



Porter County U.S. 12/20 Transportation Corridor Plan

February 2008



The Porter County U.S. 12/20 Transportation Corridor Plan

Porter County, Indiana

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The Porter County U.S. 12/20 Transportation Corridor Plan

Prepared for Northwest Indiana Regional Planning Commission

1.0 Introduction

The Porter County U.S. 12/20 Transportation Corridor Plan (Corridor Plan) has been developed to evaluate the existing transportation infrastructure, adjacent land uses, and environmental resources, and to provide recommendations for land use and transportation investment for two major corridors in Porter County, Indiana. This Corridor Plan was commissioned by the Northwest Indiana Regional Planning Commission (NIRPC) for the US-12 and US-20 corridors within Porter County and was prepared in a collaborative planning effort with the Marquette Plan: The Lakeshore Reinvestment Strategy: Phase Two (Marquette Plan Phase II).

1.1 Study Area

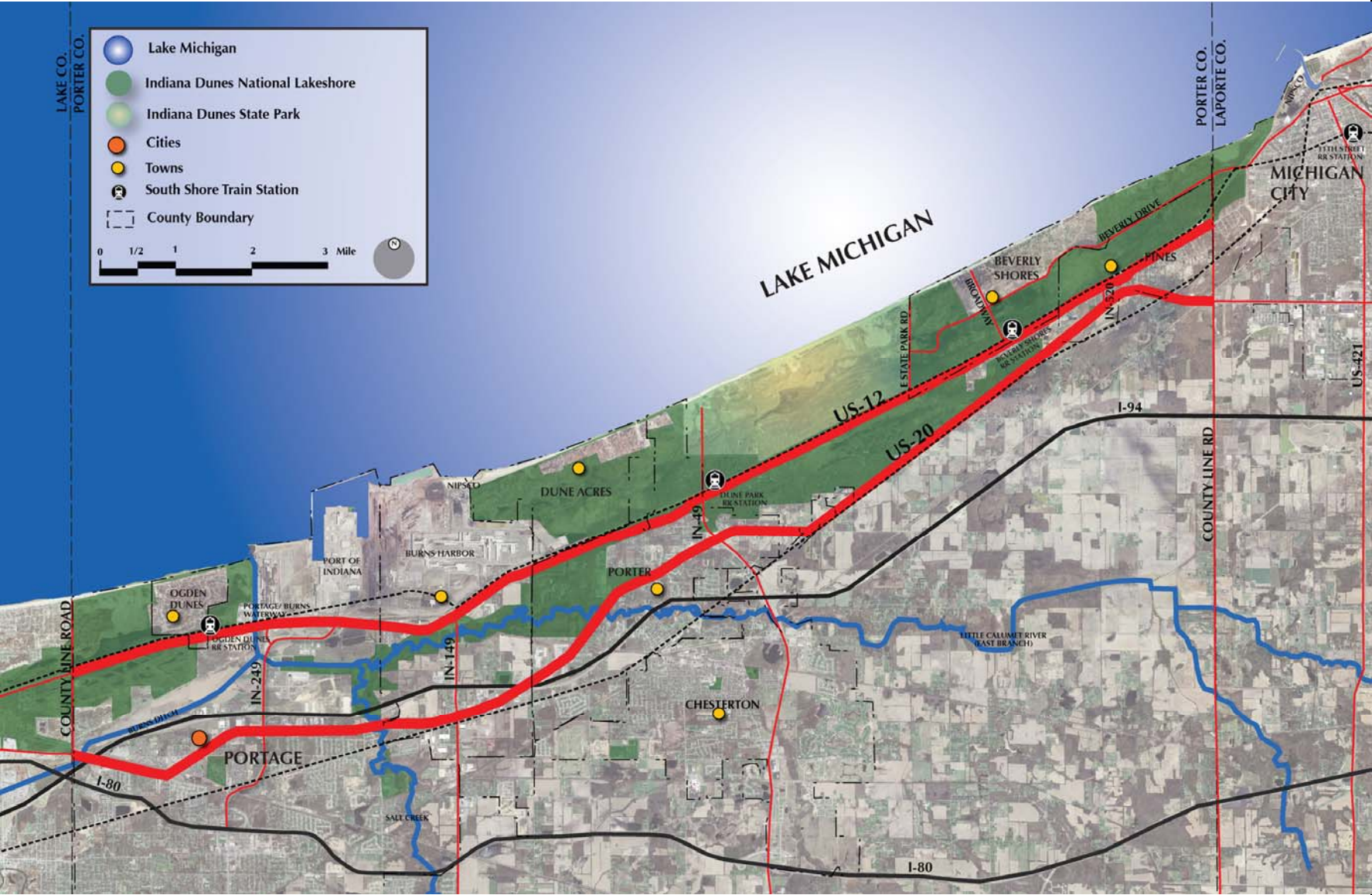
The corridor study area includes both US-12 and US-20 in Porter County and also parallels two major interstates, I-94 and I-80/90 (See Figure 1). US-12 and US-20 provide an important link in the regional highway network as well as providing access near the lakeshore of Lake Michigan.

The study area is defined as the 14-mile section, stretching from County Line Road on the west to County Line Road on the east. The southern boundary is 1/6 of a mile south of US-20 and the northern boundary is 1/6 of a mile north of US-12. The US-20 corridor is currently a four-lane undivided highway and it is designated for permitted overweight truck traffic. These overweight trucks are not permitted on Interstates I-94 and I-80/90. US-20 carried up to 19,540 vehicles per day (in Porter County) in 2003. Most of US-12 is a two-lane narrow corridor and carried up to 8,030 vehicles per day in 2003. It is generally level and straight with long gradual curves. US-12 is bounded on the north and south by dunes and steep slope heavy-vegetated areas that cause short sight distances in some areas. It features scenic, recreational, and historic features of national significance.

Porter County has been experiencing substantial growth in the last ten years. According to census 2000, the county population increased by 14% in the previous decade and it is projected to increase by 8% by the year 2030. The corridors are located within the Lake Michigan Watershed and a part of it is within the Indiana Dunes National Lakeshore. The corridor study area also includes the commuter rail services of the South Shore Chicago South Shore and South Bend Interurban line between South Bend, Indiana and Chicago, Illinois. The mixed land uses of commercial, residential, recreational, and

industrial within the corridor area generate a mix of vehicular traffic. This traffic includes local and commuter passenger cars, recreation-related and tourism traffic, and trucks that serve major industrial sites. This diversity in transportation modes (e.g. tourism and truck traffic) is not presenting a safe and quality traveling experience for visitors.

Figure 1 – Project Location Map



The Corridor Plan has been developed to provide strategies and recommendations for aesthetic enhancements and functional improvements for the corridors. In addition, recommendations related to potential development opportunities along these corridors, promoting alternative modes of transportation in the region, and utilizing sustainable strategies have been recommended as part of this study. The Corridor Plan, while prepared as a stand alone document, is a key component of the Marquette Plan Phase II and integrates the long term visions and strategies of Marquette Plan Phase II for reinvestment along Indiana’s Lake Michigan shoreline.

The Plan presents a range of mainline alternatives and general recommendations that help achieve the long-term vision for the corridor. The Plan strives to integrate environmental and economic best practices into its recommendations. Other goals include:

- To improve the safety and efficiency of US-12 and US-20
- To improve multi-modal travel efficiency and connectivity
- To convey a message to visitors and travelers about the unique identity of the Indiana Dunes and the lakeshore area, and to identify scenic views and how they can be preserved.
- To treat the corridor area with a uniform program of signs, landscaping, banners, sidewalks (as needed), lighting, and other features to improve safety, accessibility, and appearance.

It is important to understand the historical background of the Marquette Plan in order to fully comprehend the process and strategies developed in these subsequent documents.

A key recommendation of the Marquette Plan was to extend the study east from the Burns Harbor International Port, Portage, Indiana to the Indiana/ Michigan state line. The Northwest Indiana Regional Planning Commission (NIRPC), northwest Indiana’s Council of Governments (COG) and Metropolitan Planning Organization (MPO), recognizing the importance of this recommendation, successfully identified funding.

1.2 Historical Background

The Marquette Plan, a collaborative effort of the lakefront communities of East Chicago, Gary, Hammond, Portage and Whiting, the office of Congressman Pete Visclosky and the Indiana Department of Natural Resources is a reinvestment strategy to reclaim Indiana’s lakefront – to create a livable lakefront.

An extensive eight month public process culminated in the unveiling of the Marquette Plan: The Lakeshore Reinvestment Strategy in January of 2005. The Plan’s vision is to “Create a Livable Lakefront,”

- A place to live, work, play, and stay; an environmentally, economically and socially sustainable environment;
- A place for mixed uses and new uses; and
- A place to be proactive and think and act strategically.

The Marquette Plan Phase II illustrates a changing landscape where more compact viable industries co-exist with public parks, mixed-use neighborhoods and business-oriented developments. It's a Plan about balance – between nature and industry, between public access and privacy, between old jobs and new economies, between redevelopment and restoration and between heritage and a new way of life.

Based on the direction that was supported by public input and validation by the Working Group, mayors, and stakeholders, the planning team developed a land use “Framework Plan” that builds upon the vision statement and principals. The Framework Plan was developed around a series of project systems that included:

1. Industrial and Infrastructure Framework
2. Motorized Transportation Framework
3. Greenway Framework
4. Multi-use Trails Framework
5. Community Investment Framework

Each framework illustrated recommendations specific to that system and when combined represented a Composite Framework for land use strategies. Included in the short-term Project recommendations was the Extension of the Marquette Plan to the Michigan State Border.

1.3 Project Background

Recognizing the importance of Lake Michigan as an asset for development and redevelopment, and as an unparalleled opportunity and challenge, the Northwestern Indiana Regional Planning Commission (NIRPC) conducted a Feasibility Study for Marquette Plan Phase II extension for the shoreline from the Port of Indiana to the Michigan border. It identified the need for broad stakeholder involvement and a desire by communities to engage in the Marquette Plan Phase II visioning process in an effort to create a comprehensive land use vision. NIRPC also identified the need to enhance the region's economic future by providing a stand alone plan, the Porter County U.S. 12/20 Transportation Corridor Plan, for the future development of US-12 and US-20.

The team of JJR, Short Elliot Hendrickson Inc. (SEH[®]), Cambridge Systematics, and JF New were contracted by the Northwest Indiana Regional Planning Commission (NIRPC) to conduct the Porter County U.S. 12/20 Transportation Corridor Plan. NIRPC is designated as the Metropolitan Planning Organization (MPO) for Northwestern Indiana. MPOs are responsible together with state departments of transportation and public transit operators for carrying out the transportation planning process for urbanized areas. The plan was a collaborative process consisting of comprehensive data collection, public and local official involvement, and application of land use, transportation, and access management principles. The project team concluded its work on the plan with the culmination of this document. The core project team and contributors to this report consisted of a core consultant team and a project work group.

Core Consultant Team:

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- Garry Traynham (Indiana Dunes National Lakeshore)
- Eric Ehn (Indiana Dunes National Lakeshore)
- Hank Bliss (Beverly Shores)

Major funding assistance for the projects was provided by the Lake Michigan Coastal Program, which is administered by the Indiana Department of Natural Resources (DNR) with matching funds from concurrent planning efforts at NIRPC and contributions from Porter County for the Corridor Plan.

1.4 Project Stakeholders

The Corridor Plan affects many agencies and entities ranging from local to regional to state jurisdictions. The plan development and adoption process reflects the varying roles of each of these units of government, and the need for a collaborative approach to achieve its implementation.

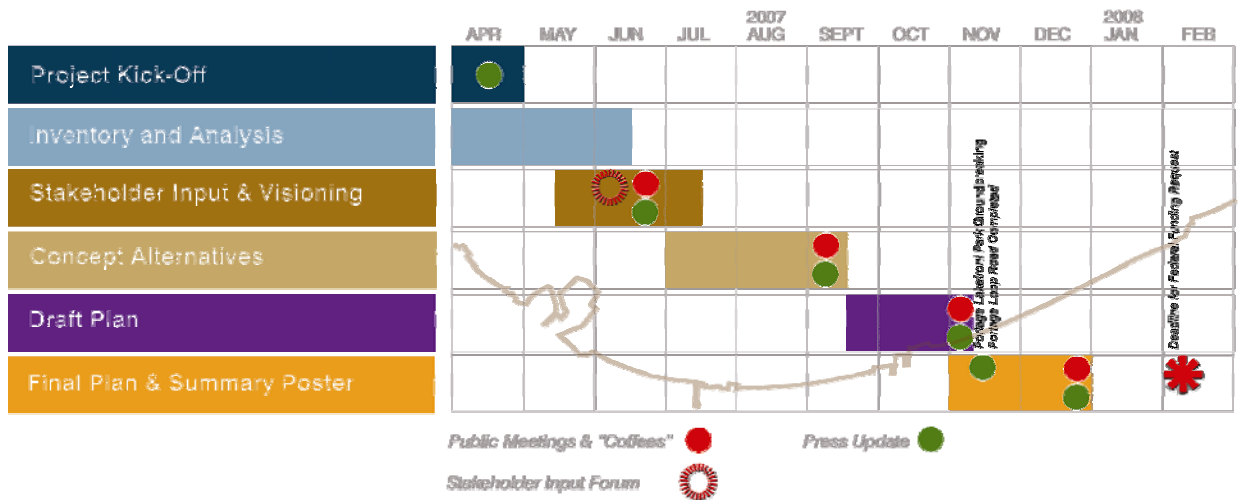
- Indiana Department of Transportation (INDOT) – LaPorte District - INDOT plays a role in all highway projects on state and federal routes in Northwest Indiana.

-
- Indiana Department of Natural Resources (DNR) – The development of the corridor will have natural resource impacts that require the involvement of the DNR.
 - Indiana Dunes National Lakeshore – Much of the corridor is located within the Indiana Dunes National Lakeshore and future development could have an impact on the Dunes area.
 - Porter County – The corridor includes two principle roadways in the county, leading to increased traffic efficiency and potential development and/or redevelopment opportunities.
 - Port of Indiana - The Port of Indiana is located within the study area and any future improvements can affect the Port
 - Porter County Convention and Visitors' Bureau
 - Porter County Economic Development Alliance
 - Northern Indiana Commuter Transportation District (NICTD)
 - Communities: The City of Portage, Town of Dunes Acres, Town of Ogden Dunes, Town of Porter, Town of Burns Harbor, Town of Chesterton, Town of Beverly Shores, Town of Pines, City of Gary, City of Michigan City.
 - Industrial Companies along the corridor such as Mittal Steel, NIPSCO, Beta Steel, etc.
 - Regional Development Authority (RDA)
 - Save the Dunes Council and various special interest groups

1.5 Planning Process

The planning process for both the Marquette Plan Phase II and the Porter County U.S. 12/20 Transportation Corridor Plan (the Corridor Plan) was initiated in May 2007 with the establishment of a project Working Group, Stakeholder Group, and development of a Consultant Management Plan. While the focus of the Marquette Plan Phase II was to involve the residents and stakeholders along the lakefront communities in LaPorte and Porter Counties, the Corridor Plan focus was within Porter County primarily along the US-12 and US-20 corridors. The purpose of the inclusionary, interactive and transparent process for the Corridor Plan was to gather input from all in Porter County, address the issues and concerns that the corridors and areas around it face, and work together to develop a consensus based vision and actionable implementation recommendations. Figure 2 shows the timeline for the project.

Figure 2 – Project Timeline



The preparation of the Corridor Plan and MP 2 has included study area reconnaissance, review of existing documents, meetings with project stakeholders, elected officials, town/city/county council briefings, and project working group and steering group meetings. Over the duration of the project NIRPC and the consultant team have conducted extensive public involvement initiatives. Various planning tools and techniques, such as, visual preferencing, one-on-one dialogue with the residents/stakeholders, large group format presentations and public open-houses were utilized over a period of ten months that included 10 public meetings, monthly meetings with project working group, and regular meetings with project stakeholders.

The planning process included the following:

- Extensive field analysis; analysis of traffic, commuter, crash, land use and environmental data; and review of available background data to gain a thorough understanding the study area. Information gathered during this phase was documented and used for area-wide analysis, identification of issues and opportunities that were presented during the visioning phase
- Five public meetings during the visioning phase of the project at different locations throughout the study area to maximize public involvement. Information gathered during this phase was documented and used to establish goals and objectives, and development of concept alternatives that were presented during concept alternatives phase.
- Two public meetings were held during the concept alternatives phase where three varying concepts were presented at different locations to have maximum representation. Information gathered during this phase was documented and through a process of public input and refinement a draft plan was developed that was presented during the draft plan phase.



- Two public open houses during the draft plan phase at different locations to have maximum public participation. The comments received during these meetings were used to refine the draft plan into a final plan and recommendations.
- Stakeholder input forums that included over 100 stakeholders. These stakeholders were categorized into transportation groups, environmental groups, educational, civic/citizen groups, governmental and economic development/private industry groups. These stakeholders were interviewed one-on-one or in focus group formats.
- One stakeholder open house during the draft plan stage. The information gathered and comments received during this meeting were used to refine the draft plan and recommendations.

