Commuter on the South Shore Train. NIRPC photo.

Chapter II: Transportation

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Overview

Northwest Indiana's transportation network plays a central role in supporting and maintaining the region's quality of life. In order to realize the vision of the 2040 Comprehensive Regional Plan (CRP), we must think regionally about transportation infrastructure and integrate it more effectively into land use planning activities. In fact, a critical element to Northwest Indiana's economic success hinges on the ability to move people and goods in an efficient and effective manner. Implementing the 2040 CRP in the context of transportation facilities requires that we fully leverage our transportation improvement program to realize both our economic development and quality of life goals for the future of the region.

As demonstrated in the Growth and Conservation section, land use patterns in Northwest Indiana have changed drastically over the last few decades - with major implications for our transportation system. Trends show that population is dispersing throughout the region, while jobs are remaining concentrated along the lakefront and in regional centers such as Merrillville and Valparaiso. Because the growth pattern is dispersed it effectively mandates use of the automobile for the majority of daily trips. The result is congestion on our regional highways, diminished mobility.

The 2040 CRP identifies four vision themes: Vibrancy, Revitalization, Accessibility and Unity. **Accessibility** – connecting people with opportunities – is a fundamental component of this vision because it provides the foundation for a prosperous and lively region. The transportation system is a key organizational feature of the region – the shared, public realm that facilitates the social and economic activity of daily life. The CRP envisions a sustainable transportation system that enables this activity to occur at all scales – all means of motorized and non-motorized transportation.

A particularly important element of this vision is the imperative to ensure Environmental Justice; that is, a fair distribution of benefits and burdens among all socioeconomic groups. In particular, the region shares the responsibility for more proactive consideration of the needs of the core communities in transportation funding allocation.

The result of our dispersed urban growth pattern is congestion on our regional highways and diminished mobility.

Dusk on the Indiana Tollway. Photo by CBNight via Flickr.

Transportation Goals & Objectives

The 2040 CRP Vision Statement addresses transportation in its "Accessible Region" theme.

> An accessible region: Our people are *connected to each other and to equal opportunities* for working, playing, living, and learning;

Four goals and their related objectives provide the framework for further action and initiatives to bring about achieving this vision theme. Thoughtful consideration and implementation of transportation initiatives to support multi modal accessibility is vital to achieving the other CRP vision themes of creating a Revitalized, Vibrant and United Region.

Goal: A safe and secure transportation system
Objectives:

- Reduce the number and severity of motor vehicle crashes
- Improve the safety of non-motorized transportation through education, enforcement, engineering, design and construction
- Reduce flooding of roadways
- Reduce emergency response times
- Support the development of regional preparedness and evacuation planning
- Improve the safety and security of transit facilities including stations, stops and vehicles
- Utilize technology, including Intelligent Transportation Systems and other strategies, to improve transportation safety

Goal: Increased mobility, accessibility, and transportation options for people and freight
Objectives:

- Integrate local, regional and national transportation systems to facilitate movement of people and freight between modes
- Improve freight facilities connecting the region to national and global markets
- Reduce congestion on major freight and passenger routes
- Improve the internal connectivity of the transportation network
- Enhance connectivity between housing, jobs, services, and educational facilities
- Improve system accessibility for people with special transportation needs including persons with disabilities, the elderly, the young and low-income populations
- Increase access to and improve the reliability of public mass transit
- Improve the nonmotorized transportation network by building Complete Streets that accommodate bicycles, pedestrians and transit users
- Enhance navigability through improved wayfinding and signage
- Encourage land use policy that supports access for disabled persons, efficient mass transit, and non-motorized travel

Goal: Adequate transportation funding and efficient use of resources
Objectives:

- Increase the level of federal and state funding flowing into the region and improve the ability to provide local matching funds
- Protect previous investments through maintenance and improvements to existing transportation infrastructure, operations and services
- Devote sufficient resources to address reconstruction and maintenance needs
- Utilize the Congestion Management Process to optimize the efficiency of the existing system
- Prioritize transportation investments that support land use and economic development goals
- Encourage investments that consider long range impacts of changing transportation systems and anticipate future technologies

Goal: A transportation system that supports the health of all people and places

Objectives:

- Improve the integration of environmental planning activities into transportation planning
- Reduce the levels and impacts of pollution (including air, noise, and vibration) caused by transportation, particularly freight, especially in environmental justice communities
- Improve the nonmotorized transportation network by building Complete Streets that accommodate bicycles, pedestrians and transit users
- Expand environmental mitigation efforts
- Conduct outreach to determine the negative impacts of transportation investments and to ensure environmental justice
- Promote energy efficiency and alternative energy

NICTD maintenance. NIRPC photo.

Barge passes under NICTD line. NIRPC photo.

NIRPC Transportation Planning Roles

NIRPC supports two major transportation roles in the region. The first is its responsibility as lead agency the preparation of the federally approved regional transportation plan (RTP) and its related transportation improvement program (TIP). The program establishes a "constrained" set of system improvements in accord with available funding. This role is served by NIRPC functioning as the region's designated metropolitan planning organization.

The second major transportation planning function is established through the CRP. Because the CRP is a vision plan, it is not constrained by current funding cycles and allows the region to plan further ahead of current program and prepare itself to integrate preferred projects as funding permits. A critical outcome of the 2040 CRP includes providing direction to better align transportation funding with the region's broader objectives for land use and the environment. NIRPC will adopt a more proactive role in identifying projects for consideration that move northwest Indiana toward its vision of thriving Livable Centers and concentrations of employment growth, while supporting revitalization of the core communities and protecting valuable rural landscapes from unsustainable development. Thus, the CRP should ultimately guide the preparation of future RTP and TIP programs.

This chapter of the CRP, along with the associated appendices serves as the regional transportation plan. The transportation improvement plan is a separate document from the CRP that can be obtained by contacting NIRPC. A brief discussion of the role of NIRPC in the federal planning process is presented in the section below on NIRPC as the metropolitan planning organization.

NIRPC's Role as the Metropolitan Planning Organization

NIRPC serves as the Metropolitan Planning Organization (MPO) for the three-county region and is responsible for the federally managed regional transportation planning efforts. In this role, NIRPC carries out a continuing, cooperative and comprehensive regional transportation planning process and, as required by federal transportation funding requirements, completed the 2030 Regional Transportation Plan (RTP) in June, 2007. The RTP establishes the region's transportation planning priorities for the next 20 years and then uses a Transportation Improvement Plan (TIP) to implement those priorities at a project level in the first five-year increment.

In preparing the RTP and TIP, NIRPC must demonstrate its compliance with the Safe, Accountable, Flexible, and Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU). Transportation improvements called for in the RTP and TIP must further the eight planning factors (or goals) contained in SAFETEA-LU.

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
- Increase the safety of the transportation system for motorized and non-motorized users.
- Increase the security of the transportation system for motorized and nonmotorized users.
- Increase the accessibility and mobility of people and freight.
- 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.
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- Promote efficient system management and operation.
- Emphasize the preservation of the existing transportation system.

These goals are inter-woven in the Goals and Objectives related to creating an Accessible Region presented above.

Funds for transportation projects can come from federal, state, county or local sources; the larger the project, the more likelihood that achieving it will require a combination of two or more of these sources. Projects of regional impact take many years to plan, design, engineer and construct and rely significantly upon federal funding. Smaller scale projects that also are vital to maintaining an effective transportation network, such as road resurfacing of collector and local streets, rely on local planning and funding and can be achieved in a shorter time frame.

For larger projects, identified either through regional planning efforts or by the counties or municipalities themselves, requests for federal funding support must be made through application to NIRPC for inclusion in the TIP and evaluated against needs in other areas to determine what level of federal funding support will be provided to use available federal funds as effectively as possible.

The CRP Transportation Network Vision

In order to achieve the vision of the 2040 CRP, we must think regionally about our transportation infrastructure and its relationship to land use planning. The Growth and Revitalization Vision provides an overall framework for long-range transportation planning by concentrating growth within Livable Centers in our existing cities and towns. When we develop these vibrant, highly-connected, mixed-use centers, we create opportunities to safely walk, bicycle, and use transit for more daily trips. If we can reduce the length of our automobile trips, we can reserve our regional corridors for regional travel.

The Elements of Transportation Infrastructure

This chapter addresses in turn each of the following key elements of the regional transportation network.

- ***Highways:*** The existing system of interstates, expressways, principal and minor arterials, and major and minor collectors comprise INDOT's functional class network for the region. CRP recommendations build on this network and suggest the need to modify classifications in some areas to better reflect the Livable Centers vision.
- ***Public Transportation:*** Expanding both the geographic reach and the service level of the public transportation system in northwest Indiana will be a vital component of achieving the CRP vision. Alleviating congestion, improving access and mobility in the core communities, and supporting Livable Centers are all goals of the Transit Framework presented in public transportation section.
- ***Aviation:*** Improvements to Gary/Chicago International Airport to solidify its regional role for passenger travel and cargo movement are outlined in the airport's master plan, which aligns with the CRP. A Strategic Business Plan prepared for the airport in 2010 identifies strategies to facilitate associated industrial and commercial development in ways that would also align with improved connections between the airport and passenger rail.
- ***Freight Movement:*** The freight movement network, consisting of trucks, rail, air and maritime facilities, is a vital component of maintaining a strong economy and job market for the region. Several strategies are identified to facilitate more effective cargo movement and inter-modal transfers in the region, while addressing traffic and safety issues resulting from highway-rail crossings.
- ***Nonmotorized Transportation:*** Building on the direction provided by the *Greenways and Blueways Plan*, the CRP advocates for continuing efforts to expand the regional nonmotorized mobility network, including "priority regional trails and corridors" that will facilitate walking, bicycling and boating- for both recreational and commuter use.

While conditions and recommendations are focused according to the mode of travel, it is important to consider that each element must operate in coordination with the others to achieve a fully effective mobility network for people and goods throughout the region.

Land Use and Transportation Compatibility

The following should be considered in any transportation funding decision, to ensure compatibility of transportation planning efforts with the broader goals of the CRP. These considerations have been formalized in the updated analysis criteria developed for the 2040 RTP, application of which will promote more sustainable and integrated transportation planning in the future.

- Proximity of transportation and transit projects to an existing or planned Livable Center, to support mixed-use walkable developments
- Proximity of transportation and transit projects to existing or planned area(s) containing a mixture of housing types and price points, to support housing choice and diversity
- Proximity of transportation and transit projects to identified employment centers, to mitigate congestion and offer commuter choice
- Proximity of transportation and transit projects to identified transit nodes, to support creation of a complete and accessible transit network
- Proximity of transportation and transit projects to area(s) currently served by transportation, sewer, and other infrastructure, to avoid loss of valued rural or agricultural land and environmental assets

The transportation system will support the CRP Vision if NIRPC actions focus on achieving the following:

- Take a proactive and balanced approach to transportation funding decisions, with a particular emphasis on ensuring the public investments improve access and mobility in Livable Centers and the core communities.
- Utilize innovative project selection criteria that consider indirect benefits of sustainable transportation choices, such as protection of open space and agricultural lands, and support for concentrations of commercial and industrial activity.
- Maintain and improve existing infrastructure to maximize the efficiency of scarce public resources .
- Enhance integration of the multimodal network with Complete Streets, expanded trails, improved public transit and multimodal freight and passenger hubs.
- Reduce congestion on major regional routes to improve air quality and support a robust economy.
- Invest in transportation improvements that improve job access for low-income and minority residents.
- Support projects that encourage affordable housing creation in locations near jobs and transit.
- Coordinate freight movement and facilitate a long-term mode shift from trucks, building on both existing and new rail and air and maritime assets.
- Promote Stormwater Best Management Practices (BMPs) and the use of Green Infrastructure elements in transportation projects.
- Support projects that incorporate Context-Sensitive Solutions and Safe Routes to School.
- Promote transit-supportive land use patterns including Transit Oriented Development (TOD), Traditional Neighborhood Development (TND) and Conservation Design.
- Support projects that use intelligent transportation systems (ITS) to improve the safety and effectiveness of the transportation network.
- Prioritize preservation of historical and cultural resources, prime agricultural land and rural landscapes in the context of transportation project planning.
- Develop and preserve Greenways and Blueways as alternative modes of transportation.
- Improve access to region's amenities including Lake Michigan, regional parks, open lands and open space.

The Projected Demand of Persons and Goods

The Northwestern Indiana Regional Planning Commission uses a transportation network model to quantify and analyze the demand

for travel by the region's population and by the region's commercial and industrial trip generators. NIRPC uses an enhanced four step model to identify these trips. Beginning at the trip generation step, the trips are identified separately for two daily peak periods and the off-peak period. In addition, the close proximity to the Chicago metropolitan area results in a significant amount of commuting and freight movements across the state line. Below are tables that summarize the trips made by residents and by freight in the region.

The most significant generator of trips is the population of the three-county region. Population, households and employment numbers are the primary factors in the generation of trips on the network. The numbers are provided in Table II.1.

	AM	PM	OP	Day
2040 IE & EI Trips	4,590,368	5,979,239	13,746,104	24,315,711

Table II.1 Socioeconomic Forecasts

The tradition of using the county control totals as the total future population for each county and allocating the growth to the Traffic Analysis Zones (TAZ) has caused some problems in the past. For the 2030 plan, NIRPC used such county control totals and allocated growth to the TAZs. When the forecasts were applied in the transportation network model, this procedure resulted in very low predicted traffic volumes in some areas that have been growing. Consultants working on the Illiana Feasibility Study for INDOT and on the Westlake alternatives analysis for NICTD, working independently, concluded that the growth predicted between 2000 and 2030 was already achieved by 2007. Using input from these consultants and with the concurrence of INDOT, the growth of approximately 170,000 people and approximately 80,000 jobs were identified as more realistic targets.

The internal population's trips are generated for four trip purposes: home-based work, home-based shopping, home-based other and non-home-based trips. As the name implies, these are trips between the home and work, shopping and other activities, as well as trips that are entirely away from the home. Each trip has a production or origin end and an attraction or destination end. A balancing procedure is used to match these numbers so that each production or origin has a corresponding attraction or destination. The number of these trip ends is summarized in the in Table II.2.

2040 Socioeconomic Forecasts	
Population	938,683
Households	426,678
Employment	353,315

Table II.2 Internal Person Trip Ends

The amount of travel outside the planning area is quite extensive, given the close proximity to Chicago. Table II.3 includes trips that have external ends in the NIRPC transportation network model. These include internal to external and external to internal trips as well as trips that remain within the Illinois part of the model. These also include trips that pass through the region.

2040 Productions/ origins	AM	PM	OP	Day
HBW	248,016	148,187	232,497	
HBS	22,472	105,781	284,726	
HBO	235,146	343,745	868,926	
NHB	75,491	260,937	662,188	
Sum	581,125	858,650	2,048,337	3,488,112
2040 Attractions/ destinations	AM	PM	OP	Day
HBW	248,013	148,173	232,485	
HBS	22,474	105,773	284,718	
HBO	235,138	343,742	868,916	
NHB	75,491	260,937	662,188	
Sum	581,116	858,625	2,048,307	3,488,048

Table II.3 External Person Trip Ends

Goods movements also generate a significant number of truck trips on the region's highway network. Table II.4 summarizes the number of heavy trucks and non-heavy trucks using the region's roads. The table includes the number of heavy trucks, as well as the same quantity expressed in vehicle equivalent units, where each heavy truck is equated to three passenger vehicles.

	AM	PM	OP	Day
2040 Heavy Trucks	74,363	98,387	436,231	608,981
2040 Heavy Trucks in VEQ	223,089	295,161	1,308,693	1,826,943
2040 Non-heavy Trucks	202,313	281,726	1,406,737	1,890,776

Table II.4 Truck Trips

The result of these trips on the region's network of streets and highways is the volume of traffic, summed in vehicle-miles of travel. Table II.5 is the sum of all daily vehicle-miles of travel in the three-county region.

2040 Vehicle-Miles of Travel	29,075,354

Table II.5 Vehicle-Miles of Travel

South Shore passenger on platform. NIRPC photo.

The Region's Transportation Infrastructure Network

The 2040 CRP addresses the five key elements of the northwest Indiana transportation network- ***highways, public transportation, aviation, freight movement*** **and** ***nonmotorized transportation***. These transportation modes together create an integrated system of regional accessibility, each with unique conditions and needs. Current conditions and recommendations specific to each transportation mode are discussed in the following sections.

Highways

NIRPC is most directly involved in roadway planning for the region because of the flow of federal funds through NIRPC to counties and municipalities for roadway projects that are identified through NIRPC's TIP. As a result of this funding structure, NIRPC has a particular opportunity to implement meaningful improvements to the roadway planning process, to more closely tie transportation planning decisions to support for sustainable and regionally beneficial land use patterns.

Overview of the Existing Highway Network

Each day millions of vehicle trips occur in the Northwest Indiana region. The vast majority of these daily trips involve travel entirely within the region while hundreds of thousands more involve nonstop passage straight through Northwest Indiana. Additionally, vehicle trips involving travel outside the region but originating or terminating within Lake, Porter or LaPorte County make up a significant portion of total vehicle trips. All of these trips are accommodated on Northwest Indiana's roadway system, which is a complex and well-developed network of expressways, highways, arterials, collector roads and local streets. More than 5,800 miles of roadways are maintained in Northwest Indiana including over 3,500 miles of regional highways, as depicted in Figure II.1.

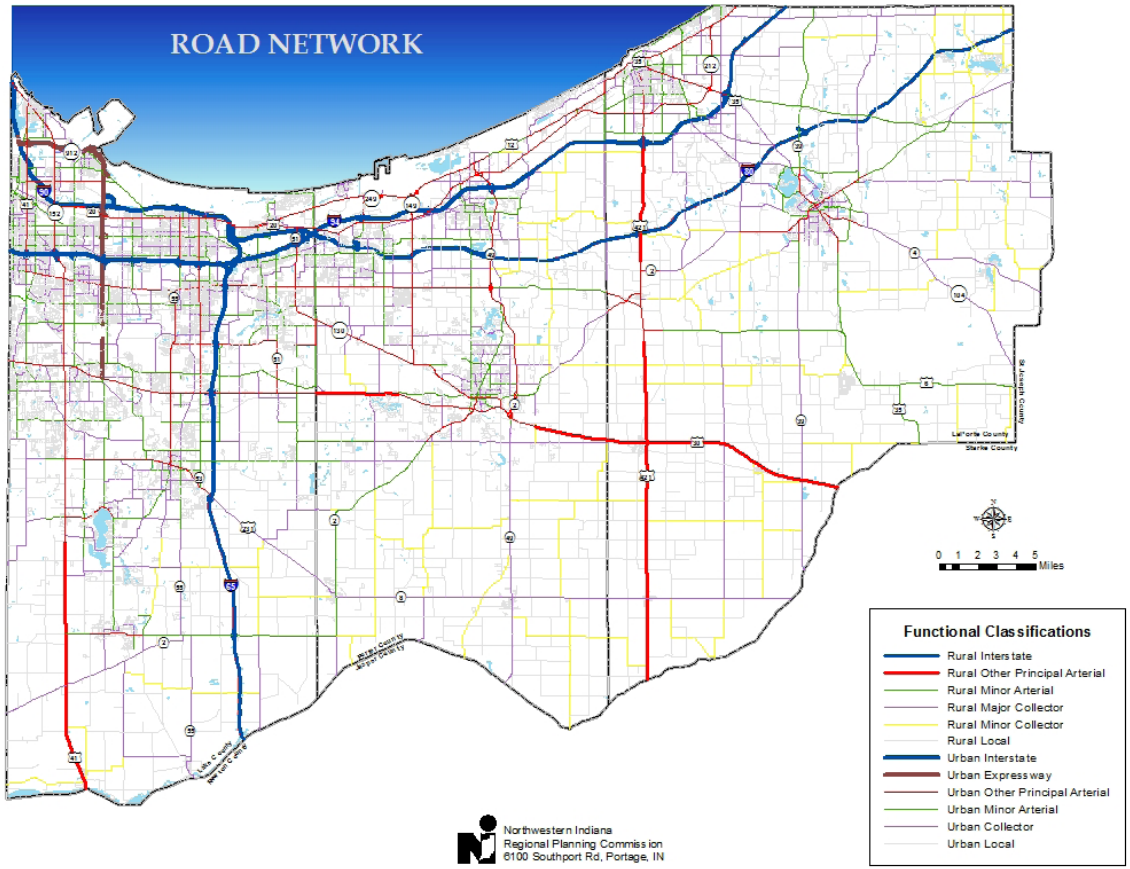

Figure II.1 Map of the Regional Highway Network

Between 2000 and 2010, the population in Northwest Indiana increased 8.5%, and Vehicle Miles Traveled (VMT) subsequently followed suit through their peak in 2007 at 22,397,000. By 2008, record high gas prices and the economic recession cause a decline in VMT for the first time ever. As a result, the 2008 total of 21,792,000 VMT showed only a very slight increase over the 2000 total of 21,527,000. By 2010, VMT started to rise again as the economic recovery strengthened; even with the higher fuel prices and economic troubles, there was still an increase in VMT. This phenomenon reflects the continuing regional dependence on automobile travel often associated with decentralized development and urban sprawl. The situation is also indicative of the increased demands being placed on the existing regional transportation system, which will only increase as the economy improves.

Functional Classification of Roadways

Transportation planning is based on the concept of the functional classification of roadways. The Federal Highway Administration (FHWA) defines functional classification as: "the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide."[1]

Functional classification reflects the fact that different types of roads are intended to provide different types of service. For instance, the design of an expressway is not intended to accommodate a short trip down the street to visit a neighbor, nor is a residential street intended to carry cars traveling through at 65 miles per hour.

Using the FHWA functional class guidelines, INDOT recognizes two main functional classes in the Northwest Indiana region: *urban* roadways and *rural* roadways. These two classes are further divided into sub-categories of principal arterials, minor arterials, collector roads and local roads. Table II.6 provides a brief description of each roadway type.

Road Type	Description
Principal Arterials	*Rural* – Are typically designed as limited-access roadways serving high-speed interstate and interregional travel. *Urban* – Serve the region's most important transportation corridors. Provide connections between major centers within the urban area. Typically removed from residential neighborhoods.
Minor Arterials	*Rural* – Are built for relatively high speeds and traffic volumes. Provide connections between larger cities. *Urban* – Make connections with principal arterials and serve activity centers not served by principal arterials.
Collectors	*Rural* – Generally serve intra-county trips between smaller communities and somewhat longer-distance local trips. *Urban* – Provide for both through-traffic and access to adjacent land. May run through residential areas.
Local Streets	*Rural* – Are designed as lower-speed streets serving only local travel needs and providing access from adjacent land to collectors and arterials. *Urban* – Serve low-speed traffic seeking access to adjacent land and make connections with higher-order roadways. Through-traffic is generally discouraged.

Table II.6 Description of Roadways Types.
Source: http://www.fhwa.dot.gov/planning/fcsec2_1.htm

[1] http://www.fhwa.dot.gov/planning/fcsec2_1.htm

Every road in the region has been assigned one of these designations according to the character of its existing surroundings and the role it plays in the regional road network. These assignments reflect the hierarchy of purpose that each roadway serves. With a new focus on sustainable development patterns that encourage contiguous development patterns and accommodating new development in Livable Centers and the core communities, it will be necessary to revisit the functional classifications of some existing roadways and ensure that they are appropriately classified to reflect the preferred scenario resulting from the CRP. This will aid both NIRPC and INDOT in making appropriate planning and design decisions in the future regarding investments in the roadway system.

Issues and Challenges

A roadway network that provides mobility and access is essential to Northwest Indiana and its economic resurgence. The region's location at the southern tip of Lake Michigan forces a large portion of the national surface transportation system to converge on Northwest Indiana. The national transportation system has contributed, and will continue to contribute, to the development of the region, although it has also been responsible for dividing regional communities.

Three of the seven major east-west transcontinental interstate highways converge on Northwest Indiana resulting in an extraordinary concentration of national traffic (for both people and freight) on the regional highway system. The national railroad system also converges on Northwest Indiana with lines crossing the region from every direction. Trunk lines of three major eastern railroads pass through, providing both a tremendous regional asset for economic growth and a challenge to the orderly movement of roadway traffic in the region.

Security

Homeland Security is an important component of life in Northwestern Indiana. Lake County is home to many of the most industrialized portions of Indiana. Porter County contains the Port of Indiana. Lake, Porter, and LaPorte counties are truly the crossroads of the nation with highways, railroads, and transmission lines and pipelines converging on the region just south of Lake Michigan.

The Northwestern Indiana Regional Planning Commission is committed to collaboration and coordination in preserving the safety and security of the citizens of our region. The Indiana Department of Homeland Security is the key agency in preparing and responding to homeland security emergencies and provides support and funding for the county emergency management agencies who often are the first responders. Each of the 3 counties of NIRPC has an Emergency Management Action Plan and also a Hazard Mitigation Plan. Those plans are reviewed and updated every five years.

NIRPC led an effort with the five Homeland Security County Directors of District 1 (Lake, Porter, LaPorte, Newton, and Jasper) in developing a mutual aid pact, which can be invoked in the event of a disaster or security issue.

As we develop strategic plans for future transportation, infrastructure, and environmental development, we will assess local security needs with the help of our county Homeland Security partners and constantly monitor and develop plans for disaster and security issues, both seen and unforeseen.

Downtown street in Valparaiso. Photo by Stephen Sostaric.

Safety*

In response to SAFETEA-LU regulations, the Indiana Department of Transportation (INDOT), with coordination and support from the Federal Highway Administration (FHWA), developed the State Highway Safety Plan (SHSP). The SHSP identifies a number of local, regional, and statewide initiatives and strategies targeted towards overall traffic safety. The plan outlines a broad approach which recognizes the need for local collaboration, coordination, and better communication between state, regional, and local agencies. In response to the Indiana SHSP, NIRPC took the initiative to localize the plan for Northwest Indiana and conducted a safety assessment for all types of vehicular crashes in the region that take place on the state system.

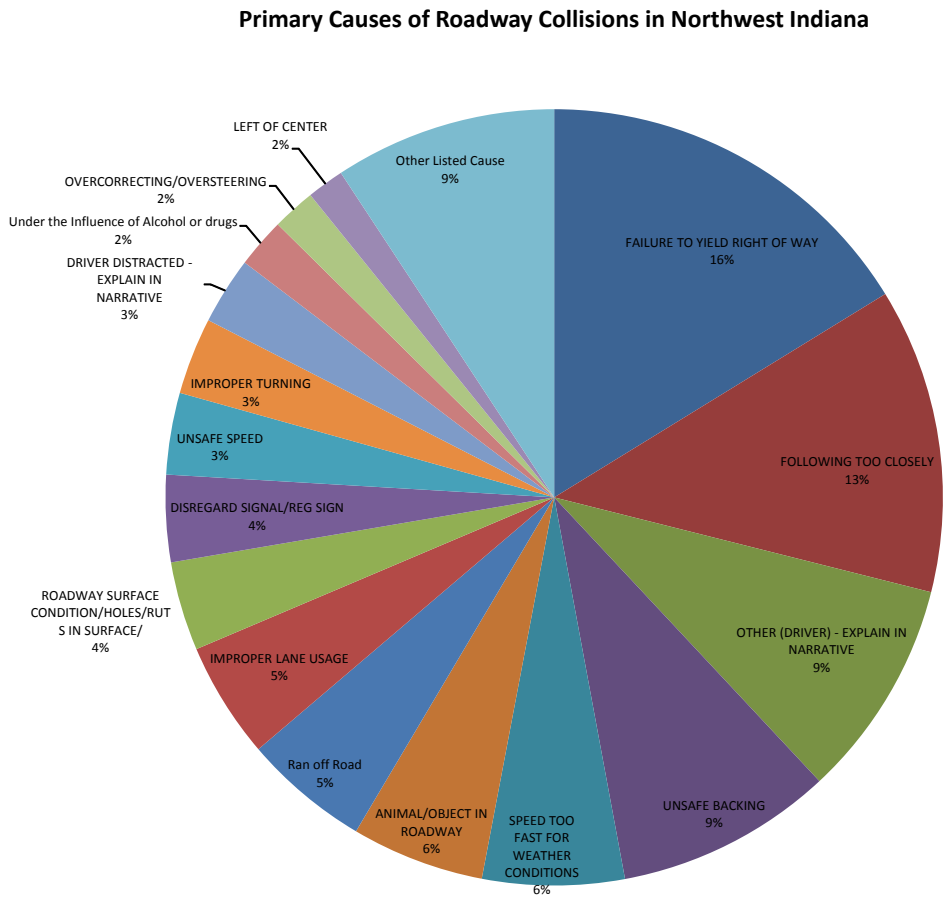

Figure II.2 Primary Causes of Roadway Collisions in Northwest Indiana

Understanding the conditions of the transportation network and establishing a safe and efficient transportation network that accommodates all users is vital to realizing the 2040 CRP and establishing livable centers within the region.

*Please note that there is technical safety analysis in the appendix.

Crashes in the Region

The analysis of the 2005-2009 crash data for the three counties of Northwest Indiana shows that there was an average of approximately 26,000 automobile crashes per year. In each of the five years studied, crashes occurring in Lake County accounted for approximately two-thirds of all crashes (Figure II.3). To pinpoint what areas and elements of the region's transportation network need improvement and which ones might not, a further examination is needed of the types of crashes in the region. Four categories of crashes are examined:

- Vehicular crashes with nonmotorized transportation
- Crashes involving trucks
- Crashes occurring at railroad crossings
- Crashes involving buses

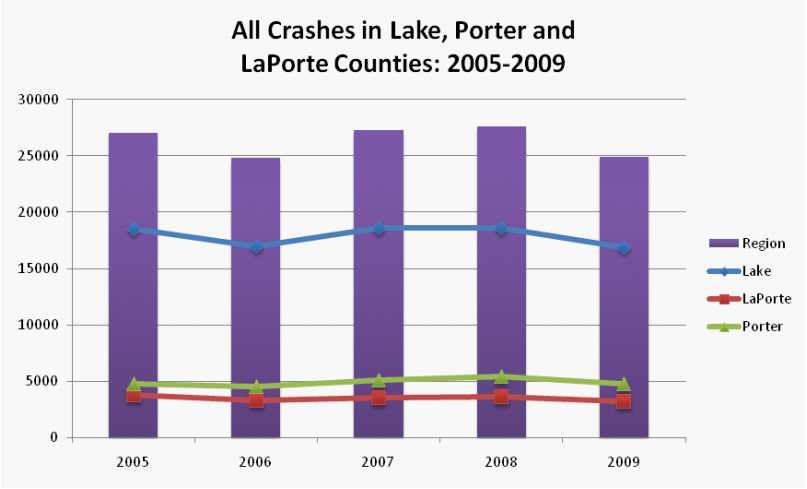

Figure II.3 All Crashes in Lake, Porter, and LaPorte Counties: 2005-2009; NIRPC, Data Source: Indiana State Police, 2010.

Vehicular Crashes Involving Nonmotorized Transportation

Crashes involving vehicles and nonmotorized transportation (i.e. pedestrians and bicyclists) are of great concern as they directly reflect the livability of our centers and influence the willingness of our residents to use alternative transportation (Figure II.4). As the road network is made more bicycle and pedestrian friendly and the region's trail network is expanded, safety for these users becomes an ever-larger concern. While non-motorized transportation is growing within the region, both as a means of recreation and active transportation, data for nonmotorized crashes for the region shows a significant increase in the number of crashes between 2005 and 2009. During that period, the number of crashes per year averaged 337, while the total number of crashes rose 265%, from 159 to 421.

This increase could reflect both the growing popularity of nonmotorized transportation and the increase in available opportunities to use alternative transportation via paths, trails and sidewalks. More importantly, this trend indicates a need to address safety issues related to non-motorized transportation within 2040 CRP and points to the growing importance of NIRPC policies that support the livable centers strategy such as the recently adopted Complete Streets policy and programs like Safe Routes to School.

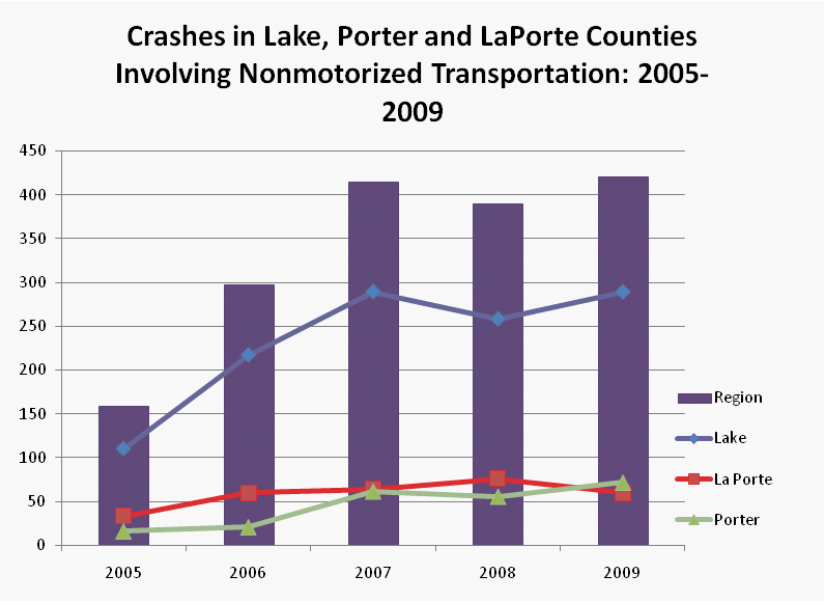

Figure II.4 Crashes in Lake, Porter and LaPorte Counties Involving Nonmotorized Transportation: 2005-2009; NIRPC. *Data Source: Indiana State Police, 2010.*

Crashes Involving Trucks

Northwest Indiana contains a dense freight network due to the confluence of interstates and the region's port facilities. This network relies largely on trucks for movement of cargo and because of the larger size and heavier weight of these vehicles, the resulting crashes are usually much more severe when they do occur and therefore this category warrants special attention. Between 2005 and 2009, crashes involving trucks averaged approximately 2,400 incidents per year (Figure II.5). While truck crashes in Porter and LaPorte Counties stayed relatively constant, Lake County

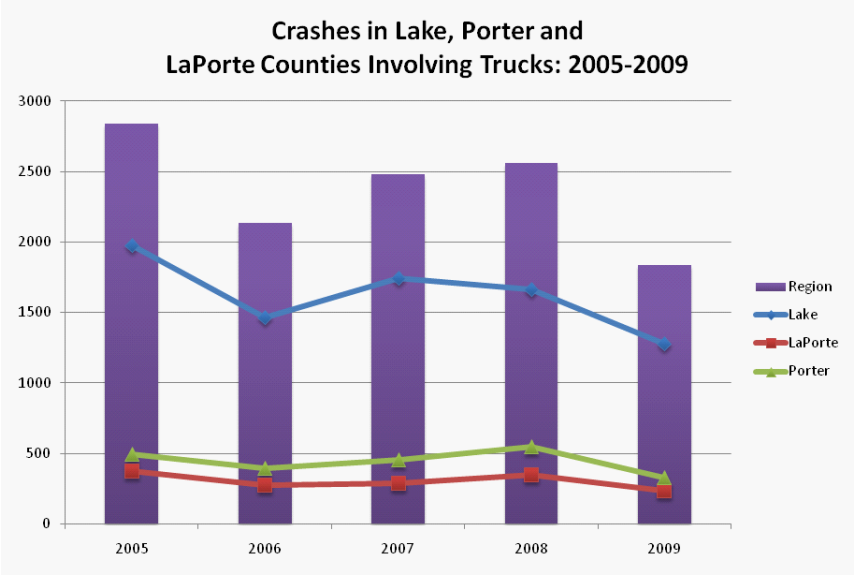

Figure II.5 Crashes in Lake, Porter and LaPorte Counties Involving Trucks: 2005-2009; NIRPC. *Data Source: Indiana State Police, 2010.*

crashes fluctuated, but generally experienced a downward trend. Unfortunately, this is most likely a function of the economic downturn and the corresponding reduction in container transportation rather than the result of significant improvements in safety. Therefore, it is anticipated that without significant safety enhancements, an improved economy will also bring an increase in the number of crashes involving trucks.

Railroad Crossing Crashes

On average, there are 27 vehicle-train crashes each year (Figure II.6). While the instances of crashes occurring at railroad crossings are considerably lower than other types of crashes in the region, this type of crash has a much greater potential to be fatal due to the weight and speeds of the vehicles involved. Further, the number of rail lines passing through an urbanized area is directly related to the number of crashes, and, as a result, Lake County with its more urbanized geography consistently has the highest number of railroad crossing crashes out of the three counties. In addition to the high fatality rates for crashes of this kind, the 2040 CRP's focus on the revitalization of urban centers and the creation of livable centers makes it necessary to prioritize safety improvements to reduce crashes at railroad crossings.

School and Transit Bus Crashes

According to the National Safety Council, bus riding is the safest form of surface transportation. Between 2005 and 2009, an average of 236 bus crashes occurred in Northwest Indiana each year (Figure II.7). While this is a relatively low number compared to other crash types, increased user demand and planned service expansions will bring added bus traffic and the potential for even greater safety concerns. In urban areas, the concern for bus safety is even greater: 74%

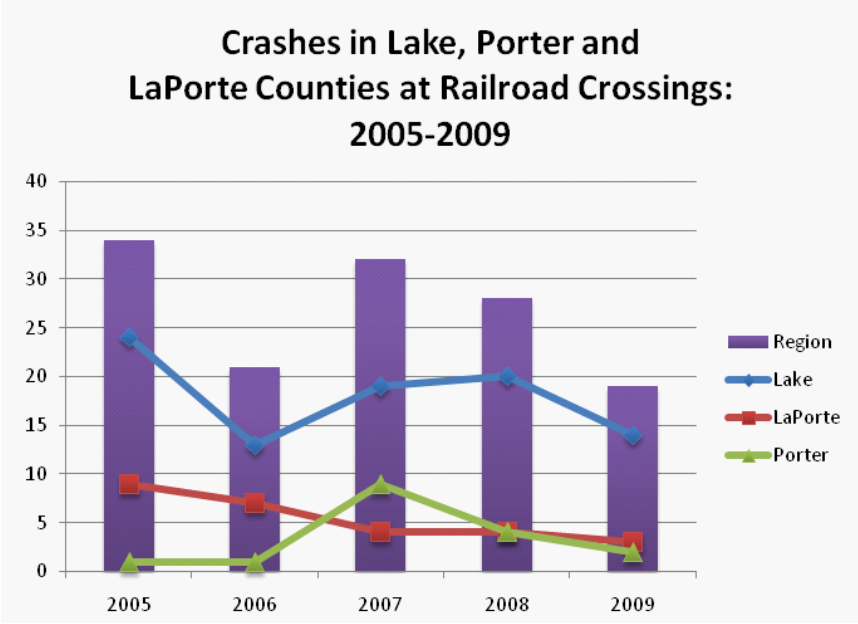

Figure II. 6 Crashes in Lake, Porter and LaPorte Counties at Railroad Crossings: 2005-2009; NIRPC. *Data Source: Indiana State Police, 2010.*

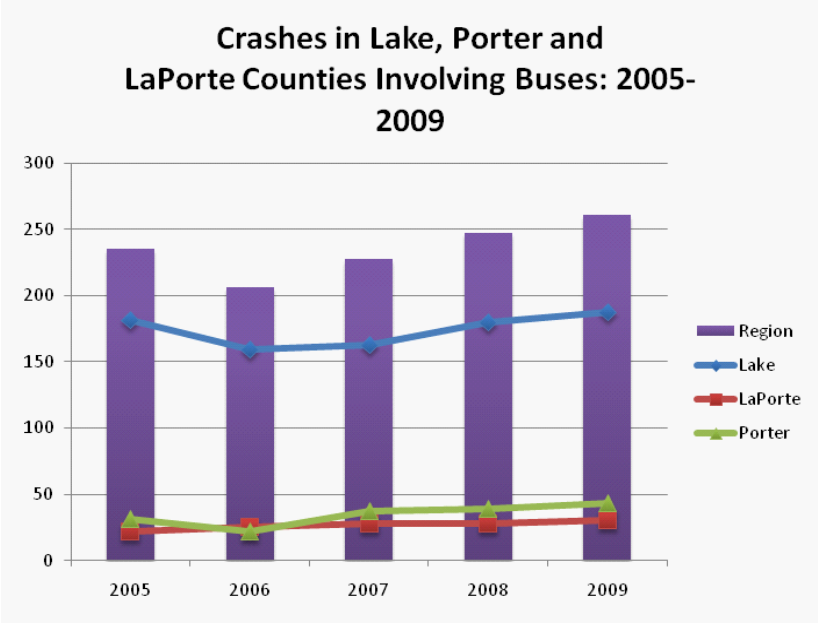

Figure II.7 Crashes in Lake, Porter and LaPorte Counties Involving Buses: 2005-2009; NIRPC. *Data Source: Indiana State Police, 2010.*

of all bus crashes occurring between 2005 and 2009 took place in Lake County, the most urbanized of the three counties and therefore the one with the most extensive use of both transit and school buses. As the bus and transit system expands in Northwest Indiana, efforts must be taken to ensure the safety of all passengers especially those in urban centers where bus service is most concentrated.

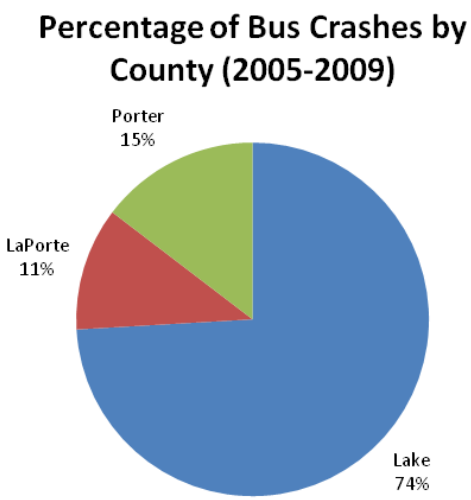

Figure II.8 Percentage of Bus *Crashes* by County 2005-2009; *NIRPC Data Source: Indiana State Police, 2010.*

Tractor trailer crashed into state police vehicle. NIRPC photo.

Congestion Management

What is Congestion Management?

Congestion Management is a federally mandated step-by-step process (Figure II.9) that evaluates the roadway network to identify where congestion is located and help determine practical ways to relieve a congested area. This objective driven process involves a detailed analysis through performance measures and an analysis of viable alternative strategies that will best utilize the regional resources.

A Congestion Management process (CMP) is both a way of thinking about congestion-related issues and a set of technical tools. The analytic tools are used to define and identify congestion within a region or corridor. In addition, the tools help to develop and select appropriate strategies to reduce congestion or mitigate the impacts of congestion. A CMP has the potential to help Metropolitan Planning Organizations and the operating systems involved in the process to create a credible, defensible planning process that yields effective congestion management projects.

Congestion Management Strategies

The congestion management process involves looking at alternative strategies to adding roadway capacity. They are:

Demand Management: Strategies that will reduce demand on roadway by persuading commuters to reduce the amount of single occupancy travel trips or move their travel trips to nonpeak hours.

