



Indiana Dunes National Lakeshore

Transportation System Existing Conditions



The Pavilion at Portage Lakefront and Riverwalk
Source: Volpe Center photograph (July 2015)

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Report Notes

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Definitions

The following terms are used in this report:

CMAQ	Congestion Mitigation and Air Quality Improvement Program
CSSB	Chicago, South Shore, and Bend
INDOT	Indiana Department of Transportation
MSA	Metropolitan Statistical Area
NHA	National Heritage Area
NIRPC	Northwestern Indiana Regional Planning Commission
NICTD	Northern Indiana Commuter Transportation District
NPCA	National Parks Conservation Association
NPS	National Park Service

Executive Summary

As Indiana Dunes National Lakeshore (“the Lakeshore”) approaches its 50th anniversary as well as the National Park Service’s (NPS) Centennial in 2016, it must continue to balance visitor experience and access to the park with the preservation of Lake Michigan and the surrounding ecosystems. The Lakeshore and its regional partners have a strong commitment to multimodal travel, but the majority of trips made to and within the park are by personal automobile. Although many stakeholders are enthusiastic about opportunities to improve regional access, the Lakeshore must also address concerns from the residents of its gateway communities.

The following summary of existing transportation-related conditions provides an overview of multimodal access to and within the Lakeshore. The issues and concerns explored at the end of this document provide a framework for potential projects that can be implemented in the short term to address transportation issues. Key concerns at the Lakeshore include:

1. Congestion and traffic safety,
2. Parking lot capacity,
3. Trail connections,
4. Bicycle and pedestrian connections from rail to lake, and
5. Underutilization of alternative modes.

Potential projects for addressing these key issues in the short term (five years) can be explored in further detail in a follow-on report as the Lakeshore moves forward with developing future transportation project implementation plans.

Transportation System Context

The Lakeshore’s transportation system supports access to not only its sensitive and popular park resources but also a number of gateway communities. Although industrial and commercial activities adjacent to the park have declined in past decades, there are still several steel mills and the Port of Indiana abutting the park. The Lakeshore is situated within the Chicago Metropolitan Statistical Area (MSA), and millions of people are within an hour’s drive of the park.

Park Background

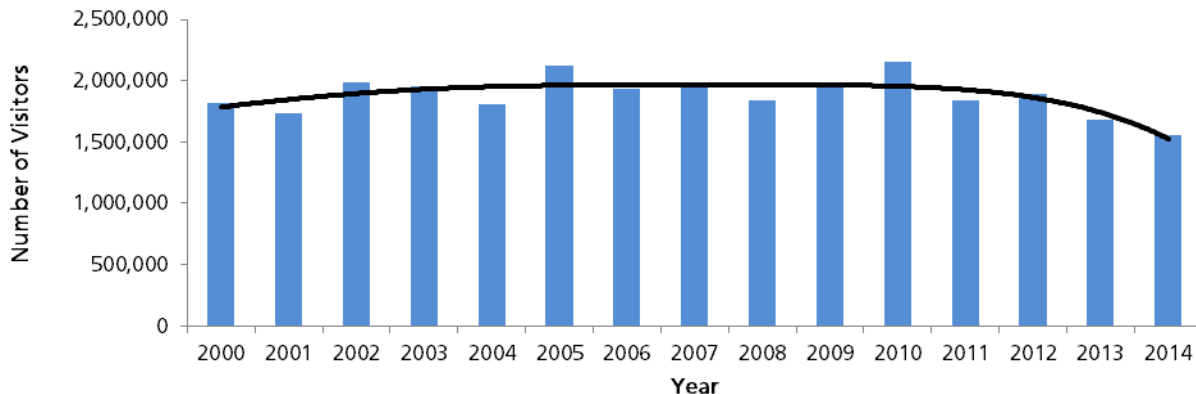
Established in 1966, the Lakeshore now consists of approximately 15,000 acres along Lake Michigan. The Lakeshore manages scenic, fragile dunes and other ecosystems within its jurisdiction. The Lakeshore is known as a regional tourism destination in Northwest Indiana, drawing between 1.5 to 2 million visitors every year to its beaches, trails, camp sites, and other activities. As shown in Figure 2, the Lakeshore is non-contiguous and separated by active industry and a number of communities. The Lakeshore also surrounds Indiana Dunes State Park, which is operated by the Indiana Department of Natural Resources.

Visitation Trends

Visitation to the Lakeshore has generally been steady since 2000, with annual visitation between 1.5 and over 2 million people (see Figure 1). Visitation has been on a downward trend since 2012, possibly due to the government shutdown in 2013 and closures that occurred after a severe storm in fall 2014. This trend, however, is not unlike previous annual visitation cycles reported in recent years for the Lakeshore. Other NPS units in the Midwest report more drastic increases and decreases in visitation trends over the past decade.¹

Figure 1: Annual Park Visitation, 2000-2014

With 3-year rolling trend line. Source: NPS Visitor Use Statistics



On average, visitation peaks in June, July, and August, with July seeing roughly 350,000 visitors (see Figure 3). The low season takes place during the winter months, with approximately 50,000 visitors in both January and February. The most challenges in accessing the park occur in the summer months, which will be discussed in future sections.

¹ Visitation to Cuyahoga Valley National Park has decreased by nearly a third, from 3.3 million in 2000 to 2.2 million in 2014, while visitation at Sleeping Bear Dunes National Lakeshore has increased roughly 16 percent, from 1.2 to 1.4 million. Visitation statistics are available at <https://irma.nps.gov/Stats/>.

