,400	13.1%	159,695	12.9%	169,301	12.6%	174,142	12.5%
Total	1,145,850	100.0%	1,193,969	100.0%	1,239,071	100.0%	1,338,616	100.0%	1,388,269	100.0%

Attractions

Trip Purpose	2010 Trips	2010 Percent	2010 Trips	2010 Percent	2020 Trips	2020 Percent	2030 Trips	2030 Percent	2030 Trips	2030 Percent
HBWLO	65,276	5.6%	68,285	5.6%	71,271	5.6%	77,431	5.6%	80,524	5.6%
HBWHI	102,261	8.7%	107,435	8.8%	112,347	8.9%	122,918	8.9%	128,121	9.0%
HBS	148,771	12.7%	155,856	12.8%	162,426	12.8%	176,950	12.9%	184,018	12.9%
HBO	338,136	28.9%	353,991	29.0%	368,971	29.1%	401,514	29.2%	417,501	29.3%
HBSCH	120,419	10.3%	125,809	10.3%	130,189	10.3%	143,060	10.4%	148,931	10.4%
HBU	15,168	1.3%	15,896	1.3%	16,622	1.3%	18,130	1.3%	18,890	1.3%
NHBW	27,019	2.3%	27,802	2.3%	28,546	2.3%	30,023	2.2%	30,854	2.2%
NHBO	202,606	17.3%	210,308	17.2%	217,995	17.2%	234,306	17.1%	242,657	17.0%
TRK	151,872	13.0%	156,400	12.8%	159,695	12.6%	169,301	12.3%	174,142	12.2%
Total	1,171,528	100.0%	1,221,782	100.0%	1,268,062	100.0%	1,373,633	100.0%	1,425,638	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

Trip Distribution

The production and attraction trip-ends, estimated for each traffic zone for the year 2035, were matched using a trip distribution model. The model gives the second dimension to travel patterns by connecting trip productions and attractions (trip ends) to form trips. The model works zone by zone, allocating trips produced in one zone to trip attractions in other zones. The distribution is generally based upon the number of attractions of a zone and the distance between zones.

The form of the gravity model is expressed as:

$$T_{ij} = P_i \left(\frac{A_j F_j K_j}{\sum_{k=1}^{zones} A_k F_k K_k} \right)$$

Where,

Tij = O-D trips between TAZ i and TAZ j,
Pi = total trip productions of TAZ i,
Dj = total trips attractions of TAZ j,
Fij = friction factor between TAZ i and TAZ j, and
Kij = socioeconomic factor between TAZ i and TAZ j.

In the model, all Ks are equal to 1. The trip distribution modeling process incorporated the following data inputs and modeling elements:

- Production (P) and Attraction (A) trip ends by trip purpose from the trip generation model, and for each trip purpose the total P must be equal to the total A,
- Interzonal and intrazonal travel times computed using the NIRCC roadway network,
- Friction factors calibrated for each trip purpose using gravity model procedures,
- Socioeconomic adjustment factors, or K-factors, developed as part of the overall model validation process, and
- Gravity model applications by trip purpose using TransCAD procedures.

The results of the 2035 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 2030-II 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 9. 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 provide 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, 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 4 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 4 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 12. 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

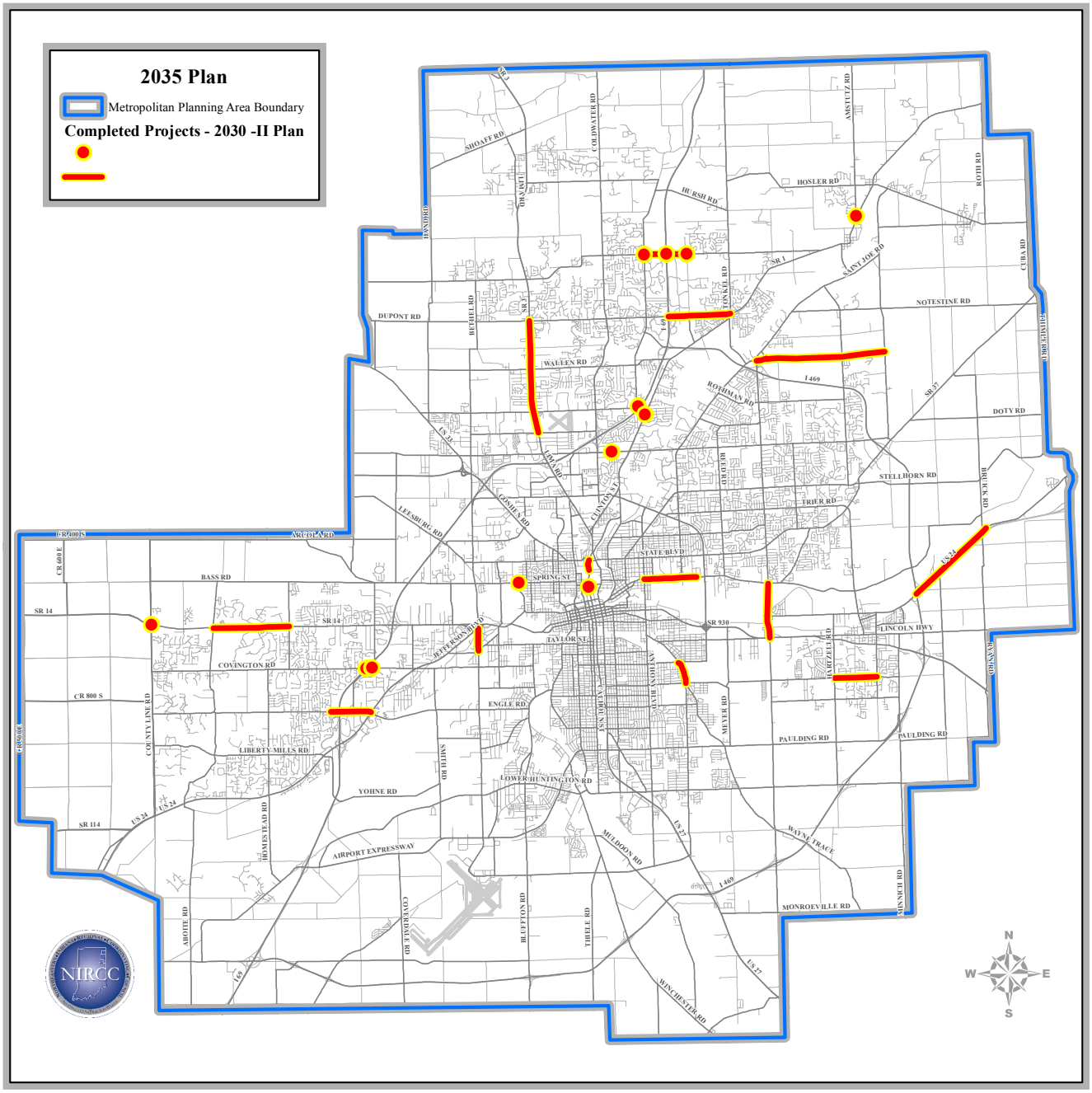

Figure 9

Completed Projects from the current 2030-II Plan

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 5. 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.

Transit System

The transit system was included as part of the travel forecasting process for this transportation plan update. The 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 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 Transit Development Plan Update Report prepared in Fiscal Year 2010 and the Coordinated Public Transit – Human Services Transportation Plan for Allen County Update completed in Fiscal Year 2013. The projects identified in the Transportation Development Plan and the strategies identified in the Coordinated Plan are included as a component of this plan.

Figure 5: 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.

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. Their current service area is the incorporated boundaries of the City of Fort Wayne and the City of New Haven. There are three rural transit providers within the MPA. The Allen County Council on Aging (dba Countilink) is the rural transit provider in Allen County. Countilink will provide 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. 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. Citilink and Countilink are the primary transit providers within the MPA.

The current Citilink transit system has twenty-one routes. Most of these routes utilize the Fort Wayne Central Business District as a hub and transfer point. Two point-deviation routes currently operate to provide access to suburban medical and retail facilities. A circulator route known as CampusLink serves the IPFW / Ivy Tech campuses and surrounding area. 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 existing Citilink transit route network is displayed in Figure 10. Until the summer of 2008, the majority (eleven of nineteen) of the routes (nineteen total at that time) ran on thirty-minute headways, however funding issues resulted in six of the routes reducing service frequency to headways to sixty-minutes. Currently, fifteen routes run on sixty-minute headways, five run on thirty-minute headways, and one (CampusLink) run on twenty-minute headways. Citilink intends to restore the thirty-minute service as funding is made available to provide more frequent service on heavily used routes.

Countilink service was new as of January 2009. The current Countilink transit system is a demand response system. The system operates Monday through Friday from 8:00 am to 4:30 pm. Countilink provides approximately 5,000 one-way trips per year initially. As demand for the service increases, increased hours of operation and fixed routes will be considered.

Citilink's service area (incorporated boundaries of the City of Fort Wayne and the City of New Haven) currently contains approximately 83% of all households, 81% of the population, and 87% of the employment opportunities within the Metropolitan Planning Area. If the service area does not expand, by 2035 it is estimated that these numbers will decrease to account for approximately 75% of the households, 72% of the population, and 83% 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 65% of the households, 62% of the population, and 82% 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 2035 indicates approximately 60% of the households, 55% of the population, and 80% 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.

The service area of the rural transit providers within the MPA (which is primarily served by Countilink) currently contains approximately 17% of all households, 19% of the population, and 13% of the employment opportunities within the MPA. By 2035 it is estimated that these numbers will increase to approximately 25% of the households, 28% of the population, and 17% of the employment opportunities. Since Countilink, WCT, and HAT all operate a demand response systems, transit service is available to 100% of their service area including those portions within the MPA.

Collectively, the four transit providers currently provide transit service to approximately 81% of all households, 80% of the population, and 92% of the employment opportunities within the MPA. These numbers are projected to remain relatively constant for the projected 2035 socioeconomic conditions with transit reaching approximately 82% of all households, 82% of the population, and 92% of the employment opportunities. The coverage area of transit service within the MPA is displayed in Figure 11.

Conclusion

The evaluation of the existing highway system was utilized for the initial evaluation of capacity deficiencies when burdened with the 2035 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 provide 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 12.

The analysis of the travel demand forecast indicates that additional improvements are necessary to meet the projected 2035 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 2035 travel desires.

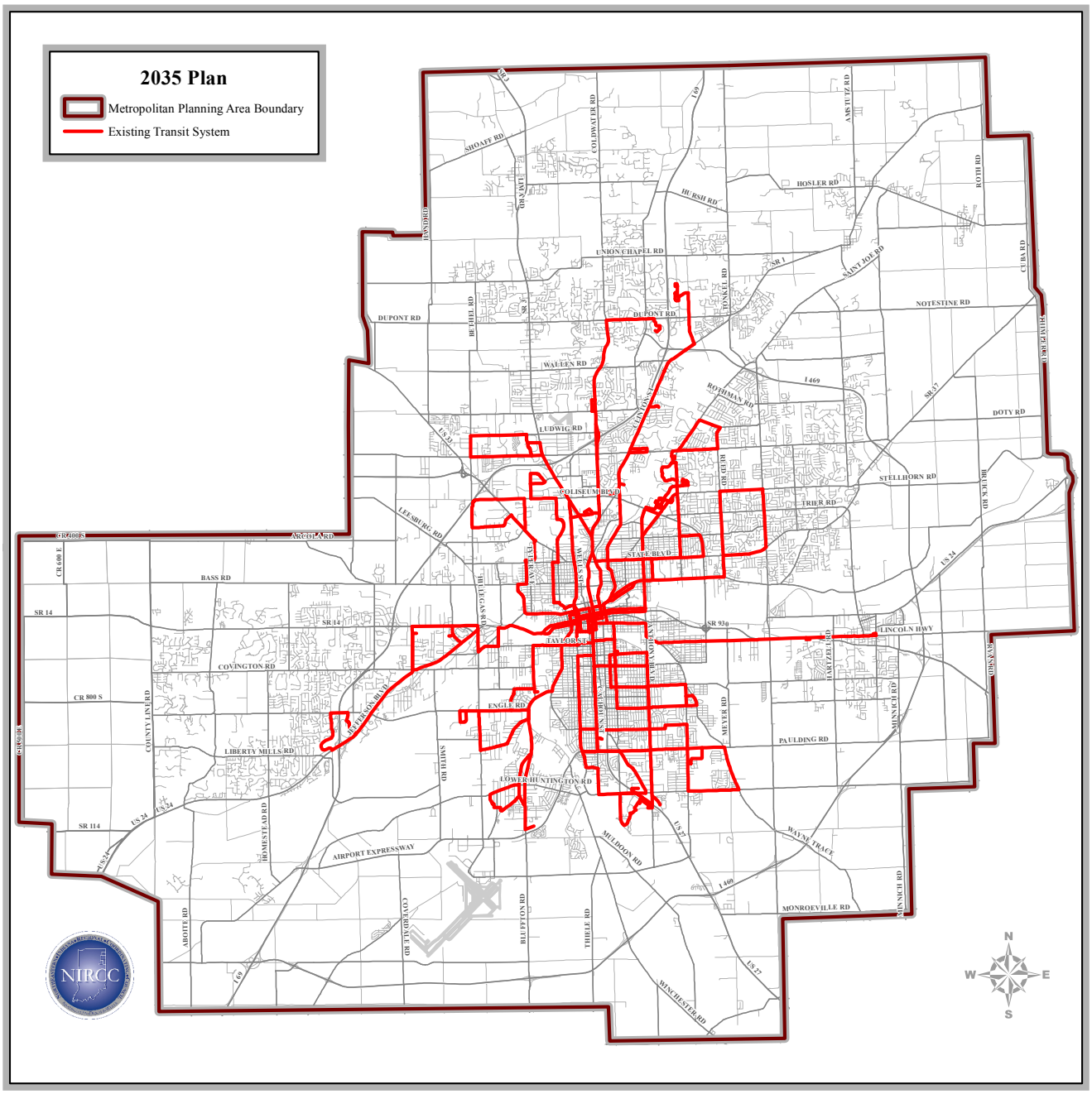

Figure 10

Existing Transit System

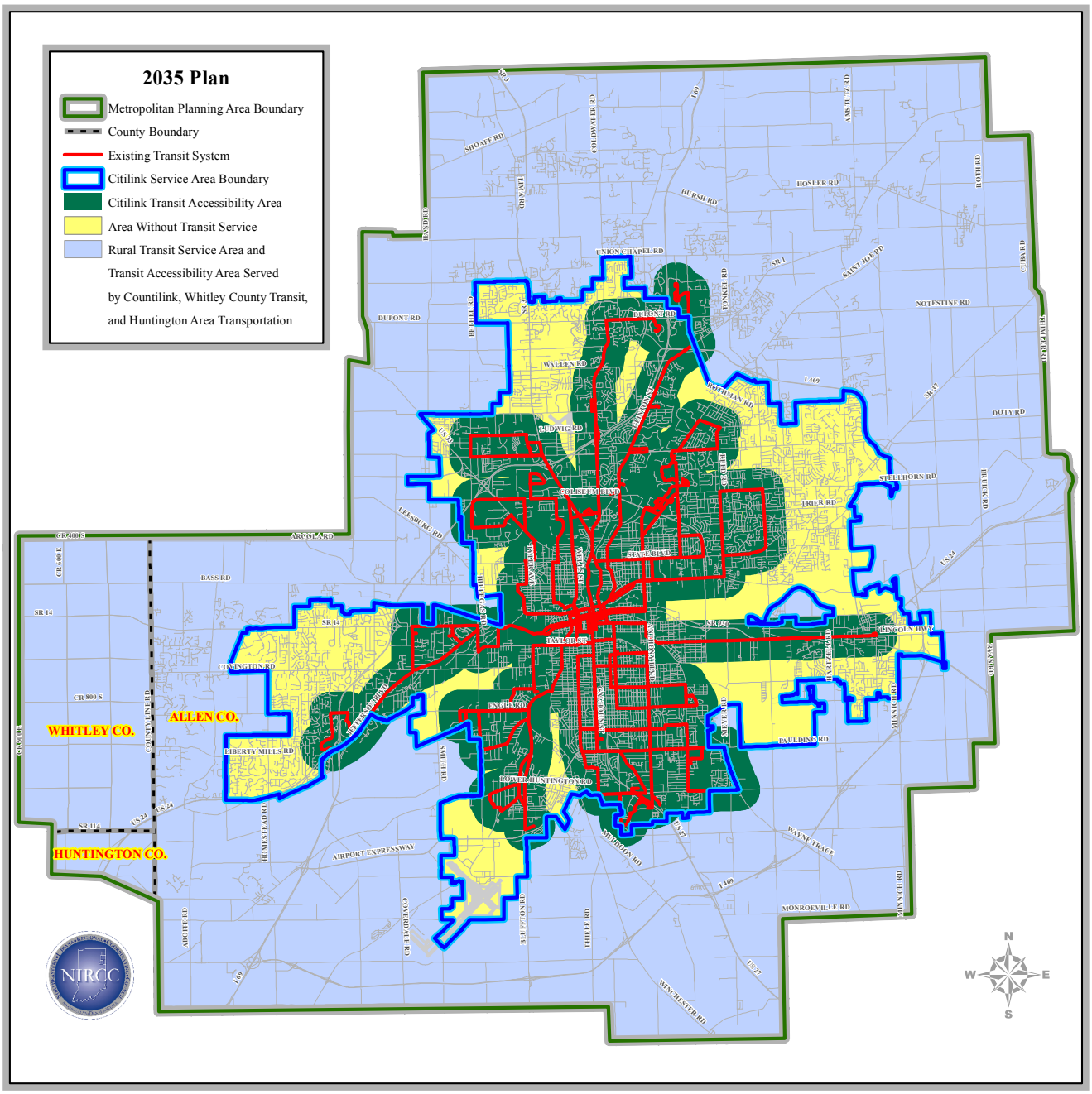

Figure 11

Transit System Accessibility

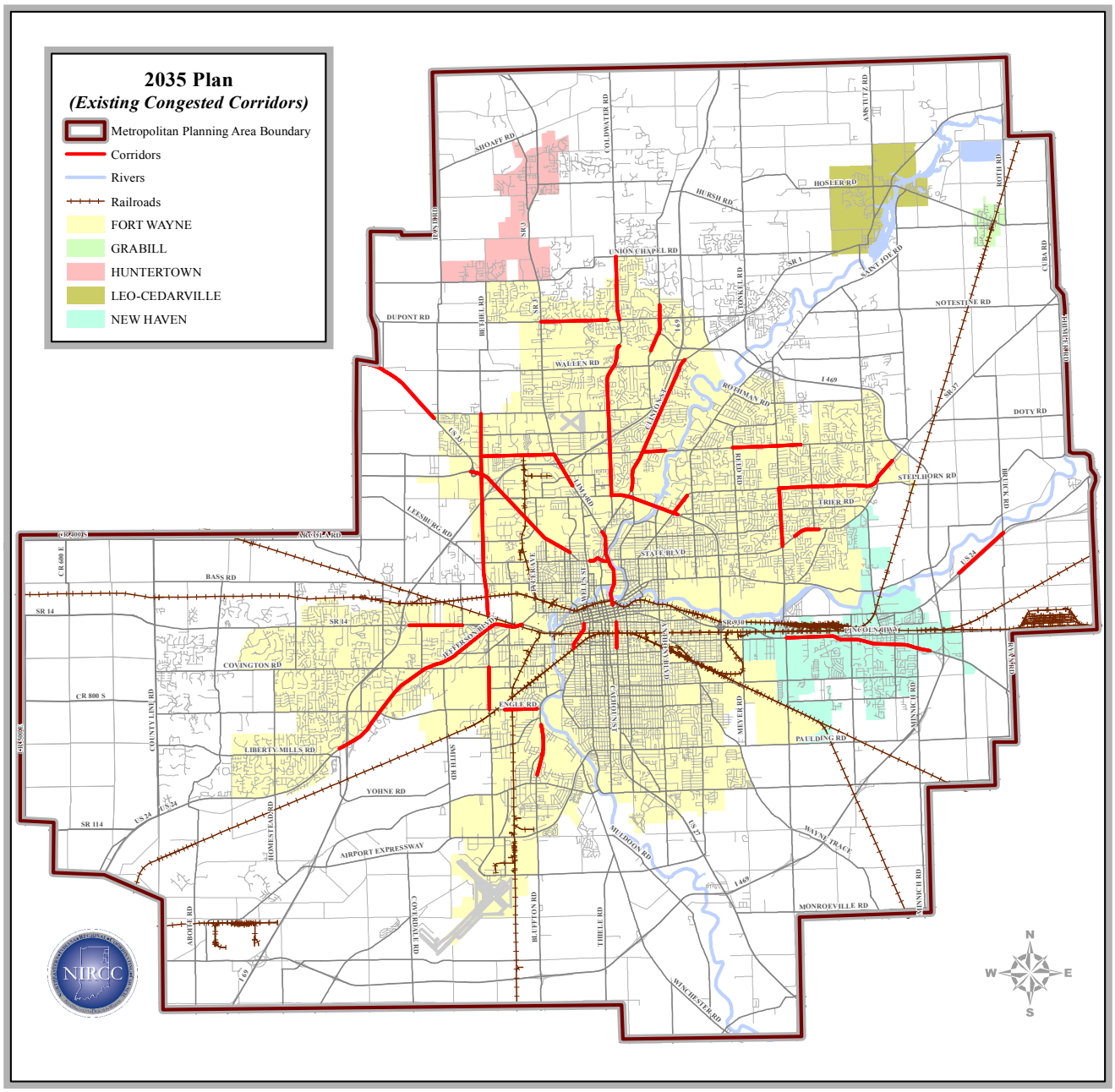

Figure 12

Network Deficiencies if no Projects were completed

Chapter 4
EVALUATION OF ALTERNATIVE TRANSPORTATION SKETCH PLANS

Chapter 4 discusses the development and evaluation of alternative transportation sketch plans for the target year 2035. The highway and transit alternatives considered as the 2035 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 2035.

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 2035 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 2035 travel demands provided for the selection of specific alternatives aimed at relieving deficient corridors and increasing transit ridership. The deficient corridors (see Figure 12) 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 2030-II 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 utilized for the Congestion Management System Access Management Program. The revised 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 2030-II 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 2030-II Plan projects to determine if they remained practical under the 2035 travel demands. Remaining deficiencies from the 2035 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 2030-II Plan projects were modified 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 2035 transportation system yields positive results. The comparison utilizes the 2035 travel demands. Table 6 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 9.6 million vehicle miles of travel (VMT) on a daily basis. Under the identical travel demands, the recommended 2035 system will carry an estimated 9.3 million vehicle miles of travel.

Equally important is the comparison of vehicle hours of travel for the two systems. The existing plus committed transportation system will induce an estimated 263,400 vehicle hours of travel (VHT) on a daily basis. The same estimate for the recommended 2035 system is 245,600 vehicle hours. Table 7 shows the VMT per-capita for the existing/committed network and the 2035 analysis year.

The amount of vehicle miles of travel and vehicle hours of travel can directly relate to a community's

Table 6. 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	9,583,033	2,491,588,580	263,400	68,484,000
Recommended 2035	9,333,134	2,426,614,840	245,600	63,856,000

Table 7. VMT Per-Capita

Transportation System	Existing /Committed	2035
VMT	9,583,033	9,333,134
Population	394,629	394,629
VMT/Capita	24.28	23.65

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.

Carbon monoxide, hydrocarbons (which convert to ozone), and nitrous oxides are pollutants emitted from automobiles. As the amount of vehicle miles of travel and vehicle hours of travel increase, pollution becomes more severe and air quality deteriorates. It becomes easy to understand the related air quality benefits of the recommended 2035 system through the significant reduction in vehicle hours of travel and slight reduction in vehicle miles of travel. The air quality conformity analysis provided in Appendix B presents the formal air quality analysis and conformity determination.

As the recommended 2035 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 13 shows the remaining deficiencies after the 2035 funded projects are in place, and Figure 14 shows the remaining deficiencies after the 2035 funded and illustrative projects are constructed.

The deficient locations on the recommended 2035 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.

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 Transportation Development Plan Update completed in 2010. The intentions 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 Transit Development Plan Update, the Coordinated Public Transit – Human Services Transportation Plan for Allen County Update was completed in 2012 (Appendix G). The plan 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. On a local level, the plan also requires that Job Access and Reverse Commute (JARC) Related

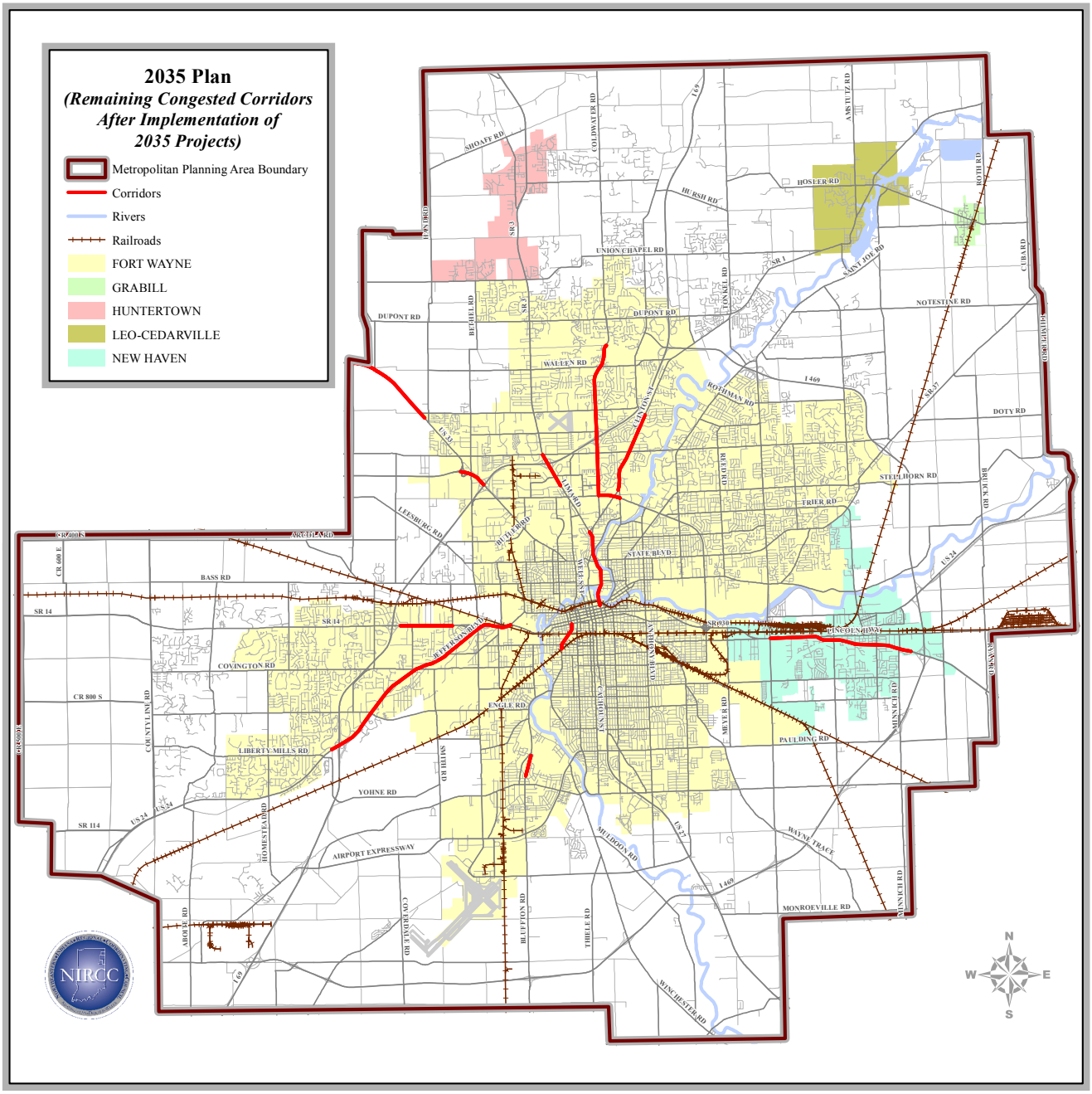

Figure 13

Network Deficiencies after 2035 Funded Projects

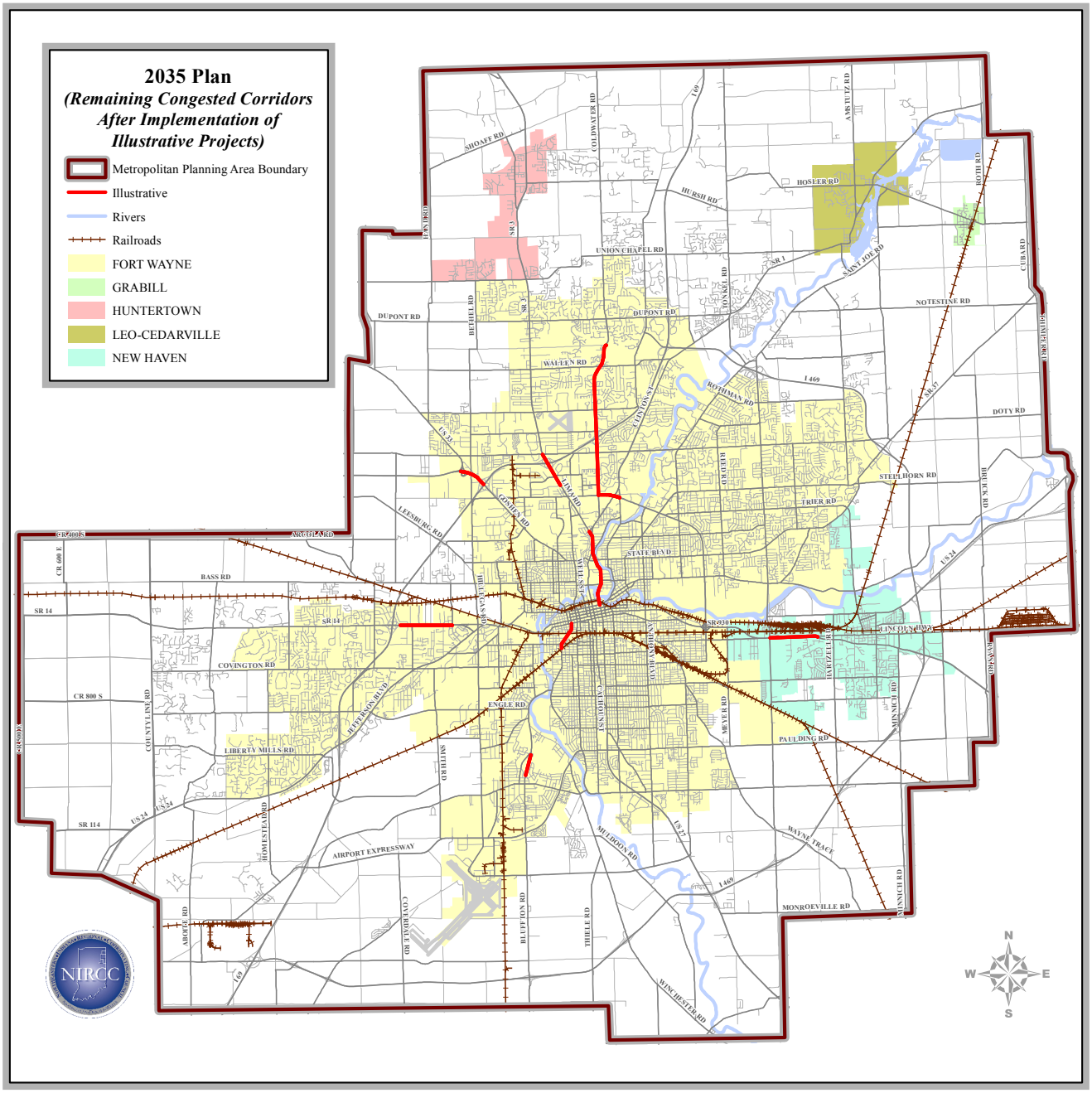

Figure 14

Network Deficiencies after 2035 Funded and Illustrative Projects

Projects 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 (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

Job Access Reverse Commute Related Projects Strategies:

- Provide transportation to destinations outside of the current service area
- Provide transportation within and in particular outside of the current service schedules
- Facilitate multiple destination trips from a single service provider. (ie. daycare/job)
- Inform the public about transportation services available in the community and train them to use the services to get to work, job training, and child care as efficiently as possible

Citilink continues to improve transit service by implementing strategies identified in the Transit Development Plan Update. These improvements include reducing headways from sixty minutes to thirty minutes on selected routes and extending service hours. 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 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.

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 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. The final adoption of the transportation plan is made by the Northeastern Indiana Regional Coordinating Council.

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 2035 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 8. 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 2035 Transportation Plan in mid-2012 in preparation of the 2035 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 2035 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.

Participation meetings were conducted to inform area residents of the planning process and status of the plan development. More important, however, was the opportunity through these meetings for discussing and exchanging ideas concerning the future transportation system. Questions, comments and information were exchanged at these meetings. Valuable information was shared and the quality of the

plan was enhanced through the community involvement. A list of the meetings is provided in Table 9. See Figure 15 for a map of the locations. A number of the citizen meetings were directed to neighborhood representatives throughout the region including low income and minority neighborhoods. The meetings were held at locations convenient to the representatives near their respective neighborhoods. This process is in accordance with the Public Involvement Policy as adopted and revised.

Table 8. Urban Transportation Advisory Board Meetings*

July 10, 2012
September 4, 2012
October 2, 2012
November 13, 2012
January 8, 2013
February 5, 2013
March 12, 2013
April 2, 2013
May 7, 2012
June 4, 2013

*These meetings were all open to the public

Table 9. Citizen Participation Meetings

Date	Location
April 2, 2012^	Citizen Square Building
April 11, 2012	Calvary Third Presbyterian Church
May 10, 2012	Good Shepherd United Methodist Church
May 16, 2012	Fort Wayne Sports Club
October 18, 2012	Northridge Baptist Church
March 18, 2013	Citizen Square Building
April 25, 2013	INDOT Ft Wayne District Office
May 22, 2013	Citizen Square Building

^Televised

In addition, numerous other efforts were made to inform and involve the public in developing the 2035 plan update. Citizens are encouraged to 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

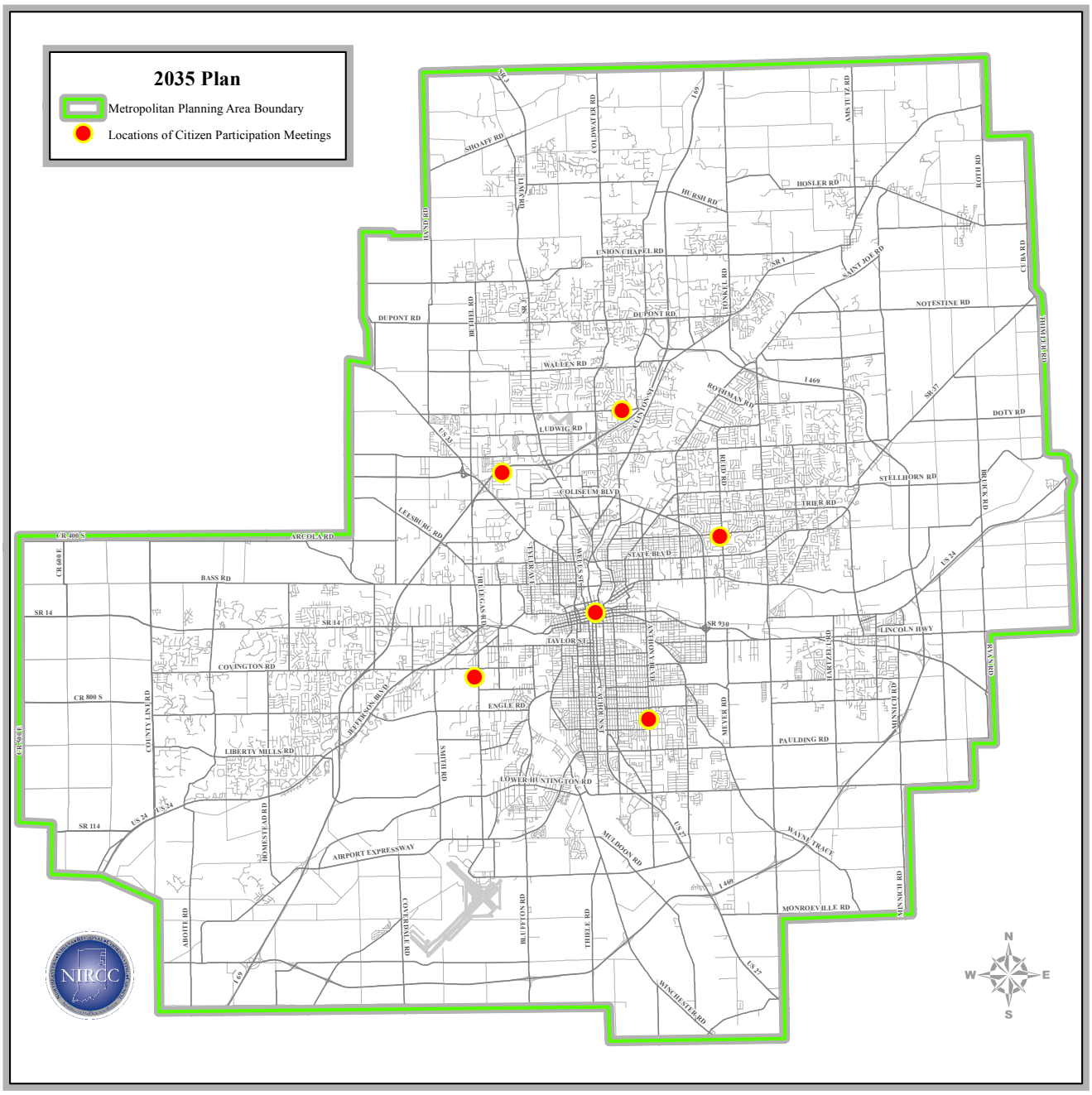

Figure 15

Location of Citizen Participation Meetimgs

received coverage by local news media including 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 2035 Transportation Plan along with the responses are provided in Appendix H.

Environmental Justice

The concept of environmental justice refers to the goal of identifying and avoiding disproportionate adverse impacts on minority and low-income individuals and communities. 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.

Defining and Identifying Minority and Low-Income Populations

In order to identify the location of low-income and minority populations, a demographic profile of the Metropolitan Planning Area was developed based upon 2010 Census information. Three separate profiles were developed that identify minority, Hispanic, and low-income populations by census tract. Separate maps have been prepared for each profile.