The Corridor Plan report has been divided into the following sections:

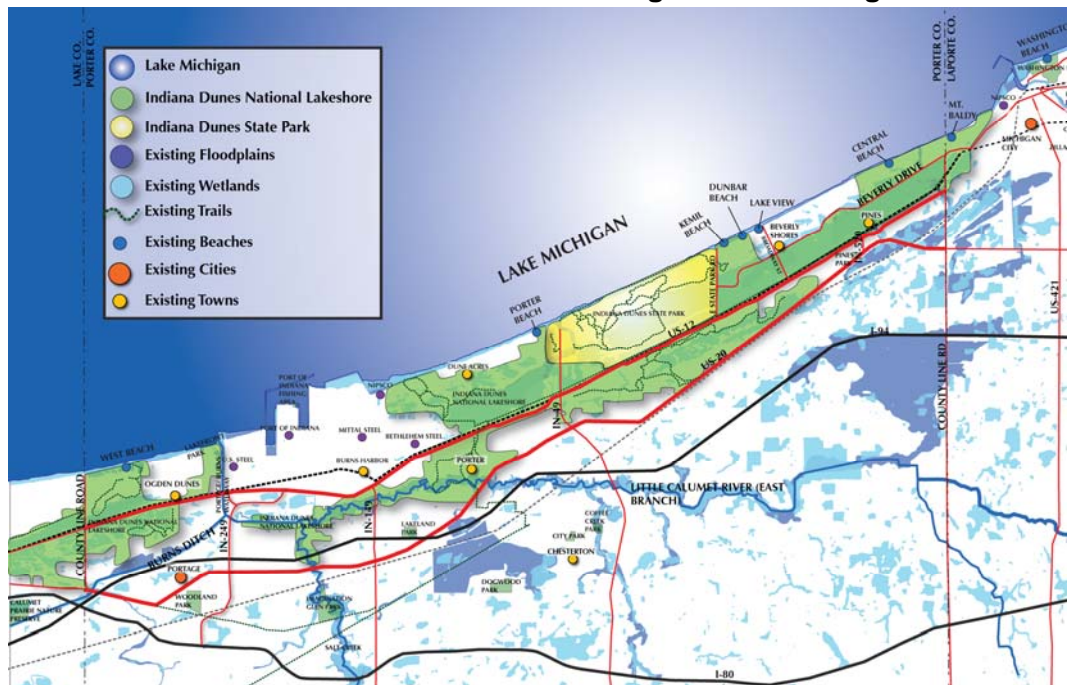
- Introduction
- Existing Conditions and Inventory
- Purpose, Needs and Analysis
- Alternatives Analysis and Recommendations

Inquiries about the Porter County Transportation Corridor Plan can be directed to Darren Fortney, AICP, Short Elliot Hendrickson Inc. (SEH[®]), 6418 Normandy Lane, Suite 100, Madison, WI 53719 (1.800.732.4362).

2.0 Existing Conditions and Inventory

This section provides broad documentation of the built and natural environmental conditions that are found within the study area. The Existing conditions are organized to correspond with many of the subject areas that are required by the National Environmental Policy Act (NEPA) environmental review process. This section is not intended to act as a substitute for or prelude formal environmental documentation, nor is it intended to be a complete analysis of all potential environmental issues and resources in the area that could be affected by future improvements. It is anticipated that future improvements along the corridor would likely require necessary and comprehensive environmental documentation prior to implementation. Figure 3 is an overview of the existing environmental features in the study area.

Figure 3 – Existing Environment



2.1 General Economics

The US-12 and US-20 corridor is located in Porter County. The economy of Porter County has been fairly stable over the past several decades but the Northwest Indiana economy has generally lagged the state and the nation over the last decade. Per capita income for Porter County grew by 12.9% between 1995 and 2005 (adjusted for inflation).

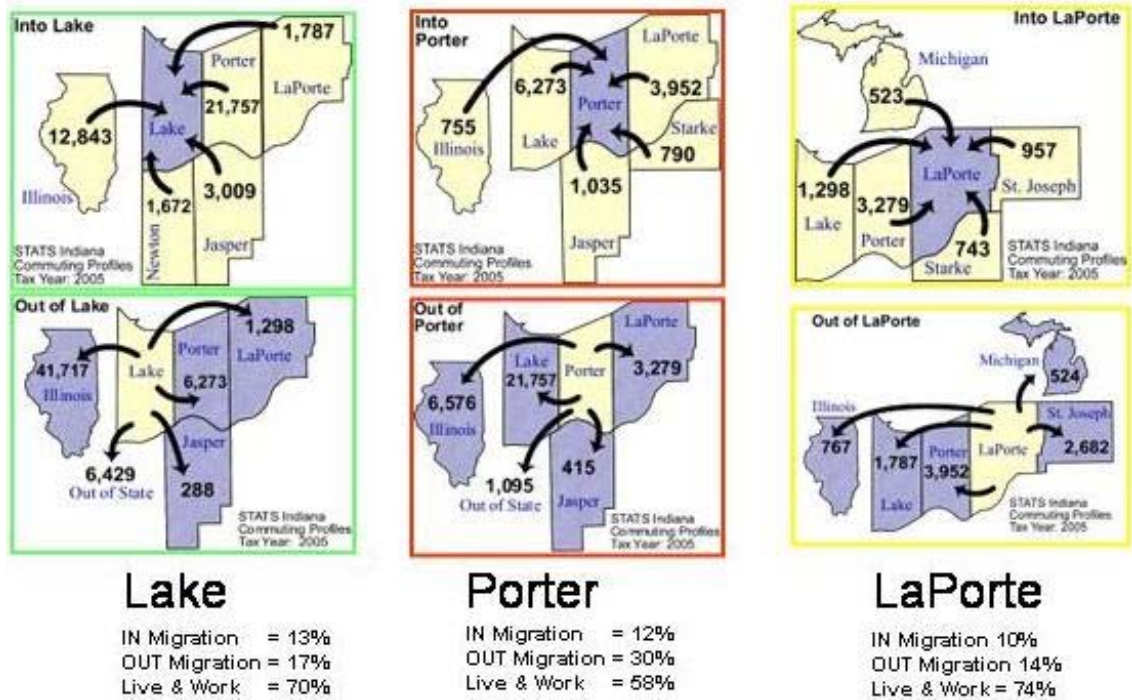
Since the early 1900s, manufacturing has been a primary industry in the United States. Manufacturing was the highest employer in Indiana and Porter County at the end of the 1960's and early 1970's. Today the service industry is the leading employer in Porter County. The retail trade sector continues to grow and is now Porter County's third leading employment sector. The manufacturing industry is Porter County's second largest employment sector. See Table 1.

**Table 1
Regional Employment Trends by Industry from 2002-2006**

Lake	Porter	La Porte
Top 5 Largest Employers - Locally		
Health Care and Social Assistance	Federal, State, and Local Governments	Manufacturing
Federal, State, and Local Governments	Manufacturing	Federal, State, and Local Governments
Manufacturing	Retail Trade	Health Care and Social Assistance
Retail Trade	Accommodation and Food Service	Retail Trade
Accommodation and Food Service	Health Care and Social Assistance	Accommodation and Food Service
Top Five Largest Employers - Nationally		
Health Care and Social Assistance		
Manufacturing		
Retail Trade		
Accommodation and Food Service		
Administrative and Support and Waste Management and Remediation Services		

Porter County is experiencing a net-loss of commuting workers. In 2005, 30% of the labor force commuted out of the county while 2% of the workforce commuted from another county. A total of 34,528 workers lived in Porter County and commuted to another county for work. While the income of those workers is earned in another county, it is basically spent in Porter County where the worker resides. See Figure 4.

Figure 4 – Regional Commuting Patterns for Northern Indiana Counties in 2005



2.1.1 Economic Development Along the Corridor

There are economic development initiatives occurring along the corridor in the City of Portage, Town of Burns Harbor, and areas of US-12 and US-20.

The City of Portage currently has several on-going economic development initiatives planned and underway within the Porter County U.S. 12/20 Transportation Corridor Planning area including:

- The Portage Northside Development Area. Construction has begun on the proposed Burns Parkway and associated infrastructure located west of the intersection of SR-249 and Ameriplex Drive. This 157 acre planned development is anticipated to include a professional office park and others that recognize water-related land use opportunities including restaurants, marina uses, and hotels and conference center.
- Portage Lakefront Park – A planned 60-acre park on the shore of Lake Michigan and west of the Burns Waterway is currently in design with anticipated construction beginning in November of 2007. The project includes a visitor’s facility, access road, utilities, parking, trails and a boardwalk. The project is located north of US-12 and west of SR-249.
- Marina Shores at Dune Harbor – An upscale residential marina community featuring executive single family lots, cottage homes and waterfront condominiums, 300 slip marina, and restaurant and clubhouse is being developed on US-12 west of SR-249 in the City of Portage.
- Ameriplex Business Park – This business park located at the NE corner of I-94 and SR-249 continues to grow and expand. This site is also the location of the new Bass Pro Shop and various restaurants.

-
- Portage Northside Master Plan – The City continues to implement projects associated with the Northside Master Plan. Anticipated future project include: marina oriented development along SR-249 between I-94 and US-12, entertainment/restaurants/commercial at the Confluence of the Burns Waterway and Little Calumet River and Transit-oriented Development near the South Shore Station along US-12.

The Village of Burns Harbor subdivision is developing residential areas with a “New Urbanism” theme. This development includes plans for a development of a town center that will provide commercial and retail opportunities within walking distance of the development.

The majority of the north side of the US-20 Corridor in Portage is included in the City’s Tax Increment Financing District. This area has the potential for redevelopment and infill throughout the community. Mixed business and commercial uses prevail with underutilized parcels at various locations.

- There are current discussions between developers and the City of Portage for redevelopment of a hotel facility at the NW corner of US-20 and SR-249.
- Town of Burns Harbor is experiencing residential development growth on US-20 west of SR-149. Business/commercial infill opportunities exist between I-94 and SR-149.
- Development opportunities on US-20 east from I-94 to SR-49 are minimal due to the environmental features, and current land uses in this area. Some opportunities may exist at quadrants of existing road intersections.
- Some development/redevelopment opportunities exist on US-20 east of SR-49 to Kemil Road. East of Kemil Road to SR-530 development would be unlikely due property ownership issues on the north Side (National Lakeshore Property) and south side due to the parallel alignment of the existing Railroad and US-20.
- Development opportunities may exist from the intersection of SR-520 east to the Porter/LaPorte County line. Environmental issues would need to be considered for development at the intersection of SR-520 and US-20.

Opportunities for development along US-12 are limited between the Lake/Porter County Line and the entrance to the Town of Ogden Dunes due to property ownership and environmental issues. Other opportunities along US-12 include:

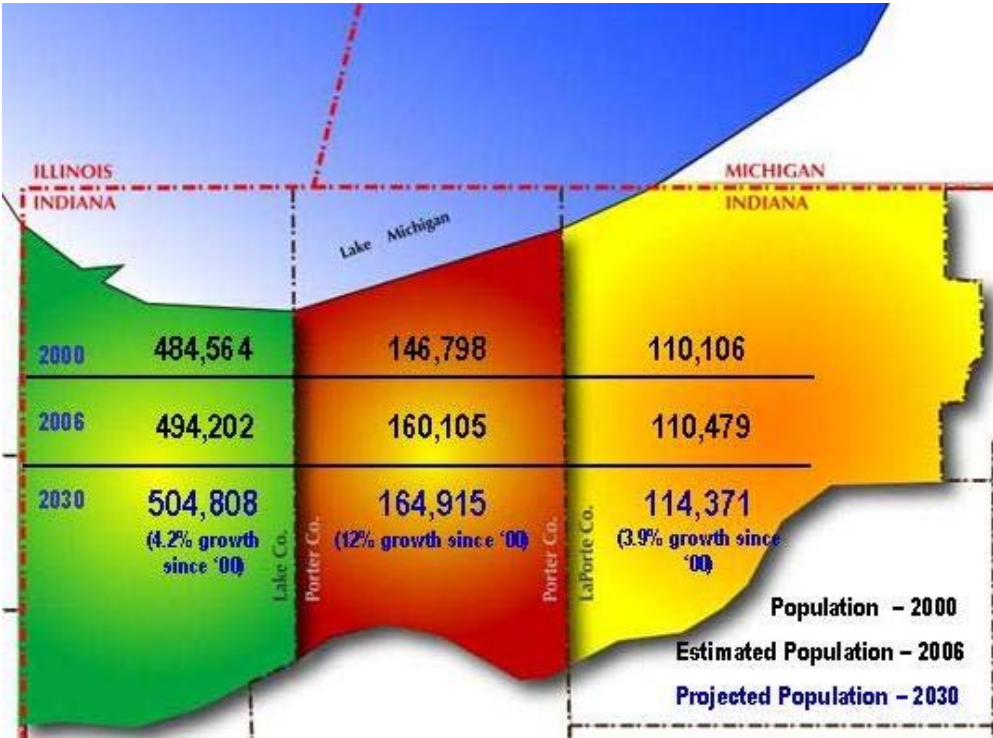
- The area around the Portage/Ogden Dunes South Shore Station is being considered for transit-oriented development as part of the Northside Master Plan.
- US-12 from Burns Waterway east to the Portage corporate limits is included in their Tax Increment Financing District and has opportunity for development. However some environmentally sensitive areas exist in this area that would need to be addressed.

-
- The area of US-12 between the Portage corporate limits and the entrance to Mittal Steel may have some opportunity for development/redevelopment.
 - US-12 between Mittal Steel and the Town of Beverly Shores is part of the National Lakeshore and would have little development opportunity.
 - Transit-oriented development (TOD) opportunities may exist at the entrance to Beverly Shores at Broadway. These TOD type activities and other development/redevelopment potential could extend east into the Town of Pines to the County Line.

2.2 Community/Residential

Since 1960, Porter County's population has grown nearly 10 times faster than neighboring LaPorte County. Porter County is the fastest growing county in Northwest Indiana. Along the lakefront in Porter County, the inland cities have nearly doubled their population while the waterfront cities have largely lost population. In the region, Porter County is projected to have the greatest increase in population growth (nearly 12%) by 2030. See Figure 5.

Figure 5 – Demographics



According to the 2000 census there are 57,616 housing units in Porter County including 2,967 vacant housing units or about 5.1%. Of the 54, 649 occupied housing units in the county, 76.7% were owner-occupied and the remaining units were renter-occupied. Porter County has a higher rate of home ownership than neighboring counties.

2.3 Business

US-12 is bordered primarily by the Indiana Dunes State and National Park. The Steel mill is located along the west central section of US-12 in Porter County and residential communities are found further east. US-20 is primarily industrial. The road is a mix of truck stops, highway dependent business, tobacco shops, liquor stores, and light and heavy manufacturing.



2.4 Agriculture

The United States Department of Agriculture defines prime farmland as “land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. The land must also be available for these uses (cropland, pastureland, forestland, or other land not water or urban built-up land).” The project study area does include areas of prime soil but they are inter-mixed with significant areas of non-prime soils.

Agricultural land comprises 145,779 acres in Porter County in 2002. This is up 5% from the 1997 survey while the average farm size is 241 acres and is down 5% from 1997. The market value of production fell 13% from 1997 to 2002. The prime farmland is in the east-central part of Porter County based on soil surveys and other factors.

The majority of the agricultural land in Porter County is cropland (92%). The leading crops are corn and soybeans. Other agricultural products include vegetables, cattle, poultry, wheat, popcorn, soybeans, nursery and greenhouse products.

2.5 Wetlands

Wetlands are defined as areas that range along a gradient from permanently flooded to periodically saturated soil and support hydrophytic (water-loving) vegetation at some time during the growing season. Wetlands are important for many reasons. They help minimize flooding by holding moisture and slowly discharging it into the ground, which recharges aquifers. Water filtration is another attribute of wetlands. Vegetation takes up excess nitrogen, phosphorus, copper and other heavy metals brought in by surface runoff.

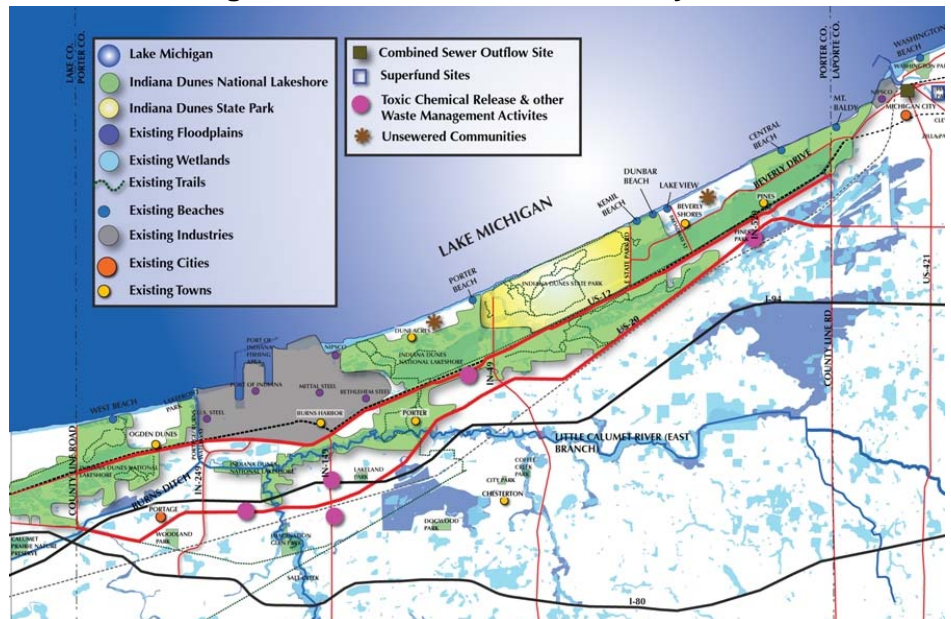
Wetlands are also important as wildlife nesting and wintering habitat. Porter County has about 18,000 acres of wetlands including about 10,000 forested acres. The wetlands in the study area are primarily within the Park boundary and in depressed areas with poorly drained soils.

2.6 Lakes, Streams and Floodplains

The study area is located adjacent to the floodplain and associated wetlands of Lake Michigan to the north. In addition there is a floodplain along the Kankakee River in Southern Porter County. Streams in the corridor include Little Calumet River, Dunes Creek, Brown Ditch, and Burns Ditch.

The Lake Michigan shoreline is a major asset to Porter County. Lake Michigan is the only Great Lake that lies entirely within the United States. Lake Michigan has an average natural depth of 279 feet and holds 22% of the total volume of the Great Lakes. Figure 6 shows the environmental inventory and constraints in the study area.

Figure 6 – Environmental Inventory and Constraints



2.7 Unique Areas

In the early part of the 20th century, the Indiana Dunes Region was a premier resort region. The Great Depression, growing industrialism along the lakeshore, and the influx of permanent residents all had a direct impact on declining resort business. The creation of the Indiana Dunes National Lakeshore renewed interest in the Dunes as a tourist destination. The sand dunes offer a unique habitat. The beaches along the shores of Lake Michigan provide access to the water for swimming and boating activities, as well as opportunities for wildlife watching, hiking, and other recreational activities.