Figure 2: Park Map
Source: NPS

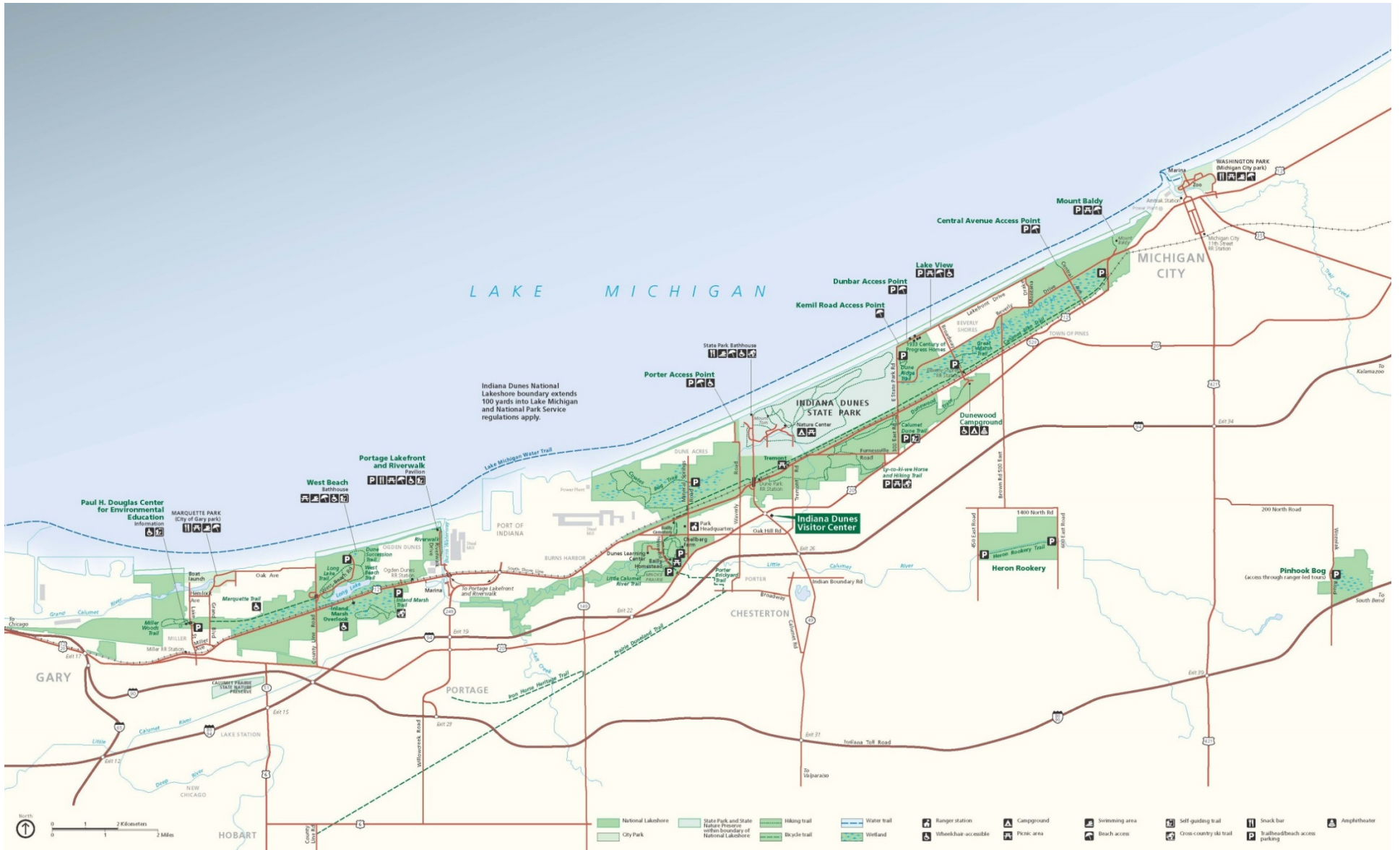
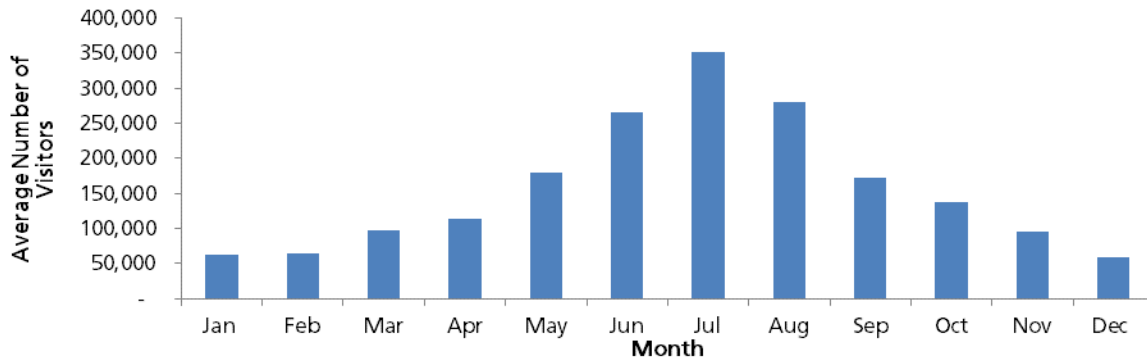