Potential Demand Strategies: Carpooling, School Pooling, Telecommuting, Flex work hours

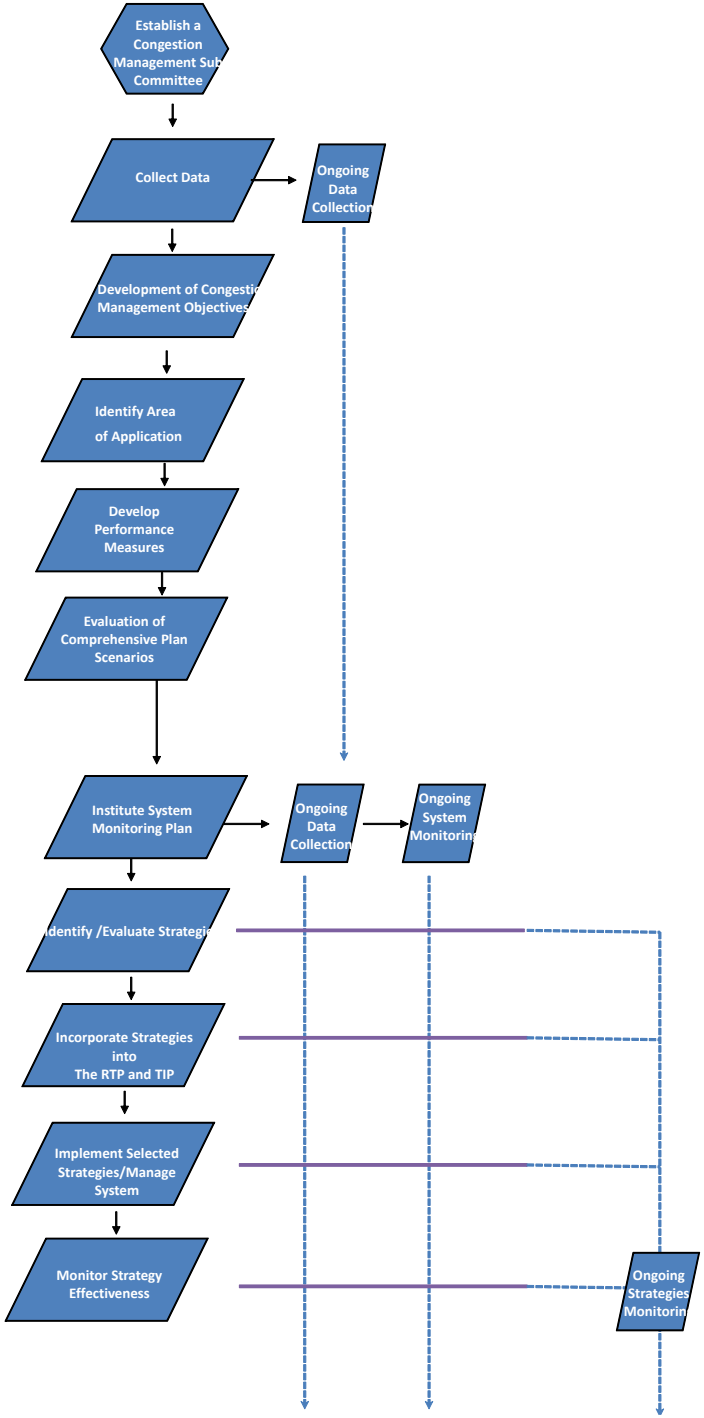

Figure II.9 (right) Diagram of Traditional Congestion Management Process Steps

Transportation Systems/Access Management: Strategies that improve congestion by physically altering a roadway without adding roadway capacity.

Transportation Management/Access Management Strategies: Courtesy patrols, roadway signage improvements, add bike lanes, ramp meters, intersection turn lanes, acceleration/deceleration lanes, railroad crossing grade separation, HOV/HOT managed lanes, roundabouts, separation of truck traffic, intersection grade separation, new stop sign, new sidewalks, lane widening.

Intelligent Transportation Systems: Strategies that use technology to better improve traffic flow.

Potential Intelligent Transportation Systems Strategies: New traffic signal, traffic signal timing and coordination, traffic signal equipment modernization, incident management plans, dynamic messaging system.

Transit: Strategies that increase the capacity, coverage, use or promotion of public transportation as a means to relieve traffic congestion.

Potential Transit Strategies: New Public Transit Guideway System, Public Transit Capacity Expansion, Public Transit Route Extension, New Transit Route Transit Signal Priority.

Growth Management: Strategies that manage and regulate where growth will occur. These strategies usually have political influence with the public sector.

Potential Growth Management Strategies: Promote more high density; promote more transit-oriented development (TOD), promote more cargo oriented development, improvement of land use patterns, urban growth boundary, tax incentive policies.

Performance Measures and Level of Service

The performance measures were initially selected by NIRPC staff members, and discussed with and approved by the Congestion Management Subcommittee. These performance measures have been or will be used in the future to evaluate potential regionally significant projects and determine where congestion is located within the region.

Highway Performance Measures

- Volume/Capacity Ratio (V/C Ratio)
- Travel Time & Travel Time Index
- Average Speed
- Delay

Safety Performance Measures

- Crash Rate
- Average Incident Clearance Time

Transit Performance Measures

- Load Factor
- On-Time Performance
- Passenger Trips per Vehicle Revenue Hour and Mile
- Vehicle Revenue Hours/Per Capita

Other Performance Measures

- Customer Satisfaction
- Vehicle Miles Traveled/Vehicle Hours Traveled

The Roadway Level of Service map (Figure II.10) displays the level of service for the roadways in Northwest Indiana. The roadway level of service is determined from available data and expressed in the form of performance measures. Any area with a level of service of D or lower is considered to be congested.

Data Sources

NIRPC obtains Travel Time and speed data from NAVTEQ, which collects travel time data from INDOT. The data that is acquired is for the Borman Expressway (I-80/94) west of the Indiana Toll (I-90) road and I-65 between the Borman Expressway and U.S. 30. NIRPC also collects travel time data in house by conducting data collection runs on the region's arterials. Currently there are five corridors that have completed travel time data. NIRPC's goal is to eventually collect data on 69 regional corridors that have been identified.

Congestion Pricing

Congestion pricing is a policy tool that is designed to reduce unnecessary driving and encouraging the use of transit into congested areas (i.e. a central business district, or a particular roadway or bridge) by imposing a charge, usually between certain hours of the day. One of the most famous examples of this is the Congestion Charge Zone (CCZ) in London, which was instituted in 2003. Vehicles entering the CCZ between the hours of 7 a.m. and 6 p.m. Monday through Friday must pay a £10 charge. The funds raised are invested back into the city's transportation system.

While this idea has been proposed for cities all over the world, including Manhattan in New York City, it does not necessarily translate to smaller cities. In Northwest Indiana, the major urban centers of Hammond and Gary might appear, on the surface, to be candidates for this congestion-reduction strategy. This must be considered with care, however, as this pricing could have a detrimental effect on revitalization attempts in both cities.

In Hammond and Gary, substantial trip attractions either do not exist or are extremely limited. In addition, the transit systems in Gary and Hammond are not very extensive and are not enough suitable alternatives to driving. As a result, congestion pricing could actually end up discouraging people from visiting the area and harm revitalization efforts, as the incentives or transportation alternatives do not exist to encourage them to visit despite the charge. Further redevelopment, the addition of jobs, and extensive transit improvements are needed before this is a viable option for an urban center in Northwest Indiana.

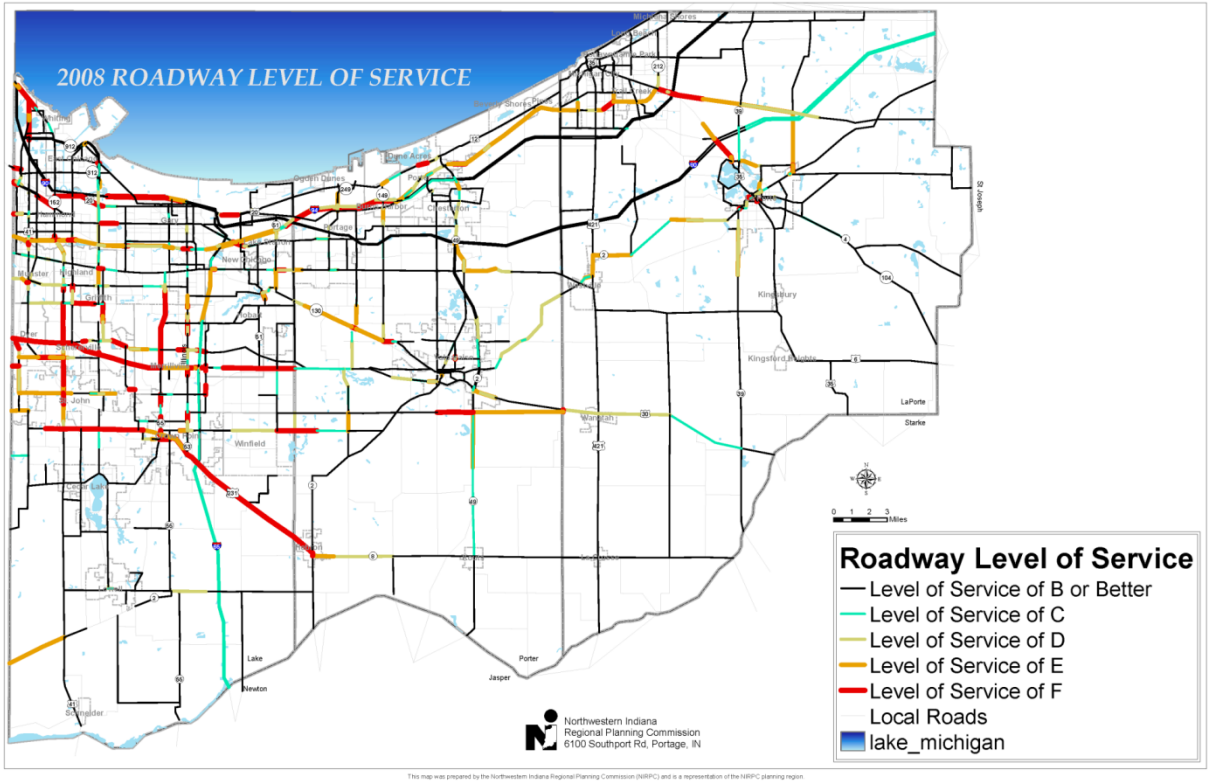

Figure II.10 2008 Roadway Level of Service in Lake, Porter, and LaPorte Counties; NIRPC.

The Illinois Tollway has congestion pricing for semi-trucks that use the roadway. During daytime hours (6 a.m. to 10 p.m.), toll rates for these vehicles are higher than during overnight hours (10 p.m. to 6 a.m.). This pricing scheme encourages the larger, slower vehicles to avoid utilizing the tollway during peak hours, with off-peak hours and its lower prices meant to encourage truck traffic during periods of typically lighter traffic. This is a possible congestion pricing solution that could be considered for the Indiana Toll Road. Adding tolls to Borman Expressway or Interstate 65 would increase congestion rather than relieve it due to the slowdown required to pay tolls. Adding tolls to these expressways will also not deter trucks and single occupancy travelers to consider other modes of transportation due to the lack of options and alternative routes to Chicago.

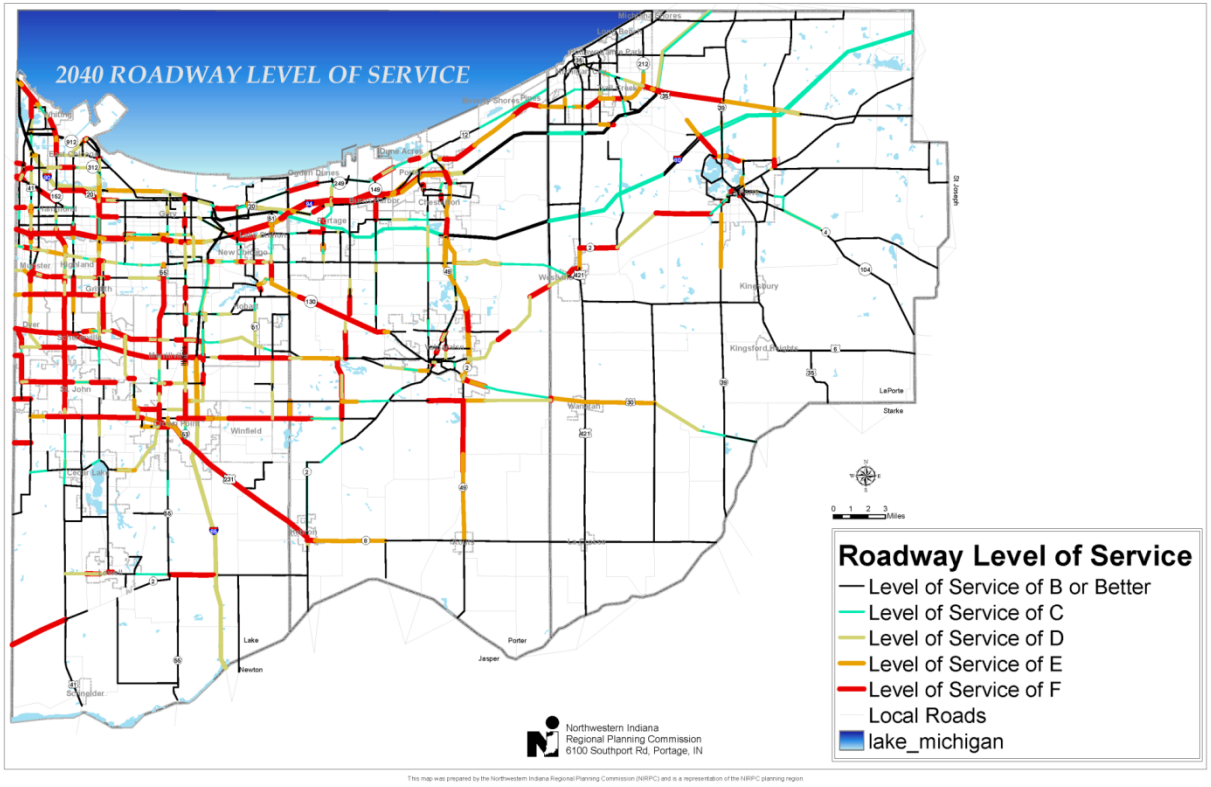

Figure II.11 2040 Roadway Level of Service in Lake, Porter, and La Porte Counties; NIRPC.

Corridor Analysis

For the congestion management process both project corridors and other corridors that were identified by NIRPC staff were analyzed. The reason for this analysis was to find out what the best solution is to fix congestion in these corridors. The first step in the process was to determine the contributing factors of congestion at these locations. Once the contributing factors are determined, Demand Management, Transportation Systems Management, Intelligent Transportation, Transit and Growth Management Strategies. If none of these strategies relieve congestion, then adding capacity may be considered. From this process, submitted expansion projects are evaluated and additional projects may also be recommended for congested corridors that do not have any projects submitted.

Results of the Project Selection Process

Projects for the 2040 CRP were solicited in December, 2010. The evaluation was completed in April, 2011 and approved by the Congestion Management Subcommittee on March 31, 2011. Eighteen projects passed the congestion management process outright, and an additional five projects passed pending a reduction in the scope of the project. Four projects were not selected from the congestion management process.

In the table II.7 there is an explanation for each project (last column on the right) on how they conform to the goals and objectives of the 2040 CRP. For the projects that passed the congestion management process, most agreed with the goals and objectives. However, there are a few that did not agree. These projects are exceptions to the rule and "passed" because the stakeholder commit-

tee that reviewed the projects discovered that there was a surplus of funding available for expansion projects in Lake and Porter counties. It was the prerogative of the committee to include projects that are advantageous to the overall system given the available resources. One project was considered that agreed with the goals and objectives but not selected because the sponsor withdrew the project, pending an alternative analysis.

Projects That Passed NIRPC's Congestion Management Process

	Sponsor	Name	Improvement Type	Functional Class (FC)	From	To	Length	Lanes Before	Lanes After	Regionally Significant?	OTT Year	LOS Grade	LOS Pass	Alt. Analysis Grade	Alt. Analysis Pass?	Reduction of Scope?/Comments	Does this project agree with the goals and objectives of the 2040 CRP?
1	Cook County, IL/Munster, IN	Joe Orr Rd Extension/Main St	New Roadway and Added Travel Lanes on Existing Roadway	Minor Arterial	IN/IL State Line	Calumet Ave	0.8 in IN	0	3	Yes	2016	C	Yes	50%	Yes	No	Yes because it is a bi-state project that will provide a better connection to Chicago's south suburbs
2	Gary	Marina Access Rd, Phase II, Segment 3	New Roadway Segment w/ Pre-existing Segment(s)	Minor Arterial	About 800' E of SR 912	About 920' SW of Parking Garage	0.5	2	4	Yes	2013	A	No	100%	Yes	No	This project has economic development potential. This project is also underway. This project is also a part of the Marquette Plan.
3	Gary	Marina Access Rd, Phase III	New Roadway	Collector	About 940' E of Parking Garage	About 600' NE of Parking Garage	0.4	0	2	Yes	2014	A	No	100%	Yes	No	This project has economic development potential. This project is also underway. This project is also a part of the Marquette Plan.
4	Lake County	45th Ave	Added Travel Lanes on Existing Roadway	Minor Arterial	Cleveland St	Colfax St	2.75	2	3	Yes	2012-2018	E	Yes	100%	Yes	No	Yes as it provides a connection between two communities.
5	LaPorte	Economic Development Corridor (NE Quadrant)	New Roadway	Minor Arterial	SR 2	SR 39 North	4.5	0	2	Yes	2020	E	Yes	75%	Yes	No	No, as this project does demand too much major greenfield development
6	Merrillville	101st Ave	Added Travel Lanes on Existing Roadway	Minor Arterial	Broadway (SR 53)	Mississippi St	1	2	4	Yes	2014	C	Yes	60%	Yes	No	No, as it involves adding lanes to a roadway that is surrounded by a greenfield.
7	Merrillville	Mississippi St	Added Travel Lanes on Existing Roadway	Minor Arterial	83rd Ave	101st Ave	1	2	4	Yes	2011-2015	F	Yes	56%	Yes	No	Yes because it relieves congestion in an area where other alternatives would not improve traffic conditions
8	Porter County	Willowcreek Rd Extension	New Roadway	Minor Arterial	US 30	Porter CR 700N	4.5	0	2	Yes	2013-2017	E	Yes	100%	Yes	No	Yes, as it facilitates growth contiguous to existing development, and improves north-south connectivity in Porter County, and it should relieve congestion on US 30 from Valparaiso to I-65.
9	Schererville	Kennedy Ave Reconstruction	Added Travel Lanes on Existing Roadway	Minor Arterial	Main St	US 30	2.25	2	4	Yes	2013-2018	C	Yes	100%	Yes	No	Yes, as it supports redevelopment and infill of existing community. This project also provides a valuable missing connection in Northwest Indiana's roadway network.
10	Valparaiso	Division Rd	Added Travel Lanes on Existing Roadway	FC Change from Collector to Minor Arterial	SR 2	US 30	6.95	2	4	Yes (Conditional)	2013	F	Yes	100%	Yes	No	No as it promotes sprawl and greenfield development.

Table II.7 Projects that Passed NIRPC's Congestion Management Process.

Projects That Passed NIRPC's Congestion Management Process																	
	Sponsor	Name	Improvement Type	Functional Class (FC)	From	To	Length	Lanes Before	Lanes After	Regionally Significant?	OTT Year	LOS Grade	LOS Pass	Alt. Analysis Grade	Alt. Analysis Pass?	Reduction of Scope?/Comments	Does this project agree with the goals and objectives of the 2040 CRP?
11	Valparaiso	Vale Park East	Added Travel Lanes on Existing Roadway	Minor Arterial (Needs FC Map Change from Collector)	Calumet Ave	Silhavy Rd	1	2	4	Yes	2015	D	Yes	100%	Yes	No	Yes as it relieves congestion and improves connectivity in an existing community
12	INDOT	US 421 Added CTL (Westville)	Added Travel Lane (Aux)	Principal Arterial	SR 2 West	SR 2 East	1.1	2	3	Yes	2012	E	Yes	50%	Yes	No	Yes because it improves connection by relieving an congested roadway.
13	INDOT	SR 49 at CR 400N (Valpo)	New Interchange	Collector	n/a	n/a	n/a	n/a	n/a	Yes	2013	C	Yes	75%	Yes	Project will pass due to safety issues as stated in Indiana's 5% report	Yes as it improves access management and safety in a major transportation corridor.
14	INDOT	US 20 CTL (Mich City)	Added Travel Lane (Aux)	Principal Arterial	Woodland Ave	1,500' W of Johnson Rd	1.1	4	5	Yes	2015	E	Yes	50%	Yes	No	Yes, as it improves accessibility within an urban community. This project will also improve safety as well
15	INDOT	Cline Ave Realignment*	Road Reconstruction with Interchange Modifications	Expressway	SR 912 at Dickey Rd	Riley Rd at Existing SR 912	n/a	n/a	n/a	Yes	2011-2013	E	Yes	72%	Yes	No	Yes as it fixes a missing connection within the transportation network
16	Hobart	61st Ave	Added Travel Lanes on Existing Roadway	Principal Arterial	Colorado St	SR 51	1.75	2	3	Yes	2013	A	No	100%	Yes	Passed due to safety concerns	Yes as it will provide a connection to Merrillville and I-65 from Hobart
17	INDOT	SR 2 at I-65 (DES 9706420)	Intersection Improvements with Added Travel Lanes	Minor Arterial	From 0.8 mile W of I-65	To 0.9 mile E of I-65	1.7	2	5	Yes	2015	E	Yes	50%	Yes	No	No as it contributes to development outside the urbanized area. There are also environmental concerns as there is a lot of green space and agricultural land near the project site.
18	Cedar Lake	133rd Ave	Added Travel Lanes on Existing Roadway	Principal Arterial	US 41	Industrial Rd	0.46	2	3	No	2013	B	No	80%	Yes	Not Regionally Significant. Congestion Management evalution not needed.	Yes as this project considers both NIRPC's and the town of Cedar Lake's comprehensive plans into consideration. This project will improve connections and accessibility along a major corridor in Cedar Lake. This project is located in a livable center

*Preferred route has not been identified as the NEPA process is not yet complete. INDOT is reviewing two solutions for Cline Ave: the ground route alternative utilizing Riley and Dickey roads, and a four-lane bridge alternative.

Table II.8 Projects that did not Pass the Congestion Management Process.

Projects that Passed NIRPC's Congestion Management Process Pending a Reduction in Scope																	
	Sponsor	Name	Improvement Type	Functional Class (FC)	From	To	Length	Lanes Before	Lanes After	Regionally Significant?	OTT Year	LOS Grade	LOS Pass	Alt. Analysis Grade	Alt. Analysis Pass?	Reduction of Scope?/Comments	Does this project agree with the goals and objectives of the 2040 CRP?
1	Gary	Lake-Porter County Line Rd	Added Travel Lanes on Existing Roadway	Minor Arterial	US 20	Nat Lakeshore Entrance	1.4	2	4	Yes	2014	B	No	56%	Yes	Intersection Improvements, Signal Improvements. No added travel lanes is necessary	Yes, as this project provides access to the Lakefront. This project also corresponds with the Marquette Plan too.
2	LaPorte	18th St	Added Travel Lanes on Existing Roadway	FC Change from Collector to Minor Arterial	SR 39	US 35	1.8	2	4	Yes	2016	C	Yes	75%	Yes	No added travel lanes or center turn lane. Intersection improvements, new Traffic signals are recommended instead.	No, as this project consists of potentially overbuilding a roadway
3	LaPorte	Boyd Blvd North Extension	New Roadway	Minor Arterial	SR 2	Severs Rd	0.8	0	4	Yes	2020	D	Yes	50%	Yes	Two travel lanes is recommended rather than four	No as it consists mainly of greenfield development
4	LaPorte	Boyd Blvd Expansion	Added Travel Lanes on Existing Roadway	Minor Arterial	SR 2	US 35	3.25	2	4	Yes	2016	B	NO	50%	Yes	Center Turn Lane is recommended instead of added travel lanes	Yes because it utilizes infrastructure that already exists and improves connections.
5	Michigan City	Springland Ave Extension	New Roadway	Minor Arterial	Karwick Rd	Royal Rd	0.8	0	4	Yes	2015	C	Yes	82%	Yes	Should be built as a two lane road only	No, as it potentially includes greenfield development. This project does provide a new connection between neighborhoods.

Projects Not Selected																	
	Sponsor	Name	Improvement Type	Functional Class (FC)	From	To	Length	Lanes Before	Lanes After	Regionally Significant?	OTT Year	LOS Grade	LOS Pass	Alt. Analysis Grade	Alt. Analysis Pass?	Reduction of Scope?/Comments	Does this project agree with the goals and objectives of the 2040 CRP?
1	Crown Point	Mississippi Parkway	New Roadway	Minor Arterial	101st	109th	1	0	2	Yes	2020	A	NO	0%	No	Project did not relieve congestion off surrounding roadways	No, as this project promotes sprawl and greenfield development
2	Hobart	Lake-Porter County Line Rd	Added Travel Lanes on Existing Roadway	Minor Arterial	SR 130	37th Ave	1.75	2	3	Yes	2030	D	Yes	0%	No	Sponsor withdrew project because the project is in early stages and alternatives haven't been considered yet	Yes, as it improves access and safety to driveways along County Line road. This project will also provide access to County Line Orchard as well
3	Valparaiso	Airport Pkwy	New Roadway	FC Change from Collector to Minor Arterial	SR 2	US 30	2.63	0	2	Yes (Conditional)	2015	C	Yes	100%	Yes	Project will not appear in plan until airport study is completed.	No, it promotes sprawl into prime agricultural land.
4	Valparaiso	SR 149 Extension	Construct New Roadway (1.6m)	Minor Arterial	SR 130	US 30	2.3	0	2	Yes	2014	C	Yes	100%	Yes	There isnt that much congestion in this area. A better solution would be to improve CR 250 W and even resign it as SR 149 if necessary. Corridor should be protected. The Willowcreek road Extension is determined to be a more viable project	No, it promotes sprawl into unincorporated Porter County.

Table II.9 Projects that Passed NIRPC's Congestion Management Process Pending a Reduction in Scope.

Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) is an arrangement of electronic and communications technologies that is used to help manage and operate the highway and transit systems in the most efficient and safest way possible. The purpose of using ITS technologies is to help make the highways and transit systems safer and to move people, goods and vehicles more efficiently.

The Northwestern Indiana Regional Planning Commission (NIRPC), in cooperation with the Indiana Department of Transportation (INDOT), initiated the development of the Northwestern Indiana Regional Intelligent Transportation System Architecture in 2000. A regional ITS task force of stakeholders from the region was formed in 2000 to develop the regional ITS Architecture. The task force met a number of times over two years to select the ITS elements to be deployed in the region and to develop information flow tables to illustrate the exchange of data and functionality over a 20-year horizon. NIRPC developed the Regional ITS Architecture Database using the Turbo Architecture Version 2.0 software and the functional flow tables created by the regional stakeholders. The flow tables graphically show the relationships among the agencies that operate and manage transportation systems in the region. The regional ITS data from the Turbo Architecture was submitted to the Indiana Division of the Federal Highway Administration (FHWA).

The Northwest Indiana ITS Architecture text document and appendix of information flow tables were adopted by NIRPC on July 21, 2005, by Resolution 05-21. They were submitted to the FHWA Indiana Division, and they were subsequently approved. Plans are under way to update the ITS Architecture with in the next year.

One of the update's first steps will be to appoint a committee to facilitate the process. With the help of the committee, the list of regional ITS stakeholders will be updated. Members of the existing Congestion Management Subcommittee will be invited to participate in the ITS process. Those who are available and willing to serve will be added to other invitees to form the ITS committee. The ITS Architecture update will be conducted using Turbo Architecture Version 5.0 software. The update of the ITS Architecture should be completed sometime in 2012.

Elements for ITS Architecture Update

- Regional ITS Architecture
- Update of Regional Stakeholders
- Operations and Functional Requirements
- ITS Strategies
- Agreements
- ITS Standards
- Maintenance
- Inventory Analysis
- Project Solicitation
- Systems Engineering analysis

Example of intelligent transportation in New York. Photo from web.

Environmental Mitigation Activities

Roads, highways and bridges can have a wide variety of environmental impacts. The best way to avoid these impacts is to first identify and understand what environmental resources and issues exist in a proposed project area. This information can then be incorporated into the planning and design phases to minimize or all together avoid foreseeable negative impacts.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires metropolitan transportation plans to include a discussion of potential environmental mitigation activities in consultation with federal, state, and tribal wildlife, land management and regulatory agencies. The mitigation activities identified in the plan are to be at the policy and/or strategic level and not project specific. To address these requirements NIRPC has included a section on environmental mitigation as part of the Long Range Transportation Plan.

Several state and regional plans were included as a beginning discussion point for identifying critical areas for conservation and/or restoration in Northwest Indiana. In some cases these plans did not specifically identify critical areas (spatially) but in most cases they did include priorities. The plans included:

- Indiana Comprehensive Wildlife Strategy
- Indiana Statewide Forest Assessment & Strategy
- Coastal & Estuarine Land Conservation Program Plan
- Indiana Nonpoint Source Management Plan
- Local Watershed Management Plans

NIRPC began the environmental consultation process with a scoping meeting on Dec. 16, 2010, in which agencies reviewed federal and state documents, maps, and plans for inclusion in the Environmental Mitigation section. Representatives of these agencies, making up the Environmental Consultation Team (ECT), outlined the environmental consultation process and provided feedback on transportation projects types for inclusion in the process. The transportation project categories identified as being appropriate for environmental review included: capacity expansion, intersection improvements, bridges, drainage, roadway preservation projects that include culvert or drainage repair and replacement, and other.

In consultation with the ECT, NIRPC has identified seven common environmental issues for inclusion in the Environmental Mitigation section of the Long Range Transportation Plan. The environmental issues include:

- Wetlands
- Lakes and Streams
- Indiana Waters Designated for Special Protection
- Forestlands
- Endangered, Threated, and Rare Species and High Quality Natural Communities
- Managed Lands
- Cultural Resources

Wetland in LaPorte County. NIRPC photo.

Highways

Capacity Expansion Project Selection

The selection of capacity expansion projects for inclusion in the 2040 Comprehensive Regional Plan was accomplished in consultation and cooperation with local and regional stakeholders. Beginning with the plan's vision, goals and objectives, a set of criteria was created by the stakeholder subcommittee in November, 2010.

The scoring process began with two prerequisites: the project must be compatible with the adopted Complete Streets Policy, and must be recommended by the Congestion Management Process. The scoring system included potential points in the categories of mobility, transportation and land use, safety, environment, and quality of life. Forty-one points were possible under these categories. In addition, the scoring system included a multiplier for the location of the project that reflected the adopted 2040 Growth and Revitalization Vision. Depending on the type of area served, the multiplier ranged from 1.00 for outside the targeted growth areas to 1.30 for livable centers within the revitalization communities. Please refer to Figure X1 on page 3 of the Growth and Conservation chapter for a discussion and graphic of these areas. Table II.10 includes the criteria used to select the projects for inclusion in the 2040 plan.

A solicitation for projects was sent on December 21, 2010 to all local governments and eligible recipients of federal transportation dollars. The deadline for submittal of applications was January 21, 2011. Initially, a total of 43 projects were submitted. After an initial staff review, it was determined that a number of the projects were of a nature that exempted them from the air quality conformity analysis, and therefore not necessary to be included in the plan. Another group of projects were not submitted that would need to carry over from the old plan into the new plan to maintain their eligibility for federal funding. Projects that have received substantial public investment were considered to be "grandfathered". Once the Congestion Management Subcommittee had concluded the recommendations of the Congestion Management Process, the project selection subcommittee met on April 11, 2011 to hear the results of the staff review of project scores, and to make a final recommendation to the Transportation Policy Committee and the 2040 Comprehensive Regional Plan Steering Committee. This allowed the start of the air quality conformity analysis and the environmental justice benefits and burdens analysis.

Weekday traffic on I-94. Photo by Stephen Sostaric.

	Project Prerequisites		
Passed?			
Yes	Prereq 1	Complete Streets Policy	Required
Yes	Prereq 2	Congestion Management Process	Required
Points			
0	Mobility		9 Points Possible
	Credit 1	Improve Accessibility for Disabled, Elderly, Young, and Low-Income Populations	2
	Credit 2	Improve Internal Connectivity of the Transportation Network	1
	Credit 3	Improve Regional Priority Linkage	1
	Credit 4	Improve Network Wayfinding	1
	Credit 5	Improve Efficiency and Attractiveness of Public Transit	1
	Credit 6	Promote Safe and Accessible Pedestrian and Bicycle Environment	2
	Credit 7	Reduce Congestion on Freight Routes	1
Points			
0	Transportation and Land Use		7 Points Possible
	Credit 8	Encourage Development Around Existing Infrastructure	1
	Credit 9	Service to Housing Mix and Affordability Near Jobs and Transit	2
	Credit 10	Prioritize Transportation Investments that Support Land Use and Econ. Dev. Goals	2
	Credit 11	Service to TOD, TND, and Conservation Design	1
	Credit 12	Support Mixed-Use Downtowns	1
Points			
0	Safety		3 Points Possible
	Credit 13	Reduce Number and Severity of Collisions	2
	Credit 14	Use Intelligent Transportation Systems to Improve Safety	1
Points			
0	Environmental		9 Points Possible
	Credit 15	Preserve Floodplains	1
	Credit 16	Preserve Wetlands	1
	Credit 17	Promote Stormwater BMPs	1
	Credit 18	Develop Green Infrastructure	1
	Credit 19	Reduce Impervious Surfaces	1
	Credit 20	Protect and Enhance Environmental Assets	1
	Credit 21	Redevelop Brownfields and Grayfields	2
	Credit 22	Reduce Negative Impacts of Pollution caused by Transportation	1

Points			
0	Quality of Life		13 Points Possible
	Credit 23	Coordinate Projects Across Multiple Agencies	2
	Credit 24	Develop and Preserve Greenways and Blueways	1
	Credit 25	Improve Access to Regional Parks, Open Lands and Open Space	1
	Credit 26	Expand Access to Lake Michigan	1
	Credit 27	Improve Access to Jobs	1
	Credit 28	Preserve Historical and Cultural Resources	1
	Credit 29	Preserve Prime Agricultural Land	1
	Credit 30	Provide Safe and Reliable Access to Education	1
	Credit 31	Reduce Air Pollution	2
	Credit 32	Reduce and Limit Disproportionate Environmental Impacts on EJ Communities	1
	Credit 33	Reduce Emergency Response Times	1
Points			
0	Baseline Project Total		41 Points
Multiplier			
1	Growth and Revitalization Priority Areas		Multiplier
	Priority Area 1	Revitalization Area + Livable Center	1.3
	Priority Area 2	Revitalization Area + Economic Center	1.25
	Priority Area 3	Revitalization Area	1.2
	Priority Area 4	Livable Center	1.15
	Priority Area 5	Economic Center	1.1
	Priority Area 6	Growth Area	1.05
	Priority Area 7	Outside Growth Area	1
	Project Totals		0

Table II.10 Project Selection Scoring System

Capacity Expansion Projects

The following is a list of the capacity expansion projects that have been selected for inclusion in the Regional Transportation Plan. The projects in Table II.11 and shown in Figure II.11 include some carry- over projects from the Connections 2030 Plan that have had significant expenditures of public dollars, plus new projects that were recommended by the Congestion Management Process. These projects were scored using the project selection criteria and compared with expected future revenues to maintain financial constraint. The projects were segmented into groups representing the milestone years of implementation for air quality conformity analysis purposes. Table II.10 and Figure II.11 also include an illustrative list of projects that are beyond the means of the region to implement, given currently identified resources. Finally, the table includes significant projects in Northeastern Illinois that would have impacts on travel within Northwestern Indiana and that have been included in the air quality conformity analysis.

Preferred route for SR-912 has not been identified as the NEPA process is not yet complete. INDOT is reviewing two solutions for Cline Ave: the ground route alternative utilizing Riley and Dickey roads, and a four-lane bridge alternative.

Projects Complete by 2016	
45th Avenue	Lake County
61st Avenue	Hobart
Mississippi Street	Merrillville
Gary Marina Access Phase 2a segment 3	Gary
Vale Park East	Valparaiso
Main Street Extension	Munster/Cook County, IL
SR-2 at I-65	INDOT
US-421 from SR-2 to SR-2	INDOT
SR-49 at CR-400N	INDOT
US-20 Center Turn Lane	INDOT
SR-912 over Indiana Harbor Canal	INDOT
Projects Complete by 2020	
Gary Marina Access Phase 3	Gary
Springland Avenue	Michigan City
101st Avenue	Merrillville
Projects Complete by 2030	
Willowcreek Extension	Porter County
Projects Complete by 2040	
Kennedy Avenue	Schererville
Boyd Boulevard Expansion	LaPorte
Division Road	Valparaiso
Economic Development Corridor NE	LaPorte
Illustrative List of Projects	
Projects that are not included in the fiscally-constrained conforming plan:	
Broadway Rapid Transit	GPTC/Sierra Club
Westlake Commuter Lines	NICTD
Illiana Expressway	INDOT

Table II.11 List of the capacity expansion projects

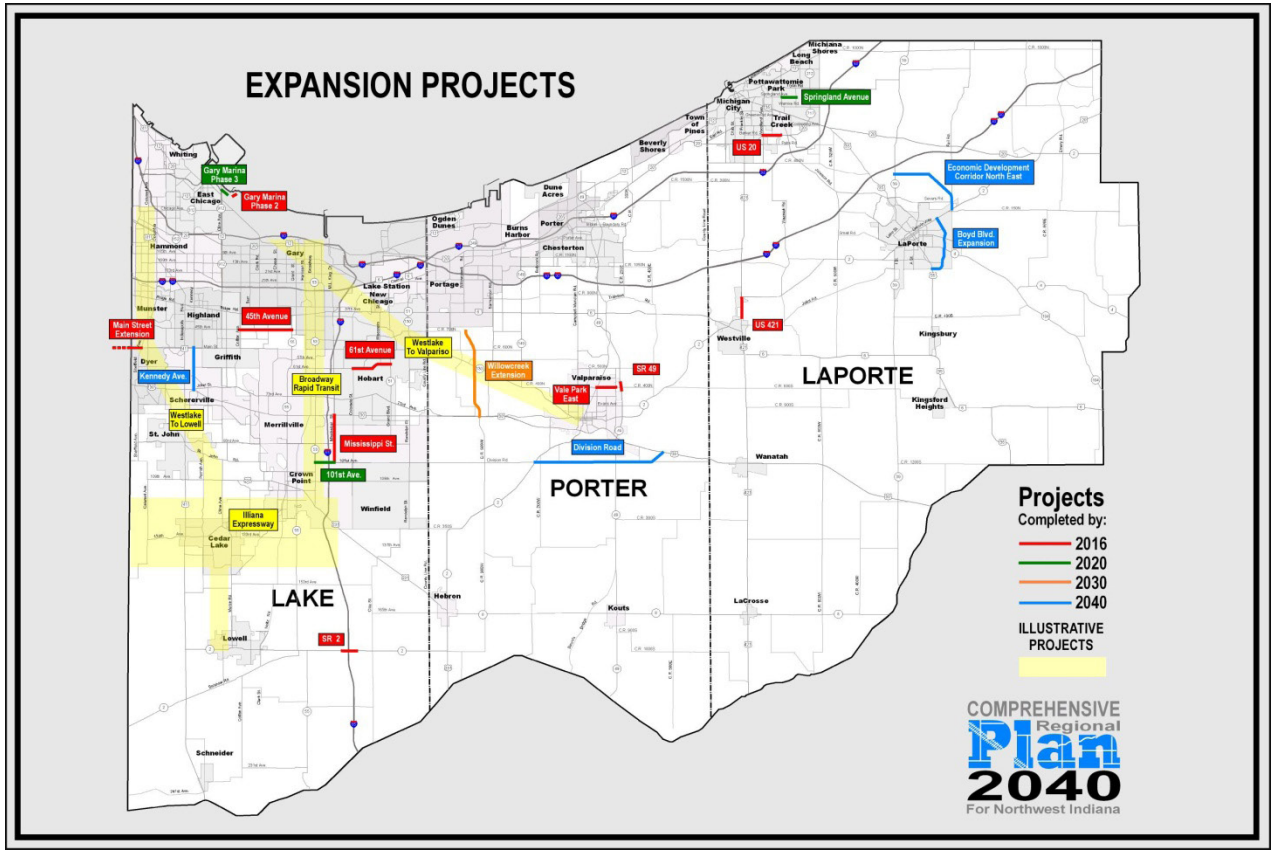

Figure II.12 Illustrates the list of projects and their generally expected completion dates.

Congestion on I-94. Photo by Stephen Sostaric.

Public Transportation

The availability of public transportation is a key element of the 2040 CRP and is, in fact, integral to the success of the region. Currently, the people of Northwest Indiana are served by intercity and commuter rail, local bus, demand response and paratransit service. However, the current services can neither be taken for granted, nor considered sufficient to achieve the goals of the 2040 CRP. Only portions of the region are served by fixed route buses while many important centers of activity and employment, are un-served, such that an already deficient system lacks multimodal transportation connectivity. Further, while there are multiple providers of public demand response service, the overall capacity of the system is inadequate to meet the needs of the transit dependent population in the region. To make matters even worse, declining funding subsidies have resulted in service cuts that make regional transit travel an option that is even less convenient, attractive and viable for riders. Compounding these service and subsidy issues is the fact that all of the public transit service providers are hampered by the lack of a dedicated regional or countywide source of funding that provides stable annual support and can be used as a match for federal and state transit grants. Consequently, expanding services to create a truly regional system that supports Livable Centers is more challenging in Northwest Indiana than many other regions.

Throughout the 2040 planning process, participants supported the concepts of Livable Centers, urban revitalization, sustainable communities and in-fill development as the preferred scenario for future growth and development in Northwest Indiana. Linking existing communities, regional employment and activity centers, and recreational amenities was recognized as essential to achieving the 2040 vision of a vibrant, revitalized, accessible, and united region. This is reflected in the CRP goals of creating livable urban, suburban and rural centers, furthering a safe and secure transportation system, securing adequate transportation funding and efficiently using resources.

Overview of Public Transportation in Northwest Indiana

Northwest Indiana is now served by a number of public and private transit providers that offer intercity passenger rail, commuter rail, fixed route bus systems with complementary paratransit, private intercity bus and motor coach, as well as public and private demand response transit services for the elderly and disabled. While there is a level of regional cooperation among the providers, the Northwest Indiana region lacks a truly comprehensive, independently funded, regional transit agency that serves both the transit-dependent population and choice riders. In recent years, all public transit services in the region have been threatened by declining funding, which has forced many providers to make cuts in service, resulting in fewer areas of Northwest Indiana being served by transit.