2.7.1 Archeological

Archeological resources are granted protection under a variety of authorities, primarily Section 106 of the National Historic Preservation Act. Archeological resources that maybe granted protection include burial sites, graveyards, Native American sties and burials, Euro-American artifacts, etc. Coordination with the Indiana State Historical Preservation Office (SHPO) regarding archaeological resources would likely be required for many INDOT improvement projects.

2.7.2 Historic

Historical resources are also granted protection under a variety of authorities, primarily Section 106 of the National Historic Preservation Act and Section 4(f) of the Department of Transportation Act. Historic resources that may be offered protection include those listed as National Register sites. Coordination with the Indiana SHPO regarding historic resources would likely be required for many INDOT improvement projects.

2.7.3 Park/Recreation Areas and Trails

The study area has parks and recreational areas available to local residents and travelers to the area. There are over 70 miles of trail that wind along the coast.

- Indiana Dunes State Park features bathhouse/pavilion, picnic areas, and shelters. There are three miles of beach 16.5 miles of trails and Mt. Tom, the tallest dune.
- Indiana Dunes National Lakeshore features a wide variety of hiking trails:
 - Calumet Dune Trail is an accessible paved 0.8 mile trail.
 - Cowles Bog Trail is a moderate to rugged trail with two trail heads and three different loops totaling five miles. It features marshes, a stand of northern white cedars, forested dunes, and an open beach.
 - Dunewood Trace is an easy 1.8 mile linear trail between the campground and Kemil Road.
 - Heron Rookery Trail is an easy two mile linear trail that includes forested watershed, reclaimed farmland, excellent bird watching and spring wildflowers.
 - Inland Marsh Trail is a moderate two-loop trail that totals three miles. The trail skirts the edge of a marsh and crosses through and oak savanna.
 - Ly-co-ki-we is moderate trails that features a series of loops up to 6.4 miles. This is the only trail in the park that permits horseback riding. Trial winds though black oak forested dune ridges, wetlands, and reclaimed prairie.
 - Miller Woods Trail is an easy 1.5 mile trail around a wetland and through Miller Woods. The trail features include wetlands and black oak savanna.
 - Pinhook Bog Trail is an easy 0.75 mile trail through Indiana’s only “true” bog. It is available only by ranger-guided tour.
 - West Beach Trail is an easy 2.5 mile two-loop trail.

The Porter County Bikeway System has been developed within the county to provide recreational and alternative transportation opportunities. There are nine looping trails with over 100 miles that connect with one another. Five rails-to-trails pathways are available for public use in Porter County. The trails are mostly paved and include: Chesterton trail (three miles), Prairie Duneland Trail (nine miles), Iron Horse Heritage Trail (five miles), Calumet Trail (9.2 miles), and Marquette Trail (three miles).

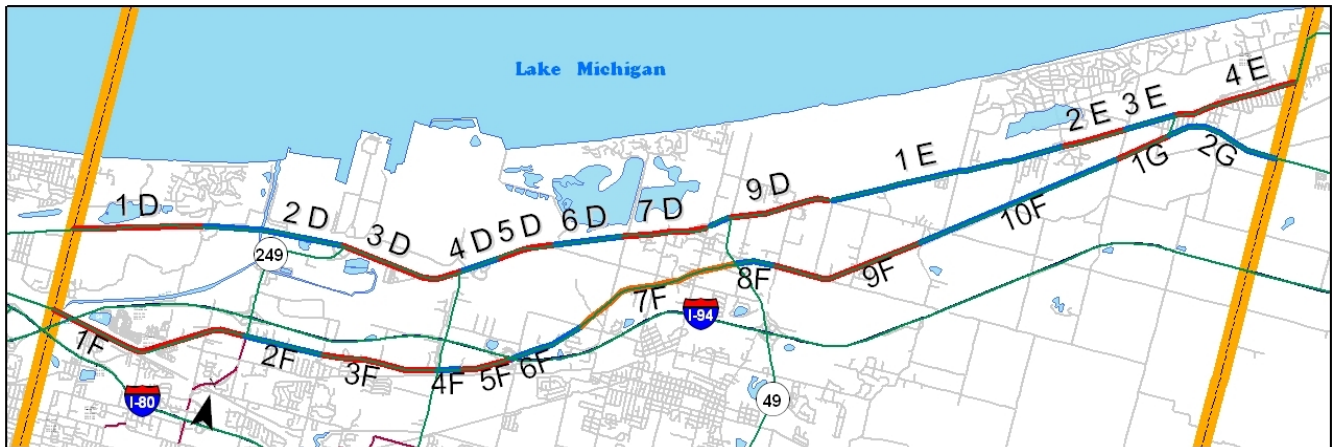
3.0 Purpose, Needs and Analysis

This study was undertaken to address a number of interrelated issues that have the potential to adversely affect the US-12 and US-20 corridor in Porter County. The need to develop a long-term vision for the corridor stems from issues relating to:

- Land Use and Transportation Integration
- Aesthetics
- Access
- Multi-modal Accommodations
- Traffic Congestion and Operation
- Crash/Safety
- Facility Deficiencies

For the purpose of this study, the corridor is divided into segments based on the INDOT State Road Inventory (Figure 7).

Figure 7 – Roadway Segments Based on INDOT State Road Inventory



**Table 2
Roadway Segment Breakpoints**

Segment ID	Beginning Terminus (West)	Segment ID	Beginning Terminus (West)
Route 12		Route 20	
1D	Lake County Line	1F	Lake County Line
2D	Hillcrest Road	2F	SR-249
3D	SR-249	3F	Samuelson Road
4D	SR-149	4F	SR-149
5D	Private Road Interchange	5F	Lions Drive
6D	Oak Hill Road	6F	I-94 Interchange
7D	Mineral Springs Road	7F	Beam Street
8D	Waverly Road	8F	SR-49
9D	SR-49	9F	Tremont Road
1E	IR-272	10F	IR-55
2E	Broadway Avenue	1G	IR-219
3E	Lake Shore Drive	2G	SR-520
4E	SR-520		

3.1 Land Use and Transportation Integration

The corridor is experiencing a number of changes in the activities that are occurring. Tourism is increasing and alternative modes of transportation are becoming more important. US-12 and US-20 cross the corridor east to west and currently fall under the jurisdiction of INDOT for transportation and access considerations. Porter County has jurisdiction over county highways that intersect the corridor. In addition to numerous local streets connecting to US-12 and US-20, the cities and towns have jurisdiction over land use along the corridor. Land use decisions are the responsibility of the local community and are achieved through a set of powers granted by the state. As access decisions such as location, type, and spacing of public and private driveways are made by the various entities with jurisdiction along the corridor, the plan can be used as an advisory guide to ensure that the decisions made by each participant compliment the decisions made by other jurisdictions. A collaborative decision making process would assist in land use and transportation activities that compliment each other.

3.2 Aesthetics

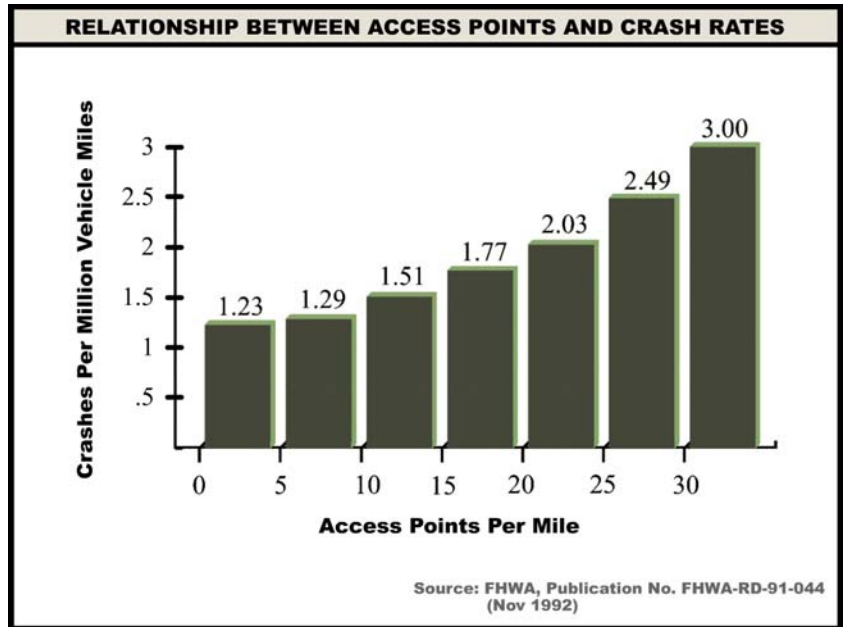
The Porter County Land Use and Thoroughfare Plan emphasize the need to improve the aesthetics and design along the roadways. Within the corridor these improvements range from creating community gateways, signage, minimizing access points, improved landscaping, and design guidelines. The Marina Shores sign on US-12 is an example of a well-designed sign that provides a nice gateway to the city while the signs for the Indiana Dunes are cluttered and hard to read (see photo below).



3.3 Access

Access management is planning the number and location of driveways and intersections to help maintain safe, efficient traffic movement and to provide safer access to and from abutting properties. There is a linear relationship between the number of access points and safety/operation of a roadway. As the number of access points along a roadway increases, the likelihood of crashes and operational problems increases (Figure 8).

Figure 8 – Relationship Between Access Points and Crash Rates



Access points that are frequent and too closely spaced promote stopping, turning, exiting, and entering movements to abutting land uses which causes safety and operational conflicts with through traffic. Properly located and spaced access points can provide for sufficient access to property while maintaining safe roadway operations. The design of access points is important, as well as location and spacing.

US-12 and US-20 are currently being undermined with respect to number and spacing of access points. A chart of access points along US-12 and US-20 is shown in Table 3. Each roadway is divided into segments based on the INDOT State Road Inventory (See Figure 7).

**Table 3
Access Points on US-12 and US-20**

US-12 Segments	Segment Terminus (West)	Access Points	Access Points/Mile	Exceeds Statewide Average Crash Rate
1D	Lake County Line	6	3	
2D	Hillcrest Road	18	10	
3D	SR-249	10	7	
4D	SR-149	5	21	X
5D	Private Road Interchange	11	10	
6D	Oak Hill Road	7	6	
7D	Mineral Springs Road	12	11	X
8D	Waverly Road	5	16	X
9D	SR-49	14	10	X
1E	IR-272	27	9	X
2E	Broadway Avenue	31	36	
3E	Lake Shore Drive	40	65	
4E	SR-520	78	35	X
US-20 Segments		Access Points	Access Points/Mile	Exceeds Statewide Average Crash Rate
1F	Lake County Line	53	20	X
2F	SR-249	51	49	X
3F	Samuelson Road	51	34	
4F	SR-149	13	41	
5F	Lions Drive	9	14	
6F	I-94 Interchange	17	16	
7F	Beam Street	40	18	X
8F	SR-49	11	5	X
9F	Tremont Road	17	8	X
10F	IR-55	27	10	
1G	IR-219	13	18	
2G	SR-520	20	13	X

3.4 Multi-modal Accommodations

Alternative travel options to the motor vehicle include bike, pedestrian, and commuter rail on portions of the corridor.

3.4.1 Non-Motorized

Bike travel on the corridor is limited to the most skilled users due to the lack of bike lanes, numerous access points, and traffic volume. Currently no bike lanes exist on US-12 and 20. Bicyclists generally ride on the narrow shoulders.

Pedestrian travel is difficult because there are no sidewalks on US-12 and 20 for pedestrians. There are also limited crosswalks and numerous access points making it dangerous for pedestrians due to vehicles entering and exiting driveways.

3.4.2 Transit

Commuter Rail service is provided in Northwest Indiana, between South Bend and Chicago, Illinois along the South Shore Line of the Chicago South Shore and South Bend Railroad (South Shore) which is operated by the Northern Indiana Commuter Transportation District (NICTD). The South Shore serves a total of twenty stations, eight of which are in Illinois and twelve of which are in Indiana. Of the twelve Indiana South Shore stations, three are located in Porter County. The Porter County stations are located at Beverly Shores, Dune Park, and Portage/Ogden Dunes. A total of 41 trains operate in both directions each weekday on the South Shore. Of these 41 trains, 27 provide service to one or more of the three Porter County Stations.

Of the average weekday (inbound) boarding total of approximately 7009 on the South Shore (2006), 755 are attributable to the Porter County Stations. The distribution among stations is shown below. In addition, the table also shows the available parking and parking usage at each of these stations, as well as the number of inbound (to Chicago) and outbound (from Chicago) weekday trains serving the stations.

**Table 4
Porter County Commuter Rail Station Data**

Porter County Commuter Rail Station	2006 Average Weekday Boardings	Parking Availability	Parking Usage	Trains per Day (i) inbound (o)outbound
Beverly Shores (f)	57	39	22	(i) 9; (o) 13
Dune Park	482	519	405	(i) 12; (o) 14
Portage/Ogden Dunes	216	230	200	(i) 12; (o) 13

(f) Flag Stop

Source: NICTD

Based on a NICTD survey performed in 2004, home origins (source communities) of commuters for the three Porter County stations are shown below (by percentage of respondents). By applying these percentages to the 2006 boarding data, source community estimates for 2006 were also calculated as shown in Table 5.

**Table 5
Porter County Commuter Rail Station Source Communities**

Porter County Commuter Rail Station	Source Community	% of Commuters from Source Community (2004)	2006 Daily Boardings	Estimated 2006 % of Commuters from Source Community
Beverly Shores	Beverly Shores	80%	57	46
	Other Indiana	20%		11
Dune Park	Valparaiso	35%	482	241
	Chesterton	33%		159
	Porter	17%		82
	Beverly Shores	3%		14
	Other Indiana	16%		53
Portage/Ogden Dunes	Portage	37%	216	80
	Valparaiso	32%		69
	Ogden Dunes	18%		39
	Other Indiana	14%		30

Source: NICTD

In regard to ridership trends, Table 6 below shows historic average weekday boarding data from 1992-2006 at the Porter County South Shore Stations, as well as the combined total for all stations along the South Shore Commuter Rail Line. As shown in the table, total daily weekday boardings on the South Shore have grown from 5897 in 1992 to 7009 in 2006, which equates to an annual growth rate of 1.2%. In comparison, at the three Porter County Stations (Beverly Shores, Dune Park and Portage/Ogden Dunes), boardings have increased from 544 in 1992 to 755 in 2006, an annual growth rate of 2.4%, twice the growth rate of the South Shore line as a whole.

**Table 6
Porter County South Shore Station Average Weekday Boardings (1992-2006)**

Station	1992	1997	1999	2002	2006
Beverly Shores	37	30	20	38	57
Dune Park	271	375	388	428	482
Portage / Ogden Dunes	236	244	222	213	216
Total Porter County Stations	544	649	630	679	755
Total South Shore Boardings	5897	6273	6301	6276	7009

Source: NICTD

Although NICTD does not collect passenger boarding data by station on a monthly basis, they do maintain systemwide average daily boardings by month for the following classifications: total weekday, weekday peak period, weekday off-peak, and weekend. This data for the latest available calendar year, 2006, is summarized below in Table 7.

**Table 7
South Shore Average Monthly Boarding Data - 2006**

Month	Avg. Weekday Boardings	% of Avg. Month	Avg. Weekday Peak Boardings	% of Avg. Month	Avg. Weekday Off-peak Boardings	% of Avg. Month	Avg. Weekend/Holiday Boardings (per day)	% of Avg. Month
January	12,725	89%	9,244	96%	3,480	75%	3,448	67%
February	13,027	91%	9,167	95%	3,860	83%	4,991	97%
March	13,281	93%	9,349	97%	3,932	85%	3,960	77%
April	15,025	105%	10,023	104%	5,002	108%	4,604	89%
May	14,374	101%	9,890	102%	4,484	97%	5,037	98%
June	15,390	108%	10,141	105%	5,249	113%	4,986	97%
July	16,427	115%	9,937	103%	6,490	140%	7,288	141%
August	15,313	107%	9,927	103%	5,386	116%	6,397	124%
September	14,050	98%	9,827	102%	4,224	91%	4,489	87%
October	14,035	98%	9,928	103%	4,107	89%	5,652	109%
November	13,974	98%	9,553	99%	4,422	95%	5,554	108%
December	13,996	98%	8,974	93%	5,022	108%	5,575	108%
Average	14,301		9,663		4,638		5,165	

Source: NICTD

A review of the monthly ridership variations, particularly for the weekend and off-peak periods, was used as an indicator of tourist-oriented ridership on the South Shore, since these are generally the periods during which these types of riders are most prevalent. For purposes of this analysis, it is assumed that the three peak months of the tourist season are June, July and August.

As shown in Table 7, the average weekend ridership on the South Shore in 2006 was 5165. Reviewing the weekend ridership by month shows that during the months of June, July and August, average weekend ridership was 6224, or 29% higher than the average weekend ridership for the year. As can be expected, the highest average weekend ridership occurred in July, which was 41% greater than the monthly average. Similar observations can be made by reviewing the daily off-peak ridership during the same summer period. The average daily off-peak boardings during June, July and August are 33% higher than the average annual off-peak boardings, with July being the highest at 40% greater than the average. It should be noted, as shown in the table, that peak period ridership during the summer months is 5% greater than the average annual peak ridership, however this summer variation is significantly less than the variation for off-peak and weekend ridership.

While the above observations are based on systemwide boardings, it is reasonable to assume that the three Porter County South Shore Stations experience summertime fluctuations that are at least equal to the systemwide average. It is assumed that to a large degree this fluctuation can be attributed to visitors to the Lake Michigan tourist attractions.