Figure 3: Average Monthly Visitation, 2000-2014

Source: NPS Visitor Use Statistics

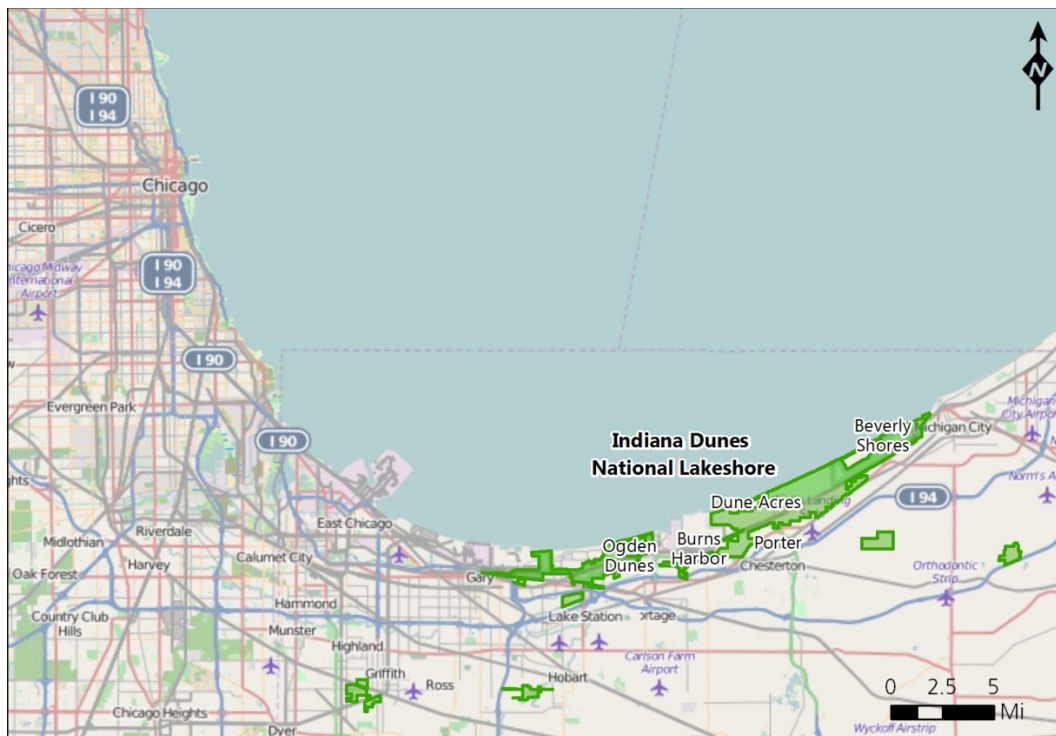


Geographic Context

The Lakeshore is located in Northwest Indiana along the shores of Lake Michigan, with a couple sites scattered south of the shoreline, including the Heron Rookery and Pinhook Bog. The Lakeshore is unique within the National Park system in that it has a number of gateway communities and adjacent industrial properties (see Figure 4). The Lakeshore is bordered by the City of Gary to the west and Michigan City to the east. From west to east, the communities of Ogden Dunes, Burns Harbor, Dune Acres, Porter, and Beverly Shores are located adjacent to and sometimes surrounded by the Lakeshore, resulting in a discontinuous park boundary. The 2014 populations of these communities are as follows: Ogden Dunes: 1,114; Burns Harbor: 1,571; Dune Acres: 186; Porter: 4,881; and Beverly Shores: 610.

Figure 4: Regional Map

Source: The Volpe Center, with NPMAP data



Indiana Dunes State Park is also located within the Lakeshore’s eastern boundaries between the towns of Porter and Beverly Shores. The Lakeshore is located primarily within Lake and Porter counties, and a small portion of the park near its eastern boundary is located in LaPorte County. Downtown Chicago is approximately 50 miles northwest from the park. The closest other National Park Service site, Pullman, designated as a National Monument in 2015, is roughly 15 miles from the western boundary of the park in Chicago’s South Side. With two NPS sites within such close proximity, there may be opportunities to take advantage of the connections between the two sites, whether through coordinating planning efforts, pursuing joint funding or grants, or exploring transportation and trail connections between the two sites.

The Indiana Dunes Visitor Center is located just outside of the park boundaries, off highways US 20 and US 49 in Porter. The Paul H. Douglas Center Environmental Education Center, a significant visitor destination, is located in the western part of the park in Gary.

Climate Change

The Lakeshore has a delicate ecosystem and a long history of varying lake levels. The National Oceanic and Atmospheric Administration reports that “there is little evidence that future water level variability will greatly exceed the historical range and intensify lake level variation.”² Still, other impacts of climate change, such as increased variation in temperature and precipitation, threaten to disrupt the Lakeshore’s ecosystems. An increase in intense storms could also damage infrastructure at the Lakeshore.

Beach Erosion

The Lakeshore and its surrounding communities experience beach erosion due to long-established industrial barriers that alter the natural migration of the sand in Lake Michigan. At Portage Lakefront and Riverwalk, beach erosion is especially evident. In the past, visitors could walk from Portage Lakefront to West Beach, but as of July 2015, Lake Michigan reaches the sea wall at the border of Ogden Dunes, preventing pedestrian passage (see Figure 5). Though replenishing beaches by bringing in sand is costly, it is being actively pursued by staff to address beach erosion.

Figure 5: Looking West from the Portage Lakeshore and Riverwalk to Ogden Dunes



²*Multi-Decadal Forecasts from Recent Climate Studies*. August 14, 2015. Accessed September 3, 2015. <http://www.glerl.noaa.gov/data/now/wlevels/levels.html>

Regional Economy

Northwestern Indiana is home to heavy industrial uses, with the Port of Indiana and several steel mills, including U.S. Steel and ArcelorMittal, located near the geographic center of the Lakeshore. AmeriPlex, a regional business park, is located adjacent to the Lakeshore property south of the Port of Indiana. Additionally, the City of Gary has industrial areas and steel mills that border the park on the western edge.

The Lakeshore and its gateway communities are located within the Chicago MSA. Although the U.S. Census estimates the MSA has grown by nearly 100,000 residents in the past five years (a growth of 0.9 percent, see Figure 6), communities adjacent to the Lakeshore are experiencing little population gain or are undergoing population loss (see Figure 7).³