The minority population is obtained by combining the Census categories of Black, American Indiana, Asian, Hawaiian, other, and two or more races. The Hispanic population is obtained directly from a Census category identifying Hispanic population. The information was determined by Census Tract. Identifying these two environmental justice populations was fairly straightforward.

Identifying the low-income population group is a little more difficult and subjective based on various acceptable methods. Information was obtained from 2010 Census data and is based upon household income. Several methods for identifying low-income populations using household income data were evaluated. One method used 2010 Census poverty income criteria for various household sizes, which is very similar to the U.S. Department of Health and Human Services 2000 poverty guidelines. This provided data on the number of persons considered low-income by Census poverty definitions. A second similar approach identified households, rather than population, that met the Census poverty guidelines. A third and simpler approach established a threshold for household income based household size. (see Table 10). Any household under the listed annual income level was identified as low-income. The three

Table 10: Poverty Thresholds by Family Size

Family Size	Threshold
One Person	$11,722
Two People	$14,960
Three People	$18,287
Four People	$23,497
Five People	$27,815
Six People	$31,485
Seven People	$35,811
Eight People	$39,872
Nine people or more	$47,536

*Source US Census

methods of identifying low-income populations yielded similar demographic profiles. The third approach was utilized for its simplicity and reasonable results.

The process used to identify concentrations of environmental justice populations was based upon establishing threshold levels for minority, low-income, and Hispanic populations. The thresholds are based on the Metropolitan Planning Area regional average established through 2010 Census data. The regional averages for the environmental justice populations are 20.22 percent for minority populations, 6.40 percent for Hispanic populations, and 12.11 percent for low-income populations. A map was developed for each population group identifying census tracts where data indicates the population characteristic exceeds the threshold level. Figures 16, 17, and 18 display this information. Figure 19 combines the minority population, Hispanic population, and low-income population census tracts that exceed the respective threshold levels. As a performance measure we looked at the transit system coverage area. Staff determined that approximately 81% percentage of poverty level households, population, and employment fell within a 1/2mile of a transit route. See Figure 20.

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.

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.

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 populations have been identified. Figure 21 displays the location of neighborhood associations. In addition,

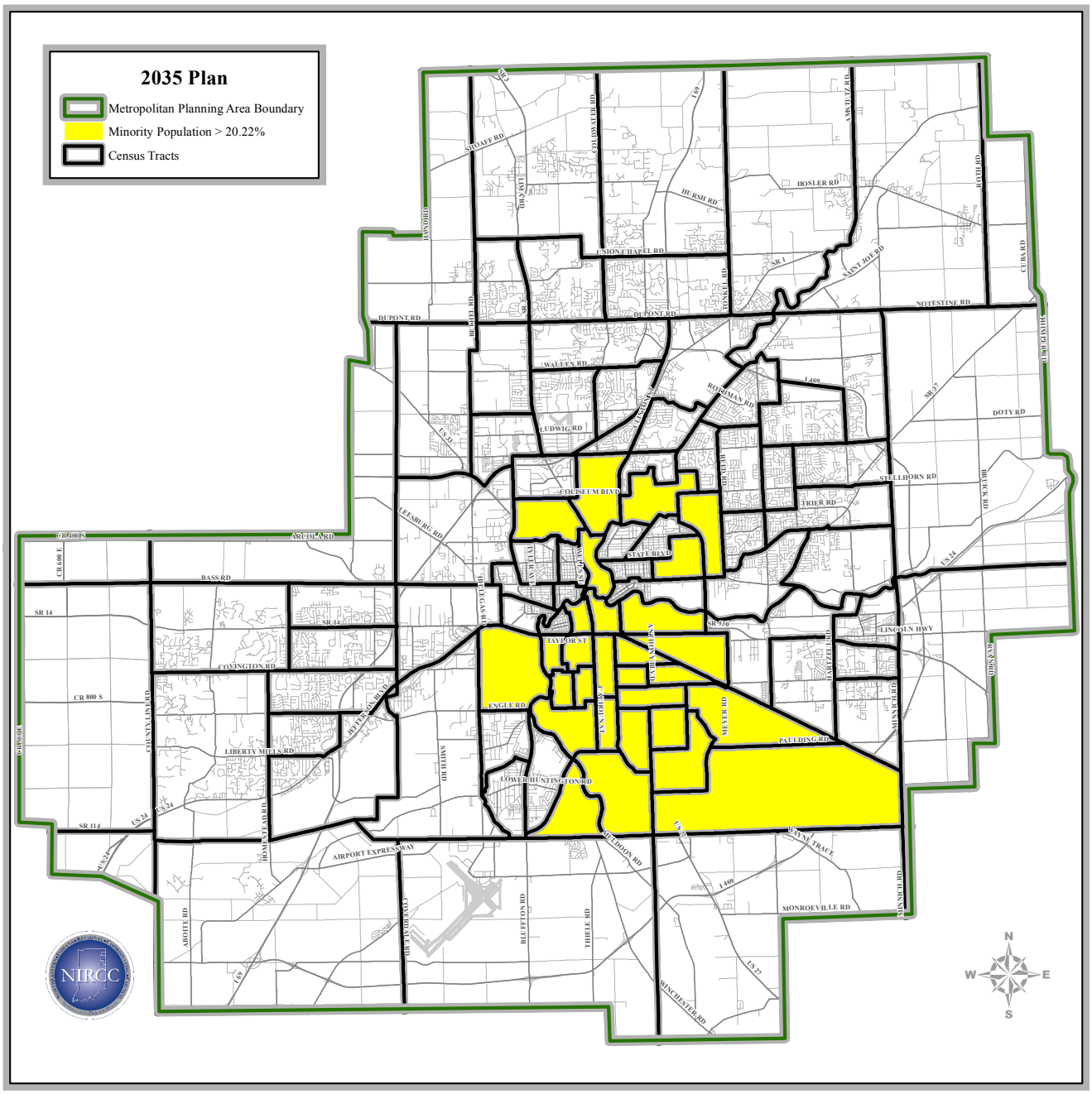

Figure 16

Minority Population Profile

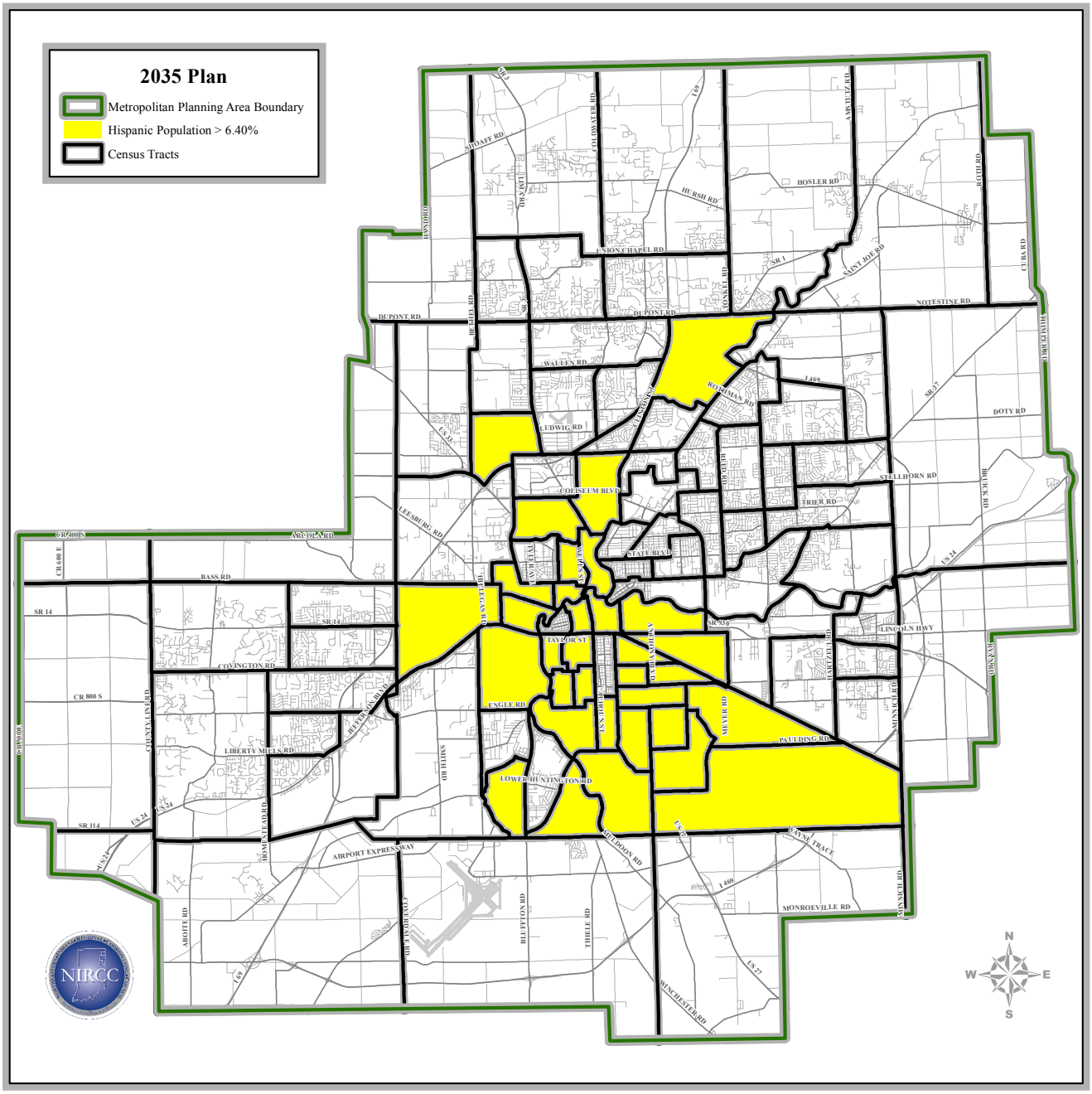

Figure 17

Hispanic Population Profile

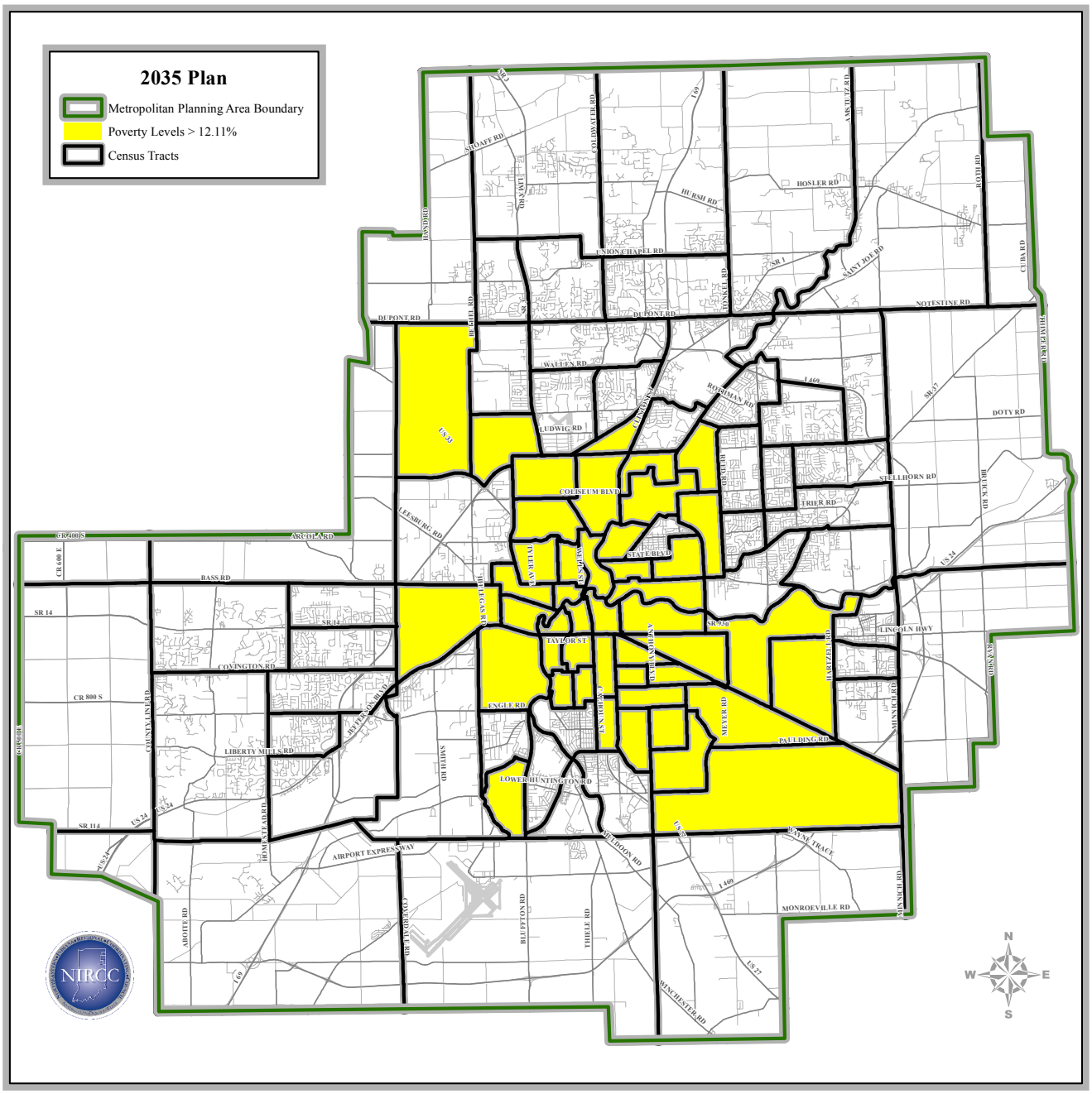

Figure 18

Low-Income Population Profile

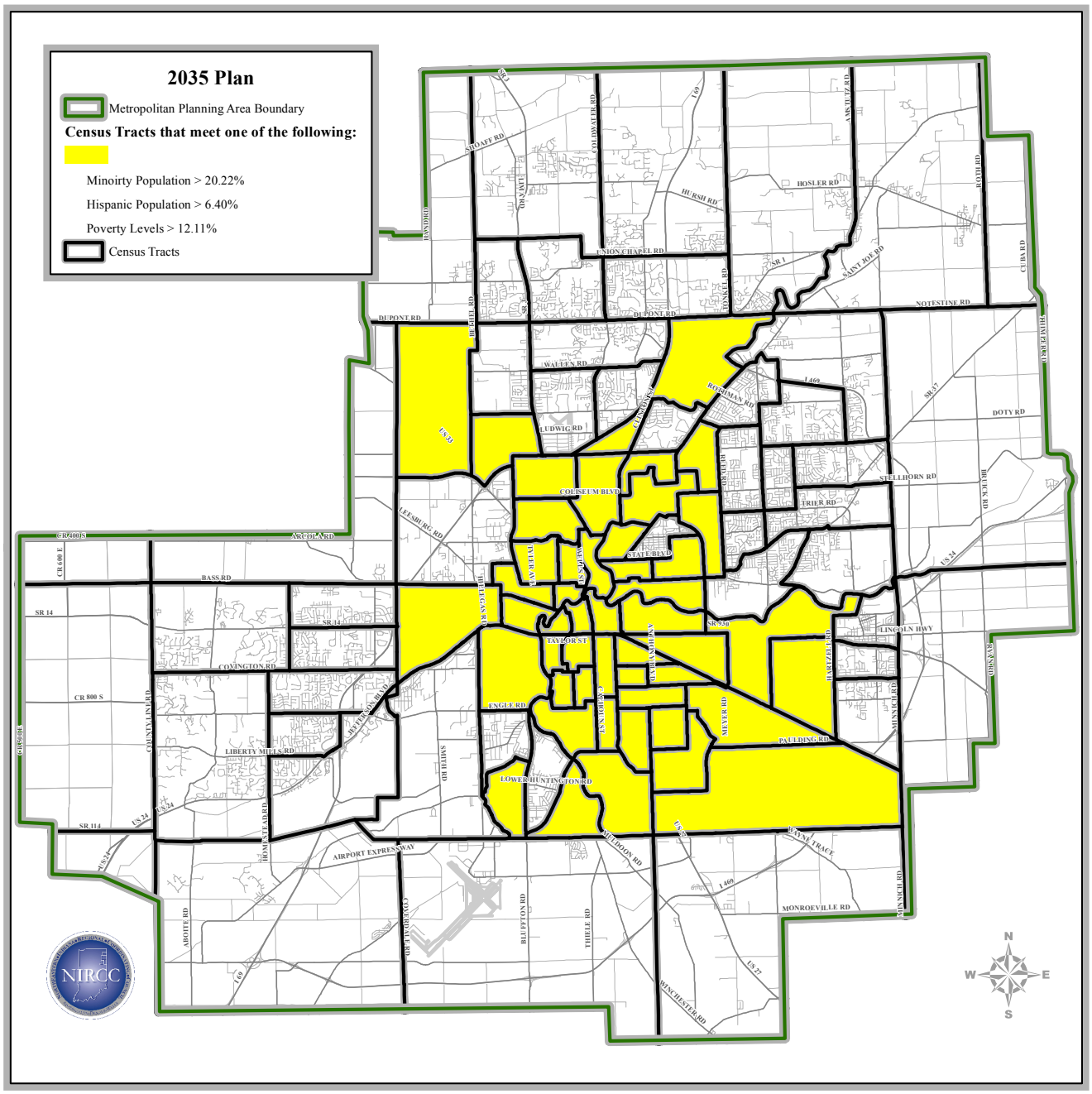

Figure 19

Combined Enviromental Justice Population Profile

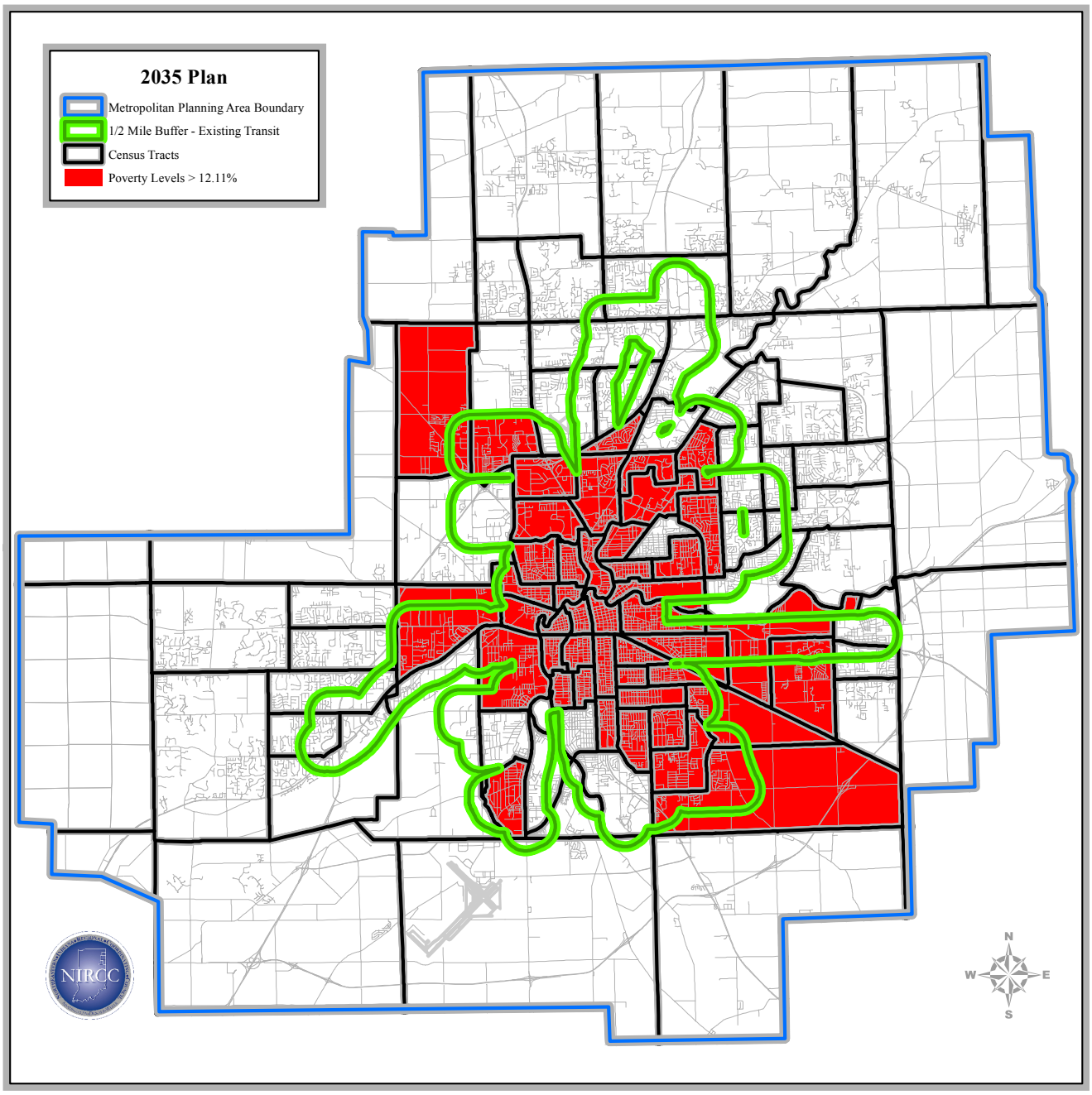

Figure 20

Transit Routes 1/2 mile buffer

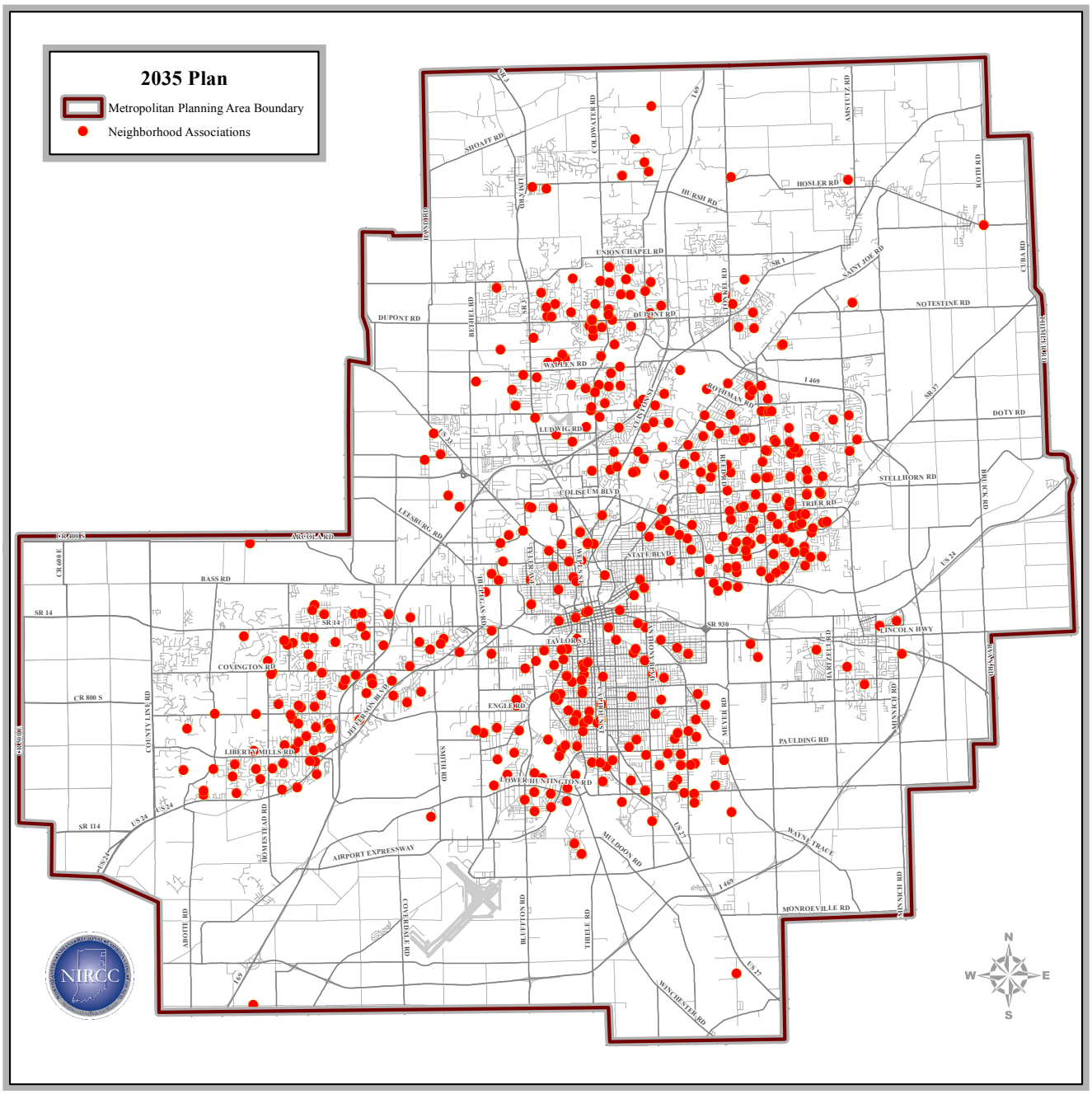

Figure 21

Neighborhood Associations

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.

The Transportation Plan and planning process were presented to the public at meetings held throughout the metropolitan area. These meetings are sponsored by the local governments to address issues related to the delivery of government services. These forums provided the opportunity for NIRCC staff to present the transportation plan and discuss the highway, transit and bicycle/pedestrian components. The meetings are well attended by neighborhood groups representing all areas in the Metropolitan Planning Area. Various solutions and strategies were discussed to reduce congestion and improve mobility. A public meeting was also held during the Public Review and Comment Period to discuss the Transportation Plan and corresponding Air Quality Conformity Analysis.

A series of five meetings with the neighborhood representatives and two Open House style meetings occurred during the development of the Transportation Plan. These meetings were held at five different locations throughout the Metropolitan Planning Area. Locations are selected to geographically cover the entire MPA. Comments from all citizen involvement meetings 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 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 22. The transit system is extremely sensitive to the needs of low-income and minority groups. The transit system has concentrated a number of routes in low-income neighborhoods based upon identified transit needs and transit propensity. Recent transit modifications by Citilink concentrated on improvements in the south central section of Fort Wayne. Service was improved and headways were reduced to thirty minutes on several of heaviest traveled routes through this area. 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 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 and the 2035 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

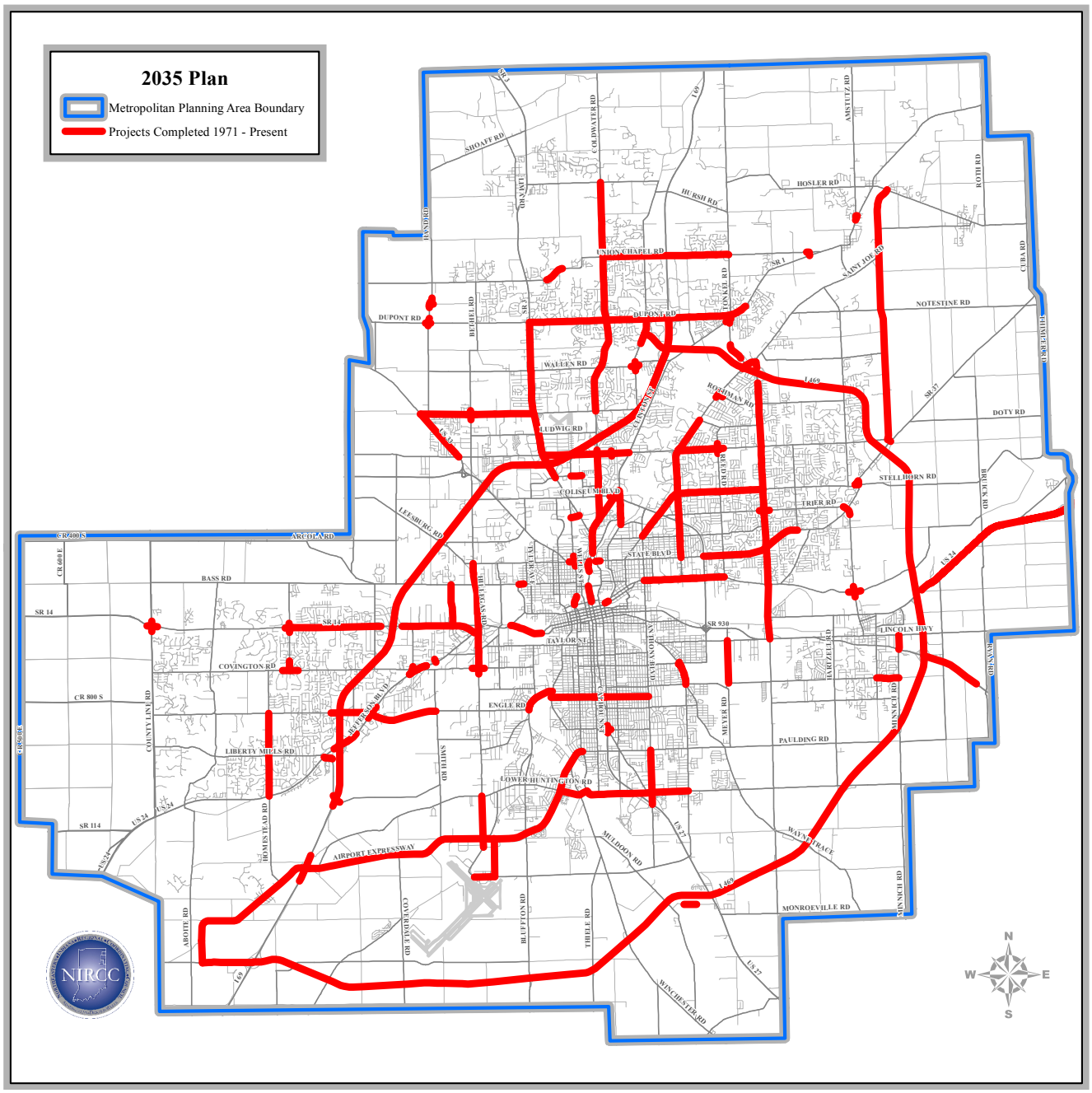

Figure 22

Implementation of Transportation Plans (1971-present)

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 2035 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 2035 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.

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Chapter 6
THE SELECTED PLAN

The culmination of the long range planning process is the selected transportation plan titled "2035 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 23. A complete highway improvement project listing is provided as a part of this chapter. The transit system, including potential areas for future transit service, is displayed in Figure 24. The Pedestrian and Bicycle Plans are displayed in Figures 25 and 26. 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.

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.