A field report for the Indiana Dunes National Lakeshore was performed in conjunction with the Federal Lands Alternative Transportation Systems Study for the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) in 2001. This study recommended that due to the proximity of the existing South Shore commuter rail line to park facilities, consideration should be given to enhancing the linkages between

the rail line and the park facilities. In particular, the study suggested that potential feeder bus service between the existing rail stations and the lakefront attractions should be a consideration in the future. In addition, the study also suggested extensions of local city routes into the park areas (Gary or Michigan City), loop services to serve areas with limited parking and further enhancements to encourage bicycling.

3.5 Traffic Congestion and Operation

Traffic forecasts for US-12 and US-20 were developed from information provided by NIRPC. Growth rates were developed from a series of projections for each of the roadway segments and applied to the latest traffic counts. Forecasts for the years 2010, 2020, and 2030 were developed for each segment (See Table 8).

**Table 8
Annual Average Daily Traffic for US-12 and US-20**

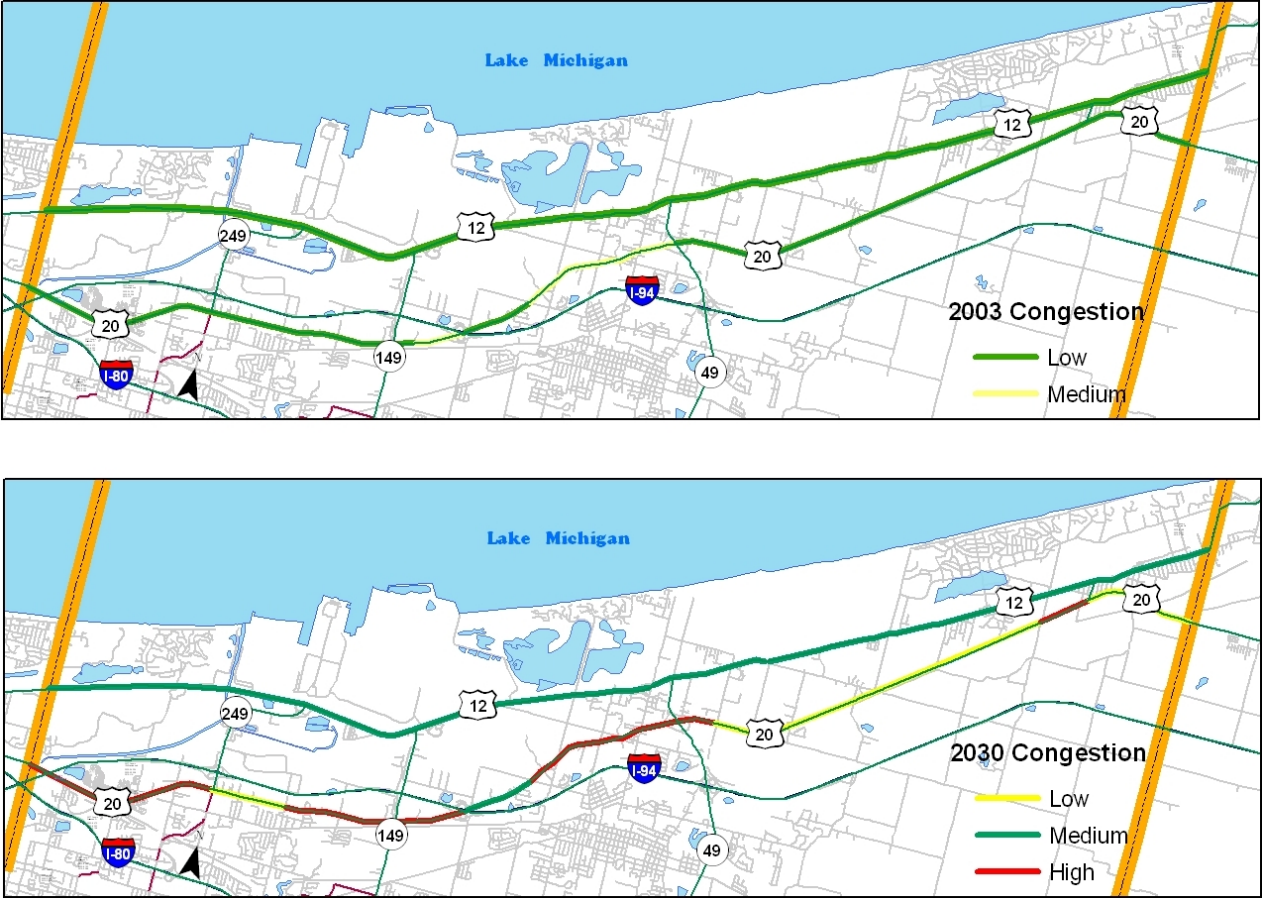
Segment ID	Beginning Terminus (West)	2003	2010	2020	2030
US-12					
1D	Lake County Line	3,280	4,092	5,106	6,370
2D	Hillcrest Road	4,150	4,829	5,620	6,540
3D	SR-249	8,030	9,909	12,227	15,088
4D	SR-149	7,820	9,773	12,214	15,264
5D	Private Road Interchange	7,670	10,652	14,793	20,545
6D	Oak Hill Road	5,790	7,100	8,706	10,676
7D	Mineral Springs Road	6,000	7,404	9,137	11,276
8D	Waverly Road	5,930	7,320	9,035	11,152
9D	SR-49	3,360	3,399	3,438	3,477
1E	IR-272	2,920	2,942	2,965	2,987
2E	Broadway Avenue	3,370	3,407	3,444	3,481
3E	Lake Shore Drive	3,670	3,729	3,790	3,851
4E	SR-520	7,350	7,718	8,105	8,510
US-20					
1F	Lake County Line	10,840	14,116	20,586	30,021
2F	SR-249	13,910	16,000	19,542	23,869
3F	Samuelson Road	10,720	14,430	22,062	33,731
4F	SR-149	10,530	13,885	20,612	30,599
5F	Lions Drive	17,110	19,831	24,487	30,235
6F	I-94 Interchange	19,540	21,778	25,426	29,686
7F	Beam Street	19,100	21,191	24,581	28,513
8F	SR-49	20,400	25,032	33,529	44,912
9F	Tremont Road	17,660	20,172	24,392	29,496
10F	IR-55	16,370	19,455	24,896	31,859
1G	IR-219	15,080	16,931	19,977	23,571
2G	SR-520	10,660	11,547	12,944	14,510

An operational analysis was performed for US-12 and US-20 using the average daily traffic forecasts prepared for each segment. A peak hour, peak directional capacity was developed for each roadway segment using methods from the Highway Capacity Manual. Design hour traffic volumes for each

forecast year were developed using a peak hour factor of 0.12 and a directional split of 60/40. The volumes were then applied to the capacities to produce volume to capacity ratios (V/C) for each segment. The segments were then labeled on a scale of LOW, MEDIUM, and HIGH congestion. LOW represented a V/C below .85, MEDIUM .85 to 1.0, and HIGH over 1.0.

In 2003, the traffic in the corridor ranged from a low of 2,920 AADT on the east end of US-12 to a high of 20,400 AADT on the central section of US-20 in Porter County. In 2030, the traffic is expected to increase to over 30,000 AADT on several sections of US-20. The increase in traffic is expected to influence the capacity and intersection operations within the corridor. Figure 9 shows the current and future congestion on the road segments on the corridor. As congestion is anticipated to increase, the colors in the figure change from green to red. Corridor wide improvements are recommended for segments with a 2030 V/C of 1.0 or higher. US-20 has a number of segments over 1.0 in 2030.

Figure 9 – 2003 and 2030 Congestion



3.6 Crash/Safety

An analysis of crashes occurring on US-12 and US-20 within Porter County was conducted for the years 2002 through 2006. There were 1,583 reported crashes on the two highway segments. Table 9 breaks down the crashes by severity. Any crashes involving fatalities are designated “Fatal”. Crashes involving injury but no fatalities are designated “Injury”. Crashes with neither fatality nor injury are designated “Property Damage Only.”

**Table 9
Crash Severity 2002-2006**

	US-12	US-20
Total Crashes	467	1,116
Fatal	3	15
Injury	134	328
Property Damage Only	330	773

The top five factors for crashes on US-12 from 2002-2006 are:

1. Animals or objects in the road-way (23%)
2. Failure to yield the right of way (10%)
3. Ran off road (10%)
4. Following too closely (9%)
5. Unsafe speed (5%).

The top five factors for crashes on US-20 are:

6. Animals or objects in the roadway (18%),
7. Failure to yield right-of-way (15%)
8. Following too closely (10%)
9. Unsafe backing (5%)
10. Distracted driver (4%)

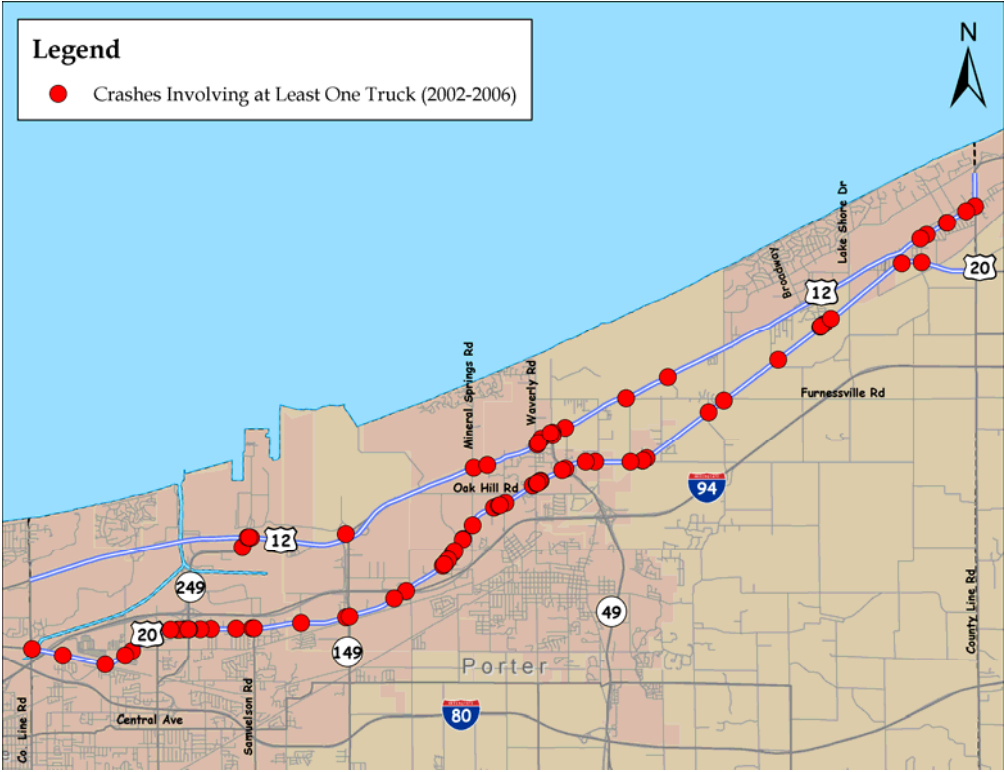
Reducing truck crashes is a stated goal of the Indiana Department of Transportation's 2006 Strategic Highway Safety Plan. Table 10 shows the percentage of truck crashes on US-12 and US-20 versus all crashes. Truck crashes are shown to be a more significant issue on US-20 than US-12.

Table 10
Truck Crashes vs. Auto Crashes (2002-2006)

	US-12/ US-20	US-12	US-20
Non-Truck Crashes	1,328	409	919
Trucks	255	58	197
Percent Truck	16.1%	12.4%	17.7%

The locations of crashes involving trucks on US-12 and US-20 between 2002 and 2006 are displayed in Figure 10.

Figure 10 – Truck Crash Locations



The majority of crashes on US-12 and US-20 do not occur at intersections. The numerous access points along US-12 and US-20 play a contributing role in non-intersection crashes. The crashes occurring at intersections are primarily four-way and T-intersections. Of the 178 intersection crashes along US-12 from 2002 through 2006, approximately 29% were clustered at three major intersections, listed below in Table 11 as “crash hot-spots.”

**Table 11
US-12 Intersection Hot-Spots (2002-2006)**

Intersecting Roadway	Crashes
SR-249	28
SR-149	13
Mineral Springs Road	11

Of the 507 crashes at intersections along US-20 from 2002 to 2006, approximately 28 percent took place at five intersections, shown in Table 12. US-20, from Oak Hill to Waverly Road in Chesterton has been included in *Indiana's Five-Percent Report*. The latest report, based on data as recent as 2005, lists the top five percent of roadways and intersections exhibiting a high occurrence of traffic crashes.

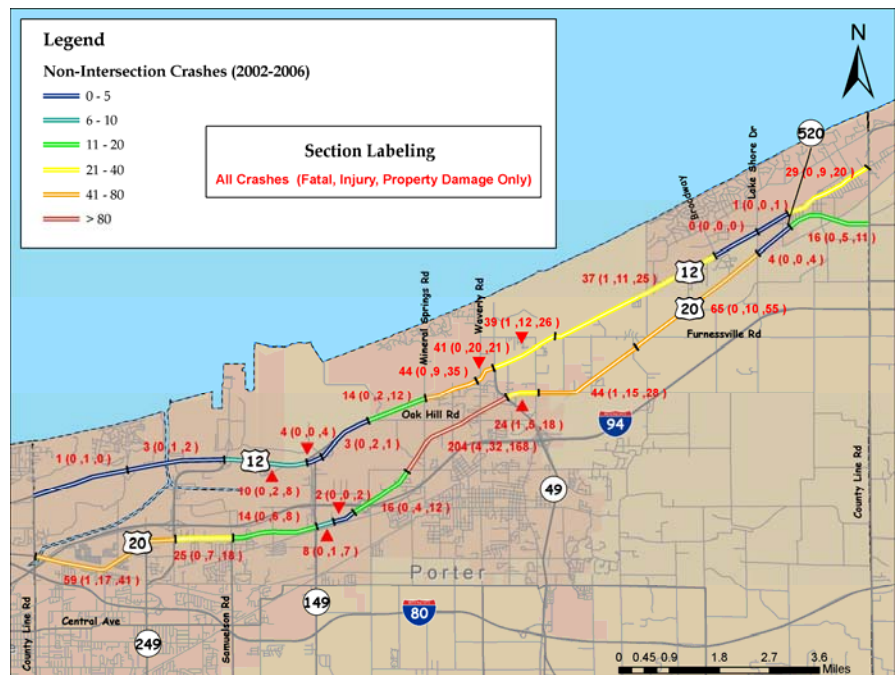
**Table 12
US-20 Intersection Hot-Spots (2002-2006)**

Intersecting Roadway	Crashes
Waverly Road	34
SR-249	34
Willowcreek Road	31
Worthington Drive	23
SR-149	21

A large percentage of crashes on US-12 and US-20 are designated as having “no junction involved”. Non-intersection crashes are often difficult to address as they are frequently spread out along roadways rather than clustered around a particular point such as an intersection.

The non-intersection crashes which were reported from 2002-2006 are totaled for each roadway segment, along with the number of crashes classified as fatal, injury, or property damage only. The data displayed only cover crashes for which reliable geographical coordinates were provided (about 81 percent of the entire crash data from 2002-2006). Figure 11 shows the occurrence of non-intersection crashes on US-12 and US-20.

Figure 11 – Non-Intersection Crashes



To determine crash rates, all crashes (junction and non-junction) were tied to the roadway segments shown in Figure 12. Values in bold red text (see Table 14) are greater than the 2005 Indiana statewide average crash rates, listed in Table 13 below (statewide crash rates).

Table 13
Indiana Statewide Average Crash Rates (2005)

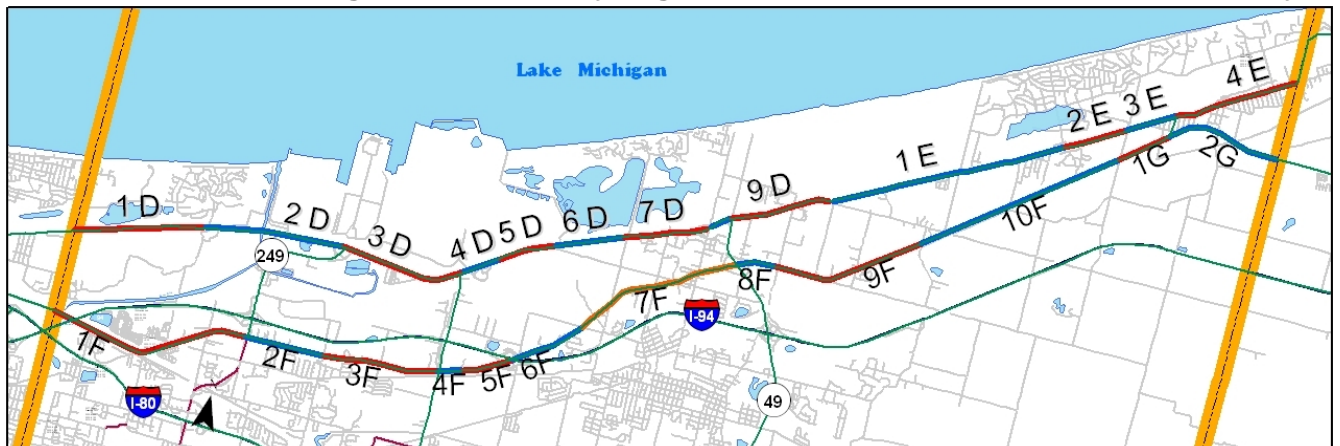
	All Indiana Roadways	U.S. Routes in Indiana
Fatal Crash Rate (per 100 MVMT)	1.15	1.30
Injury Crash Rate (per 100 MVMT)	57.38	44.78
PDO Crash Rate (per 100 MVMT)	221.96	135.01
All Crashes (per 100 MVMT)	280.40	181.09

Table 14
Crash Rates

Segment ID	Beginning Terminus (West)	Starting Milepost (West)	Total Crash Rate Per 100 MVMT	Fatal Crash Rate Per 100 MVMT	Injury Crash Rate Per 100 MVMT	PDO Crash Rate Per 100 MVMT
US-12						
1D	Lake County Line	0.00	10.12	0.00	10.12	0.00
2D	Hillcrest Road	1.77	61.98	0.00	20.66	41.32
3D	SR-249	3.55	159.31	0.00	39.83	119.48
4D	SR-149	5.06	419.12	0.00	132.35	286.77
5D	Private Road Interchange	5.30	22.99	0.00	15.33	7.66
6D	Oak Hill Road	6.38	206.92	0.00	33.11	173.81
7D	Mineral Springs Road	7.46	468.84	0.00	100.47	368.38
8D	Waverly Road	8.54	1,519.26	0.00	696.33	822.93
9D	SR-49	8.86	574.07	11.96	155.48	406.63
1E	IR-272	10.20	275.66	5.87	82.11	187.68
2E	Broadway Avenue	13.37	0.00	0.00	0.00	0.00
3E	Lake Shore Drive	14.23	101.29	0.00	0.00	101.29
4E	SR-520	14.85	202.89	0.00	69.96	132.93
Entire US-12 Segment		n/a	233.89	1.33	69.97	162.59
US-20						
1F	Lake County Line	0.00	285.79	5.10	108.87	171.81
2F	SR_249	2.70	165.31	0.00	59.79	105.51
3F	Samuelson Road	3.74	142.18	0.00	56.28	85.90
4F	SR-149	5.26	134.01	0.00	29.78	104.23
5F	Lions Drive	5.58	18.24	0.00	7.30	10.94
6F	I-94 Interchange	6.24	90.49	0.00	30.16	60.33
7F	Beam Street	7.29	698.22	13.34	173.44	511.43
8F	SR-49	9.51	143.61	2.56	43.60	97.45
9F	Tremont Road	10.08	163.78	2.16	53.88	107.75
10F	IR-55	12.09	144.73	0.00	24.12	120.61
1G	IR-219	14.84	31.37	0.00	0.00	31.37
2G	SR-520	15.56	78.15	3.40	30.58	44.17
Entire US-20 Segment		n/a	202.32	2.78	60.19	139.36

Values in red text are greater than the 2005 Indiana statewide average crash rates

Figure 12 – Roadway Segments Based on INDOT State Road Inventory



3.7 Facility Deficiencies

Facility deficiencies occur as policy, standards, and technology change over time. US-12 and US-20 are in INDOT jurisdiction and therefore their standards have been applied to identify potential deficiencies along the corridor. A number of deficiencies exist on the corridor including obstructions such as light poles and other objects within the clear zone, insufficient shoulder widths, and obstructions.