Figure 6: Chicago MSA Estimated Population, 2010-2014

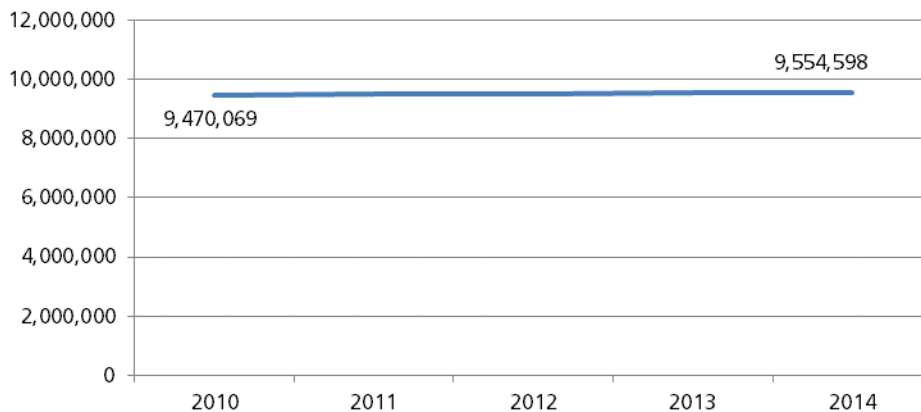
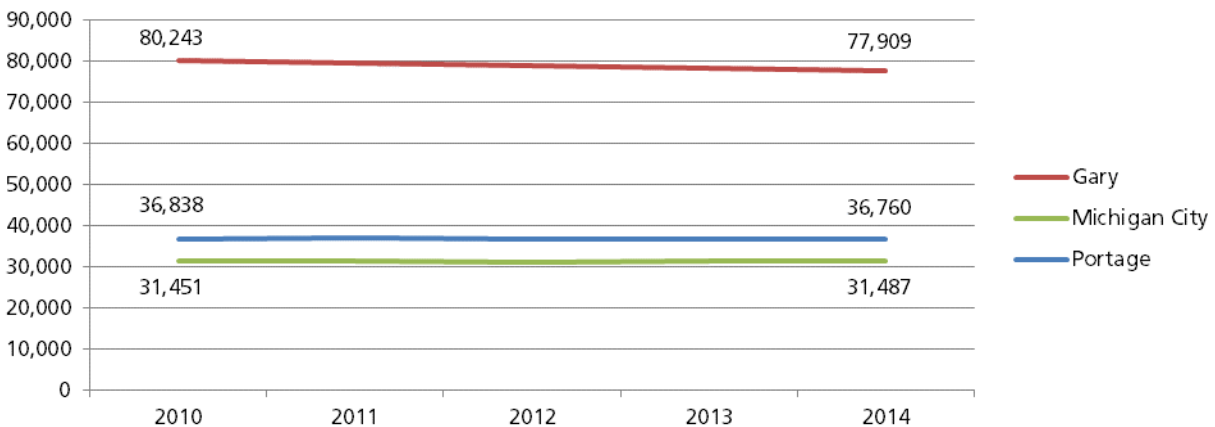


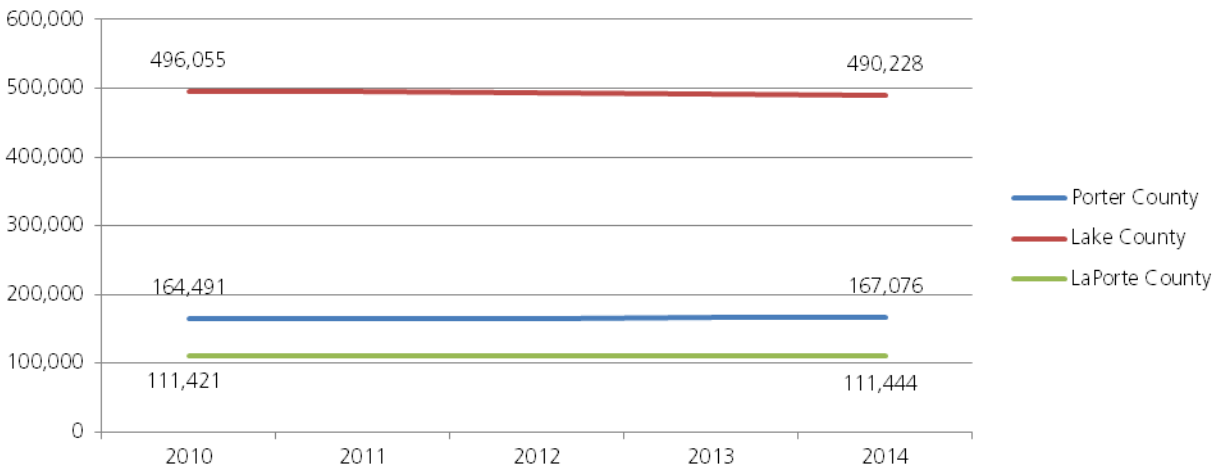
Figure 7: Gateway Communities Estimated Populations, 2010-2014



The three counties in which the Lakeshore is located are similarly experiencing steady or declining populations (see Figure 8). The area immediately surrounding the Lakeshore, not unlike other areas in the United States with shrinking industrial activities, struggles with maintaining jobs and residents.

³ Annual estimates of the resident population from the U.S. Census American Fact Finder: <http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

Figure 8: County Estimated Populations, 2010-2014



Regional Transportation Planning Context

The Lakeshore staff coordinate with a number of regional planning and transportation organizations in Northwestern Indiana, which also share a vision of improving access to Lake Michigan. Below is a summary of major relevant transportation planning efforts in the region.

2010 Lakeshore Transportation Study

The Lakeshore commissioned a transportation study focusing on parking, visitor circulation, and proposed transportation improvements, which was completed in 2010 by consultants at Otak. The study includes an existing conditions analysis, transportation toolbox, and a concept for a pilot beach bus program. The 2010 study served as a baseline for this current report.

The Future of Indiana Dunes National Lakeshore

In 2010, the National Parks Conservation Association (NPCA), Field Museum, and Indiana University's Eppley Institute for Parks and Public Lands published a vision for the future of Indiana Dunes National Lakeshore. The report summarizes the results of a 2010 visitor experience survey that was conducted online over six months with 417 respondents. The survey finds that 91 percent of visitors arrive by automobile. The survey also shows that visitors perceived that pollution (16 percent of respondents), funding (13 percent), invasive species (12 percent), and parking (eight percent) as being among the Lakeshore's top challenge areas.⁴

The NPCA's vision plan also calls for trail segments constituting the National Lakeshore Connector Route to be completed within and adjacent to the Lakeshore, enabling visitors to bike on a continuously off-road trail from Chicago to Michigan on the Marquette Greenway (see Figure 9 and text box on the following page). This recommendation is also included in the Northwestern Indiana Regional Planning Commission's Marquette Plan, which is described below. The NPCA's vision plan estimates that the 10 mile Connector Route will cost approximately \$8 million.