To illustrate the level of service (in revenue vehicle hours) throughout the region, figures II.12 through II.14 show the service levels for operators in the region, according to the different types of transit (fixed route, demand response and commuter rail). This measure indicates the number of hours that transit vehicles are in active revenue generating service and available to riders. Since the onset of the national recession in 2008, two of the region's major commuter rail and fixed route operators (the Northern Indiana Commuter Transportation District and the Gary Public Transportation Corp) have made cuts in service as have most of the demand response operators.

As those operators made cuts, they had less ability to serve riders. According to the National Transit Database, combined ridership for all of the region's ten service providers topped 5.5 million unlinked passenger trips. Ridership since 2002 for these transit agencies is pro-

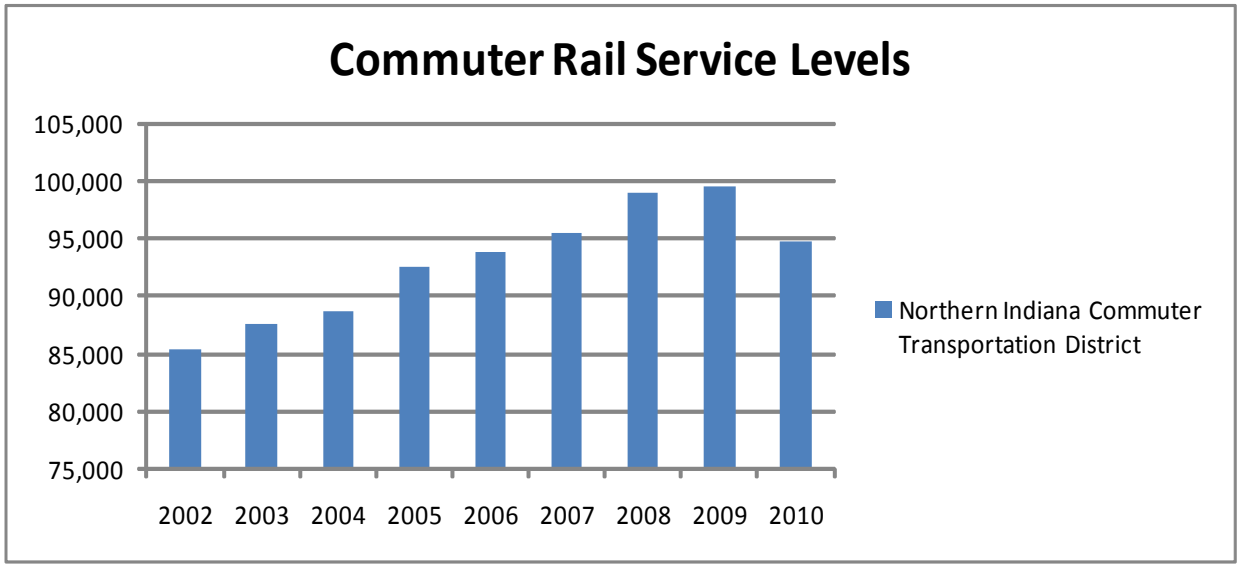

Figure II.13 Commuter Rail Service Levels. *Source: National Transit Database and NIRPC, 2010. Year 2010 data is preliminary only.*

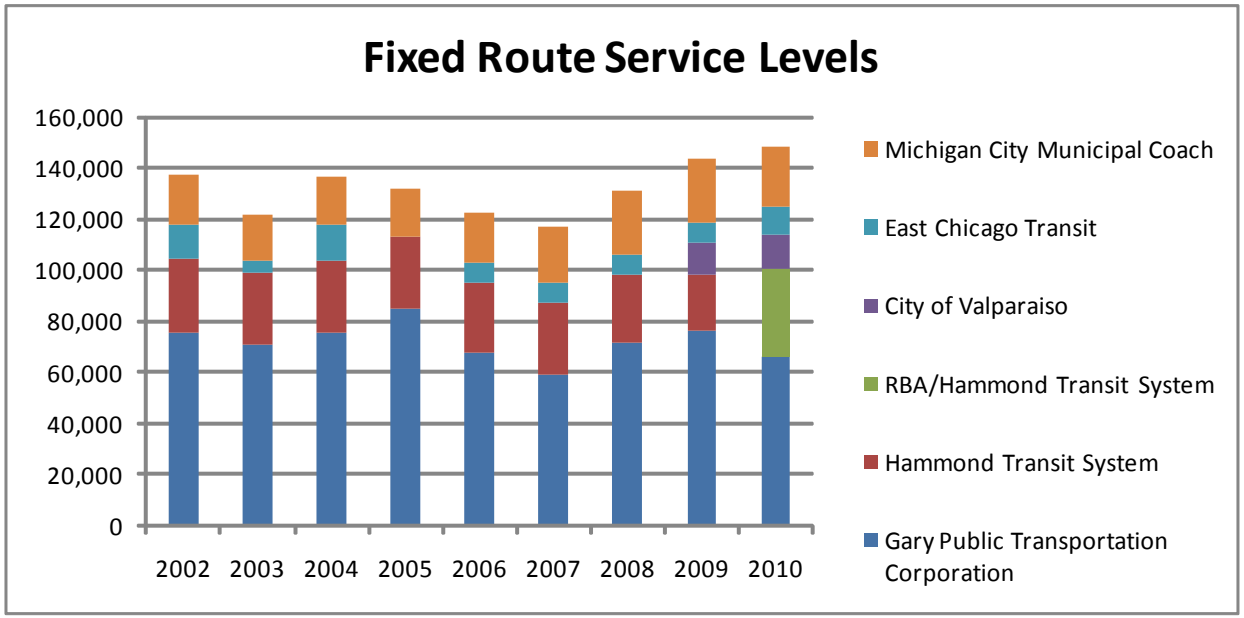

Figure II.14 Service Levels for Fixed Route Operators by Transit Operating Agency. *Source: National Transit Database and NIRPC, 2010. Year 2010 data is preliminary only. It is also noted that in 2010 the Hammond Transit System became the RBA.*

vided in figures II.15 through II.17, which shows that ridership has declined in recent years primarily due to service cuts by Northern Indiana Commuter Transportation District (NICTD) and the Gary Public Transportation Corp (GPTC) and economic conditions.

Southlake Community Services Vehicle. NIRPC photo.

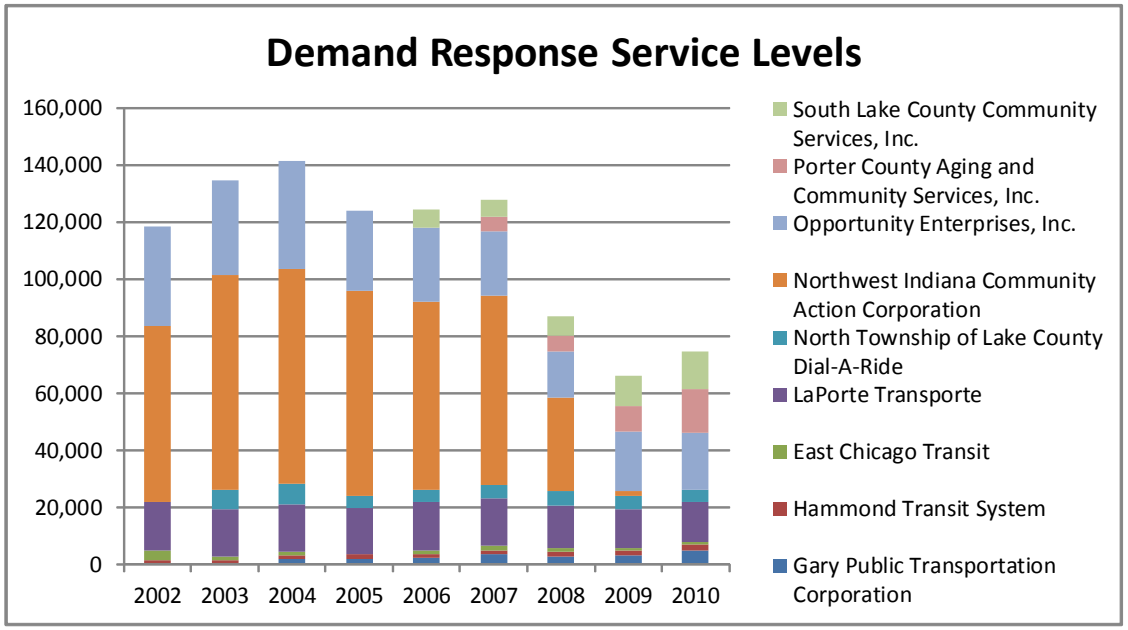

Figure II.15 Service Levels for Demand Response Operators by Transit Operating Agency. *Source: National Transit Database and NIRPC, 2010. Year 2010 data is preliminary only.*

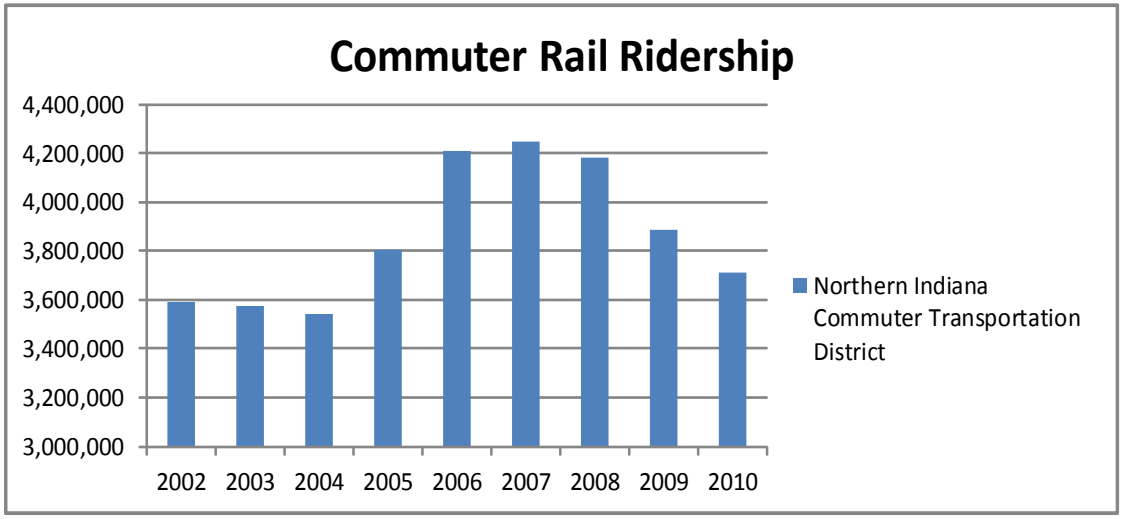

Figure II.16 Commuter Rail Ridership. *Source: National Transit Database and NIRPC, 2010. Year 2010 data is preliminary only.*

East Chicago bus. NIRPC photo.

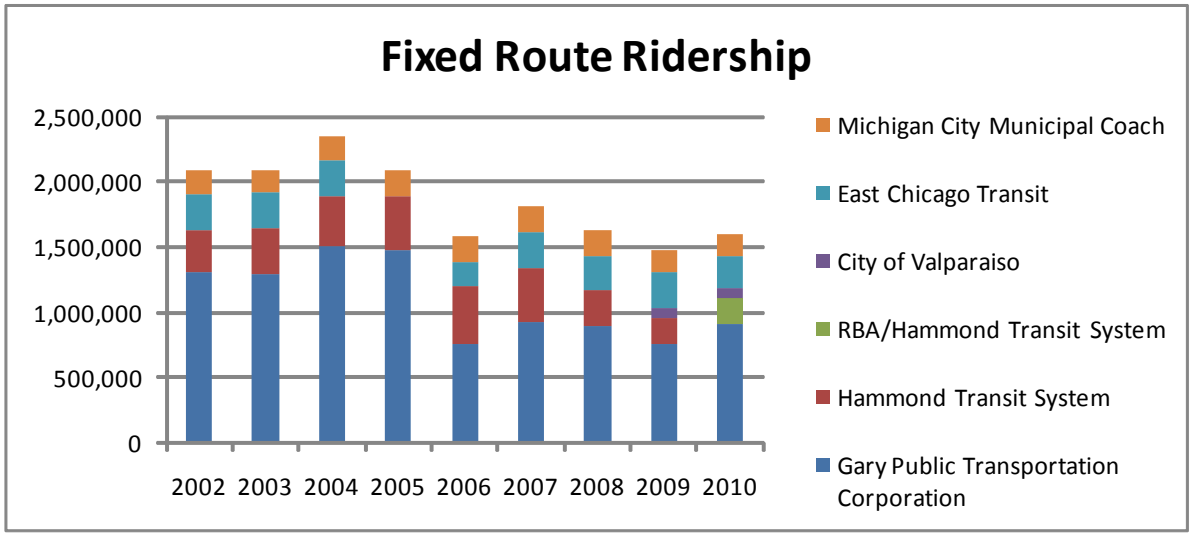

Figure II.17 Riders by Transit Operating Agency. *Source: National Transit Database and NIRPC, 2010. Year 2010 data is preliminary only. It is also noted that in 2010 the Hammond Transit System became the RBA.*

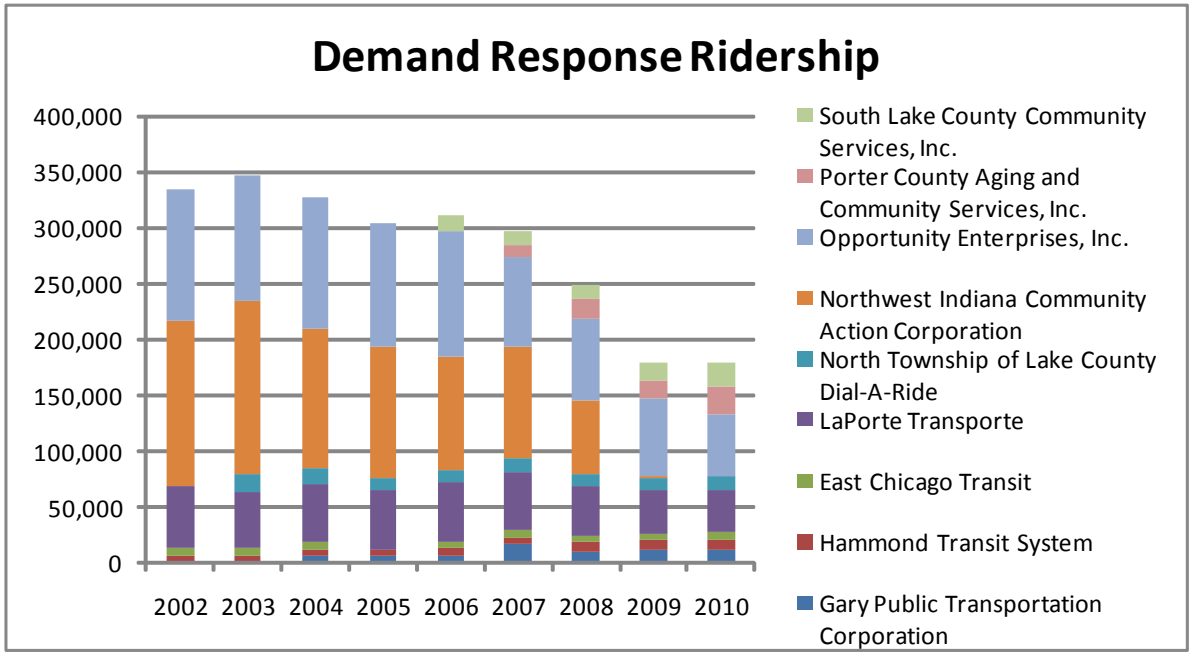

Figure II.18 Ridership for Demand Response Operators by Transit Operating Agency. *Source: National Transit Database and NIRPC, 2010. Year 2010 data is preliminary only.*

Northern Indiana Commuter Transportation District making repairs. NIRPC photo.

Transit Operators in the Region

Intercity passenger rail service is provided by Amtrak, which operates three daily long-distance trains through the region and a regional service to Michigan with three trips per day. These services make stops in Dyer, Hammond-Whiting, and/or Michigan City. Due in part to limited service frequency, limited multimodal transportation connections and limited passenger amenities, Amtrak recorded fewer than 10,000 boardings or alightings in Northwest Indiana in 2009.

Commuter rail service is provided by the Northern Indiana Commuter Transportation District (NICTD) NICTD serves four counties and operates between South Bend and Chicago with a total of 11 stations in Lake, Porter and LaPorte Counties. Also known as the "South Shore Line", NICTD provides 3 million trips annually, primarily serving commuters traveling from Northwest Indiana and St. Joseph County into downtown Chicago.

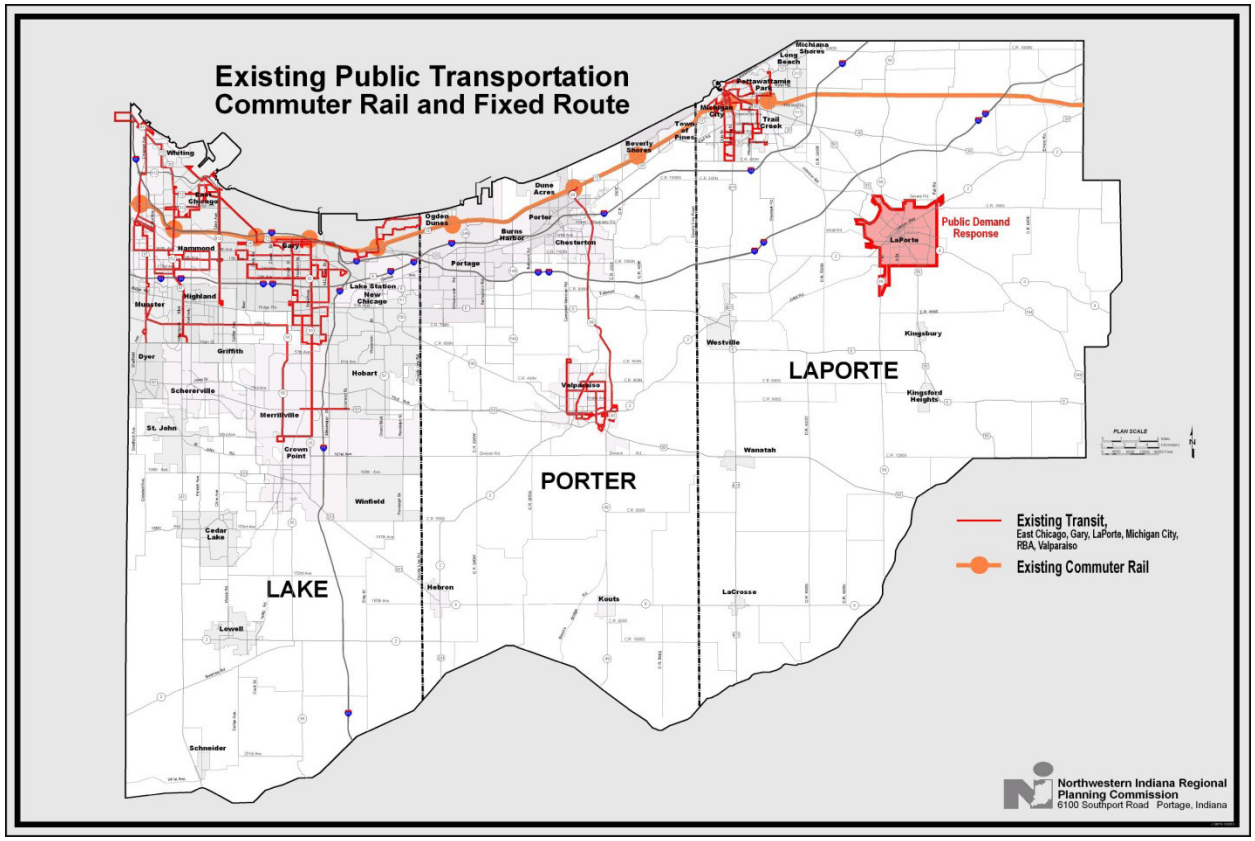

Figure II.19 Existing Public Transit – Commuter Rail and Fixed Route, NIRPC, April, 2011.

Fixed-route bus service in the region is provided both at the municipal and regional level (Figure II.18). Municipally owned and operated fixed-route bus service can be found in East Chicago (East Chicago Public Transit), Gary (Gary Public Transportation Corporation), Michigan City (Michigan City Municipal Coach)), and Valparaiso (V-Line). The services generally operate every hour, with some of GPTC's routes operating every 30 minutes and others every two hours. Ridership on the fixed route systems was 1,418,185 in 2010, with an additional 17,929 complementary paratransit rides.

On the regional level, the Northwest Indiana Regional Bus Authority (RBA) operates fixed-route service in Hammond, Highland, Munster, Whiting, Griffith, Merrillville, and Crown Point, with connections to East Chicago, Gary, and CTA Pace Suburban Bus Service in Illinois. The RBA took over the service previously operated by the City of Hammond in 2010 and substantially expanded the service area with several bus routes providing regional connections. The RBA routes run hourly. Ridership on the regional routes was 196,604 in 2010, with an additional 9,382 complementary paratransit rides. The total combined fixed-route and complementary paratransit services provided nearly 1.6 million trips in 2010.

In addition to the required complementary paratransit service within the fixed route areas, a network consisting of human services pro-

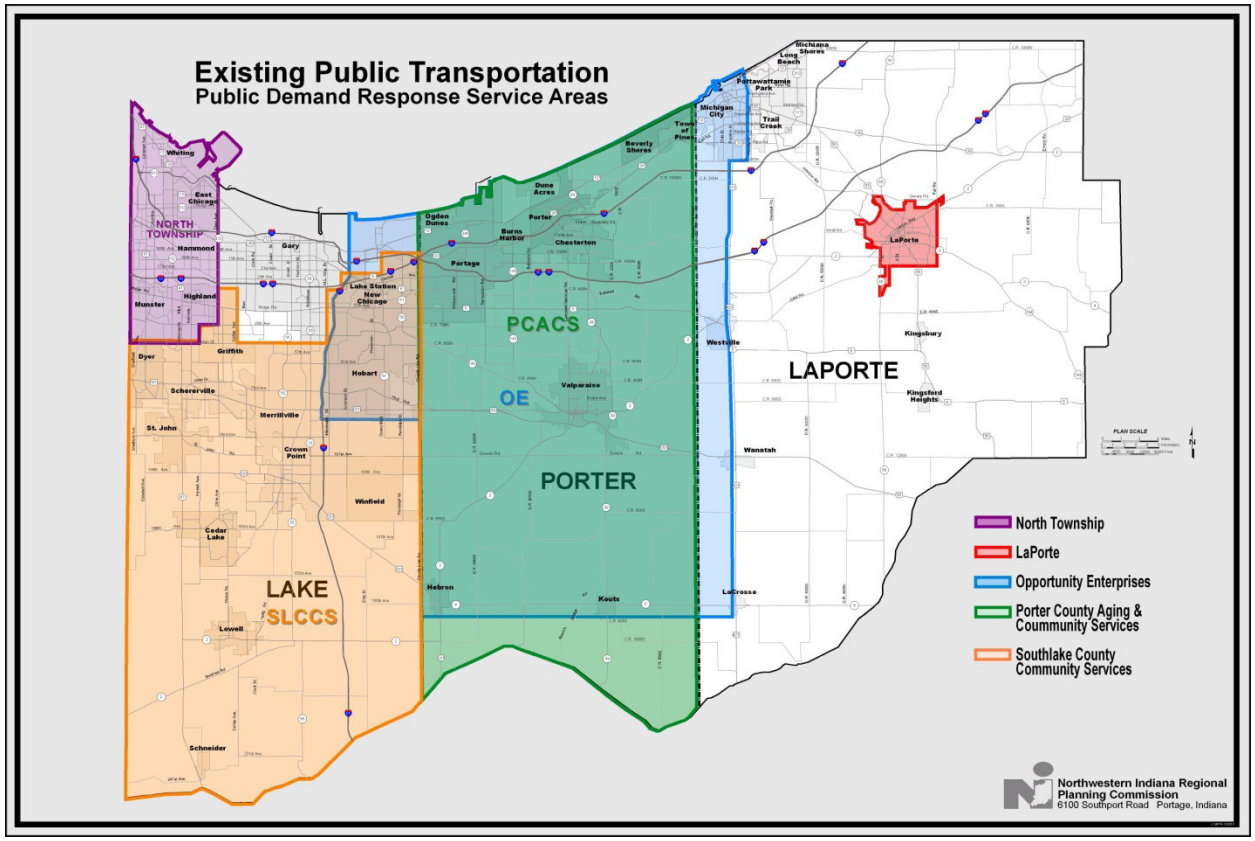

Figure II.20 Existing Public Transportation – Public Demand Response Service Areas

viders, townships, and private providers offer either public demand response (Figure II.19) or limited service for elderly and disabled. These services frequently limit trips to origins and destinations within their municipal, township or county boundaries, which makes regional connections difficult. In addition, several human services agencies provide client-based services in larger areas, but have difficulty reaching clients in the extreme south and southeast areas of the region due to prohibitive costs. In 2010, the total number of rides provided by the demand response operators in all three counties was 112,899.

Recent Planning Initiatives

Since the 1970s, NIRPC has sponsored a series of planning initiatives to identify transit needs, operating strategies and funding sources for the region. Common themes have emerged in the findings and recommendations of each of these studies, including:

- The need for regional services to connect major centers of activity, employment, shopping, medical service and recreation in the three counties,
- The need for a regional organization to coordinate, manage and operate these services, and
- The need for a regional funding source to provide stable and dedicated capital and operating supports for these services.

In 2000 Lake County took the historic step of creating the Regional Transportation Committee to begin building a regional transportation authority. Today's RBA is the result of those early efforts. The RBA's 2006 Strategic and Operations Plan called for many of the same routes and services identified in earlier planning studies. Among the observations noted in the RBA Strategic and Operations Plan is the following:

- Unmet needs for transit service exist – and it is not confined to the urbanized northern portions of the region.
- Northwest Indiana needs to provide an additional 2.3 million trips annually to serve unmet demand
- South Lake and Porter counties require five times the current number of trips
- North Lake County requires a doubling of service

Implementation of the Strategic and Operations Plan began with the city of Hammond turning over its municipal transit service to the RBA in 2010. In 2010, the RBA implemented new services covering not only Hammond but also all of North Township, including Munster and Highland. The RBA also initiated commuter bus service to Chicago from Dyer, and has plans to add another service from the Hobart-Merrillville area.

The only other significant new services are centered in Porter County. The city of Valparaiso implemented its deviated route transit service and an express service to Chicago, the first region community to start a new service in over 50 years.

An update to LaPorte County's transit needs and services planning was undertaken in 2008. The NIRPC-sponsored report looked at the feasibility of creating a consolidated human services and rural public transit system (Feasibility Study for Consolidated Human Services and Rural Public Transit in LaPorte County, Indiana, Westat, 2008). Recommendations from the study included a stepped approach to consolidation that would initially establish a shared call center and dispatch operation and provide for ride-sharing among human services providers. This would be followed by improvements to Michigan City's and LaPorte's existing transit systems and implementation of a "triangle" service covering Purdue North Central, Michigan City and LaPorte. Ultimately, the fully consolidated system would include centralized management of vehicles and drivers as well as have consolidated call center and dispatch functions. Initial steps have been taken and funding has been secured to establish the consolidated dispatch center with the city of LaPorte serving as lead agency. Other participants include the Parents and Friends, Inc./Council on Aging, and Michiana Resources, a developmental disabilities training and services center.

Issues and Challenges

Historically, there has been no shortage of attempts to craft a public transportation system for northwest Indiana that was capable of crossing municipal and county lines and meeting the needs of both the transit dependent and choice riders. The recommendation to have a regional organization to operate a regional transit system was identified in every major study conducted over the past 33 years. While transit ridership has been declining due to reduced operating funds and cuts in service that make it difficult to adequately serve riders, there is still significant unmet need. The need for transit has been documented repeatedly and there has been little difference between recommendations except to show increasing needs based on the aging of the population and growing traffic congestion. The projected costs for a regional system, whether it be a two-county or three-county system, have of course escalated, much like the cost of living since 1978 and now that one exists, its future existence is at risk unless bold fiscal, leadership and management actions are taken to secure its future.

Expanding commuter rail to Valparaiso and/or Cedar Lake and Lowell has been the subject of feasibility and environmental impact studies for the past 10 years. While the studies have indicated that an expansion maybe feasible in terms of projected ridership, the project is stalled for lack of a dedicated source of local funding to provide the local match for federal funding for both construction and ongoing operations and maintenance. NICTD is currently engaged in a study to determine the feasibility of realigning the tracks that travel on downtown Michigan City streets. Long a dream of local officials, moving the tracks would improve public safety, spur the economic redevelopment of the downtown area, and improve the efficiency of the South Shore service.

Long-Term Funding

The lack of a dedicated local source of funding to support public transportation is the acknowledged number one problem for transit in northwest Indiana. The RBA's existing funding will be exhausted by June of 2012. If regional bus service ends, northwest Indiana could be one of the largest metropolitan areas without bus service in its urban core and with no connections among its major activity centers. If the RBA service is lost, disadvantaged communities will be disproportionally impacted. Compounding the situation is the fact that the other fixed route providers in the urban core, East Chicago Public Transit, Gary Public Transportation Corp, and Michigan City Municipal Coach, are all faced with dwindling revenues from

property taxes with no new sources of funding in sight. Service reductions already have been announced in East Chicago and Gary. Each has eliminated Saturday service and/or reduced late night service hours. GPTC has also reduced the number of routes it operates by either eliminating or consolidating services.

The lack of local funding also impacts the commuter rail service operated by NICTD. NICTD relies on a small portion of the state sales tax dedicated to commuter rail to support operations. Over the course of the recent economic downturn, NICTD's state revenues declined with the loss of state sales tax dollars, resulting in personnel reductions to reduce costs. There is no mechanism in place to finance expansion of commuter rail, and no funding in place for operations and maintenance of a new service.

If northwest Indiana is to realize the vision of a vibrant, revitalized, accessible and united region, a dedicated source of long-term local funding must be created to support the types of services that will help achieve it.

Regional Leadership

To achieve the regional vision and ensure the viability and longevity of a regional transit system, strong leadership and coalition building is necessary. The dialogue on the need for regional transit and a local dedicated funding source needs to be elevated beyond local politics and parochial interests and communicated to the state with one cohesive voice so that the needs of the entire region are met.

Regional Oversight and Management

Northwest Indiana must have a regional transit service delivery mechanism. Maintaining multiple local operators has resulted in services responding to only localized needs at the expense of broader regional mobility needs. The success of regional public transit is dependent upon the participation of the entire region – and not serving portions of the region unnecessarily hinders regional mobility at the expense of employers, businesses, job seekers and others. An organization with members who have credibility, expertise and authority to make decisions is critical to meeting the challenges of funding and providing the regional transportation that will assure northwest Indiana's future success.

Outreach and Education

There is an equally critical need to increase the public's and local officials' knowledge of the benefits of public transit. The positive economic and environmental impacts of a robust transit system have been demonstrated repeatedly all over the country. A robust system serving our region can contribute to job creation, stimulate development and redevelopment, and improve worker and business productivity. There is a lack of understanding among the public of the tremendous impact transit can have on the quality of life in our region. Raising the level of knowledge and comprehension of the benefits of public transportation is the first step in developing the political will to fund it.

Partnering with other regional groups in Indiana who are pursuing transit initiatives is another type of outreach that would increase the effectiveness of our own advocacy efforts. Interacting with the Central Indiana Regional Transportation Authority (CIRTA), the IndyConnect initiative and the citizen-advocacy group INCAT (Indiana Citizens Aligned for Transit) would present a more solid front when approaching the state for legislative support for funding initiatives or creating appropriate regional structures. Building relationships on the local level with groups such as Clean Cities, AARP, Urban League, and the Hoosier Environmental Council would also help support public education.

Regional Benefits of Public Transportation

Achieving the 2040 vision of a vibrant, revitalized, accessible, and united region will only happen with a truly regional public mass transit system. Not only does transit provide consumers with transportation alternatives to balance growing fuel costs, it also fosters transit-oriented development (TOD), which can spur economic revitalization at the neighborhood level

and foster regional economic development. In this context, transit can support the Livable Centers concept as it helps to contain sprawl and the concentration of people around transit centers is symbiotically related to the population concentrations desired by developers and businesses seeking customers.

For the population that does not drive, a regional transit system is a necessity to share in the high quality of life personal mobility affords us. With a transit system that connects the Livable Centers of the region, the region's residents are more connected and have more options for employment, services and recreation.

Mass transit is also a proven strategy in reducing traffic congestion, which can save employers and employees millions of dollars in lost productivity. Fewer cars and less time spent idling in traffic also improves air quality. As a region that has struggled to meet the US EPA clean air standards, northwest Indiana stands to benefit directly from the cleaner air reduced congestion can bring to an area.

Emerging Opportunities for Intercity Passenger Rail

The increasing interest in national intercity passenger rail investment creates unique opportunities for Northwest Indiana. As a convergence point on the national railroad network, the region is crossed by several of the high speed rail corridors included in the Midwest Regional Rail Initiative (MWRRI).

Some of these corridors are currently served by Amtrak and are proposed for more frequent, faster and more reliable service. Other corridors are proposed for development of new passenger service. In either case, intercity passenger rail investments can create opportunities for integration with existing and planned transit services. For example, by allowing regional commuter rail projects to share track, signal, and station costs with the national projects, NICTD's West Lake Corridor concepts to Lowell and Valparaiso could be advanced at lower local cost.

Although the specific alignments, station locations, and operating plans of improved intercity passenger rail services remain the subject of further study, some key opportunities include:

- Intercity passenger rail improvements for the Chicago-to-Detroit and Chicago-to-Cleveland corridors of the MWRRI. If these are implemented in the Norfolk-Southern corridor currently used by Amtrak for its Michigan and Ohio services, the Gary-Chicago International Airport (GYY) could emerge as a major regional multimodal transit hub. This facility, at the nexus of high speed rail, NICTD, bus services and the lakefront trail, could attract new airline service to GYY, link important regional and national transportation services, and help to organize and stimulate the redevelopment of part of Gary.
- Replacement of the current Amtrak alignment through South Bend with the southern route to Ohio via Fort Wayne. If this is selected, the West Lake Corridor to Valparaiso could be advanced as a regional commuter rail service operating with additional stops in the same corridor.
- Amtrak passenger rail service improvements to Indianapolis through Dyer. If this corridor is selected for improvements, the West Lake Corridor to Lowell could again be advanced as a regional commuter rail service operating with additional stops in the same corridor.
- Six of the regional bus routes proposed in the RBA Strategic Plan (shown with minor adjustments to serve Livable Centers) provide opportunities for eventual development of arterial bus rapid transit in some of the major corridors in the region. They also provide the backbone of a network of services connecting rail stations and other activity centers.

These concepts have not had the benefit of objective quantitative studies on travel patterns, road or rail right-of-way availability, traffic conflicts, capital or operating cost estimates, or field verification. More extensive feasibility studies and alternatives analysis should be performed to refine the alignment, operating concepts, and other features of each element of the system. Accordingly, NIRPC should develop a regional long-term public transportation framework plan,

including an assessment of market opportunities, intercity rail integration opportunities, funding options and potential implementation priorities based on a range of potential funding strategies.

Recommendations: A Regional Transit Framework

A regional Transit Framework has been prepared, providing a vision of how a transit investment program could support the Livable Centers strategy that is key to realizing the NIRPC 2040 CRP (Figure II.20). The vision synthesizes information from several recent planning efforts (including the Midwest Regional Rail Initiative, INDOT Rail Plan, NICTD West Lake Corridor Study, RBA Strategic Plan, and Marquette Plan), the locations of the Livable Centers identified in the CRP, the alignments of existing and proposed transit services, multimodal connection opportunities, and the major corridors and focal points identified in CRP workshops.

Key concepts of the Transit Framework include:

- A focus on high capacity transit services that have the ability to support desirable development patterns- including high speed rail, commuter rail and regional bus service. Supportive fixed route, demand response, and other local transit services are to be provided. While some examples are shown, the specific characteristics of these supporting services are considered to be a subject for future study.
- The vision draws extensively on projects that have already received some level of planning scrutiny. It assumes that the South of the Lake high speed rail improvements are completed in the Norfolk-Southern corridor currently used by Amtrak for its Michigan and Ohio services, that both legs of the West Lake corridor are implemented to extend NICTD commuter rail service to Lowell and Valparaiso, and that the local and regional bus services in the RBA Strategic Plan are fully implemented.
- The Gary/Chicago International Airport is identified as an opportunity for a major regional multi-modal transit hub. This facility, at the nexus of high-speed rail, NICTD, and bus services, as well as a connection with the lakefront trail, could attract new airline service to the airport as part of Chicago's airport system, link important regional and national transportation services, and help to organize and stimulate the redevelopment of part of Gary.
- The implementation of high speed rail also appears to provide some good opportunities to advance the West Lake Corridor concept, in

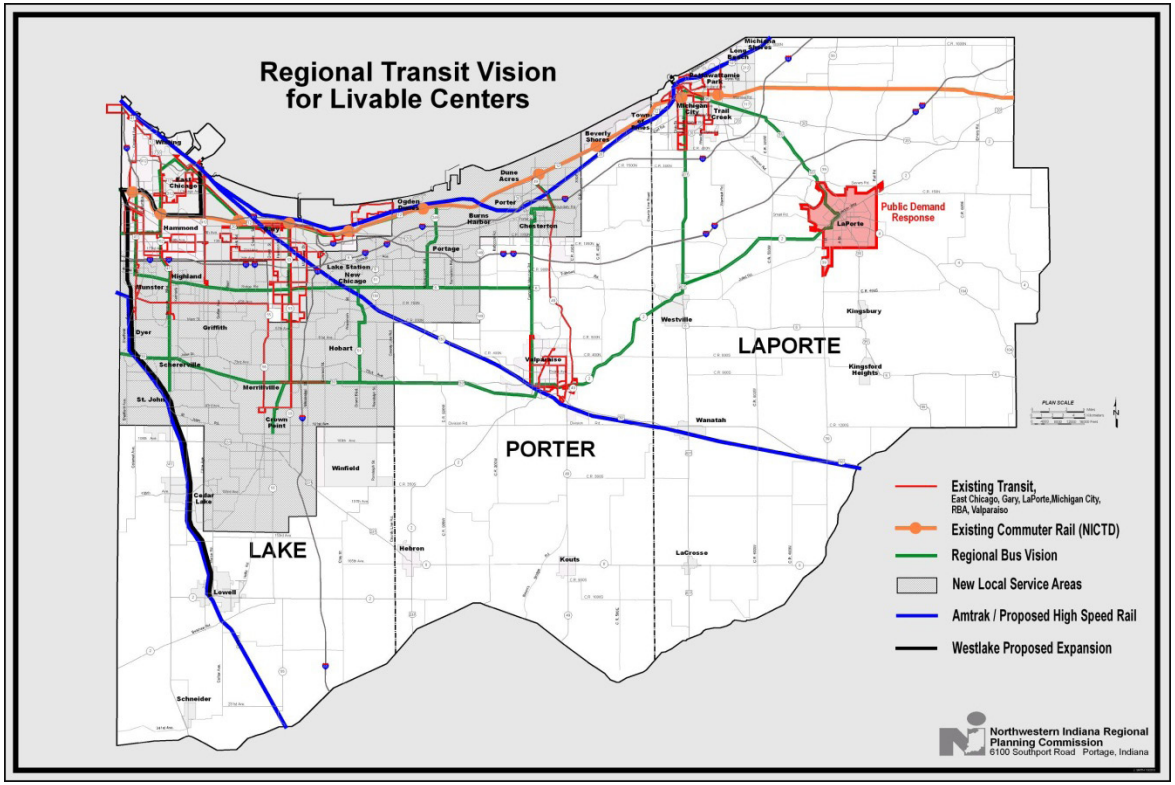

Figure II.21 Regional Transit Vision for Livable Centers, NIRPC, April 2011.

particular if the southern route via Fort Wayne is selected to replace the current Amtrak alignment through South Bend.

- Six of the regional bus routes proposed in the RBA Strategic Plan (shown with minor adjustments) provide opportunities for eventual development of arterial bus rapid transit (BRT) in some of the major corridors in the region. They also provide the backbone of a network of services connecting rail stations and other activity centers. A seventh route has been proposed as a circumferential route between Ogden Dunes and Merrillville via Portage and Hobart.
- The vision provides high quality transit services to, or near, each of the metro, large, and medium centers identified in the planning process. Over the long term it will be worthwhile to study whether La Porte could be added to the system, if the level of demand for a high intensity service type between LaPorte and Michigan City and/or Valparaiso increases over time.
- New local bus services in areas where the population density would support it will be critical to connecting the livable centers with each other and the regional employment, shopping and services centers. Likely areas of such service include Schererville, Dyer and St. John; 45th Avenue corridor on the west side of Lake County; Hobart, Lake Station and New Chicago; Portage and South Haven; Chesterton, Burns Harbor and Porter; and a service corridor that encompasses Michigan City, LaPorte and Westville.
- Expanded capacity for public demand response paratransit in areas not served by fixed-route bus is a critical component of the regional system. Added capacity and increased coverage is especially important in all of LaPorte and Porter Counties, and south Lake County.

The Transit Framework will require additional study and refinement, including objective quantitative information on travel patterns, road and rail right-of-way availability, traffic conflicts, and capital and operating cost estimates. More extensive feasibility studies and alternatives analysis should be performed to refine the alignment, operating concepts, and other features that this vision may suggest for each element of the system. To support the Transit Framework and transit in Northwest Indiana in general, the 2040 CRP offers policies including:

- Support and promote the creation of a local source of funding to be dedicated to public mass transit
- Support and promote a consolidated structure for the efficient and effective provision of public mass transit
- Support and promote transit-friendly land use practices
- Support and promote public transit services that connect the region with jobs, neighborhoods, shopping, medical, entertainment, recreational and educational facilities
- Support and promote increased capacity of public demand response services where fixed route is not feasible and/or available.
- Support and promote increased accessibility for the elderly and disability communities.

South Shore train in Michigan City. Photo by Stephen Sostaric.

High-Speed Rail

Introduction

Chicago has been identified as a potential hub for the new Midwest high-speed rail system. High-speed rail enables the potential to trim door-to-door travel time within 450 miles of a departure city compared to air travel. Most high-speed rail stations are located in urban centers where commuters have better access to their residences and jobs, which eliminates the need of an extra crosstown trip. High-speed rail reduces the dependence of foreign oil by using alternative fuels, such as electricity. In early 2009, the American Recovery and Reinvestment Act allocated $8 billion for the development of a high-speed rail network. Due to Northwest Indiana's proximity to Chicago, high-speed rail will have a substantial impact on the region if implemented. The official definitions of high-speed rail are as follows:

High-Speed Rail Express will operate at speeds of 150 to 220 mph. This also is the current standard for leading high-speed rail networks in Europe and Asia. HSR Express operates on dedicated right-of-way, separated from other trains, and is completely grade-separated. *Regional high-speed rail* operates at speeds from 110 to 150 mph and can share existing tracks with freight and other forms of passenger rail with the use of positive train control technology.

Emerging high-speed rail operates at 90 to 110 mph and can run on existing tracks that have been upgraded.