Shoulder, travel lane and turn lane widths are generally at or above standard for US-12, though there are deficiencies east of SR-249, along the section near Oak Hill Road and between SR-49 and IR-272 (Furnessville Road).

US-12 has limited design deficiencies. Right shoulder widths fall below the design standard for two-lane urban principal arterials of six feet between Oak Hill Road and just east of the intersection with SR-49. Right shoulder widths are similarly below design standards for a stretch of US-12 between IR-272 (Furnessville Road) and Lake Shore Drive.

US-20 falls below INDOT standards more frequently. Lane widths are deficient for much of Porter County, falling below the recommended minimum width of 12 feet for 4-lane urban principal arterials. In addition, the right shoulder width is deficient for all undivided portions of US-20 in Porter County, falling below the minimum 10-foot standard.

4.0 Alternatives Analysis and Recommendations

4.1 Mainline Alternatives

In addition to the strategies and recommendations of this study that can be applied as stand alone improvements, incrementally, or as part of other strategies and recommendations, this study developed a range of alternatives for US-12 and US-20. All of the alternatives include consideration of access management strategies and implementation of multi-modal accommodations. Because this study is separate from the National Environmental Policy Act (NEPA) process, it was not within the scope of this study to select a preferred alternative for the study area. The mainline alternatives were developed to address the long-term concept vision of the corridor.

4.1.1 US-20 Mainline Alternatives

4.1.1.1 Five-Lane Two-Way-Left-Turn-Lane (TWLTL)

This alternative would include a 16-foot center Two-Way-Left-Turn Lane (TWLTL) (Figure 13). This alternative would meet some of the traffic congestion and safety needs, by removing left-turning vehicles from the through traffic stream. A TWLTL is most appropriate for roads with a speed limit less than 45 mph.

Figure 13 – Five-Lane with Two-Way Left Turn Lane Cross-Section



Pedestrian-friendliness would be improved at signalized intersections though mid-block crossings would not be possible with a TWLTL. Pedestrians would have to cross a significant roadway width without the benefit of two-stage crossings.

This alternative would meet some of the multimodal needs for the corridor by providing an eight foot shoulder which includes five foot bike lanes, and sidewalks to accommodate bike and pedestrian traffic. However the presence of numerous left-turns into private driveways would not make this alternative as safe as the variable width median. See Figure 14.

Aesthetically, this is the least favorite alternative for the corridor. Approximately 80 feet of corridor width would be continuous pavement. Opportunities for textured pavement and plantings would be limited to the sidewalk and terraces along the sides of the roadway.

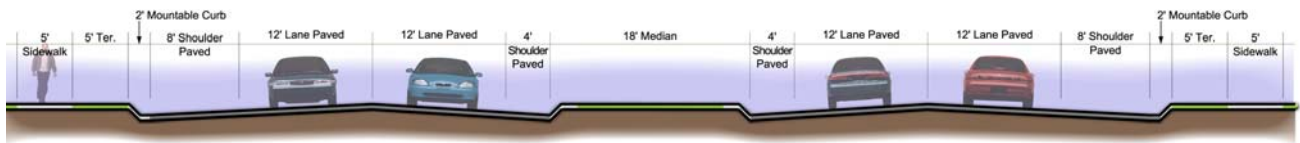
Figure 14 – US-20 Five-Lane with Two-Way Left Turn Lane



4.1.1.2 Four-Lane with Median

This alternative consisted of a four-lane divided urban facility with a median extending along the entire length of the corridor (see Figure 15). With this alternative, many of the existing driveways along US-20 would be changed from full access to right in/right-out access with the introduction of a median. Median openings would be provided at mid-block between signalized intersections where they could be safely accommodated. The mid-block openings would allow u-turns for direction change to gain access to driveways along the corridor. This alternative best meets the need to reduce access points along the corridor. This alternative would require the greatest number of commercial and residential acquisitions primarily because the median would be wider than a center turn lane.

Figure 15 – Four-Lane with Median Cross-Section



This alternative provides improved pedestrian and bike accommodations. In addition to a bike lane and sidewalks, pedestrians would be able to cross the roadway in two-stages rather than one, with the median providing a refuge between crossings. See Figure 16.

The addition of a median has the greatest potential for aesthetic enhancements. Median treatments could include grass, decorative plantings, and decorative pavements to enhance the visual landscape of the corridor. The use of pavement coloring and textures could also be included at pedestrian crossings and other locations to enhance the aesthetics of the alternative.

Figure 16 – US-20 Four-Lane with Median



4.1.1.3 Three-Lane with Two-Way Left-Turn Lane

This alternative consisted of converting US-20 from a four-lane undivided facility to a three-lane facility, with a continuous two-way left turn lane down the center. See Figure 17. This alternative was initially considered due to increased research in the transportation industry on the safety and operational benefits of converting four-lane undivided roadways to three-lane facilities. Several recent studies have recently been undertaken by the Iowa Department of Transportation in conjunction with Iowa State University's Center for Transportation Research and Education (CTRE) and Department of Statistics. The results of these studies show significant improvements to both safety and operations in some cases.

A number of factors determine the feasibility of such a conversion. The primary factor is traffic volume, including when bi-directional, peak-hour volumes are less than 1,500 vehicles per hour (VPH), which typically translates to about 15,000 vehicles per day. In the case of US-20, the traffic is forecasted to exceed 15,000 vehicles per day throughout much of the corridor by the year 2030. Because of this, the alternative was dismissed from further consideration.

Figure 17 – Three-Lane with Two-Way Left-Turn Lane



4.1.1.4 Hybrid Alternative

The hybrid alternative is a combination of both the four-lane with a median and the five-lane TWLTL alternatives. Pedestrians would have the benefit of two-stage crossings at intersections and the potential for mid-block crossings with a pedestrian refuge in parts of the corridor. This alternative includes a five-foot bike lane and sidewalks along the entire corridor. This alternative lies in the middle in comparison to the other two build alternatives from an aesthetics perspective.

4.1.1.5 No Action

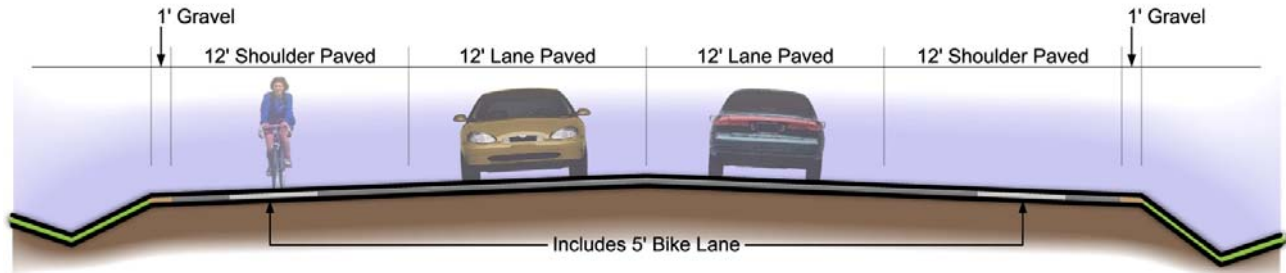
Under this option, the existing facility would be maintained as is. The no-action alternative would not include short-term improvements such as access management strategies and implementation of multi-modal accommodations. The no-action alternative fails to address the long-term needs from increased traffic and safety pressures on the corridor. This option would operate at a low level of service (LOS) and would not provide adequate bike or pedestrian accommodations along the corridor. The no-build option provides a baseline for comparison of the other alternatives.

4.1.2 US-12 Mainline Alternatives

4.1.2.1 Two-Lane with Bike Lanes

This alternative consists of a portion of the roadway designated for bicyclists. The bike lane would be a paved one-way lane on both sides of the roadway. The shoulder would increase to 12 feet wide and five feet of each shoulder would be a designated bike lane. Bike lanes will be clearly marked and identified to direct motorist attention to their preferred use by bicyclists. Figure 18 shows a typical cross-section for a two-lane road with bike lanes.

Figure 18 – Two-Lane with Bike Lanes Cross-Section



This alternative would only address the needs of the biker and would not address all the multi-modal needs for the corridor. This alternative is the less aesthetically pleasing than a multi-use path. See Figure 19.

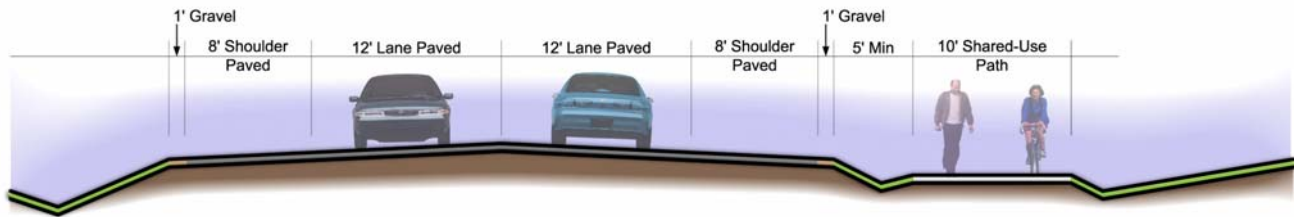
Figure 19 – US-12 Two-Lane with Bike Lane



4.1.2.2 Two-Lane with Multi-Use Path

This alternative consists of a two-way paved facility used by pedestrians, joggers, skaters, and bicyclists. The path would be separated from motor vehicle traffic by a minimum of five-feet of open space and an eight-foot shoulder. The path would be constructed within the roadway right-of-way. Figure 20 shows a typical cross-section for a two-lane road with a multiple use path.

Figure 20 – Two-Lane with Multi-Use Path Cross-Section



This option would provide for the most multi-modal accommodations as the path is shared use for runners, walkers, bikers, and other non-motorized forms of transportation. This alternative is also the most aesthetically pleasing and the safest as the pedestrians are separated from vehicles by a grass median. See Figure 21.

Figure 21 – US-12 Two-Lane with Multi-Use Path



4.1.2.3 No Action

Under this option, the existing facility would be maintained as is. The no-action alternative would not include short-term improvements such as access management strategies and implementation of multi-modal accommodations. The no-action alternative fails to address the long-term impacts from increased traffic pressures on the corridor. This option would operate at a low level of service (LOS) and would not provide adequate bike or pedestrian accommodations along the corridor. The no-build option provides a baseline for comparison of the other alternatives.

4.2 **Recommendations**

The strategies and recommendations developed for the study are for both US-12 and US-20 except where noted. The strategies and recommendations are organized into twelve sections:

1. US-20 needs a major upgrade and long-term funding sources should be explored, identified and obtained.
2. Right-of-way requirements should be planned for and sample typical sections need to be reviewed.
3. Corridor multi-modal strategies should be implemented.
4. Corridor access management strategies should be implemented to preserve the corridor.
5. Aesthetic enhancements should be applied to the corridor.
6. Local communities and Porter County should balance land use and transportation.
7. Porter County and communities should adopt local transportation plans.
8. Communities adjacent to the corridor should enact/update regulatory ordinances and other land use controls.
9. Intelligent transportation systems need to be developed and implemented.
10. Promote sustainable practices
11. A feasibility study should be considered for jurisdictional transfer of US-12 from INDOT to another entity.
12. Implementation of Marquette Plan Phase II projects.

Many of the strategies and recommendations for the corridor can be implemented as stand alone short-term improvements or as incremental improvements toward a long-term alternative.

4.2.1 **US-20 Needs a Major Upgrade and Long-term Funding Sources Should be Explored, Defined, and Obtained**

The US-20 corridor is a vital element in the transportation system from local, regional, and state perspectives. It needs to continue to provide the level-of-service, safety, and mobility it was envisioned to provide. The needs and

issues identified for the corridor were used to conclude that the US-20 corridor needs a major upgrading in the long-term. Upgrades should be balanced with other INDOT projects.

Due to these needs it is envisioned that a four-lane with median would best serve the corridor's needs in the long-term. A four-lane with median would likely serve the long-term needs but in areas with right-of-way constraints and speed limits of less than 45 mph, a TWLTL should be considered. In order to best preserve the US-20 corridor, the hybrid alternative needs to be examined in more detail.

Funding sources are critical to all INDOT improvement projects. This is especially the case considering the increasing transportation needs across Indiana and the limited and competitive funding available to accommodate the needs.

Depending on the level and type of improvement approved for the US-20 and US-12 corridor, funding sources could include Transportation Improvement Program (TIP) funds, Surface Transportation Program (STP), National Highway System (NHS), and STP Transportation Enhancement.

4.2.1.1 Transportation Improvement Program

A Transportation Improvement Program (TIP) is a list of federally funded local transit and highway projects (including state highways), in a metropolitan planning area. Federal funds for transportation projects from the US DOT are allocated to urbanized areas (UZA) on an annual basis. Portions of Porter County lie within the Chicago UZA and Michigan City UZA. All projects contained in a TIP must be consistent with the Northwest Regional Transportation Plan.

4.2.1.2 Surface Transportation Program

STP is a block grant program providing states and local agencies flexible funding that may be used for projects on any Federal-aid highway facility, including the NHS. The types of projects eligible for STP funds include roadway maintenance, preservation and expansion projects, bridge rehabilitation and replacement projects, transit capital projects, transportation system enhancement projects, and safety improvement projects.

4.2.1.3 STP Transportation Enhancement

Ten percent of Indiana's STP allocation is set aside for transportation enhancement activities encompassing a range of environmentally related activities. The Northwest Regional Transportation Plan asserts that Northwest Indiana has been very successful in receiving funding for bicycle/recreation trails, historic preservation, and similar projects.

4.2.2 Right-of-Way Needs to be Planned for and Sample Typical Sections Should Be Reviewed

To effectively implement the functional roadway classification map, adequate right-of-way must be preserved to facilitate future road improvements. The most effective way to preserve right-of-way is to require adequate building setbacks along roads that are identified as arterials and collectors. Requiring a deeper setback will prevent new construction within the right-of-way, such as houses, buildings, and other structures that are

costly to relocate. Access control is another mechanism that can be used to implement the functional roadway classification map.

The existing right-of-way widths on the corridor are 70 feet for all of the two-lane sections of US-12 and 200 feet on all of the four-lane sections of US-12. No capacity expansion is needed on US-12 before 2030 so existing right-of-way is sufficient for the proposed alternatives. On US-20 the right-of-way varies from 92 to 200 feet. The right-of-way widths by segment are shown in Table 15.

**Table 15
Existing Right-of-Way Widths for the US-20 Corridor**

Segment ID	Starting Milepost	Divided/ Undivided	Existing ROW Width
1F	0	U	100
2F	2.7	U	100
3F	3.74	U	100
	4.24	U	115
4F	5.26	U	115
5F	5.58	U	92
	5.93	D	200
6F	6.24	D	200
	6.40	U	92
7F	7.29	U	92
	7.80	U	103
	9.01	U	105
8F	9.51	U	100
	9.80	U	118
9F	10.08	U	100
10F	12.09	U	100
	12.53	U	105
1G	14.84	U	105
2G	15.56	U	105

The actual amount of right-of-way that will be needed varies depending on the type of improvement that is desired. A deeper setback allows more flexibility in improvement choices but excessive setback may result in inefficient land use. The necessary amount of right-of-way and corresponding setbacks will vary based on a number of factors including, but not limited to:

- Traffic volume
- Roadway function
- Speed limit/design speed
- Terrain (cuts and fills-removing and/or adding soil)
- Intersection types and needs (dedicated left and right turn lanes, islands, etc.)
- Storm sewer/curb and gutter versus rural ditches for drainage
- Trails and sidewalks for bikes and pedestrians

-
- On-street parking
 - Type and width of median
 - Landscaping/streetscaping (trees, plants, lights, pedestrian, and transit amenities)
 - Type and location of access points (driveways)
 - Local roadway connections (including frontage roads)

4.2.3 Corridor Multi-modal Strategies Should Be Implemented

Multimodal strategies and recommendations include bike, pedestrian, and transit accommodations as well as linkages between all three modes. Currently the local and county ordinances along the corridor do not contain provisions pertaining to on or off street bicycle/pedestrian pathways. The Porter County Land Use and Thoroughfare Plan suggest these pathways could be in many forms and can be added to roads. Recommendations include marked crosswalks, sidewalks and bike lanes on US-20 and a bike path or lane on US-12. Highway 12 and 20 are not currently the preferred bike or pedestrian route in the corridor. The following multimodal accommodations could include:

- Review sidewalk connections along the corridor and provide connections where gaps currently exist along side roads. Improve sidewalk quality and provide pedestrian-scale lighting.
- Add signage that promotes driver awareness of bike and pedestrian users such as “Share the Road” signs as a short term measure.
- Provide marked crosswalks and two-stage crossing, or crossing one direction of traffic at a time by providing a pedestrian refuge in the middle.
- Provide clear bike delineation and/or protection between cars and bikes on the roadway.