Figure 9: The Marquette Greenway Plan, with the Lakeshore Connector Highlighted

Source: NIRPC Marquette Greenway Poster Plan



Northwestern Indiana Regional Planning Commission (NIRPC)

NIRPC acts as the regional planning commission and metropolitan planning organization for Lake, Porter, and LaPorte counties. NIRPC has several planning initiatives relevant to the Lakeshore, including the:

⁴Page 24. http://www.npca.org/assets/pdf/INDU_Report_Web.pdf

2007 (and forthcoming 2020) Greenways and Blueways Plan

The 2007 Greenways and Blueways Plan is a vision for potential greenways and blueways throughout Northwest Indiana, including within the Lakeshore. NIRPC is currently updating the Greenways and Blueways Plan for 2020.

2008 Porter County U.S. 12/20 Transportation Corridor Plan

This plan evaluates the corridors' infrastructure, adjacent land uses, and environmental resources. The plan provides recommendations for aesthetic enhancements and functional improvements for the corridors.⁵

2010 Ped and Pedal Plan

The 2010 Ped and Pedal Plan is NIRPC's regional plan for walking and bicycling in Northwest Indiana. The plan designates regional priority corridors for bicycling and walking, which includes the Marquette Greenway. The plan also includes estimates for trail construction. This plan is also being updated.

2040 Comprehensive Regional Plan

The 2040 Comprehensive Regional Plan was adopted by NIRPC in 2011, and the plan is currently being updated. The guiding principles of the plan emphasize environmental justice and preservation of natural resources.

Marquette Plan 2015: The Lakeshore Reinvestment Strategy

The Marquette Plan is NIRPC's comprehensive vision for guiding future decision-making across Indiana's Lake Michigan shoreline with regards to tourism development, infrastructure improvements, neighborhood reinvestments, and other policy frameworks. One of the key regional projects outlined in the plan is the completion of the Marquette Greenway. NIRPC awarded Burns Harbor \$1.6 million in 2015 to complete a part of the Connector Route, which will ultimately connect the Dunes Learning Center to State Route 149.

Northern Indiana Commuter Transportation District (NICTD)

NICTD runs the South Shore Line, which is a commuter rail passenger train service from downtown Chicago through Northwestern Indiana that terminates at the South Bend Airport. The South Shore Line primarily serves commuters traveling to Chicago; however, there are four stations within the Lakeshore. NICTD is working to improve train speeds and frequencies for this line, which has the potential to spur economic development throughout the South Shore corridor.

Indiana Department of Transportation (INDOT)

INDOT maintains US highways 12 and 20, the main roads that access the Lakeshore. INDOT's responsibilities include managing wayfinding, safety issues, and trail and rail crossings on these roads. The Lakeshore is currently using INDOT liquid propane fueling stations for its shuttles.

Marquette Greenway

The Marquette Greenway is a proposed continuous trail connecting points of interest along the Lake Michigan lakefront in Illinois, Indiana, and Michigan. Out of the 20 segments of the trail identified by NIRPC, five sections are complete, completing roughly 13.5 miles of the proposed 50 mile trail.

The majority of the Greenway in Indiana is planned to run through or near the Lakeshore, providing both residents and visitors safe bicycle and pedestrian access to regional resources. Two sections of the Greenway are complete within the Lakeshore: the two-mile Marquette Trail and the nine-mile Calumet Trail. The roughly 10-mile gap between these segments is identified as the Lakeshore Connector. Of this 10-mile gap, Porter Brickyard Trail, a mile-long peripheral segment at the eastern terminus of the Connector Route, was completed in 2010.

⁵Plan available at: http://www.nirpc.org/media/18554/final_report_pctp.pdf

Other Stakeholders

Other relevant stakeholders and initiatives include the Northwest Indiana Regional Development Authority and the Calumet Heritage Partnership. The Northwest Indiana Regional Development Authority focuses on infrastructure development to spur economic development in Northwest Indiana. It works with communities and other organizations to leverage funds to meet its objectives, including redeveloping the Lake Michigan shoreline in accordance with the Marquette Plan.

The Calumet Heritage Partnership advocates for the Calumet area in Illinois and Indiana, which spans from Pullman National Monument to the Lakeshore, to be designated as a National Heritage Area (NHA). NHAs are NPS affiliates and get limited NPS funding, but are managed by a State or non-profit. Potential benefits of the designation include increased tourism and better coordination among regional stakeholders.

Existing Conditions by Mode

Although private motor vehicle use is the primary way visitors reach the Lakeshore and travel within the park boundaries, there are alternatives for reaching and exploring the park. Alternatives to driving are both underutilized and limited because of incomplete and unsafe infrastructure. Access to the park by non-motorized and public transportation, including the South Shore Line, represent important yet underused opportunities.

Motor Vehicle

The majority of visitors use private motor vehicles to reach the Lakeshore. As mentioned above, a 2010 visitor survey by the NPCA showed that 91 percent of visitors drove an automobile to reach the park. Visitors can park in any of 1,004 spaces at the Lakeshore. An additional 180-space parking lot was constructed at the Portage Lakefront and Riverwalk in late 2015 and will be available for the 2016 peak visitation season. Parking at the Lakeshore is free except at West Beach, where visitors are charged a \$6 per vehicle entrance fee. This fee is comparable to that charged at nearby beaches (see Table 1).