Policies and Associations

Indiana High-Speed Rail Association

The Indiana High Speed Rail Association (INHSRA) is an organization that consists of citizens and professionals from government and business industries who are dedicated to the development of a high-speed rail transportation system within the state of Indiana. The Indiana High Speed Rail Association was incorporated on June 15, 1994. INHSRA promotes high-speed rail transportation as "an economic, safe and efficient mode (of transportation) in highly traveled corridors." INHSRA has established strategic alliances with the states of Illinois, Kentucky, Michigan, Ohio and Wisconsin for the development of the federal high-speed rail system in those states. The mission of the INHSRA is "with a consensus of Indiana people, business and government … to develop a viable intermodal high-speed rail network in Indiana with links to adjacent high-speed rail networks consistent with environmental, business, personal and financial needs."

Midwest Intercity Passenger High-Speed Rail Compact

Indiana has been involved with high-speed rail planning since at least 1982, when it became the third state to join the Midwest Intercity Passenger High Speed Rail Compact. The compact was dissolved in 2000 in favor of a more narrowly defined group, the Midwest Interstate Passenger Rail Commission, which is hosted and administered by the Midwest Legislative Commission.

Midwest Interstate Passenger Rail Commission

MIRPC brings together state leaders from across the region to advocate for passenger rail improvements. Formed by agreement in 2000, the commission's current members are Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio and Wisconsin. (All Midwestern states are eligible to join.)

The Midwest Regional Rail Initiative

Indiana also is one of the nine member states of the Midwest Regional Rail Initiative (MWRRI). The National Railroad Passenger Corporation (Amtrak) and the Federal Railroad Administration (FRA) also are members of MWRRI. The Midwest Regional Rail Initiative is an ongoing effort to develop and improve passenger rail in the Midwest, including the implementation of high-speed rail service. The objectives of the MWRRI are to evaluate the potential for the implementation of a Midwest Regional Rail System (MWRRS), which would provide a new transportation option for the Midwest region, and to create a business plan for implementing the MWRRS.

Midwest High Speed Association

In April 2011, The Midwest High Speed Association compiled a research project that was prepared in conjunction with AECOM and the Economic Development Research Group. This report identified the potential routes, stops and cost of implementing a nine-state high-speed rail system. The states of Indiana, Illinois, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio and Wisconsin are served by the routings. The estimated cost for the entire system would be $75 billion for a 150-mph network and $84 billion for a 220-mph network. The estimated 2030 ridership is 35 million passengers for the 150-mph network and 44 million for the 220-mph network.

Description of Technologies Used

The desired car fleet for high-speed rail in Indiana is a combination of bullet trains that travel at 220 mph and regional trains that will travel from 79 to 110 mph. Recently, there was an announcement of a study conducted by the University of Illinois that includes the possibility of fleet that would run at 220 mph.

Potential Alignments (Map Included)

There are three potential high-speed routes that would travel through Northwest Indiana. All three potential routes traverse from Chicago.

Chicago to Cincinnati

This potential route would follow the Norfolk Southern Railroad to Wanatah. From Wanatah, the potential route would travel south to Indianapolis and Cincinnati. This route may be affected by the state of Ohio's decision to rescind money allocated for high-speed rail.

Chicago to Cleveland

This potential route would follow the Norfolk Southern Railroad from Chicago to Cleveland and Detroit. Both Cleveland and Detroit would be served from separate branches via Toledo. This route may be affected by the state of Ohio's decision to rescind money allocated for high-speed rail.

Chicago to Detroit

This potential route would be the upgrade of the Wolverine Corridor that travels from Chicago to Detroit. This route will be served by trains traveling up to 110 mph.

As alignments are finalized, and state and national funding commitments emerge, the following actions will need to be undertaken:

- Preserve right-of-way encroachment
- Remove at-grade traffic crossings through grade separations or crossing closures;
- And provide for protection regarding intrusion and trespassing.

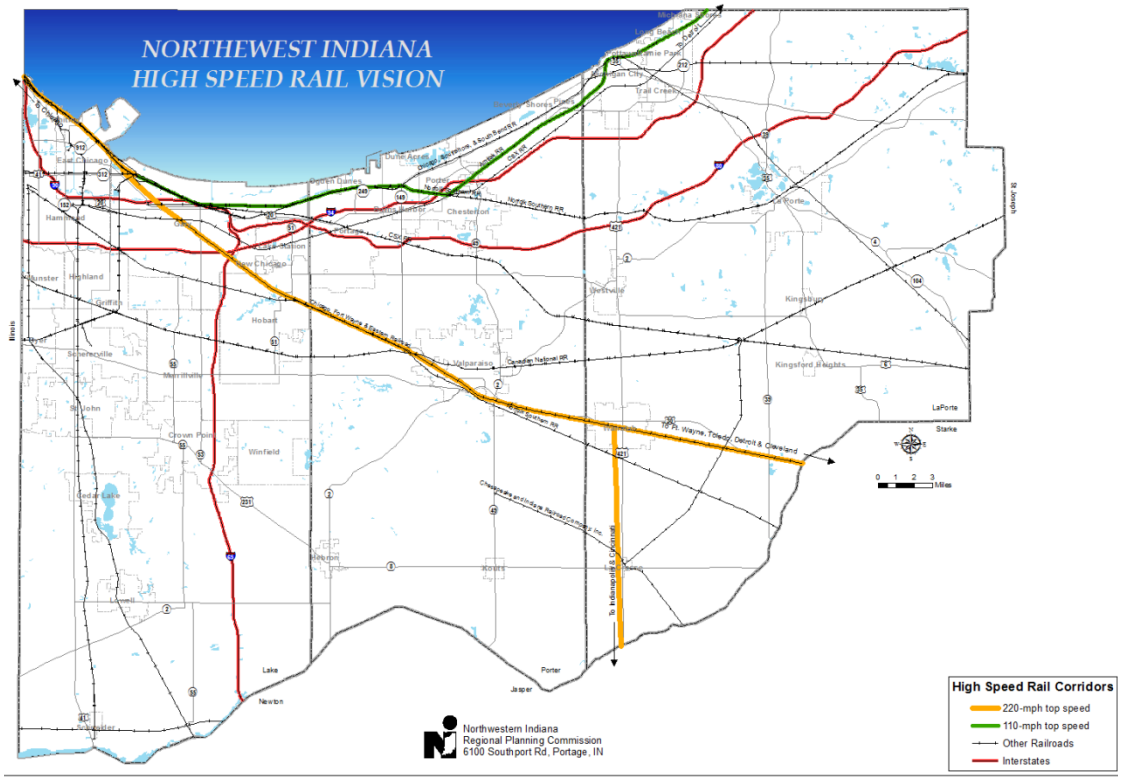

Figure II.22 High Speed Rail Corridors

Possible Northwest Indiana Station Locations/Transit-Oriented Development Potential

Gary Metro Center

One possible location of a station will be adjacent to the current South Shore station in downtown Gary. This location would allow passengers to transfer from a high-speed rail line to the South Shore line by walking. This location will allow a new east entrance to be built that would improve access to downtown Gary's businesses and amenities.

Gary/Chicago International Airport

Another possible location for a high-speed rail station would be near the Gary/Chicago International Airport. The Gary/Chicago airport will be expanding in the near future, and this expansion will provide new opportunities and investments. The type of development around the airport will be mostly commercial and light industrial. A people mover between the high-speed rail station and the airport also is a possibility.

The Indiana Gateway at Porter Junction

The Porter Junction project is a $71.4 million project to upgrade the Norfolk Southern Chicago-Cleveland line between the Town of Porter and the Indiana/Illinois state line. This project was submitted by INDOT in 2009 and was selected for funding. The Indiana Gateway at Porter Junction is one of the top five priority projects for high-speed rail projects. Currently, 90 freight and 14 Amtrak trains pass through the Porter Junction on a daily basis.

Current Challenges

The biggest threat to the high-speed rail initiative would be the act of neighboring states rescinding funding for high-speed rail. Many of the identified corridors for the Midwest high-speed rail network either travel through or have planned stops in states that have rescinded funding. This makes it tough to adequately connect each planned corridor to Chicago. On the plus side, the money that is rescinded is usually redistributed to other planned high-speed rail corridors.

Aviation

Overview of the Gary-Chicago International Airport

Northwest Indiana's largest and busiest airport is the Gary-Chicago International Airport (GCIA). It is the Chicago metropolitan region's third airport supplying complementary services to the larger O'Hare and Midway International Airports, providing easy access to the region's recreational attractions, such as marinas, casinos and shoreline parks, including the Indiana Dunes National Seashore.

Located at the junction of Interstate 90, Indiana Route 912 (Cline Avenue) and the Airport Road (formerly Industrial Highway) in Gary, GCIA airport is surrounded by a Midwest industrial hub of steel plants, oil refineries, rail yards, harbors, trucking companies and other industries. GCIA is close to the Chicago Business district with an average trip time of 35 minutes from southern Chicago and its suburbs, northern Indiana and southwestern Michigan and over 1.4 million persons live closer to the Gary Airport than to the three competing airports of O'Hare, Midway and South Bend (Landrum and Brown, 2010).

GCIA facilities include modern, upgraded and expanded passenger facilities including new ticket counters, a concession area, full TSA security, and a 1,250 vehicle parking lot. Runways accommodate heavy jet aircraft, and Precision Approach Pathway Indicators and radar-equipped air traffic control towers guide planes on all runways. GCIA also supports personal and corporate aircraft with T- Hangars available for rent and land available for hangar development. In addition to these facilities, the Airport also houses the Indiana Army National Guard Gary - Limited Army Aviation Support Unit and the Gary Airport Armory. Considering its prime location and modernized facilities, GCIA is well positioned to be a major economic generator for Northwest Indiana.

Since 1995, the city of Chicago has supported the city of Gary and GCIA by contributing more than $9.9M with another $22.5M anticipated either in currently approved ($9.5M) or pending applications for Passenger Facility Charge (PFC) revenues from O'Hare and Midway International airports. Contributions from the PFC have enabled the purchase of airport safety, security, communications equipment and facilities and allowed the refurbishment of the present terminal and facility upgrades.

Overview of the Porter County Regional Airport

The Porter County Regional Airport is centrally located within the boundaries of Porter County and located to the east of Valparaiso. The airport is northeast of the intersection of U.S. 30 and SR 49, placing it approximately 45 statute miles southeast of Chicago. The planning area is under jurisdictional control of the city of Valparaiso and Porter County (Washington Township). The airport serves general aviation needs, however with its longest runway at 7,000 feet, has the required infrastructure to support aviation operations of the largest corporate fleet aircraft. According to INDOT, the Porter County Regional Airport is ranked first in Based Aircraft and third for Estimated Operations (statistical forecast) among Indiana airports for 2010.

Aviation-Related Initiatives

High-Speed Passenger Rail and South Shore Commuter Rail Stations

Gary Airport is proposed to be the future site of an Intermodal Rail Terminal, which will serve as a convenient transfer center for passengers on multiple High-Speed Rail lines, the South Shore Commuter rail and, of course, air travelers. With this development, GCIA will be connected to the region's communities and beyond, furthering the vision for an accessible region where people are connected to opportunities and have increased mobility and transportation options. Partners in the development of the terminal and its services are

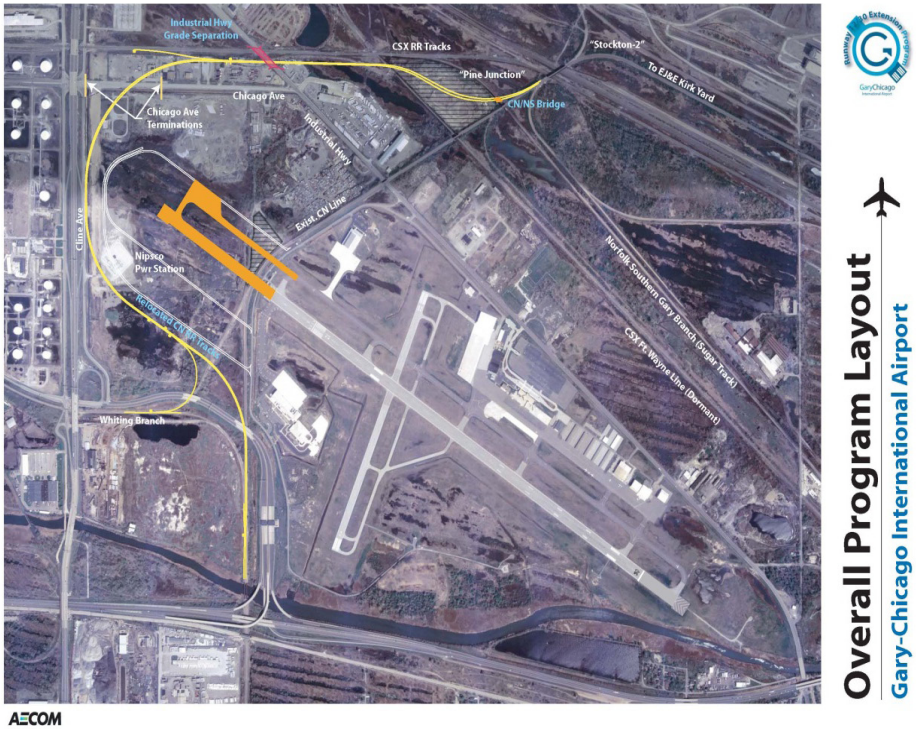

Figure II.23 Gary/Chicago International Airport Layout

making progress. Amtrak has already approved the Gary airport as a High-Speed Passenger Rail station; INDOT is proceeding with the planning services and NICTD is planning the commuter rail service.

GCIA Strategic Business Plan

The GCIA Strategic Business Plan was prepared and released in April of 2010 by the Airport in partnership with the Northwest Indiana Redevelopment Authority (RDA). This Plan defined GCIA's core business niche as a low-frequency passenger carrier and charter service airport. Its component projects and programs will further the 2040 CRP through the revitalization of the urban core of Gary, help to create diverse, emerging and sustainable industries and facilitate infill development and brownfield redevelopment. The highest priority and most critical projects in the plan are a 1,900-foot runway extension and the development of the airport area; both are described below.

Runway Extension

The extension of Runway 12-30 from approximately 7,000 to 8,900 feet is proposed to increase capacity and capabilities of the airport. Before the extension of the runway is completed, a railroad line owned and operated by Canadian National must be relocated, which will affect two other lines owned by CSX and Norfolk Southern. GCIA has already acquired 162 acres of property for the runway lengthening and has completed some of the necessary supporting projects for its expansion. The official groundbreaking for the airport expansion project took place on May 25, 2011. As part of this project, a new headquarters hangar building is to be constructed, with space for a potential U.S. Customs facility.

In addition to the relocation of the CN tracks, the rail lines will be grade separated from the airport's primary access road (Airport Road). Other, more modest, rail improvements will be completed to improve interconnections between existing rail lines, protect freight rail capacity, and reduce community impacts. These improvements will reduce traffic delays and conflicts and assure that crucial freight rail links are available for the region to connect to national and global markets and respond to the nation's growing demand for freight rail transport. Additional benefits due to the encouragement of freight to move by rail rather than road will be reduced energy consumption, improved air quality and mitigated greenhouse gases.

The airport project funding was provided by a variety of sources with the majority from the Federal Aviation Administration ($57.8 million), the RDA ($30 million), the State of Indiana via the RDA ($20 million), the Federal Highway Administration ($6 million), as well as a projected $9.5 million dollars collected from passenger facility charges from the Chicago Airport System. The GCIAA will continue to pursue additional funding available at the federal, state, or local levels.

A second significant initiative of the strategic plan is the capitalization of both on and off-airport land assets. The airport is located within the City of Gary's Westside Focus area and sites here have excellent highway, freight rail and Great Lakes shipping access.

Particularly noteworthy is that the Strategic Business Plan recommends that the airport, working with the city, the RDA and the state, develop a national and international business attraction capability and target firms that require proximity to transportation as well as the benefits of the airport's Foreign Trade zone. It also recommends that opportunities be pursued for development in the logistics field, e.g. with trucking redistribution center/companies, rail freight and the Port of Indiana, especially for multimodal cargo consolidation."

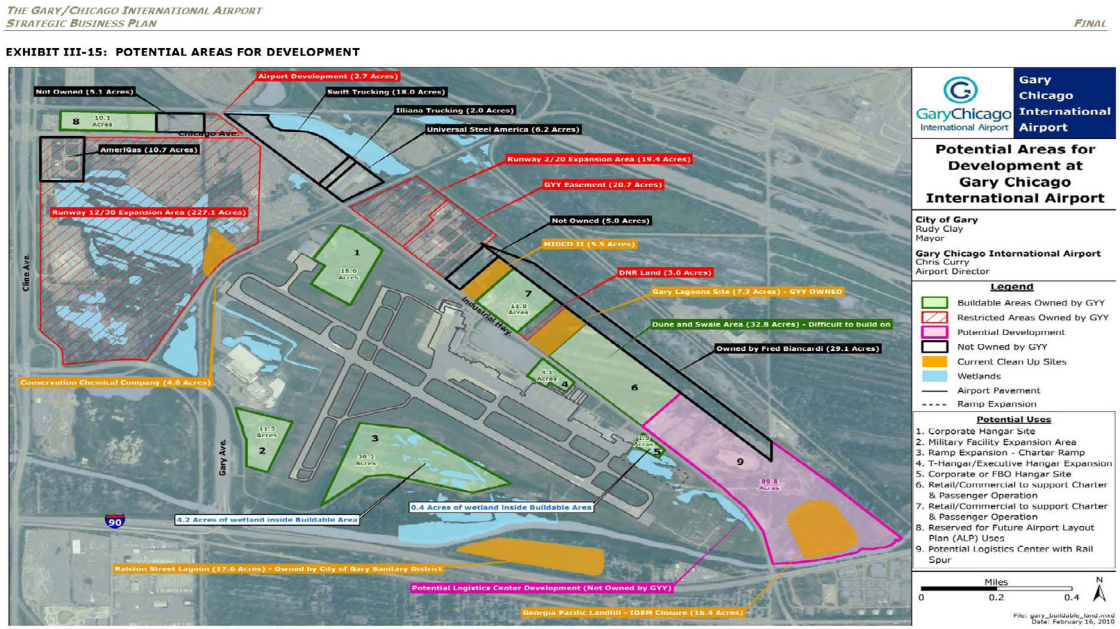

Figure II.24 Gary-Chicago International Airport Area Recommendations

Porter County Airport Zone Development Study

The Porter County Regional Airport, the city of Valparaiso, Porter County and the Valparaiso Economic Development Corp have commissioned a plan that will facilitate the most appropriate land use, infrastructure and development initiatives, to further promote and maximize the economic development potential of a 15-square-mile area surrounding the Porter County Regional Airport.

The outcome of this project will be a plan that will create policies that guide future development around the Airport, identify key catalyst projects to spur development in the area, and address annexation and funding recommendations. This plan will address the physical and economic issues and opportunities at the Airport in order for this facility to development into an intermodal facility. Through this planning process, detailed recommendations regarding land use, transportation planning and airport planning, and shovel-ready sites and site development plans focusing on transit oriented design will be developed. Additionally, the plan will create strong, clear zoning recommendations that will implement this vision and policies in the plan.

Freight Movement

Northwest Indiana's freight infrastructure network is a critical lifeline for the economy, serving as the conduit through which goods flow between the region and the world. It delivers the vast quantities of raw materials that feed the Northwest Indiana steel mills, refineries and power plants – and transports the finished products to the customer. An efficient freight network keeps prices low and business and industry competitive as the price paid for any product is directly related to this cost of transporting it.

Fortunately, Northwest Indiana possesses a dense, heavily-used, multimodal freight transportation network. The combination of heavy industrial activity along the Lake Michigan shoreline, major national and international shipping facilities and proximity to the economic influences of the Chicago metropolitan area results in an extraordinary level of local, national and international freight movement into, out of, within and through the region (Figure II.23). Moreover, Lake Michigan creates a pinch point in the national surface transportation system forcing a number of major highways and rail lines to converge at its southern tip. This includes:

Highway:	*A network of arteries including 3 Interstates with 4 designations (I-80, I-90 [Indiana Toll Road], I-94, I-65), a dense network of US and state routes, an Extra Heavy Duty Truck Route on which loads of up to 134,000 pounds are permitted*
Rail:	*3 Class I Operators (CSXT, NS, CN), Short line and regional carriers (IHB, CSSB, CKIN, CFE)*
Air:	*Gary/Chicago International Airport*
Maritime:	*Two federal harbors: the Port of Indiana-Burns Harbor and Indiana Harbor; and two private harbors: Gary Harbor and Buffington Harbor*

Among regional and state leaders, a growing awareness of the current and potential economic benefits of this freight network has prompted interest in improving freight flow and management and identifying opportunities to attract and grow the transportation, distribution and logistics sector. This was reinforced throughout the CRP planning process in which stakeholders identified improved freight mobility as a key strategy for revitalizing Northwest Indiana and building a strong and competitive economy and several 2040 CRP goals have direct relevance to freight planning and improvement of goods movement within the region.

Freight Supportive Land Use Planning

The improved integration of transportation and land use is a fundamental principle of the 2040 CRP's vision for livable communities. While industrial and freight-related development is often viewed by residents and local governments as undesirable, it is frequently because its negative externalities have not been mitigated. As with all development, sound planning can help to manage the impacts of freight development and industrial land uses to ensure that the livability of Northwest Indiana communities is preserved and enhanced. Planning can also help to preserve those lands that are most appropriate for freight-related uses, such as land adjacent to rail lines.

While most industrial land uses are tend to be clustered around Lake Michigan, near the ports, parcels for industrial-type development are fragmented throughout the region, making it difficult to for businesses to assemble significant parcels of land. This is particularly true in Lake County. If freight and industry is to continue to be successful and central to Northwest Indiana's economy, a coordinated effort will be needed to achieve regional, modern, freight supportive developments that are appropriately sited to minimize impacts and support livable communities.

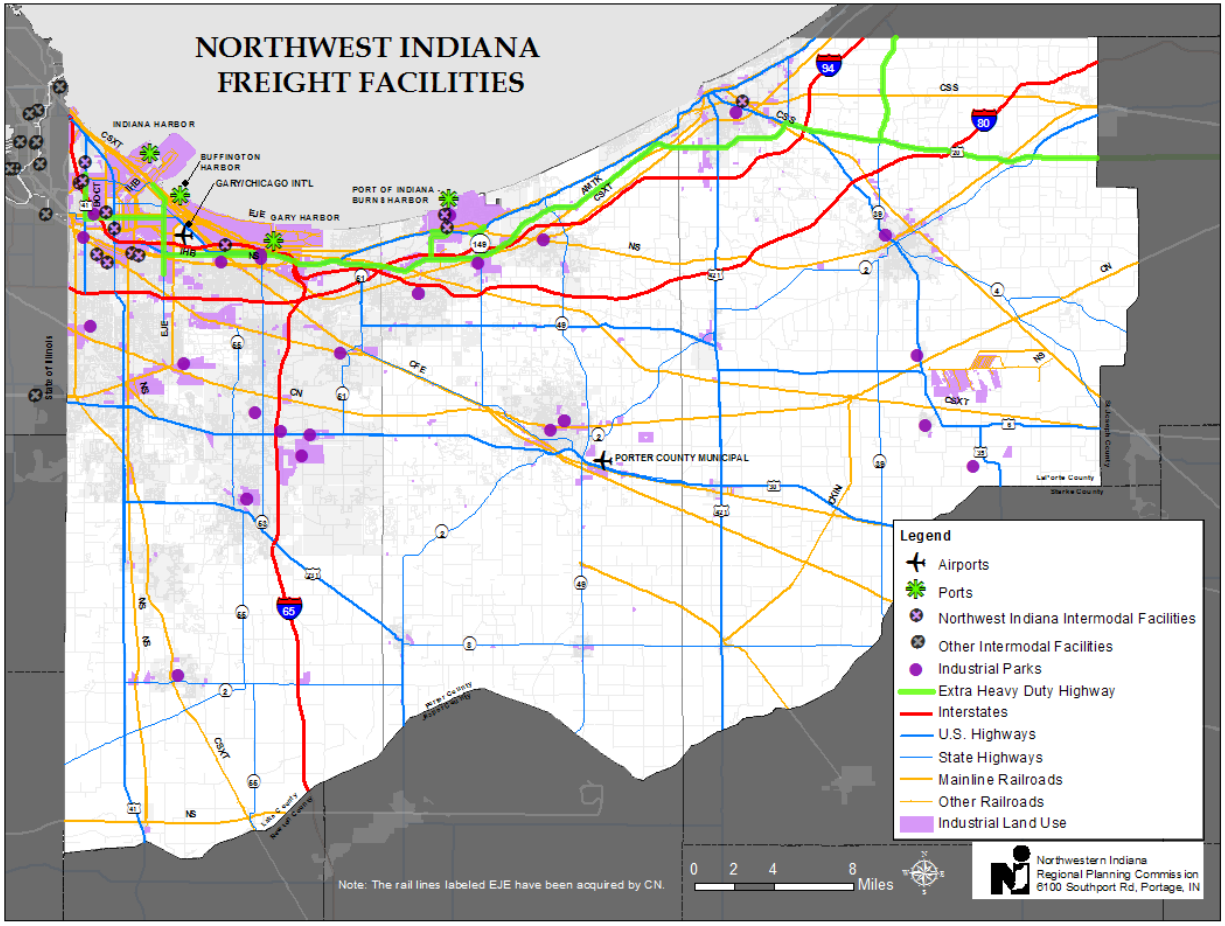

Figure II.25 Northwest Indiana Freight Infrastructure. *Source: Indiana Department of Transportation, Federal Highway Administration, National Transportation Atlas Database, U.S. Census Bureau, NIRPC Land Use Database.*

Freight Study

To better address the freight needs of the region, NIRPC completed a two-phase study that provided a baseline understanding of freight movement in the region and developed recommendations for improving the regional freight system. The study involved technical analysis of local, regional and national freight data; stakeholder interviews; and expert recommendations. This was followed by a stakeholder workshop where it was noted that, as previously indicated, parcel fragmentation is a barrier to additional freight-oriented development. The workshop also generated a freight vision, established regional freight policies and prioritized projects. Public and private stakeholders included representatives from Class I and short line railroads, the Gary/Chicago International Airport, the Ports of Indiana, INDOT, local and regional economic development agencies, real estate development, transportation and logistics experts, and local governments.[2]

Benefits of an Effective Freight Movement Network

Our investment in our freight network yields substantial economic benefits to the region. In Northwest Indiana, over 4,500 businesses are involved in a freight-generating industry. These businesses collectively provide nearly 80,000 jobs – close to one third of all employment in the region. According to a study completed in 2010, regional waterborne shipping alone supported 20,837 jobs and generated $14,196,465,066 in economic activity.

The 2040 Focused Revitalization areas of Northwest Indiana possess the highest concentrations of freight intensive land uses and multimodal freight infrastructure, which affords quick access to Chicago and the rest of the nation. As these cities are also struggling with vacant lands and brownfields, redevelopment of these lands for freight-related uses represents an enormous opportunity for economic development.

[2] For more information see the NIRPC Freight Study Final Report.

Freight Issues and Challenges

Along with the significant economic opportunities produced by the movement of freight, there are also negative impacts, including heavy traffic congestion and delays, safety concerns and air quality issues. Conflicts at highway grade crossings and the movement of heavy trucks through urban and residential areas contribute to inconvenient and potentially unsafe conditions. The development of land along rail lines for residential, rather than industrial and freight-related uses is not only a missed opportunity for economic development, but also a potential point of conflict that diminishes quality of life.

A balanced approach to freight-related development is necessary. Since economic benefits can be invisible, the tangible negative impacts often become the unwanted face of freight in a community. Consequently, improving or expanding the freight network in Northwest Indiana and capitalizing on our freight assets will require that we minimize and mitigate these impacts.

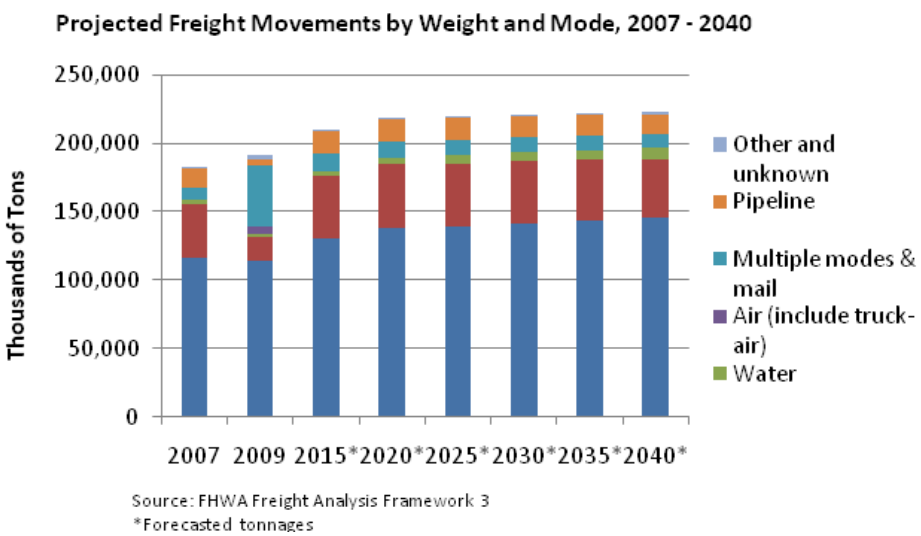

Figure II.26 Projected Freight Movements by Weight and Mode, 2007 - 2040. *Source: FHWA Freight Analysis Framework 3, 2010.*

Trucks

By 2040, the volume of freight transported in Northwest Indiana is projected to grow by 20 percent. All modes will see increases in freight traffic on infrastructure that is already at or near capacity. The largest increase will be in freight moved by truck, which already comprises over 60 percent of the region's volume by weight (Figure II.25).

The quantity of trucks that travel Northwest Indiana highways each day ranks among the highest in the nation, with most interstates and expressways carrying 14,000 trucks per day or more. On the Indiana Toll Road, truck volumes reach more than 15,000 per day, representing 40% of all traffic and making it one of the highest truck volumes in the U.S.

With these high volumes, congestion in the region is an impediment to the efficient movement of freight and a deterrent to the relocation of freight-related business and businesses that rely on just-in-time deliveries to Northwest Indiana. This is especially true on the Borman Expressway (I-80/94 in Lake County) and by 2030, congestion within the region is expected to worsen (see Figures II.25 and II.26). Much of I-65, the Borman in Lake County, U.S. 35 between Michigan City and LaPorte and portions of U.S.-30, U.S.-41 and Ridge Road are projected to operate at Level of Service F, which is characterized by stop-and-go waves, poor travel times, low comfort and convenience, and increased crash exposure.

Not only is congestion problematic for business, but it is also a health concern to the residents of Northwest Indiana. Diesel exhaust from trucks is a primary source of air pollution including particulate matter (PM2.5 and PM10), air toxic contaminants, and nitrous oxide (NOx) emissions. According to the Environmental Protection Agency, trucks accounted for 46 percent of freight-related NOx and 57 percent of PM10 nationwide. Not only does traffic congestion concentrate these emissions in one place, but vehicles idling in traffic emit more than those traveling at a steady speed. Mitigating congestion and thereby reducing these pollutants will have positive impacts on air quality. A more complete discussion of air quality can be found in the Environment and Green Infrastructure section.

The coordination of truck routing and land use is also an issue of concern both for the livability of our communities and the efficiency of freight movement. In suburban areas, the proliferation of traffic signals and curb cuts on heavily-traveled routes such as U.S. 30 and U.S. 41 delay trucks and create safety issues. The lack of a direct route that connects to industrial facilities in Illinois forces heavy trucks through residential areas in Hammond, creating safety issues for residents and hindering the efficient movement of goods. The closure of the Cline Avenue Bridge over the Indiana Harbor and Ship Canal has, for the time being, diverted trucks onto commercial and residential streets in Hammond and East Chicago, primarily Riley Road and Dickey Road in East Chicago. To ensure the safety of the region's residents and livability of the communities, facility and roadway access needs to be balanced with mobility and safety.

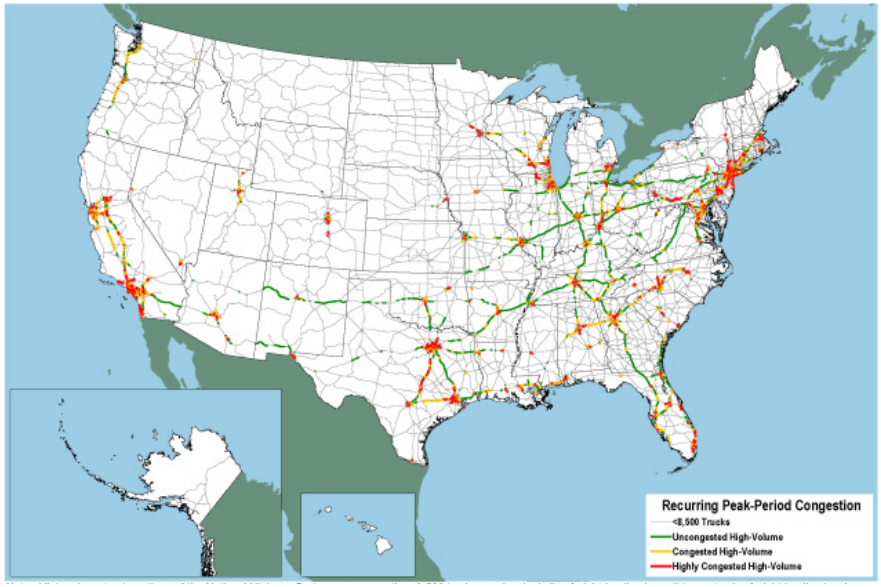

Figure II.27 Peak-Period Congestion on High-Volume Truck Portions of the National Highway System, 2007. *Source: U.S. Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, Highway Performance Monitoring System, and Office of Freight Management and Operations, Freight Analysis Framework, version 3.1, 2010.*

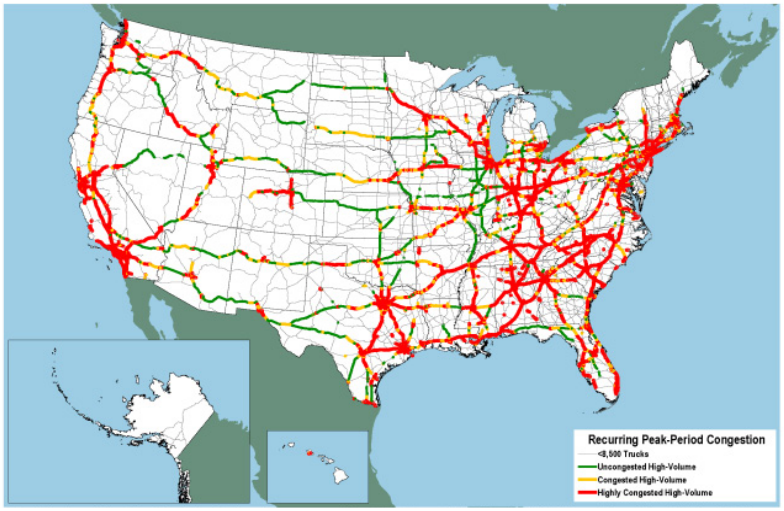

Figure II.28 Peak-Period Congestion on High-Volume Tuck Portions of the National Highway System, 2040. *Source: U.S. Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, Highway Performance Monitoring System, and Office of Freight Management and Operations, Freight Analysis Framework, version 3.1, 2010.*

Freight Rail

Freight rail has a significant presence in Northwest Indiana, largely due to the region's heavy industrial facilities and because of its proximity to the national rail hub of Chicago (Figure II.27). Three of the seven North American Class I rail operators provide service within Northwest Indiana: CSX Transportation, Inc. (CSXT), Norfolk Southern (NS), and Canadian National (CN). These are among the most heavily-traveled lines in the country (Figure II.28). In addition, several short-line and regional carriers operate in the region, including two headquartered in Northwest Indiana: the Indiana Harbor Belt and the South Shore Freight. One of the most pressing of the freight rail issues is highway-rail grade crossings (Figure II.29). Conflicts between trains and vehicles at these crossings pose significant risk of crashes, as described in the section on safety. In addition, these crossings can cause delays in traffic movement. While the delay is an irritation for residents, it also increases costs for businesses, contributes to air pollution from idling vehicles and can add danger-

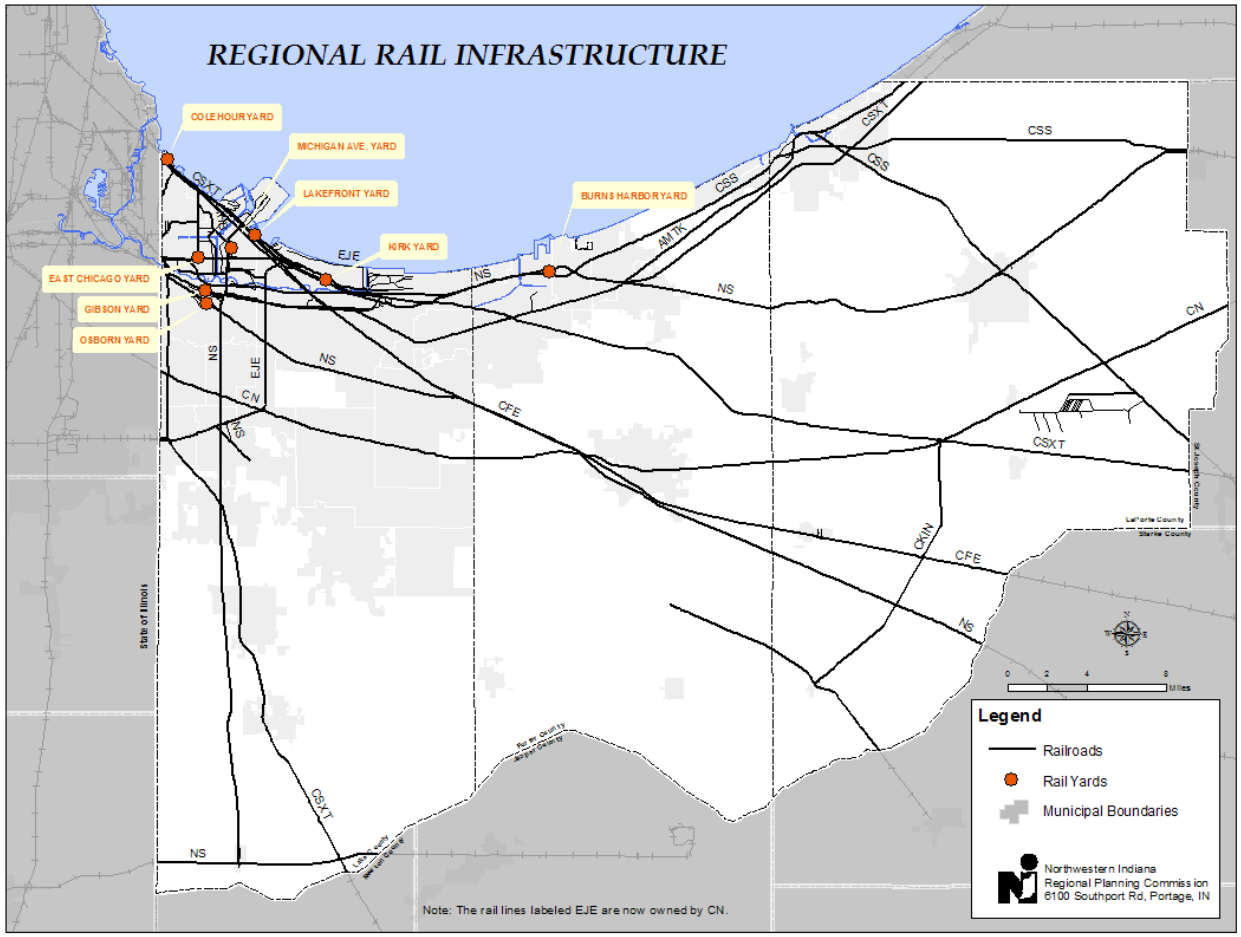

Figure II.29 Regional Rail Infrastructure. *Source: U.S. Census Bureau; National Transportation Atlas Database, 2010; Illinois Department of Transportation, 2006.*

ous minutes to the response times of emergency vehicles. This issue arose in the town of Griffith where the Canadian National acquisition of the EJ&E railroad and the resulting increase in train lengths could simultaneously block a number of highway-rail grade crossings potentially cutting off portions of the town from emergency services such as fire and police.

As development has spread out of the urban areas in Northwest Indiana, available land adjacent to rail has become scarcer. In some cases, residential subdivisions have developed adjacent to active lines, subjecting residents to the noise and other environmental and safety impacts of freight rail. Because rail access is a limited resource, it is a major community and regional asset for Northwest Indiana and presents a strong economic development opportunity. Preservation of rail corridors for industrial and freight-related uses allows communities to maximize the economic benefits of this infrastructure and buffer the negative impacts of freight on residents.

The most significant rail issue in the region is the national freight rail bottleneck in Chicago, the impacts of which are felt in Northwest Indiana. The severe slowing of freight movement in Chicago is being addressed by the Chicago Region Environmental and Transportation Efficiency Program (CREATE), a public-private partnership that is charged with implementing 71 freight and passenger improvements. In 2009, CN took its own steps to overcome the blockage when it completed its acquisition of the EJ&E and the Kirk Yard in Gary, allowing it to bypass the bottleneck via a 198-mile circumferential line around Chicago from Waukegan, Illinois to Gary. The acquisition is expected to result in substantial changes in rail traffic patterns in Northwest Indiana while upgrading of the Kirk Yard is expected to generate substantial investment and jobs.