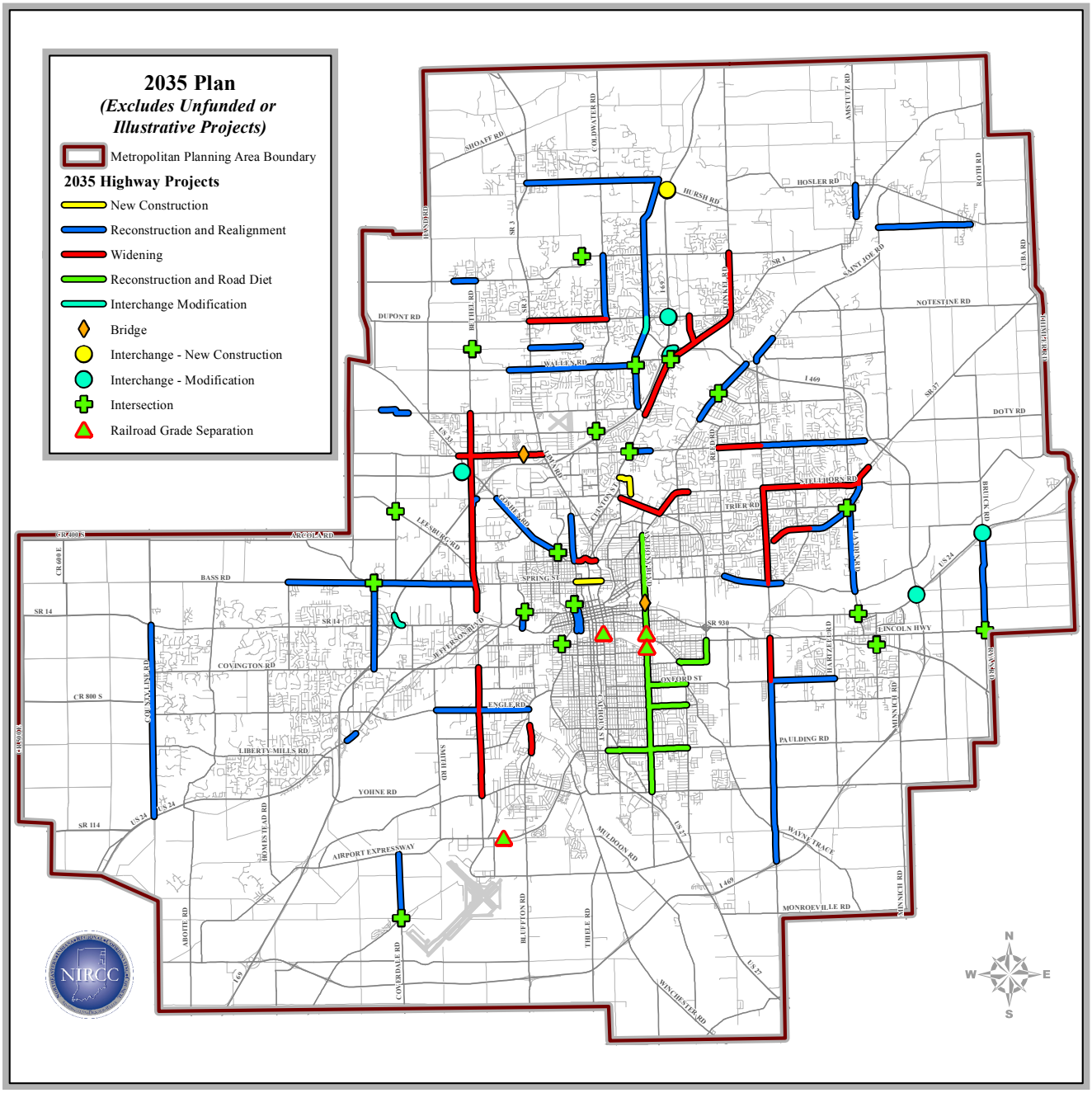


Figure 23

Recommended 2035 Transportation Plan

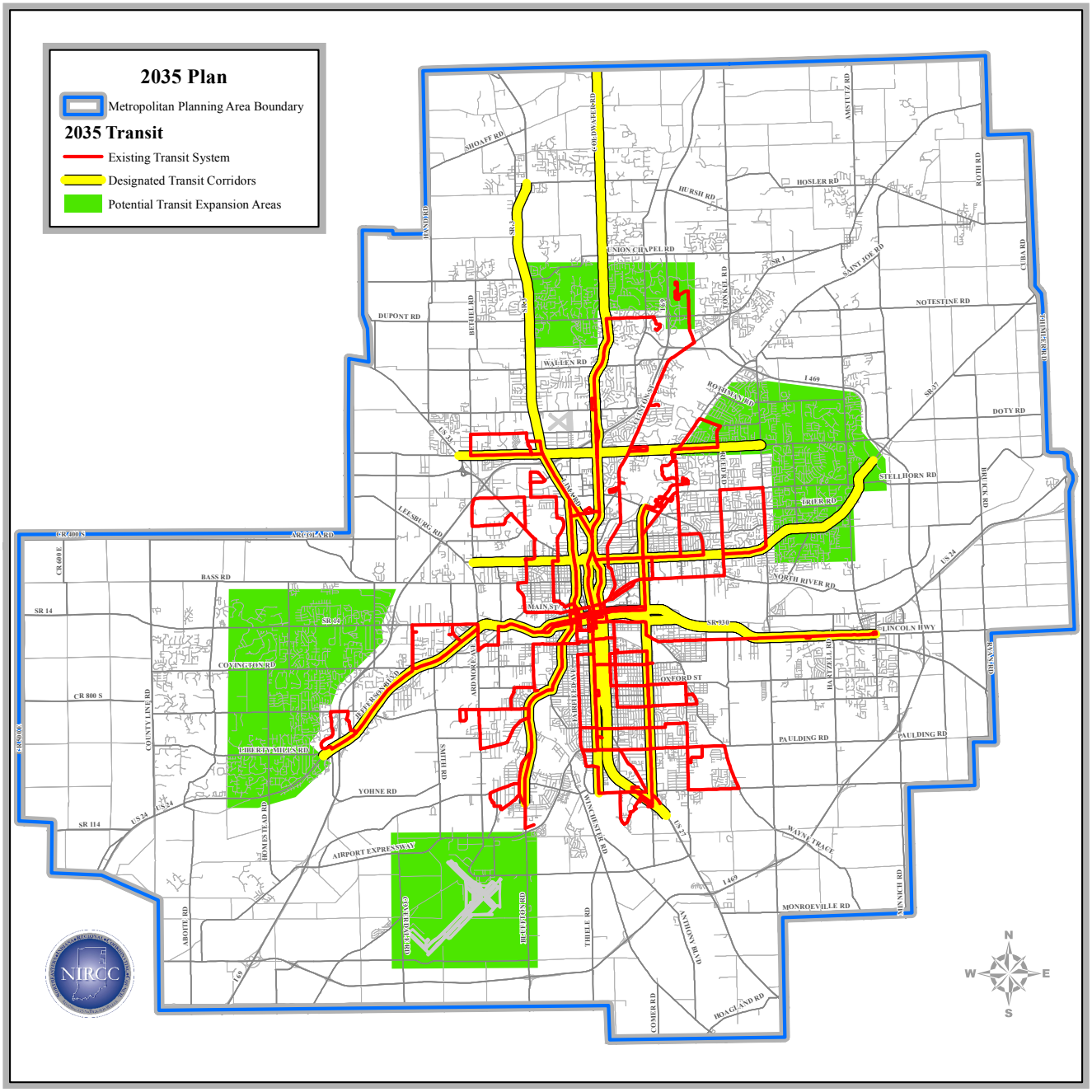


Figure 24

Recommended 2035 Transit Syatem

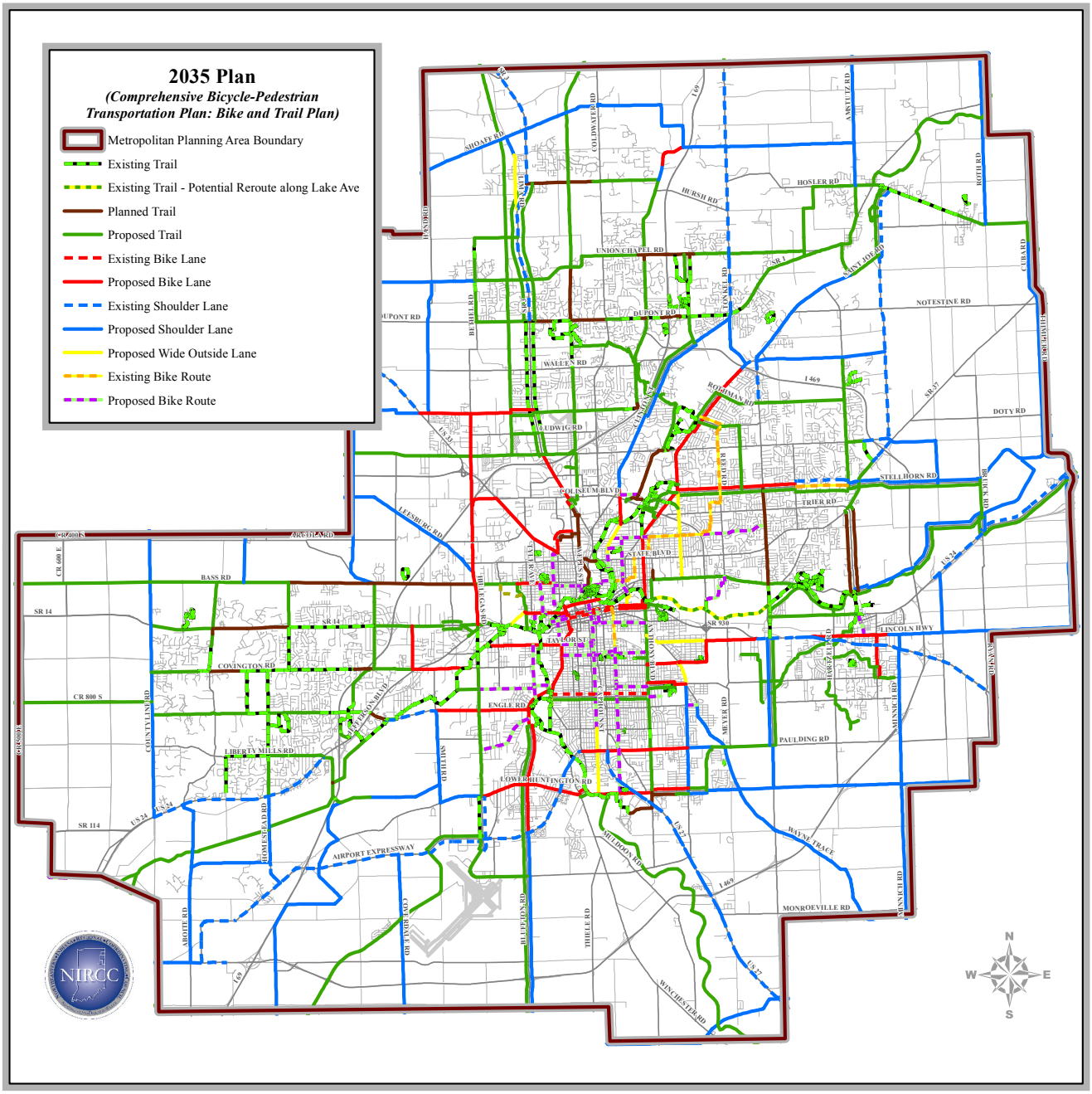


Figure 25

Recommended 2035 Bicycle and Trail Plan

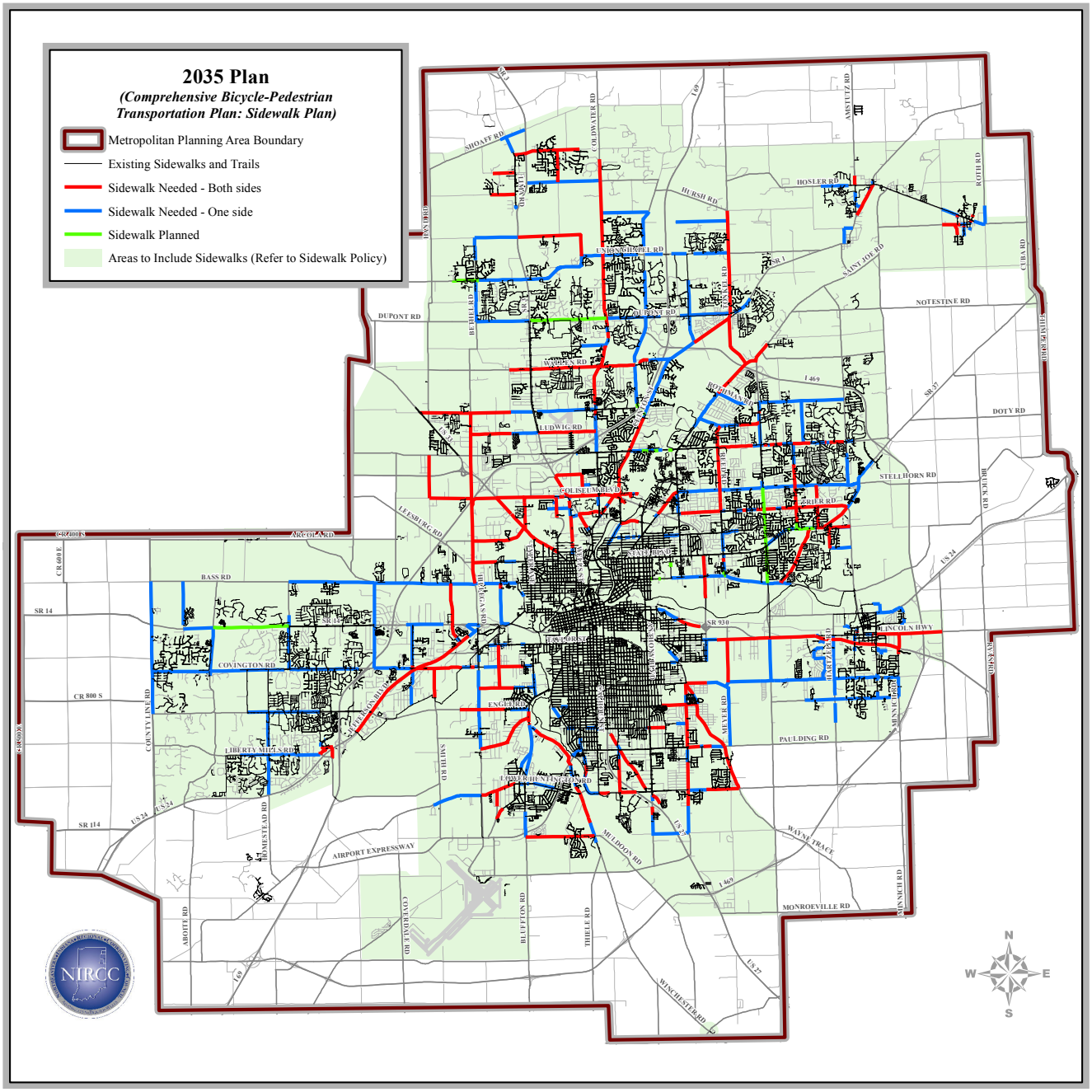


Figure 26

Recommended 2035 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 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.

New two-lane construction

Paul Shaffer Drive - California Road to Clinton Street
Connector Street - Wells Street to Spy Run Avenue

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.

Widen to six lanes

Crescent Avenue - Sirlin Drive to Coliseum Boulevard
State Road 930/Coliseum Boulevard - Parnell Avenue to Crescent Avenue

Widen to four lanes

Adams Center Road - State Road 930 to Moeller Road
Ardmore Avenue - Covington Road to Engle Road
Ardmore Avenue - Engle Road to Lower Huntington Road
Bluffton Road - Winchester Road to Old Trail Road
Clinton Street - Auburn Road to Wallen Road
Clinton Street - Wallen Road to Dupont Road/State Road 1
Diebold Road - Clinton Street to Dupont Road/State Road 1
Dupont Road - Coldwater Road to Lima Road/State Road 3
Hillegas Road - s/o Bass Road to Washington Center Road
Huguenard Road - Washington Center Road to Cook Road
Maplecrest Road - Lake Avenue to State Boulevard
Maplecrest Road - State Boulevard to Stellhorn Road
Maysville Road - Stellhorn Road to Koester Ditch

Saint Joe Center Road - Reed Road to Maplecrest Road
State Boulevard - Maysville Road to Georgetown North Boulevard
State Boulevard - Spy Run Avenue to Clinton Street
State Boulevard - Clinton Street to Cass Street
Stellhorn Road - Maplecrest Road to Maysville Road
Tonkel Road - Dupont Road/State Road 1 to Union Chapel Road
Washington Center Road - Lima Road/State Road 3 to US 33

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.

Center Turn Lane Improvement
Auburn Road - Cook Road to Interstate 469 Exit Ramp (3-lane)
Auburn Road - Dupont Road to Gump Road (3-lane)
Coldwater Road - Dupont Road to Union Chapel Road (3-lane)
Engle Road - Bluffton Road to Smith Road (3-lane)
Gump Road - State Road 3 to Coldwater Road (3-lane)
Gump Road - Coldwater Road to Auburn Road (3-lane)
Hadley Road - Illinois Road/State Road 14 to Covington Road (3-lane)
Hadley Road - Illinois Road/State Road 14 to Bass Road (3-lane)
Maysville Road - State Boulevard to Stellhorn Road (3-lane)
Saint Joe Center Road - Clinton Street to River Run Trail (5-lane)
Saint Joe Center Road - Maplecrest Road to Meijer Drive (3-lane)
Saint Joe Road - Evard Road to Mayhew Road (3-lane)
Saint Joe Road - Maplecrest Road to Eby Road (3-lane)

Road Reconstruction-Road Diet
Anthony Boulevard - Tillman Road to Rudisill Boulevard
Anthony Boulevard - Rudisill Boulevard to Pontiac Street
Anthony Boulevard - Pontiac Street to Wayne Trace
Anthony Boulevard - Wayne Trace to Crescent
Coliseum Boulevard/Pontiac Street - New Haven Avenue to Wayne Trace

McKinnie Avenue - Anthony Boulevard to Hessen Cassel Road
Oxford Street - Anthony Boulevard to Hessen Cassel Road
Paulding Road - US 27/Lafayette Street to Anthony Boulevard
Paulding Road - Anthony Boulevard to Hessen Cassel Road

Turn Lane Extension
Jefferson Boulevard - Interstate 69 Ramp to Lutheran Hospital Entrance

Bridge Reconstruction/Modification
Anthony Boulevard Bridge over the Maumee River
Washington Center Road Bridge over Spy Run Creek

Intersection Reconstruction
Auburn Road and Wallen Road, Bridge over Becketts Run
Bass Road, Hadley Road and Yellow River Road
Bethel Road, Huguenard Road and Till Road
Broadway and Taylor Street
Broadway/Landin Road and Rose Avenue
Clinton Street and Wallen Road
Clinton Street and Washington Center/Saint Joe Center Road
Coldwater Road and Ludwig Road
Corbin Road and Union Chapel Road
Coverdale Road, Winters Road and Indianapolis Road
Ewing Street, Fairfield Avenue, Superior Street and Wells Street
Flaugh Road and Leesburg Road
Goshen Road, Lillian Avenue and Sherman Street
Green Road and State Road 930
Landin Road, Maysville Road and Trier Road
Leesburg Road and Main Street
Rothman Road and Saint Joe Road
Ryan Road and Dawkins Road

Reconstruction and Realignment
Adams Center Road - Moeller Road to Paulding Road
Adams Center Road - Paulding Road to Interstate 469
Allen County/Whitley County Line Road - US 24 to SR 14
Amstutz Road - Hosler Road to State Road 1/Leo Road
Bass Road - Shakespeare Boulevard to Clifty Parkway
Bass Road - Clifty Parkway to Thomas Road
Bass Road - Thomas Road to Hillegas Road
Bass Road - Hadley Road to Scott Road
Carroll Road - Preserve Boulevard to Bethel Road
Coliseum Boulevard - Hillegas Road to 1,500' E/O Hillegas Road
Cook Road - US 33 to O'Day Road
Coverdale Road - Indianapolis Road to Airport Expressway
Ewing Street - Baker Street to Superior Street

Fairfield Avenue - Baker Street to Superior Street
Flutter Road - Schwartz Road to St. Joe Road
Goshen Avenue - Sherman Boulevard to Coliseum Boulevard/State Road 930
Lake Avenue - Reed Road to Maysville Road
Landin Road - North River Road to Maysville Road
Leesburg Road from Main Street to Jefferson Boulevard
Moeller Road - Hartzell Road to Adams Center
Ryan Road - Dawkins Road to US 24
Till Road - Lima Road to Dawson Creek Boulevard
Wallen Road - Hanauer Road to Auburn Road
Wells Street - State Boulevard to Fernhill Avenue
Witmer Road/Second Street - County Shoals Lane to Main Street
Witmer Road - Schwartz Road to County Shoals Lane

Other Highway Improvements

This category of highway improvements includes the construction and reconstruction of railroad grade separations, interchange construction and modifications, and the Congressional high priority corridor improvement for US 24 between Fort Wayne and Toledo (Fort to Port). These improvement projects will increase mobility and accessibility for transit, freight movement, and passenger vehicles.

New Railroad Grade Separation
Anthony Boulevard and Norfolk Southern Railroad
Airport Expressway and Norfolk Southern Railroad

Reconstruct Railroad Grade Separation
Anthony Boulevard and CSX Railroad
US 27/Lafayette Street and Norfolk Southern/CSX Railroads

Interchange-New Construction
Interstate 69 at Hursh Road

Interchange/Ramp-Modification
Interstate 69 and Interstate 469 Interchange (NB to EB Ramp mm 215)
Interstate 69 and State Road 1/Dupont Road Interchange
Interstate 69 and State Road 14/Illinois Road Interchange (WB to NB Ramp)
Interstate 469 and Auburn Road Ramp
Interstate 469 and US 24 Interchange
US 24 and Ryan Road/Bruick Road Interchange
US 30 and US 33 Interchange

Additional Projects for Illustrative Purposes
Widening Projects - six lanes
Clinton Street - Parnell Avenue to Auburn Road
Interstate 69 - Interstate 469 to US 24
Interstate 69 - Dupont Road/State Road 1 to Hursh Road

Interstate 469 - Maplecrest Road to Interstate 69
Jefferson Boulevard - Illinois Road South to Main Street
Jefferson Boulevard - Interstate 69 to Illinois Road South
State Road 3/Lima Road - Dupont Road to Gump Road
State Road 3/Lima Road - Gump Road to Allen County Line
US 24 - Interstate 69 to Homestead Road
US 30 - Interstate 69 to US 33
US 30 - US 33 to Flaugh Road
US 30 - Flaugh Road to O'Day Road

Widening Projects - four lanes
State Road 1/Leo Road - Tonkel Road to Union Chapel Road
State Road 1/Leo Road - Union Chapel Road to Grabill Road
State Road 1/Bluffton Road - Interstate 469 to State Road 116/124
State Road 14/Illinois Road - West Hamilton Road to Allen/Whitley County Line
State Road 37 - Doty Road to Interstate 469
State Road 930 – Brookwood Drive to Minnich Road
US 33 - Cook Road to O'Day Road
US 33 - O'Day Road to State Road 205

Reconstruction and Realignment
Lafayette Center Road/E 900 North Road - Fogwell Parkway Drive to US 24
State Road 37 - Doty Road to Cuba Road

Interchange – Modification
Interstate 69 and Coldwater Road Interchange - Ludwig Road

Bridge Reconstruction/Modification
Bass Road over Interstate 69
Hillegas Road over Interstate 69
US 27/Spy Run Avenue Bridge over St. Mary's River w/Pedestrian Treatment

Highway Policies

Interchange Review

As areas adjacent to interchanges on Interstates 69 and 469 develop, access at these locations must be carefully planned in order 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

In order to insure 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

The transit improvements have been derived from the public transit policies that guide future transit growth, methods of service delivery, and transit efficiency. The public transit improvements are listed in one category titled "Public Transit Projects." This category of transit improvements includes route modifications, capital projects, and service modifications designed to increase transit efficiency and improve transit service. Reducing headways, providing Sunday service and potential transit expansion areas are examples of these projects. Specific improvements from the Citilink Transit Development Plan 2010 Update and the identified strategies from the Coordinated Public Transit – Human Services Transportation Plan for Allen County 2013 have also been included.

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. In the rural portion of the Metropolitan Planning Area where demand response transit service is the most efficient means of providing public transit, Countilink (5311 Rural Transit Provider) will be the service of choice. Where fixed route and demand response transit service cannot meet established performance standards, other types of transit service will be investigated. Opportunities for service coordination and connectivity should be explored by Citilink and Countilink.

Policy 2 As the urbanized area grows; transit service should be expanded to meet the transit demands of the community. Decrease headways where demands warrant.

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. The land use planning approval process should include pedestrian and public transportation issues and recommendations from appropriate providers and committees.

Policy 5 Citilink will have a role in urban core redevelopment. Specific projects such the recently completed Citilink Central Station and the Hanna/Creighton community center can compliment and encourage redevelopment activities.

Policy 6 Citilink should continue to implement appropriate nontraditional transit services and evaluate vehicle type, design, and propulsion when purchasing new capital equipment. This may include the investigation and promotion of additional transportation services such as telecommuting, ridesharing, and van pools. Citilink and other providers should also be encouraged to continue adding vehicles to their fleets that utilize hybrid-propulsion and bio-diesel fuel technology, as well as other propulsion technologies as they become available.

Policy 7 Citilink, Community Transportation Network, Countilink, 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 Transportation policies should continue to be developed with opportunities for involvement by taxi and other private sector providers.

Policy 10 Transportation services should be coordinated with all providers (public and private) to maximize efficiency and utilize all available resources

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

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.
*Policies 2, 7, 8, 9, 10, & 11

Project 2 Replacement of transit coaches and service vehicles as necessary to maintain a dependable transit fleet.
*Policies 1 & 6

Project 3 Install and upgrade bus shelters, benches, and other customer amenities. Placement of shelters (Bus Huts) should be consistent with Citilink service, accessible, and have sidewalk connectivity.
*Policies 1 & 5

Project 4 Reduce headways on selected routes where current and potential ridership levels warrant.
*Policies 2 & 3

Project 5 Expand service hours into the evening and provide Sunday service through fixed route and other types of transit services.
*Policies 2 & 3

Project 6 Provide customer access to automatic vehicle locator (AVL) information for the transit system through Internet connections.
*Policy 3

Project 7 Design and construct a satellite transfer center to serve the northern portion of the service area.
*Policy 2

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).
*Policies 1, 4, & 5

Project 9 High Priority Corridors: Designate corridors to include amenities that allow busses and para-transit vehicles to safely pull off the corridor to load and unload as well as provide safe pedestrian facilities. These corridors should 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.
*Policy 3

Project 10 Review and update the Transit Development Plan on a four-year cycle.

- Establishing Evaluation Markers
- Establishing Performance Measures
- Providing continuous monitoring and evaluation

*Policies 1, 2, 3, 4, 5, & 6

Specific Improvements from the Transit Development Plan

- Increased service frequency – routes 1, 2 and 3
- Extend evening/nighttime service hours
- Provide limited service on Sundays
- Update Transit Development Plan

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 / fleets
2. Maintain and increase coordination / efficiency between all transportation providers
3. Expand existing service / 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

Job Access Reverse Commute Related Projects Strategies:

1. Provide transportation to destinations outside of the current service area
2. Provide transportation within and in particular outside of the current service schedules
3. Facilitate multiple destination trips from a single service provider. (ie. daycare/job)
4. Inform the public about transportation services available in the community and train them to use the services to get to work, job training, and child care as efficiently as possible

Bicycle, Pedestrian and Enhancement Improvements

Current Proposed Enhancement Projects

Aboite New Trails-Allen County-Fort Wayne

- Trail along Covington Road from W. Hamilton Road to w/o I-69.

Greenway Consortium-Fort Wayne

- Johnny Appleseed Park to Shoaff Park Trail.
- Pufferbelly Trail from Lawton Park to Franke Park and Fernhill Avenue.
- Six Mile Creek Trail from Southtown Center to Lemar Drive (entire trail will continue to Moser Park in New Haven).

Northwest Allen Trails-Fort Wayne

- NY Central Railroad Corridor

Indiana University Purdue University Fort Wayne

- Bridge over Coliseum Blvd (SR 930).

Financial Plan

The financial plan demonstrates the ability of local and state governments to maintain the existing transportation system and implement improvements to meet future travel demands. This financial component of the transportation plan compares the estimated revenue from existing and proposed funding sources, which are reasonably expected to be available for transportation expenditures, to the estimated costs of constructing, maintaining, and operating the total transportation system. The financial plan covers the twenty-two year period of the transportation plan. The most important aspect of implementing the 2035 Transportation Plan is securing the necessary funding for project completion. The plan was developed to be fiscally reasonable based on the projected amount of available local and federal funding for the next 22 years. The plan's implementation depends on both the Indiana Department of Transportation and the funding resources of the local jurisdictions in the Metropolitan Planning Area.

Highway

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 was to prepare an estimate of the amount of funds available for the next 22 years. This was done for Allen County and the cities of Fort Wayne and New Haven. These three units of government are the primary jurisdictions responsible for the local highway system. The estimate was based on each jurisdiction's historical funding practices for operations, maintenance and construction activities. Concurrent with the financial resources forecast, all of the projects in the plan were identified and the type of improvement necessary was determined. These include all 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 their Long-Range Transportation Planning initiatives. 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 list.

The highway system under INDOT's jurisdiction is an integral part of the transportation system in the Metropolitan Planning Area. In order 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 of 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 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 2013 through 2020, 2021 through 2030, and 2031 through 2035. Project cost estimates for the years 2013 through 2017 are based on current costs as developed for the Transportation Improvement Program (TIP) utilizing a 2% annual inflation rate to the year of expenditure. Projects cost estimates for the years 2018 through 2035, were adjusted based upon an average annual growth rate of 2.8 percent for each band. The rate is based on a historical trend for construction cost developed by the American Road and Transportation Builders Association, a leading source of transportation construction market research.

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. The construction expenditures fund local construction and reconstruction projects, and provide local matching funds for federal-aid projects. The remaining funds are for operation, administration, and maintenance costs.

An estimate of federal funds available to the Urbanized Area for the 23 year plan was developed. The forecast of available federal funds was based on historical federal funding revenues to the Urban Area. Currently, the Urban Area receives approximately 9.9 million dollars annually in federal funds to support highway construction projects. Federal funds allocated to the Urban Area have increased at an annual rate of 7.2% over the past thirty-three years when the annual allocation was approximately one million dollars. The fiscal analysis assumes the federal funds allocated to the Urban Area will increase throughout the duration of the Transportation Plan. The difficulty lies in predicting the rate in which such funds will increase. Based on the current uncertainty of the Federal Highway Trust Fund, and the understanding

that it will take time to implement strategies necessary to replenish and expand the fund, the forecast of federal revenues were held constant for the years 2013 through 2017. Based on historical growth and cautious optimism a conservative annual growth rate of 3% was applied to forecast federal revenues for years 2018 through 2035. Based on these revenue forecasting assumptions and currently available federal funds, the total federal resources total approximately 302.9 million dollars over the life of the Plan.

Local governments including Allen County, City of Fort Wayne, and City of New Haven collectively have annual revenues of 33.7 million dollars dedicated to transportation operations, maintenance, and construction. In addition, Economic Development Income Taxes generate millions of dollars each year of which a portion is typically dedicated to highway construction projects. The amount of these funds spent on transportation projects varies from year to year, but on average, local governments currently spend at least 11 million dollars a year on construction and reconstruction projects. Adjusted for inflation and conservative growth, local funds available for project implementation total approximately 326.1 million dollars over the twenty-two year period of the Transportation Plan.

The estimated combined federal and local dollars available for supporting the local projects in the plan is approximately 630 million dollars. A listing of the estimated costs for local projects included in the Selected Transportation plan, including costs for design, right-of-way and construction, is provided in Appendix F. The Design phase includes preliminary engineering, environmental and permitting activities. The Right-of-Way phase includes right-of-way engineering, appraisal and acquisition activities. The Construction phase is the final stage that includes building the roadway improvement or other system modification. The projects are banded by time period based on their implementation schedule. Time Period 1 represents the years of 2013 through 2020; Time Period 2 from 2021through2030; and Time Period 3 from 2031 through 2035. The combined costs for each phase are adjusted for inflation based on an average annual inflation rate of 2.8 percent. The cost for Design in Time Period 1 were not adjusted as these are the initial costs involved with a project development and cost estimates already account for short term inflation.

Summary of Financial Plan for Local Highway Projects

The total of local highway project costs, adjusted for the year of expenditure, is 603.8 million dollars. Table 11 displays the total estimated project costs and the anticipated revenue available for each time period. The combined total for the duration of the Transportation Plan is also provided. The figures in this Table demonstrates that the local highway projects included in the 2035 Transportation Plan can be funded through the combination of federal and local funds. The highway component of the 2035 Transportation Plan is financially feasible.

Table 11: Project Cost Estimates and Available Revenue Summary

Time Period	Project Costs	Available Revenue
2013-2020	$190,029,000	$190,000,000
2021-2030	$251,152,000	$270,000,000
2031-2035	$162,627,000	$170,000,000
Total	$603,808,000	$630,000,000

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 Federal operating assistance. The apportionment of Federal capital assistance funds has fluctuated from a high of 3.6 million dollars in 2013, to a low of 642,613 dollars in 1995. 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 3.6 million in Federal funds for capital equipment and capitalization activities. This represents an increase of 4.6% each year.

It is anticipated that Citilink will continue to receive Federal Capital assistance and the amount will increase slightly each year by approximately 5 percent. Over the duration of the planning period of the Transportation Plan, Citilink will have approximately 138 million dollars in federal assistance for capital projects. Assuming the 80:20 percent ratio of federal to local funds remains, 34.5 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 172.5 million dollars.

State Funding

The State of Indiana Public Mass Transportation Funds (PMTF) can be used for capital or operating assistance. The source of these funds is a fixed percentage of the Indiana State sales tax. The current fixed percentage is approximately 0.64 percent. These funds are allocated based on a performance-based formula with an emphasis on system efficiency.

Citilink has historically used state funding for operating purposes. The allocation of State funds has increased over time from 1.25 million dollars in 1995 to 1.9 million dollars in 2013. This represents an annual increase of 2.35% per year. State funding is expected to remain relatively stable over the next few years and then begin to increase as the economy recovers. During the planning period of the plan, the state funds will provide approximately 57 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 8.1 million dollars in 2013. 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 234 million dollars over the planning period of the plan. These funds will be used primarily for operating funds.

A local cumulative capital fund deriving revenue from a dedicated portion of the local property tax is utilized for matching federal capital assistance. This fund currently provides 400,000 dollars annually. This local capital fund should provide an estimated 9.2 million dollars over the next twenty years.

Transit Operating Costs

The detailed transit financial information is provided in Tables 12 through 16. 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. Information is provided in this section on the estimated costs of providing additional transit 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.

Table 12 displays the general 2013 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 2013 is approximately 11.5 million dollars. Table 13 contains the estimated 2013 revenues for capital expenditures. Citilink anticipates that operating revenues will increase at an average of two percent per year and capital revenues will increase at an

average rate of five percent per year. The cost of operations and capital projects are estimated to increase at the same respective rates.

Table 12 Citilink Operating Revenue-2013

Revenue Item	2013 Revenue
Fare Revenue	$1,340,173
Other Revenue	$97,847
Local Property Taxes	$5,491,961
State Assistance-PMTF	$1,900,000
Federal Assistance	$2,498,826
Total	$11,328,807

Table 13 Citilink Annual Capital Revenue Estimates

Federal Revenue	Local Revenue	Total Revenue
$3,100,000	$400,000	$3,500,000

The Citilink operating cost estimates and anticipated operating revenues are provided on Table 14. 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 2013 through 2035. Table 15 contains a summary of the operating costs and revenues by three time periods utilized for highway projects costs. Table 15 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 is displayed in Table 16 for each time period. As previously mentioned, capital costs and capital revenues are expected to increase by approximately five percent per year. 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.

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 14 Citilink Annual Operating Costs and Revenue Forecasts

Year	Operating Costs	Operating Revenue
2013	$11,328,807	$11,328,807
2014	$11,532,872	$11,532,872
2015	$11,823,560	$11,823,560
2016	$12,185,715	$12,185,715
2017	$12,569,938	$12,569,938
2018	$12,947,036	$12,947,036
2019	$13,335,447	$13,335,447
2020	$13,735,510	$13,735,510
2021	$14,147,575	$14,147,575
2022	$14,572,003	$14,572,003
2023	$15,009,163	$15,009,163
2024	$15,459,438	$15,459,438
2025	$15,923,221	$15,923,221
2026	$16,400,918	$16,400,918
2027	$16,892,945	$16,892,945
2028	$17,339,733	$17,339,733
2029	$17,921,725	$17,921,725
2030	$18,459,377	$18,459,377
2031	$19,013,159	$19,013,159
2032	$19,583,553	$19,583,553
2033	$20,171,060	$20,171,060
2034	$20,776,192	$20,776,192
2035	$21,399,478	$21,399,478

Table 15 Citilink Operating Revenue and Expenditure Estimates

Time Period	Operating Costs	Operating Revenue	Surplus
2013-2020	$99,458,885	$99,458,885	$0
2021-2030	$162,186,100	$162,186,100	$0
2031-2035	$100,943,445	$100,943,445	$0

Table 16 Citilink Capital Revenue and Expenditure Estimates

Time Period	Capital Costs	Available Revenue	Surplus
2013-2020	$14,734,250	$32,197,030	$17,462,780
2021-2030	$45,198,490	61,944,250	$16,745,760
2031-2035	$33,050,225	$44,326,970	$11,276,745

Cost for Additional Transit Service

Project 1 – Provide 30 minute service on Transit Routes 1, 2 and 3

The reduced headway on Routes 1, 2 and 3 would be implemented only on weekday service and would not apply to Saturday service. The service would require the purchase and maintenance of six additional busses with a replacement schedule of 12 years. The additional service may require over-time labor cost, however these costs were not included in the following estimate. The operation cost associated with providing 30 minute service is approximately $571,500 per year, based on 2013 dollars. Providing 30 minute service on all three routes would cost an additional $1,714,500 each year. The initial investment for six additional transit buses is approximately $3,600,000.

Project 2 – Extend service 3 additional hours until midnight on weekdays

The extension of service hours until midnight will require 3 additional hours of operating costs for each route. The provision of extended hours will also require the Citlink Access service to be available. The service would only apply to weekdays and all routes would run on 60 minute headways during the extended service hours. The operation cost associated with providing the extended service hours is approximately $1,200,000 per year, based on 2013 dollars.

Project 3-Demand Response Sunday Service

The introduction of Demand Response Sunday Service from 7:00am until 4:00pm is new service and would utilize four Citilink Access type vehicles. The service would not include any fixed routes, only demand response. The provision of this type of service would cost approximately $156,000 per year, based on 2013 dollars.

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 2035 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 state wide trail plan in northeast Indiana. The Upstate Indiana Trail from Oabache 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, public and private groups were advocating for many other trail opportunities throughout the region. 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 27). 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.

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, Fort Wayne, New Haven, Leo-Cedarville, and Woodburn) and selected routes identified by the original Northeastern Indiana Regional Bicycle and Pedestrian Forum. During the most recent (FY 13) update to the Comprehensive Bicycle-Pedestrian Transportation Plan however, NIRCC utilized the City of Fort Wayne's "Bike Fort Wayne Plan", "Walk Fort Wayne Plan", and information gathered through the production of the soon-to-be complete "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.

To create a more usable and detailed plan the latest update to 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 plan (figure 28) which includes trails and on-street bike infrastructure, a trail plan by itself (figure 29), and a sidewalk plan (figure 30). 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.

Before the plan update, the Comprehensive 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 of the 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 Comprehensive Bicycle-Pedestrian Transportation Plan. This policy made recommendations for sidewalk improvements within this shaded boundary shown on the plan map. This shaded boundary was 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 updated Comprehensive 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 30). 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 I. This area has been reshaped in some areas to reflect the new 2010 Federal Urban Area.

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 six 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 below with an example shown for each.

Examples of a Trail

Examples of a Sidewalk

Examples of a Bike Lane

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.

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.

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.

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.

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.

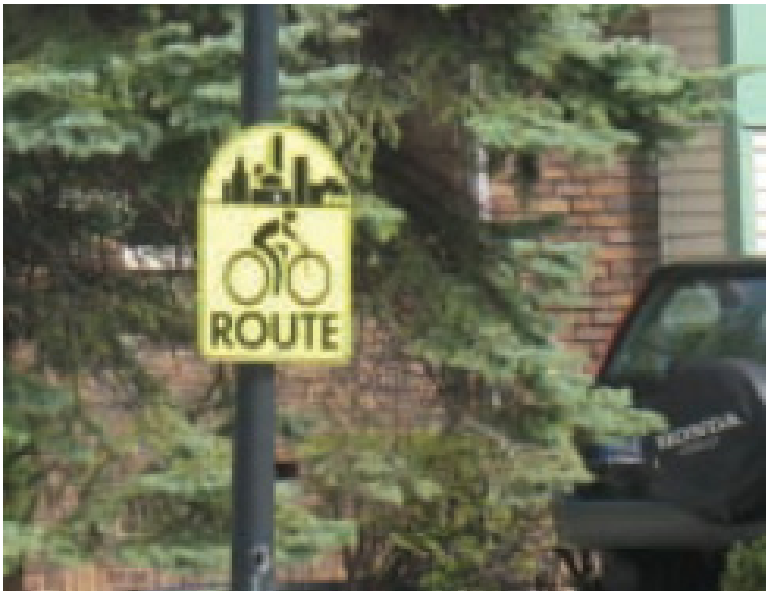
Sharrow: In shared roadways, the lanes have special arrow markings within to help alert cars to take caution and allow cyclists to safely travel in these lanes when striping is not possible.

Examples of a Wide Curb Lane

Examples of a Shoulder Lane

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 29) have increased in recent years. There are about 66 miles of trails in Fort Wayne now. Allen County has about 13 miles of trails, and there are 2 miles of trails that now exist in New Haven along with sidewalk improvements from their comprehensive trails and pedestrian walkways master plan. Planned additions to these trail systems will add about 14 miles of trails to the Fort Wayne area, 10 miles of trails to Allen County, and about 4 miles to New Haven. 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 11 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.