Table 1: Parking Fees and Capacity at the Lakeshore and Nearby Beaches

Location	Beach	Indiana Fee	Out-of-State Fee	Capacity
The Lakeshore	West Beach	\$6	\$6	596 vehicles
The Lakeshore	Portage Lakefront and Riverwalk	Free	Free	125 vehicles
The Lakeshore	Porter Access Point	Free	Free	66 vehicles
The Lakeshore	Kemil Road Access Point	Free	Free	81 vehicles
The Lakeshore	Dunbar Access Point	Free	Free	26 vehicles
The Lakeshore	Lake View	Free	Free	40 vehicles
The Lakeshore	Central Avenue Access Point	Free	Free	70 vehicles
The Lakeshore	Mount Baldy (Temporarily Closed)	Free	Free	120 vehicles
Indiana Dunes State Park	Indiana Dunes State Park	\$7	\$12	1,042 vehicles (3 lots)
Gary	Lake Street Beach	\$3	\$5	110 vehicles, 40 boat trailer (2 lots)
Gary	Marquette Park Beach	\$3	\$5	358 (2 lots)
Gary	Wells Street Beach - Weekday	\$8	\$8	
Gary	Wells Street Beach - Weekend	\$10	\$10	

The Lakeshore is generally accessed by US 12, which runs parallel to the shoreline and through the park boundaries in certain sections. US 20 and Interstate 84, which run south and parallel of US 12, are also close to the Lakeshore.

Figure 10 shows yearly traffic counts for various sites within the Lakeshore. Traffic counts are collected by NPS equipment at each site. The sites with highest traffic counts in 2014 include Portage Lakefront, the Kemil Lot, Dunbar, Central Beach, and West Beach. Mount Baldy had high traffic counts before it closed temporarily in 2014. Lakeshore staff report that the parking lots located east of Ogden Dunes generally see the most traffic, and fill up by 10:00 AM on the weekends and 11:00 AM on weekdays between Memorial Day and Labor Day. Staff also report that the West Beach parking lot fills up only a few times a year on holidays or hot days. Although West Beach has the highest number of parking spaces, it has lower traffic counts than the Kemil and Portage parking areas.

Figure 11 shows the total traffic counts by year for the sites listed in Figure 10. In the aggregate, traffic at these sites has been on a downward trend since 2010, which corresponds to the trends shown by yearly visitation numbers in Figure 1, especially due to the closing of Mount Baldy.

Figure 10: Annual Traffic Counts

Source: NPS

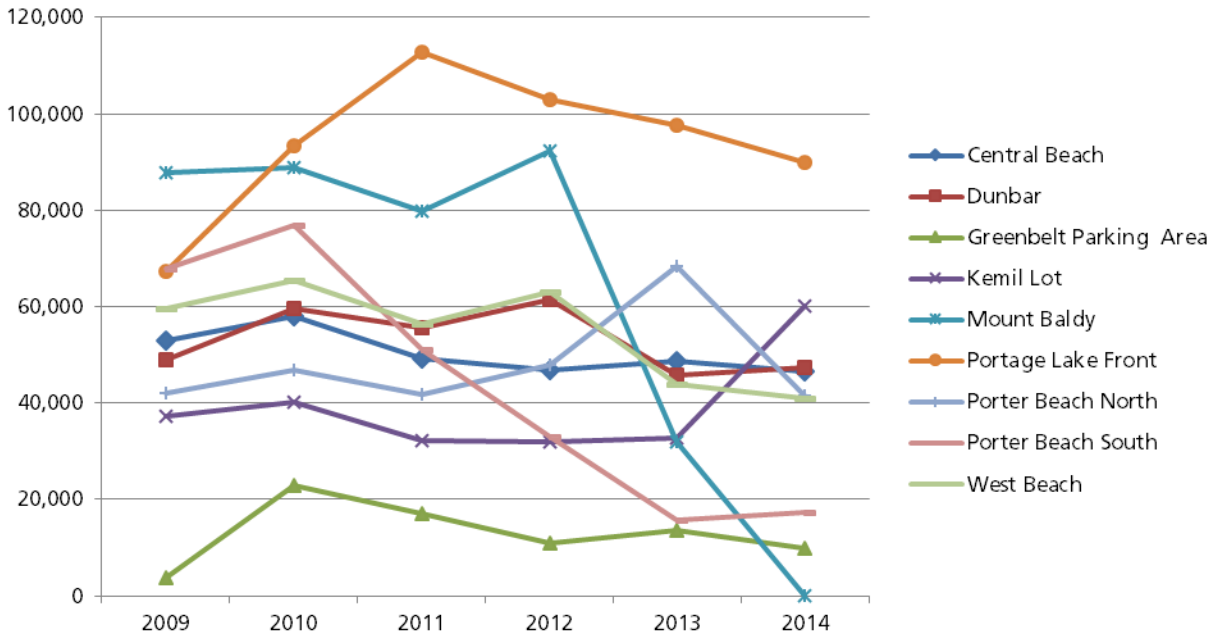
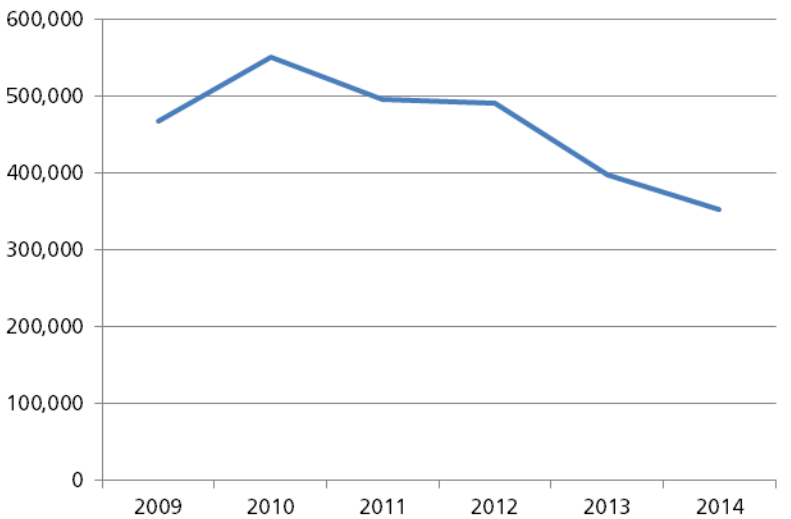


Figure 11: Total Annual Traffic Counts

Source: NPS



Shuttle

The Lakeshore acquired two 16-passenger, liquid propane-fueled shuttles (see Figure 12) in early 2015 with Paul S. Sarbanes Transit in Parks Program funding. The wheelchair-accessible shuttles cost \$98,000 each and are primarily used to pick up summer camp or school groups from nearby communities or parking areas and transport them to the Dunes Learning Center or other sites within the Lakeshore.