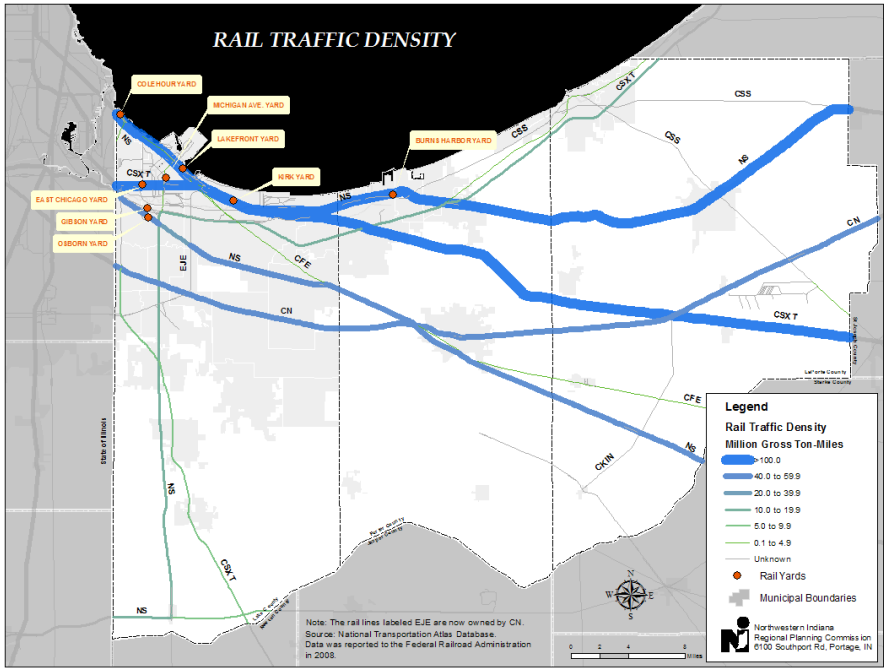

Figure II.30 Rail Traffic Density. *Source: U.S. Census Bureau, National Transportation Atlas Database as reported to the Federal Railroad Administration in 2008.*

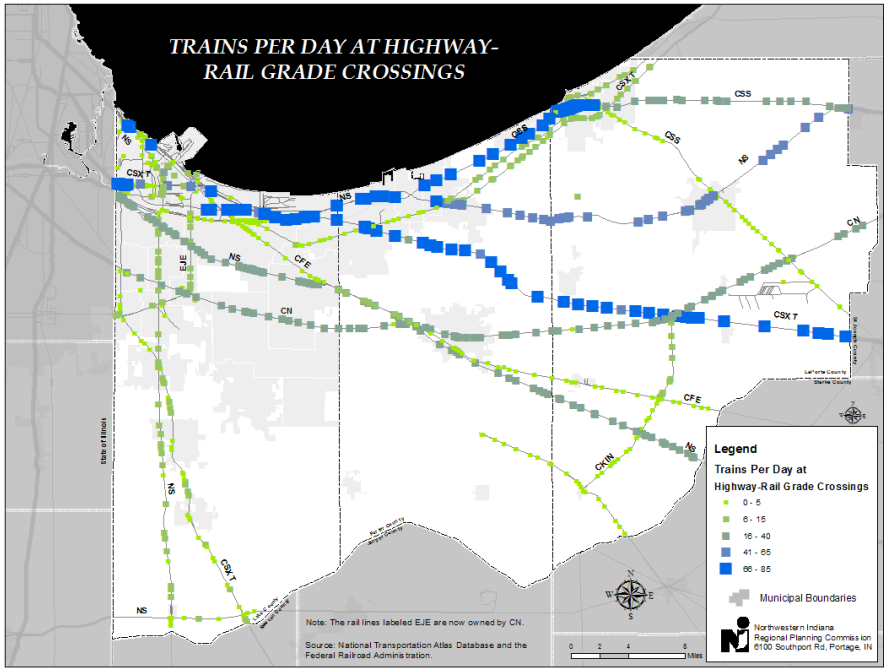

Figure II.31 Trains per Day at Highway-Rail Grade Crossings. *Source: U.S. Census Bureau; National Transportation Atlas Database, 2010; Federal Railroad Administration, 2009.*

Freight train in Whiting. Photo by Stephen Sostaric.

Ship in Buffington Harbor. Photo by Stephen Sostaric.

Maritime

Maritime transportation comprises a small fraction of total freight movement in Northwest Indiana, but because it is an effective, low-cost means of moving heavy, high-volume, bulk goods, it serves a crucial role in supporting the region's economy (Table II.12). In 2008, the 32 million tons of cargo that moved through the region's ports directly created 20,837 jobs, $923 million in personal income and $567 million in state and local taxes. Four Lake Michigan ports serve the industrial heart of the region, allowing raw materials to flow in and finished goods to flow out. The steel, construction, and agriculture industries are the primary users of these facilities and the top commodity processed at the three largest ports is iron ore, a raw material used in the manufacture of steel. Since all of Northwest Indiana's ports are served by both rail and highway they are also important intermodal facilities.

Maritime shipment is the most energy efficient form of transportation and the least polluting. However, it is also the slowest and it competes with rail for freight from the East Coast. As freight rail increases efficiency, particularly on the East Coast with the NS and CSX initiatives to enable double-stacking of containers on trains, waterborne shipping will become less competitive compared to rail.

Several additional obstacles stand in the way of increased shipping on the Great Lakes including the size limitations of the St. Lawrence Seaway, disinvestment in the Soo Locks and the threat of invasive species. The size of ships that can enter the Great Lakes is limited by the width of the St. Lawrence Seaway. Therefore, goods transported to East Coast ports need to be transloaded to smaller vessels that can traverse the Seaway, adding time and cost to shipments. Given that the Seaway is operating at just 60 percent of capacity it is unlikely that future investment would be warranted for widening.

Disinvestment in the nation's lock and dam infrastructure further reduces the efficiency of waterborne shipping and threatens the viability of the region's industries. The Soo Locks in Sault Ste. Marie, Michigan are in need of an upgrade, which has been authorized by Congress, but not yet funded. The Northwest Indiana region is the top destination for commodities coming through the Soo Locks and in 2008 it received 19.1 million tons of cargo valued at $618 million, largely consisting of iron ore, a vital ingredient for the region's steel industries. Failure to invest in the upgrades could have dramatic results for the region's industries and cargo operations.

Port	Total Tonnage	Among Lake Michigan Ports*	Among Great Lakes Ports*	Among U.S. Ports*
Indiana Harbor	**15,380,630**	2	3	42
Gary Harbor	**9,030,152**	3	8	56
Burns Harbor	**6,283,154**	5	15	70
Buffington Harbor	**1,333,849**	11	30	130

*Ports may include multiple harbors. For example, in 2008 Indiana Harbor was the highest ranking individual harbor on Lake Michigan, but trails the Port of Chicago, which includes both Calumet Harbor and Chicago Harbor, on this list.

Source: U.S. Army Corps of Engineers, 2008.

Table II.12 Northwest Indiana Port Ranking by Cargo Volume, 2008

Invasive species are another major problem plaguing the Great Lakes. The increased traffic of foreign ocean-going vessels since the 1959 opening of the St. Lawrence Seaway System has heightened concern over invasive species being discharged by ships in their ballast water. Additionally, the threat of Asian Carp migrating to the Great Lakes from the Mississippi River system has resulted in a number of federal lawsuits to permanently separate the two waterways. A study by the Ports of Indiana found that 17,655 jobs and $1.9 billion in economic activity could be attributed to Indiana barge movements through the Mississippi River System. The loss of this connection would have serious negative economic impacts on Northwest Indiana.

Air

Air cargo activity plays only a minor role in regional freight movement and is limited primarily to the Gary/Chicago International Airport, which has only a very small-scale freight operation as it handled only 180 tons of cargo in 2009. Moreover, the development of its cargo capacity is not an immediate priority identified in its recently completed strategic plan.

Although air cargo is not a major focus, plans for Northwest Indiana's airports are positioning these facilities as hubs of intermodal and multimodal districts, due to their strong rail and highway connections. The Gary/Chicago International Airport Strategic Business Plan recommends attracting logistics and warehousing, light manufacturing, and time sensitive products. A study is also underway for the Porter County Regional Airport to explore freight-related industrial development opportunities in the airport zone.

Freight Plan Policy and Recommendations

Freight Corridor Planning and Cargo Oriented Development

NIRPC, in coordination with local governments, can identify lands along freight rail lines and truck routes in Northwest Indiana and prioritize them according to their potential for freight-related development. Many of these sites are brownfields or underutilized land which could be brought back into more productive use to the benefit of the community and region. This is an opportunity to employ quantitative and qualitative analysis to bring high-opportunity corridors and sites to interested public and private sector parties in order to facilitate redevelopment. A regional initiative in the South Suburbs of Chicago coined the term Cargo Oriented Development to describe this process and its results.

Highway-Rail Grade Crossings

Highway-rail grade crossings cause traffic congestion and create safety issues. Grade separation would benefit freight movement for both rail and trucks. At a NIRPC freight workshop, regional stakeholders identified improvements to these crossings as the region's highest priority. NIRPC can work with local and state officials as well as rail representatives to study this issue on a regional corridor level.

Support Development of Intermodal and Multimodal Freight Facilities and the Logistics Industry

As both highways and rails become more congested, it will become increasingly important to use our transportation network as efficiently as possible. Intermodal and multimodal freight facilities, including transload facilities, where cargo is transferred between modes, maximize the efficiency and utility of each mode of transportation. Increased intermodalism has the potential to take trucks off the roads, improve highway safety and reduce the environmental impacts of goods movement.

There is strong consensus at the local, regional and state level that the development of multimodal freight hubs offers the potential for significant economic development. This is supported by local governments and by the state of Indiana through the Indiana Economic Development Corp, INDOT and educational facilities such as Ivy Tech. The recently completed Comprehensive Economic Development Strategy identifies the transportation, distribution and logistics sector as a growth cluster.

The 2040 CRP supports the initiatives to develop intermodal and multimodal hubs throughout Northwest Indiana. These include the development of the Gary/Chicago International Airport Zone and the Porter County Regional Airport Zone, the development of Kingsbury Industrial Park as a multimodal center, improvements to the Gibson Yard in Hammond including maintaining the height and width of the Indianapolis Boulevard Bridge, and improvements to the Port of Indiana-Burns Harbor.

Encourage Freight Supportive Land Use Planning and Zoning

Industrial and freight-related development has its place in a livable community if it is the product of integrated land use and transportation planning. Coordination and consensus-building between public officials and private sector operators is necessary to identify the appropriate locations for industrial and freight-related development

and to develop effective multimodal linkages between them. Local communities are encouraged to develop zoning overlay districts and ordinances that establish "good neighbor" practices such as buffers, open space requirements, low impact design, context sensitive lighting, and green building techniques.

Improve the Extra Heavy Duty Truck Route

The Extra Heavy Duty Truck Route in Northwest Indiana is a vital link in the industrial freight network of Northwest Indiana. Indiana's Extra Heavy Duty Highways run from Hammond to South Bend, connecting to Michigan as well. Trucks may weigh up to 134,000 pounds, subject to axle loading restrictions. This network of roads was originally created to support the steel industry, but has since been extended to serve other industries in the region, and to bridge the gap between shippers in Northwest Indiana and the State's border with Michigan.

Connecting the Extra Heavy Duty Route network to Illinois is a concept that is still developing as a bi-state project. Although the Extra Heavy Duty Route network comes within 1.12 miles of Illinois near the Brainard Avenue/Gostlin Street border crossing, it does not connect across the state line. Making this connection would improve truck movement between Northwest Indiana suppliers and Illinois industry, including the facilities around Lake Calumet and the Ford Motor Company's Chicago Assembly Plant. Potential routes where it could do so are limited by natural areas such as Wolf Lake and Powder Horn Lake and also by residential development along the corridors.

Despite its status as an industrial highway, in Northwest Indiana, land uses along the Extra Heavy Duty network are not exclusively industrial. In all three counties, the route passes through residential and commercial areas. Many segments of the route have not been well maintained, this is particularly true around downtown Gary. Improvements to this route should be made in order to maintain efficient freight flows in and around Northwest Indiana. Additionally, they must be comprehensive in scope protect the safety and the quality of life of residents and businesses along the corridor.

Support rail and maritime policies that encourage mode shift and reduce truck volumes

The nation's freight network is a multimodal system, but the bulk of public investment supports the trucking industry. The 2040 CRP supports local, state and national freight policies that encourage mode shift and reduce truck volumes.

- The Port of Indiana has been advocating for "Short-sea shipping" between ports on the Great Lakes. These ports are collectively marketing this as Highway H20.
- The Indiana Rail Plan recommends developing a short-haul intermodal rail corridor between Louisville and Chicago following the I-65 corridor.
- A May 2007 study published by the Center for Coal Technology Research at Purdue University recommended the development of an "Indiana Coal Corridor," composed of trackage rights connecting southern coal mines with northern power plants, mainline railroads, and ports. Such an entity would seek to increase the share of Indiana coal used in the state's power plants and also position the state to increase coal exports through its Great Lakes and Ohio River ports. Constraints in the transportation network are a primary inhibitor of greater coal extraction and exporting in Indiana.

The federal government has authorized, but not appropriated the funding for, construction of a new lock at the Soo Locks in Sault St. Marie, Michigan that is capable of handling large lake freighters. The health of Northwest Indiana's industry, primarily steel, is dependent these freighters and their transport of raw materials through the locks. Failure of the Poe lock, the only lock large enough to handle 1000 foot vessels, would drive up costs for industry and put additional strain on the highways and railways of Northwest Indiana.

Nonmotorized Transportation

Northwest Indiana is becoming a premiere location for bicycle, pedestrian and water trail users. With the adoption of the Northwest Indiana Blueways and Greenways Plan in 2008 and the Complete Streets Guidelines and the Pedestrian and Bicycle Transportation Plan in 2010, NIRPC and the region have committed to connecting the Northwest Indiana communities and the adjacent states of Illinois and Michigan with opportunities for active recreation and alternative transportation. The priorities and opportunities in these plans include off- and on-road facilities as well as water trail routes and will help establish an accessible region and a transportation system that supports the health of all people and places, a goal that was identified in the 2040 CRP Vision.

Overview of Nonmotorized Transportation in the Region

Bicycle Use

While bicycle use in Northwest Indiana is not currently monitored by local public agencies, park departments, or planning departments, there is bicycle use data available from the Census Bureau that indicates trends in bicycle travel and mode choice in the three-county region. In the American Community Survey and the decennial Census (2000 and earlier), respondents were asked about their journey to work and their mode of travel. Specifically, the Census Bureau asks workers age 16 years and older how they travelled to work with choices including: drive alone, carpool, bus, trolley, subway, railroad, ferry, taxi, motorcycle, bicycle, walk, other or, alternatively, whether they work at home. In 2000, 331,519 workers from the three-county region made a work trip. According to the Census, by 2008, regional work trips totaled 342,801, an increase of 3.4% or 11,282 trips. By comparison, bicycle work trips increased by 10.7% from 607 trips in 2000 to 672 trips in 2008. Still, in 2008, just 0.2% of all work trips by workers in the three-county region were by bicycle.

Walking Trips to Work

Similar to bicycle usage, walking trips to work can be identified through Census Bureau data. In 2000, of the 331,519 workers traveling from the three-county region, 6,695 or 2% walked to work. By 2008, walking trips to work had decreased to 6,142 and accounted for 1.8% of the 342,801 work trips made. In the preceding decade of 1990 to 2000, workers walking to work decreased by 20% while the total number of work trips actually increased 7.8%.

A Regional Inventory of Non-Motorized Transportation

Regional & Local Routes

Northwest Indiana possesses a network of off (Class I) and on-road (Class II & III) facilities, which have been typically confined to municipal systems, but which show great progress towards the completing an interconnected regional bikeway system as funding permits. As of the summer of 2010, the regional bikeways system comprised approximately 80 miles of off-road trails primarily located in segments across northern Lake and Porter counties. In addition, there are approximately 50 miles of bike trails for which funding has already been secured, either through federal enhancement dollars or state and local revenues. In sum, there are 15 principle regional trails that have been completed in whole or in part and another ten have been funded and currently under development. A chart highlighting off-road trail mileage developed since 1990 is shown in Figure II.30.

Apart from the growing Class I off-road trail network developing in Northwest Indiana, a significant regional network of on-road, or shared routes, have emerged. The on-road routes are broken down into Class II routes, which include painted, or marked lanes and direction signs designated for bike traffic, and Class III routes, which are directionally signed only. The largest of the Class III systems

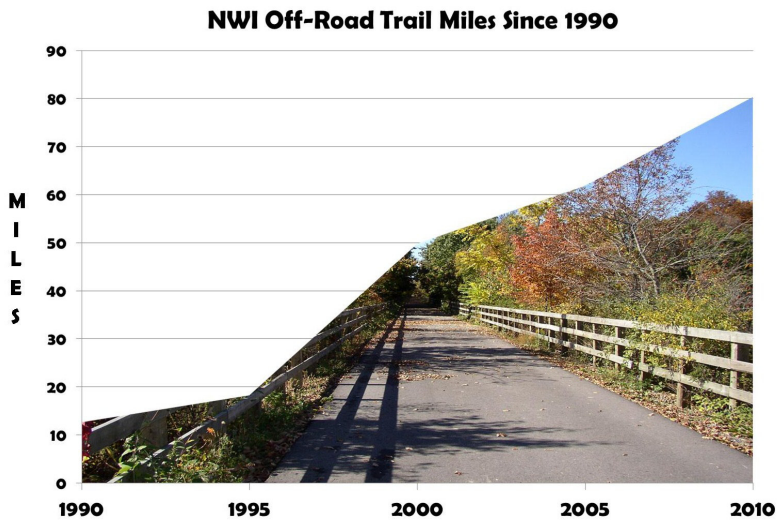

Figure II.32 Off-Road Trail Miles Since 1990, NIRPC, 2011.

include the 142-mile Porter County Bikeways System, and the 420-mile LaPorte County Bikeways System, which comprises 20 loop rides throughout the county.

Adding to this regional network are those communities which have already developed an internal bicycle network or which have projects that have been funded for development. Significant local networks and planning efforts include those in Crown Point, Gary, Hobart, Michigan City, Munster and Valparaiso. Apart from local plans to expand routes for non-motorized transportation, there exist significant projects of note that will require careful planning and perseverance to become reality.

Inter-regional Facilities

A number of non-motorized routes and trails extend beyond the boundaries of Northwest Indiana. From Northeast Illinois to Southwest Michigan, St. Joseph County and all parts south, an inter-regional network for hiking and biking is taking shape, providing inter-regional opportunities for non-motorized travel and further positioning Northwest Indiana as a Midwest destination for outdoor recreation.

On a national scale, the development of the American Discovery Trail (ADT), a 6,800-mile route stretching across 15 states from Delaware to California, continues to build momentum. The northern route of the ADT has been planned to pass directly through the Northwest Indiana area and coordination has begun to secure this route along the planned Veterans Memorial Trail into Illinois via the proposed, but not yet funded, Pennsy Greenway, from Crown Point to Lansing, Illinois.

In a similar vein, the United States Bicycle Route System (USBRS) is a proposed national network of bicycle routes. The National Corridor Plan shows two corridors slated for Northwest Indiana. Bike Route 35, a north-south route, will come through LaPorte County while Bike Route 36 is an east-west route that goes west from Detroit, Michigan to the Illinois/Iowa state line.

Water Trail Routes

In 2008, NIRPC adopted the Greenways and Blueways Plan that set forth a vision for corridor preservation and water trail development. As part of this, a total of 16 potential waterways were identified for canoe and kayak users, consisting of both major and minor waterways. A map outlining these waterways is shown in Figure II.32 on the following page.

Major Waterways:

1. Lake Michigan
2. Kankakee River
3. Little Calumet River (West and East Branches)
4. Grand Calumet River

Minor Waterways:

5. Plum Creek (Dyer, Munster)
6. Turkey Creek (Schererville, Merrillville)
7. Cady Marsh Ditch (Munster, Highland, Griffith)
8. Indiana Harbor Canal (East Chicago)

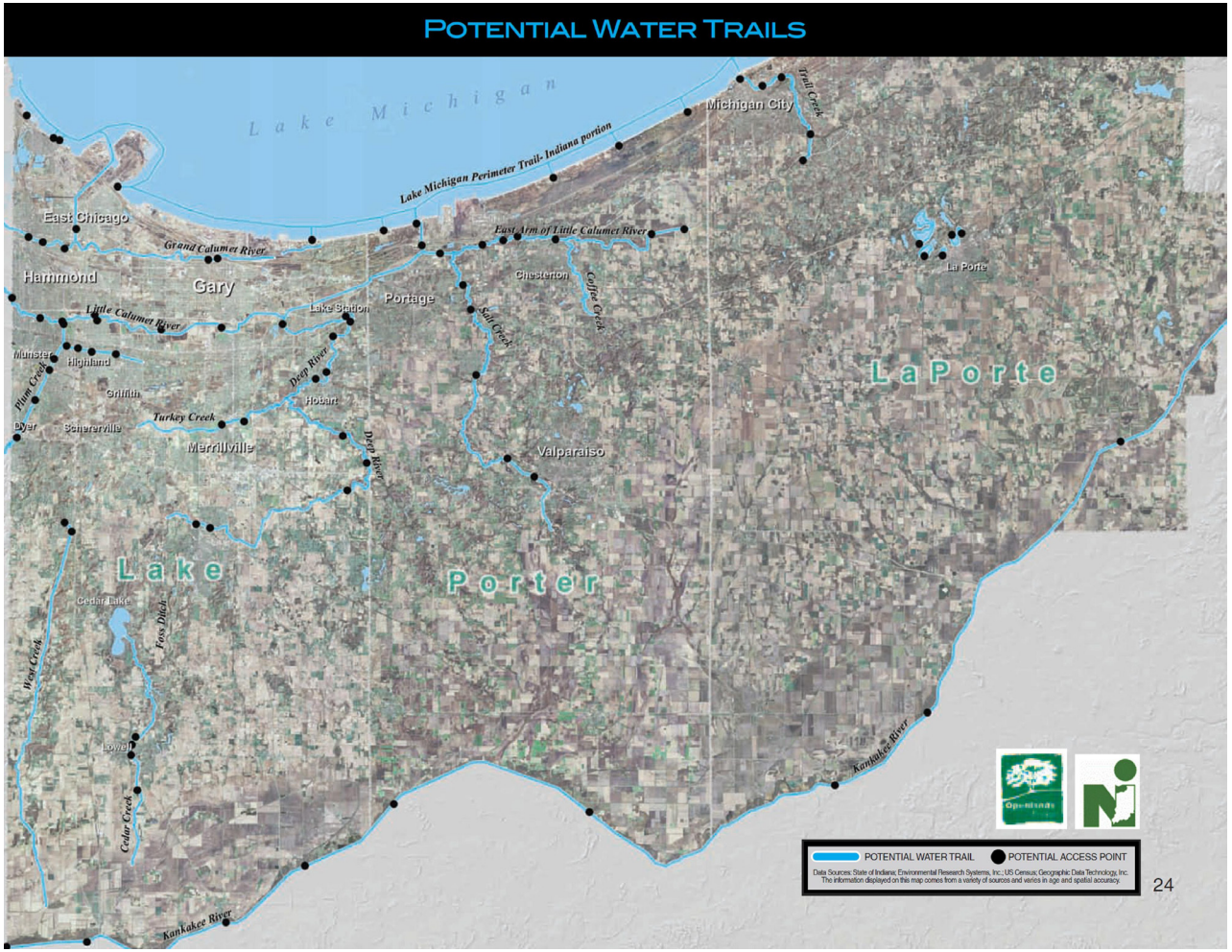

Figure II.33 Potential Regional Blueways, NIRPC, 2007.

9. Deep River (Hobart, Merrillville, Lake Station)
10. Beaver Dam Creek (Crown Point, Merrillville)
11. West Creek (St. John, Lake County)
12. Cedar Creek (Lowell, Lake County)
13. Salt Creek (Portage, Valparaiso)
14. Coffee Creek (Chesterton)
15. Trail Creek (Michigan City)
16. Lakes of LaPorte

Nonmotorized Transportation Issues

Unlike many countries worldwide, the United States is heavily dependent upon automobiles for personal transportation. As personal vehicle use increased, inevitably, the rate of pedestrian and bicycle usage for primary modes of travel have declined. There are a number of reasons behind these statistics in the U.S., but the primary reasons are development patterns and standards that have resulted in disconnected communities where walking or biking to a destination can be a dangerous proposition. The impact of this has been more vehicular travel, greater congestion and increasingly sedentary lifestyles with the unintended consequences of an obesity epidemic.

The Legacy of ISTEA

In 1991, Congress passed the landmark Intermodal Surface Transportation Efficiency Act (ISTEA), which recognized the increasingly important role of bicycling and walking in creating a balanced, intermodal transportation system. The second successor to ISTEA came in 2005 in the form of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) legislation. SAFETEA-LU contained two major components that were targeted specifically at pedestrians and bicyclists. It introduced the Safe Routes to School (SRTS) program in order to provide a safer and more appealing environment for schoolchildren to get to school. Secondly, the Act appropriated $370 million for the development and maintenance of recreational trails for a variety of users, including pedestrians and bicyclists.

Until the ISTEA, trails projects did not compete well against highway projects, and few were built with federal funding. With ISTEA and successor acts, the separate funding for trail projects provided the impetus for trail development in Northwest Indiana and throughout the country. The "TEA" legislations have been responsible for over 12,000 miles of off-road trails being constructed in the United States. In Northwest Indiana alone, nearly 80 miles of off-road trail have been constructed, with another 50 miles either funded or planned. The legislation has provided the funding, planning, and program authorizations necessary to create more walkable and bicycle-friendly communities.

State & Local Roles in Advancing Nonmotorized Transportation

Through the "TEA" legislations, the Indiana Department of Transportation (INDOT) set aside 10% of its federal apportionment to projects for the Transportation Enhancement (TE) program. In 2009, INDOT distributed about $20 million statewide for projects eligible under the TE program. Since ISTEA, INDOT has awarded entities in Northwest Indiana more than $29 million, for an average of $1.6 million per year. In addition, the Indiana Department of Natural Resources manages the Recreation Trail Program (RTP) and, in 2010, distributed $1.4 million in RTP funds statewide.

At the regional level, NIRPC's Ped, Pedal, and Paddle Committee (3PC) has been charged with reviewing and ranking all bicycle and pedestrian projects eligible for TE funding. In a far more direct fashion, the 3PC also solicits and ranks projects for NIRPC's Transportation Improvement Program, or TIP, which doles out approximately $19 million per year in allocated Surface Transportation Program (STP) monies. Of this money, no less than 3% is guaranteed to nonmotorized projects, with more funding eligible based on roadway-related submissions. NIRPC internally selects those projects and funds them at their own discretion without any further approvals from INDOT. Through this process, NIRPC is able to support and reinforce the priorities of the 2040 CRP including the vision of an accessible region that provides increased mobility, accessibility, and transportation options for people.

Benefits of Nonmotorized Transportation

A growing library of empirical data has clearly shown the positive effects of trail development on a local economy. From a homeownership perspective alone, trail location has been associated with higher property values and attraction from homebuyers. In addition, trails also attract new businesses to an area and thus serve as a vital economic development tool. Nonmotorized transportation and facility development result in a number of other benefits including:

- Traffic Reduction: With more travelers opting to use trails, there are fewer automobiles on the road, aiding the flow of traffic and alleviated congestion.
- Air Quality: Less congestion and fewer cars on the road results in less pollution from automobile exhaust and less idling at traffic signals or in traffic jams.
- Health: Where more people opt to travel by bike or foot, it leads to significantly healthier communities, helping to stem the current obesity epidemic that our country faces.
- Economic Development: Trails have proven to be a highly desirable amenity to any community, usually stimulating new businesses of all varieties along their route. Proximity to trails also been shown to increase property value.
- Quality of Life: With all the above mentioned, the end result is a greater quality of life, making a community more livable, and thus able to retain and attract residents and businesses.

As trail development provides many positive benefits to communities, they also have a positive impact onto the environment. For example, trail corridors provide linear greenbelts that preserve and protect plant species and open spaces and facilitate wildlife habitat preservation and wildlife migrations.

Even with the benefits associated with nonmotorized transportation facility development, there still remain a number of people and organizations that strongly oppose their creation – especially the development of trails. The basis for opposition comes in many forms with the major issues being

fear of crime, privacy violations and liability concerns, all of which have been effectively countered by solid educational campaigns.

Plan Recommendations for Nonmotorized Transportation

NIRPC seeks to create a non-motorized transportation culture in Northwest Indiana. To accomplish this, a number of policies, strategies and opportunities have been identified over the years through various planning documents:

Establish a Regional Trail Network Along Abandoned Rail Corridors

There are several advantages of using railroad rights-of-way for bikeway development. Since railroads are interregional, abandoned railroad rights-of-way stretch through an entire region and connect several municipalities. For this reason, abandoned railroad rights-of-way should be used to form the backbone of a regional trail network that connects municipalities and their bike networks with regional bikeways as well as bikeways outside of the region.

Partner with Utility Providers to Use Utility Corridors

Similar to the advantages of converting rail corridors to multiuse trails, another trail development opportunity exists in developing existing utility corridors into trails. Like rail corridors, utility corridors provide a linear, mostly unobstructed and undeveloped corridor for trail development regardless of whether the utility corridor includes underground or above-ground facilities. In Northwest Indiana, the Northern Indiana Public Service Co, or NIPSCO, has been instrumental in the development of new multi-use trails and these opportunities should be pursued. A graphic representation of NIPSCO corridors – both owned in fee or through easement – is shown in Figure II.33.

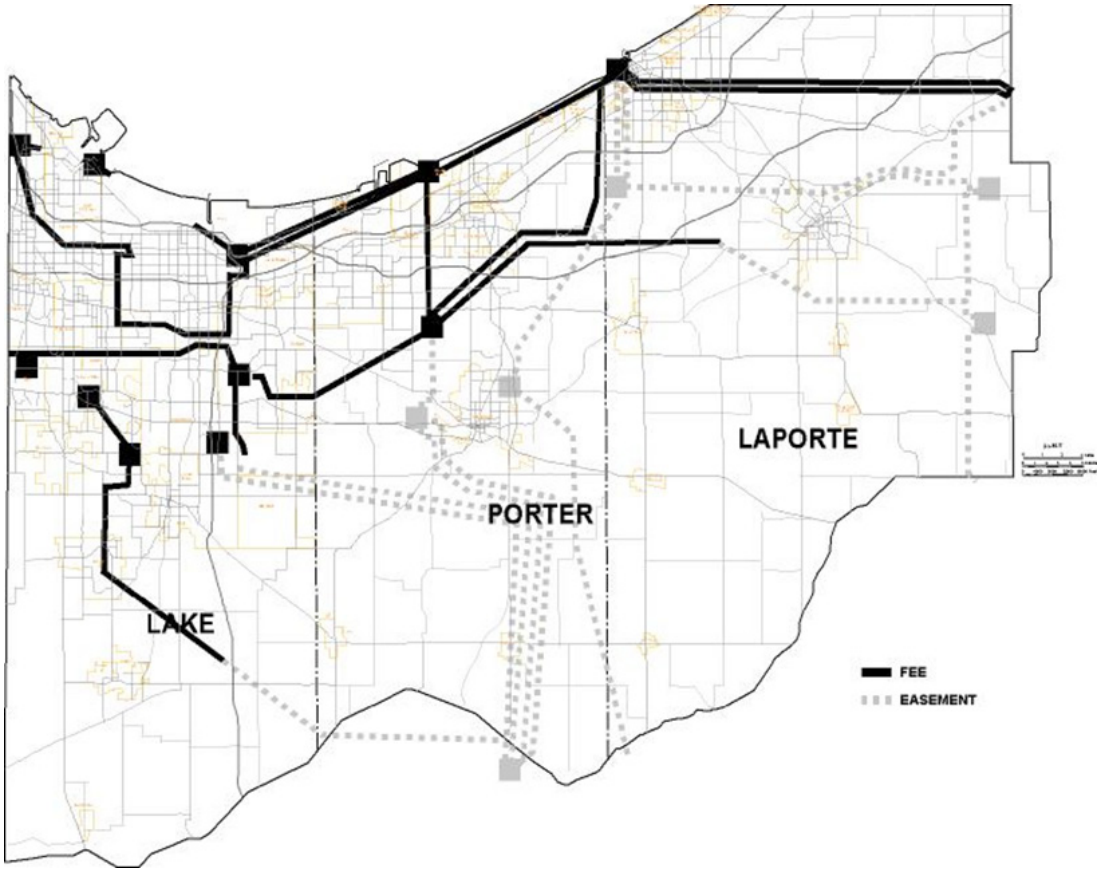

Figure II.34 NIPSCO Corridors, NIRPC, 2004.

Use Natural Features to Develop Greenways

Landscape corridors adjacent to natural features in the region provide additional opportunities to establish contiguous multimodal trail networks. Specifically, numerous waterways are present throughout Northwest Indiana and offer an excellent opportunity for fostering greenway development and providing a linear recreation amenity for the entire region.

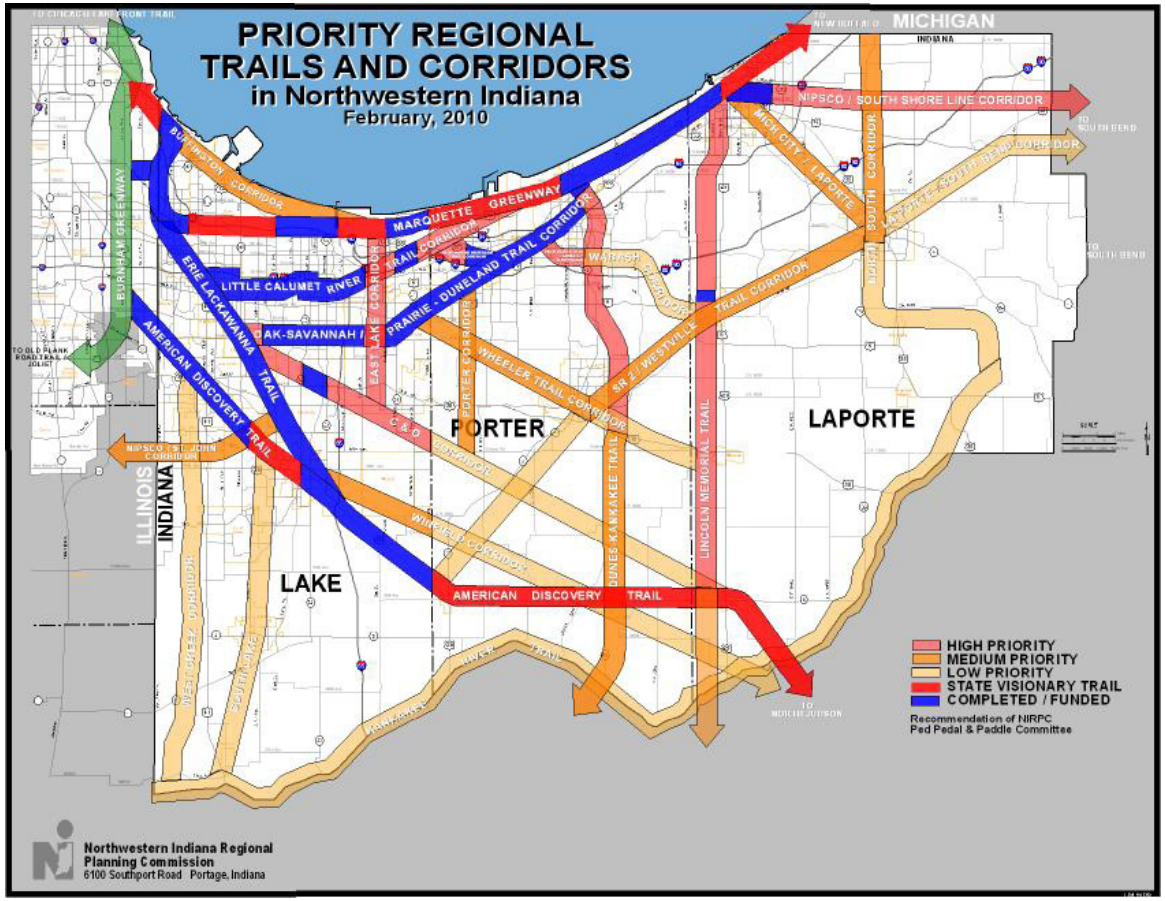

Figure II.35 Priority Regional Corridors Map, NIPRC, 2010.

Paddlers at the Trail Creek Fun Float in Michigan City.
Photo courtesy of Northwest Indiana Paddlers Association.

Develop Water Trails According to the Greenways and Blueways Plan

The Greenways & Blueways Plan outlined in detail, for the first time, all navigable water trail routes in the region for canoe and kayak users only. Sixteen potential routes in the Northwest Indiana region were identified to serve the active recreation needs of Lake, Porter and LaPorte counties. Many of these corridors are currently navigable for canoes and kayaks, but basic structures for launches would be needed for proper utilization

Prioritize Trail Development to Establish a Regional Network

Thirty-three corridors in the region were prioritized for development and categorized as either High, Medium or Low Priority (Figure II.33). Several of these corridors were incorporated into the two Visionary Trail Corridors. The result is a series of corridors that form a regional pedestrian and bikeway network that connects major population areas and major scenic areas. While some corridors follow waterways or utilize existing utility or abandoned rail corridors, there are a few corridors that are only conceptual in form, with no specific route yet identified, but which are intended to connect population centers or scenic areas.

Prioritize Complete Streets and Safe Routes to School

In prioritizing transportation projects that incorporate Complete Streets and Safe Routes to School, the region will possess a nonmotorized transportation network that accommodates bicycles, pedestrians and transit users and provide opportunities for an active lifestyle.

Environmental Justice

A Commitment to Environmental Justice

On Feb. 11, 1994, President Bill Clinton issued an Executive Order on Federal actions to address environmental justice in minority populations and low-income populations. It directed every federal agency to make environmental justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on "minority populations and low income populations." The order was designed to focus Federal attention on the environmental and human health conditions in minority communities and low-income communities with the goal of achieving environmental justice. The order promotes nondiscrimination in Federal programs substantially affecting human health and the environment, and to provide minority communities and low-income communities' access to public information on, and an opportunity for public participation in, matters relating to human health or the environment.

In accordance with Title VI of the Civil Rights Act of 1964, each Federal agency shall ensure that all programs or activities receiving Federal financial assistance that affect human health or the environment do not directly, or through other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin. Part of Title VI reads, "No person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance."

The three fundamental environmental justice (EJ) principles are: 1) 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; 2) To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and 3) To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

Properly implemented, EJ principles and procedures improve all levels of transportation decision making. A comprehensive approach will:

- Result in better transportation decisions that meet the needs of all people.
- Design transportation facilities that fit more harmoniously into communities.
- Enhance the public-involvement process, strengthen community-based partnerships, and provide minority populations and low-income populations with opportunities to learn about and improve the quality and usefulness of transportation in their lives.
- Improve data collection, monitoring, and analysis tools that assess the needs of, and analyze the potential impacts on minority populations and low-income populations.
- Partner with other public and private programs to leverage transportation agency resources to achieve a common level of accessibility for communities.
- Avoid disproportionately high and adverse impacts on minority populations and low-income populations.
- Minimize and/ or mitigate unavoidable impacts by identifying concerns early in the planning phase and providing offsetting initiatives and enhancement measures to benefit affected communities and neighborhoods.

Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, and national origin. The Executive Order addresses persons belonging to any of the following groups:

- Black – a person having origins in any of the black racial groups of Africa.

- Hispanic – a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
- Asian American – a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.
- American Indian or Alaskan Native – a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition.
- Minority population – any readily identifiable groups of minority persons who live in geographic proximity.
- Low-Income – a person whose household income (or in the case of a community group, whose median household income) is at or below the U.S. Department of Health and Human Services poverty guidelines.
- Low-income population – any readily identifiable group of low-income persons who live in geographic proximity.

Concern for environmental justice should be integrated into every transportation decision. The EJ Order applies to all policies, programs, and other activities that are undertaken, funded, or approved by the Federal Highway and Federal Transit Administration. Other components of U.S. DOT funded activities include: policy decisions; systems planning; metropolitan and statewide planning; project development and environmental review under the National Environmental Policy Act; preliminary design; final design engineering; right-of-way; construction; and operations and maintenance. Federal agencies, state departments of transportation, metropolitan planning organizations, transit providers, and the public all have roles in implementing Title VI and EJ. For example, to certify compliance with Title VI and address EJ, MPOs need to:

- Enhance their analytical capabilities to ensure that the regional transportation plan and the transportation improvement program comply.
- Identify residential, employment, and transportation patterns of low-income and minority populations so that their needs can be identified and addressed, and the benefits and burdens of transportation investments can be fairly distributed.
- Evaluate and, where necessary, improve their public involvement processes to eliminate participation barriers and engage minority and low-income populations in transportation decision making.

DETERMINING NEEDS: - Meaningful Public Involvement

- Definition and list of public involvement activities from Dec 2008 and onward in EJ areas.
- EJ workshop, outreach subcommittee, outreach coordinator

A key component of the 2040 CRP was the use of an unprecedented level of public involvement to develop a vision that was representative of the entire region. To gather input for the 2040 CRP, build consensus and ensure that the recommendations identified in the plan are realistic and will be implemented, NIRPC is engaging an unprecedented number of citizens and stakeholders. An Outreach Subcommittee advises the 2040 CRP Steering Committee to ensure that the process is inclusive. Major public participation opportunities included:

- ***Forum on the Future of Northwest Indiana***, December 2008: A day-long, 500-person, pubic visioning event held at the Radisson in Merrillville. Attendance was geographically and demographically representative of the region as a whole. Results were used to develop a vision statement.
- ***Goal Setting Workshops***, May – June 2009: Six public workshops held throughout the region to validate the vision statement and generate ideas for plan goals and objectives.
- ***Subregional Cluster Workshops***, September – October 2009: Five public workshops held throughout the region. On table-sized maps of their counties, attendees mapped out a physical framework for the

future using a palette of *Centers, Corridors* and *Green Areas:* regional population and employment growth centers, major transportation improvements and natural resource conservation areas.

- ***INDiscussions,*** Ongoing: Meetings with small groups of stakeholders around the region, e.g. city planners, urban core representatives, town and city councils.
- ***Regional Scenarios Stakeholder Workshop and Public Outreach Meetings,*** September – October 2010: Eight public meetings held throughout the region to garner feedback on the scenarios and to "select" a preferred scenario.

Environmental Justice Analysis

This section presents the results of the Environmental Justice (EJ) Analysis based upon inputs from three scenarios: the 2010 Baseline Scenario; the 2040 Constrained Scenario, and the 2040 Unconstrained Scenario. Each scenario was modeled using the NIRPC Travel Demand Model (TDM). The TDM uses data for population and employment, as well as assumptions about the transportation network as inputs. The TDM then generates estimated travel times and trips taken by purpose and by mode. Each time the model is used to generate an output is called a "model run."

The Model Run:

The 2010 Baseline Scenario was conducted using current population and employment by Traffic Analysis Zone (TAZ), with model runs made on the existing transportation network. The 2040 Constrained Scenario was conducted using the population and employment projections based upon the 2040 Growth and Revitalization Vision, with model runs made on the 2040 transportation network of fiscally constrained projects. The 2040 Unconstrained Scenario was conducted using the population and employment projections based upon the adopted 2040 Growth and Revitalization Vision, with model runs made on the 2040 transportation network of additional projects, regardless of fiscal constraints. The EJ analysis consisted of three parts:

- Defining Environmental Justice Populations
- Developing Performance Measures
- Comparing Scenarios

Environmental Justice Methodology

Environmental Justice Populations

Environmental Justice (EJ) populations are defined by either minority status, low income, or both. In order to account for all minority groups and individuals, minorities are defined as all people who do not identify themselves as "White, non-Hispanic". The minority population data comes from the Census 2010 Redistricting Data, and is aggregated to TAZs based on Census Block data.

The low income population was derived from the Census Bureau's American Community Survey for the years 2005-2009. All people identified as living in poverty during the past 12 months prior to being surveyed by the Census Bureau are included in this group. Population estimates for the low income group by TAZ were produced using ACS data at the Census Block Group level.

Figure II.35 (below) provides a basic representation of many of the inputs used in the analysis. For example, it does not show the entire EJ population, but it shows the areas with the greatest concentration of EJ populations in the yellow, blue, and green areas. It also shows the major destinations used for the proximity performance measures, along with major public transit and major roads that are in the Traffic Demand Model (TDM). The areas bordered by dashed lines represent the 455 Traffic Analysis Zones (TAZs) used in the TDM.