There is a definite need for a transit service linkage between the existing South Shore Commuter Rail Line and the Lakefront recreational areas. With the three existing commuter rail stations in Porter County, transit would be a logical mode choice for visitors to the tourist attractions in this area. Currently the one-mile separation between the stations and the lakefront attractions limits the attractiveness of this option. As recommended in the prior Federal Lands Alternative Transportation Systems Study, it is

suggested that consideration be given to providing transit connections between the existing stations and the lakefront attractions, as well as between the attractions themselves. In addition to completing the transit connectivity to the lakefront attractions, shuttle service from the commuter rail stations to the lakefront would also enable the station parking lots to be utilized by visitors on weekends by providing them a shuttle connection to the lakefront.

Bicycles are not allowed to be transported on the South Shore railroad at the present time, due to a number of factors:

- Because of the low level platforms at many of the South Shore stations, combined with the high level boarding on the trains, passengers would be required to lift the bicycles up the steps into the vestibule of the train.
- Because many of the South Shore trains are currently operating at or above capacity, there is a shortage of available space on the trains for storing bicycles.
- Additional dwell time at stations would be required for passengers boarding and alighting with bicycles.

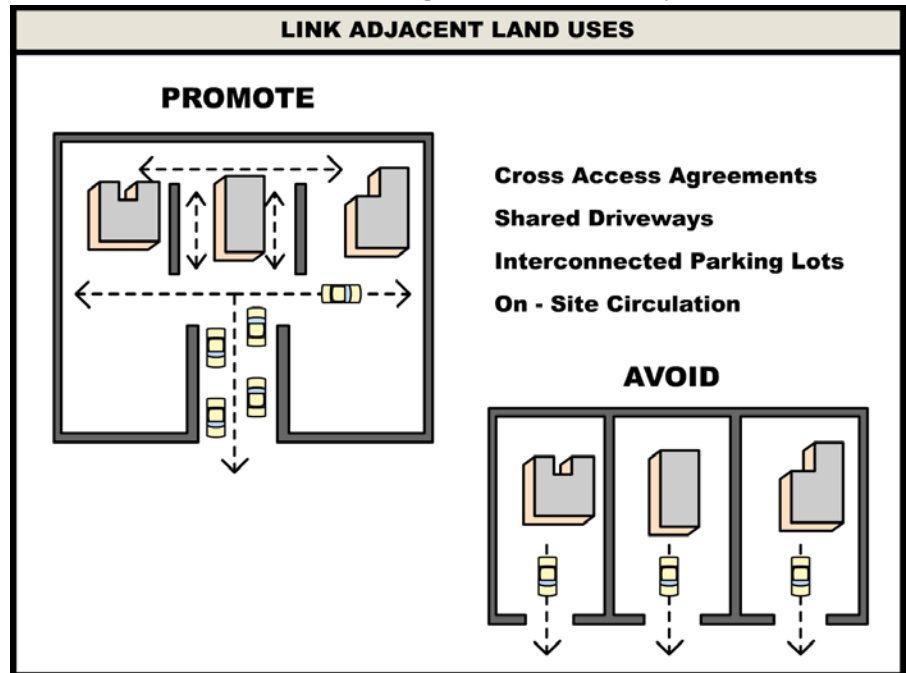
Due to the character of the study area and the bicycling facilities that are available in this area, it is suggested that opportunities be explored for providing a multi-modal interface between bicycles and trains along the South Shore. The following are possible alternatives that may be explored further (to be considered either individually or in combination):

- Providing ramps in lieu of the stairs between low level platforms and high level boardings to enable easier transporting of bicycles onto trains.
- Retrofitting a number of South Shore cars by removing several rows of seats to allow a storage area for bicycles.
- Lifting the prohibition on bicycles during off-peak hours only in order to avoid conflicts between bicycles and commuters on the more crowded rush-hour trains.
- Allowing bicyclists to board and alight South Shore trains at certain designated stations where provisions could be made to facilitate the boarding/alighting process.

4.2.4 Corridor Access Management Strategies Should be Implemented to Preserve the Corridor

Access management has been the focus of a number of studies across the country, and INDOT is beginning to incorporate access management strategies into their highway improvement projects to enhance safety, operations, and mobility. Strategies to consider include consolidation, elimination and relocation of driveways (Figure 22). In addition, local street connections should be provided in some areas of the corridor to enhance local traffic circulation.

Figure 22 – Link Adjacent Land Uses



4.2.4.1 Driveway Consolidation

The number of entrances and exits along US-12 and US-20 directly impacts the movement of traffic through the area. Driveway consolidation refers to the reduction in the number of adjacent driveways to the minimum needed for safe and efficient ingress and egress to/from a parcel. Driveway consolidation can be achieved through a voluntary agreement between INDOT and the local land owner at any time. It may also include relying on entrance regulations that are controlled by the issuance of permits from INDOT.



4.2.4.2 Driveway Elimination

In some cases a property owner may agree to remove direct access to US-12 and US-20. In those instances where a structure has been constructed on a property to make a driveway obsolete but the curb-cut still remains, INDOT should remove the access via reconstruction of the curb and gutter.

Other criteria for driveway removal include driveways located within the functional area of the intersection that pose a safety hazard to vehicular traffic using the intersection.

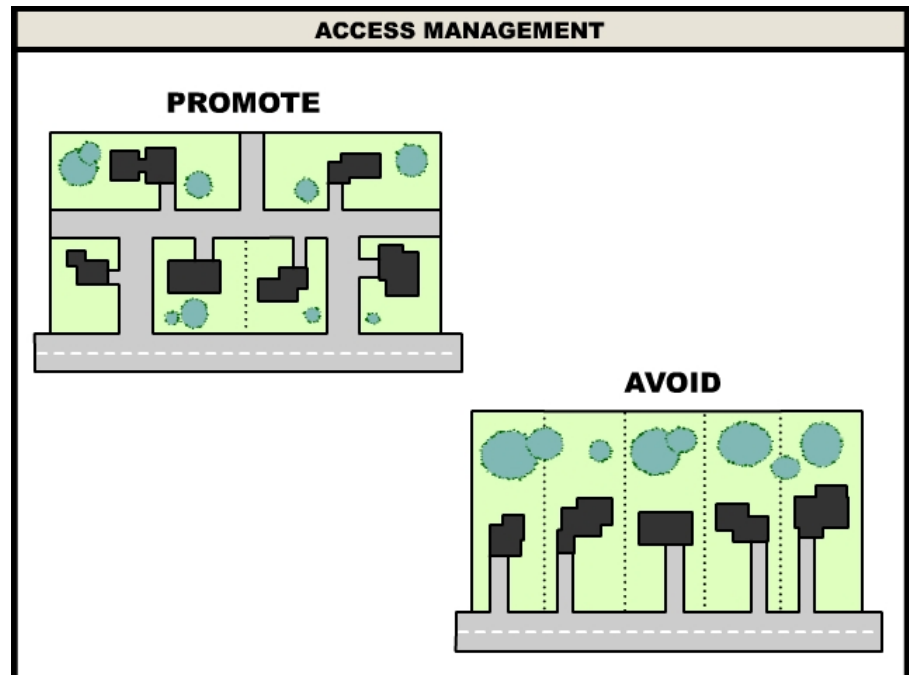
4.2.4.3 Driveway Relocation

Relocating driveways in close proximity to an adjacent intersection helps maintain and or improve the function of the intersection. Driveways that are located too close to an intersection can pose safety and operation challenges. Some examples include difficulty anticipating where a vehicle is likely to turn, left-turns into a driveway too close to the intersection and difficulty entering or exiting the driveway because of intersection queues blocking the driveway. Relocating the driveway farther away from the intersection or onto the side road often remedies this situation.

4.2.4.4 Cross Access

Cross access can be achieved by connecting parking lots and promoting efficient channelization between those lots, or can include private or public street connections between adjacent properties (Figure 23). Cross access agreements between commercial properties along the corridor would allow a vehicle to frequent multiple businesses easily without the need to travel on US-12 or 20.

Figure 23 – Promote Cross Access



4.2.5 Aesthetic Enhancements Need to be Applied to the Corridor

Corridor aesthetics can play an important role in how inviting and comfortable a corridor can feel for the auto, bicycle, transit, and pedestrian user. Many communities use transportation facilities as an opportunity to establish entrances or gateways to the community. Gateways offer a sequence of views from the road, which play a part determining a traveler's first impression of a place. Aesthetic enhancements include:

- Gateways
- Wayfinding
- Streetscaping
- Aesthetics

Effective gateway planning links a sequence of views with common elements that give the corridor and community entrance its own identity. One of the most important and frequently used elements is streetscaping. Common streetscaping techniques include a continuous row of shade trees on either side of a road, a planted median, and a landscaped buffer composed of native plant materials. Streetscaping can also provide a sense of enclosure that accentuates the transition between openness of the surrounding landscape and the density of the community as shown on the Marquette Plan Phase II graphics at the end of the report.

Placing utilities underground, ornamental lighting, sign controls, and sidewalks or parallel paths can also contribute to the overall image of a community gateway. Other gateway themes can focus on natural or scenic features, history, civic identity, etc. An example is shown below.



Beyond the gateway, communities may also embrace corridor branding. Corridor branding continues the gateway theme on arterial streets and major commercial corridors. A branded corridor includes an identifiable and continuous design theme. The theme may be defined by landscaping, streetscaping, and signage.

A successful corridor will have distinct boundaries and clearly defined destinations within the corridor. The corridor should provide attractive and

efficient accommodations for a variety of transportation means including automobiles, bicycles, and pedestrians. Communities that embrace these ideas may realize a regional economic advantage as they provide unique and stimulating environments.

Examples of aesthetic opportunities include:

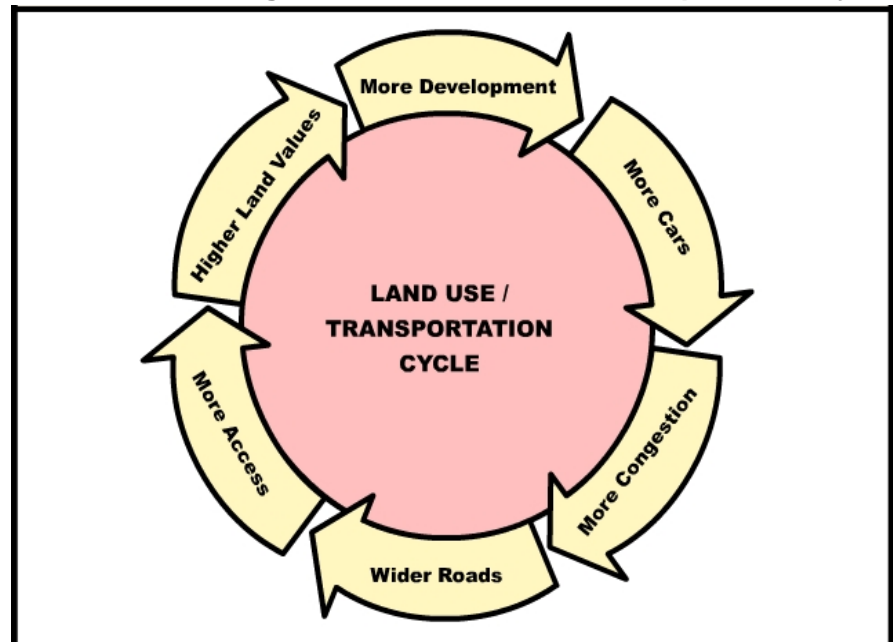
- Increase pedestrian lighting at crosswalks to provide a safe crossing and increase visibility of pedestrians.
- Enhance corridor aesthetics and promote a corridor-wide theme to create a sense of community. This can be achieved through uniform lighting, signage such as banners, pavement coloring and patterns or other elements such as planters.
- Clean up visual clutter by removing billboards and applying uniform standards for commercial signs. Directional and way finding signage should be consistent as well.
- Encourage and support businesses so that they can improve facades, signage and landscaping. Promote community-oriented development such as inside out development with buildings closer to the sidewalk and parking on the interior of lots, blocks and linear shops to reduce the auto-dependent feel of the corridor.
- Relocate and bury overhead utilities to remove visual clutter and promote a human scale.
- Provide a grass terrace and wide sidewalks to separate pedestrian zones from vehicular traffic and improve pedestrian comfort. Planting street trees in terrace areas provides a barrier between pedestrians and traffic and adds a formal, uniform feel to the corridor.

4.2.6 Local Communities and Porter County Should Balance Land Use and Transportation

Land use and transportation systems are closely interrelated. Each affects and is affected by the other. Decisions about land use and development by Porter County and those communities adjacent to the US-12 and US-20 corridor determine the transportation needs for the area, both in terms of trips to and from the area and the transportation modes (automobile, bus, bicycle, etc.) used to make those trips. Thus, land use and transportation decisions affect the level of mobility and accessibility of a region, the viability of each transportation mode in the region and the overall efficiency of both the US-12 and US-20 corridor and the local transportation system. In addition, transportation systems can have impacts (at the regional, community, and site-specific level) on land uses and development. When sufficient transportation service are provided or added to alleviate congestion, for instance, the newly developed or adjacent land may become even more accessible, resulting in higher land values and greater pressure to develop previously undeveloped land.

The land use and transportation relationship can be viewed as cyclical rather than a one-way causal relationship in either direction. Transportation systems influence land use patterns, which in turn influence transportation systems (Figure 24).

Figure 24 – Land Use and Transportation Cycle



In a well-integrated system, usage generated by both land use and development and the transportation system itself can be efficiently served by the transportation system provided (state and local system). However where land use and transportation decision are not considered together, a variety of problems occur. The travel demand (traffic) generated by the development of an area may exceed the transportation system's capacity; land development patterns and building site designs may make travel more difficult by alternative or multiple modes of transportation; and transportation system decisions may accelerate development in an area that may otherwise not have developed in the same manner, location, or pace.

This cycle has been further hampered by the separation of land use decisions, which have historically been made at the local level, and major transportation decisions, which have typically been made at the state and regional level. Land use and transportation decision that impacted the same region could often be driven by different sets of concerns and issues. In recent years, both state and local governments have encouraged planning and decision-making that considers both land use and transportation impacts concurrently.

A land use plan that is impermanent will not be successful in balancing land use and transportation. Much of the activity in many communities still involves action on plan amendments, rezoning, variances, conditional uses, and other modifications of the land use plan in order to permit development that differs from, and is counter to, that envisioned in the plan. Because land use plans change so often and provide only a minimal amount of long term certainty (in most cases), continual revisions to transportation plans are needed to keep up with the changing demands on transportation systems.

4.2.6.1 Transit-Oriented Development

Transit-supportive land use, also known as transit-oriented development (TOD), is compact, mixed use development near transit facilities that boosts ridership, encourages community economic development, and promotes smart growth objectives. It is characterized by three D's, including

Density – increased concentration of activities around a rapid transit station

Diversity – fine-grained mix of residential, retail, recreational, office, and other uses that promote activity throughout the day and week; and

Design – urban design features that create a high quality pedestrian environment

This document describes a sequence of general strategies to realize transit-supportive land use that could be applied at selected locations in Porter County. The Plan has identified two stations on the Northern Indiana Commuter Transportation District's (NICTD's) Chicago, South Shore, and South Bend Line as locations where additional development or redevelopment should be encouraged, including the Portage/Ogden Dunes station and the Dune Park station. Two other areas along US-20 have been identified for redevelopment, but not with a transit orientation. As a key element of the Plan involves promoting Northwest Indiana's potential for tourism, at least some development at these locations could be oriented to tourists.

Where regions have been successful in encouraging transit-supportive land use around their rail transit investments, there has been a general pattern of planning and implementation activities. Although there is some variation from region to region, the realization of transit-supportive development typically proceeds through the main phases described in this section. Transit supportiveness often takes decades to develop, and a vibrant station area is more a manifestation of an organic process that is working well than an end state that is ever really "done." Therefore, these steps should be considered as part of an ongoing, iterative process through which a place evolves over time.

4.2.6.1.1 *Framework Plan*

Transit-supportive land use strategies frequently begin with a framework for organizing growth at the regional level over several decades. Framework plans generally contain several elements, including a broad regional vision, goals for achieving that vision, a geographic plan for growth, and general implementation strategies. The Marquette Plan Phase II provides this framework for the growth of Northwestern Indiana.

4.2.6.1.2 *Station Area Planning*

A coordinated community-based planning process lays the foundation that is needed to achieve successful implementation of transit-supportive development over time. Most transit-supportive development involves three key players, including a transit operator (e.g. NICTD and the Regional Bus Authority), local government, and some form of community development organization or neighborhood stakeholder group. It is essential that each of these organizations are involved throughout the planning process.

The planning process determines how the station area will function within the community, the desired range of densities and mix of land uses, how all transportation modes will be accommodated, and what policies and regulations may be applied to support implementation. The urban design recommendations and implementation strategies are combined to form a station area plan.