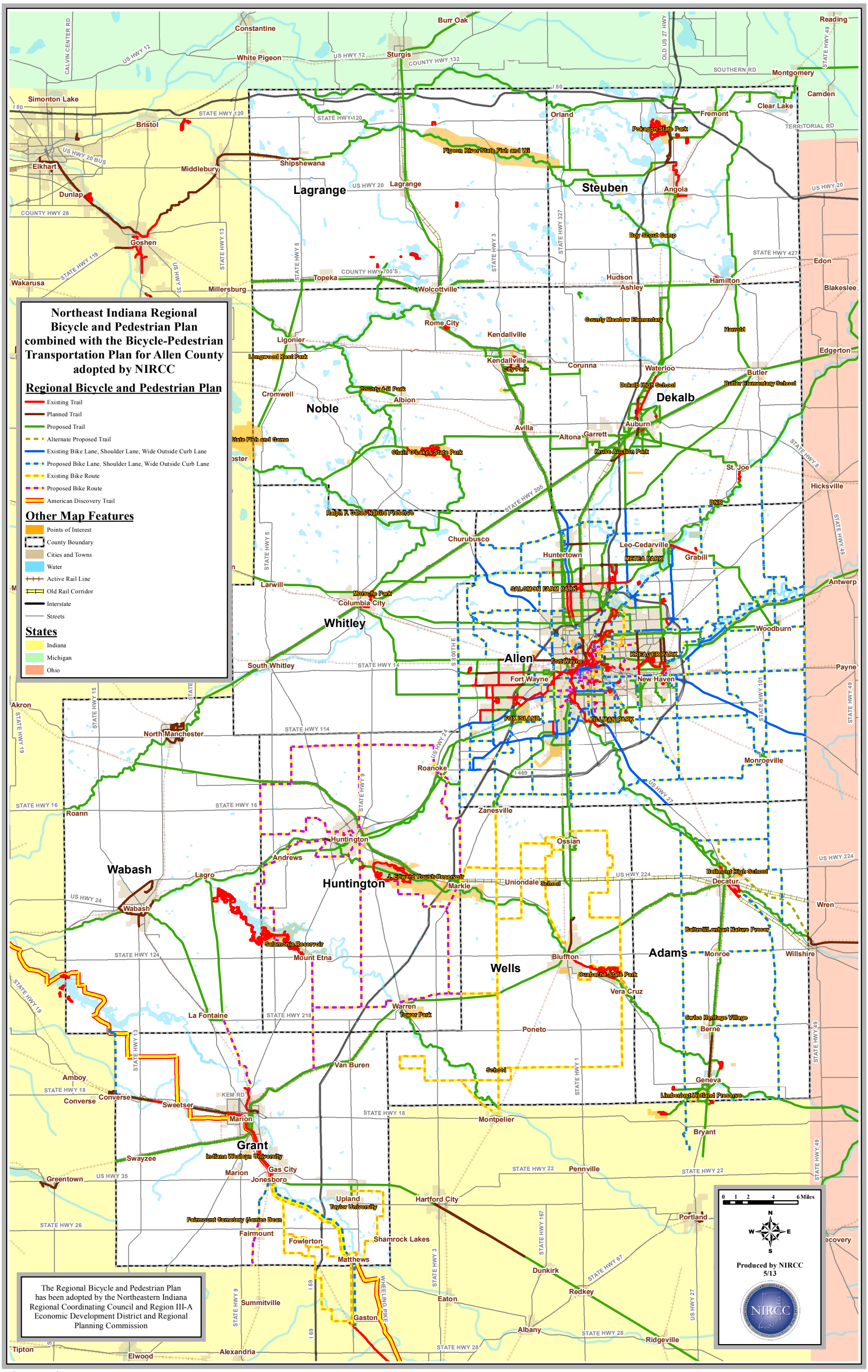


Figure 27

Regional Bicycle and Pedestrian Plan for Northeast Indiana

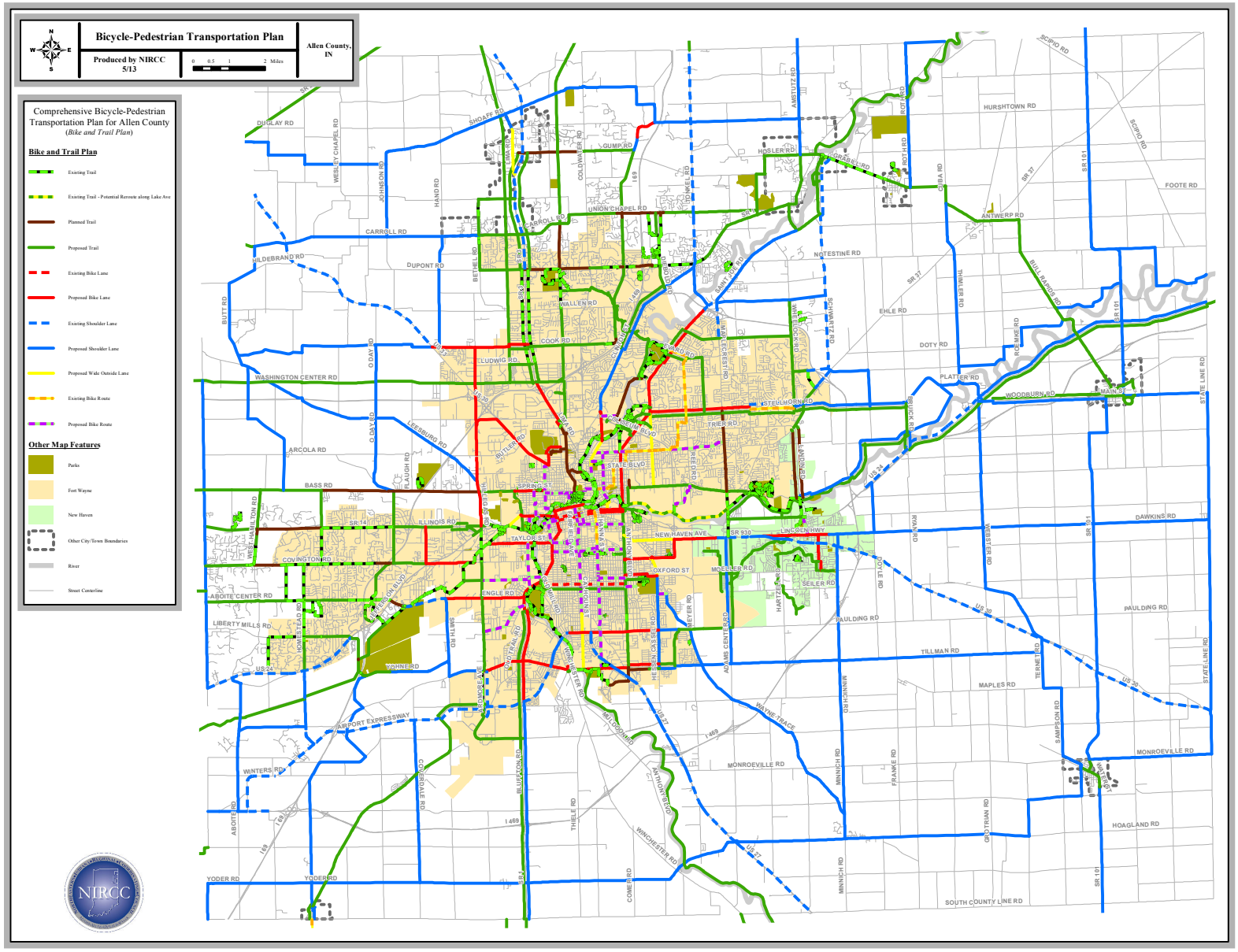


Figure 28

Bike and Trail Plan

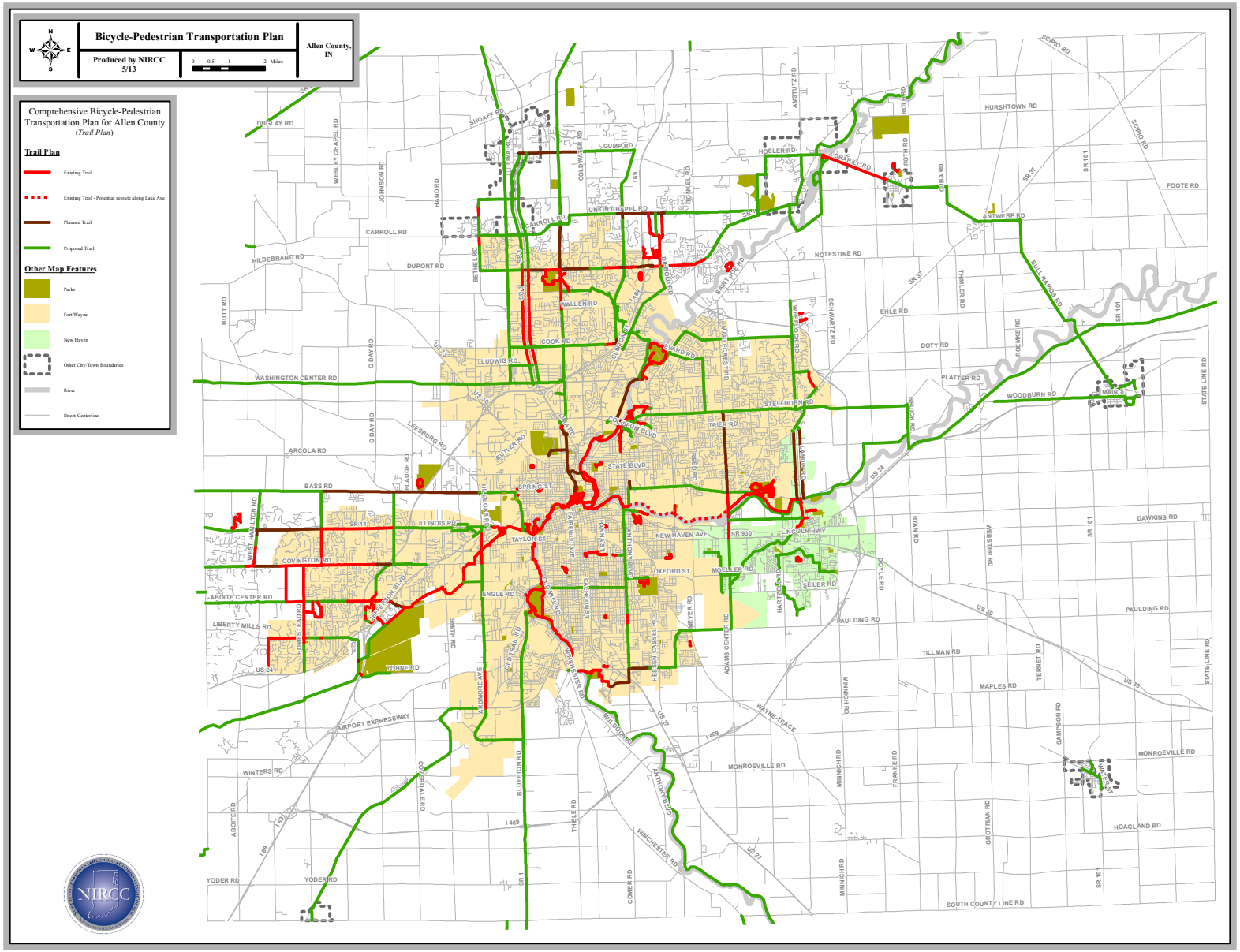


Figure 29

Trail Plan

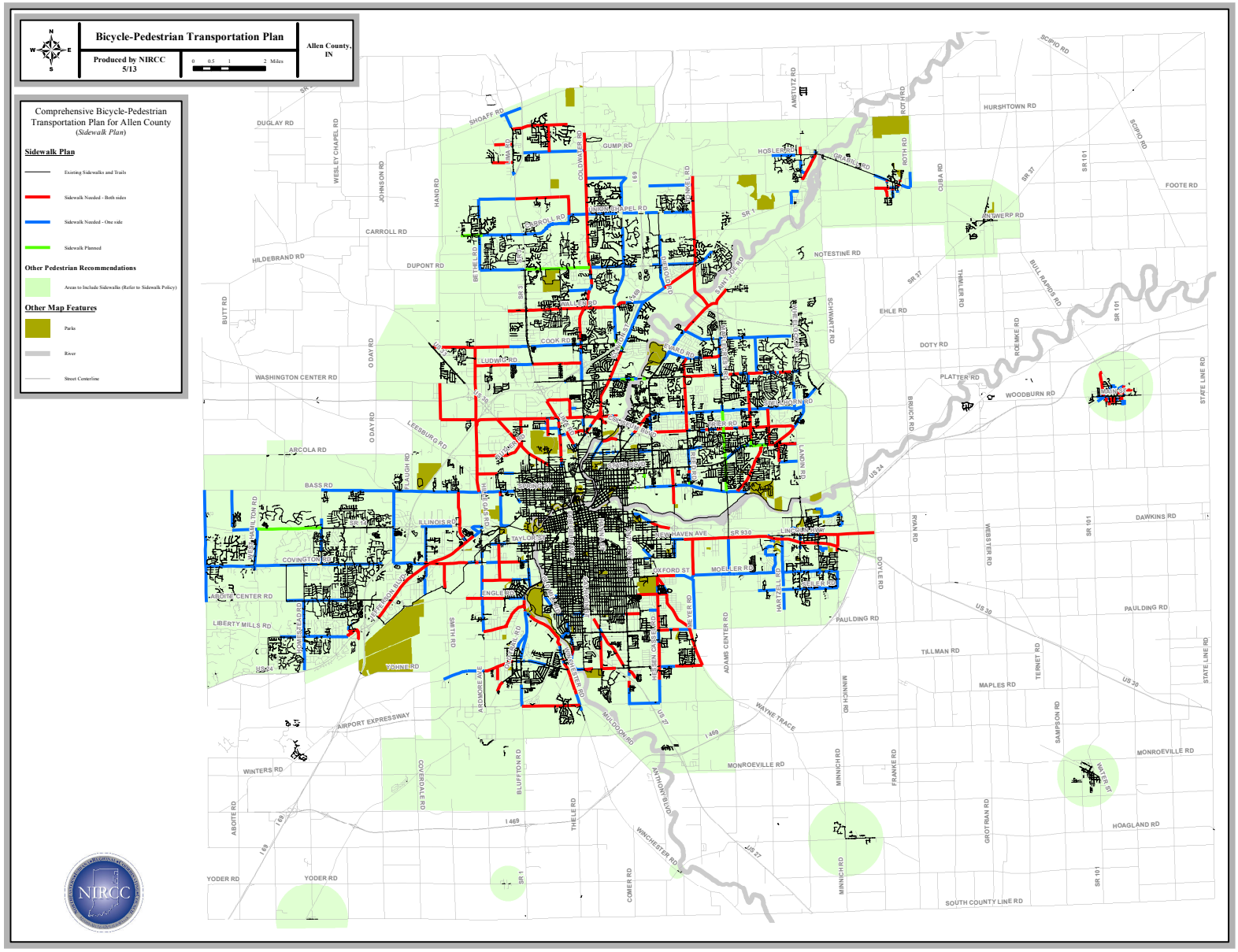


Figure 30
Sidewalk Plan

Transportation Alternatives Program (TAP)

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 (ISTEA). The transportation enhancement activities were continued with support from the Transportation Equity Act for the 21st Century (TEA-21) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Such projects included bicycle and pedestrian facilities, roadside landscaping, water run-off mitigation, and historic preservation of transportation facilities. The most recent transportation bill eliminates the TE program and replaces it with what is called Transportation Alternatives (TA) which is a part of the new Transportation Alternatives Program (TAP). MAP-21, the Moving Ahead for Progress in the 21st Century Act, makes use of the phrase "Transportation Alternatives" with two different meanings. First, Transportation Alternatives refers to the 9 eligible definitions, which are a recasting of the former Transportation Enhancement program. The term Transportation Alternatives Program (TAP) is 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 have been consolidated into one funding source with the 9 eligible TA activities.

Prior to 2008 INDOT received applications for Transportation Enhancement projects from all over the state. With only a certain amount of funds available, a competitive process was implemented to rank applications and distribute money accordingly. A committee had been formed to score and prioritize enhancement projects for the entire state. Beginning in 2008, the Transportation Enhancement (TE) award process changed. The Indiana Department of Transportation (INDOT) divided the total amount of money allocated for enhancement projects by populations for their respective INDOT districts, with a portion based on urban area populations distributed to Metropolitan Planning Organizations (MPOs). The Metropolitan Planning Organizations (MPOs) selected qualified enhancement projects within their urban areas and INDOT Districts selected the projects in the small urban and rural areas. INDOT and the MPOs used their own scoring and ranking process to select these projects. The new TAP process will be similar to this method and give NIRCC the ability to provide a constant annual distribution of funds for TAP projects and also provide opportunities for NIRCC to phase projects that may exceed the total funding allocation for a single year.

Since the passage of SAFETEA-LU, a number of TE projects have been identified and implemented. A number of other projects are under construction or are in some phase of implementation. The current status of TE projects is provided in Table 17 and identified by two asterisk symbols. Under the new Transportation Alternatives Program 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 Regional Bicycle and Pedestrian Plan.

Table 17. Bicycle-Pedestrian Projects

Bicycle-Pedestrian Facility	Description	Status
***Aboite Center Rd Trail**	1100 ft w/o Coventry Ln to Jefferson Blvd	Completed 2010
***Amber Rd Trail**	Liberty Mills Rd to Ivanhoe Ln; just north of US 24	Completed 2008
***Ardmore Ave Extension Trail**	Lower Huntington Rd to Indianapolis Rd	Completed 2006
***Ardmore Ave Trail**	Covington Rd to north of Taylor St	Completed 2009
***Ardmore Ave Trail**	North of Taylor St to Jefferson Blvd	Completed 2010
***Auburn Rd Trail**	Cook Rd to Clinton St	Completed 2012
***Bass Rd Trail**	Hillegas Rd to Hadley Rd	Construction 2016 & 2018
Beckett's Run Trail	Along the Beckett's Run creek from St Joe River to Salomon Farm	Partially Complete in 2012
Coliseum Blvd Trail Spur	The Rivergreenway to Carrington Field baseball diamond	Completed 2009
Covington Rd Trail Phase 1	Scott Rd to Eggeman Rd	Completed 2010
****Covington Rd Trail Phase 2-A**	Eggeman Rd to Beal-Taylor Ditch	Completed 2010
****Covington Rd Trail Phase 2-B**	Beal-Taylor Ditch to West Hamilton Rd	Construction 2014
****Covington Rd Trail Phase 3**	Scott Rd to Ladue Ln	Completed 2010
Covington Rd Trail	Ladue Ln to I-69 bridge	Construction 2013
***Covington Rd Trail**	Bridge over I-69 to Hadley Rd (including bridge)	Construction 2013
***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
***Dupont Rd Trail**	Pine Mills Rd to just west of Auburn Rd	Completed 2007
Dupont Rd Trail	Auburn Rd to I-69 Interchange	Completed 2011
***Dupont Rd Trail**	Diverging Diamond Interchange at Dupont Rd and I-69	Construction 2014
***Dupont Rd Trail**	Coldwater Rd to Lima Rd	Construction 2015-2016
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	Construction 2013
****Fort Wayne Urban Trails Project Phase 1**	Barr St from Wayne St to Main St	Completed 2008
***Gump Rd Trail**	West of SR 3 to west of Coldwater Rd	Construction 2014-2015
Homestead Rd Trail	Liberty Mills Rd to Summit Middle School	Completed 2008
****Homestead Rd Trail**	Aboite Center Rd to Covington Rd	Completed 2010

Table 17 Continued next page...

Table 17. Bicycle-Pedestrian Projects - Continued

****IPFW Bridge**	Pedestrian Bridge over St Joe River at IPFW	Completed 2009
****IPFW Bridge**	Pedestrian Bridge over Coliseum Blvd	Construction 2016
***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 Phase 1B and 1C**	Western side of the new IPFW pedestrian bridge to Upper St Joe Center Rd	Construction 2013
Johnny Appleseed to Shoaff Park Trail Phase 2	Upper St Joe Center Rd to Shoaff Park	Completed 2010
Johnny Appleseed to Shoaff Park Trail	Bridge over St Joe River	Completed 2012
Landin Rd Trails	North River Rd to Maysville Rd	Construction 2014
Liberty Mills Rd Trail	Amber Rd to Homestead Rd	Completed 2007
Lutheran Loop Trail	Hospital Loop, Connects the Aboite Trails with the Towpath Trail	Completed 2008
***Maplecrest Rd Trail**	Lake Ave to State Blvd	Construction 2014
***Maplecrest Rd Trail**	State Blvd to Stellhorn Rd	Right-of-Way 2016
***Maplecrest Rd Trail**	Lake Ave to SR 930	Completed 2012
Meijer Dr	Maysville Rd to St Joe Center Rd	Completed 2011
****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
North Anthony Blvd Trail	Crescent Ave to the "Johnny Appleseed to Shoaff Park trail" at Coliseum Blvd	Completed 2010
****NY Central Railroad Corridor Trail**	Washington Center Rd to Wallen Rd	Right-of-Way 2013
****Pufferbelly Trail Phase 1**	Lawton Park to Franke Park and Fernhill Ave	Construction 2015 or 2016
Pufferbelly Trail	Wallen Rd to Dupont Rd	Completed 2010
Pufferbelly Trail	Dupont Rd to Carroll Rd	Construction 2014
Reed Rd Bike Route	Evard Rd to Greenway at Tennessee Ave	Compeleted 2009
Renaissance Pointe Trail	Lafayette St to Hanna St and Hanna St to Bowser St (Eventually Anthony)	Completed 2008

Table 17 Continued next page...

Table 17. Bicycle-Pedestrian Projects - Continued

***Rudisill Blvd Bike Lanes**	Old Mill Rd to Anthony Blvd	Completed 2010
Safe Routes to School sidewalks (State Blvd / Maysville Rd / Lahmeyer Rd)	State Blvd and Maysville Rd from Arrowwood Dr to Sandarac Ln / Lahmeyer Rd from State Blvd to Antebellum Blvd	Construction 2013
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
****Six Mile Creek Trail phase 1**	From Southtown Centre to Lemar Dr (entire trail will be from Southtown Centre to Moser Park)	Right-of-Way 2013 or 2014
Southtown Centre Rivergreenway extension Phase 1	Tillman Park to public safety academy	Completed 2009
***SR 1 Trail**	I-69 to east of Tonkel Rd	Completed 2011
***SR 14 Trail**	I-69 to Scott Rd	Completed 2010
***SR 14 Trail**	Scott Rd to West Hamilton Rd	Construction 2013
***SR 3 Trail**	North of Ludwig Rd to south of Dupont	Completed 2011
***State Blvd Trail**	Spy Run Ave to the Pufferbelly Trail	Construction 2015-2016
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
***Union Chapel Rd Trail**	Union Chapel Rd Interchange @ I-69	Completed 2012
***Untion Chapel Rd**	West of Auburn Rd to east of Diebold Rd	Construction 2013
Wayne St and Berry St Bike Lanes	Van Buren St to Coombs St	Complete 2010

*** Project that is combined with a road improvement project.**

**** Project utilizes Transportation Enhancement Funds (TE Funds).**

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 and then again in 2012. 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

Four 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, and automatic vehicle location (AVL) systems 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 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. A planned expansion of this program will allow the vehicle location information to be sent to the Internet through Citilink's website to provide transit customers with real time information on the status of the transit bused. Transit customers will be able to more efficiently determine when to meet their bus and minimize wait time.

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 first step performed by planners with the data is to perform a quality check. This step is the most time consuming part of the safety management process. Planners review all crash locations to ensure that once mapped, the locations are accurate and unique in their description. Locations are often misspelled or have multiple names. It is critical that all crashes occurring at a specific geographical location are named identically for future analyses. A significant amount of time is devoted to inputting these unique crash locations descriptions and verifying the accuracy of the data.

Crashes that do not occur at intersections (within 33 feet) require planners to assign mid-block address locations. This task requires geographic information systems and relies on accurate information from the reporting officers. Each crash that occurs 34 or more feet from an intersection is assigned an address if not already provided in the report.

Private property crashes have also created quality concerns with where crashes are reported. Planners work to identify crashes reported on a public roadway that occur on private property such as in parking lots. Crash reports require officers to provide the address of a crash on private property. This address

is then reflected as a "private property" crash by another input item. This step is often omitted by the reporting officer. An inverse problem also is checked where a vehicle leaves a public roadway and collides with a fixed object or parked car located on private property. Since the crash involved a vehicle that left a public roadway it should be included as a "non-private property crash". However the collision itself occurred on private property and occasionally is reported in that manner.

NIRCC works directly with the law enforcement agencies in Allen County to address these 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 to education of drivers. As the program continues to grow the various uses of the data also increases.

The Indiana Strategic Highway Safety Plan identifies 13 emphasis areas listed below. This report provides

components of NIRCC's Safety Management Program that support this effort.

Driver Behaviors
- Emphasis Area 1: Develop Safer Young Drivers
- Emphasis Area 2: Increase occupant protection
- Emphasis Area 3: Reduce impaired drivers

Special Users/Vehicles
- Emphasis Area 4: Improve motorcycle safety
- Emphasis Area 5: Reduce large truck crashes
- Emphasis Area 6: Reduce bicycle and pedestrian crashes

Serious Crash Types/Locations
- Emphasis Area 7: Reduce "High Risk" rural road crashes
- Emphasis Area 8: Minimize the possibility and consequences of leaving the roadway
- Emphasis Area 9: Improve safety at intersections
- Emphasis Area 10: Reduce crashes at highway railroad crossings

Crash Management
- Emphasis Area 11: Enhance emergency services response to traffic crashes
- Emphasis Area 12: Expedite crash clearance to reduce secondary crashes and congestion
- Emphasis Area 13: Improve the quality of the data used to make safety improvement decisions

Driver Behaviors

(1) Develop Safer Young Drivers

NIRCC provides crash data to advocacy groups for education of young drivers in Allen County. The "Drive Alive" campaign works with parents and teens to promote safe driving practices through education. The campaign provides parents with tools to help them talk to their teen including a parent/teen contract. Various partners have contact NIRCC for data related to crash locations near schools, statistics of crashes involving drivers by age, crash types most common to young drivers, and contributing factors of crashes involving young drivers.

Crash data will continue to be provided to this group, other local groups and elected officials to encourage education of young drivers. The information will also be a tool to monitor the effectiveness of the programs and efforts by all those involved.

(2) Increase Occupant Protection

Crash records that are summarized by NIRCC provide local agencies information from crashes that occur in each jurisdiction. This information can be used to monitor the impacts of legislation and education aimed at occupant protection. Use of seatbelts and helmets are available to the agencies. This information can be used to target enforcement or evaluate educational efforts.

(3) Reduce Impaired Drivers

The reduction of impaired drivers has been an important issue for all motorists for many years.

Crash statistics provided by NIRCC to local officials and law enforcement agencies the necessary tools to identify areas where impaired drivers are involved in crashes. This serves as a portion of the information needed. Traffic arrests are also used in determining areas for enforcement. Educational activities are also supported with crash data to inform motorists of the dangers in driving while impaired.

Special Users/Vehicles

(4) Improve Motorcycle Crashes

Motorcycle crashes have a high rate of injury and fatality per mile traveled compared to motor vehicles. NIRCC provides an annual summary of crashes by vehicle type. The data is mapped in a manner that allows planners to geographically analyze where crashes involving specific vehicle types such as motorcycles. Areas or roadways that have a concentrated number of crashes higher than that expected are identified and discussed with transportation engineers and law enforcement. Helmets are not required in Indiana which makes education of drivers more crucial. Identified crash locations involving motorcycles can provide law enforcement the ability to target enforcement efforts.

(5) Reduce Large Truck Crashes

Commercial vehicle crashes are identified by crash type. NIRCC reviews the frequency of crashes involving commercial vehicles with traffic data also collected and maintained by NIRCC. The percentage of trucks on a location or corridor can be used to evaluate the number of crashes occurring at that location. The data can aid local officials and planners with identification of needed improvements.

(6) Reduce Bicycle and Pedestrian Crashes

Planning activities for bicycle and pedestrian facilities are conducted by NIRCC and the Indiana Department of Transportation for local and regional plans. The participation in both activities by NIRCC provides a great benefit to the process. Crash statistics can be reviewed when planning efforts for specific projects are proposed. Crash statistics are also used to identify needed bicycle and pedestrian facilities. In recent years a significant amount of work has been devoted in identification of all existing sidewalks, needed greenway expansions, connectivity projects, and new construction to provide safe bicycle and pedestrian facilities.

Local advocacy groups continue educational efforts geared at sharing the roads. Crash records can the effort by providing the number of annual crashes involving bicyclists and pedestrians. This information can increase the awareness of the severity of the issue and result in safer motorists.

Serious Crash Types/Locations

(7) Reduce “High Risk” Rural Road Crashes

The metropolitan planning area for NIRCC includes areas in cities of Fort Wayne and New Haven and a portion of Allen County which are defined as urban areas. The planning efforts for the Long Range Transportation Plan focus on projects within this urban area. The Safety Management Program for NIRCC however includes data for the entire county. The intent of this information is

to provide law enforcement agencies that respond to crashes throughout the urban areas and rural areas the tools necessary to respond to crashes in a timely manner and identify enforcement areas. This information is reviewed as previously stated in a manner that considers the rural areas. The crashes outside the urbanized area are mapped and reviewed based on frequency while considering traffic volumes and roadway characteristics.

NIRCC has reviewed potential system wide improvements to mitigate crashes in rural areas. Though these type projects may not be part of a long range plan, they can serve the residents by identifying improvements that may be made by local government agencies while reducing overall crash costs to the public.

Rural crash data is also reviewed for DeKalb and Wells County. NIRCC has provided three-year crash summaries for these counties to provide local officials with necessary information in addresses safety in each jurisdiction. The data is mapped to provide an easy method to identify high crash locations in each county. The data also provides the counties with information to respond to inquiries about crash frequencies at specified locations. Periodic review of this data will aid NIRCC in assessing safety at identified locations in each county.

(8) Minimize the Possibility and Consequences of Leaving the Roadway

Annual reports provide a summary of crashes involving vehicles that leave the roadway. The data provided by NIRCC can identify all crash types to evaluate roadways that experience a greater than expected number of off road collisions. This information is provided to local agencies for consideration of improvement projects. NIRCC continues to encourage system wide improvements such as installation of guardrails on curves, clear zone improvements, and speed evaluations where problems are identified.

(9) Improve Safety at Intersections

The strength of NIRCC's safety management process is that all crash locations are accurately identified through unique location names. Each intersection is identified by one name where various alternatives exist. This process greatly increases the level of confidence in reviewing crashes at intersections. Current requirements for law enforcement agencies reporting crashes define intersection crashes as those that occur within 33 feet of the intersection. Planners analyze all crashes reported at intersections by reviewing the crashes reported at all approaches in addition to those within the 33 feet of the crossroads. This process ensures planners that crashes related to the intersection such as rear ends are identified and examined to determine what countermeasures can be implemented to mitigate future crashes.

NIRCC dedicates a significant portion of time to examining high crash or hazardous intersections. This element of the program results in the most number of identified projects that are pursued by local public agencies. Improvements to existing intersections identified as hazardous can often provide the most effective benefit in reduction of crashes and severity of crashes. Continual review of these locations from year to year will provide planners and local public agencies with the necessary information to prioritize improvement projects.

(10) Reduce Crashes at Highway Railroad Crossings.

Railroad crossing information is maintained and updated regularly by NIRCC. Traffic volumes are

collected at all at-grade railroad crossings in Allen County as part of the traffic count program. In addition to this data planners collect other information regarding warning devices, sight distance, roadway lane widths, train speed, and trains per day. Photographs of crossings are also collected and maintained to review potential safety issues.

Crashes at railroad crossings are identified by NIRCC and also the Indiana Department of Transportation. Planners review the data reported by the state to ensure records are accurate. In recent years full protection at many of the railroad crossings in Allen County have been installed including lights and gates. Annual crash summary reports identify all crashes involving motor vehicles and trains in order to identify potential improvements.

Crash Management

(11) Enhance Emergency Services Response to Traffic Crashes

Emergency response times are critical to saving lives and clearing scenes quickly to avoid congestion and secondary crashes. NIRCC works with 911 Communication, law enforcement agencies and GIS staff on issues related to roadway names or addresses to ensure when needed, the addresses and posted signage is accurate. NIRCC has identified and mapped intersections that have the same name so that first responders do not loose valuable time going to the incorrect location.

NIRCC is also actively involved in TIM (Traffic Incident Management) which provides training to all first responders to improve their safety and aid in clearing the scene as quickly as possible. A vital part of this process is ensuring that dispatchers provide the first responders with enough information to insure appropriate agencies and equipment is sent to the scene. In addition this communication can ensure that special details about the crash and crash location are passed on to the responders.

(12) Expedite Crash Clearance

NIRCC participates in activities with local and state agencies to improve emergency services and quick clearance. These activities have motivated legislators to consider new laws to improve these issues. Crash data can assist emergency service providers in determining where crashes are occurring more than others. These decisions can help in responding to emergencies to aid victims and improve quick clearance of crash locations.

(13) Improve Quality of the Data Used to Make Safety Improvement Decisions

Reporting crash data has significantly improved in Indiana in the past years. All of the law enforcement agencies in Allen County utilize the electronic reporting software. This automatic reporting of crashes provides information to planners in a timely manner. The data provided is in a more usable format than in past years. As previously stated NIRCC extracts all the crashes from the Indiana database for annual analysis. NIRCC updates all crash locations to ensure consistency and accuracy.

Through to process of updating crash locations and mapping the data, NIRCC has identified issues that can be improved by the State of Indiana and the officers reporting the data. NIRCC works closely with the local law enforcement agencies to address these issues and improve the quality of the data reported.

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 are able to 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 agencies 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 2035 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. 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 2035 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 31 and 32. 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 on the list as a Scenic River 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 31.

The Indiana Department of Environmental Management (IDEM) maintains a list of impaired waters. Figure 33 displays the surface waters in Allen County identified by IDEM as impaired and Table 18 and Table 19 include a listing with the cause of impairment. Table 18 displays the 2010 303(d) list of impaired waters submitted to U.S. EPA and includes a "Target Date For TMDL". Table 19 displays the 2012 303(d) list of impaired waters revised and submitted to U.S. EPA but did not include the a column for "Target Date For TMDL". 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 34).

Impact analysis and mitigation are integral parts of the project development process. Early review and analysis of projects 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) and Indiana Department of Environmental Management (IDEM). 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 35.