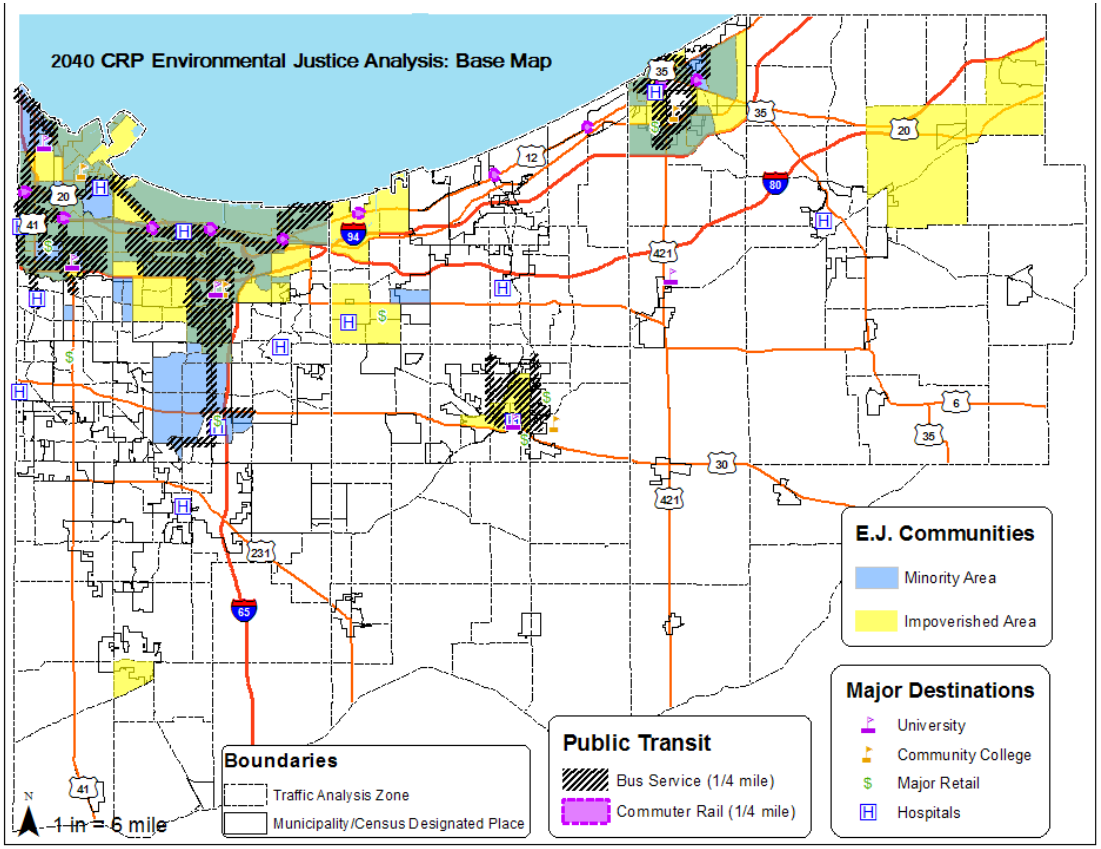

Figure II.36 Environmental Justice Analysis Base Map: Population, Destinations, and Major Transportation

The map does not show the total population or total employment of each TAZ, both of which were used in the analysis. The next section describes performance measures in detail..

Performance Measures

NIRPC developed performance measures to conduct the EJ Analysis. This section documents the methods used to develop these measures. The performance measures have been calculated using the three scenarios described above:

Performance Measures
Average number of job opportunities close
Average number of shopping opportunities close
Average number of non-shopping opportunities close
Percent of population close to a college or university
Percent of population close to a hospital
Percent of population close to a major retail destination
Percent of population close to a livable center
Average travel time for mandatory (work commute) purposes
Average travel time for shopping purposes
Average travel time for other purposes
Average travel time for all purposes

Table II.13 Performance Measures

- **2010 Existing Conditions (2010-EC)**
- **2040 Fiscally Constrained Plan (2040-CP)**
- **2040 Unconstrained Plan (2040-UP)**

Table II.13 identifies the 11 performance measures produced from the analysis. Each performance measure is reported across all three scenarios to allow for comparison of the relative effects of each scenario on environmental justice (EJ) populations. Individual measures are reported for both transit trips and auto trips.

In order to isolate travel impacts to the specific populations, each TAZ was assigned a weight based on its relative share of either impoverished or minority residents compared to the regional total. For example, if TAZ 1 has a total of 200 minority residents, and the whole region has 10,000 minority residents, TAZ 1 would be assigned a weight of 200/10,000, or 0.02.

Proximity Measures

Average Number of Job Opportunities

The number of jobs in a TAZ for 2010 is based on data from the Quarterly Census of Employment and Wages. The number of jobs in a TAZ for the two 2040 CRP scenarios is based on the socio-economic projections of the Growth and Revitalization Vision. Using these job numbers and the estimated travel time between each TAZ, all jobs were identified within a 20-minute transit and auto travel time of a given TAZ.[3] This number was then multiplied by the EJ weight of the TAZ. The weight-adjusted number of job opportunities was then summed up across all TAZs to produce a regional weighted average of jobs for a given EJ population and mode type.

For example, assume that TAZ 1 has three other TAZs within a 20-minute drive: TAZ 2, TAZ 3 and TAZ 4. Assume that the total number of jobs in TAZs 1-4 is 100 (employment in TAZ 1 is also included because it falls within the 20-minute drive time). The EJ minority weight in TAZ 1 is 0.10, meaning that 10% of the region's minority population resides in TAZ 1. The weight-adjusted number of job opportunities is 100x0.10 or 10 jobs. This figure is summed across all TAZs in the region to produce a weighted average number of job opportunities within a 20-minute drive for minority populations.

Average Number of Shopping Opportunities

The TAZ data does not include explicit numbers on shopping opportunities. To arrive at this performance measure, the number of shopping trips ending in each TAZ was used as a proxy or substitute for shopping "destinations." Thus, shopping opportunities is not a count of the number of actual stores in a TAZ, but the number of trips for shopping purposes that a particular TAZ attracts.

This measure was developed in essentially the same manner as the job opportunities measure. In place of job opportunities, shopping opportunities (trips attracted) was used in the calculation. In addition, a travel time of ten minutes was used for shopping instead of the 20 minutes to job opportunities.

Average Number of Non-Shopping Opportunities

This measure was produced using the same methodology as the shopping opportunities measure. In place of shopping trips, all home-based 'other' trips were counted and used as a proxy for non-shopping destinations. These are non-work and non-shopping trips for other household purposes.

Percent of Population Close to a University or College

The data for each TAZ includes a count of the number of colleges and universities (as well as other attractions, as described below) within the TAZ's boundaries. For each TAZ, all TAZs within a 20-minute travel time were identified. The measure was produced by adding together the EJ population of all TAZs with at least one college or university within the 20-minute travel market shed and comparing to the total regional EJ population.

Percent of Population Close to a Hospital

This measure was produced using the exact same methodology as the college measure. Instead of colleges, the number of hospitals was counted in the 20-minute travel market shed.

Percent of Population Close to a Major Retail Destination

This measure was produced using the exact same methodology as the college measure. Instead of colleges, the number of major retail destinations (as reported by the travel demand model) was counted in the 20-minute travel market shed.

[3] Automobile and public transit trip times in this analysis consist only of in-vehicle travel time. Walk times to transit and wait and transfer times at transit stops have not been included in the evaluation but make up a significant portion of overall transit travel times. Therefore, the market shed reflected in the transit measures is typically larger than the market shed reflected in the automobile measures.

Percent of Population Close to a Livable Center

This measure was produced using the exact same methodology as the college measure. Instead of colleges, the number of livable centers was counted in the 20-minute travel radius.

Because livable centers are part of future regional plans and may not yet exist, this statistic was not reported for the 2010 Existing Conditions scenario.

Average Travel Time Measures

Average Travel Time for Commuting Trips

Travel times, trip volumes and trip purposes between TAZs are outputs of the travel demand model. This measure focuses only on home-based work (HBW) trips. For each origin-destination TAZ pair, travel times were weighted using the ratio of origin-destination HBW trip volume to the total number of HBW trips from the origin TAZ to all TAZs. This number was then summed for all destinations from a given TAZ. The result was a trip-weighted HBW travel time measure.

Each TAZ's trip-weighted HBW travel time measure was multiplied by the EJ population weights and summed across the entire region to produce a weighted average travel time for mandatory purposes for each of the EJ populations.

For example, assume TAZ 1 has the following HBW trip volumes to other TAZs:

Destination TAZ	HBW Trip Volume	Travel Time
1	30	0
2	60	10
3	10	20

The trip-weighted HBW travel time for TAZ 1 would be 30x0/100 + 60x10/100 + 10x20/100 or 8 minutes. If we assume that TAZ 1 houses 50% of the region's minority population, the weight-adjusted travel time in TAZ 1 for the minority population would be 8x0.5 or 4. This number would be added to the minority weight-adjusted travel times of TAZs 2 and 3 to produce the weighted average travel time for the region.

Average Travel Time for Shopping Trips

This measure was produced using the same methodology as the commuting measure. In place of HBW trips, only home-based shopping (HBS) trips were considered.

Average Travel Time for Other Purposes

This measure was produced using the same methodology as the commuting measure. In place of HBW trips, only home-based other (HBO) trips were considered.

Average Travel Time for All Purposes

This measure was produced using the same methodology as the commuting measure. In place of HBW trips, all HBW, HBS and HBO trips were considered.

Region senior riding the bus. Photo courtesy of Northwest Indiana Forum.

Results and Analysis

Proximity Measures

Being close to essential destinations such as job centers, hospitals, and education is highly important. All of the region's residents should have easy access to key facilities, regardless of socio-economic status. The analysis looks at the proximity of such destinations for both the EJ populations and non-EJ populations. This, along with travel time analyses, will allow us to determine whether the transportation plan is equitable, or fair, to all of the region's residents.

Access to Jobs – Average Number of Job Opportunities within 20 Minutes

Figures II.36 and II.37 show the average number of jobs that are accessible to the EJ populations is greater than the accessibility of jobs to the non-EJ populations in each of the scenarios. In addition, job access via public transit and automobile is better in both the 2040-CP and 2040-UP scenarios than in the baseline 2010 Scenario. While job access by automobile is similar across the three scenarios, transit access is noticeably higher in the 2040 Unconstrained Scenario. This difference is probably due to the increased accessibility that would occur if key projects that are not in the fiscally constrained plan, such as the Broadway Rapid Transit project, were to be funded and built. With respect to job access, the analysis shows that there would be benefits to *both* EJ communities and non-EJ communities with the adoption of the 2040 Comprehensive Regional Plan.

Access to Shopping – Total Number of Home-Base Shopping Trips within 10 Minutes

Figures II.38 and II.39 show shopping opportunities that are greater in both 2040 scenarios when compared to the baseline year. Auto access to shopping is similar between the 2040-CP and 2040-UP scenarios, while transit access is a bit higher in the 2040-UP Scenario. While access via transit in the 2040-UP seems to benefit non-EJ communities more than EJ communities, both populations are benefitting more than in the 2040-CP Scenario. This can probably be seen as more of a positive situation for everyone as opposed to an inequitable benefit to non-EJ communities.

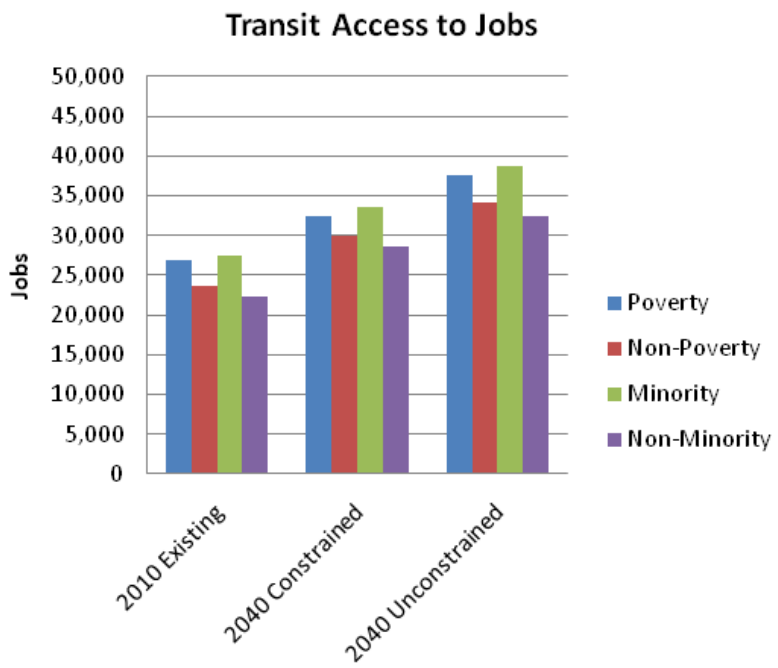

Figure II.37 Transit Access to Jobs

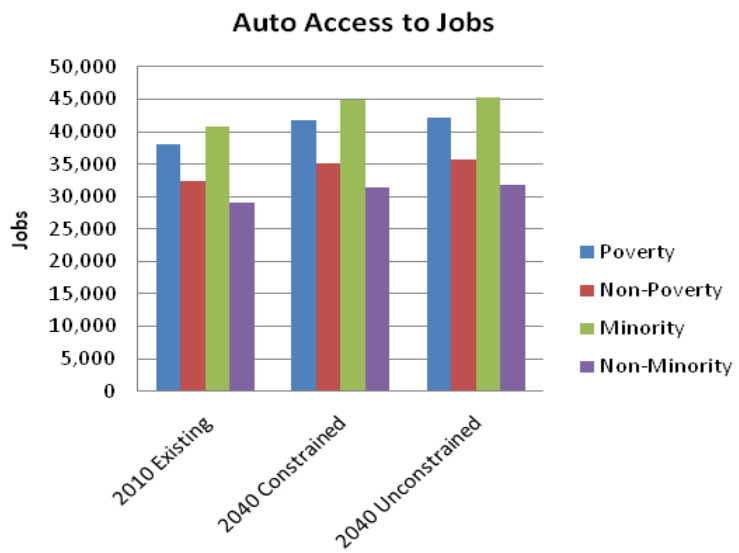

Figure II.38 Auto Access to Jobs

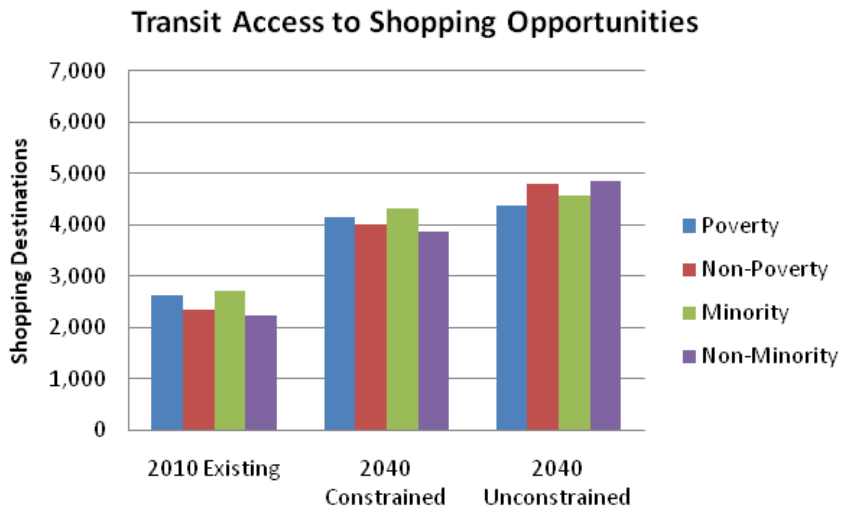

Figure II.39 Transit Access to Shopping Opportunities

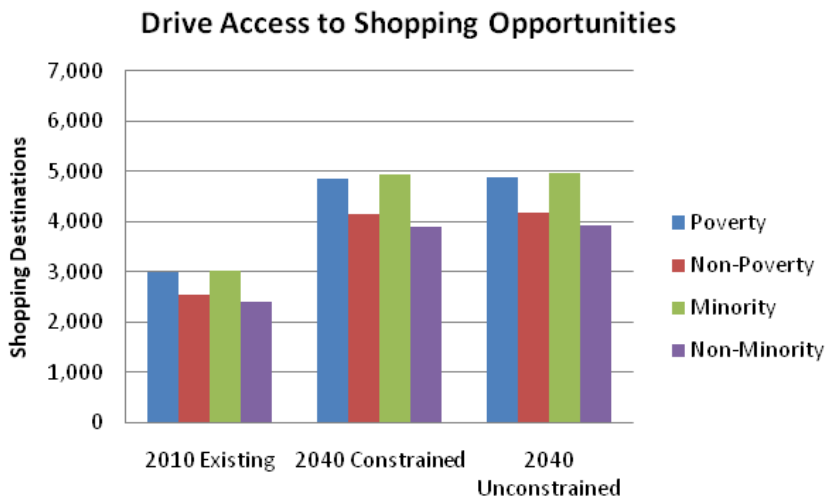

Figure II.40 Drive Access to Shopping Opportunities

Access to All Other Destinations – Total Number of Home-Base Non-Work, Non- Shopping Trips within 10 Minutes

Figures II.40 and II.41 show more non-shopping opportunities (non-commute/non-shopping trips) exist in both 2040 scenarios than in the baseline year. Similar to the shopping proximity analysis, the 2040-UP shows slightly better transit access for non-EJ communities. This may be due to the NICTD commuter rail extension projects in the 2040-UP Scenario, which add rail service to many non-EJ places. Again, the overall access via transit is better for all populations, so this can be viewed as a win-win situation.

Access to Education – Percent of the Population within 20 Minutes of a University or College

Figures II.42 and II.43 show the percentage of the population living close to a higher education facility is fairly consistent across all scenarios. In all cases, the EJ population is in closer proximity to higher education institutions by automobile and, to a lesser extent, public transit than is the non-EJ population. Despite slightly lower rates for both EJ and non-EJ populations in the 2040-CP and 2040-UP scenarios compared to the baseline, the ratio of the EJ population to the non-EJ population in proximity to educational facilities is actually higher in the two CRP scenarios than in 2010. Given that EJ communities have better access to education in all scenarios, including the two CRP scenarios, we believe that EJ communities will benefit from implementation of the CRP.

Regional grocery chain in a shopping center. Photo courtesy the Times of Northwest Indiana.

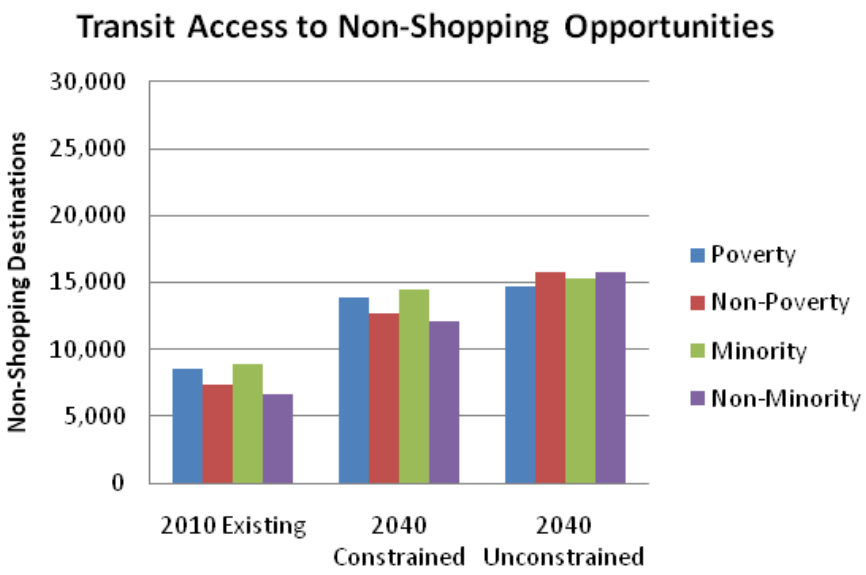

Figure II.41 Transit Access to Non-Shopping Opportunities

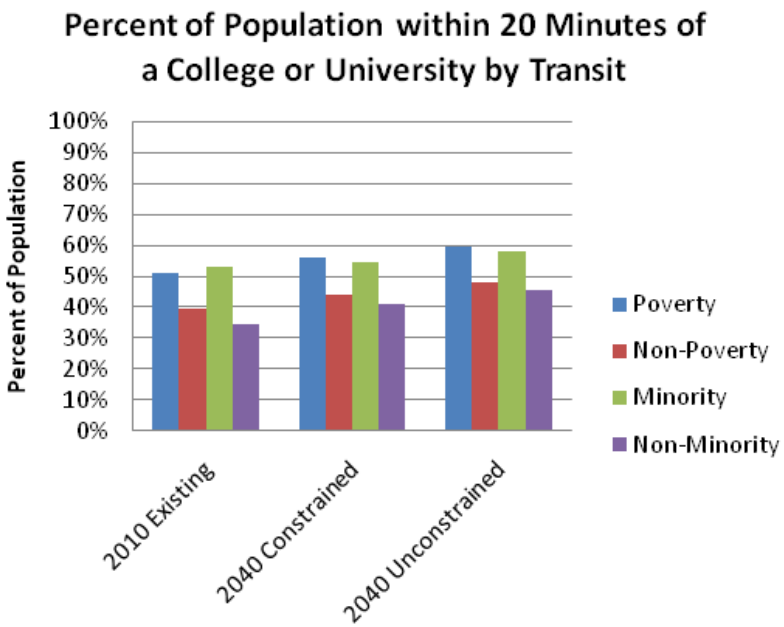

Figure II.43 Percent of Population within 20 Minutes of a College or University by Transit

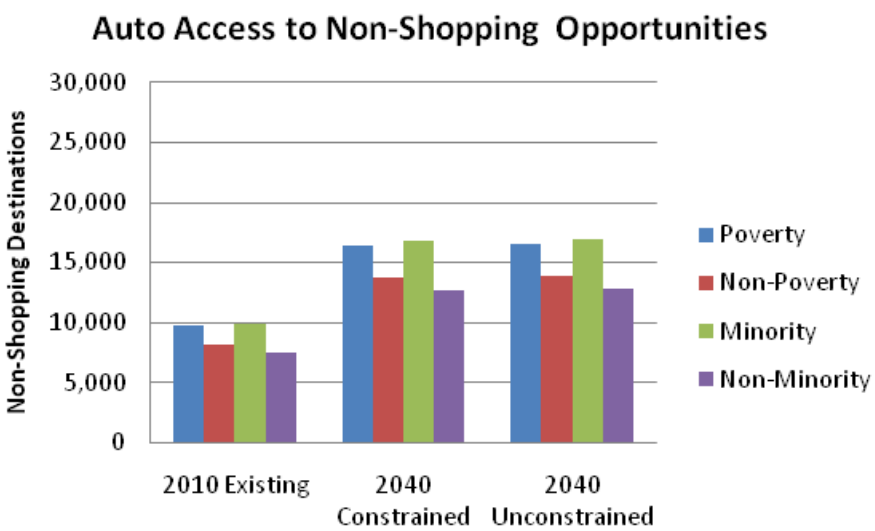

Figure II.42 Auto Access to Non-Shopping Opportunities

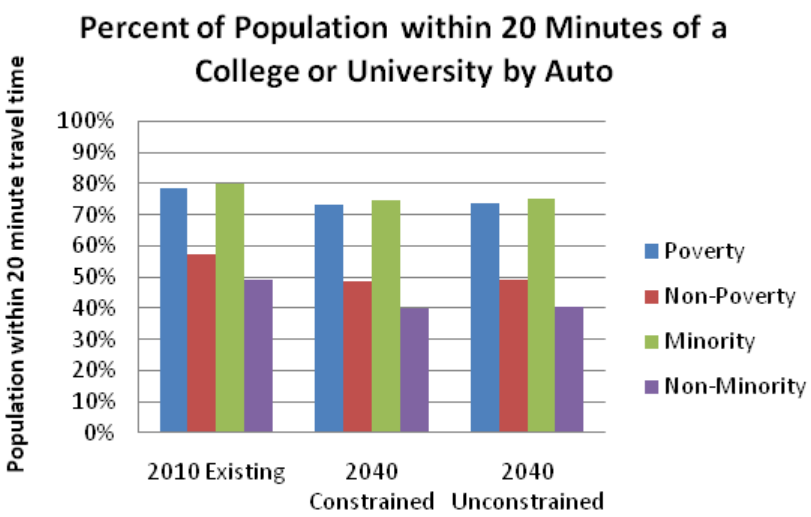

Figure II.44 Percent of Population within 20 Minutes of a College or University by Auto

Figure II.44 shows that transit access to the region's 10 hospitals is slightly worse for all populations in the 2040 scenarios. While the CRP scenarios both show a decline in accessibility, the 2040-UP shows slightly higher accessibility for EJ communities than non-EJ communities. In terms of automobile access, Figure II.45 shows that the three scenarios are fairly equal.

With Porter Hospital moving outside of downtown Valparaiso, which is served by transit, to a more auto-oriented area, one would expect the accessibility measures to shift to favor automobile access.

Access to Major Retail

Figures II.46 and II.47 show that currently the EJ population has less access to major retail centers than non-EJ communities. This is not surprising given that five of the region's seven major retail centers are located outside of the urban core communities. The 2040-UP Scenario shows more equitable access to retail for EJ communities than both the 2040-CP and 2010 baseline. The 2040-UP only shows better access via transit, which could be due to the Broadway Rapid Transit project connecting the core of Gary to the Westfield Southlake Mall and commercial corridor at U.S. 30 and I-65.

It is believed that the lack of access to retail for EJ communities points more to a lack of major retail locations within those communities than it does to a transportation issue. An appropriate way to increase access to retail is not always to bring more of the EJ population to retail, but to bring more retail to the EJ population.

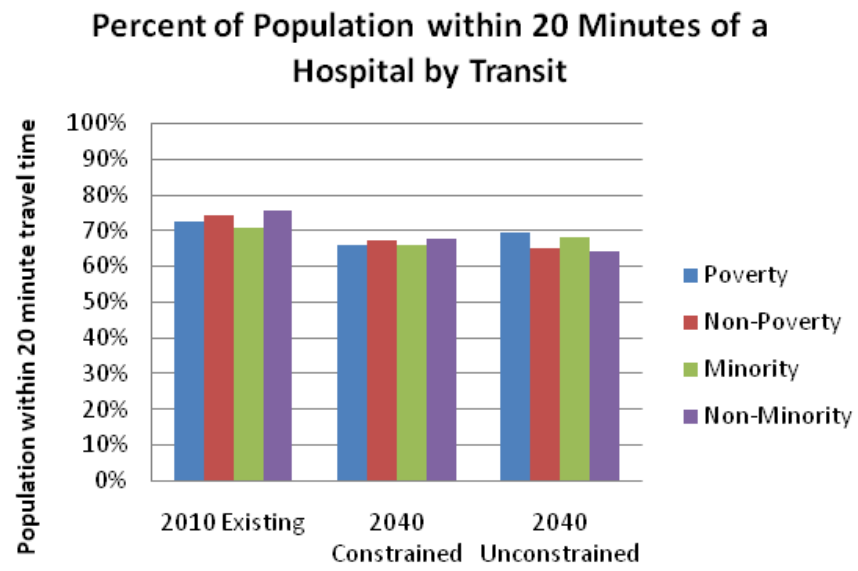

Figure II.45 Percent of Population within 20 Minutes of a Hospital by Transit

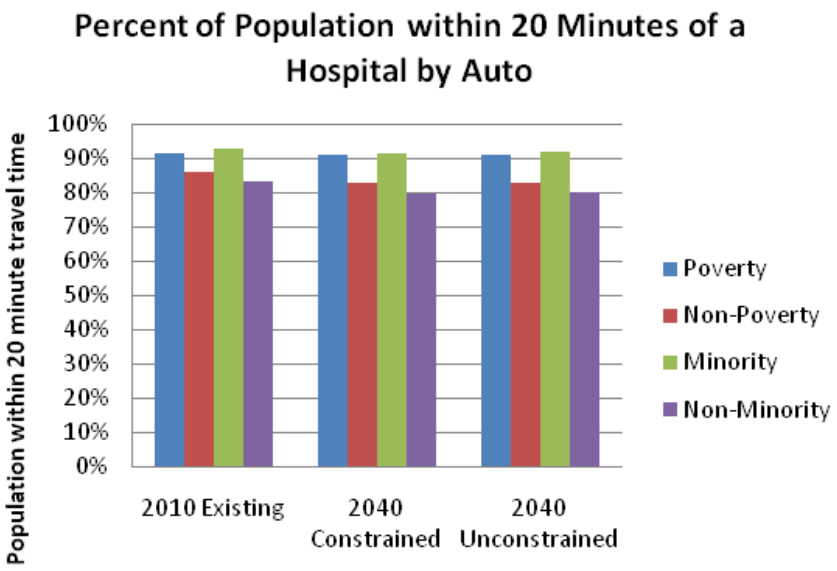

Figure II.46 Percent of Population within 20 Minutes of a Hospital by Auto

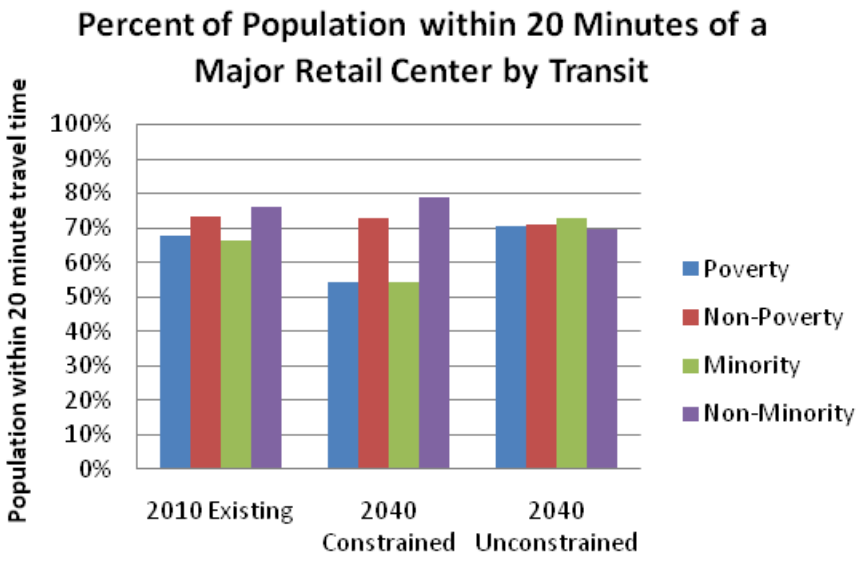

Figure II.47 Percent of Population within 20 Minutes of a Major Retail Center by Transit

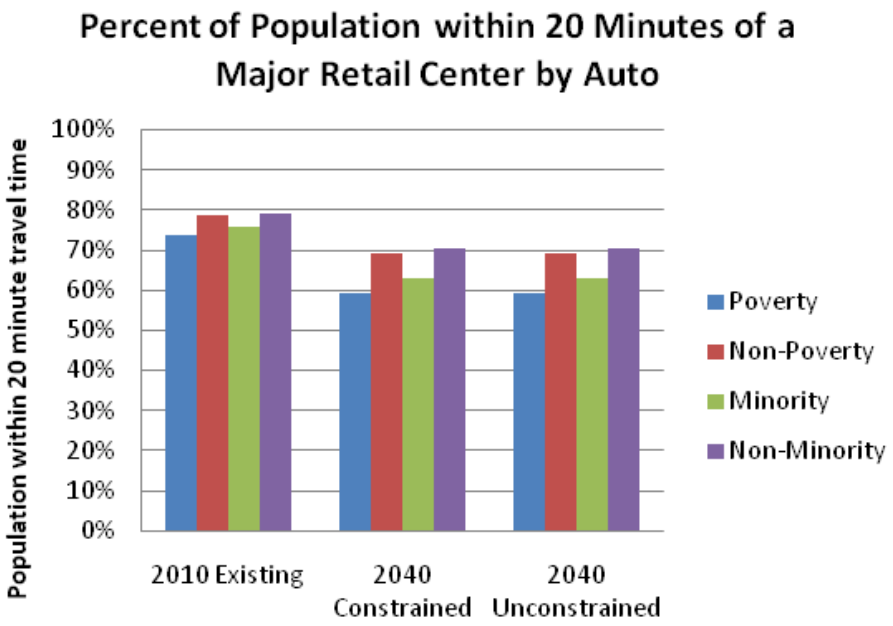

Figure II.48 Percent of Population within 20 Minutes of a Major Retail Center by Auto

Access to Livable Centers

Central to the 2040 Comprehensive Regional Plan is the idea that each town or city has at least one mixed-use, walkable center to serve as a central destination for both living and commerce.[4] Figures II.47 and II.48 show that in the two 2040 scenarios, both EJ and non-EJ communities will have excellent access to these "livable centers". This is not surprising, given that livable centers were selected for their central locations and accessibility.

However, the key assumption is that *all* of the identified areas will develop into livable centers by 2040. If this happens, then this measure shows great benefits for all of the region's residents. If this does not happen, then this measure shows nothing more than the proximity of EJ and non-EJ populations to points on a map. In other words, without the development of such centers, this measure will be meaningless. To ensure this does not happen, we will need to make a region-wide effort to develop key places into livable centers. If that happens, then clearly there will be benefits to EJ and non-EJ communities alike.

Average Travel Time Measures

Proximity to destinations is an important part of the analysis. Having a large number of jobs, or a hospital, or a major retail center close by is very convenient. However, proximity to destinations only tells part of the story. Another important measure to look at is how long it takes to make a trip. This section analyzes average trip times for different purposes to see what benefits or burdens the EJ populations may experience. Since most people would agree that spending less time in their car or on the bus is desirable, we assume that shorter trips are a benefit, while longer trip times are a burden.

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[4] *Since many of the areas identified as locations for livable centers do not yet exhibit the characteristics we have defined for livable centers, the 2010 Baseline Scenario is excluded from this analysis.*

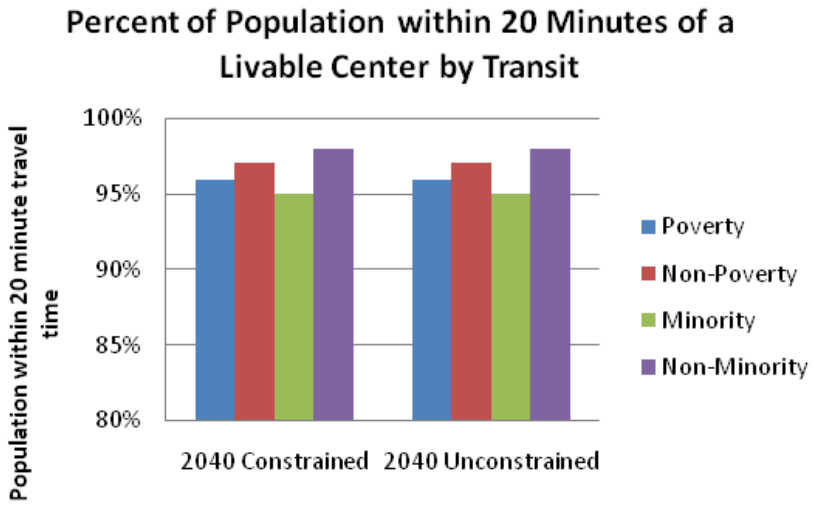


Figure II.49 Percent of Population within 20 Minutes of a Livable Center by Transit

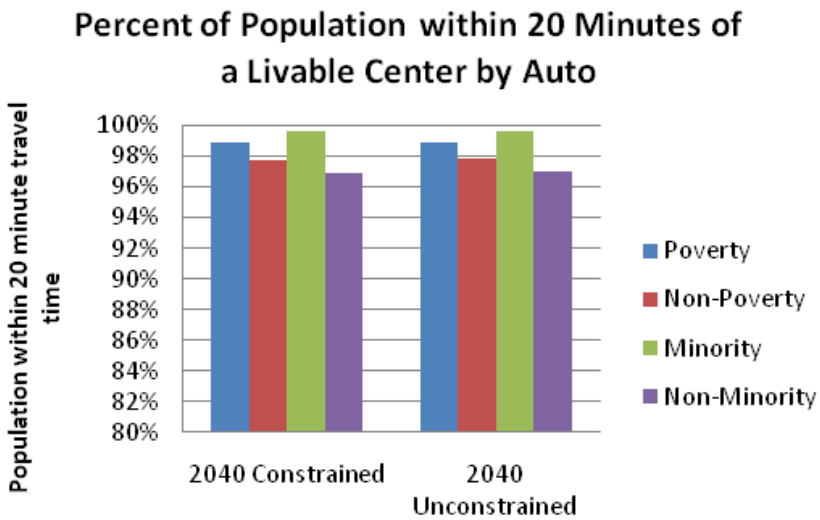


Figure II.50 Percent of Population within 20 Minutes of a Livable Center by Auto

Average Commute Trips

Commute trips are also called "mandatory trips", because people – those who want to stay employed – do not have a choice in whether or not to make them. Minimizing travel times for mandatory trips is therefore very important. Figure II.50 shows very slight differences in average transit travel times for the 2040 scenarios compared to the base year. The 2040-CP shows virtually no change, while 2040-UP shows declines in travel time for both EJ and non-EJ populations. With a projected 170,000 additional residents and 80,000 more jobs, we would expect travel times to rise. Since travel times are shown to be decreasing, these results appear favorable for all scenarios.

For auto trips, as seen in Figure II.51, we do see a rise in average travel time, with both the 2040-CP and 2040-UP scenarios showing an increase of about 33%, or 5-6 minutes, over the base year. The differences between EJ and non-EJ populations are almost non-existent, which shows this to be an equitable outcome for all residents; travel times are higher, but they are higher for everyone. Everyone will share this burden equitably.

Overall, average travel time by auto is less than average time by transit for every scenario. It would be better to see average travel times equal between public transit and auto travel, especially since low income populations have to rely more on (slower) public transit. However, the fact that average transit time is constant or declining in each of the 2040 scenarios is important, as transit riders will either experience a benefit in the form of time savings, or at worst no additional burdens.

Commuters on the South Shore train in Michigan City. Photo by Stephen Sostaric.

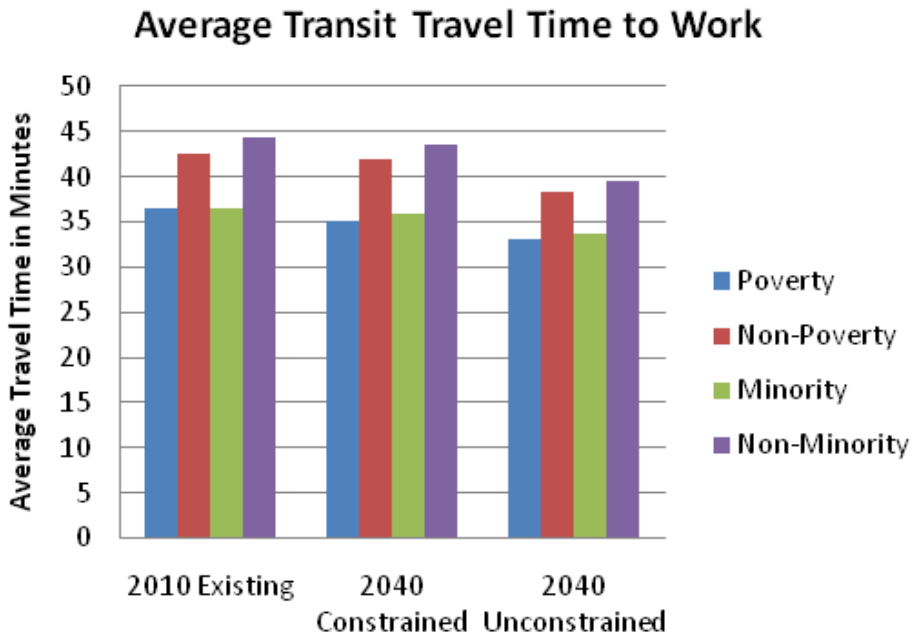


Figure II.51 Average Transit Travel Time for mandatory Purposes

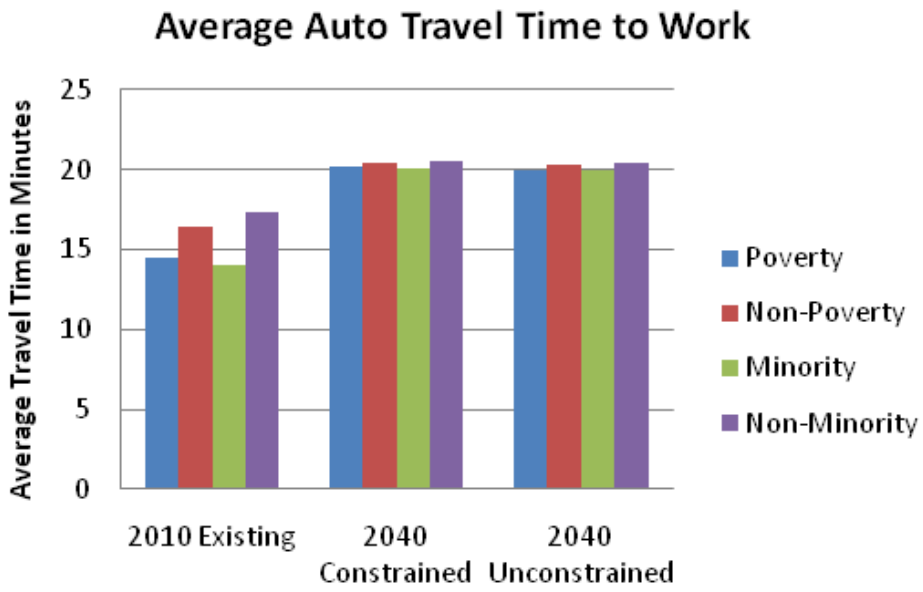


Figure II.52 Average Auto Travel Time for Mandatory Purposes

Average Travel Time for Shopping Trips

Figure II.52 shows that the 2040-CP Scenario has slightly reduced transit travel times for the EJ populations, while the 2040-UP scenario has slightly higher travel times compared to the base year. Figure II.53 shows that with respect to the 2010 Baseline Scenario, both of the CRP scenarios have reduced travel times for auto trips. However, given the projected increase in population and employment, these minor increases are not significant. This indicator shows slight benefits and no real burdens to the EJ population for either 2040 scenario.

Average Travel Time for Other Trips

Figures II.54 and II.55 show reduced travel times for EJ populations in both the 2040-CP and 2040-UP scenarios for all modes in comparison to the 2010 baseline scenario.

Transit travel times are reduced for all groups in both of the CRP scenarios. Interestingly, travel times by transit are reduced by a larger degree for non-EJ populations than for EJ populations for each of the 2040 scenarios. It could be argued that this shows an inequitable *benefit* for non-EJ populations in the two CRP scenarios. However, given that travel times are falling for all populations by a fair amount, this is viewed as a win-win situation, where everyone benefits.

Auto travel times are clear. Both the 2040 scenarios perform better than the 2010 baseline for all populations. This potentially benefits the EJ population.