Detailed station area plans represent the next step in developing transit-supportive land use at the Ogden Dunes station and the Dune Park station. Similar plans, but with perhaps less emphasis on transit, should also be prepared for the redevelopment areas along US-20. The station area plan covers an area that generally ranges in size from a 0.25-mile radius of a transit center to 0.5-mile radius or more, with a 2000-foot walk distance (10-minute walk or less) representing a common average dimension. The station area plan describes:

- Desired land use, including densities and uses
- Building design such as mass, orientation and form
- Streetscape; such as street furniture and public art
- Transportation circulation, including parking placement and non-motorized transportation
- Open space

Based on the station area plan and desired urban design, planners determine what changes are needed to current zoning to encourage the development densities, mix of land uses, and pedestrian features that are desired in the station area. Station area plans also identify other tools or actions that may be needed to leverage station-area development. Examples of such tools or actions might include:

- Assistance with land assembly
- Assistance with environmental cleanup
- Infrastructure/capital investment needs and finance mechanisms, such as tax increment finance
- “Gap finance” mechanisms if development is close to being marketable
- Catalyst projects in redevelopment areas

While planning agencies, municipal government, and transit operators play critical roles in developing the station area plan and enacting supportive policies, successful implementation of transit-supportive development frequently depends on the capability of a local stakeholder group with an interest in community development. Potential organizations that can take on this responsibility include chambers of commerce, community development corporations, business development corporations, neighborhood groups, and economic development organizations. Identifying this non-profit or quasi-governmental group early in the process, building capability where necessary, and getting a long-term commitment to spearhead the implementation of the station area plan can be crucial to getting from plan to vibrant station area.

4.2.6.1.3 *Regulatory Changes*

Almost all publicly encouraged transit-supportive development involves some form of overlay zoning that designates a station area for development intensification, mixed land uses, and improvements to the pedestrian environment. Overlay zones frequently include the following features:

- Minimum requirements for density and land use mix, frequently tapering from a high near the transit station to less intensive development near the edge of the district;
- Density bonuses for developers who include desirable features, such as mixed uses, infill development, transit station integration, public space, off-street paths, pedestrian and bicycle amenities, or affordable housing;
- Reduced parking supply through caps or reduced minimum parking requirements;
- Street design standards that make walking more pleasant, including traffic calming measures, curb extensions at intersections, landscaped buffers between pedestrians and traffic, shaded sidewalks, and standards for the relationships between building height and street width;
- Site design standards that reduce the apparent scale of the built environment to that of a pedestrian and also make walking more pleasant, such as small building setbacks, parking in the rear of buildings or in buffered side lots, and requirements for street-facing windows;
- Expedited development review, including streamlined permitting for complying projects, exemption from roadway level of service standards for traffic impacts, and a place at the front of the line for developments in the zone; and
- Sliding scale impact fees, such as reduced trip generation estimates to reflect the greater share of transit and walking trips in station areas.

Some of these features may also be handled via design guidelines that address elements of station area character beyond what is codified in the zoning ordinance, such as façade treatments and building entrance requirements.

4.2.6.1.4 *Real Estate Development*

Upon adoption of the station area plan and associated zoning changes, the implementation organization takes over day-to-day responsibility for coordinating and promoting activities with public and private partners. Public sector development or amenities may be a first step or provide “critical mass” to spur private investment in the station area. Additionally, the public sector may provide incentives for private development in the station area. Implementation organizations will work with private developers to promote development in station areas and work to identify and overcome any barriers developers are facing.

4.2.6.1.5 *Ongoing Refinement*

As development occurs, the implementation organization, the regional planning agency, the transit operator, and local government will evaluate how the station area is taking shape and adjust accordingly. If developers are

not proposing the desired residential development in the station area, for example, incentives can be devised to spur such development. Likewise, the station area plan may be revisited periodically and updated as conditions evolve.

4.2.7 Communities Adjacent to the Corridor Should Enact/Update Regulatory Ordinances and Other Land Use Controls

Local ordinances, regulations and land use controls can be implemented or updated to protect investments in transportation infrastructure.

Transportation supportive ordinances would support the preservation of investments and help promote balanced and coordinated land use and transportation planning. Local ordinances should:

- Provide a balanced transportation system and local traffic circulation
- Preserve appropriate future right-of-way
- Promote access management
- Promote access point location and spacing standards
- Promote proper roadway/driveway convergence angles
- Provide corner vision triangles and safe intersection access
- Promote functional parking lots and internal site circulation
- Avoid flag lots with narrow frontage along a roadway

There are a number of tools available for local communities to implement the use of urban design elements along at transportation corridor.

4.2.7.1 Comprehensive Planning

Discussion of special areas within a community for urban design enhancements can be included as part of the land use, economic development, or transportation components of the community's comprehensive plans. The planning stage is where the community identifies priorities for implementation of urban design elements, specific locations of significance, and opportunities for aesthetic enhancements. The legwork performed as part of the comprehensive planning process can identify a general direction for development of urban design guidelines and changes needed to the existing zoning code to achieve implementation.

4.2.7.2 Overlay Zoning

An overlay zone is designed to place additional restrictions to the base zoning districts that it is placed on. Often, if the code between the districts differs, the most restrictive ordinance is enforced.

Overlay zones can be used to protect sensitive and valuable resources along the natural features, roadway corridors, and culturally significant areas. In this way, a highway corridor could have multiple districts such as residential, commercial, and industrial, with each of the base districts also having similar requirements where urban design and corridor aesthetics is concerned as part of the overlay district that is created.

4.2.7.3 Design Guidelines

Design guidelines address aesthetics and compatibility of buildings with their environment. They encourage corridor enhancement by promoting the construction of buildings or properties that are attractive and enhance the community context in which they are constructed. They are often developed to coincide with specific districts, neighborhoods, or corridors, especially in larger communities with viable character.

Design guidelines are not the same as “standards” because they are flexible allowing variation between structures, sties, and properties to promote creativity and avoid uniformity. Design guidelines should consider local building codes, and other plans. Guidelines should also be crafted for easy understanding by users in order to limit personal opinion and be legally defensible. Unlike the ordinance based overlay zone, design guidelines often employ a review process to determine if a proposal meets the spirit of the guidelines.

4.2.7.4 Sign Ordinances

Ordinances relating to signs can be applied in overlay zones or as part of an administrative review process. Often these ordinances are intended to preserve views of cultural and natural resources or preserve the character of a neighborhood. Sign ordinances should complement design guidelines and other ordinances that address the form of a structure or site.

4.2.8 Porter County and Communities Should Adopt Local Transportation Plans

Most of the local roadway network within the US-12 and US-20 corridor was planned and constructed years ago, prior to the accelerated growth/development in the area. The local roadway network is not currently balanced with respect to the local needs for the area. Growth/development has induced local traffic in many communities along the US-12 and US-20 corridor. Improvements to the local transportation network have not kept pace. This has put an overwhelming burden on the US-12 and US-20 corridor. No additional transportation facilities have been constructed to accommodate the increasing local traffic needs. The current system for the area is unbalanced.

If the communities on the US-12 and US-20 corridor are to avert a mobility deficiency, they should enhance and update the local roadway network through land use planning and the development of a local transportation plan. This plan should work to accommodate the local traffic using the corridor as well as supplement the existing transportation system. As the area continues to experience growth, additional local roadways should be planned to accommodate these increasing local traffic needs.

4.2.9 Intelligent Transportation Systems Should Be Developed and Implemented

In July of 2005, NIRPC adopted a Regional Intelligent Transportation Systems (ITS) Architecture to guide the deployment of ITS projects in Northwest Indiana. The Regional Architecture complies with the National ITS Architecture, as required by Section 5205(e) of the Transportation Equity Act for the 21st Century (TEA-21) for projects funded through the

Highway Trust Fund. NIRPC's Regional ITS Architecture was developed from their ITS Early Deployment Plan, the purpose of which is to identify and implement ITS solutions which minimize delay, reduce congestion, enhance safety and provide guidance through low-cost, technology-based strategies using real-time communications techniques.

The Regional ITS Architecture for Northwest Indiana was built around 42 ITS market packages selected from the 85 market packages that are part of the National ITS Architecture. These 42 market packages for Northwest Indiana may be categorized in the following seven areas:

- Data Management
- Public Transportation
- Traveler Information
- Traffic Management
- Commercial Fleet Administration
- Emergency Operations
- Maintenance and Construction Management

4.2.9.1 Porter County Corridor ITS Recommendations

As stand-alone improvements or in conjunction with the other recommendations for US-12 and US-20 in Porter County, ITS strategies can supplement the operations of these routes by providing directional guidance, alleviating congestion, enhancing safety and reducing delays. Of the 42 market packages identified in the Regional Architecture for Northwest Indiana, the packages described below have been identified for improving operations within the US-12 and 20 corridors.

4.2.9.1.1 *ATMS06 – Traffic Information Dissemination*

The basic function of this ITS Market Package is to distribute real-time roadway information to drivers by such means as highway advisory radio (HAR) or dynamic message signs (DMS). Information such as roadway incidents or congestion is collected by field surveillance equipment, such as traffic detectors, etc., and is then transmitted back to a traffic management center for dissemination to roadway users. In addition, information may also be transmitted to the media, transit providers, emergency service providers and other information service providers. This tool works most efficiently when information is provided to motorists at a time and location which will enable them to modify their route decisions based on the new information.

Operationally, this market package could be used as a tool for incident management, rerouting drivers to avoid delays caused by construction, crashes, railroad grade crossing blockages, or seasonal congestion along the US-12 and 20 Corridors. In addition, this could be tied to the management systems along I-80/I-94/I-90 to enable drivers on these routes destined to the lakeshore recreational areas to select an appropriate interchange from which to exit in order to avoid congestion at the park and beach access points.

4.2.9.1.2 *ATMS16 – Parking Facility Management*

This market package functions as a tool in the management and operation of parking facilities. By sensing the availability of parking spaces within given facilities, the system can disseminate this information to users, directing them to the closest available facility. In addition, this package would also have the ability to electronically collect parking fees.

Within the US-12 and 20 Corridors, this market package could assist in directing tourists and users of the recreational facilities to the nearest available parking. This information could be provided via dynamic message signs along US-12 and 20, as well as along I-80/I-94/I-90. By providing drivers with directional guidance to available parking lots, the need for drivers to circle the area in search of a parking space would be alleviated. In addition, this package could be tied into a system that would provide shuttle service from parking lots to the various recreational facilities. This market package would tie in well with the recommended use of commuter parking lots at the South Shore Stations on weekends for recreational user parking.

4.2.9.1.3 *EM02 – Emergency Routing*

The function of this market package is to support the timely routing of emergency vehicles by assigning routes based on real-time traffic conditions. As delays are detected by means of traffic surveillance, this information is relayed to a traffic management center and is then disseminated to appropriate emergency service providers. The emergency routing would enable the avoidance of delays caused by congestion, incidents, closures, rail crossing blockages, etc. In addition, this package includes traffic signal preemption for emergency vehicles.

Operationally, this market package would improve emergency response times by rerouting emergency service providers to avoid delays on US-12, US-20, or I-80/I-94/I-90. In addition, through the traffic signal preemption component of the package, emergency vehicles would have the capability to activate by way of in-vehicle transponders a green signal phase on traffic signals when responding to calls, thus enabling quicker response times.

4.2.10 Promote Sustainable Practices

Sustainable development can be defined as meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. Encouraging sustainable initiatives throughout the region for future development is one of the key recommendations of the Northwest Indiana Regional Planning Commission – Economic Development Planning Project – 2006. The Marquette Plan Phase II and the Porter County Transportation Corridor Study identify recommendations to ensure sustainability-driven decision making. Amongst the many studies conducted for this region, “Healthy Waters, Strong Economy: The Benefits of Restoring the Great Lakes Ecosystem” (Metropolitan Policy Program, The Brookings Institution, September 2007) recommended a series of measures aimed at assuring that further development in the Great Lakes Basin is environmentally sustainable. This report recommends that:

- State and local governments in the region encourage sustainable development

- State and regional planning and governance be aligned to enhance sustainable planning and management of resources
- Marketing and outreach programs be launched to educate consumers and users on sustainable alternatives
- Adequate resources be provided to implement this overall strategy

NIRPC'S sensible tools handbook for Indiana (2007) also provides valuable information regarding implementation of principles of sensible growth in Indiana. In addition, the following are some of the sustainable practices and techniques recommended for new development (Source: U.S. Green Building Council / resources and project profiles;

<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1721>; accessed Feb 1, 2008; Stormwater Management Manual, City of Portland Adopted July 1, 1999; revised September 1, 2004; U.S. EPA http://www.epa.gov/owow/nps/lid/stormwater_hq/; accessed Feb 1, 2008.

4.2.10.1 Water Management and Landscaping Techniques

4.2.10.1.1 *Intent*

Reduce storm water runoff, increase infiltration, improve water quality, improve air quality, decrease green house gas emissions, reduce water consumption, and reduce solid wastes.

4.2.10.1.2 *Techniques*

- Green Roof (roof top gardens), green terraces, eco-roof
 - A lightweight roof system of waterproofing material with thin soil/shallow root/drought resistance vegetation. Recommended to be used in place of traditional roofs as a way to minimize impervious surface, reduce urban heat island effects, capture rainwater, improve air quality and improve aesthetics pleasing to the upper view shed.
 - For instance, the Imagination Glen Soccer Complex in the City of Portage, recently built a green roof and the project was funded by Salt Creek Watershed group
- Contained planter
 - Recommended to be used to plant trees, shrubs, and ground cover and are placed over impervious surfaces, such as, sidewalks, plazas, streets.
 - Recommended to be a prefabricated pot or constructed on site in a variety of shapes and dimensions. Accept precipitation only, not storm water runoff and enhance the visual appearance of areas where they are placed.
- Pervious pavements
 - Pervious pavement is designed to allow infiltration of stormwater through the surface into the soil below where the water is naturally filtered and pollutants are removed. In contrast normal pavement is an impervious surface that sheds rainfall and associated surface pollutants forcing the water to run off paved surfaces directly into nearby storm drains and then into streams and lakes.

- Recommended to be used for walkways, patios, plazas, driveways, parking lots, and some portions of streets. Recommended to be used to minimize impervious surfaces, reduce urban heat island effects, and capture rainwater.
- An example of pervious pavement in the region is in Coffee Creek Conservation Area in Chesterton
- Vertical gardens
 - Includes landscaping for narrow vertical spaces and providing aesthetically pleasing vertical pedestrian views (in areas with limited space and at locations that require screening).
- Vegetated Swales/Rain Gardens
 - Vegetated swales (or grassed channel, dry swale, wet swale or biofilter) are constructed open-channel drainageways used to convey stormwater runoff. Vegetated swales are often used as an alternative to, or an enhancement of, traditional storm sewer pipes.
 - Includes landscaping with water absorbing species planted in depressions (internal landscaped areas in parking lots, along streets, medians etc.) to collect and convey storm water, allowing natural filtration.
 - Some examples of vegetated swales include Portage Lakefront Park; a church; and Cardinal Crossing (demonstrates a middle-income housing development using best management practices) in the City of Portage.
- Green Buffers
 - Landscaped areas adjacent to sidewalks and streets to slow the flow of storm water runoff, filter pollutants and visually enhance the streetscape.
 - Some examples of green buffers include examples in Valparaiso (Harrison West) that demonstrates a higher-income development using best management practices.

4.2.10.2 Alternative Transportation and Transportation Demand Management

4.2.10.2.1 *Intent*

Mitigate future traffic congestion and encourage use of alternative transportation modes

4.2.10.2.2 *Techniques*

■ Walkability

- Provide amenities to make site accessible to pedestrians, such as crosswalks, drop-off areas, pedestrian islands, and design for wheelchair access.
- Provide well lit walkways, separated from parking and roads by landscaping.
- Incorporate welcoming features such as benches and signs along walkways.

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- Accessibility and Visibility of Transit Stops
 - Upgrade existing transit stops.
 - Provide additional signage to further increase visibility of transit stops.
 - Bicycle Facilities
 - In addition to dedicated bike lanes, provide covered, secured and lighted bicycle parking for residents/visitors to demonstrate visible encouragement of bicycle transportation.
 - Signage
 - Provide adequate signage around site indicating train stations, bus stops, passenger loading, yield to pedestrians, bicycle parking, pedestrian paths, trails and special parking areas.
 - Car Pooling
 - Encourage car pooling to reduce traffic on roads and demand for parking spaces. Encourage programs for employer that encourage carpooling by employees and that are mutually beneficial.

4.2.10.3 Green Buildings/Conserving Materials and Resources

For instance, the Portage Lakefront Park Pavilion in the City of Portage.

4.2.10.3.1 *Intent*

Encourage sustainable building design; minimize factors that contribute to wastes generated during construction, deconstruction and occupancy phases.

4.2.10.3.2 *Techniques*

- Encourage and utilize building designs that meet LEED (Leadership in Energy and Environmental Design) standards for developing high-performance and sustainable buildings. Use of Green Building approaches have proven that sustainable design and construction does not translate to higher costs.
- Design projects to be recyclable. Use products that can easily be disassembled and/or recycled towards the end of project's useful life.
- Develop waste management plans during construction to minimize waste and maximize recycling of construction and land clearing wastes.
- Encourage recycling of grey water as a part of the fundamental solution to many ecological problems. Grey water may be reused for other purposes, especially landscape irrigation. Some of the benefits of grey water recycling include lower fresh water use, ability to build in areas unsuitable for conventional treatment, less energy and chemical use, groundwater recharge, plant growth, reclamation of otherwise wasted nutrients etc.
- Utilize materials and products that are extracted and manufactured regionally.

4.2.11 A Feasibility Study Should Be Considered for Jurisdictional Transfer of US-12 from INDOT to Another Entity.

INDOT has suggested their willingness to consider turning over US-12 from SR-520 to US-20 (Gary) to another entity. A small portion would probably have to be given to the City of Gary. This would facilitate the relocation of truck traffic off of US-12, east of Mittal. Trucks could then use SR-149 and/or SR-249 to get to/from Mittal. Trucks would not be allowed east of Mittal. INDOT could retain jurisdiction of US-12 across SR-520 to US-20 in the Pines, then west to Gary.