Figure 12: One of the Lakeshore's Shuttles



Currently, the closest liquid propane fuel station is four miles away in Chesterton. There are also fueling stations in Gary, Chesterton and Michigan City, and the Dunes Learning Center secured an agreement with INDOT to use any fueling station in the state. The Dunes Learning Center is in the process of securing a \$100,000 grant in Congestion Mitigation and Air Quality Improvement Program (CMAQ) funding for liquid fuel, although it is likely the grant will have to be distributed through a municipality or the MPO. The Dunes Learning Center will ultimately be the owner and operator of the shuttles and is working with INDOT to install a fueling station on site at the Learning Center. The shuttle driver must hold a commercial driver's license. Several park staff have this license and the Dunes Learning Center also hires three to four part time drivers that work for school transportation systems.

Public Transportation

There is limited access by local public transit to the Lakeshore. Gary Public Transportation Corporation's Bus Route 13 (Oak and County Line) runs hourly and passes in front of the Douglas Learning Center and also has a stop close to West Beach (see Figure 13). Michigan City Transit's Route 4 runs within half a mile of Mount Baldy's main entrance, although there are no pedestrian facilities leading from the route to the entrance along US 12.

Figure 13: Gary Public Transportation Corporation Bus Route 13

This is an abstract transit map and is not necessarily to scale. Letters along the route mark bus stops. Source: Gary Public Transportation Corp



Pedestrian

While there are many options for recreational hiking near and within the Lakeshore (see Trails section below), pedestrian infrastructure serving more of a transportation purpose (e.g., sidewalks to visitor sites)

is limited. US 12 has no pedestrian facilities throughout the Lakeshore. The Marquette Greenway, however, will serve as a safe alternative for bicyclists and pedestrians when complete.

Of particular note are typical north-south beach access roads where pedestrians walk in narrow traffic lanes with limited or no shoulders. While the South Shore Line presents an opportunity to improve access to the Lakeshore, riders typically rely on these access roads to reach the beaches once disembarking at their station. This presents a significant safety concern and is an inconvenient option for travelers carrying beach equipment. Facilities like the recently completed segment of the Dune-Kankakee Trail, connecting Dune Park station and the Calumet Trail to the Indiana Dunes State Park entrance, will help address these problems.

Bicycle

Bicycles are allowed on main roads in the Lakeshore, on Long Lake Trail between the Long Lake parking lot and Ogden Dunes, and the Lake Michigan shoreline from Lake Front Drive to the Central Beach access point. Bicycles are not allowed off-trail or on the dunes. Figure 14 provides an overview of bicycle facilities at the Lakeshore, including the planned 10-mile Lakeshore Connector Trail (shown in yellow in the map below). There are two main bicycle trails in the Lakeshore (shown in red in the map below): Calumet Trail in the central and eastern part of the park and Marquette Trail in the western part of the park.

Figure 14: Bicycle Facilities at the Lakeshore

Source: Google Maps 2015



Outside of the Lakeshore, bicycle travel on US 12 is challenging due to a lack of safe off-road facilities. As mentioned above, however, the Marquette Greenway will serve as a safe alternative for bicyclists and pedestrians when complete. Bicycle rentals are available in Chesterton and Porter, but there are none within the Park.

Trails

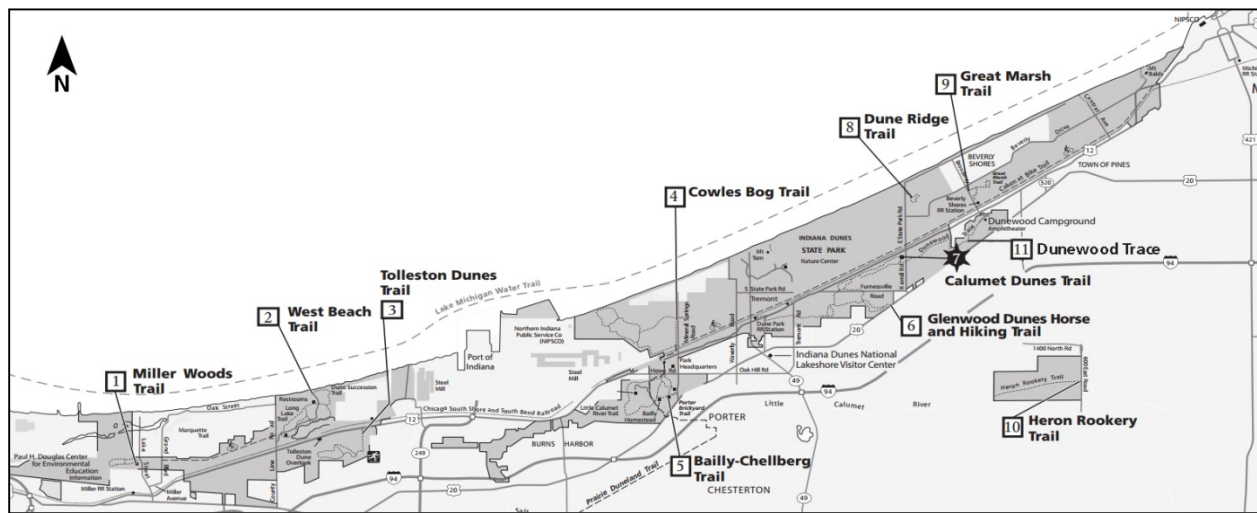
The Lakeshore has a number of hiking trails that serve a primarily recreational purpose, although some trails are critical in linking pedestrians between visitor use sites. On its website, the Lakeshore highlights eleven trails varying in difficulty for visitor use (see Table 2 and Figure 15). Trails are typically scenic loops or linear “out and back” designs. Some recreational trails connect with existing or future segments of what will eventually form the Marquette Greenway.