Average Travel Time for All Trips

Figures II.56 and II.57 show that for both the 204-CP and 2040-UP, average travel times are reduced for EJ populations compared to the 2010 baseline scenario. This is true for both transit trips and automobile trips. The 2040-UP performs slightly better than the 2040-CP Scenario. This is likely due to the proposed Broadway Rapid Transit project. Clearly there are travel time benefits for the EJ populations for both 2040 CRP scenarios.

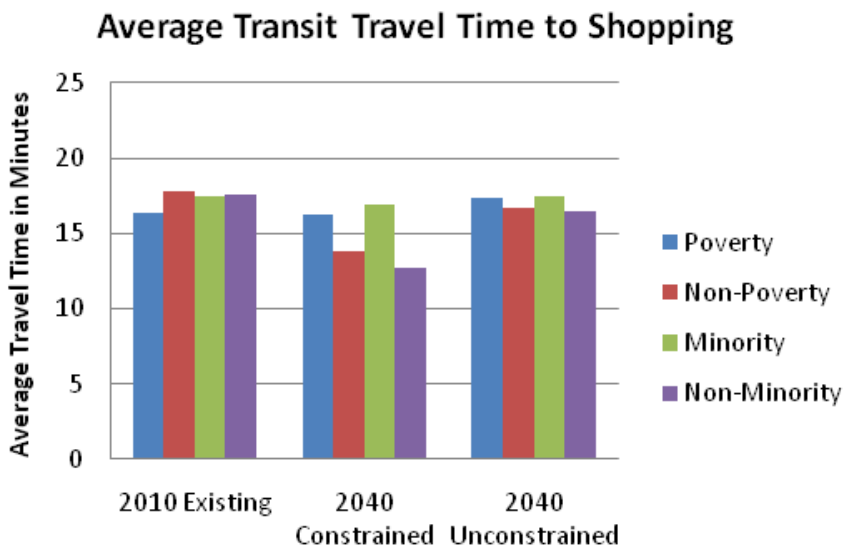


Figure II.53 Average Transit Travel Time for Shopping Purposes

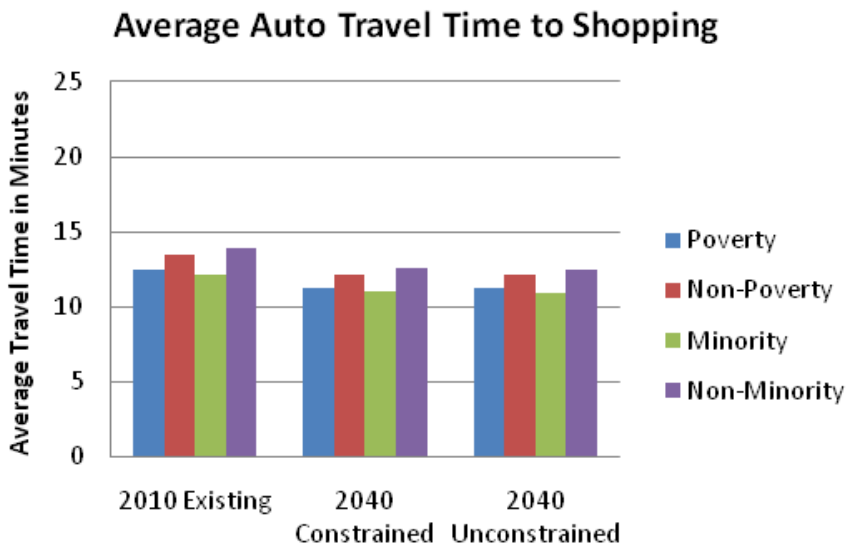


Figure II.54 Average Transit Travel Time for Shopping Purposes

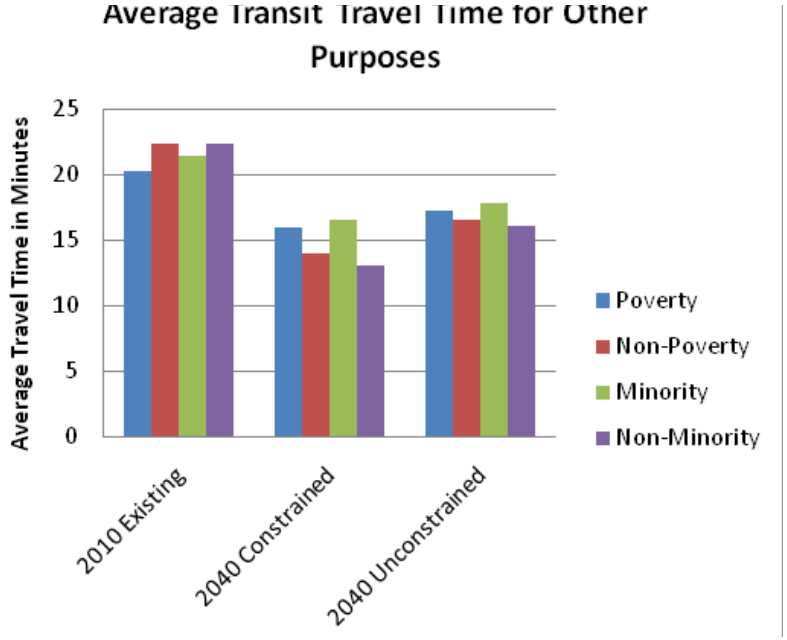


Figure II.55 Average Transit Travel time for Other Purposes

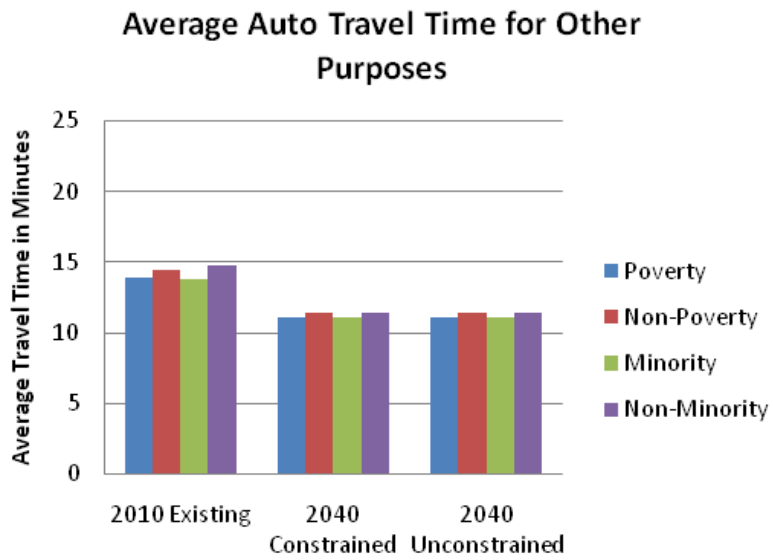


Figure II.56 Average Auto Travel time for Other Purposes

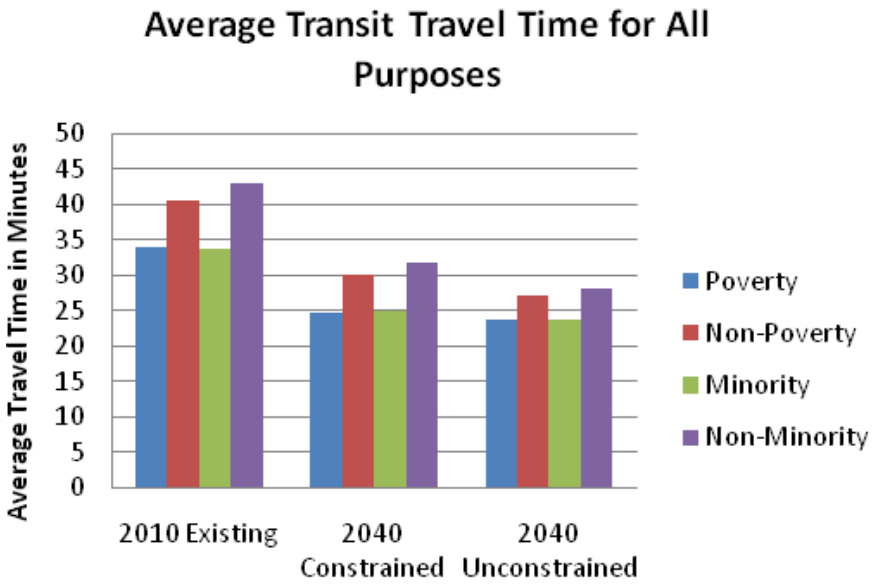


Figure II.57 Average Transit Travel time for All Purposes

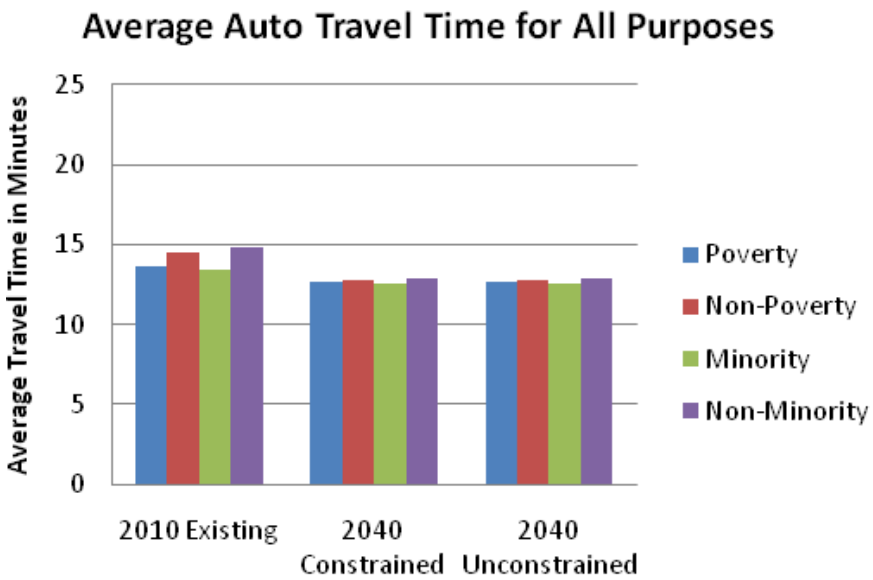


Figure II.58 Average Transit Travel time for Other Purposes

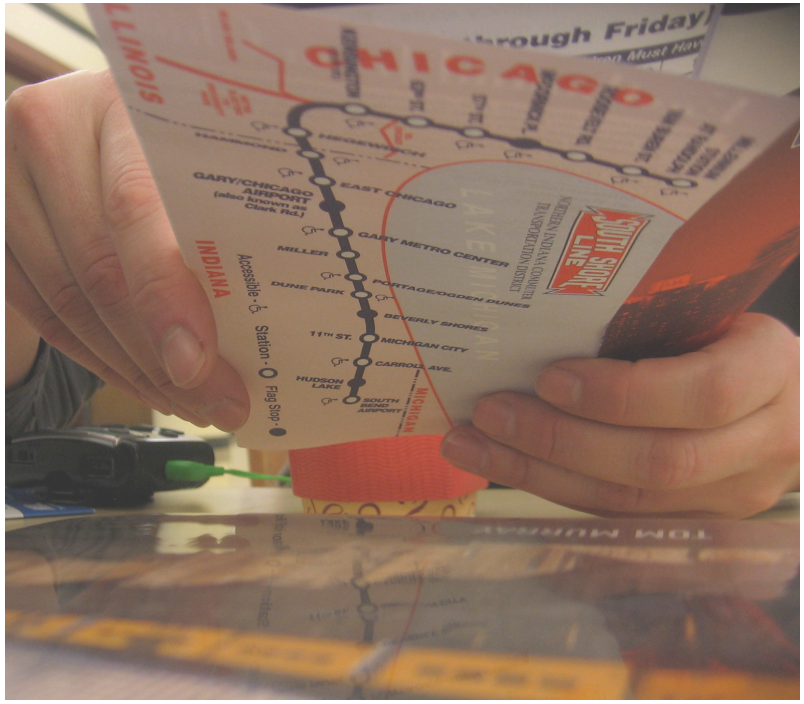
Conclusion

From the measures that were analyzed in this report, Environmental Justice communities appear to either benefit or will have no undue burdens placed upon them from either of the 2040 CRP scenarios. Again, one of the 2040 scenarios is fiscally constrained, which means that there is a reasonable expectation that the proposed expansion projects will be funded and implemented. The other is unconstrained, where additional expansion projects are proposed but no funding has been identified for their implementation. Both of these scenarios are limited in that very few projects were proposed by local governments or other entities, and therefore only a few are included in each scenario. Very few of the included projects will have any significant, transformative impacts on the region. To meet the goals and objectives of the CRP, we will have to raise the bar and identify and develop such significant projects in the future.

The Environmental Justice Analysis is based on assumptions for population and employment that are grounded in the Growth and Revitalization Vision for Northwest Indiana – the preferred scenario for the CRP. The Vision calls for the revitalization of the urban core, the development of "livable centers" throughout the region, and in general an end to sprawling land use patterns. This analysis is dependent on breaking with the status quo and implementing the recommendations of the CRP.

This Vision – of a more vibrant region with a thriving economy and well educated people, a revitalized region with renewed urban areas, an accessible region that connects people and opportunities, and a united region working together – was explicitly asked for by the participants in our process. The increased population and jobs envisioned over our thirty-year planning horizon places high expectations on our local communities to strive for and to reach these goals. It is achieving this vision that allows the benefits derived from stabilizing and strengthening our urban core that will allow the reinvestment that brings jobs, retail, and other measures closer to the low-income and minority populations, known as the "EJ communities".

Finally, this analysis is limited because it only focuses on transportation measures. On these terms, one can see that for most of the measures studied, EJ communities already have the benefits of proximity to destinations and shorter travel times than their non-EJ portions of the region. But, clearly, proximity to destinations and shorter travel times only tell part of the story. Access to jobs is only significant if people can get those jobs. Access to education is most useful if it gives people the skills and knowledge that are needed in the local economy. Access to major retail centers is only important if people have extra money to spend, above and beyond what is needed for buying necessities. This analysis does not go into these deeper issues. There are many other meaningful measures beyond transportation that would be useful to examine. Future analyses may be able to go deeper into these topics.



Passenger with South Shore schedule. Photo by Katherine from Chicago via Flickr.

View out of a South Shore car. Photo by Kendra via Flickr.

Transportation Improvement Program Guidance (TIP)

Background

Each year, Congress appropriates federal funds for surface transportation projects to two parts of the U.S. Department of Transportation. Highway-oriented funds are assigned to the U.S. Federal Highway Administration (FHWA) and public transit-related funds are appropriated to the U.S. Federal Transit Administration (FTA).

FHWA distributes its funds to each of the 50 states. The states, in turn, sub-allocate a portion of these funds to the Urbanized Areas[5] (UZAs) within the state. In Indiana, the Indiana Department of Transportation (INDOT) sub-allocates 25% of its total annual federal surface transportation highway funds to urbanized areas and other units of government in the state with surface transportation operations and maintenance responsibilities. The FTA allocates funds directly to urbanized areas.

In order to spend these federal funds, they must be assigned to individual projects and published in a Transportation Improvement Program (TIP) document. Northwest Indiana has two urbanized areas: Portions of Lake and Porter counties lie within the Chicago IL/IN urbanized area. Northwestern LaPorte County (and extreme northeastern Porter County) is within the Indiana portion of the Michigan City/LaPorte, IN/MI urbanized area. NIRPC develops a TIP that shows how these federal surface transportation funds are to be spent.

What is a Transportation Improvement Program?

A Transportation Improvement Program (TIP) is a short-term (four-year) list of federally funded surface transportation investment projects in a metropolitan planning area[6]. Surface transportation projects include those for public transit, local and state highways and bicycle/pedestrian projects. (The entire three-county area constitutes the metropolitan planning area.) A TIP will also include all regionally significant[7] surface transportation projects funded with or without federal funds. All projects contained in a TIP must be consistent with the current Regional Transportation Plan. Additionally, all capacity-increasing projects (such as added travel lane projects or regionally significant new roadways) must be specifically identified in both the long-range regional transportation plan and its accompanying Air Quality Conformity Determination. In summary, the TIP is the short-range program of projects derived from the long-range list of transportation improvements recommended in the transportation plan. Both the plan and TIP must conform to the State Implementation Plan for Air Quality.

Who Develops the TIP?

Regulations of the U.S. Department of Transportation require that Metropolitan Planning Organizations (MPOs), in cooperation with the state and affected transit operators, develop a transportation improvement program (TIP) for a designated metropolitan area. The Northwestern Indiana Regional Planning Commission (NIRPC) is the designated MPO for Northwest Indiana and is responsible for developing the TIP. There is an MPO in every metropolitan area of the country, including 14 in Indiana. Each MPO, however organized and governed, is responsible for developing a long-range plan and short-range program, which is a TIP.

[5] Areas of concentrated development with a population of 50,000 or more persons.

[6] A metropolitan planning area is the geographic area that is expected to become urbanized over a period of time.

[7] NIRPC has adopted a policy defining Regionally Significant transportation projects.

Stakeholder Involvement in TIP Development

Eligibility to Receive Federal Surface Transportation Funds. Most federal surface transportation funds identified in a TIP are for either state highway projects, local highway or bicycle/pedestrian projects undertaken by units of government with surface transportation operations and maintenance responsibilities and public transit operators. In some rare instances, when permitted by the federal funding program, there are projects for miscellaneous public entities (e.g., state universities, local school districts, park boards, etc.) or private sector interests.

Stakeholder Committees. For those federal funds that are assigned to the urbanized areas (either directly by FTA or indirectly by INDOT), the TIP development process is largely carried out by groups of stakeholder committees. Because our metropolitan planning area includes two urbanized areas (one with a population over 1,000,000 and the other with a population under 200,000), there are separate allocations of federal funds, and NIRPC maintains separate stakeholder committees and project selection systems for highways, transit, highway safety and Congestion Mitigation and Air Quality, or CMAQ. FHWA Transportation Enhancement (TE) funds are separately allocated to each urbanized area but are combined into a single pool of funds (there is a single stakeholder committee instead of two).

Membership on stakeholder committees is unrestricted and is open to any interested person. Notices of stakeholder meetings are posted on the NIRPC Website and e-mailed to transportation stakeholders. Each stakeholder-level committee reviews and reaches consensus upon the project selection criteria and relevant selection policies to be used in the selection process. Each stakeholder committee reviews results of its project solicitation process and recommends a list of projects to be selected for funding. Projects are selected competitively under each funding category.

INDOT maintains its own separate project development processes for those highway and transit funds that it sub-allocates to local projects.

Transportation Policy Committee. Stakeholder committees report to the Transportation Policy Committee (TPC). The general purpose of the Transportation Policy Committee (TPC) is to oversee the development of a multi-modal system of transportation in Lake, Porter and LaPorte counties. This is primarily done through TPC actions on regional transportation plans, transportation improvement programs, studies, analyses, planning work programs and other special programs. The TPC functions primarily as a technical committee – it hears recommendations from transportation stakeholder committees and makes recommendations for official action to the Commission or Executive Board.

Functions of the metropolitan area transportation planning process of particular interest to the TPC are:

- Identifying and analyzing transportation problems
- Developing and recommending solutions
- Fostering the development of projects, monitoring progress
- Allocating available federal funds
- Selecting and prioritizing projects of regional significance
- Coordination of activities and projects among local units of government within Northwest Indiana with adjacent areas and with state and federal agencies.

January sunset over the East Chicago train station. Photo by Ann Fisher.

Comprehensive Regional Plan (CRP) Impact on TIP Project Selection

The Comprehensive Regional Plan establishes one vision statement, 14 goal statements and 94 objectives. These were adopted by the Commission in December 2010 and are found in an appendix to the plan. Many, but not all, of the objectives offer specific guidance pertaining to the investment of U.S. Department of Transportation funds.

In the development of the solicitation package for capacity increasing projects under the Congestion Management Process (CMP), the CMP project selection process was developed around a core set of 30 indicators that measured the impact of each project in relation to the plan's 94 objectives. These 30 indicators (also called criteria elements) were divided into five broad thematic areas. Evaluation criteria were established for each. The same five thematic areas used in the CMP process (including the 30 indicators) served as the foundation for the new project selection criteria for the new TIP.

Mobility Improvements:	Six (6) Criteria Elements	(9 Points)
Transportation & Land Use:	Four (4) Criteria Elements	(6 Points)
Highway Safety:	Two (2) Criteria Elements	(3 Points)
Environmental:	Seven (7) Criteria Elements	(9 Points)
Quality of Life:	Eleven (11) Criteria Elements	(3 Points)

There is one key difference between the CMS process criteria and that to be used in the selection of new projects for the TIP – the CMS process involved use of a weighting mechanism that gave higher priority to some geographic areas over others. No similar prioritization was made during the TIP process. As of this writing, the only new projects being added to the TIP are under the Surface Transportation Program (STP) Group I program. That selection system was modified in early 2011 and used in the selection of new projects. The STP Group I project selection system will serve as a prototype for all future new project selection systems being developed.

General TIP Policies – TIP Updates: Content, Format, and Frequency

The 2007 U.S. DOT Transportation Planning regulations require that the metropolitan area TIP's be updated at least every four years. NIRPC will normally update its TIP every other year. TIP updates are always done in written form, exposed to public comment and acted on by the NIRPC Transportation Policy Committee and NIRPC Board. Each update will be prepared within a time frame that is consistent with INDOT's normal INSTIP development and approval cycle.

Incomplete projects from a prior TIP will be included in the updated TIP as appropriate and listed as an "ongoing" or "carryover" project in Year No. 1 of the new TIP. The purpose of this will be to maintain current TIP support for such projects in the event that additional funds need to be assigned to the project. Planning projects funded with formula (FHWA STP and FTA Section 5307) funds will appear in the TIP for informational purposes only. The controlling document for these projects is the Unified Planning Work Program (UPWP).

Funding targets will be developed and used within each category of federal funding. These targets are part of the stakeholder project selection processes. Available funds are divided into different categories of assistance. Funding targets are intended to be flexible tools for ensuring that all project selection processes reflect current needs. Stakeholder committees are required to review the funding targets for appropriateness prior to each solicitation for projects as a part of a TIP Update. Funding targets are intended to ensure that a variety of projects are selected within each federal funding category.

Investment priority is to be given to projects involving the preservation and maintenance of the existing transportation network. Nominally, this means *"at a level of funding greater than that provided for network expansion."* Functionally, at least 51% of the STP and Section 5307 funds programmed for new projects added to the TIP

(during each biennial update) must be for preservation and maintenance purposes.

Projects to be let or implemented prior to the next TIP Update will be programmed in the first two years of the new (updated) TIP. Project sponsors are expected to inform NIRPC of significant events, which may adversely affect progress toward letting or implementation.

TIP Update Procedures. Each TIP will encompass a four-year period – identifying projects that will receive federal funding over four Federal Fiscal Years. It is anticipated that all projects listed will be formally recognized as committed by the INDOT and the federal agencies (i.e., FHWA and FTA). However, stakeholder committees may recommend that certain projects be selected and placed on an "illustrative list" of projects that is separate from the official TIP. The NIRPC Board will determine the status of these projects (if any) in its resolution adopting the new TIP.

The general process to be followed in performing a TIP Update follows:

- *Stakeholder* Review/*Modification of Selection Systems.* The stakeholder committees will be responsible for reviewing and updating each existing project selection system prior to a TIP Update. The purpose of this effort is to ensure that the subject system remains consistent with the Regional Transportation Plan, federal requirements and local priorities.
- *Solicitation for Projects*. The Transportation Policy Committee (TPC) may review the Project Selection systems and authorize a solicitation for projects prior to a TIP Update. Alternatively, staff may issue the solicitation and inform the TPC afterward. A notice of the solicitation will be mailed (via U.S. Postal Service) to each eligible local unit of government.
- *NIRPC Staff Review of Applications.* NIRPC staff will review applications received for completeness and will communicate with the applicant, via e-mail, in instances where the application is incomplete and/or where the application submitted (including supporting documentation) does not appear to support the project. Applicants may supply the missing or supplemental information within a time frame made known in the solicitation document.
- *Financial Constraint.* Federal regulations require that Transportation Improvement Programs be financially constrained by year and include a financial plan that demonstrates:
    1. How the approved TIP can be implemented
    2. Resources from public and private sources that are reasonably expected to be made available to carry out the TIP
    3. Any additional financing strategies for needed projects and programs

NIRPC will consult with the public transit operators of record and INDOT in developing projections of available funds for a TIP Update. Federally funded projects included in the first year of the TIP shall not exceed the level of funding actually committed by FTA, FHWA and other federal agencies. Federally funded projects included in the second through fourth year of the TIP may not exceed levels of funding committed, or reasonably expected to be available.

Stakeholder Committee Review

Each stakeholder committee will review all project scores and rankings from their respective areas and recommend a (draft) program of projects to the Transportation Policy Committee.

In 2011 through 2013, staff will experiment with alternative ways of more actively engaging stakeholders in the review of applications and in the verification of project scores. At present, this duty is undertaken solely by staff.

NIRPC Approval of TIP

The Transportation Policy Committee (TPC) will reach be provided a draft version of the updated TIP (including the program of projects or "agreed-to" list) and release it for public comment. The TPC will afterward consider all public comments received, authorize a response to each

and then forward the draft TIP and public comments (and responses issued thereto) to the NIRPC Board with a recommendation that it be approved.

The Commission (or Executive Board) will take action to adopt the TIP

Alternatively, the TPC may decline or opt to not recommend the draft TIP to the NIRPC Board for adoption. The NIRPC Board may also decline or opt to not adopt the draft TIP pending the resolution of outstanding public comments or for other issues of substance.

TIP Revisions – Amendments and Administrative Modifications

TIP Amendments

TIP amendments are used to add new projects or project phases to the TIP, or to remove projects or project phases from the TIP. Amendments are also required for significant changes in the scope of a project occur, such as a change in the beginning or ending point of a road construction project or when a change in scope causes the project to become regionally significant. Requests for TIP Amendments must always be submitted to NIRPC in writing.

All TIP amendments will be submitted to the Indiana Interagency Consultation Group (ICG) for review at least seven calendar days prior to taking final action. The ICG will determine the status of each item in the amendment pursuant to the Federal Clean Air Act and its implementing regulations.

TIP amendments will be made in one of two ways:

1. *Standard Amendments.* Individual projects or the entire draft amendment will be posted on the NIRPC website as soon as practicable but not less than three weeks prior to the date of anticipated NIRPC Board action. Public comments received, along with responses issued, will be presented to the NIRPC Board during their consideration of an Amendment for adoption. All changes to Regionally Significant projects will be processed as standard amendments.

   Project sponsors and others requesting a standard TIP amendment must submit their request by the first working day of the month[8] in which the programming action is requested.
2. *Emergency Administrative (via letter):* NIRPC's Executive Director may make a TIP amendment via a letter to INDOT. These amendments will only be made for individual projects after the Executive Director, upon consultation with others, concludes that a delay in adding the project to the TIP through the standard process would either: 1) adversely affect public well-being or safety, or 2) result in the lapse or loss of federal funds to the region. This process may not be used to make changes to Regionally Significant projects.

TIP Administrative Modifications

Changes to non-Regionally Significant projects already in the TIP may be made by way of an administrative amendment (or modification). Changes in the year, federal funding type, level of funding (total or federal) and/or descriptive information will be made in this manner. Once these changes are made, NIRPC will inform INDOT and the project sponsor via e-mail.

These TIP Revision procedures are subject to modification by the Commission at any time.

Federal Funds Apportioned to Northwest Indiana – Restrictions and Conditions

FHWA-Controlled Funds – Quarterly Tracking System

NIRPC has implemented a quarterly progress tracking system for all FHWA-funded projects. This system was released in draft form in December 2010, field tested in January-February 2011, revised by

[8] The exception is during the months of November and December. The board meets only in early December. Requests are due Nov 15 for action to be taken at the December board meeting.

the STP Group I stakeholder committees in April 2011 and is being implemented in May 2011. The tracking system is intended to follow a project from the assignment of a DES number through fund obligation and letting to substantial completion.

Pre-Letting Reporting. The pre-letting reports are intended to provide us with a clear picture of where each project is on its pathway to construction or implementation. These reports will provide NIRPC with two key pieces of information: advance warning of changes in project costs and notification of, and reasons for, delays in project implementation.

Post-Letting Reporting. The post-letting reports are intended to obtain a measure of MPO fiscal control over project costs. These reports will permit us to monitor change orders and predict open-to-traffic dates for highway projects.

This system also identifies, for the first time, all information that project sponsors are required to provide NIRPC over the life of the project. This includes notifications regarding the selection of engineering firms, right-of-way costs and the assignment of Employees in Responsible Charge (ERC). NIRPC will conduct training sessions on the process as needed. NIRPC will involve representatives from INDOT's LaPorte District Office in this process. Regular reports will be provided to the TPC and NIRPC Board.

Lack of Progress Provisions. Following the receipt of reports for three consecutive calendar quarters, a report on the entire process will be made to project stakeholders, the TPC and NIRPC Board. The process may be amended at that point to improve the system and to consider implementing appropriate remedies for lack of progress.

Funding Adjustment Provisions. During a TIP Update, any applicant may request additional funds for projects. However, projects within 24 months of letting will receive funding priority for the new funds being programmed. Outside of a TIP Update process, applicants also may obtain supplemental funds for one project by "borrowing" funds from another project or NIRPC will remove funds from one project so that another may proceed to letting upon request.

Following lettings, the funds assigned to FHWA-funded projects will be adjusted to an amount that is 125% of the contract cost. This is intended to eliminate the need to secure additional federal funds following change orders and to discourage overspending.

Annual Listing of FHWA and FTA-Obligated Funds

Each year, NIRPC will publish a list of projects for which federal funds were obligated during the prior year. The intent of the list is to permit the public to know where federal surface transportation funds were expended. (An obligation event occurs when federal funds are reserved or assigned to a project in either the FHWA or FTA accounting system.)

General Restrictions on Use of Funds – STP Group 2

- Sponsors shall not apply for, nor will they be granted, STP funding for preliminary engineering or right-of-way services. For right-of-way costs for Land, Damages and Improvements (LD&I), sponsors may be allocated up to $200,000 in federal funds per project.
- No single project or phase of a project shall exceed 50% of the amount targeted for availability within the Roadway Preservation and Intersection Improvement project categories.
- All roadway-capacity expansion projects must be recommended for construction through the Congestion Management System (CMS) and be listed in the Regional Transportation Plan.[9]
- All STP-funded construction projects must generally include the provision of a sidewalk on at least one side of the roadway (unless the LPA submits "compelling" evidence that such are unnecessary).
- Whenever one project sponsor applies for funding to construct improvements to transportation facilities owned by another sponsor, the owner of the facility must authorize (in writing) submission of the application.

[9] A full description of the CMS process and qualifying list of expansion projects is found elsewhere in this document.

- STP Group I funds may not be programmed for pavement projects on INDOT-owned facilities. Other activities, however, are eligible.

General Restrictions on Use of Funds – STP Group

- LPAs may request STP funding for preliminary engineering and/or right-of-way acquisition.
- LPAs shall not apply for, nor will they be granted, STP funding for bridge projects or transportation enhancement activities.
- All STP-funded projects must be physically located within the UZA.
- All roadway-capacity expansion projects must be recommended for construction through the Congestion Management System (CMS) and be listed in the Regional Transportation Plan.
- All STP-funded construction projects must generally include the provision of a sidewalk on at least one side of the roadway (unless the LPA submits "compelling" evidence that such is unnecessary).

General Restrictions on Use of Funds – Congestion Mitigation/Air Quality (CMAQ)

Non-Attainment Area Status and Funding. The air quality in Lake, Porter, and LaPorte counties has improved. All three counties are currently designated as "maintenance" areas for ground-level ozone under the National Ambient Air Quality Standards (NAAQS). Additionally, the Lake-Porter County Area also is a maintenance area for particulate matter (PM 2.5). There are two maintenance areas (Lake-Porter, and LaPorte) and two allocations of CMAQ funds.

Eligible CMAQ Project Sponsors. Eligible sponsors of CMAQ-funded projects include units of general local government (i.e., counties, cities, towns and townships). Transit projects may be sponsored by only one of the following entities: Northern Indiana Commuter Transportation District (NICTD), Gary Public Transportation Corp. (GPTC), city of Michigan City and Northwestern Indiana Regional Planning Commission (NIRPC).

Eligible CMAQ Project Applicants. Eligible applicants include all of the above, plus any other legal entity or organization (for-profit or nonprofit) that enters into a written *cooperative agreement* with one of the Eligible Sponsors identified above. This includes governmental entities established by either a unit of local government or the state of Indiana (e.g., Soil and Water Conservation Districts, Conservancy Districts, Boards of Parks and Recreation, etc.) Project applicants who rely upon a project sponsor for their eligibility to apply for CMAQ funds must provide the sponsor with at least a 30-day notice of its (the applicant's) intent to abandon a CMAQ-funded project.

Project Selection System. The 2008 Lake-Porter Area CMAQ project selection system will be updated in 2011. The CMAQ project selection system for the LaPorte County Non-Attainment Area was developed in early 2007 and also will be updated in 2011.

General Restrictions on Use of Funds – FTA Sections 5307 and 5309 Rail Modernization

Chicago UZA Section 5307 – Movement of Funds among Funding Targets (Cascading Funds). If during stakeholder review of project applications submitted, targeted funds remain in any of the six priorities after initial selection of projects, these unprogrammed funds will be transferred into a reallocation pool. Funds placed into the reallocation pool will be applied to the highest priority categories first, beginning with Priority #2 (Preservation and Maintenance) and (if funds remain) proceeding downward toward Priority #5. No additional funds generally will be made available through this process for Priority #1 (Operating Subsidy) projects unless determined as necessary by the Transit Stakeholder Committee.

FTA Section 5309 Rail Modernization Funds. NIRPC's TIP will contain the entire list of commuter rail improvement projects that will be undertaken by the Northern Indiana Commuter Transportation District (NICTD) with these capital funds. The TIP may display projects that will be constructed in Cook County, Ill., and St. Joseph County, Ind.

NICTD is responsible for the utilization of Rail Modernization funds allocated to the Chicago UZA. NICTD is responsible for developing its own project selection criteria and utilizing same in selecting Rail Modernization projects.

Chicago UZA – 1% Transit Enhancement and 1% Safety/Security Funds. All reasonably expected Transit Enhancement and Safety/Security funds will be programmed during each TIP Update. This fact will be so noted within the text of the TIP Update document. The annual post-apportionment funding adjustment will accurately assign the required 2% of the apportionment to the grantees.

Michigan City/LaPorte UZA – Section 5307 Funding Priorities. Funds will be allocated for operating assistance in the same manner that they were allocated in prior years: Each operator will be allocated sufficient funds in order to receive a similar percentage reimbursement of their respective net operating expense.

The balance of the FTA Section 5307 funds will be allocated for FTA-eligible capital projects. Alternative funding sources will be sought to meet each system's capital needs.

FTA-Mandated Title VI Components. If previous Title VI deficiencies have been found by an FTA grantee or FTA, corrective actions to remedy such deficiencies will be incorporated into the TIP upon receipt of a written request issued by the grantee or FTA.

Special Procedures for NIRPC Transit Subrecipients under FTA Sections 5307, 5316, and 5317

As soon as practicable following the development of a draft list of projects that will use U.S. Federal Transit Administration (FTA) Section 5307, 5316 (Job Access/Reverse Commute) and/or 5317 (new Freedom) funds, NIRPC MPO staff will transmit a list of projects submitted by NIRPC sub-recipients to NIRPC's Executive Director and Subrecipient Oversight Program staff. Oversight Program staff are expected to communicate directly with subrecipient applicants if there are project management concerns regarding any project or projects. NIRPC Subrecipient Oversight Program staff will review the list and determine if NIRPC will (or will not) sponsor each project listed. Their written determination(s) will be provided to the MPO staff – who will remove projects from the list that NIRPC will not sponsor.

NIRPC Subrecipients are encouraged and expected to communicate at the earliest possible time (prior to the application submission deadline) with NIRPC Subrecipient Oversight staff to discuss the scope of any nontraditional Section 5307-funded projects. Preapproval of projects by NIRPC Subrecipient Oversight Department staff is required for all projects submitted by NIRPC subrecipients.

INDOT-Selected Projects

INDOT will select its own respective programs of projects using its own process or processes on an annual basis (or other time frame). INDOT will transmit (to NIRPC) a list of projects it has selected to be included in the TIP. All projects so listed will be included in the TIP, provided that all are then eligible for inclusion.

NIRPC will presume that any project that appeared on a prior list and is not on the then-current list has been completed (and therefore no longer in need of TIP support).

Projects selected by other INDOT Divisions, Sections or Offices (e.g., Public Transit, Rail, Toll Road, etc.) will be included after NIRPC is notified of their selection by INDOT.

Financial Capacity & Projections

Introduction

The development of reliable funding estimates is essential to the development of a realistic transportation plan that is consistent with the federal requirements for fiscal constraint. Funding for operating, maintaining and improving the transportation system is available from federal, state and local sources. In accordance with the provisions of 23 CFR §450.322, a metropolitan regional transportation plan must demonstrate how the transportation plan is to be implemented:

> "System-level estimates must be given of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain federal-aid highways.
>
> 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.
>
> Revenue/Cost estimates that support the transportation plan must use an inflation rate(s) to reflect "year of expenditure dollars."

Federal transportation funding from the U.S. Department of Transportation is derived primarily from federal taxes imposed on motor fuels. The state of Indiana derives transportation funding from a motor fuels tax, vehicle license, title and driver license fees, motor carrier surtax, tolls and state general sales and use tax. Local transportation funding is derived from a variety of sources including user fees and fares, local property and income taxes, vehicle registration fees, casino revenues and special-purpose bonds.

Routine maintenance of existing local highway infrastructure is typically funded with revenues from those state and local sources permitted by the Indiana General Assembly. These funds are considered to be marginally adequate for maintaining the local highway infrastructure in its current condition with funding for local highway reconstruction, rehabilitation and expansion historically provided from limited state and federal sources. The maintenance of designated interstate, national and state highways is the jurisdiction of the Indiana Department of Transportation (INDOT).

Annual local revenue for roadways is about $100.8 million per year for local units of government ($84.5 million for operations/maintenance and $16.3 million per year in federal aid) and $73.4 million for state projects. Annual transit expenses of $60.5 million are forecast. ***In total, about $234.7 million will be spent each year to maintain and operate the entire three-county transportation network, or about $6.6 billion over the life of the plan.***

NICTD maintenance. NIRPC photo.

Projected INDOT Investments for Highway Operations and Maintenance 2012-2040				
Fund	Four-Year Total	Average Per Year (Statewide)	Average Per Year (Region)	2012-2040 Total (Region)
Highway Operating				
Personal Services	$ 441,772,498	$ 110,443,125	$ 9,056,336	$ 253,577,414
Other Operating Expense	113,626,212	28,406,553	2,329,337	65,221,446
Highway Vehicle & Road Maintenance Equipment	30,600,000	7,650,000	627,300	17,564,400
Highway Maintenance Work Program	134,000,000	33,500,000	2,747,000	76,916,000
Subtotal Highway Operations & Maintenance	**$ 719,998,710**	**$ 179,999,678**	**$ 14,759,974**	**$ 413,279,260**

Table II.14 Projected INDOT Investments for Highway Operations and Maintenance 2012-2040

Projected INDOT Investments Highway Construction 2012-2040				
Fund	Four-Year Total (2012-2015)	Average Per Year (Statewide)	Average Per Year (Region)	2012-2040 Total (Region)
Highway Construction (State Funds)	1,993,088,124	498,272,031	11,735,152	328,584,242
Highway Construction (Federal Funds)	3,005,715,880	751,428,970	46,940,606	1,314,336,968
Subtotal Highway Construction	**$ 4,998,804,004**	**$ 1,249,701,001**	**$ 58,675,758**	**$ 1,642,921,210**

Table II.15 Projected INDOT Investments Highway Construction 2012-2040

State Sources of Revenue

Resources for operations and maintenance costs for the existing INDOT highway network were most recently quantified in their new 2012-2014 Statewide Transportation Improvement Program (STIP). The Indiana General Assembly appropriates funds into four expense categories for routine operations and maintenance in the state's biennial budget. Budgeted expenses for this four-year period and an annual average are shown following:

The portions of INDOT's operations and maintenance expense attributable to Northwest Indiana are estimated. These estimates are based on the percentage of INDOT system miles that are located in Lake, Porter, and LaPorte counties. Our most recent data (from 2005) indicates that about 8.2% of all INDOT road miles are within the region.

Actual projected highway construction and reconstruction project costs for the period 2012-2015 were used to project INDOT investments in the region between 2012 and 2040.

Local Sources of Revenue – Highways

Routine maintenance, operations and improvements of existing local road and highway infrastructure is typically funded with revenues from local sources. Under Indiana law, the following accounts serve as the basic local sources of revenue for highway, road and street work:

- Motor Vehicle Highway Account
- Local Road and Street Account
- Cumulative Capital Improvement Funds
- Cumulative Capital Development Funds
- Cumulative Bridge Funds

For the purpose of the 2040 Plan, the sources of revenue and cost estimates were derived from the 2009 Indiana State Board of Accounts Audit Reports. This included information from the Cities and Towns Summary of revenues, distributions and expenses. The revenues for the period 2012-2040 have been flat-lined. The principal source of funds for local road and street construction and maintenance operations comes from the Motor Vehicle Highway (MVH) and Local Road and Street (LRS) Accounts.

Motor Vehicle Highway (MVH)
This accounts for the construction and maintenance of streets, alleys and the operations of street maintenance activities of the public works department. Resources are derived from state motor vehicle (gasoline tax) distributions. It also includes the purchase of materials, labor and/or equipment required in the maintenance and construction of roads and bridges.

Local Road and Street (LRS)
This accounts for the operation and maintenance of the local and county road and street systems. Resources are derived from state gasoline tax distributions. These funds are used for engineering, construction or reconstruction of roads, streets or bridges.

Cumulative Capital Improvement Funds (CCI)
The money from this fund may be used for road construction or improvement, acquisition of land or right-of-way for streets, roads, alleys, sidewalks, thoroughfares and maintenance. This fund is collected from the state cigarette tax.

Cumulative Capital Development Funds (CCD)
This fund provides money for any purpose for which property taxes may be imposed.

Cumulative Bridge Fund
This source of revenue provides funds for the cost of construction, maintenance and repair of county highway bridges, approaches and grade separations. County commissioners may levy a tax in compliance with IC 6-1.1-41 in assessed valuation of all taxable personal and real property within the county.

Expense Transfers from General Fund and Other Sources
Indiana law requires all funds to be balanced at the end of the year. When over-spending has occurred in one or more accounts, a transfer of funds from another account is made so that the account will balance (i.e., expenses will equal revenues).

Local Financial Summary. The data shows that there is about $84.5 million in revenue each year versus $78.2 million in expenses. For the period of the plan (2012-2040), we project revenue approaching $2.4 billion and expenses of $2.2 billion. From this, we can only conclude that there likely will be marginally sufficient local financial resources to maintain the current rate of expenditure.