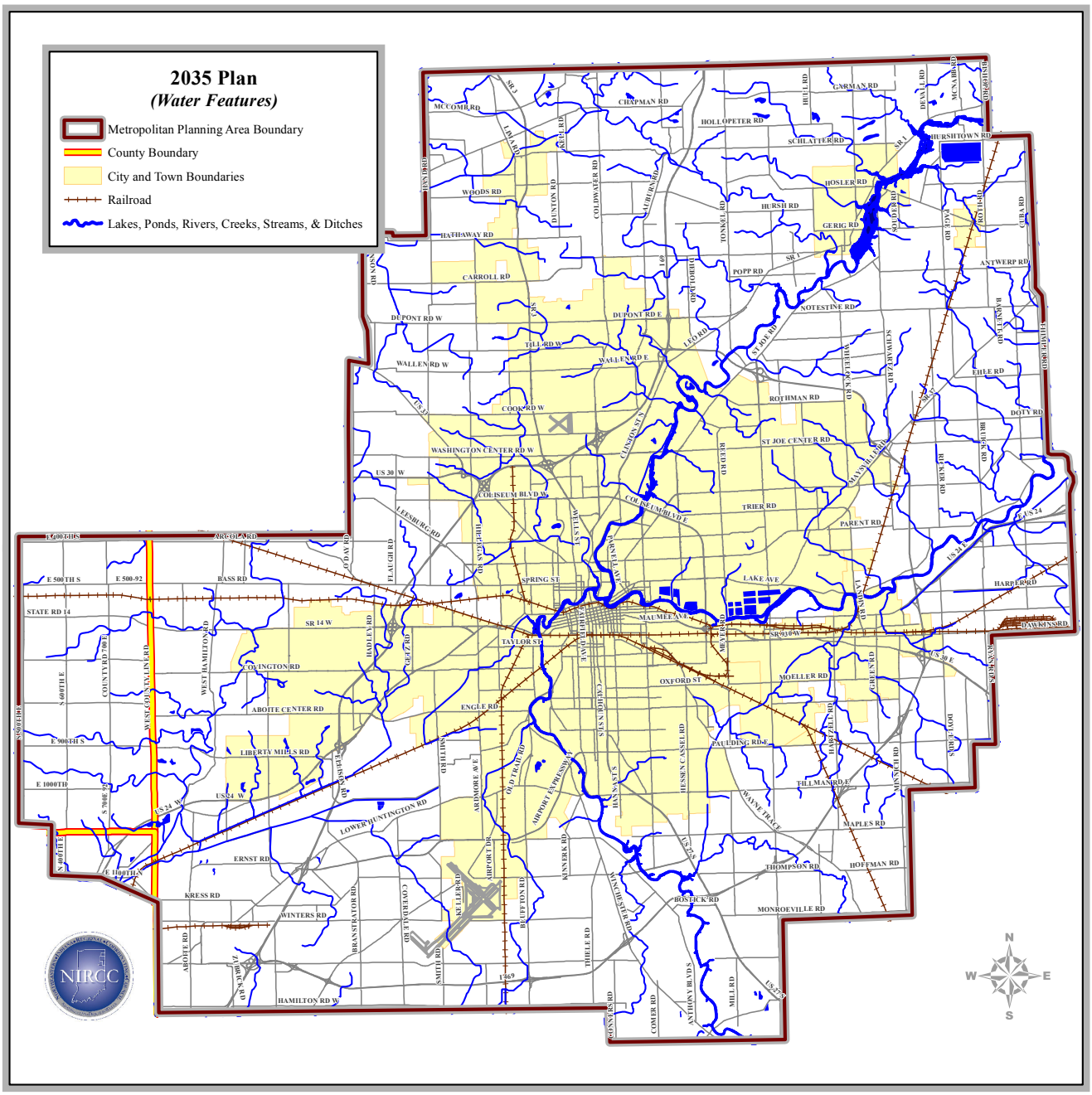


Figure 31

Water Features

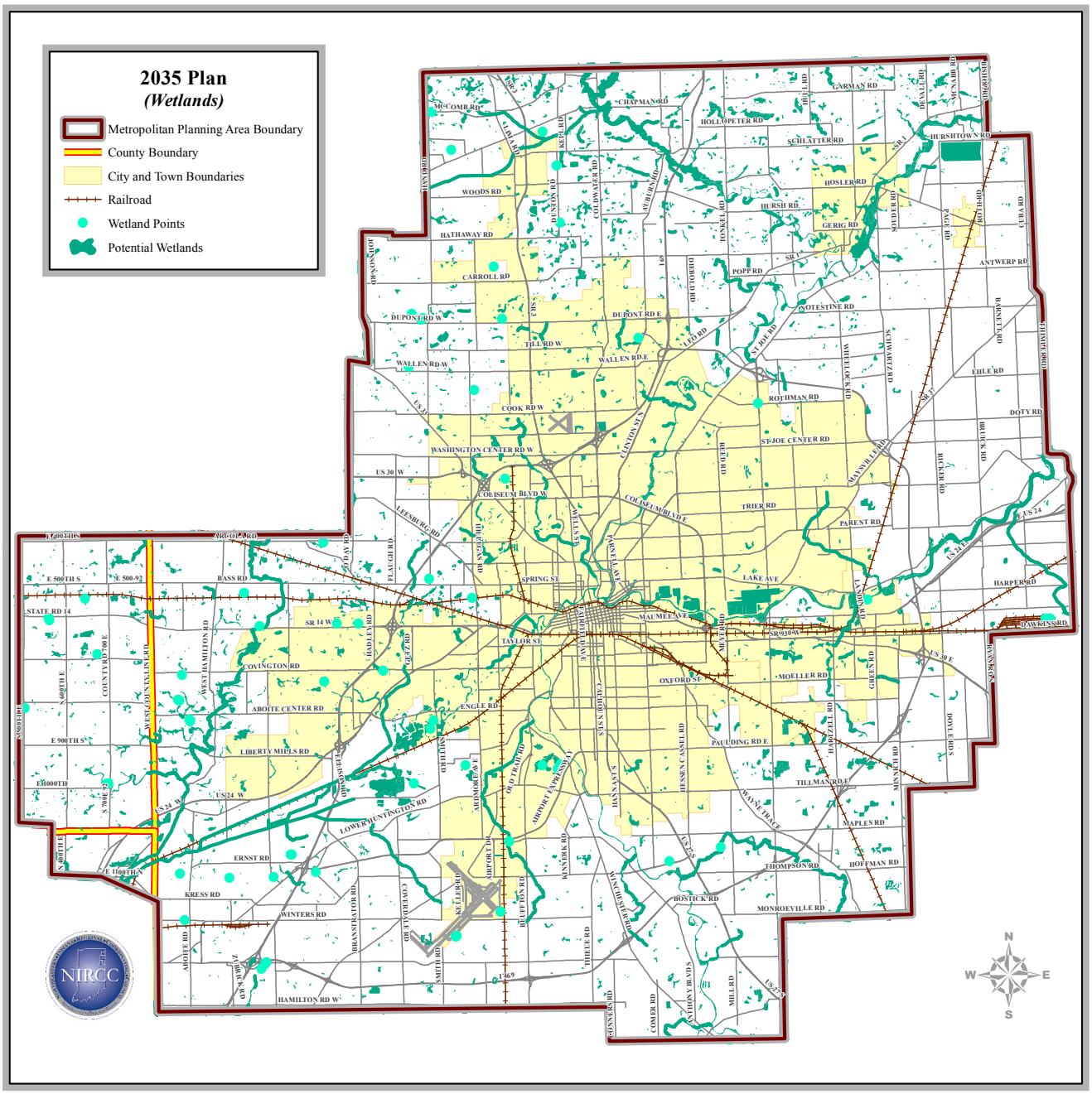


Figure 32

Potential Wetlands

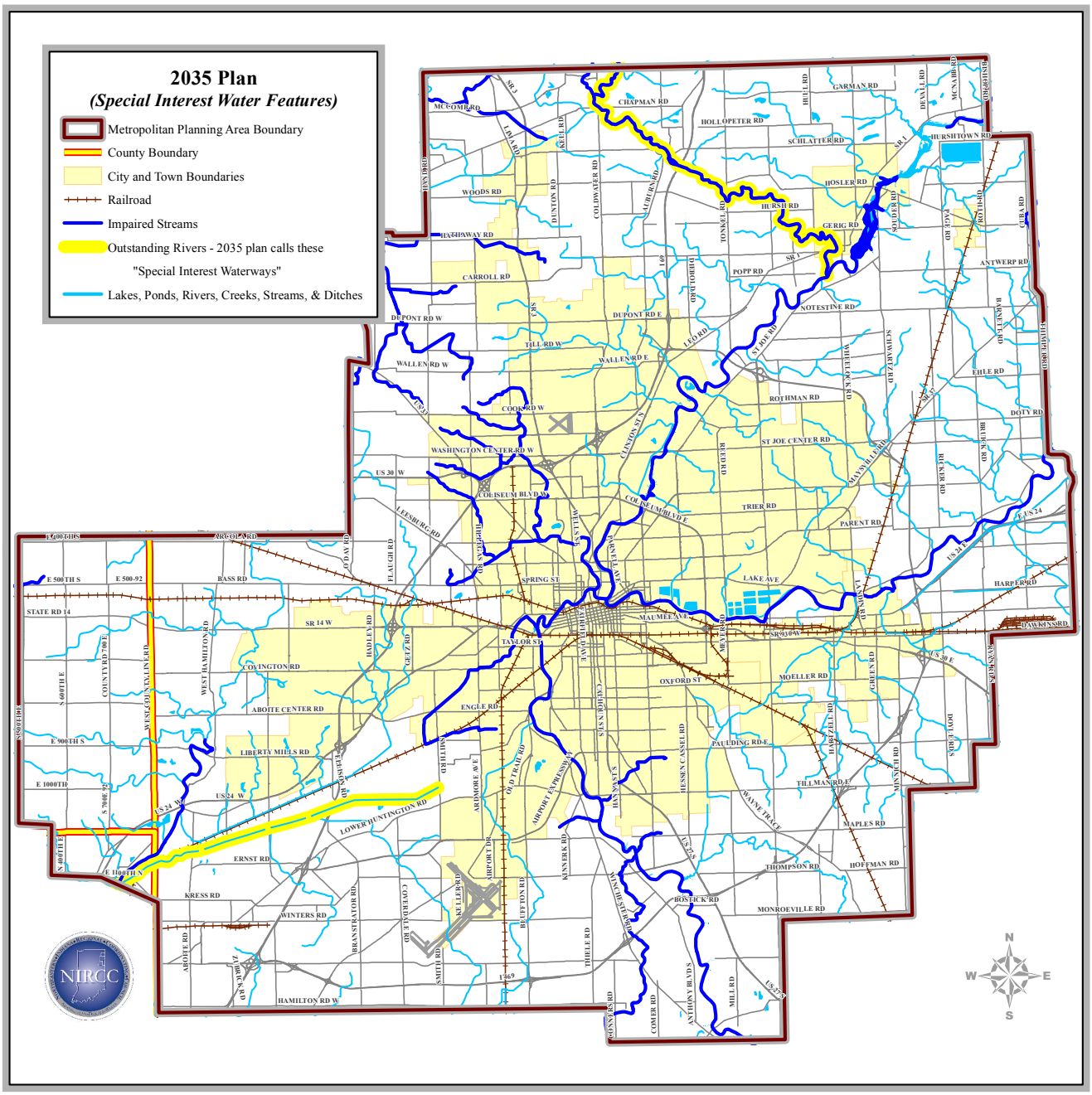


Figure 33

Water Features and Impaired Streams

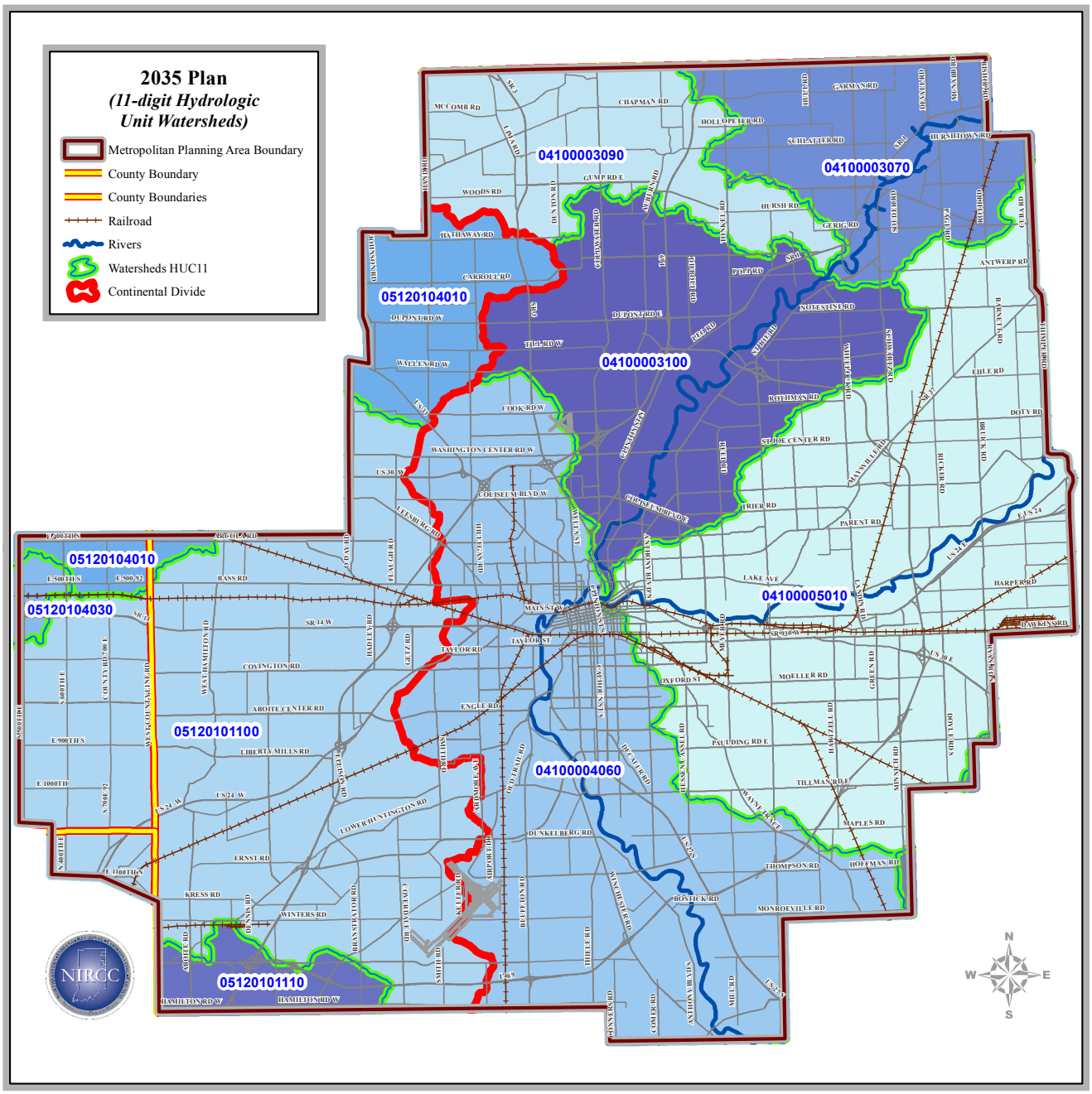


Figure 34

Watersheds

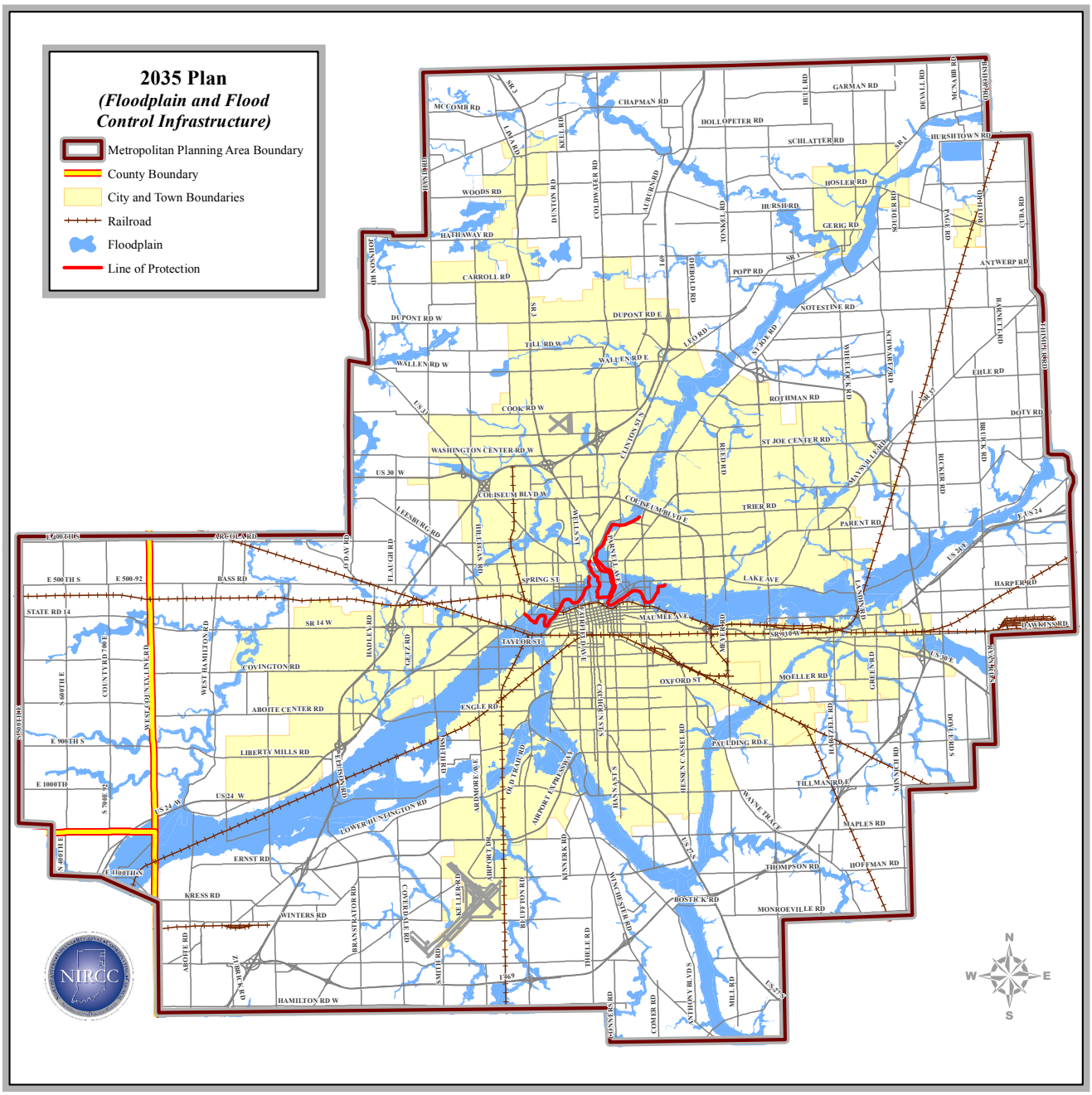


Figure 35

Flood Control Projects

Table 18. 2010 Impaired Waters in Allen County

2010 303(d) List of Impaired Waters Submitted to U.S. EPA

BASIN	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT	TARGET DATE FOR TMDL
GREAT LAKES	St Joseph River (Upstream of Metcalf Ditch)	E. COLI	2013
GREAT LAKES	St Joseph River (Downstream of Metcalf Ditch)	E. COLI	2013
GREAT LAKES	CEDAR CREEK	E. COLI	2011
GREAT LAKES	CEDAR CREEK	PCBS (FISH TISSUE)	2021
GREAT LAKES	WILLOW CREEK AND TRIB	E. COLI	2017
GREAT LAKES	CEDAR CREEK	PCBS (FISH TISSUE)	2011
GREAT LAKES	CEDAR CREEK	E. COLI	2011
GREAT LAKES	CEDAR CREEK	TOTAL MERCURY (FISH TISSUE)	2025
GREAT LAKES	ST. JOSEPH RIVER	PCBS (FISH TISSUE)	2011
GREAT LAKES	ST. JOSEPH RIVER	TOTAL MERCURY (FISH TISSUE)	2025
GREAT LAKES	CEDARVILLE RESERVOIR	E. COLI	2017
GREAT LAKES	CEDARVILLE RESERVOIR	PCBS (FISH TISSUE)	2017
GREAT LAKES	CEDARVILLE RESERVOIR	ALGAE	2021
GREAT LAKES	CEDARVILLE RESERVOIR	TASTE AND ODOR	2021
GREAT LAKES	ST. JOSEPH RESERVOIR	ALGAE	2013
GREAT LAKES	ST. JOSEPH RESERVOIR	E. COLI	2013
GREAT LAKES	ST. JOSEPH RESERVOIR	PCBS (FISH TISSUE)	2013
GREAT LAKES	ST. JOSEPH RESERVOIR	TOTAL MERCURY (FISH TISSUE)	2025
GREAT LAKES	ST. MARYS RIVER	E. COLI	2013
GREAT LAKES	ST. MARYS RIVER	IMPAIRED BIOTIC COMMUNITIES	2017
GREAT LAKES	ST. MARYS RIVER	NUTRIENTS	2017
GREAT LAKES	St. Marys River	NUTRIENTS	2013
GREAT LAKES	JUNK DITCH AND OTHER TRIBS	PCBS (FISH TISSUE)	2021
GREAT LAKES	JUNK DITCH AND OTHER TRIBS	TOTAL MERCURY (FISH TISSUE)	2025
GREAT LAKES	ST MARYS RIVER	PCBS (FISH TISSUE)	2013
GREAT LAKES	St. Marys River	NUTRIENTS	2013
GREAT LAKES	ST MARYS RIVER	TOTAL MERCURY (FISH TISSUE)	2025
GREAT LAKES	LOWTHER NEUHAUS DITCH	IMPAIRED BIOTIC COMMUNITIES	2025
GREAT LAKES	ST MARYS RIVER	PCBS (FISH TISSUE)	2017
GREAT LAKES	St. Marys River	NUTRIENTS	2017
GREAT LAKES	ST MARYS RIVER	TOTAL MERCURY (FISH TISSUE)	2025
GREAT LAKES	Maumee River	NUTRIENTS	2013
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)	2013
GREAT LAKES	MAUMEE RIVER	TOTAL MERCURY (FISH TISSUE)	2025
GREAT LAKES	Maumee River	NUTRIENTS	2013
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)	2013
GREAT LAKES	MAUMEE RIVER	TOTAL MERCURY (FISH TISSUE)	2025
GREAT LAKES	MAUMEE RIVER	FREE CYANIDE	2025
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)	2013
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)	2013
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)	2013
GREAT LAKES	Black Creek (Harlan, IN)	NUTRIENTS	2017
GREAT LAKES	Black Creek (Harlan, IN)	E. COLI	2017
GREAT LAKES	Black Creek (Harlan, IN)	ALGAE	2017
GREAT LAKES	Black Creek (Harlan, IN)	IMPAIRED BIOTIC COMMUNITIES	2017
GREAT LAKES	Oberhaltzer Ditch	E. COLI	2017
GREAT LAKES	Reichelderfer Ditch	E. COLI	2017
GREAT LAKES	Ward Lake Ditch	E. COLI	2017
GREAT LAKES	MAUMEE RIVER	NUTRIENTS	2013
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)	2013
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)	2013
GREAT LAKES	MAUMEE RIVER	NUTRIENTS	2013
GREAT LAKES	HAM INTERCEPTOR DITCH	IMPAIRED BIOTIC COMMUNITIES	2017
GREAT LAKES	HAM INTERCEPTOR DITCH	NUTRIENTS	2017
GREAT LAKES	Flatrock Creek (Upstream of Monroeville, IN)	E. COLI	2017
GREAT LAKES	Flatrock Creek (Downstream of Monroeville, IN)	IMPAIRED BIOTIC COMMUNITIES	2017
GREAT LAKES	Flatrock Creek (Downstream of Monroeville, IN)	E. COLI	2017
GREAT LAKES	Flatrock Creek - Unnamed Tributary (Illinois)	E. COLI	2017
GREAT LAKES	Flatrock Creek - Unnamed Tributary	E. COLI	2017

Table 18 Continued next page...

Table 18. 2010 Impaired Waters in Allen County Continued

2010 303(d) List of Impaired Waters Submitted to U.S. EPA

BASIN	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT	TARGET DATE FOR TMDL
GREAT LAKES	Flatrock Creek - Unnamed Tributary	E. COLI	2017
GREAT LAKES	Brown Ditch	IMPAIRED BIOTIC COMMUNITIES	2017
GREAT LAKES	Brown Ditch	E. COLI	2017
GREAT LAKES	Brown Ditch - Unnamed Tributary	E. COLI	2017
GREAT LAKES	Brown Ditch - Unnamed Tributary	E. COLI	2017
GREAT LAKES	Scoff Ditch	E. COLI	2017
GREAT LAKES	GROMEAUX DITCH	IMPAIRED BIOTIC COMMUNITIES	2017
UPPER WABASH	GELLER DITCH	IMPAIRED BIOTIC COMMUNITIES	2021
UPPER WABASH	BENWARD DITCH	IMPAIRED BIOTIC COMMUNITIES	2021
UPPER WABASH	SHOAFF DAWSON DITCH	IMPAIRED BIOTIC COMMUNITIES	2021
UPPER WABASH	BOBAY DITCH	IMPAIRED BIOTIC COMMUNITIES	2021
UPPER WABASH	BENWARD DITCH-UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES	2021
UPPER WABASH	JOHNSON DITCH	IMPAIRED BIOTIC COMMUNITIES	2021
UPPER WABASH	JOHNSON DRAIN (UPSTREAM OF CHURUBUSCO BRANCH)	IMPAIRED BIOTIC COMMUNITIES	2021
UPPER WABASH	EEL RIVER	IMPAIRED BIOTIC COMMUNITIES	2021
UPPER WABASH	EEL RIVER	PCBS (FISH TISSUE)	2021
UPPER WABASH	EEL RIVER	TOTAL MERCURY (FISH TISSUE)	2025
UPPER WABASH	JOHNSON DITCH-UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES	2021
UPPER WABASH	DUGLAY DITCH	IMPAIRED BIOTIC COMMUNITIES	2021
UPPER WABASH	CHURUBUSCO BRANCH-UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES	2021
UPPER WABASH	CHURUBUSCO BRANCH	IMPAIRED BIOTIC COMMUNITIES	2021

Table 19. 2012 Impaired Waters in Allen County

2012 303(d) List of Impaired Waters Revised and Submitted to U.S. EPA

BASIN	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
GREAT LAKES	ST JOSEPH RIVER (UPSTREAM OF METCALF DITCH)	E. COLI
GREAT LAKES	ST JOSEPH RIVER (DOWNSTREAM OF METCALF DITCH)	E. COLI
GREAT LAKES	CEDAR CREEK	E. COLI
GREAT LAKES	CEDAR CREEK	PCBS (FISH TISSUE)
GREAT LAKES	WILLOW CREEK AND TRIB	E. COLI
GREAT LAKES	CEDAR CREEK	E. COLI
GREAT LAKES	CEDAR CREEK	PCBS (FISH TISSUE)
GREAT LAKES	CEDAR CREEK	TOTAL MERCURY (FISH TISSUE)
GREAT LAKES	ST. JOSEPH RIVER	PCBS (FISH TISSUE)
GREAT LAKES	ST. JOSEPH RIVER	TOTAL MERCURY (FISH TISSUE)
GREAT LAKES	CEDARVILLE RESERVOIR	ALGAE
GREAT LAKES	CEDARVILLE RESERVOIR	E. COLI
GREAT LAKES	CEDARVILLE RESERVOIR	TASTE AND ODOR
GREAT LAKES	CEDARVILLE RESERVOIR	PCBS (FISH TISSUE)
GREAT LAKES	ST. JOSEPH RESERVOIR	ALGAE
GREAT LAKES	ST. JOSEPH RESERVOIR	E. COLI
GREAT LAKES	ST. JOSEPH RESERVOIR	TOTAL MERCURY (FISH TISSUE)
GREAT LAKES	ST. JOSEPH RESERVOIR	PCBS (FISH TISSUE)
GREAT LAKES	ST. MARYS RIVER	E. COLI
GREAT LAKES	ST. MARYS RIVER	NUTRIENTS
GREAT LAKES	ST. MARYS RIVER	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	ST. MARYS RIVER	NUTRIENTS
GREAT LAKES	JUNK DITCH AND OTHER TRIBS	PCBS (FISH TISSUE)
GREAT LAKES	JUNK DITCH AND OTHER TRIBS	TOTAL MERCURY (FISH TISSUE)
GREAT LAKES	ST. MARYS RIVER	NUTRIENTS
GREAT LAKES	ST MARYS RIVER	PCBS (FISH TISSUE)
GREAT LAKES	ST MARYS RIVER	TOTAL MERCURY (FISH TISSUE)
GREAT LAKES	LOWTHER NEUHAUS DITCH	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	ST. MARYS RIVER	NUTRIENTS
GREAT LAKES	ST MARYS RIVER	TOTAL MERCURY (FISH TISSUE)
GREAT LAKES	ST MARYS RIVER	PCBS (FISH TISSUE)
GREAT LAKES	MAUMEE RIVER	NUTRIENTS
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)
GREAT LAKES	MAUMEE RIVER	TOTAL MERCURY (FISH TISSUE)
GREAT LAKES	MAUMEE RIVER	FREE CYANIDE
GREAT LAKES	MAUMEE RIVER	NUTRIENTS
GREAT LAKES	MAUMEE RIVER	TOTAL MERCURY (FISH TISSUE)
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)
GREAT LAKES	BLACK CREEK (HARLAN, IN)	ALGAE
GREAT LAKES	BLACK CREEK (HARLAN, IN)	E. COLI
GREAT LAKES	BLACK CREEK (HARLAN, IN)	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	BLACK CREEK (HARLAN, IN)	NUTRIENTS
GREAT LAKES	OBERHALTZER DITCH	E. COLI
GREAT LAKES	REICHELDERFER DITCH	E. COLI
GREAT LAKES	WARD LAKE DITCH	E. COLI
GREAT LAKES	MAUMEE RIVER	NUTRIENTS
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)
GREAT LAKES	MAUMEE RIVER	NUTRIENTS
GREAT LAKES	MAUMEE RIVER	PCBS (FISH TISSUE)
GREAT LAKES	HAM INTERCEPTOR DITCH	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	HAM INTERCEPTOR DITCH	NUTRIENTS
GREAT LAKES	FLATROCK CREEK (UPSTREAM OF MONROEVILLE, IN)	E. COLI

Table 19 Continued next page...

Table 19. 2012 Impaired Waters in Allen County Continued

2012 303(d) List of Impaired Waters Revised and Submitted to U.S. EPA

BASIN	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
GREAT LAKES	FLATROCK CREEK (DOWNSTREAM OF MONROEVILLE,	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	FLATROCK CREEK (DOWNSTREAM OF MONROEVILLE,	E. COLI
GREAT LAKES	FLATROCK CREEK - UNNAMED TRIBUTARY (ILLINOIS)	E. COLI
GREAT LAKES	FLATROCK CREEK - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	FLATROCK CREEK - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	BROWN DITCH	E. COLI
GREAT LAKES	BROWN DITCH	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	BROWN DITCH - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	BROWN DITCH - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	SCOFF DITCH	E. COLI
GREAT LAKES	GROMEAUX DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER WABASH	SEEGAR DITCH	DISSOLVED OXYGEN
UPPER WABASH	SEEGAR DITCH	E. COLI
UPPER WABASH	SEEGAR DITCH - UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	SEEGAR DITCH - UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	ABOITE CREEK	E. COLI
UPPER WABASH	EEL RIVER	IMPAIRED BIOTIC COMMUNITIES
UPPER WABASH	BENWARD DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER WABASH	BENWARD DITCH	DISSOLVED OXYGEN
UPPER WABASH	BENWARD DITCH	AMMONIA
UPPER WABASH	BENWARD DITCH	NUTRIENTS
UPPER WABASH	SHOAFF DAWSON DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER WABASH	EEL RIVER	IMPAIRED BIOTIC COMMUNITIES
UPPER WABASH	EEL RIVER	TOTAL MERCURY (FISH TISSUE)
UPPER WABASH	EEL RIVER	PCBS (FISH TISSUE)
UPPER WABASH	JOHNSON DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER WABASH	JOHNSON DITCH	DISSOLVED OXYGEN
UPPER WABASH	JOHNSON DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER WABASH	JOHNSON DITCH	DISSOLVED OXYGEN
UPPER WABASH	JOHNSON DITCH	NUTRIENTS
UPPER WABASH	JOHNSON DITCH - UNNAMED TRIBUTARY	DISSOLVED OXYGEN
UPPER WABASH	JOHNSON DRAIN	IMPAIRED BIOTIC COMMUNITIES
UPPER WABASH	JOHNSON DRAIN	DISSOLVED OXYGEN
UPPER WABASH	JOHNSON DRAIN	NUTRIENTS
UPPER WABASH	REHLING DITCH	DISSOLVED OXYGEN

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, fishes and plants (see Table 20). Species included in the list as federally Endangered in Allen County include the White Cat's Paw Pearlymussel, Northern Riffleshell mussel, and Clubshell mussel. The Rabbitsfoot mussel, Rayed Bean mussel, and the Eastern Massasauga reptile are species that are candidates for potential future listing as either federally threatened or endangered. The Bald Eagle has been listed as federally threatened but also has been proposed for delisting from the federal list. 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 20. Endangered, Threatened or Rare Species within Allen County

Indiana County Endangered, Threatened and Rare Species List

County: Allen

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mollusk: Bivalvia (Mussels)					
Epioblasma obliquata perobliqua	White Cat's Paw Pearlymussel	LE	SE	G1T1	SX
Epioblasma torulosa rangiana	Northern Riffleshell	LE	SE	G2T2	SX
Lampsilis fasciola	Wavyrayed Lampmussel		SSC	G5	S3
Obovaria subrotunda	Round Hickorynut		SSC	G4	S1
Pleurobema clava	Clubshell	LE	SE	G2	S1
Ptychobranchus fasciolaris	Kidneyshell		SSC	G4G5	S2
Quadrula cylindrica cylindrica	Rabbitsfoot	C	SE	G3G4T3	S1
Toxolasma lividus	Purple Lilliput		SSC	G3	S2
Villosa fabalis	Rayed Bean	C	SSC	G2	S1
Insect: Odonata (Dragonflies & Damselflies)					
Tachopteryx thoreyi	Gray Petaltail		SR	G4	S2S3
Fish					
Moxostoma valenciennesi	Greater Redhorse		SE	G4	S2
Percina evides	Gilt Darter		SE	G4	S1
Amphibian					
Ambystoma laterale	Blue-spotted Salamander		SSC	G5	S2
Hemidactylium scutatum	Four-toed Salamander		SE	G5	S2
Rana pipiens	Northern Leopard Frog		SSC	G5	S2
Reptile					
Clemmys guttata	Spotted Turtle		SE	G5	S2
Clonophis kirtlandii	Kirtland's Snake		SE	G2	S2
Emydoidea blandingii	Blanding's Turtle		SE	G4	S2
Sistrurus catenatus catenatus	Eastern Massasauga	C	SE	G3G4T3T4Q	S2
Bird					
Asio flammeus	Short-eared Owl		SE	G5	S2
Bartramia longicauda	Upland Sandpiper		SE	G5	S3B
Buteo lineatus	Red-shouldered Hawk		SSC	G5	S3
Buteo platypterus	Broad-winged Hawk	No Status	SSC	G5	S3B
Circus cyaneus	Northern Harrier		SE	G5	S2
Dendroica cerulea	Cerulean Warbler		SE	G4	S3B
Falco peregrinus	Peregrine Falcon	No Status	SE	G4	S2B
Haliaeetus leucocephalus	Bald Eagle	LT,PDL	SE	G5	S2
Ixobrychus exilis	Least Bittern		SE	G5	S3B
Lanius ludovicianus	Loggerhead Shrike	No Status	SE	G4	S3B
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
Sturnella neglecta	Western Meadowlark		SSC	G5	S2B
Tyto alba	Barn Owl		SE	G5	S2

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: LE = Endangered; LT = 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; G4 = 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 20 Continued next page...

Table 20. Endangered, Threatened or Rare Species within Allen County -Continued

Indiana County Endangered, Threatened and Rare Species List

County: Allen

Species Name	Common Name	FED	STATE	GRANK	SRANK
Wilsonia citrina	Hooded Warbler		SSC	G5	S3B
Mammal					
Lynx rufus	Bobcat	No Status	SSC	G5	S1
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					
Andromeda glaucophylla	Bog Rosemary		SR	G5	S2
Armoracia aquatica	Lake Cress		SE	G4?	S1
Chelone obliqua var. speciosa	Rose Turtlehead		WL	G4T3	S3
Circaea alpina	Small Enchanter's Nightshade		SX	G5	SX
Coeloglossum viride var. virescens	Long-bract Green Orchis		ST	G5T5	S2
Crataegus succulenta	Fleshy Hawthorn		SR	G5	S2
Euphorbia obtusata	Bluntleaf Spurge		SE	G5	S1
Phlox ovata	Mountain Phlox		SE	G4	S1
Platanthera psycodes	Small Purple-fringe Orchis		SR	G5	S2
Poa alsodes	Grove Meadow Grass		SR	G4G5	S2
Scutellaria parvula var. parvula	Small Skullcap		SX	G4T4	SX
Spiranthes lucida	Shining Ladies'-tresses		SR	G5	S2
Spiranthes magnicamporum	Great Plains Ladies'-tresses		SE	G4	S1
High Quality Natural Community					
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	Dry Upland Forest		SG	G4	S4
Forest - upland dry-mesic	Dry-mesic Upland Forest		SG	G4	S4
Forest - upland mesic	Mesic Upland Forest		SG	G3?	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					
Geomorphic - Nonglacial Erosional Feature - Water Fall and Cascade	Water Fall and Cascade			GNR	SNR

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: LE = Endangered; LT = 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; G4 = 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 de minimis 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 36 and 37. Additional historic locations including local districts and the Wabash-Erie Canal alignment are also identified on Figures 37 and 38. 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) statue 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. (See Figure 39)

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.

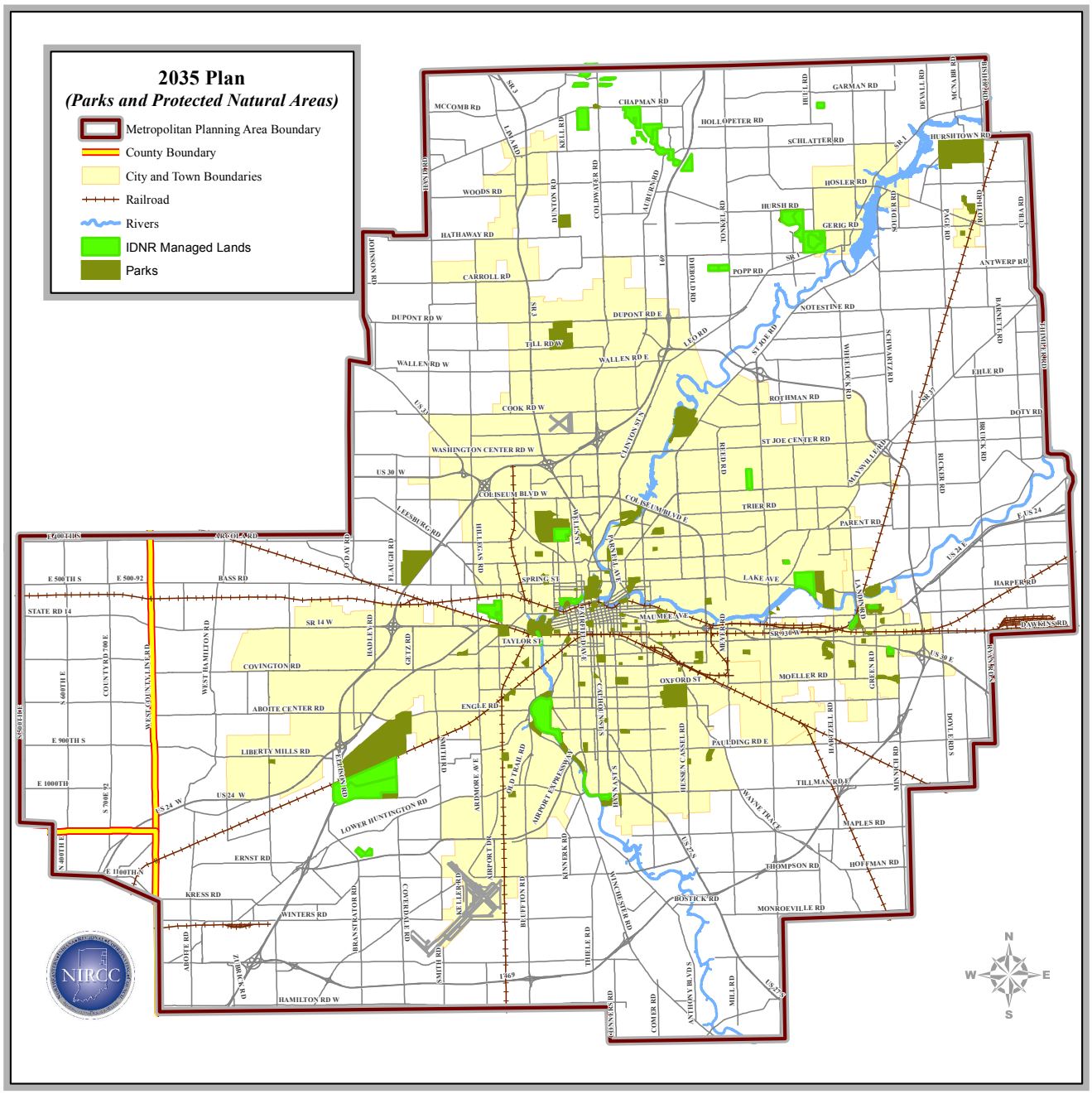


Figure 36

Parks and Significant Protected Natural Areas

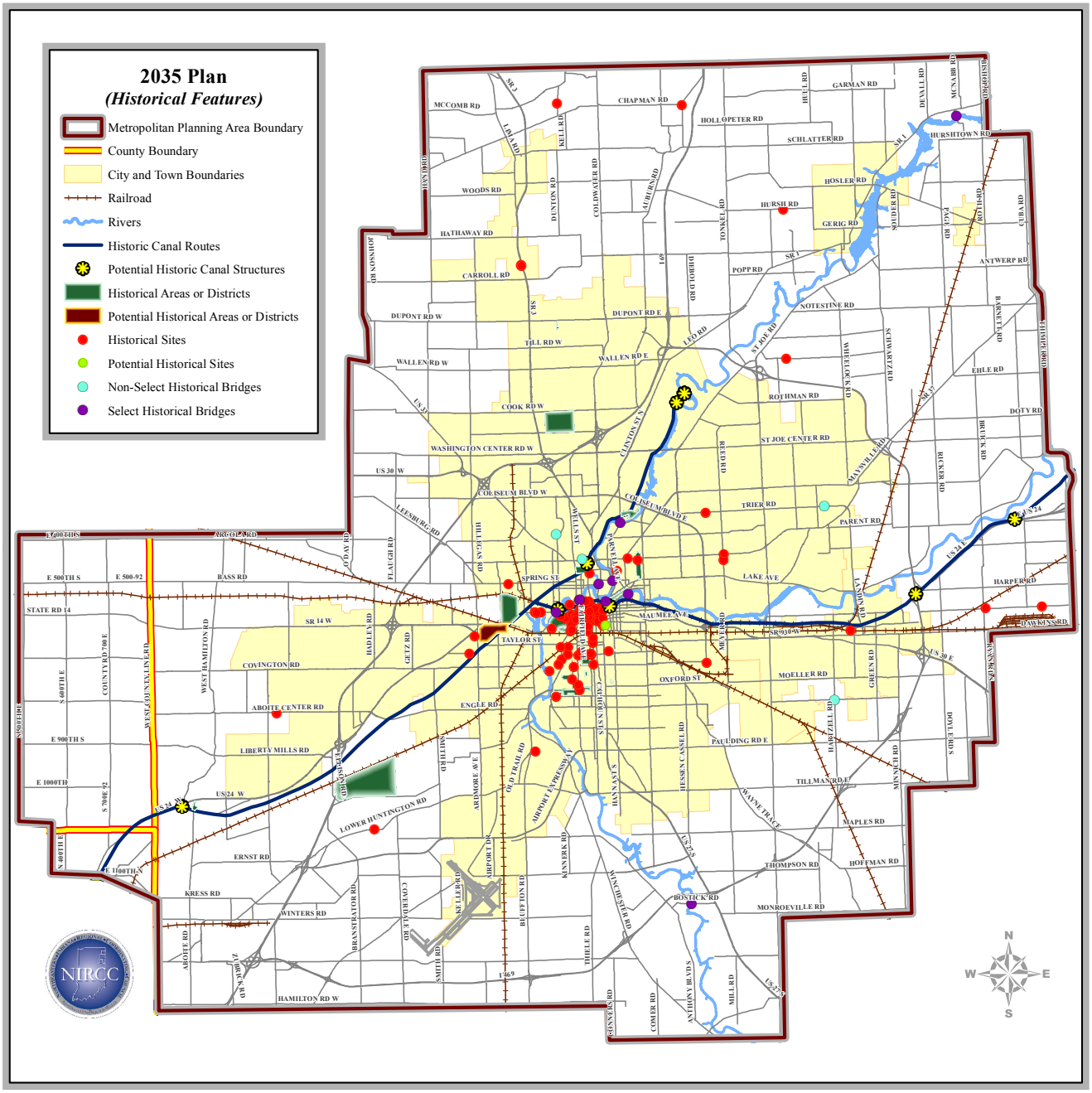
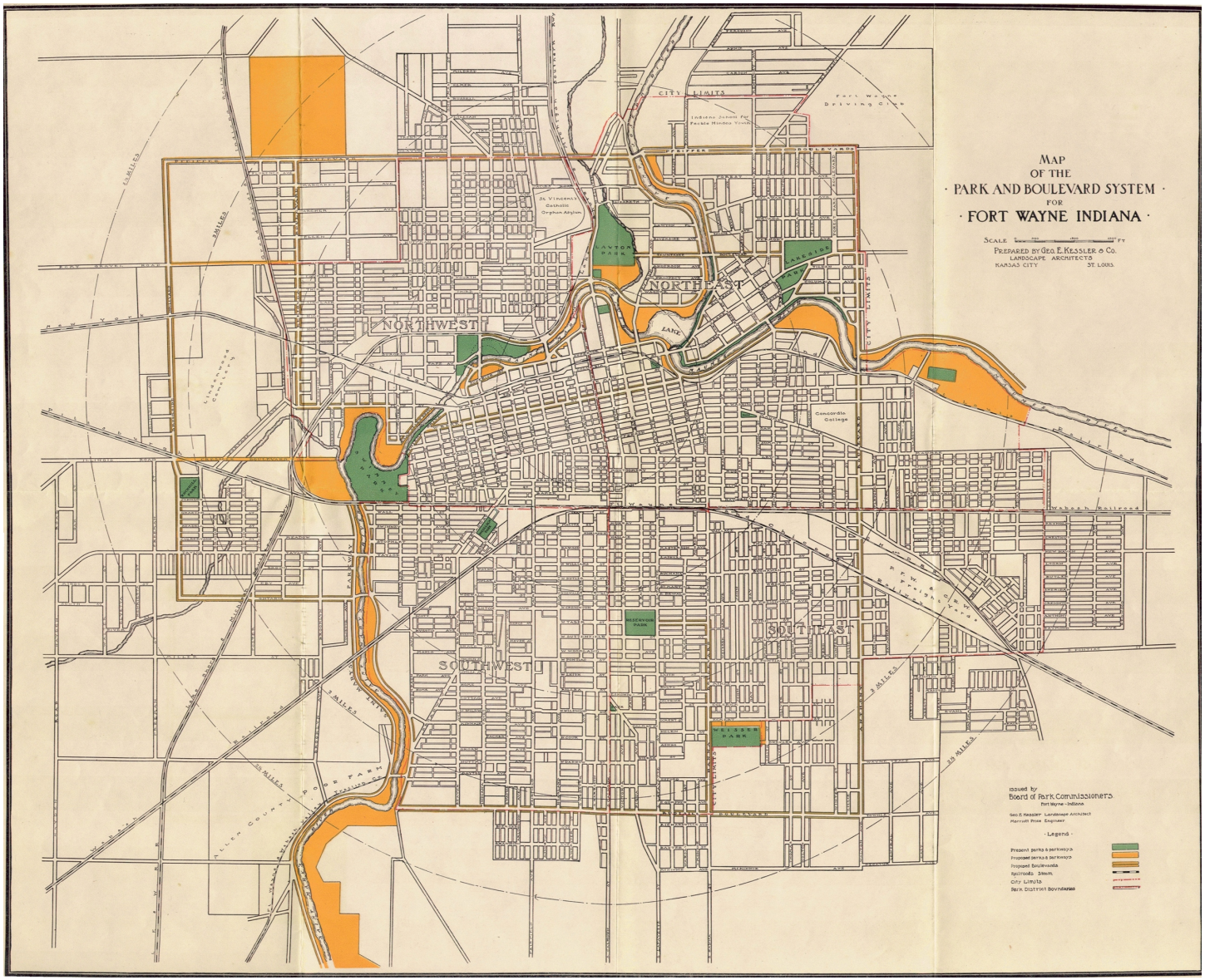