4.2.12 Implementation of Marquette Plan Phase II Projects

Transportation planning is a continuous process with regional plans refined through more detailed corridor plans, the results of which are then incorporated into the next update of the regional plan. Upon completion of the Corridor Plan, INDOT is expected to move forward with further analysis of some projects. On the basis of its knowledge of emerging needs, INDOT recommends candidate projects for evaluation. Specific projects should be identified for the corridor and incorporated into regional transportation plans. Funding sources must be identified for recommended projects.

The land adjacent to US-12 and US-20 is attractive for commercial and retail development. Developments frequently generate a significant number of local and regional vehicle trips. As developments are proposed near state highway facilities, local governments should coordinate with INDOT regarding the potential traffic implications. Through a cooperative approach, INDOT and local governments can ensure that local and state traffic needs are met now and into the future. If communities anticipate development requests near any proposed projects, coordination should occur with INDOT to ensure that potential developments do not conflict with INDOT's long-term plans for the corridor. Through a coordinated effort, local governments and INDOT can develop mutually agreeable projects.

4.2.12.1 Summary Vision

This section includes concepts and designs as developed during the Marquette Plan Phase II of the Porter County U.S. 12/20 Transportation Corridor Plan. These concepts, designs and recommendations were derived from a public process that included several stakeholder meetings and well as public open houses. As indicated in this document and Marquette Plan Phase II summary report, both projects should be integrated as they are interdependent.

4.2.12.2 Alternative Transportation Framework

This framework includes the range of existing alternative modes of transportation utilized in the region and the ongoing alternative transportation projects or initiatives for the region. Recommendations range from capitalizing on existing transportation infrastructure to provide an alternative to driving, promoting Transit-Oriented Developments, to expanding and connecting existing system of trails. See the Alternative Transportation Framework map at the end of this document (Figure 25).

4.2.12.2.1 *General Recommendations*

- Provide infrastructure necessary for the development of a truly multi-modal region.
- Reduce the dependence on the automobile by providing and promoting alternate transportation modes for residents and visitors.
- Implement the “Greenways and Blueways Plan” for the region. Formulate an intergovernmental committee to oversee the implementation.
- Maintain and develop the current blueway systems in a sustainable and eco-friendly manner.
- Identify key locations for the development of Transit-Oriented Developments (TODs).
- Leverage existing transportation infrastructure assets for future development.
- Encourage the creation of a regional coalition of stakeholders to oversee the development of regional shuttle service.

4.2.12.2.2 *Key Recommendations*

- Develop Transit-Oriented Developments at the Existing South Shore Stations
 - Integrate rail/bus service modification to improve access throughout the lakeshore communities.
 - Link various modes of transportation with NICTD transit facilities at Portage/Ogden Dunes, Dune Park, Beverly Shores, and the Michigan City South Shore train station.
 - Explore TOD opportunities south of Portage Lakefront Park (with opportunities associated with the potential acquisition of US Steel Training Center and potential relocation of Pre-Coat Metals development).
 - Explore TOD opportunities around South Shore Station in Michigan City.
 - Prepare transit/tourism-oriented development plans at each station location which integrate principles developed by the Marquette Plan Phase II.
 - Promote rail transit infrastructure improvements that facilitate carrying bikes throughout the South Shore rail system.
 - Incorporate adequate bicycle parking facilities including racks and lockers at station locations.
- Expand and Connect Existing Greenways
 - Develop the full extent of the proposed Marquette Greenway Trail to the Michigan state line.
 - Pave the Calumet Trail in asphalt affording a significant improvement to the riding and walking public.

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- Connect existing trails in the region as envisioned in NIRPC’s “2005 Ped & Pedal Plan.”
 - Encourage a coordinated effort between local and county jurisdictions, and other stakeholders in the region for the greenway development and preservation.
 - Coordinate efforts between the National Park Service and local jurisdictions for the development of the Marquette Greenway Trail to connect the east and west units of the Indiana Dunes National Lakeshore.
 - Incorporate interpretative trails throughout system.
 - Increase maintenance of the crushed limestone Calumet trail to make it more appealing and useable as a major link in the tri-state Marquette Trail.
- **Maintain and Develop Existing Blueway Connections**
 - Identify and develop existing public sites for launch locations and work with private landowners on similar sites along waterways.
 - Formulate an intergovernmental water trail committee for implementation of the Blueways Plan as envisioned in the Blueways Plan for NW Indiana. Maintenance of waterways is imperative to the development of “blueway connections” as a viable mode of alternative transportation.
 - Encourage sustainable practices for the maintenance and development of blueways.
 - Publicize blueways as a form of eco-tourism.
- **Improve Pedestrian Connectivity**
 - Install and maintain sidewalks along all major arterials including US-12 and US-20.
 - Improve safety for pedestrians at all intersections with crosswalk markings and walk/don’t walk signals.
 - Insert regular sidewalk maintenance and installation into multi-year Capitol Improvement Programs (CIP’s).
 - Provide incentives for sidewalk repairs by residents (50/50 programs).
- **Establish a Regional Trolley System**
 - Leverage and utilize existing South Shore Railroad infrastructure to create East/West shuttle service from Michigan City to Portage.
- **Connect Michigan City Attractions**
 - Establish a multi-modal shuttle system network in Michigan City to connect tourist attractions such as Washington Park, Blue Chip Casino, and the Lighthouse Place Outlet Mall.

- Create opportunities for South Shore station to serve as the TOD hub for any new shuttle/trolley system.
- Establish Dedicated Shuttle System for the Indiana Dunes National Lakeshore
 - Draw on existing case studies published by the National Park Service to establish a shuttle system that will move tourists and residents throughout the region.
 - Coordinate efforts between the National and State parks to develop a shuttle system study to explore financial and functional feasibility
 - Aim for an overall reduction of vehicular trips while increasing the tourism within the region.
 - Facilitate multi-day trips and alternative transportation generated trips by establishing a user-friendly shuttle system.

4.2.12.3 Motorized Transportation Framework: US-12 Corridor Projects

This framework includes the range of existing corridors and rail transportation utilized in the region. Recommendations range from improving existing transportation infrastructure; safety, functionality and aesthetics of existing corridors; and identification of redevelopment opportunities. See Motorized Transportation Framework: US-12 Corridor Projects Map at the end of this document.

4.2.12.3.1 *General Recommendations*

- Promote and implement access management strategies.
- Address existing functional deficiencies and safety issues along US-12.
- Provide improved pedestrian and vehicular access along corridors.
- Enhance the aesthetic quality of the corridors by suitable landscaping.
- Improve wayfinding and signage along the US-12 corridors.
- Identify gateway locations along major intersections.
- Incorporate “Complete Streets” policies when improving roadways to accommodate all users of the corridor – both motorized and non-motorized.

4.2.12.3.2 *Key Recommendations*

- Functional Projects
 - Address existing functional deficiencies and safety issues along US-12
 - Clear zone obstructions (US-12)
 - Right shoulder widths deficiencies (US-12)
 - Conduct detailed engineering studies of “Intersection Hot Spots for Accidents”
 - US-12 and SR-249
 - US-12 and SR-149

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- US-12 and Mineral Springs Road
 - Promote and implement access management policies
 - Consolidation of driveways and cross-access
 - Promote access point location and spacing standards
 - Promote proper roadway/driveway angles
 - Provide corner vision triangles and safe intersection access
 - Promote functional parking lots and internal site circulation
 - Select and program mainline improvements US-12
 - US-12 bike lanes or bike paths
 - Urban corridors (along urban areas) vs. park community corridors
 - Implement right-of-way preservation policies
 - Aesthetic Enhancements
 - Develop regional and/or community streetscape standards
 - Create community gateways
 - I-94 interchange locations relative to US-12
 - I-94 & I-249 (North and South)
 - I-94 & SR 49 (North and South)
 - US-12 at county lines (Lake/Porter, Porter/Laporte)
 - Community gateways at corporate boundaries
 - National Park and State Park entrance gateways
 - Gateways along the North/South corridors
 - Improved resident and visitor directional signage
 - Improved landscaping
 - Implement design guidelines
 - Clear visual clutter
 - Evaluate current billboard/advertising sign policies and practices
 - Investigate opportunities for placement of utilities underground or outside of view corridors
 - Encourage businesses to improve facades, signage, landscaping, and maintenance
 - Interstate 94 bridge and interchange aesthetics
 - As reconstruction of bridges and interchanges is programmed, consider “betterment” projects to enhance appearance and create gateways.
 - Enhancement of existing bridge structures at park entrances, along water corridors for appearance and feature enhancement.
 - SR 49 and US-12
 - US 12 and Burns Waterway

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- SR-249 and Burns Waterway
 - SR-249 streetscape enhancement
 - Implement SR-249 streetscape enhancements as part of the City of Portage Northside Plan.
 - Development Zones
 - US-12 Ownership
 - Interest and evaluation of INDOT relinquishing ownership of US-12 throughout Porter County to local jurisdictions and/or NPS. Would allow for local control and decision-making allowing promotion of local changes (speed limits, truck re-routing) and enhancement projects. US-12 as a federal route could be shifted to the US-20 corridor.
 - Transit-oriented Development (TOD)
 - Explore TOD opportunities South of Portage Lakefront Park (with opportunities associated with the potential acquisition of US Steel Training Center and potential relocation of Pre-Coat Metals development).
 - Explore TOD opportunity with a potential for hospitality related development and entrance to State Park.
 - Others
 - Industrial Truck Routing Evaluation
 - Evaluate alternative truck routing to I-94 to improve efficiency and safety for all motorists on US-12 and north-south connecting corridors.
 - Beverly Drive Improvement
 - Improve the conditions at Beverly Drive. Investigate the cost of improvements to the Beverly Drive.
 - Multi-Modal Accommodations
 - Evaluate and promote location specific opportunities for bike, pedestrian, commuter rail, public transit (bus/trolley) systems along the US-12 corridor.

4.2.12.4 Motorized Transportation Framework: US-20 Corridor Projects

This framework includes the range of existing corridors and rail transportation utilized in the region. Recommendations range from improving existing transportation infrastructure; safety, functionality and aesthetics of existing corridors; and identification of redevelopment opportunities. See Motorized Transportation Framework: US-20 Corridor Projects Map at the end of this document.

4.2.12.4.1 *General Recommendations*

- Promote and implement access management strategies.
- Address existing functional deficiencies and safety issues along US-20.
- Provide improved pedestrian and vehicular access along corridors.
- Enhance the aesthetic quality of the corridors by suitable landscaping.
- Improve wayfinding and signage along the US-20 corridor.
- Identify gateway locations along major intersections.
- Incorporate “Complete Streets” policies when improving roadways to accommodate all users of the corridor – both motorized and non-motorized.

4.2.12.4.2 *Key Recommendations*

- Functional Projects
 - Address existing functional deficiencies and safety issues along US-20
 - Clear zone obstructions (US-20)
 - Right shoulder widths deficiencies (US-20)
 - Lane width deficiencies (US-20)
 - Conduct detailed engineering studies of “Intersection Hot Spots for Accidents”
 - US-20 and Waverly Road
 - US-20 and SR-249
 - US-20 and Willowcreek Road
 - US-20 and Worthington Drive
 - US-20 and SR-149
 - Promote and implement access management policies
 - Consolidation of driveways and cross-access
 - Promote access point location and spacing standards
 - Promote proper roadway/driveway angles
 - Provide corner vision triangles and safe intersection access
 - Promote functional parking lots and internal site circulation
 - Select and program mainline improvements US-20
 - US-20 TWLTL or median
 - Urban corridors (along urban areas) vs. park community corridors
 - Implement right-of-way preservation policies
 - I-94 interchange evaluation at US-20 and SR-149
 - Evaluate the function and safety of this interchange and the potential for modifications that would improve functional safety.

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- Aesthetic Enhancements
 - Develop regional and/or community streetscape standards
 - Create community gateways:
 - I-94 Interchange Locations relative to US-20
 - I-94 & I-249 (North and South)
 - I-94 & US-20 (East and West)
 - I-94 & SR 49 (North and South)
 - US-20 at county lines (Lake/Porter, Porter/Laporte)
 - Community gateways at corporate boundaries
 - National Park and State Park entrance gateways
 - Gateways along the North/South corridors
 - Improved resident and visitor directional signage
 - Improved landscaping
 - Implement design guidelines
 - Clear visual clutter
 - Evaluate current billboard/advertising sign policies and practices
 - Investigate opportunities for placement of utilities underground or outside of view corridors
 - Encourage businesses to improve facades, signage, landscaping, and maintenance
 - Interstate-94 bridge and interchange aesthetics
 - As reconstruction of bridges and interchanges is programmed, consider “betterment” projects to enhance appearance and create gateways
 - Enhancement of existing bridge structures at park entrances, along water corridors for appearance and feature development
 - US-20 and SR-49
 - US-20 and Little Calumet River
 - SR-249 and Burns Waterway
 - US-20 and Salt Creek
 - US-20 and East Branch of Little Calumet River
 - SR-249 streetscape enhancement
 - Implement SR-249 streetscape enhancements as part of the City of Portage Northside Plan
 - Development Zones
 - Explore opportunities for redevelopment and infill along the urban corridors (US-20 and I-94). Capitalize on vacant/underutilized parcels for context sensitive and cohesive development.
 - Explore brownfield site inventory, assessment, remediation and reuse.

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- Explore opportunities for tourism related development along SR-49 north of US-20 in Porter County unincorporated areas.
 - Provide infrastructure improvements and utilities along SR-520 to sustain suitable development in Porter County unincorporated areas.

 - Others
 - US-20, SR-212 enhancements
 - Explore opportunities for a partial interchange at County Line Road serving traffic to the west. Work with INDOT to explore feasibility of this new interchange.
 - Explore opportunities to enhance US-20 Corridor leading into Michigan City.
 - Initiate a feasibility study for re-alignment of SR-212 to facilitate safer access to the community (INDOT project). Enhance SR-212 as a gateway to the community.

Figure 25 – Alternative Transportation

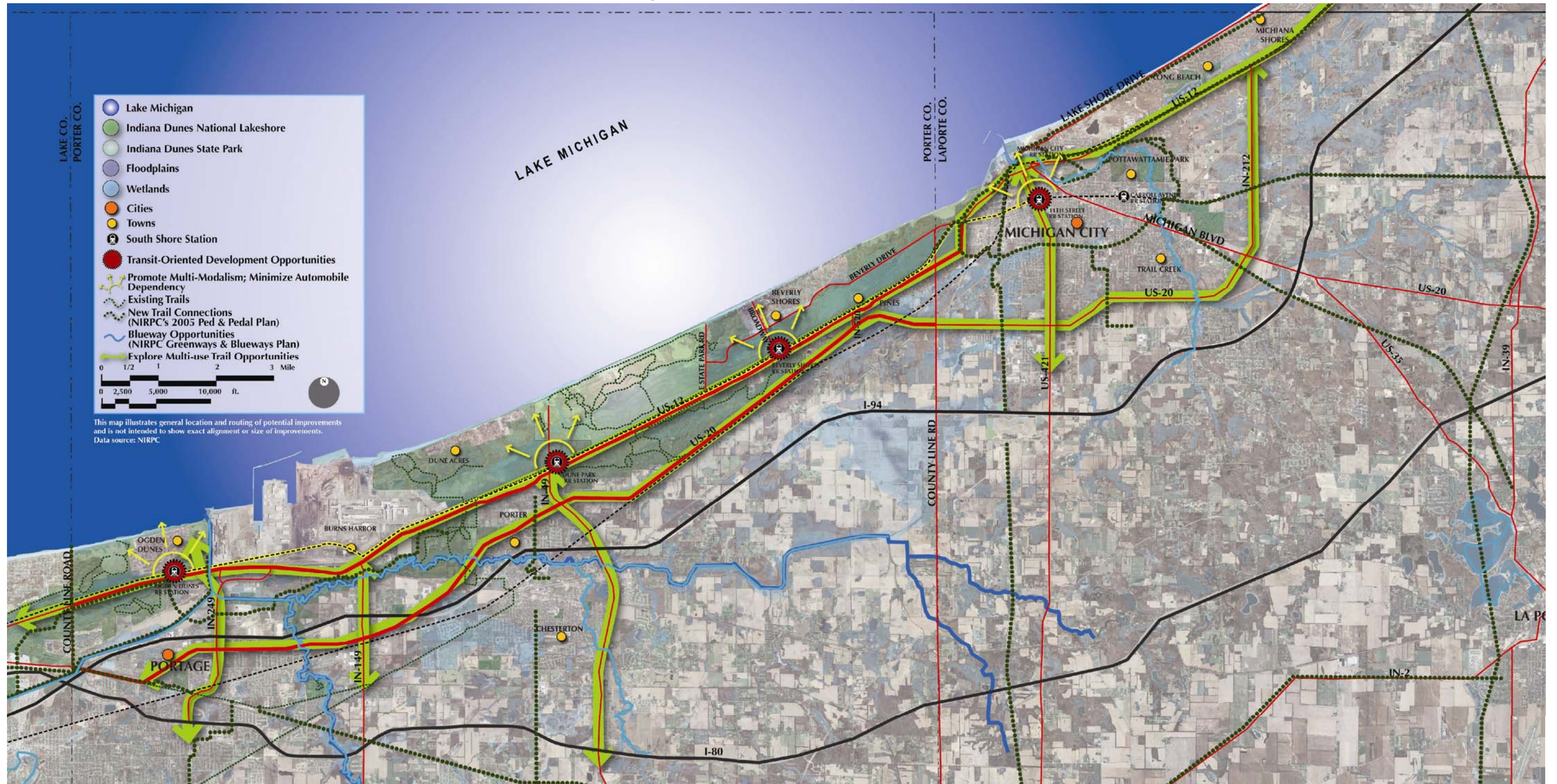


Figure 26 – Motorized Transportation US-12



Figure 27 – Motorized Transportation US-20





on the Beach.
at Ind. Dunes State Park Pavilion.