This source data does not disclose the pieces of work that performed to bring the entire local highway network to a state of good repair. Based upon a number of reports received regarding highway work conducted in calendar year 2010 and anecdotal information received since, we believe that for the region as a whole, about 18% of the total funds expended on local highway maintenance and operations were expended on preventative maintenance work beyond hole patching, crack sealing and other similar low-cost maintenance methods. In other words, about $15.2 million (of $78.2 million) was being expended each year on local, non-federal aid construction projects. We projected this same annual rate of expenditure for the life of the plan (28 years, from 2012-2040) and concluded that, excluding separately funded federal aid system reconstruction projects, existing resources would be sufficient to mill and resurface only about half of the region's 5,145 miles of locally owned roadways. With no additional sources of revenue, it will take at least 50 years to mill and resurface all of the region's roads. It will likely take even longer because the increasing price of hot mixed asphalt (brought about by increases in the per-barrel cost of crude oil) directly translates into fewer dollars that can be spent on road maintenance.

Our revenue data does not include sources such as improvements in highway infrastructure made by municipal water and sewer agencies, improvements made with federal funds from either the U.S. Department of Housing and Urban Development (HUD), the U.S. Department of Transportation, U.S. Economic Development Administration (EDA), local Tax Increment Finance (TIF) Districts or other governmental bonding entities.

Table II.15 Highway Operations and Maintenance: Baseline Annual Financial Data by Fund for Counties and Municipalities

Highway Operations and Maintenance: Baseline Annual Financial Data by Fund for Counties and Municipalities

Base Year: 2009

	MVH (Highway)		LRS		CCI		CCD		Cum Bridge		Expense
(For 2009)	Receipt	Disbursement	Receipt	Disbursement	Receipt	Disbursement	Receipt	Disbursement	Receipt	Disbursement	Transfers
Lake County	$ 4,993,392	$ 4,836,449	$ 738,368	$ 1,039,027	$ -	$ -	$ 925,790	$ 3,062,282	$ 1,167,278	$ 2,812,369	$ 3,925,299
Cedar Lake	281,386	255,710	119,664	130,913	81,542	85,225	209,157	80,198	-	-	-
Crown Point	881,351	1,013,576	278,709	267,499	99,392	1,000,000	-	-	-	-	1,021,623
Dyer	441,140	542,012	145,254	155,653	43,530	50,000	316,558	478,115	-	-	279,298
East Chicago	881,351	1,013,576	278,709	267,499	99,392	1,000,000	-	-	-	-	1,021,623
Gary	2,942,295	3,045,732	962,830	1,533,637	315,054	353,498	673,569	624,729	-	-	1,327,260
Griffith	962,303	1,000,720	211,964	80,935	60,542	57,731	-	-	-	-	-
Hammond	2,271,054	3,757,516	734,308	859,939	254,653	-	364,201	582,019	-	-	1,575,258
Highland	658,547	870,409	254,558	284,301	73,492	-	418,985	460,355	-	-	207,978
Hobart	1,446,703	1,334,217	501,860	83,194	359,393	148,288	269,960	583,019	-	-	-
Lake Station	709,670	718,679	244,273	191,305	42,769	459	-	-	-	-	-
Lowell	892,626	930,463	630,150	491,356	23,013	-	49,961	10,354	-	-	-
Merrillville	932,489	917,077	338,980	381,183	93,707	143,710	384,482	290,455	-	-	-
Munster	2,959,031	2,988,052	312,315	360,000	72,341	42,398	231,482	282,617	-	-	97,898
New Chicago	57,218	59,237	23,134	11,334	6,326	2,195	-	-	-	-	-
St. John	784,527	895,549	129,913	174,103	12,639	53,808	158,511	107,600	-	-	145,470
Schererville	1,103,876	1,191,334	219,252	491,866	37,473	75,243	656,751	566,626	-	-	307,717
Schneider	-	-	-	-	-	-	-	-	-	-	-
Whiting	291,601	349,161	145,181	283,020	19,313	42,168	63,995	118,372	-	-	-
Winfield	251,458	240,184	66,407	71,265	11,928	6,327	61,581	139,273	-	-	65,675
Total	$23,742,018	$25,959,653	$ 6,335,829	$ 7,158,029	$ 1,706,499	$ 3,061,050	$ 4,784,983	$ 7,386,014	$ 1,167,278	$ 2,812,369	$ 9,975,099
Porter County	$ 3,381,062	$ 3,752,218	$ 929,381	$ 1,000,587	$ -	$ -	$ 2,887,637	$ 970,417	$ 1,907,572	$ 1,800,279	$ -
Beverly Shores	94,115	95,716	22,157	27,585	2,575	-	-	-	-	-	4,454
Burns Harbor	86,624	90,041	12,792	10,000	3,151	-	34,179	68,272	-	-	31,567
Chesterton	1,239,222	1,204,054	120,361	124,917	32,160	-	159,679	282,578	-	-	60,127
Dune Acres	16,969	8,796	5,678	4,636	653	678	15,998	9,725	-	-	-
Hebron	99,018	80,304	35,337	44,001	11,027	7,677	35,061	23,268	-	-	-
Kouts	60,786	97,895	21,276	35,994	5,206	1,063	26,261	-	-	-	21,423
Ogden Dunes	158,307	203,841	14,850	30,249	4,026	-	28,233	8,992	-	-	37,666
Portage	3,569,358	3,428,186	568,025	488,695	652,710	1,150,000	523,768	404,988	-	-	158,008
Porter	969,418	601,809	85,609	33,710	15,246	-	71,274	27,174	-	-	-
Town of Pines	40,853	25,811	16,397	-	2,447	-	-	-	-	-	-
Valparaiso	2,636,740	1,743,632	291,521	385,710	284,103	63,479	485,094	339,742	-	-	-
Total	$12,352,472	$11,332,303	$ 2,123,384	$ 2,186,084	$ 1,013,304	$ 1,222,897	$ 4,267,184	$ 2,135,156	$ 1,907,572	$ 1,800,279	$ 313,245
LaPorte County	$ 3,395,259	$ 3,958,691	$ 716,775	$ 805,434	$ -	$ -	$ 874,384	$ 630,854	$ 1,614,289	$ 2,802,297	$ 1,596,569
Kingsbury	6,372	-	2,669	1,920	702	588	-	-	-	-	-
Kingsford Heig	40,495	36,967	17,091	-	4,531	-	4,712	-	-	-	-
La Crosse	15,553	15,466	6,206	2,456	1,721	-	1,886	20,281	-	-	12,837
LaPorte	703,717	709,315	201,973	174,250	66,297	15,963	298,074	130,944	-	-	-
Long Beach	45,186	47,236	17,931	-	4,781	-	-	-	-	-	-
Michiana Shor	25,895	30,541	7,502	-	-	-	-	-	-	-	-
Michigan City	949,704	1,400,816	273,182	300,995	100,882	44,169	514,381	388,433	-	-	-
Pottawattamie Park	11,495	21,739	3,201	887	-	-	-	-	-	-	7,930
Trail Creek	106,743	116,571	21,914	18,967	7,040	-	19,723	-	-	-	-
Wanatah	138,295	116,887	11,144	733	3,106	-	8,634	200	-	-	-
Westville	143,654	145,143	43,587	8,323	16,946	15,000	18,521	-	-	-	-
Total	$ 5,582,368	$ 6,599,372	$ 1,323,175	$ 1,313,965	$ 206,006	$ 75,720	$ 1,740,315	$ 1,170,712	$ 1,614,289	$ 2,802,297	$ 1,617,336

REVENUES

	MVH	LRS	CCI	CCD	Cum Bridge	Other	Total Revenues	Expense Transfers	Adjusted Total Revenues	Estimated 2040 Revenue Projection
Lake	$23,742,018	$ 6,335,829	$ 1,706,499	$ 4,784,983	$ 1,167,278	$ 1,993,850	$ 39,730,457	$ 9,975,099	$ 49,705,556	$ 1,391,755,568
Porter	12,352,472	2,123,384	1,013,304	4,267,184	1,907,572	-	21,663,916	313,245	21,977,161	615,360,508
Laporte	5,582,368	1,323,175	206,006	1,740,315	1,614,289	771,528	11,237,681	1,617,336	12,855,017	359,940,476
TOTAL	$41,676,858	$ 9,782,388	$ 2,925,809	$10,792,482	$ 4,689,139	$ 2,765,378	**$ 72,632,054**	**$ 11,905,680**	**$ 84,537,734**	**$ 2,367,056,552**

COSTS (EXPENSE)

	MVH	LRS	CCI	CCD	Cum Bridge	Other	Total Costs (Expense)	Expense Transfers	Estimated 2040 Costs (Expense) Projection
Lake	$25,959,653	$ 7,158,029	$ 3,061,050	$ 7,386,014	$ 2,812,369	$ 932,029	$ 47,309,144	$ -	$ 1,324,656,032
Porter	11,332,303	2,186,084	1,222,897	2,135,156	1,800,279	-	18,676,719	-	522,948,132
Laporte	6,599,372	1,313,965	75,720	1,170,712	2,802,297	222,534	12,184,600	-	341,168,800
TOTAL	$43,891,328	$10,658,078	$ 4,359,667	$10,691,882	$ 7,414,945	$ 1,154,563	**$ 78,170,463**	**$ -**	**$ 2,188,772,964**

Sources of Revenue – Public Transit

Public transit in Indiana is financed through a variety of funding mechanisms that varies in accordance with the transit operator's organizational structure. Northwest Indiana has five municipal transit operators that are departments of a unit of government, one that is organized under Indiana's Public Transportation Corporation statute, one that is operated by a Regional Transportation Authority, three that are nonprofit corporations and one commuter rail operator. Each is governed under a different set of rules. The following table is a summary of projected public transit revenue in Northwest Indiana.

Public transit is financed, in general, through a combination of multiple sources of funding – some of which subsidizes the service itself and some of which subsidizes the service user. A broader discussion of the current state of public transit funding is discussed at length elsewhere in this plan.

Reasonably Expected Federal Aid for Local Projects

NIRPC anticipates that funding in all federal aid categories will be flat-lined for the foreseeable future. Amounts shown are reflected in "Year of Expenditure" amounts.

Transit Operating and Capital Expenses 2012-2040

Transit Operator	Base Operating Expenses (2009)	Projected Annual Capital Expense	Projected Annual Total Expense	Life of Plan Cost Estimate
East Chicago	$ 1,247,012	$ 124,701	$ 1,371,713	$ 38,407,970
Gary PTC	7,823,617	782,362	8,605,979	240,967,404
RBA/Hammond	2,212,459	221,246	2,433,705	68,143,737
LaPorte	524,897	52,490	577,387	16,166,828
Michigan City	1,421,018	142,102	1,563,120	43,767,354
NIRPC*	1,996,379	199,638	2,196,017	61,488,473
Valparaiso	1,299,794	129,979	1,429,773	40,033,655
RBA Commuter	350,000	35,000	385,000	10,780,000
Subtotal Bus	**$ 16,875,176**	**$ 1,687,518**	**$ 18,562,694**	**$ 519,755,421**
NICTD Rail	38,169,706	3,816,971	41,986,677	1,175,626,945
Total	**$ 55,044,882**	**$ 5,504,488**	**$ 60,549,370**	**$ 1,695,382,366**

** Includes Opportunity Enterprises, South Lake Community Services, North Township Trustee, and Porter County Aging & Community Services*

Table II.16 Transit Operating and Capital Expenses 2012-2040

We anticipate that approximately $48 million in federal aid will be received under 11 types of federal aid from the U.S. Department of Transportation. The total funding anticipated over the life of the plan is about $1.4 billion. Of this total, we project that about 76% ($1.06 billion) will be used for reconstruction, preservation and maintenance activities and that the balance of $340 million (24%) will be used for capacity expansion projects.

The table at right shows the projected distribution of anticipated federal funding by category.

MPO-Controlled Federal Funds: U.S. Federal Highway Administration (FHWA)

Surface Transportation Program (STP) Group I and Equity Bonus (EB) Funds

STP and EB funds are apportioned to states by a formula embedded in federal law by Congress. This formula also allocates funds to each state's urbanized areas. States and their large urban ar-

Financial Projections FFY 2012-2040: MPO-Controlled Federal Funds							
	Apportioned Federal Funds			Total Federal Funds in Plan		P&M	Expansion
Source of Funds	Rollover Projects (Funds Already Committed)	Annual New Funds ($$$$)	New Funds (Years)	New Funds Projected Total (through 2040)	Grand Total (Including Rollover)	Total	Total
Highways							
FHWA STP Group I	$ 19,997,741	$ 13,686,912	2016-2040	$ 342,172,800	$ 362,170,541	$ 239,520,960	$ 122,649,581
FHWA STP Group II	2,236,891	1,507,623	2011-2040	45,228,690	47,465,581	23,066,632	24,398,949
HSIP Large Urban	7,980,415	1,362,181	2016-2040	34,054,525	42,034,940	42,034,940	-
HSIP Small Urban	527,424	163,137	2011-2040	4,894,110	5,421,534	5,421,534	-
Subtotal	$ 30,742,471	$ 16,719,853		**$ 426,350,125**	**$ 457,092,596**	**$ 310,044,066**	**$ 147,048,530**
Transit							
FTA Sec 5307/5340 Large Urban		$ 10,550,771	2011-2040	$ 316,523,130	$ 316,523,130	$ 310,192,667	$ 6,330,463
FTA Sec 5307/5340 Small Urban		885,785	2011-2040	26,573,550	26,573,550	26,573,550	-
FTA Sec 5309 Rail Modernization*		11,998,041	2011-2040	359,941,230	359,941,230	359,941,230	-
FTA Sec 5316 JARC		326,563	2011-2040	9,796,890	9,796,890	-	9,796,890
FTA Sec 5317 New Freedom		3,266,653	2011-2040	97,999,590	97,999,590	-	97,999,590
Subtotal		$ 27,027,813		**$ 810,834,390**	**$ 810,834,390**	**$ 696,707,447**	**$ 114,126,943**
CMAQ							
CMAQ: Lake/Porter Counties	$ 3,895,000	$ 3,630,758	2011-2040	$ 108,922,740	$ 112,817,740	101,535,966	11,281,774
CMAQ: LaPorte County	-	622,810	2011-2040	18,684,300	18,684,300	16,815,870	1,868,430
Subtotal	$ 3,895,000	$ 4,253,568		**$ 127,607,040**	**$ 131,502,040**	**$ 118,351,836**	**$ 13,150,204**
Total Locally Allocated	**$ 34,637,471**	**$ 48,001,234**		**$ 1,364,791,555**	**$ 1,399,429,026**	**$ 1,125,103,349**	**$ 274,325,677**

** Includes Funds Apportioned to the South Bend Urbanized Area*

Table II.17 Financial Projections FFY 2012-2040: MPO Controlled Federal Funds

eas receive both STP and Equity Bonus funds. (Equity Bonus funds supplement the STP funds and are apportioned to states that historically have generated more motor fuel tax funds for the Federal Highway Trust Fund than other states.)

Portions of Lake and Porter counties lie within the Chicago Urbanized Area, which is the third most populous urbanized area in the nation. We anticipate approximately $13.7 million in STP Group I funds per year over the life of the plan – or a total of $342.2 million.

Surface Transportation Program (STP) Group II

STP funds are also allocated by INDOT to the Michigan City/LaPorte Urbanized Area. The population of this urbanized area is only about 65,000, so no Equity Bonus funds are assigned. We anticipate receiving about $1.5 million per year over the life of the Plan for a total of $45.2 million.

Congestion Mitigation/Air Quality (CMAQ) Program

Congestion Mitigation and Air Quality (CMAQ) funds provide a flexible funding source to state and local transportation agencies for transportation projects and programs that contribute to improved air quality. Eligible activities include traffic signal, signal interconnect, intersection improvements and other direct traffic congestion relief projects, new public transit services, alternative fuels, bicycle and pedestrian facilities and diesel retrofit and repower projects.

CMAQ funding only is available for use in areas that are identified as nonattainment for failing to achieve the National Ambient Air Quality Standards (NAAQS), as well as former nonattainment areas that are now in compliance (maintenance areas). Currently, all three counties within our metropolitan planning area are classified as maintenance areas.

INDOT makes separate allocations of CMAQ funds to each urbanized area. We anticipate CMAQ apportionments of about $3.6 million per year in the Lake-Porter County Maintenance Area, and about $0.62 million per year in LaPorte County. Over the life of the plan, we anticipate new funding of about $109 million in the Lake-Porter Area and $19 million in LaPorte County.

Highway Safety Improvement Program (HSIP)

This program provides federal funds on an annual basis for highway safety-related projects. Fundable projects are those that are likely to reduce vehicle crashes. The Lake-Porter County area is allocated about $1.4 million per year and LaPorte County receives about $0.16 million per year. We anticipate that, over the life of the plan, new HSIP funding for Lake and Porter counties to be about $34 million and $4.9 million for LaPorte County.

STP Transportation Enhancement (TE)

Congress mandates that 10% of Indiana's statewide STP allocation be expended on transportation "enhancement activities." These activities encompass a broad range, including bicycle/pedestrian recreational trails, streetscaping projects, historic preservation and similar projects. Since its inception in 1991, transportation enhancement projects were selected competitively by INDOT. This changed in 2008 – these projects are now selected by the MPOs, although INDOT still does approve each project for eligibility.

Northwest Indiana is allocated about $2.1 million per year in Transportation Enhancement funds. At this rate of apportionment, the three counties should expect a total of $58.8 million in federal TE funds over the life of the plan.

INDOT-Controlled Federal Funds: U.S. Federal Highway Administration (FHWA)

Interstate Maintenance

The State of Indiana has about 135 miles of Interstate highways located in the three-county metropolitan planning area. INDOT anticipates spending an average of $10.3 million per year in Interstate Maintenance funds over the four-year period beginning in 2012. We would anticipate that INDOT would invest a similar amount per year over the life of the plan with a total investment of $283 million.

National Highway System (NHS)

In addition to 135 miles of Interstate highway, there are 103 miles of other expressways and principle arterial highways that comprise the NHS in Northwest Indiana. INDOT anticipates spending an average of $14.9 million per year in NHS funds over the four-year period beginning in 2012. Based upon this current spending, we anticipate that INDOT will invest a similar amount per year over the life of the plan with a total investment of $419 million.

Surface Transportation Program (STP) & Equity Bonus (EB)

STP/Equity Bonus funds provide states and local agencies with flexible funding that may be used for projects on any federal-aid highway facility, including the NHS. As noted earlier, INDOT allocates some STP funds to Indiana's urbanized areas for use on local projects. It utilizes the balance for its own projects. A wide variety of projects are eligible for STP funding, but INDOT uses these funds primarily for roadway maintenance, bridge rehabilitation and replacement and safety improvement projects. INDOT anticipates spending an average of $4.1 million per year in STP funds within the three-county area over the four-year period beginning in 2012. Based upon this current spending, we anticipate it will expend about $115 million in State STP funds over the life of the plan.

INDOT-Selected Local STP Projects

STP Group III funds are apportioned for use in all incorporated areas in Indiana with a population between 5,000 and 49,999. STP Group III funds are not available to cities and towns in the STP Group I and II fund categories (i.e., those within the urbanized areas). STP Group III funds are administered by INDOT and made available to

qualifying municipalities on a competitive basis. In Northwest Indiana, only the towns of Lowell and Westville qualify for STP Group III funding.

STP Group IV funds are apportioned for projects in areas where the population does not exceed 5,000 or in unincorporated areas. STP Group IV projects are competitively selected (like those under the Group III program) by INDOT. In Northwest Indiana, Lake County, LaPorte County and Porter County are eligible for STP Group IV funds in addition to incorporated rural communities of Hebron, Kingsbury, Kingsford Heights, Kouts, LaCrosse, Schneider and Wanatah. During the period of 2008 through 2011, INDOT selected only one Group III and no Group IV projects for funding in Northwest Indiana. For this reason, we do not project that there will be any significant sum of money allocated to these types of projects on an ongoing basis.

Bridge (BR) Funds

For 2007-2010, the three counties in Northwest Indiana have been relatively successful in receiving INDOT-allocated bridge funds – funding for five projects has been approved. The total amount of federal funds approved was $8.2 million. We do anticipate that this assistance will continue to be available and project that about $0.95 million per year will be received over the life of the plan, resulting in the investment of about $26.6 million for bridges.

MPO-Controlled Federal Funds: U.S. Federal Transit Administration (FTA)

Urban Area Formula Grants – Sections 5307/5340 Growing States

The FTA Section 5307/5340 formula grant program provides subsidies for public transit service provided within an urbanized area having a population of 50,000 or more. FTA makes grant awards directly to the eligible recipients for each UZA as designated by the Governor. Funds may be used for any eligible mass transportation project contained in Part 53 of Title 49, United States Code. FTA distributes Section 5307 funds to large urbanized areas (i.e., those with a population greater than 200,000) in accordance with a formula that considers population, population density and service statistics reported by transit operators. FTA distributes Section 5307 funds to small UZAs on the basis of population and population density only. Funds are apportioned to individual urbanized areas and not to specific transit providers. Thus, FTA makes separate apportionments to the Chicago urbanized area and the Michigan City urbanized area.

Chicago Urbanized Area. NIRPC, the Regional Transportation Authority of Northeast Illinois (RTA) and the Chicago Metropolitan Agency for Planning (CMAP) maintain a written Letter of Understanding which governs the manner in which the Section 5307/5340 funds allocated to the Chicago urbanized area are divided between Northwest Indiana and Northeast Illinois. The most recent Letter, which lapsed at the end of Federal Fiscal Year 2009, has been extended through Federal Fiscal Year 2011 and allocates these funds on the same basis that FTA uses in allocating them across the nation. It is likely that, when new Letters are executed, this same distribution mechanism will be retained.

There are three FTA Section 5307/5340 grantees in the Indiana portion of the Chicago UZA. These are the Gary Public Transportation Corp (GPTC), Northern Indiana Commuter Transportation District (NICTD) and NIRPC. NIRPC provides Section 5307 assistance, on a pass-through basis to seven other eligible transit operators: city of East Chicago, the Regional Bus Authority, Opportunity Enterprises, Inc., the Trustee of Lake County's North Township, South Lake County Community Services, Inc., Porter County Aging & Community Services, Inc. and the city of Valparaiso.

The Indiana portion of the Chicago Urbanized Area is sub-allocated about $10.7 million per year in Section 5307/5340 funds. At this rate of apportionment, this portion of the urbanized area reasonably expects a total of $317 million in FTA Section 5307/5340 funds over the life of the plan.
Michigan City Urbanized Area. The Michigan City urbanized area is under 200,000 in population. Therefore, the Section 5307/5340 funds al-

located there are apportioned to the governor, who has designated the city of Michigan City and NIRPC (on behalf of the city of LaPorte) to administer grants for the two transit operators. The urbanized area's two public transit operators desire to maximize their use of their annual apportionment for operating assistance and to seek alternative means of funding capital equipment.

The Michigan City urbanized area receives about $900,000 per year in Section 5307/5340 funds. It is reasonable to expect that a similar sum will continue to be received each year over the life of the plan for a total of $27 million.

FTA Capital Investment Grants – Section 5309 (Rail Modernization)

Rail Modernization funding is intended to support the modernization of urban commuter rail systems throughout the country. By definition, these systems include only facilities that are at least seven years of age. Section 5309(m)(2)(B) funds are apportioned to each UZA with a qualifying commuter rail system.

Chicago Urbanized Area. Like the FTA Section 5307/5340 program within the Chicago UZA, there is a Letter of Understanding between NIRPC and the Regional Transportation Authority of Northeast Illinois (RTA) that governs the distribution of rail modernization funds. Like the Letter regarding Section 5307/5340 funds, the most recent Letter, which lapsed at the end of Federal Fiscal Year 2009, has been extended through Federal Fiscal Year 2011. It allocates 6.29% of the entire Chicago urbanized area's rail modernization apportionment to Northwest Indiana. Each preceding Letter, beginning with the first one issued in 1992, has featured this same percentage split. It is thus reasonable to expect that this same distribution formula will be utilized indefinitely and that Northwest Indiana will receive an average of $10.8 million per year from the Chicago UZA for a total of $304.5 over the life of the Plan.

South Bend Urbanized Area. The Northern Indiana Commuter Transportation District is also the sole recipient of FTA Section 5309 Rail Modernization funds apportioned to the South Bend urbanized area. Funds from the two urbanized areas are co-mingled into a single FTA grant each year. In FFY 2011, there was $1,127,931 in rail modernization funds apportioned to the South Bend urbanized area. At this rate of apportionment, about $31.6 million would be received over the life of the plan.

Job Access/Reverse Commute Program (Section 5316)

FTA Job Access/Reverse Commute (FTA Section 5316) funds are allocated to the Chicago Urbanized Area and to INDOT for other portions of the three-county area. This grant program provides transit service subsidies targeted to lower income persons for employment-related trips. FTA makes grant awards directly to designated recipients in each large UZA. These funds may be used for operating, capital or planning assistance.

The Indiana portion of the Chicago UZA is allocated about $0.4 million per year. Over the life of the plan, we expect to receive $11.2 million.

New Freedom Program (Section 5317)

FTA New Freedom (FTA Section 5317) funds are also apportioned to the Chicago Urbanized Area and to INDOT for other portions of the three-county area. This grant program provides transit service subsidies targeted to enhanced services for persons with disabilities directly to designated recipients in each large UZA and to the state for all other areas. FTA makes grant awards directly to designated recipients in each large UZA. These funds may be used for operating, capital or planning assistance.

The Indiana portion of the Chicago UZA is allocated about $0.3 million per year. Over the life of the plan, we expect to receive $8.4 million.

Year of Expenditure Cost Estimates for Capacity Expansion Projects

The year of expenditure for the capacity expansion projects selected for inclusion in the 2040 Comprehensive Regional Plan have been estimated. The table below includes the estimates of the cost to implement each of these projects in the anticipated year of implementation.

45th Avenue, Lake County
2011: $15,537,170

Mississippi Street, Merrillville
2011: 11,887,500

SR-2, INDOT
2011: $10,200,000

U.S.-421, INDOT
2011: 7,770,000

SR-49, INDOT
2011: $8,400,000

U.S.-20, INDOT
2011: 9,836,250

SR-912, INDOT
2011: 48,900,000
(INDOT is considering two options for Cline Avenue)

Lakefront Marina Access Road, Gary
2011: $11,500,000
2013: $12,079,830

61st Street, Hobart
2011: $12,500,000
2014: $13,457,193

Boyd Boulevard, LaPorte
2011: $12,000,000
2016: $13,570,277

Economic Development Corridor, LaPorte
2011: $37,000,000
2020: $46,167,373

101st Avenue, Merrillville
2011: $2,500,000
2014: $2,691,439

Springland Avenue, Michigan City
2011: $3,745,000
2015: $4,132,166

Main Street Extension, Munster
2011: $3,000,000
2016: $3,392,569

Willowcreek Extension, Porter County
2013: $35,000,000*
**Estimate provided by applicant*

Kennedy Avenue, Schererville
2013: $24,000,000*
**Estimate provided by applicant*

Division Road, Valparaiso
2011: $24,500,000
2016: $27,705,982

Vale Park Road East, Valparaiso
2011: $3,500,000
2015: $3,861,838

Average inflation rate 2000-2010 used: 2.49%

Best Practices

Highways

FasTrak (I-15 Express Lanes, San Diego)

In 1998, San Diego converted existing HOV lanes on congested I-15 into High-Occupancy Toll (HOT) lanes. These lanes are designated for high-occupancy vehicles, and this remains their primary function. However, to ensure that extra capacity does not go unused, single-occupant vehicles can access these lanes by paying a toll. High-occupancy vehicles travel for free, and the toll rate varies according to the traffic volume in the express lanes so as to keep traffic flowing freely. Surveillance equipment monitors the lanes and updates tolls dynamically based on travel conditions. Transponders located in a user's car communicate with the system to automatically deduct tolls from a prepaid account.

The corridor is divided into segments and the toll is assessed on a per-segment basis.[10] This allows fine-grain control over pricing according to conditions on individual segments of the corridor. Toll collection is entirely automated and the carpool violation rate has stayed around 5%. Toll revenue is used for capital maintenance on the roadway and helps fund transit improvements along the corridor.

The project has been well received by the public and work is underway to further expand the express lanes. The express lanes are fully funded by toll revenue. According to SANDAG, the San Diego regional governing body, the number of carpools increased 50 percent from 1998-2006 and nearly $7 million in toll revenue has been applied to express bus service along the corridor since its inception.[11]

[10] http://fastrak.511sd.com/GettingStarted.aspx

[11] http://sandag.org/uploads/publicationid/publicationid_831_4185.pdf

Other cities with similar HOT schemes:
Minneapolis[12] (MnPASS, started in 2005)
Salt Lake City[13] (revenue does not fund transit)
Miami[14]
Bay Area[15]
Denver[16]

Public Transportation

Utah Transit Authority (Salt Lake City)

The Utah Transit Authority (UTA) has been a national leader in managing and expanding the transit system in and around Salt Lake City. UTA currently serves six counties and covers over 1,400 square miles and a population of 1.7 million.

Until 2000, UTA was a bus-only system. Since then, the agency has opened three light-rail lines, a commuter rail line and a BRT line, and is overseeing planning and construction of several more light and commuter rail corridors, a streetcar line and future BRT expansion.[17] It operates a fleet of over 650 buses.[18] Annual operating expenses were $250 million in 2009.[19]

[12] http://www.mnpass.org/394/index.html

[13] http://www.udot.utah.gov/expresslanes/faqs.php

[14] http://www.95express.com/index.asp

[15] http://www.680expresslane.org/I-680_Fact_Sheet.asp | http://www.680expresslane.org/I-580_Fact_Sheet.asp

[16] http://www.coloradodot.info/travel/tolling/i-25-hov-express-lanes/Reports/CDOT085_highlights6.pdf | http://www.coloradodot.info/travel/tolling/i-25-hov-express-lanes

[17] http://www.rideuta.com/mc/?page=UTAProjects

[18] http://www.rideuta.com/uploads/BusService_factshee.pdf

[19] http://www.rideuta.com/uploads/2009CAFR.pdf (page 23)

Board members are appointed by participating county and municipal governments. The number of appointees granted to different municipalities varies by county population. The board is currently composed of 19 members, 15 of which are local representatives. The remaining four board members are appointed by the governor, the speaker of the house, the president of the senate and the Utah Transportation Commission.[20]

UTA operates with revenue from a local option sales tax. The base tax rate is set at 0.25% (though some communities have a rate of 0.30%) and those counties with rail service pay an additional 0.25% tax.[21]

Metropolitan Transit System (San Diego)

The Metropolitan Transit System (MTS) serves an urban area of 570 square miles in San Diego County as well as rural parts of East County. The total service area is 3,240 square miles with MTS operating 82 fixed bus routes and three light rail lines, serving a population of around 2.2 million. Weekday ridership is 290,000 passengers. Annual operating cost is around $230 million.[22]

The board is composed of 13 representatives from San Diego City Council (four total) and the city councils of nearby communities (nine total). One other member is appointed from the San Diego County Board of Supervisors. The chairman is a San Diego resident chosen by Board members.[23]

The primary source of local funding comes from a local 0.05% sales tax administered by SANDAG, the local council of governments. Although the sales tax money is not earmarked exclusively for transit projects, SANDAG appropriates approximately one-third of the revenue for transit.[24]

Regional Transportation District (Denver)

Denver's Regional Transportation District (RTD) has been rapidly expanding transit service throughout the Denver region. RTD operates bus, BRT and light-rail service and is undertaking aggressive construction of commuter rail lines and expansion of light rail into suburban communities. Service covers 40 municipalities in eight counties, covering 2,348 square miles and more than 2.6 million people. RTD operates 150 fixed bus routes and a fleet of 1,050 buses. Its 2009 total operating budget was around $400 million.[25]

Its board is unique in that it is composed of 15 nonpartisan, publicly elected members who represent geographic voting districts. Voting districts are drawn to encompass approximately 160,000 constituents. RTD is funded through a 1% sales tax.[26]

Bus Rapid Transit (BRT)

Arterial mixed-traffic BRT, similar to the already implemented Kansas City MAX and the service proposed for six corridors in Indianapolis, is a package of emerging technologies that provides new opportunities for more efficient transit that can be implemented at a smaller scale and with fewer resources.

Used on an urban arterial, BRT gives many of the passenger amenities and conveniences of rail, but without the hefty price tag. BRT service is enhanced over that of typical bus transit as it limits stops to passenger stations near major activity centers along an arterial corridors, spaced one-

[20] http://tax.utah.gov/sales/rates/11q1combined.pdf

[21] http://www.sdmts.com/MTS/About_MTS.asp

[22] http://www.sdmts.com/MTS/MTS_board.asp

[23] http://www.sandag.org/index.asp?classid=30&fuseaction=home.classhome

[24] http://www.sandag.org/index.asp?classid=30&fuseaction=home.classhome

[25] http://www.rtd-denver.com/PDF_Files/2009_2010_Report.pdf (RTD Fast Facts sheet, second page)

[26] http://www.rtd-denver.com/PDF_Files/Governance_Manual/Board%20Governance%20Overview.pdf

third to 1 mile apart. Service is often provided in a lane that is dedicated to BRT service during peak hours, but otherwise allows for mixed traffic. To further increase efficiency and reliability of the service, traffic signal priority (TSP) is used to prioritize bus movements, despite sharing the roadway with automobiles. Stations for BRT service incorporate added amenities including low-floor boarding, "next bus" information and semi-enclosed waiting areas with enhanced lighting. BRT is a flexible transit service as it can be incorporated as an upgrade from an existing arterial bus route as ridership demand warrants.

Aviation

Aerotropolis Atlanta[27]

At the junction of I-75 and Central Avenue in Hapeville, GA., within one mile of the Hartsfield-Jackson Atlanta International Airport, a 130-acre former Ford Motor Company assembly plant site is being redeveloped for mixed uses. The site will provide a partially covered 4,000-space parking lot in addition to being zoned to allow for 6.5 million square feet of Class-A office, hotel, conference center, retail, data center and business park uses. This development is anticipated to provide more than 10,000 jobs upon build-out, which will replace the 3,000 jobs lost when Ford shuttered its 2.8 million-square-foot facility on the site in 2005. The site, at the intersection of air, rail and interstate facilities, is anticipated to allow global companies to capitalize on multimodal access.

Detroit Region Aerotropolis[28]

The Detroit Region Aerotropolis is a development initiative located along I-94 between the Detroit Metropolitan Airport (Metro) and the Willow Run Airport, seeking to foster economic development and job creation in a corridor well-served by multiple transportation modes. The near-term goal is to lure more cargo and supply chain traffic to the airport, capitalizing on Metro's unique proximity to borders, highways and railroads. The ultimate build-out plan includes Class A office space, hotels, retail outlets, residential and recreational areas. In June 2009, Wayne and Washtenaw counties, along with the cities of Taylor, Romulus, Belleville and Ypsilanti and the townships of Van Buren, Huron and Ypsilanti, signed an Intergovernmental Agreement to form the Detroit Region Aerotropolis Development Corp. (ADC), providing a framework to advance the Aerotropolis initiative while respecting the home-rule rights of the cities and counties within the partnership. The ADC became the first certified Next Michigan Development Corp. on Feb. 23, 2011. The ADC can now take advantage of new state benefits and programs to help regional economic development entities in attracting businesses engaged in multi-modal commerce.

Freight Movement

West Point Industrial Park, Hammond

The West Pointe Industrial Park is a 165-acre former brownfield steel slag dump that was transformed by the Hammond Urban Enterprise Association into a modern trucking facility, buffered from the neighborhood by a landscaped berm. Improvements included wetland mitigation, pipeline rerouting and complete cleanup and debris removal of the property. The site has hosted Central Transport, Federal Express Ground and Hulcher Services. It is located a quarter-mile from Interstate 80 near the Indiana/Illinois border and CSX Transportation railroad tracks.

Cargo Oriented Development, South Suburban Mayors and Managers, Northeast Illinois

The South Suburban Mayors and Managers Association, working with the Center for Neighborhood Technology, developed the Cargo Oriented Development initiative, a regional redevelopment program that encourages freight-related industry by focusing investment in areas with multimodal transportation access and industrial and logistics businesses. Under the umbrella of this initiative, the agency is capitalizing on both private rail and intermodal investments and public investments in a U.S. Customs station with land assembly and

[27] http://www.brownfieldrenewal.com/print-features_case_study_sustainable__mixed_use_aerotropolis_a_real_high_flying_achievement-289.html

[28] http://www.detroitregionaerotropolis.com/index.htm

predevelopment, intermodal connector road improvements, environmental remediation and Foreign Trade Zone designation.

Nonmotorized Transportation

Ped and Pedal Plan (2010)

The 2010 plan built upon previous plans completed in 2005 and 1994, reflecting past successes in trail development while planning for future facilities, providing an added focus on pedestrian-related travel and broadening the spectrum of nonmotorized travel options. The plan identified for development 33 priority corridors covering 522 miles, including two "Visionary Corridors" as identified in the Indiana State Trails & Greenways Plan: the Marquette Greenway along Lake Michigan, and the American Discovery Trail along the southern half of the region. Additional information on the 2010 Ped and Pedal Plan can be found on NIPRC's website: http://www.nirpc.org/transportation/2010pedandpedal.html.

Greenways & Blueways (2007)

Developed jointly by NIRPC and the Openlands Project in 2007, this plan established a vision for greenway preservation and water trail development in Northwest Indiana. In addition to the review and analysis of current regional efforts to preserve and restore linear open space corridors in Northwest Indiana, Greenways and Blueways provided an interactive resource for local and county jurisdictions developing vision plans and negotiating development proposals for open space corridors. In addition, it detailed the financial incentives available to encourage and support private and public greenway initiatives. More information on Greenways and Blueways can be found at http://www.greenwaysblueways.com.

Marquette Greenway (2009)

NIRPC released the Marquette Greenway–National Lakeshore Connector Route Proposal in October 2009. This award-winning poster plan outlined the proposed multistate route of the Marquette Greenway, and specifically highlighted the long-awaited trail connection between the east and west landholdings of the Indiana Dunes National Lakeshore.

Complete Streets (2010)

In May 2010, the NIRPC Executive Board unanimously approved a landmark resolution requiring all new NIRPC-programmed, federally aided roadway projects to consider incorporating Complete Streets design standards to accommodate safe and efficient access for all users including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. As part of the resolution, Complete Streets guidelines were published to assist project sponsors in attempting to make streets safe and functional for all drivers, pedestrians and bicycles through the inclusion of marked bicycle lanes, paved shoulders, wide outside lanes, signed bike routes, safe access to bus stops, shared-use paths, sidewalks, bicycle parking facilities, marked or raised street crossing and pedestrian signs and signals. More information on the Complete Streets initiative can be found on NIRPC's website for nonmotorized transportation: http://www.nirpc.org/transportation/nonmotorized.htm.

Safe Routes to School (2005)

NIRPC developed a Safe Routes to School toolkit in April 2005 to help Northwest Indiana communities create a safe environment that allows and encourages students to walk and bike to and from school by providing improved safety and route conditions. It is a community approach involving community members, teachers, traffic engineers and public officials to integrate safety, traffic relief, environmental awareness and health into the lives of children and families. In addition to providing children an opportunity to experience freedom and improve their health and well-being, it provides safe transportation alternatives and reduces traffic congestion and air pollution.

Performance Measures

General

- Vehicle Miles Traveled/Vehicle Hours Traveled – Standard performance measures that can be used as a corridor-level or regional-level measure.
- Level of funding for maintenance and reconstruction

Highways

- Travel Time & Travel Time Index (TTI) – Travel Time is the average time it would take for a vehicle to travel from one point of a specific corridor to another. Travel Time Index is a performance measure that is used to compare travel time in peak periods versus travel time in free flow periods. For example: TTI of 1.2 means that the average travel time is 20% longer than free-flow travel times.
- Volume/Capacity Ratio – A universal performance measure that is used to gauge the density of a highway facility.
- Average Speed – Average Speed can be displayed both in numerical form and with congestion scans. Average Speed also can be derived from travel time data. With average speed, it will be easy to point out congestion by time of day and location. Average Speed also can be displayed in indexed form by comparing with the posted speed of a road.
- Delay – A performance measure that can be derived from average speed on expressways and arterials. Delay can be figured out by finding out how long it takes for traffic to move one mile. Delay can be measured in seconds per corridor by time of day. Travel Time Index may also be used to calculate delay for a corridor.
- Vehicle Trips
- Crash rates for different modes: All vehicles, nonmotorized, trucks, buses, trains, etc.
- Average Incident Clearance Time
- Signal Delay
- Level of Service, LOS D or worse: Lane-miles, VMT and VHT
- Systemwide: VMT, VHT, Average Speed
- Emergency response times on the major expressways in the region
- Linkages to existing or planned public transit nodes
- Number of projects incorporating Context Sensitive Solutions (CSS)
- Number of ADA compliant features added at transportation nodes
- Public Transportation

Public Transportation

- Vehicle Revenue Hours/Per Capita – The hours that transit vehicles travel while in revenue service, including layover/recovery time, but excluding deadhead time. The amount of hours is counted for each vehicle in service. Per capita represents the population in the Northwest Indiana region or specific areas, corridors or municipalities depending on the scope of the measure. (Vehicle Revenue Hours/Per Capita = Total Vehicle Revenue Hours/Capita of Area)
- Population and employment within walking distance of high frequency transit route stops
- Population and employment within park-and-ride distance of commuter rail stations
- Environmental Justice population served in the region
- Route Coverage

Aviation

- Annual passenger volume, scheduled carrier flights
- Annual passenger volume, chartered flights
- Cargo volume, entering and leaving
- Level of general aviation activity (airport acreage currently leased)
- Level of fixed base operator activity (airport acreage currently leased)
- New business permits at airport or within one-quarter mile of airport property
- Utilization of property within one-quarter mile of airport property (percent vacant)

Freight Movement

- Number of fatal crashes involving heavy trucks
- Vehicle classification by time of day, percent of trucks off-peak
- Average speeds on freight significant highways
- Average peak and off-peak travel time for trucks in freight significant corridors
- Tonnage shipped through NWI ports, including total tons, domestic, foreign, imports, exports
- Number of Businesses and Employment in Freight Generating Industries, including Agriculture, Construction, Manufacturing, Mineral Extraction, Utilities, Transportation and Warehousing and Wholesale Trade
- Percent of Mode Share for freight
- Air Cargo Summary Data for Gary/Chicago International Airport: Tons Emplaned (Originating and Terminating)
- Number of Public Highway-Grade Crossings

Nonmotorized Transportation

- Miles of paths and multiuse trails constructed
- Miles of marked and signed bike lanes created
- Number of communities adopting Complete Streets policy
- Schools implementing Safe Routes to Schools
- Number of nonmotorized crashes
- Miles of sidewalk added
- Number of bike parking facilities added (commuter facilities with storage cabinets or shower facilities)
- Number of bike rack spaces added
- Number of pedestrian improvement projects completed (e.g. marked/raised street crossings, pedestrian signs and signals)
- Number of bicycle safety improvements
- Linkages to existing or planned public transit nodes
- Number of new connections between two or more pedestrian/bicycling facilities

Biking Whihala Beach Park. Photo by Eric Allix Rogers via Flickr.