Figure 37

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 38

Kessler Plan - Park and Boulevard System

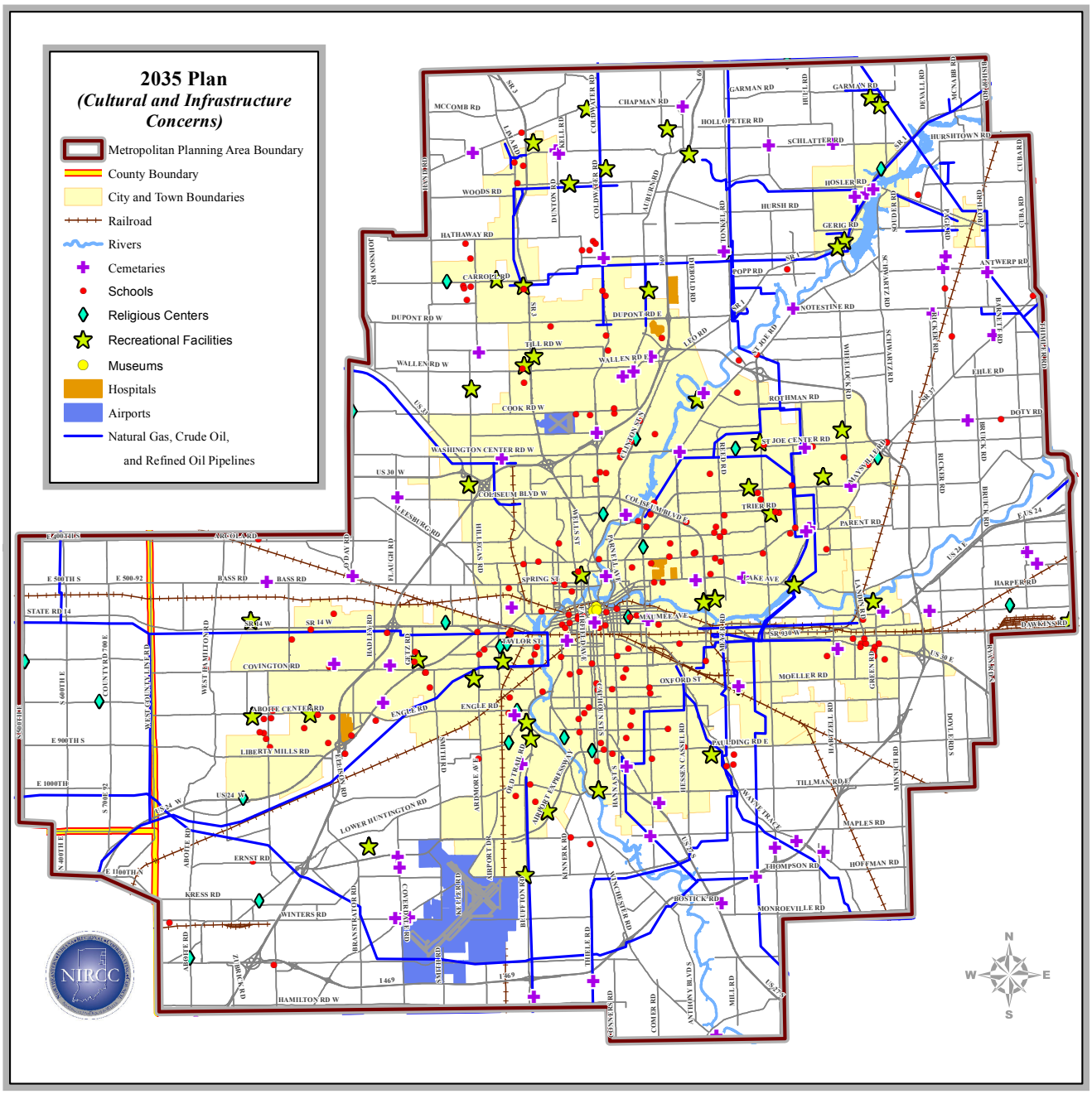


Figure 39

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 40 through 43): Confined feeding operations, 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, NPDES (National Pollutant Discharge Elimination System) facilities and pipes, corrective action 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. Several methods are available for evaluating potential impacts from specific projects or groups of projects. Based on historical public well field information, NIRCC can identify most sites within the Metropolitan Planning Area. NIRCC is also working with the Indiana Department of Environmental Management to evaluate major projects in the 2035 Transportation Plan. 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.

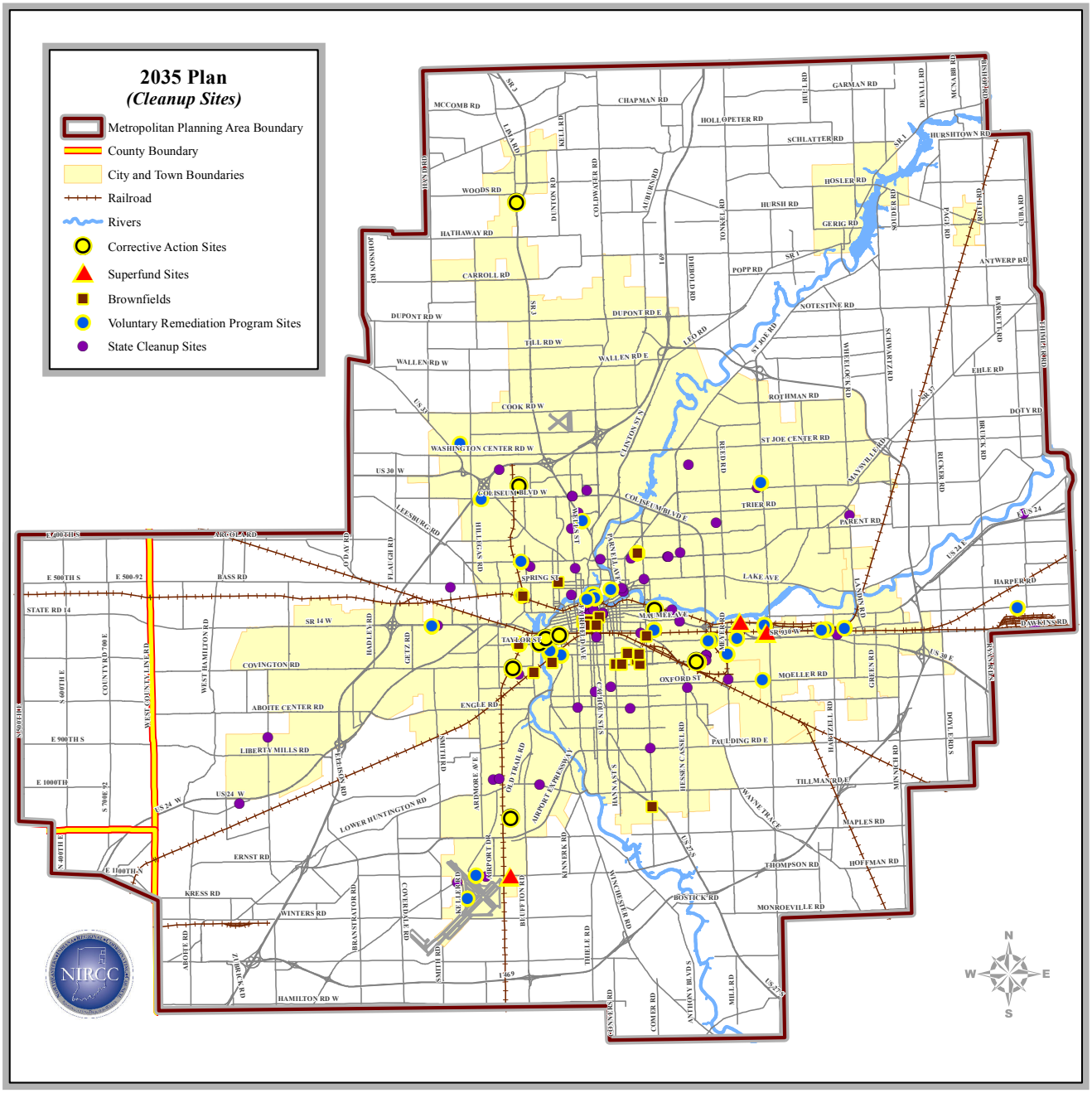


Figure 40

Cleanup Sites

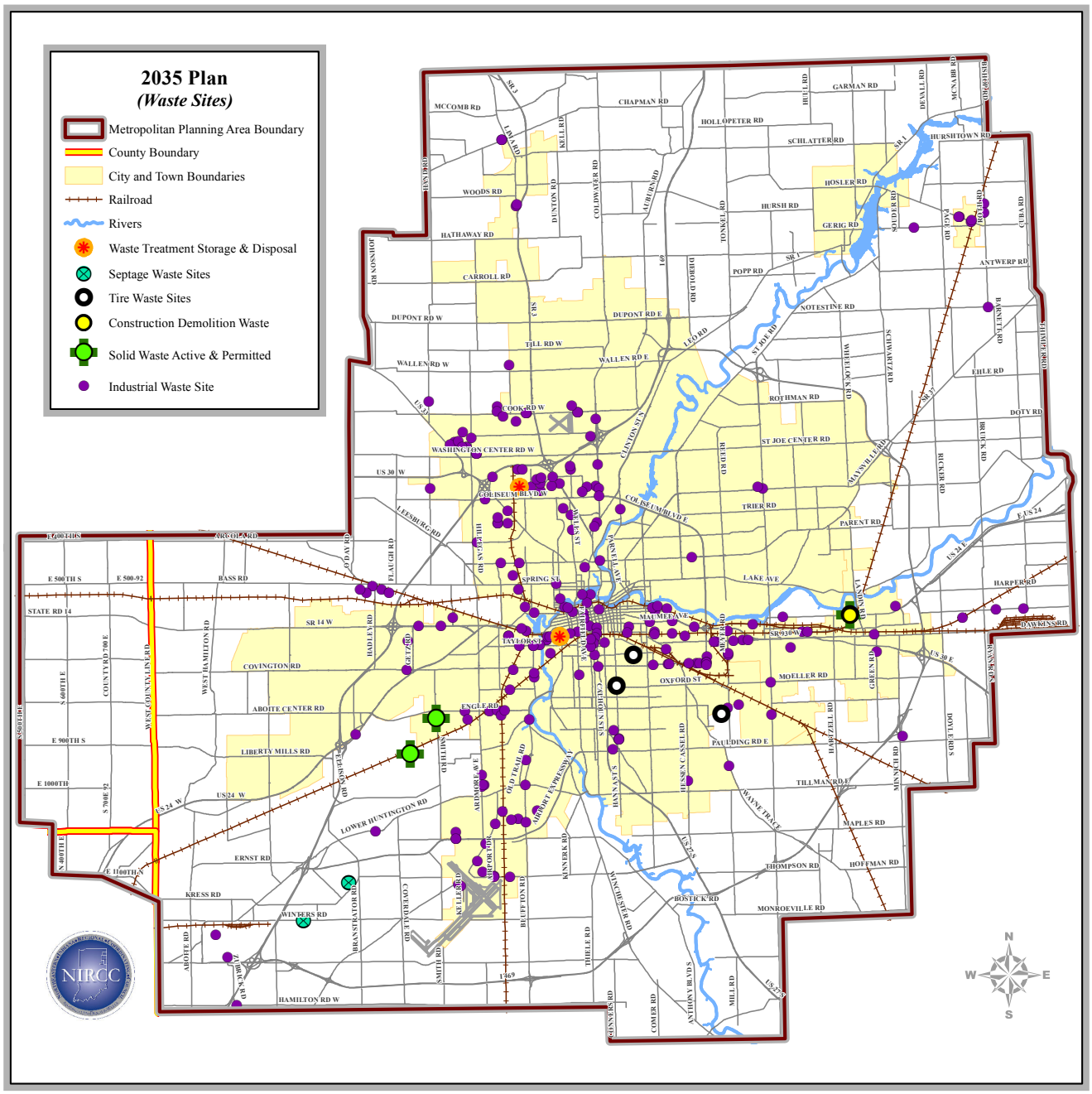


Figure 41

Waste Sites

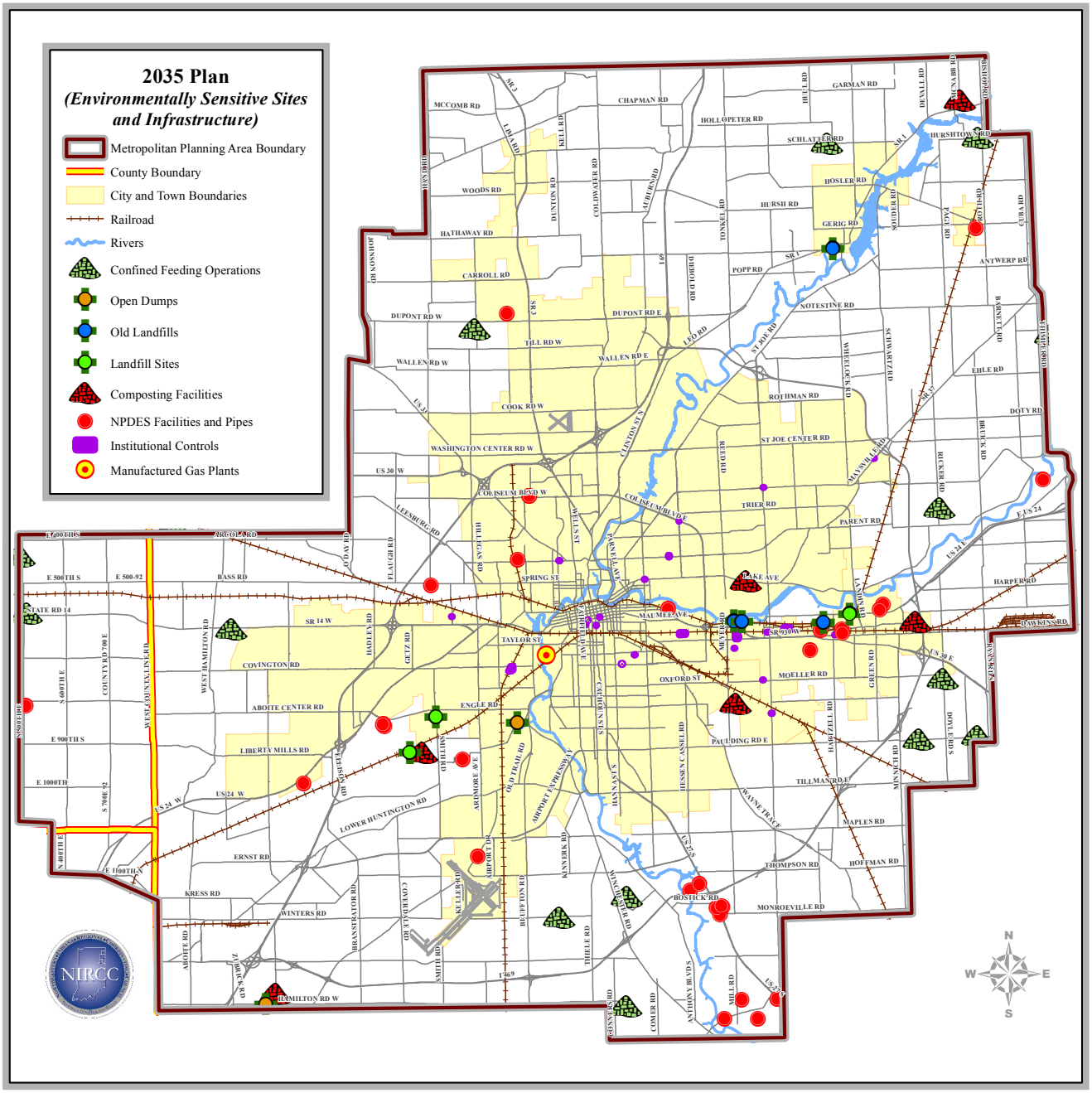


Figure 42

Enviromentally Sensitive Sites And Infrastructure

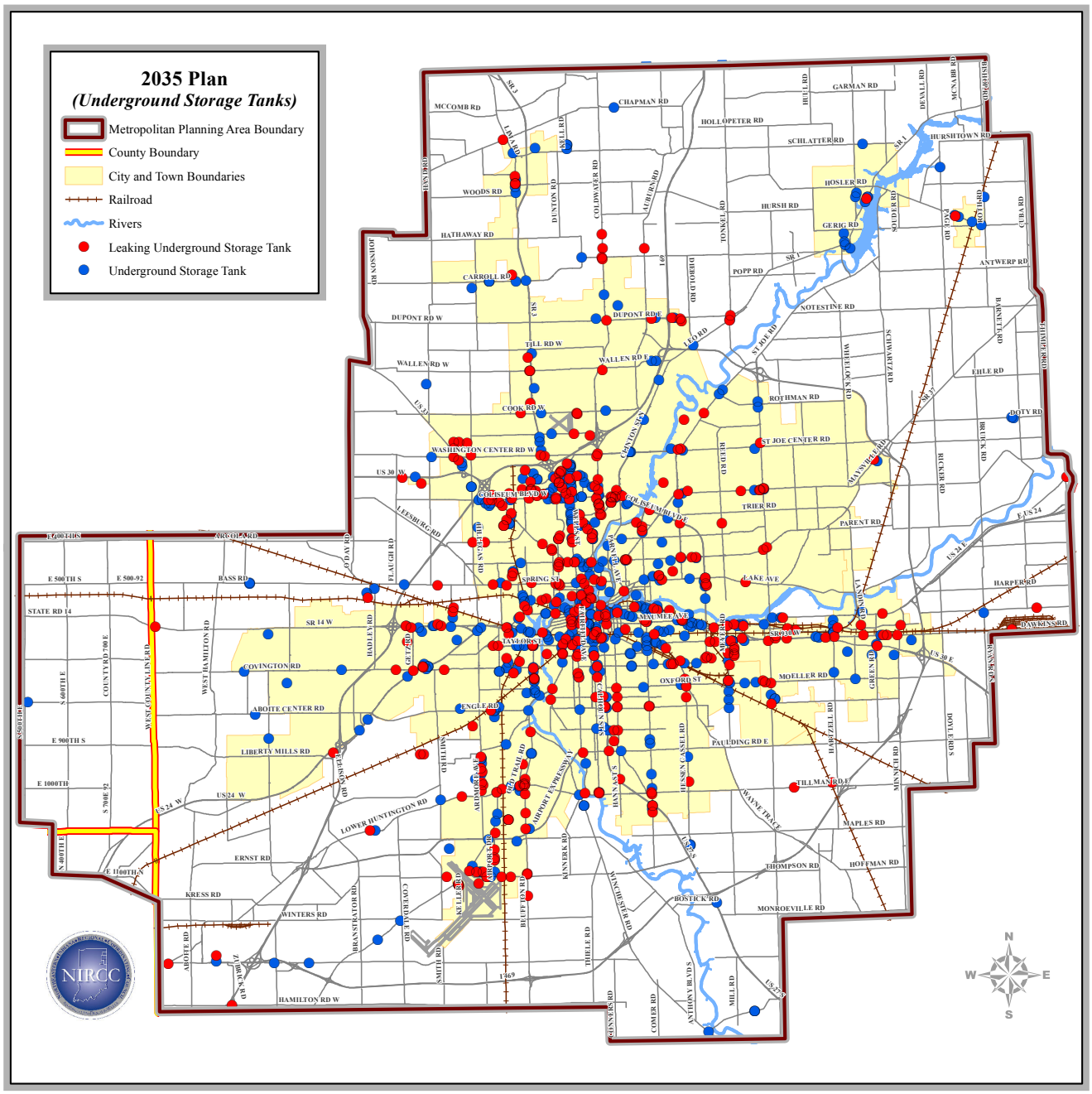


Figure 43

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 2035 Transportation Plan includes 106 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 high capacity wellhead influence areas and special interest waterways 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 21 summarizes the number of projects from the 2035 Transportation Plan that are near each type of environmental issues area within the selected buffer criteria.

Table 21. Summary of number or 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	0	0	0
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)	12	19	27
Landfill Sites (composting facilities, open dumps, old landfill sites, landfill sites)	2	2	3
NPDES (National Pollutant Discharge Elimination System) (NPDES facilities and pipes)	0	1	2
Cleanup Sites (corrective action sites, superfund sites, brownfield sites, cleanup sites, VRP sites)	6	9	19
Institutional Controls	3	4	7
Underground Storage Tanks (underground and leaking underground storage tanks)	35	57	67
Manufactured Gas Plants	0	0	0
Water Resources			
Water Features (lakes, ponds, creeks, streams, ditches)	49	64	71
Wetlands (wetland areas, wetland streams, wetland points)	37	58	77
Floodplain	54	61	65
Line of Protection	4	7	7
Special Interest Water Features/Resources (impaired lakes and streams, national river inventory (NRI, NPS), Outstanding Rivers, high capacity wells or wellhead protection/influence areas)	21	32	38
Infrastructure			
Cemeteries	3	14	22
Railroads	16	22	25
Pipelines	28	32	36
Airports and Hospitals	3	4	6

Table 21 Continued next page...

Table 21. Summary of number or 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
Cultural and Recreational Faclities (religious centers, recreational facilities, museums)	5	8	15
Schools	25	33	39
Historical Features, Parks, and Significant Protected Natural Areas			
Historical Canal (potential historic canal routes and structures)	10	11	14
Historical Bridges (select and Non-Select)	1	2	3
Historical Sites and Districts	7	11	16
Parks and Significant Protected Natural Areas	13	17	21

List of Consulting Agencies

ARCH - Historic Preservation
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
Federal Transit Administration - Region V
Fort Wayne Community Development-Historic Preservation
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

Environmental Document Data Citations

CONFINED FEEDING OPERATIONS --
Confined Feeding Operation Facilities, 2010 (Source scale is unknown)
Shows swine, chicken, turkey, beef or dairy agribusinesses that have large enough numbers of animals that IDEM regulates for environmental concerns, as defined by IC 13-18-10 of the Indiana Code.
FGDC metadata: CONFINED_FEEDING_OPERATIONS_IDEM_IN
Originator:Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: CONFINED_FEEDING_OPERATIONS_IDEM_IN: Confined Feeding Operation Facilities in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

WASTE TREATMENT STORAGE DISPOSAL --
Treatment, Storage, and Disposal Sites, 2010 (Source scale is unknown)
Shows treatment, storage, and disposal (TSD) site locations. Treatment Storage and Disposal Facilities are facilities that may treat, store, and (or) dispose hazardous waste. Such facilities are usually also generators of hazardous waste. The layer generally shows the locations of access points to managed sites, along with a unique identifier for each location.
FGDC metadata: WASTE_TREATMENT_STORAGE_DISPOSAL_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: WASTE_TREATMENT_STORAGE_DISPOSAL_IDEM_IN: Treatment, Storage, and Disposal Sites in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

SEPTAGE WASTE SITES --
Septage Waste Sites, 2010 (Source scale is unknown)
Shows septage waste site locations. Septage Sites are permitted septage (septic tank waste) sites where the waste is land applied, as defined by 327 IAC 7, 327 IAC 7-6, and 327 IAC 7-7 of the Indiana Administrative Code. The layer generally shows the locations of access points to managed sites, along with a unique identifier for each location. In a few instances other features were used as a reference for the

location of the managed sites.
FGDC metadata: WASTE_SEPTAGE_SITES_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: WASTE_SEPTAGE_SITES_IDEM_IN: Septage Waste Sites in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

TIRE WASTE SITES --
Waste Tire Sites, 2010 (Source scale is unknown)
Shows waste tire site locations. Tire Sites contain tires either for processing, for storage, or transport, as well as some illegal tire dumps, as defined by IC 13-11-2-251, IC 13-11-2-252, and IC 13-11-250.5 of the Indiana Code. The layer generally shows the locations of access points to managed sites, along with a unique identifier for each location.
FGDC metadata: WASTE_TIRE_SITES_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: WASTE_TIRE_SITES_IDEM_IN: Waste Tire Sites in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

CONSTRUCTION DEMOLITION WASTE --
Construction and Demoliton Waste Facilities, 2010 (Source scale is unknown)
Shows permitted, state-licensed facilities that accept solid waste in the form of anything that is attached to a house during construction or demolition, as defined by IAC 329 10-2-36 of the Indiana Administrative Code.
FGDC metadata: CONSTRUCTION_DEMOLITION_WASTE_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: CONSTRUCTION_DEMOLITION_WASTE_IDEM_IN: Construction and Demoliton Waste Facilities in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data

Publication_Information:
Publication_Place: Indianapolis, Indiana
Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

SOLID WASTE LANDFILLS --
Active Permitted Solid Waste Sites, 2010 (Source scale is unknown)
Shows active permitted solid waste site locations. The layer generally shows the locations of access points to managed sites, along with a unique identifier for each location.
FGDC metadata: WASTE_SOLID_ACTIVE_PERMITTED_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: WASTE_SOLID_ACTIVE_PERMITTED_IDEM_IN: Active Permitted Solid Waste Sites in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to IGS personnel by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

INDUSTRIAL WASTE SITES --
Industrial Waste Sites, 2010 (Source scale is unknown)
Shows the locations of access points to industrial waste site locations, along with unique identifiers for each location. GPS points locate the entrance to facilities that generate and (or) manage hazardous waste, non-hazardous industrial waste, and solid waste.
FGDC metadata: WASTE_INDUSTRIAL_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: WASTE_INDUSTRIAL_IDEM_IN: Industrial Waste Sites in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to IGS personnel by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

OPEN DUMP WASTE SITES --
Open Dump Sites, 2010 (Source scale is unknown)
Open Dumps are sites that are not regulated and are illegal dump sites of solid waste, as defined by IAC 10-2-28 329 and IAC 10-2-128 of the Indiana Administrative Code.
FGDC metadata: OPEN_DUMPS_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: OPEN_DUMPS_IDEM_IN: Open Dump Sites in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

OLD LANDFILLS --
OLD LANDFILLS, 2010 (Source scale is unknown)
Shows landfills that are finished with their post-closure care and older landfills that were never permitted. Post-closure care requires submittal of documentation to IDEM, maintenance of the cover, and methane and ground water monitoring, where applicable. Landfills that are finished with post-closure care no longer submit information, IDEM inspects them less frequently, and they disappear off the Permit Manager's list. These sites closed under a number of different rules and regulations. Some of them were never permitted. Many contain solid waste, but some contain industrial waste. It is a varied dataset with only one thing in common: they are not submitting information to IDEM, they are not regularly inspected, and they are not considered part of the IDEM permit universe.
FGDC metadata: WASTE_OLD_LANDFILLS_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: WASTE_OLD_LANDFILLS_IDEM_IN: Post-Closure Landfills in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

COMPOSTING FACILITIES --
Composting Facilities, 2010 (Source scale is unknown)
Shows leaf, limb, or grass collection sites where a compost product is created, as defined by IC 13-20-10 of the Indiana Code.

FGDC metadata: COMPOSTING_FACILITIES_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: COMPOSTING_FACILITIES_IDEM_IN: Composting Facilities in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

NPDES FACILITIES --
Facilities - National Pollutant Discharge Elimination System, 2002 (Source scale is unknown)
Shows state-permitted wastewater facilities and provides associated information such as the name of the facility, contacts, and a variety of mailing addresses.
Extracted from the national EPA Permit Compliance System (PCS) database, this layer includes all available records listed in Indiana associated with active surface-water discharges that have locational information as UTM values.
IGS personnel modified the original shapefile obtained from IDEM by eliminating 3,234 records that did not have associated UTM values.
FGDC metadata: NPDES_FACILITY_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Water Quality
Publication_Date: 20021212
Title: NPDES_FACILITY_IDEM_IN: Facilities in the National Pollutant Discharge Elimination System with Assigned UTM Coordinates in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Water Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Water Quality personnel. The data set provided was in an ESRI shapefile format, and was named "A-NPDES-FACILITY."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

NPDES PIPE LOCATIONS --
Pipe Locations - National Pollutant Discharge Elimination System, 2002 (Source scale is unknown)
Shows National Pollutant Discharge Elimination System (NPDES) Program pipe locations.
Extracted from the national EPA Permit Compliance System (PCS) database, this layer focuses on active state-regulated wastewater facility permit discharge points discharging into surface water bodies and for which locational information exists as UTM values.
IGS personnel modified the original shapefile obtained from IDEM by eliminating 2,782 records that did not have associated UTM values.

FGDC metadata: NPDES_PIPE_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Water Quality
Publication_Date: 20021212
Title: NPDES_PIPE_IDEM_IN: Pipe Locations in the National Pollutant Discharge Elimination System with Assigned UTM Coordinates in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Water Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Water Quality personnel. The data set provided was in an ESRI shapefile format, and was named A-NPDES-PIPE.
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

CORRECTIVE ACTION SITES --
Corrective Action Sites, 2010 (Source scale is unknown)
Shows facilities that are subject to RCRA Corrective Action if they meet any of the following conditions: operating under a hazardous waste permits (A or B) or an interim status facility and lawsuit against any handler.
FGDC metadata: CORRECTIVE_ACTION_SITES_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: CORRECTIVE_ACTION_SITES_IDEM_IN: Corrective Action Sites in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

SUPERFUND SITES --
Superfund Program Facilities, 2010 (Source scale is unknown)
Shows GPS-located Superfund Program facilities. The layer generally shows the locations of access points to managed sites. Attributes include facility identifications, federal identification numbers, and addresses.
FGDC metadata: SUPERFUND_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: SUPERFUND_IDEM_IN: Superfund Program Facilities in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana

Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

BROWNFIELDS --
Brownfields, 2010 (Source scale is unknown)
A brownfield site is a parcel of real estate that is abandoned or inactive, or may not be operated at its appropriate use, and on which expansion, redevelopment, or reuse is complicated because of the presence or potential presence of a hazardous substance, a contaminant, petroleum, or a petroleum product that poses a risk to human health and the environment.
FGDC metadata: BROWNFIELDS_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: BROWNFIELDS_IDEM_IN: Brownfield Locations in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-06012009.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

VRP SITES --
Voluntary Remediation Program Sites, 2010 (Source scale is unknown)
Shows Voluntary Remediation Program site locations. The layer generally shows the location of access points to managed sites. Attributes include facility names and federal identification numbers.
FGDC metadata: VRP_SITES_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: VRP_SITES_IDEM_IN: Voluntary Remediation Program Sites in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

CLEANUP SITES --

State Cleanup Sites, 2010 (Source scale is unknown)
Shows State Cleanup sites that are on the Commissioner's Bulletin or referred remedial response locations or other IDEM programs that require mitigation of risk to human health and the environment through investigation, remediation or institutional controls
FGDC metadata: CLEANUP_SITES_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: CLEANUP_SITES_IDEM_IN: Cleanup Sites in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

INSTITUTIONAL CONTROL SITES (IDEM) --
Institutional Control Sites, 20120410
Shows Institutional Control (IC) site locations in Indiana.
When any amount of contamination above a residential closure level is left on a property, a legal measure called an Institutional Control (IC) may be needed.
An IC protects human health and the environment by restricting property activity, use, or access.
Institutional Control (IC) polygons were created from recorded Environmental Restrictive Covenants (ERCs) and other Institutional Controls (ICs) mandated by IDEM.
Attributes include facility names and addresses, the type(s) of use-restrictions and IC's, and a URL that links directly to a digital copy of the IC document.
FGDC metadata: INSTITUTIONAL_CONTROLS_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20120410
Title: INSTITUTIONAL_CONTROLS_IDEM_IN: Institutional Control Sites in Indiana (Indiana Department of Environmental Management, Polygon Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI shapefile format, and was named "OLQ_INSTITUTIONAL_CONTROLS_IN.SHP"
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

UST LOCATIONS --
Underground Storage Tanks, 2010 (Source scale is unknown)
Shows regulated underground storage tank locations. Regulated underground storage tanks are those that have 10 percent or more of the tank and piping buried beneath the ground and contain a regulated

substance. This data set generally contains the location of access points to managed sites, along with a unique identifier for each location.
FGDC metadata: UST_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: UST_IDEM_IN: Underground Storage Tanks in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

LUST LOCATIONS --
Leaking Underground Storage Tanks, 2010 (Source scale is unknown)
Shows known sites with leaking underground storage tanks. Regulated underground storage tanks (USTs) contain regulated substances including petroleum and hazardous substances such as those typically found at gasoline stations, fleet fueling facilities, and industrial sites. If a release from a UST system is suspected or confirmed, the owner and operator must report it to the Indiana Department of Environmental Management. These sites are called Leaking USTs. Actions must be taken as described in the UST rules - 329 IAC 9-4 and 5.
FGDC metadata: LUST_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: LUST_IDEM_IN: Leaking Underground Storage Tanks in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-04162010.gdb."

MANUFACTURED GAS PLANTS --
Manufactured Gas Plants, 2010 (Source scale is unknown)
MGPs produced gas for lighting, heating, and cooking from the 1850's to the 1940's. In addition to producing the desired product, gas, numerous toxic by-products (such as tars and purifier wastes) were often stored in subsurface structures or disposed of in the dump areas at the site. Significant amounts of contamination usually occurred at these sites due to the nature of gas production and poor housekeeping. MGPs productions decreased and were phased out in the 1940's due to the increase network of natural gas pipelines across the country. These plants were decommissioned by razing the building but leaving subsurface structures and wastes in place. There are at least 74 known former MGPs in Indiana.

FGDC metadata: MANUFACTURED_GAS_PLANTS_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Land Quality
Publication_Date: 20100416
Title: MANUFACTURED_GAS_PLANTS_IDEM_IN: Manufactured Gas Plants in Indiana (Indiana Department of Environmental Management, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Land Quality
Other_Citation_Details:
This data set was provided to personnel of the Indiana Geological Survey (IGS) by Indiana Department of Environmental Management, Office of Land Quality personnel. The data set provided was in an ESRI geodatabase format, and was named "OLQ IndianaMap Export-041620109.gdb."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

HYDROGRAPHY LINES --
Streams, Rivers, Canals, and Ditches, 2000 (1:100,000)
Shows streams, rivers, canals, and ditches.
This layer is derived from the National Hydrography Dataset (NHD). The NHD interconnects and uniquely identifies the stream segments or reaches that comprise the nation's surface-water drainage system. It is based initially on the content of the U.S. Geological Survey 1:100,000-scale Digital Line Graph (DLG) hydrography data, integrated with reach-related information from the U.S. Environmental Protection Agency Reach File Version 3.0 (RF3). For portions of the southwestern 26 counties, some features were added from 1:24,000 quadrangles by Bernardin, Lochmueller and Associates, Inc.
FGDC metadata: HYDROGRAPHY_LINE_NHD_IN
Originator: (creation): US Geological Survey and the US Environmental Protection Agency
Originator: (compilation): Bernardin, Lochmueller and Associates
Publication_Date: 20030513
Title: HYDROGRAPHY_LINE_NHD_IN: Streams, Rivers, Canals, and Ditches in Indiana (United States Geological Survey, 1:100,000, Polygon Shapefile)
Edition: National Hydography Dataset, 2002
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Evansville, IN
Publisher: Bernardin, Lochmueller and Associates
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>
Other_Citation_Details:
This dataset is derived from the National Hydrography Dataset created by the US Geological Survey and the US Environmental Protection Agency; <http://nhd.usgs.gov/> Dataset is one layer in the Indiana Statewide GIS Database funded by Indiana Department of Transportation.

HYDROGRAPHY POLYGONS --
Canals, Lakes, Streams, and Swamps, 2000 (1:100,000)
Shows lakes, ponds, rivers, large streams, and swamps or marshes in Indiana. This layer is derived from the National Hydrography Dataset (NHD). The NHD interconnects and uniquely identifies the stream segments or reaches that comprise the nation's surface-water drainage system. It is based initially on the content of the U.S. Geological Survey 1:100,000-scale Digital Line Graph (DLG) hydrography data, integrated with reach-related information from the U.S. Environmental Protection Agency Reach File

Version 3.0 (RF3).
FGDC metadata: HYDROGRAPHY_POLY_NHD_IN
Originator: (creation): US Geological Survey and the US Environmental Protection Agency
Originator: (compilation): Bernardin, Lochmueller and Associates
Publication_Date: 20021200
Title: HYDROGRAPHY_POLY_NHD_IN: Canals, Lakes, Streams, and Swamps in Indiana (United States Geological Survey, 1:100,000, Polygon Shapefile)
Edition: National Hydography Dataset, 2002
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Evansville, IN
Publisher: Bernardin, Lochmueller and Associates
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>
Other_Citation_Details:
This dataset is derived from the National Hydrography Dataset created by the US Geological Survey and the US Environmental Protection Agency; <http://nhd.usgs.gov/> Dataset is one layer in the Indiana Statewide GIS Database funded by Indiana Department of Transportation.

WETLAND POINTS --
National Wetland Inventory, as Points, 1992 (1:3,000,000)
Shows features of wetlands, lakes, ponds, streams and other water resources, as defined by the U.S. Fish and Wildlife Service and compiled from the National Wetland Inventory. Point features are used to represent areas which may be too small to be represented by a polygon.
Aerial photointerpretation techniques were used, with the objective of providing better geospatial information on wetlands than found on the U.S. Geological Survey topographic maps. Wetland boundaries are generalized and are not exact, nor are they comparable to boundaries derived from ground surveys. This layer is intended for use with its companion layers of Wetland lines and Wetland polygons.
FGDC metadata: WETLAND_NWI_POINT_IN
Originator: (creation): US Fish and Wildlife Service
Originator: (compilation): Bernardin, Lochmueller and Associates
Publication_Date: 20030128
Title: WETLANDS_NWI_POINT_IN: National Wetland Inventory Points in Indiana (US Fish and Wildlife Service, 1:3M, Point Shapefile)
Edition: National Wetland Inventory
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Evansville, IN
Publisher: Bernardin, Lochmueller and Associates
Other_Citation_Details:
This dataset is a compilation of the National Wetland Inventory created by the US Fish and Wildlife Service <http://www.nwi.fws.gov/> Dataset is one layer in the Indiana Statewide GIS Database funded by Indiana Department of Transportation. This metadata applies to one shapefile for Indiana.
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

WETLAND POLYGONS --
National Wetland Inventory, as Polygons, 1992 (1:3,000,000)
Shows features of wetlands, lakes, ponds, streams and other water resources, as defined by the U.S. Fish & Wildlife Service and compiled from the National Wetland Inventory.

Aerial photointerpretation techniques were used, with the objective of providing better geospatial information on wetlands than found on the U.S. Geological Survey topographic maps. Wetland boundaries are generalized and are not exact, nor are they comparable to boundaries derived from ground surveys. This layer is intended for use with its companion layers of Wetland lines and Wetland points.
FGDC metadata: WETLAND_NWI_POLY_IN
Originator: (creation): US Fish and Wildlife Service
Originator: (compilation): Bernardin, Lochmueller and Associates
Publication_Date: 20030128
Title: WETLANDS_NWI_POLY_IN: National Wetland Inventory Polygons by County in Indiana (US Fish and Wildlife Service, 1:2M, Polygon Shapefile)
Edition: National Wetland Inventory
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Evansville, IN
Publisher: Bernardin, Lochmueller and Associates
Other_Citation_Details:
This dataset is a compilation of the National Wetland Inventory created by the US Fish and Wildlife Service <http://www.nwi.fws.gov/> Dataset is one layer in the Indiana Statewide GIS Database funded by Indiana Department of Transportation.
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

WETLAND LINES --
National Wetland Inventory, as Lines, 1992 (1:3,000,000)
Shows features of wetlands, lakes, ponds, streams and other water resources, as defined by the U.S. Fish and Wildlife Service and compiled from the National Wetland Inventory.
Aerial photointerpretation techniques were used, with the objective of providing better geospatial information on wetlands than found on the U.S. Geological Survey topographic maps. Wetland boundaries are generalized and are not exact, nor are they comparable to boundaries derived from ground surveys. This layer is intended for use with its companion layers of Wetland points and Wetland polygons.
FGDC metadata: WETLAND_NWI_LINE_IN
Originator: (creation): US Fish and Wildlife Service
Originator: (compilation): Bernardin, Lochmueller and Associates
Publication_Date: 20030128
Title: WETLANDS_NWI_LINE_IN: National Wetland Inventory Lines in Indiana (US Fish and Wildlife Service, 1:3M, Line Shapefile)
Edition: National Wetland Inventory
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Evansville, IN
Publisher: Bernardin, Lochmueller and Associates
Other_Citation_Details:
This dataset is a compilation of the National Wetland Inventory created by the US Fish and Wildlife Service <http://www.nwi.fws.gov/> Dataset is one layer in the Indiana Statewide GIS Database funded by Indiana Department of Transportation. This metadata applies to one shapefile for Indiana.
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

Flood Control Project – Line of Protection
Department of the Army, Detroit District, corps of Engineers

Environmental Analysis Branch
Data was received per consultation with Department of the Army, Detroit District, corps of Engineers Environmental Analysis Branch 3/10/09

FLOODPLAINS - DFIRM --
Floodplains - Flood Rate Insurance Maps (DFIRM), 2004 (1:12,000)
Shows floodplains created from FEMA Flood Rate Insurance Maps (FIRM). The FIRM is the basis for floodplain management, mitigation, and insurance activities for the National Flood Insurance Program (NFIP). The Digital Flood Insurance Rate Map (DFIRM) Database is derived from Flood Insurance Studies (FIS), previously published Flood Insurance Rate Maps (FIRM), flood hazard analyses performed in support of the FIS's and FIRM's, and new mapping data, where available.
This database is an interim version of the DFIRM Database and does not fully meet all DFIRM specifications. These floodplain data may be used with an associated base-flood-elevation line shapefile and cross-sections line shapefile.
FGDC metadata: FLOODPLAINS_DFIRM_IDNR_IN
Originator: Indiana Department of Natural Resources
Publication_Date: 20040909
Title: FLOODPLAINS_DFIRM_IDNR_IN: DFIRM Floodplains for 86 of 92 Counties in Indiana (Indiana Department of Natural Resources, 1:12,000, Polygon Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Natural Resources
Other_Citation_Details:
Floodplains are one layer in the interim digital flood rate insurance maps (DFIRM) created by the Indiana Department of Natural Resources (IDNR) and available for download from the following URL: <http://www.in.gov/dnr/water/surface_water/hydro_hydraulic/flood_maps/index.html>
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

IMPAIRED LAKES (IDEM) --
Impaired Lakes, 2006 (Source scale is unknown)
Shows waterbodies that do not meet water-quality standards under Section 303(d) of the Clean Water Act.
Attributes include causes for listing under Section 303(d) (such as algae, taste and odor, E. coli, and sulfates), as well as fish consumption advisories for mercury and PCBs.
Obtained from the Indiana Department of Environmental Management.
FGDC metadata: IMPAIRED_LAKES_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Water (Data creator)
Originator: Bernardin, Lochmueller & Associates (Data processor)
Publication_Date: 20060621
Title: IMPAIRED_LAKES_IDEM_IN: Impaired Lakes in Indiana on the 303(d) List of 2006 (Indiana Department of Environmental Management, Polygon Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Water Quality
Other_Citation_Details:
This data set was provided to personnel of Bernardin, Lochmueller & Associates (BLA) by Indiana De-

partment of Environmental Management, Office of Water personnel.
The data set provided was in an ESRI shapefile format, and was named "in_303d2006_utm_lakes."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

IMPAIRED STREAMS (IDEM) --
Impaired Streams, 2006 (Source scale is unknown)
Shows streams and rivers that do not meet water-quality standards under Section 303(d) of the Clean Water Act.
Attributes include causes for listing under Section 303(d) (such as algae, metals, pesticides, E. coli, dioxins, et al.), as well as fish consumption advisories for mercury and PCBs.
Obtained from the Indiana Department of Environmental Management.
FGDC metadata: IMPAIRED_STREAMS_IDEM_IN
Originator: Indiana Department of Environmental Management, Office of Water (Data creator)
Originator: Bernardin, Lochmueller & Associates (Data processor)
Publication_Date: 20060621
Title: IMPAIRED_STREAMS_IDEM_IN: Impaired Streams in Indiana on the 303(d) List of 2006 (Indiana Department of Environmental Management, Line Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Environmental Management, Office of Water Quality
Other_Citation_Details:
This data set was provided to personnel of Bernardin, Lochmueller & Associates (BLA) by Indiana Department of Environmental Management, Office of Water personnel.
The data set provided was in an ESRI shapefile format, and was named "in_303d2006_utm_streams."
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

Wellhead Protection Areas/High Capacity Wells
The Hydrogeology of Allen County, Indiana: A Geologic and Ground-Water Atlas. Anthony H. Fleming. Indiana Geological Survey, Special Report 57. Bloomington Indiana, 1994.

RIVERS - OUTSTANDING (NRC) --
Outstanding Rivers, 1997 (1:100,000)
Shows Outstanding Rivers in Indiana, as listed by the Natural Resource Commission. Identifies rivers and streams which have particular environmental or aesthetic interest. Except where incorporated into a statute or rule, the listing is intended to provide guidance rather than to have regulatory application.
FGDC metadata: RIVERS_OUTSTANDING_NRC_IN
Originator: Natural Resources Commission (creator); Bernardin-Lochmueller and Associates (compiler)
Publication_Date: 20040801
Title: RIVERS_OUTSTANDING_NRC_IN: Outstanding Rivers in Indiana Listed by the Natural Resource Commission (Bernardin-Lochmueller and Associates, 1:100,000, Line Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Evansville, Indiana
Publisher: Bernardin-Lochmueller and Associates
Other_Citation_Details:
RIVERS_OUTSTANDING_NRC_IN was created from data published by the Natural Resource Com-

mission (NRC) listing the “Outstanding Rivers List for Indiana”. This list is available at the following URL:
<http://www.in.gov/nrc/policy/outstand.html.>
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

Cemeteries
Originator: Allen County iMap
Last Updated: 20100401
Title: GISData.SDE.Cemetery
Publication_Place: Fort Wayne, IN
Publisher: Allen County iMap

MANAGED LANDS --
Managed Lands, 20120315 (1:24,000)
Shows natural and recreation areas which are owned or managed by the Indiana Department of Natural Resources. In addition, some lands are included that are owned by federal agencies, local agencies, non-profit organizations, and conservation easements. For additional information regarding these lands, persons should contact the IDNR Indiana Natural Heritage Data Center (317-232-4052).
Attributes include property names, owners, managing entities, acreages, access, and other information.
FGDC metadata: MANAGED_LANDS_IDNR_IN
Originator: Indiana Natural Heritage Data Center, Indiana Department of Natural Resources (Data creator)
Publication_Date: 20120315
Title: MANAGED_LANDS_IDNR_IN: Managed Lands in Indiana (Indiana Department of Natural Resources, 1:24,000, Polygon Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Natural Heritage Data Center, Indiana Department of Natural Resources
Other_Citation_Details:
This data set was provided to personnel of Indiana Geological Survey (IGS) on December 28. 2007 by the Indiana Natural Heritage Data Center, Indiana Department of Natural Resources personnel. An updated data set was received on April 16, 2009, April 21, 2010, September 20, 2010, and March 15, 2012. The data was provided in an ESRI shapefile format, and was named "MANAGEDLANDS_DNR_INHD_IN_120315.SHP". This file was approved for public distribution by the Natural Heritage Data Center.
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

Ft Wayne/Allen County Parks
Originator: Allen County iMap
Last Updated: 20070718
Title: GISData.SDE.Parks
Publication_Place: Fort Wayne, IN
Publisher: Allen County iMap

Railroads
Originator: Allen County iMap, Allen County, Auditor's Office, The Sidwell Company

Last Updated: 20070718
Title: GISData.SDE.Railroad_Centerline
Publication_Place: Fort Wayne, IN
Publisher: Allen County iMap

Schools
Originator: Allen County iMap
Last Updated: 20070718
Title: GISData.SDE.Schools
Publication_Place: Fort Wayne, IN
Publisher: Allen County iMap

RELIGIOUS FACILITIES --
Religious Facilities, 2007 (1:24,000)
Shows the locations of religious centers and places of worship in Indiana.
Extracted from the Geographic Names Information System (GNIS) of the U.S. Geological Survey. The dataset contains religious facilities named on 1:24,000 quadrangles. Additional facilities were added by Bernardin, Lochmueller and Associates, Inc.
FGDC metadata: RELIGIOUS_CENTERS_USGS_BLA_IN
Originator: United States Geological Survey (USGS) (data creator)
Originator: Bernardin, Lochmueller & Associates (BLA) (data creator and compiler)
Publication_Date: 20070823
Title: RELIGIOUS_CENTERS_USGS_BLA_IN: Religious Centers in Indiana (United States Geological Survey and Bernardin, Lochmueller & Associates, 1:24,000, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Evansville, Indiana
Publisher: Bernardin, Lochmueller & Associates
Other_Citation_Details:
This data set was compiled by personnel of Bernardin, Lochmueller & Associates (BLA) from the United States Geological Survey (USGS) Geographic Names Information System (GNIS), USGS topographic map review, and locating addresses found on various religious listing web sites. To find out more about the USGS, GNIS visit <http://geonames.usgs.gov/domestic/index.html>. Web sites used to obtain address listings for additional listings include - Dharma Web <http://www.dharmaweb.org/index.php/Indiana>, Jewish Finder <http://www.ujc.org/ir_LL_category.html?state=in>, and The Church of Jesus Christ Latter-day Saints <http://www.mormon.org/worshipwithus/1,20864,,00.html>.
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

RECREATIONAL FACILITIES --
Outdoor Recreational Facilities, 20090226 (1:24,000)
Shows outdoor recreation facilities, including facilities managed by federal, state, and local governments, as well as non-government organizations, private and commercial entities, and schools. It does not include sites that are private and not open to the public.
FGDC metadata: RECREATIONAL_FACILITIES_IDNR_IN
Originator: Indiana Department of Natural Resources, Division of Outdoor Recreation
Publication_Date: 20090421
Title: RECREATIONAL_FACILITIES_IDNR_IN: Outdoor Recreational Facilities in Indiana (Indiana

Department of Natural Resources, 1:24,000, Point Shapefile)
Edition: 1.1
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Indianapolis, Indiana
Publisher: Indiana Department of Natural Resources, Division of Outdoor Recreation
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

MUSEUMS --
Museums, 2007 (Source scale is unknown)
Shows the locations of 118 museums. Attributes include street addresses and type of facility (i.e., Art, Children, General, Historical Society, History, House Museum, Military, Music, Science, Sport, and Transportation). Web-site URLs are also provided.
Locations were plotted by personnel of the Indiana Geological Survey using the "Geocoding" tool in ESRI ArcMap 9.2 and street information licensed from Tele Atlas, Dynamap 2000 v. 17.0.
Addresses were obtained from various directories that were retrieved through Google searches on the Web.
FGDC metadata: MUSEUMS_IGS_IN
Originator: Indiana Geological Survey (Data source)
Originator: Denver Harper (Data processor)
Originator: Chris Dintaman (Data processor)
Publication_Date: 20070531
Title: MUSEUMS_IGS_IN: Museums in Indiana (Indiana Geological Survey, Point Shapefile)
Edition: 1
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Bloomington, Indiana
Publisher: Indiana Geological Survey
Other_Citation_Details:
The addresses, URLs, and information regarding type of facility were obtained from various Web pages, including the following: Museum and Historic Site Directory (<http://www.collectics.com/museums_indiana.html>), MuseumLink's Museum of Museums (<http://www.museumlink.com/indiana.htm>), Step into Places (<http://www.stepintoplaces.com/resource%20guide/Quick/Guide_IN.htm>), and Historical Museum Guide for Indiana (<http://www.censusfinder.com/indiana-historical-museums.htm#Indiana%20Museums>). Personnel of the Indiana Geological Survey used ESRI ArcMap 9.2 to build an "Address Locator" and used the "Geocoding" tool to perform address-matching, using street information licensed from Tele Atlas, Dynamap 2000, v. 17.0.
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html

PIPELINES (IGS) --
Natural Gas, Crude Oil, and Refined Oil Pipelines, 1988 (1:63,360)
Shows the locations and extents of known natural gas, crude oil, and refined products pipelines.
Digitized from data compiled for the creation of the following published map: Indiana Geological Survey Miscellaneous Map 53.
FGDC metadata: PIPELINES_IGS_IN
Originator: Indiana Geological Survey
Publication_Date: 20020718
Title: PIPELINES_IGS_IN: Natural Gas, Crude Oil, and Refined Oil Pipelines in Indiana (Indiana Geo-

logical Survey, 1:63,360, Line Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Bloomington, Indiana
Publisher: Indiana Geological Survey
Other_Citation_Details:
This shapefile was digitized from data shown on 1:63,360-scale (1 inch = 1 mile) county work maps compiled for the creation of Indiana Geological Survey, Miscellaneous Map 53, Map of Indiana Showing Oil, Gas, and Products Pipelines, by S.J. Keller, 1991, Scale 1:500,000. The work maps were scanned using a wide-bed, full-spectrum scanner and the resulting images were georeferenced using ESRI ArcInfo 8.01. The pipelines were then digitized on screen in ESRI ArcView 3.2.
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

Hospitals_Parcels
Originator: Allen County iMap, Allen County, Auditor's Office, The Sidwell Company
Last Updated: 20070720
Title: GISData.SDE.Parcel_Poly
Publication_Place: Fort Wayne, IN
Publisher: Allen County iMap

Airport_parcels
Originator: Allen County iMap, Allen County, Auditor's Office, The Sidwell Company
Last Updated: 20070720
Title: GISData.SDE.Parcel_Poly
Publication_Place: Fort Wayne, IN
Publisher: Allen County iMap

Historical_Bridges
Indiana Historic Bridge Inventory, Volume 4: List of Select and Non-Select Bridges. INODOT CC No. 050108. M&H Architecture, Inc. A Mead & Hunt Company. December 2010.

HISTORIC CANAL STRUCTURES --
Historic Canal Structures, 2000 (Source scale is unknown)
Shows the locations of structures associated with three historic canals constructed and used between 1830 and 1870: the Wabash-Erie Canal, the White Water Canal, and the Central Canal.
Obtained from Bernardin, Lochmueller, and Associates, Inc.
FGDC metadata: CANALS_HISTORIC_STRUCTURES_IN
Originator: Bernardin-Lochmueller & Associates
Publication_Date: 20000403
Title: CANALS_HISTORIC_STRUCTURES_IN: Historic Canal Structures in Indiana (Bernardin-Lochmueller & Associates, Point Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Evansville, Indiana
Publisher: Bernardin, Lochmueller and Associates, INC
Other_Citation_Details:
This data set was provided to personnel of Bernardin, Lochmueller and Associates, Inc. (BLA) by the Stan Schmidt. The data was originally provided in hard copy format and then digitized into an ESRI

shapefile format, and was named CANALS_HISTORIC_STRUCTURES_SW. As part of the development of the State Wide GIS of Indiana, this file was expanded to include additional areas that were not part of the SW Indiana GIS and renamed Canal_Historic_Structures_IN.
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

HISTORIC CANAL ROUTES --
Historic Canal Routes, 2000 (Source scale is unknown)
Shows the locations of three historic canals constructed and used between 1830 and 1870: the Wabash-Erie Canal, the White Water Canal, and the Central Canal.
Obtained from Bernardin, Lochmueller, and Associates, Inc.
FGDC metadata: CANALS_HISTORIC_ROUTES_IN
Originator: Bernardin-Lochmueller & Associates
Publication_Date: 20000729
Title: CANALS_HISTORIC_ROUTES_IN: Historic Canal Routes in Indiana (Bernardin-Lochmueller & Associates, Line Coverage)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Evansville, Indiana
Publisher: Bernardin, Lochmueller and Associates, INC
Other_Citation_Details:
This data set was provided to personnel of Bernardin, Lochmueller and Associates, Inc. (BLA) by Stan Schmitt. The data was originally provided in hard copy format and then digitized into an ESRI shapefile format, and was named CANALS_HISTORIC_ROUTES_SW. As part of the development of the State Wide GIS of Indiana, this file was expanded to include additional areas that were not part of the SW Indiana GIS and renamed Canal_Historic_Routes_IN.
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

Historical Sites, Areas, or Districts
Fort Wayne Local Historic Districts. Fort Wayne's Historic Preservation Commission, Division of Community Development

Indiana State Register of Historic Places. Indiana Division of Historic Preservation and Archaeology

The National Register of Historic Places. Administered by The National Park Service with the assistance of the Indiana DNR-Division of Historic Preservation and Archaeology and the City of Fort Wayne as a Certified Local Government (CLG)

Historic American Buildings Survey/Historic American Engineering Record. Library of Congress

National Historic Landmark. The National Park Service

WATERSHED HUC06 --
Watersheds - 6-Digit Hydrologic Units, 1991 (1:24,000)
Shows the boundaries of 6-digit hydrologic accounting units. Actual hydrologic units often extend beyond state and county boundaries. Created by dissolving the Digital Dataset of 14-digit hydrologic units

in Indiana created by the U.S. Geological Survey and Natural Resources Conservation Service.
FGDC metadata: WATERSHEDS_HUC06_USGS_IN
Originator: (creation): US Geological Survey
Originator: (compilation): Bernardin, Lochmueller and Associates
Publication_Date: 20021100
Title:WATERSHEDS_HUC06_USGS_IN: 6-Digit Accounting Units, Hydrologic Units, in Indiana, (Derived from US Geological Survey, 1:24,000 Polygon Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Evansville, IN
Publisher: Bernardin, Lochmueller and Associates
Other_Citation_Details:
This dataset is derived from the Digital Dataset of 14-digit hydrologic units in Indiana created by the US Geological Survey and Natural Resources Conservation Service; <http://in.water.usgs.gov/> Dataset is one layer in the Indiana Statewide GIS Database funded by Indiana Department of Transportation.
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

WATERSHED HUC11 --
Watersheds - 11-Digit Hydrologic Units, 1991 (1:24,000)
Shows the boundaries of 11-digit hydrologic accounting units. Actual hydrologic units often extend beyond the state and county boundaries. Created by dissolving the Digital Dataset of 14-digit hydrologic units in Indiana created by the U.S. Geological Survey and Natural Resources Conservation Service.
FGDC metadata: WATERSHEDS_HUC11_USGS_IN
Originator: (creation): US Geological Survey
Originator: (compilation): Bernardin, Lochmueller and Associates
Publication_Date: 20021100
Title: WATERSHEDS_HUC11__USGS_IN: Watersheds, 11-digit Hydrologic Units, in Indiana, (Derived from US Geological Survey, Polygon Shapefile)
Geospatial_Data_Presentation_Form: Vector digital data
Publication_Place: Evansville, IN
Publisher: Bernardin, Lochmueller and Associates
Other_Citation_Details:
This dataset is derived from the Digital Dataset of 14-digit hydrologic units in Indiana created by the US Geological Survey and Natural Resources Conservation Service; <http://in.water.usgs.gov/> Dataset is one layer in the Indiana Statewide GIS Database funded by Indiana Department of Transportation.
Online_Linkage: <http://igs.indiana.edu/arcims/statewide/download.html>

Input on the 2035 Transportation Plan 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 use 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; 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 2035 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 information 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 or 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 information. 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.

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 44 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 45.

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 lines. Figure 46 illustrates the railroad lines in Allen County. The three lines are The Chicago Fort Wayne & Eastern Railroad (CFE), the Maumee & Western Railroad (MAW) 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). CSX leases the line to CFE, which has permission to run as many as 10 trains per day, but typically does not run more than a couple of trains a week.

The Maumee & Western Railroad operates 51 route miles between Woodburn, Indiana, and Liberty

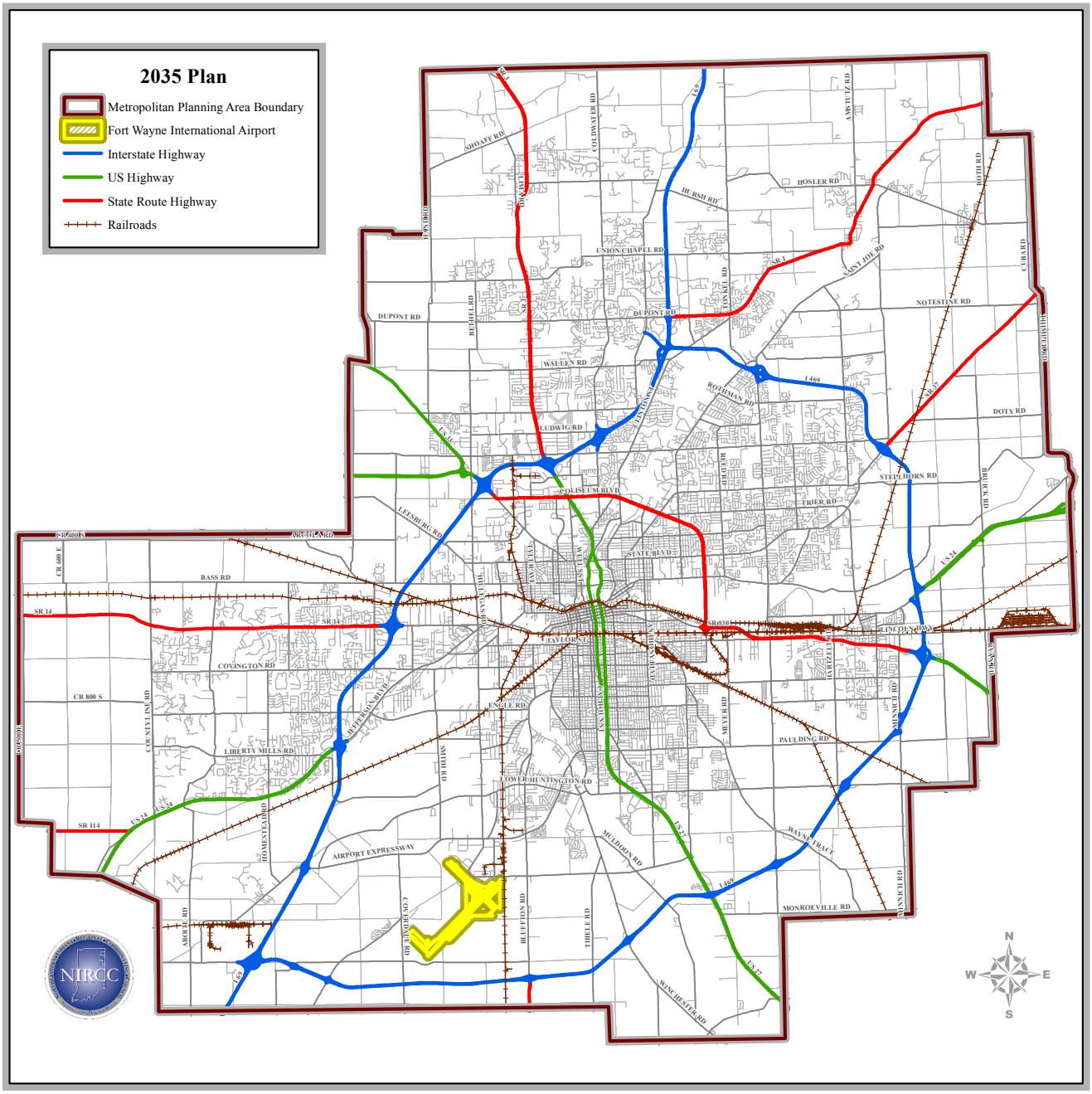


Figure 44

Transportation Infastructure

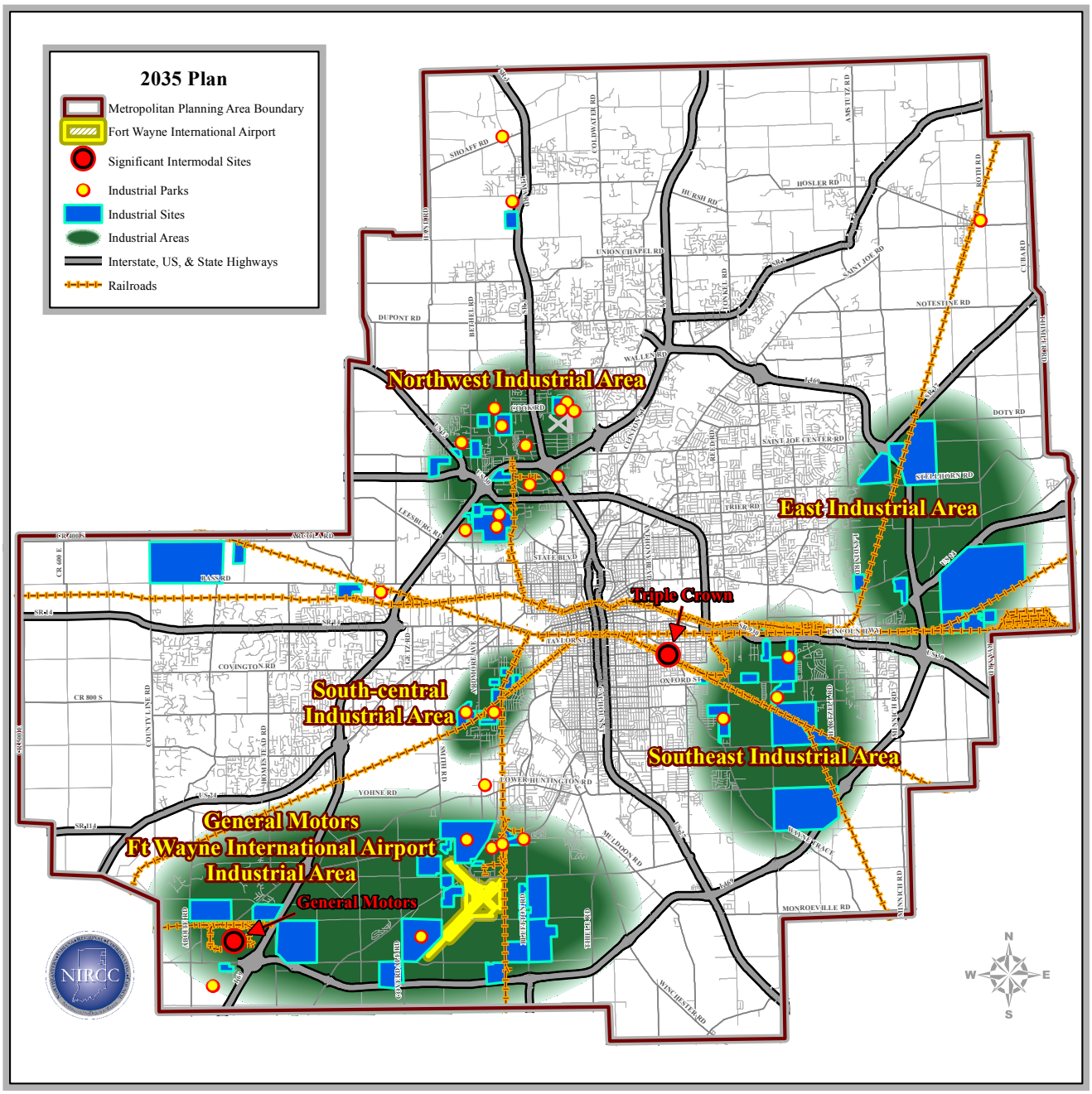


Figure 45

Major Modal Activity Centers

Center, Ohio via Defiance, Ohio. MAW operates 3.1 miles within Indiana. In 2000, MAW handled a total of 3,300 carloads, including traffic at stations in Ohio. Principal products shipped include grain, plastics, and minerals. MAW interchanges with Norfolk Southern at Woodburn and CSXT at Defiance, OH. (Indiana Rail Plan, page 21)

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 approximately 350 carloads a day. The line that runs northeast connecting Allen County to Toledo handles approximately 650 carloads a day. The NS line running southwest to Central Illinois carries approximately 320 carloads a day. The last line going to southwest Ohio handles about 215 carloads a day. (Freight Flows of Indiana, page 108) 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.

Norfolk Southern has an intermodal facility located on the east side of Fort Wayne. The Norfolk Southern Triple Crown Facility uses roadrailers, which are highway truck trailers with interchangeable wheel sets. Roadrailers combine truck and rail line haul movements. The Triple Crown Service (TCS) has a fleet that consists of 5,500 trailers that are 53 feet long and 102 inches wide. A typical train size is 73 units, but the Federal Railroad Administration has authorized the operation of trains of up to 155 units. There are a total of eleven origin-destination pairs from Fort Wayne, including sites in Canada and Mexico. The principal commodity market is automotive parts, and the highest origin-destination to Fort Wayne is to and from Atlanta, Georgia; Kansas City, Missouri; and Harrisburg, Pennsylvania. Other commodities served by TCS include appliances, paper, and food. (Freight Flows of Indiana, page 47)

Air

The 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 2012, the Fort Wayne International Airport was ranked 96th in the US for air cargo weight, handling 12,183 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 additional road projects have been scheduled. Improvements to Coverdale Road, which includes two bridge projects, will begin construction in the near future.

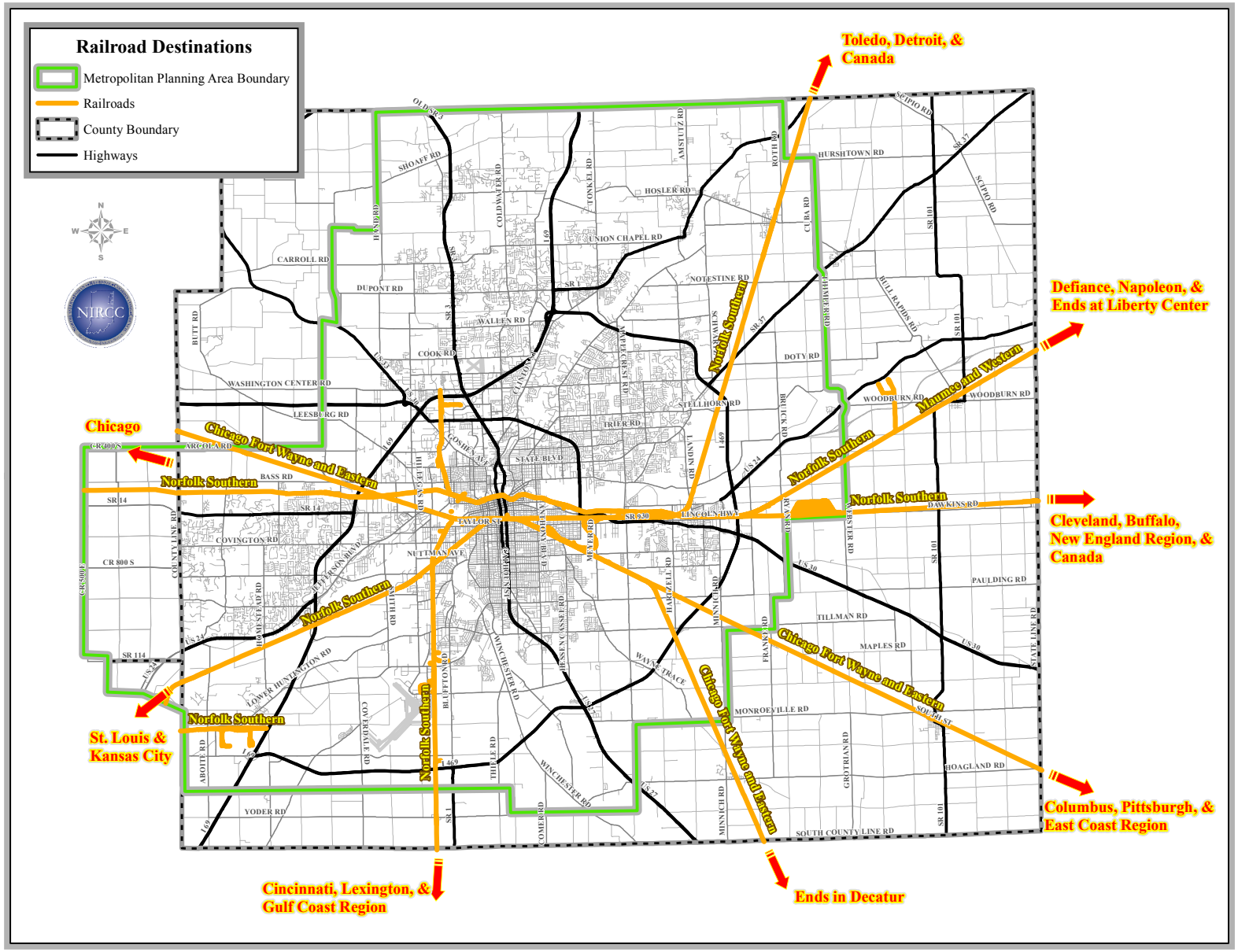


Figure 46

Railroad Destinations

Roadways

Trucks are economically important because the majority of consumer goods, such as food, furniture, automobiles and appliances, are reliant on trucks for delivery and distribution inside and outside the metropolitan area. It is easy to understand how significant Allen County is to truck freight movement since it is located within a 250 mile radius of 17% of the total United States population and within a day's drive of half of the nation's population, see Figure 47. In 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 48. 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 though 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) divert through truck traffic away from the urban core; and 2) provide an efficient delivery system for goods and services within the urban area. To a great extent, the diversion of through truck traffic has been accomplished by the completion of Interstate 469 and improvements to major freight corridors such as Interstate 69 and US 24. By providing large trucks with safe and efficient alternative routes around the urban area, the percentage of trucks on the arterial roadway system has been substantially diminished. This serves to protect our urban area and residential neighborhoods from the adverse impacts associate 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 improvement in part to facilitate local truck traffic include Airport Expressway, Hillegas Road and Ardmore Road. The plan includes additional improvements on several select corridors such as Coliseum Boulevard/State Road 930, Ryan Road, Hillegas Road and Adams Center Road that will assist freight distribution.

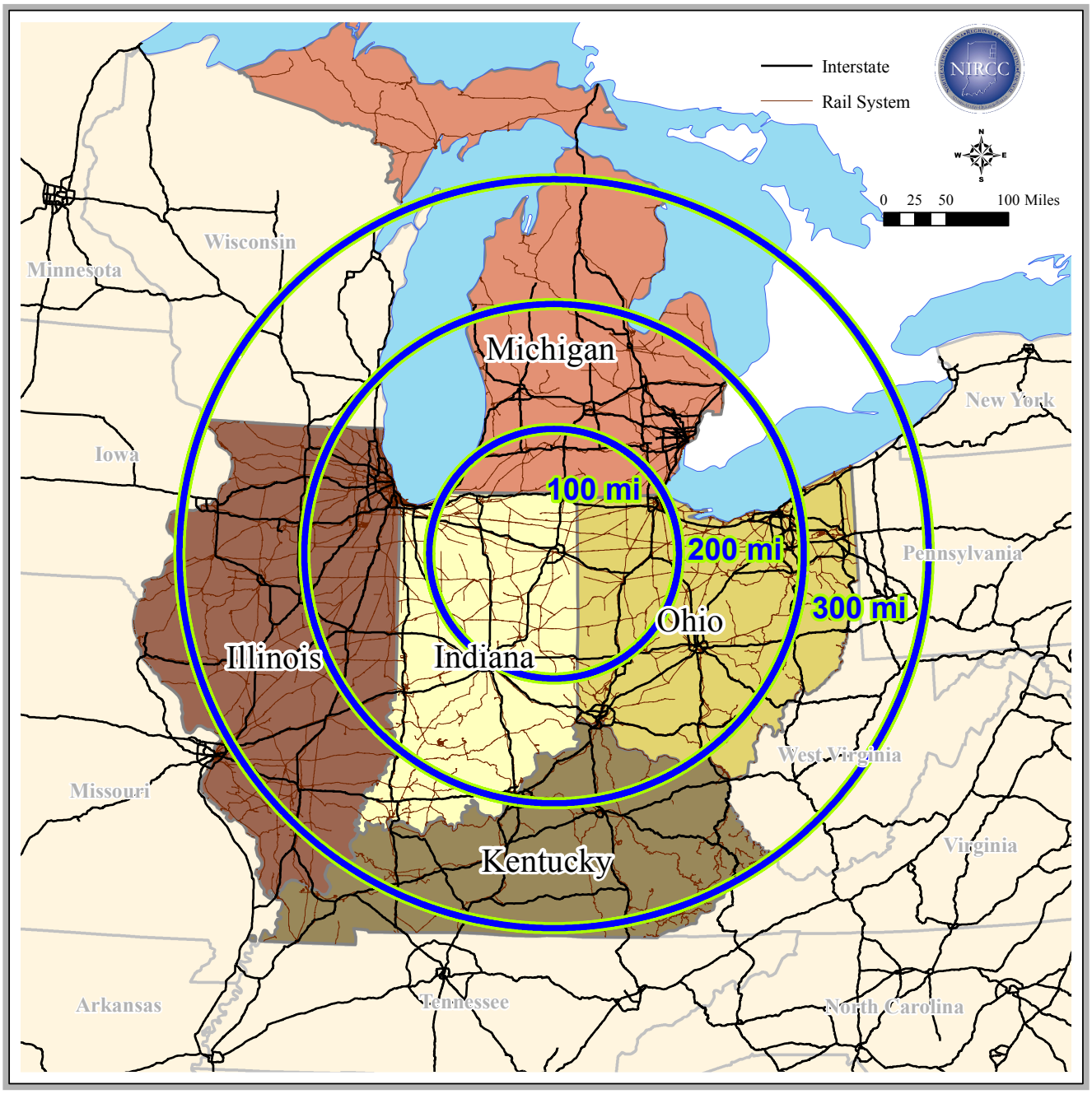


Figure 47

Regional Hub

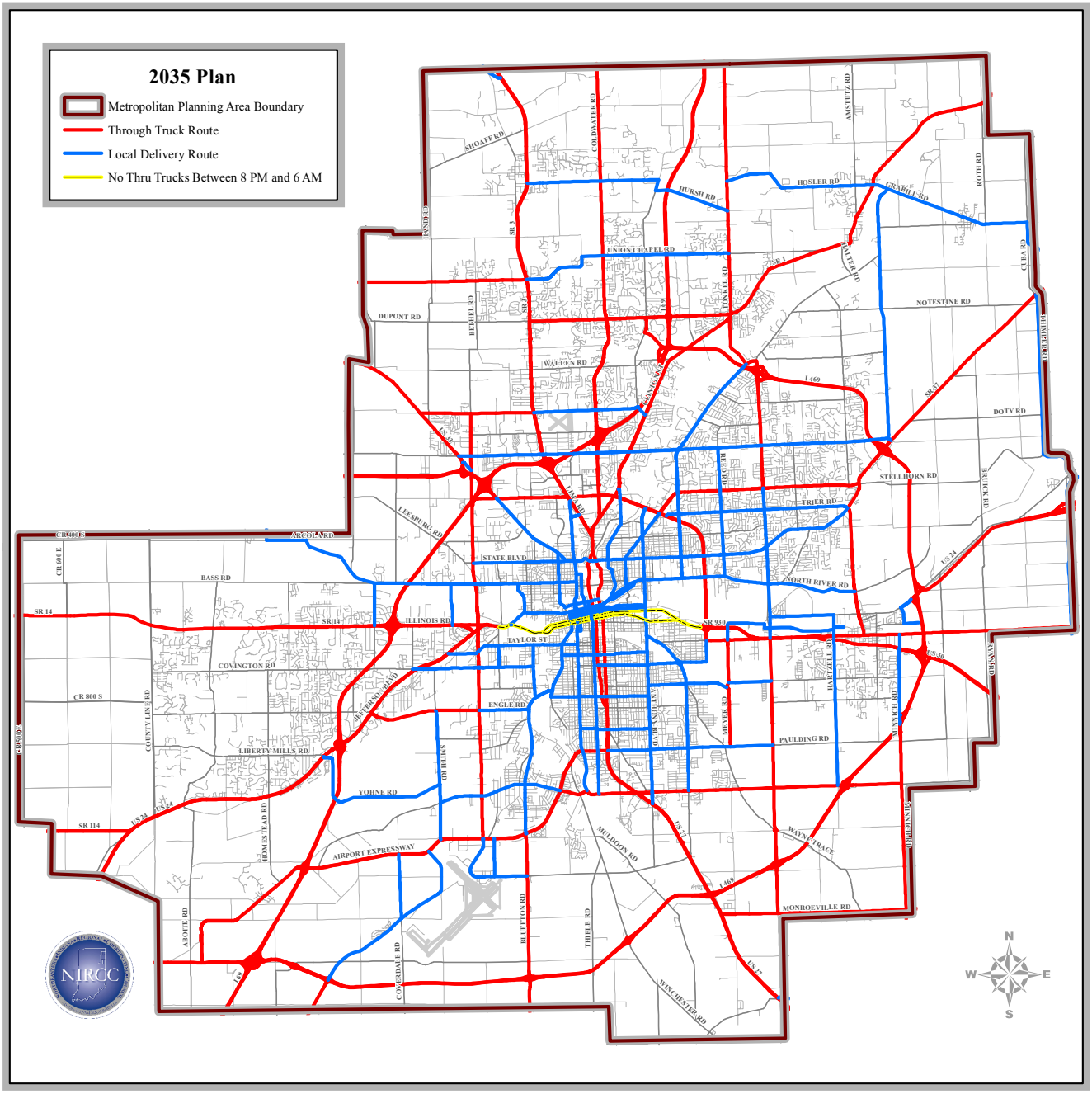


Figure 48

Truck Route System

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 analysis 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 49. Trucks are competing with passenger vehicles for capacity on 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 the trucks going through the urban core. This also helps to alleviate congestion through Fort Wayne. Other projects that were programmed to facilitate truck freight traffic include the added travel lanes to I-69, realigning of US 24 East, signalization of US 30 ramp 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, truck terminals and the Triple Crown Facility 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.

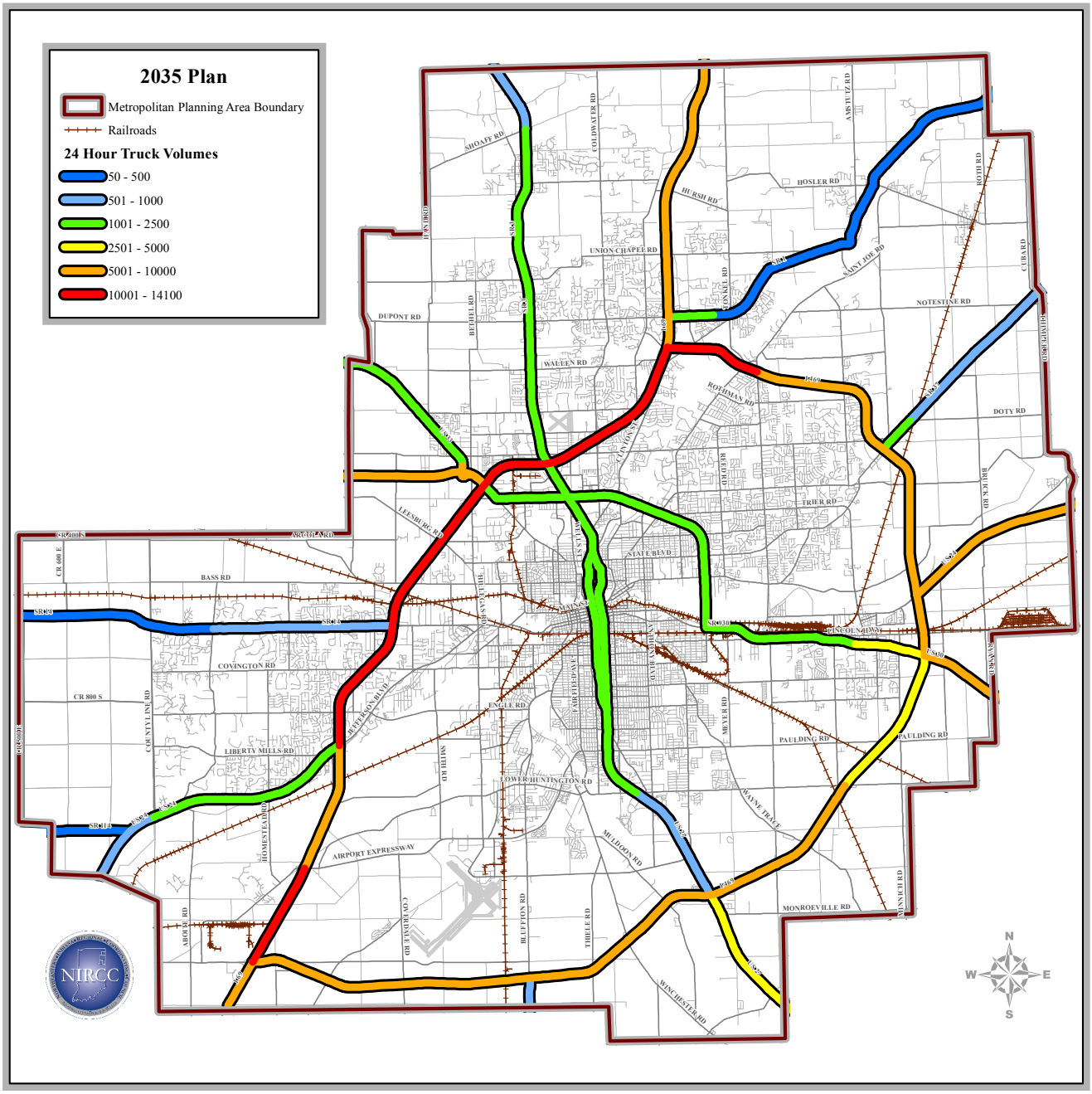


Figure 49

Truck Volumes

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 50. Many transit improvements have also been made which increase the mobility of area citizens.

The current 2030-II Transportation Plan was adopted in June 2009. In the four 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 2030-II Transportation Plan. Following each project is an indication of the project status. Projects that have not been started and remain as projects in the 2035 Transportation Plan are followed by a (2035 Plan).

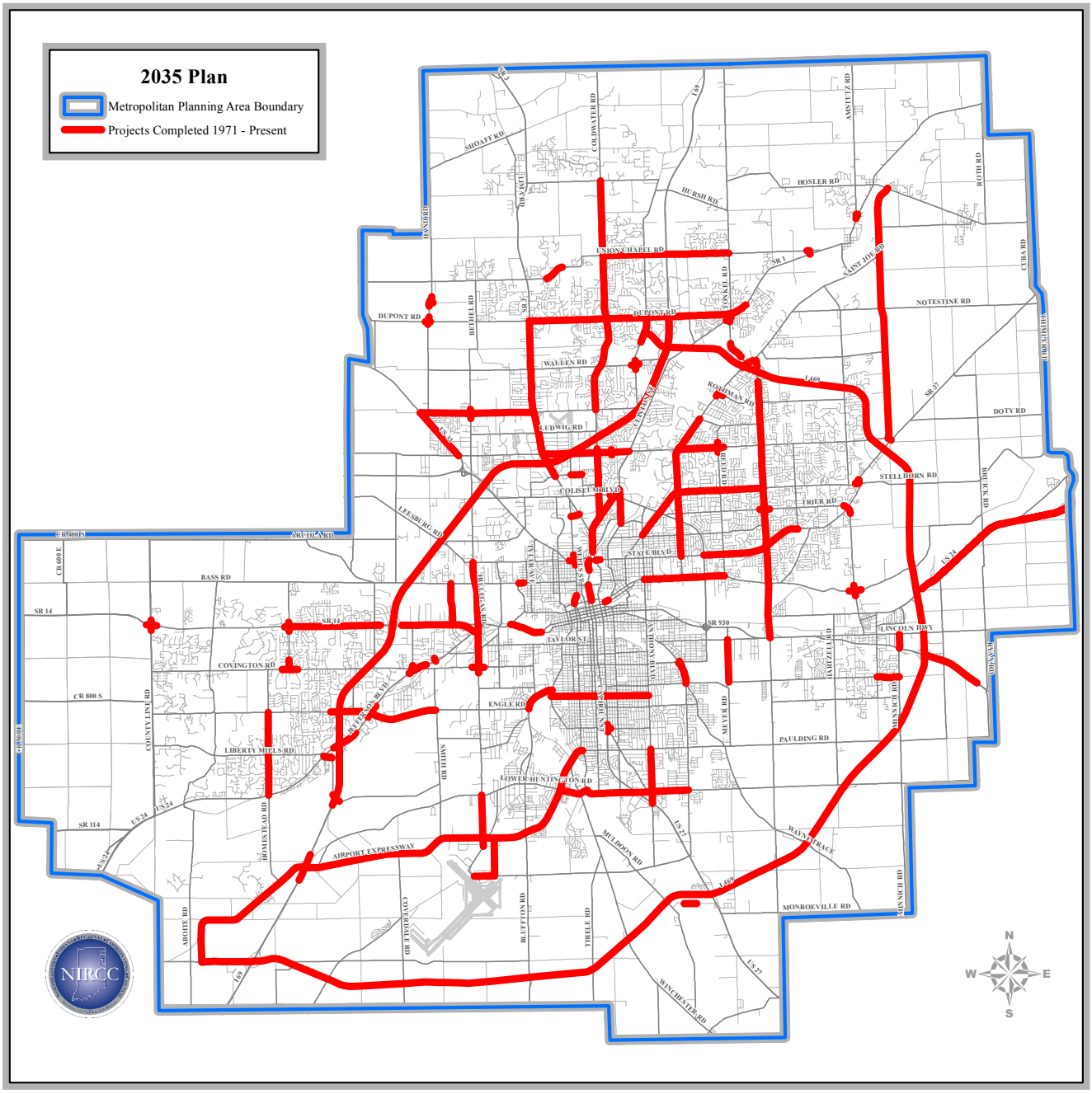


Figure 50

Implementation of Transportation Plans (1971-present)

Current 2030-II Transportation Plan

New two-lane construction
Coombs Street from Maumee Avenue to Wayne Street (removed)
Maplecrest Road from Lake Avenue to State Road 930 (completed)
Paul Shaffer Drive from California Road to Clinton Street (2035 Plan)
Spring Street from Wells Street to Spy Run Avenue (2035 Plan)

Widen to six lanes
Clinton Street from Parnell Avenue to Auburn Road (listed as illustrative project)
Crescent Ave from Sirlin Drive to Colisem Boulevard (2035 Plan)
Interstate 69 from US 24 to Interstate 469 (listed as illustrative project)
Interstate 69 from Dupont Road/State Road 1 to Hursh Road (listed as illustrative project)
Interstate 469 from Maplecrest Road to Interstate 69(listed as illustrative project)
Jefferson Boulevard from Illinois Road to Main Street (listed as illustrative project)
Jefferson Boulevard from Interstate 69 to Illinois Road (listed as illustrative project)
State Road 3/Lima Road from Ludwig Road to Dupont Road (completed)
State Road 3/Lima Road from Dupont Road to Gump Road (listed as illustrative project)
State Road 930\Coliseum Boulevard from Parnell Avenue to Crescent Avenue (2035 Plan)
US 24 from Interstate 69 to Homestead Road (listed as illustrative project)
US 30 from Interstate 69 to US 33 (listed as illustrative project)
US 30 from US 33 to Flaugh Road (listed as illustrative project)
US 30 from Flaugh Road to O'Day Road (listed as illustrative project)

Widen to four lanes
Adams Center Road from State Road 930 to Moeller Road (2035 Plan)
Aboite Center Road from Coventry Lane to Jefferson Boulevard (completed)
Ardmore Avenue from Jefferson Boulevard to Taylor Street (completed)
Ardmore Avenue from Covington Road to Engle Road (2035 Plan)
Ardmore Avenue from Engle Road to Lower Huntington Road (2035 Plan)
Bluffton Road from Winchester Road to Old Trail Road (2035 Plan)
Clinton Street from Auburn Road to Dupont Road/State Road 1 (2035 Plan)
Clinton Street from Wallen Road to Dupont Road/SR 1 (2035 Plan)
Dupont Road from Coldwater Road to Lima Road/State Road 3 (2035 Plan)
Goshen Avenue from State Boulevard to Coliseum Boulevard (listed in 2035 Plan as reconstruction)
Hillegas Road from s/o Bass Road to Washington Center Road (2035 Plan)
Huguenard Road from Washington Center Road to Cook Road (2035 Plan)
Lake Avenue from Reed Road to Maysville Road (listed in 2035 Plan as reconstruction)
Maplecrest Road from Lake Avenue to State Boulevard (2035 Plan)
Maysville Road/Stellhorn Road from Maplecrest Road to Koester Ditch (2035 Plan)
State Boulevard from Maysville Road to Georgetown North Boulevard (2035 Plan)
State Boulevard from Spy Run Avenue to Clinton Street (2035 Plan)
State Boulevard from Clinton Street to Cass Street (2035 Plan)
State Road 1/Dupont Road from Interstate 69 to Tonkel Road (completed)
State Road 1/Leo Road from Tonkel Road to Union Chapel Road (listed as illustrative project)
State Road 1/Leo Road from Union Chapel Road to Grabill Road (listed as illustrative project)

State Road 1/Bluffton Road from Interstate 469 to Allen/Wells County Line (listed as illustrative project)
State Road 14 from Scott Road to West Hamilton Road (under construction)
State Road 14 from West Hamilton Road to Allen/Whitley County Line (listed as illustrative project)
State Road 37 from Doty Road to Interstate 469 (listed as illustrative project)
State Road 930 from Minnich Road to Brookwood Drive (removed)
Tonkel Road from Dupont Road to Union Chapel Road (2035 Plan)
US 33 from Cook Road to O'Day Road (listed as illustrative project)
US 33 from O'Day Road to State Road 205 (listed as illustrative project)
Washington Center Road from Lima Road (SR 3) to US 33 (2035 Plan)
Wells Street from State Street to Fernhill Avenue (listed in 2035 Plan as reconstruction)

Center Turn Lane Improvement
Auburn Road from Cook Road to Interstate 469 Exit Ramp (3-lane) (2035 Plan)
Auburn Road from Dupont Road to Hursh Road (3-lane) (2035 Plan)
Bass Road from Hillegas Road to Scott Road (3-lane) (2035 Plan)
Coldwater Road from Mill Lake Road to Union Chapel Road (3-lane) (2035 Plan)
Cook Road from Auburn Road to Coldwater Road (removed)
Covington Road from Scott Road to Homestead Road (removed)
Covington Road from Interstate 69 to Scott Road (removed)
Engle Road from Bluffton Road to Smith Road (3-lane) (2035 Plan)
Gump Road from State Road 3 to Auburn Road (3-lane) (2035 Plan)
Gump Road from Coldwater Road to Auburn Road (3-lane) (2035 Plan)
Hadley Road from Illinois Road/State Road 14 to Bass Road (3-lane) (2035 Plan)
Hadley Road from Illinois Road/State Road 14 to Covington Road (3-lane) (2035 Plan)
Liberty Mills Road from Falls Drive to Homestead Road (removed)
Maysville Road from State Boulevard to Stellhorn Road (3-lane) (2035 Plan)
Saint Joe Center Road from Clinton Street to River Run Trail (5-lane) (2035 Plan)
Saint Joe Road from Evard Road to Mayhew Road (3-lane) (2035 Plan)
Saint Joe Road from Maplecrest Road to Eby Road (3-lane) (2035 Plan)
Union Chapel Road from Auburn Road to Tonkel Road (completed)
Wayne Trace from Oxford Street to Pontiac Street (completed)

Turn Lane Extension
Jefferson Boulevard from Lutheran Hospital Entrance to Interstate 69 Ramps (2030-II Plan)
State Road 3 from Interstate 69 to Washington Ctr Rd southbound (removed)

Bridge Reconstruction/Modification
Bass Road over Interstate 69 (listed as illustrative project)
Covington Road Bridge over Interstate 69 (completed)
Hillegas Road over Interstate 69 (listed as illustrative project)
Spring Street Bridge over Norfolk Southern Railroad (completed)
US 27/Clinton Street Bridge over Saint Mary's River (completed)
US 27/Spy Run Avenue over St. Mary's River with pedestrian treatment (listed as illustrative project)

Intersection Reconstruction

Auburn Road and Cook Road/Auburn Road and Clinton Street (completed)
Clinton Street and Washington Center/Saint Joe Center Road (2035 Plan)
Coliseum Boulevard and Pontiac Street Intersection (listed in 2035 Plan as reconstruction)
Coverdale Road/Winters Road and Indianapolis Road (2035 Plan)
Covington Road and Dicke Road/Covington Road and Hadley Road (completed)
Dartmouth Drive and Washington Center Road (completed)
Flaugh road and Leesburg Road (2035 Plan)
Hadley Road, Bass Road and Yellow River Road (2035 Plan)
Homestead Road and US 24 (completed)
Ryan Road and Dawkins Road (2035 Plan)
State Road 1/Leo Road and Amstutz Road (completed)
State Road 14/Illinois Road and Allen/Whitley County Line Road (completed)

Reconstruction and Realignment
Allen/Whitley County Line Road – US 24 to SR 14 (removed)
Carroll Road from State Road 3 to Corbin Road (removed)
Cook Road from Fritz Road to O'Day Road (2035 Plan)
Coverdale Road from Indianapolis Road to Airport Expressway (2035 Plan)
Flutter Road from Schwartz Road to Saint Joe Road (2035 Plan)
Lake Avenue from Anthony Boulevard to Coliseum Boulevard (completed)
Landin Road from North River Road to Maysville Road (2035 Plan)
Maplecrest Road from Lake Avenue to s/o Stellhorn Road (listed in 2035 Plan as widen to 4-lanes)
Moeller Road from Green Street to Hartzell Road (completed)
Moeller Road from Hartzell Road to Adams Center (2035 Plan)
Ryan Road from Harper Road and Bremer Road (2035 Plan)
Saint Joe Center Road from Reed Road to Maplecrest Road (2035 Plan)
State Road 37 from Doty Road to Cuba Road (listed as illustrative project)
Till Road from Lima Road to Dawson Creek Boulevard (2035 Plan)
Wallen Road from Hanauer Road to Auburn Road (2035 Plan)
Witmer Road/Second Street from Page Road to Main Street (2035 Plan)
Witmer Road from Schwartz Road to Page Road (2035 Plan)
US 27/Clinton Street from State Boulevard to Elizabeth Street (completed)

New Railroad Grade Separation
Anthony Boulevard and Norfolk Southern Railroad (2035 Plan)
Airport Expressway and Norfolk Southern Railroad (2035 Plan)

Reconstruct Railroad Grade Separation
Anthony Boulevard and CSX Railroad (2035 Plan)
US 27/Lafayette Street and Norfolk Southern/CSX Railroads (2035 Plan)

Congressional High Priority Corridor Improvement
US 24 from Interstate 469 to Bruick/Ryan Road including interchange (completed)
US 24 from State Road 101 to Indiana/Ohio State line including interchange (completed)

US 24 from Bruick/Ryan Road to e/o Webster Road including interchange (completed)
US 24 from Webster Road to w/o State Road 101 (completed)

Interchange-New Construction
Interstate 69 at Hursh Road (2030-II Plan)
Interstate 69 at Union Chapel Road (completed)

Interchange-Modification
Interstate 69 and Coldwater Road Interchange-Ludwig Road (listed as illustrative project)
Interstate 69 and State Road 1/Dupont Road (2035 Plan)
Interstate 69 and US 30/33/SR930 Interchange (removed)
Interstate 469 and State Road 1/Bluffton Road (removed)
Interstate 469 and US 24 Interchange (2035 Plan)
Interstate 469 and US 27 Interchange (removed)
Interstate 469 and US 30/SR 930 Interchange (completed)
US 30 and US 33 Interchange (2035 Plan)

Transit Improvements
System Modifications

Expanded transit service in the growing urbanized area. Potential locations include the Fort Wayne International Airport and surrounding area, Parkview North 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 2035 Plan)

Design and construct a downtown intermodal transfer/transportation center. (Complete)

Replacement of transit coaches and service vehicles necessary to maintain a dependable transit fleet. (complete and on-going-included in 2035 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 2035 Plan)

Reduce headways on selected routes where ridership warrants. (Partially complete and on-going-included in 2035 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 2035 Plan)

Provide customer access to automatic vehicle locator (AVL) information for the transit system through Internet connections. (Partially implemented and on-going-included in 2035 Plan)

Design and construct a satellite transfer center to serve the northern portion of the service area. (Not implemented -included in 2035 Plan)

New Haven route and Georgetown route interconnect. (Removed)

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). (Partially implemented and on-going-included in 2035 Plan)

Designate corridors to include amenities that allow busses to safely pull off the corridor to load and unload as well as provide safe pedestrian facilities. These corridors should 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. (Not implemented -included in 2035 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 51 & 52 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 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

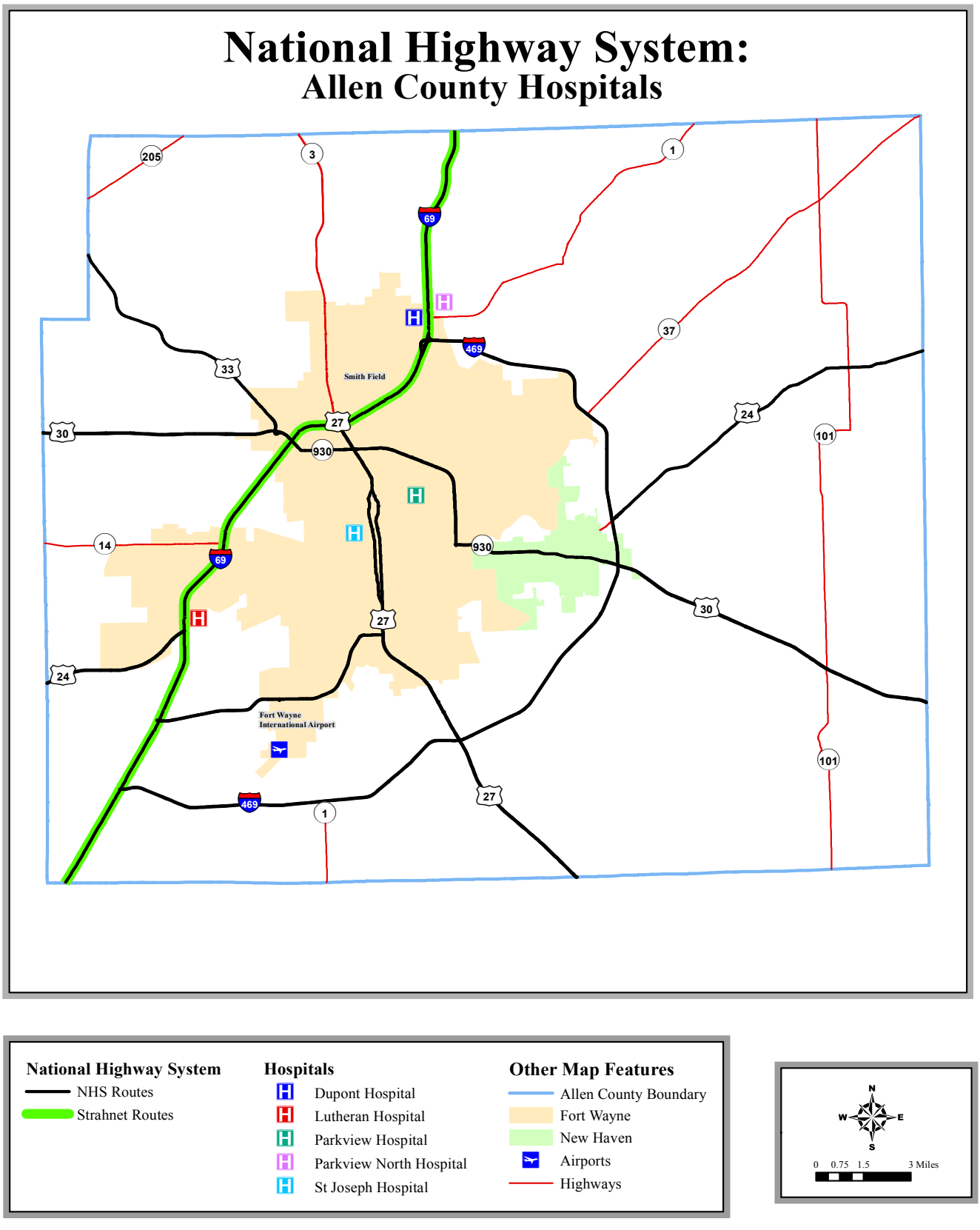


Figure 51

Allen County NHS and Hospitals

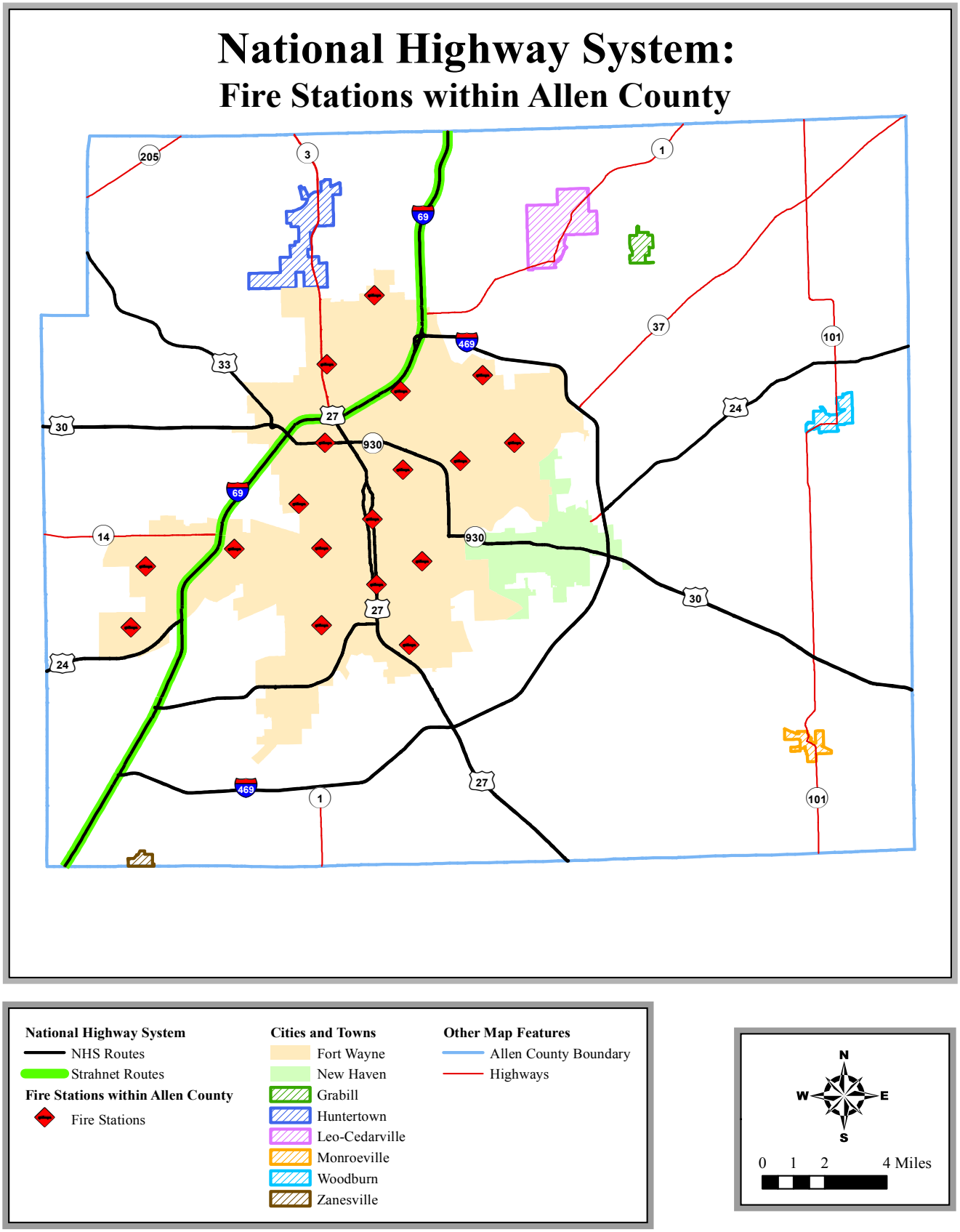


Figure 52

Allen County NHS and Fire Stations

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

As planning continues on the passenger rail corridor, evaluation of station locations, intermodal connectivity and rail-highway crossing safety will be conducted before critical decisions can be made. Additional studies and analyses will be performed as necessary to advance the proposal. NIRCC in conjunction with State and local agencies will assist in project development and programming.

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 I-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 Road143
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 53.

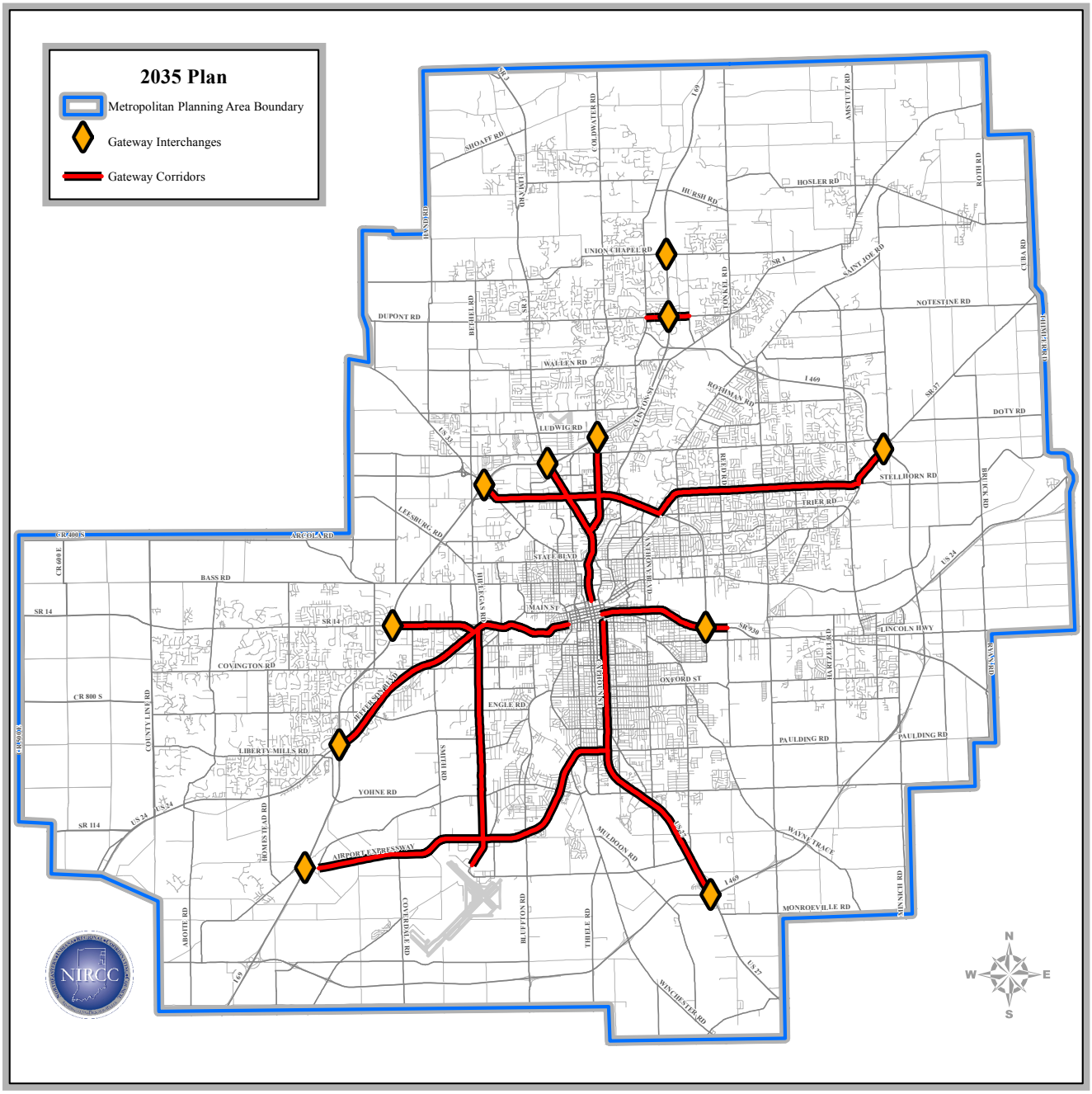


Figure 53

Gateway Plan Corridors and Interchanges

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 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.