Table 2: Recreation Trails

Trail Number	Name	Length (miles)	Type	Connect to Existing or Future Segment of the Marquette Greenway
1	Miller Woods Trail	1.5	Loop	Yes
2	West Beach Trail	2.5	Loop	Yes
3	Tolleston Dunes Trail	3	Loop	No
4	Cowles Bog Trail	5	Loop	Yes
5	Bailly Homestead & Chellberg Farm Trail	2.5	Loop	Yes
6	Glenwood Dunes Hiking and Horse Trail	6.4	Loop	No
7	Calumet Dunes Trail	0.8	Loop	No
8	Dune Ridge Trail	0.5	Loop	No
9	Great Marsh Trail	1.3	Loop	No
10	Heron Rookery Trail	2	Linear	No
11	Dunewood Trace	1.8	Linear	No

Figure 15: Hiking Trails in the Lakeshore

Source: NPS



Commuter Rail

Northwestern Indiana is a busy corridor for both freight and passenger rail. NICTD’s South Shore Line runs approximately 90 miles from downtown Chicago to the South Bend Airport in Indiana. The South Shore Line runs parallel to US Route 12 and often intersects with the Lakeshore boundaries. There are four stations that are adjacent to the Lakeshore: Beverly Shores, Dune Park, Portage/Ogden Dunes, and Miller Station (see Figure 16). The trip from the stations within the Lakeshore to downtown Chicago range from approximately an hour to an hour and 25 minutes each way. There are 12 runs in each direction each weekday, and nine runs in each direction during the weekend (see Table 3 and Table 4). Not all trains stop at every station within the Lakeshore.

Table 3: South Shore Line Westbound Weekday Schedule for Stations within the Lakeshore

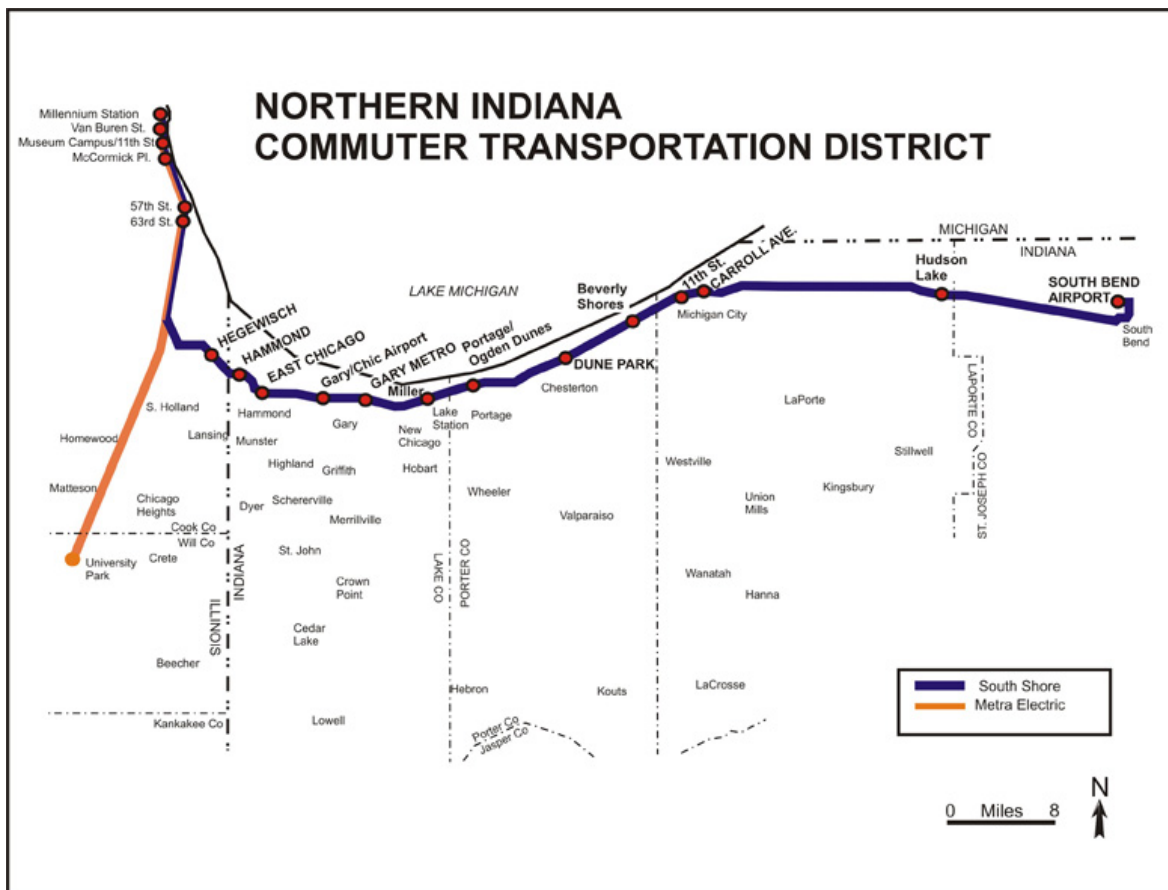
Westbound	AM	AM	AM	AM	AM	AM	AM	AM	PM	PM	PM	PM
Beverly Shores	5:03	----	----	6:21	----	7:02	8:53	11:11	12:49	2:56	4:40	8:53
Dune Park	5:08	5:53	6:10	6:27	6:41	7:08	9:00	11:18	12:55	3:02	4:45	8:59
Portage/Ogden Dunes	5:18	----	6:19	6:36	6:50	7:18	9:08	11:26	1:03	3:10	4:54	9:07
Miller	5:25	----	6:26	6:43	6:56	7:24	9:14	11:32	1:09	3:16	5:11	9:13

Table 4: South Shore Line Eastbound Weekday Schedule for Stations within the Lakeshore

Eastbound	AM	AM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM
Miller	9:49	11:14	1:40	3:29	5:07	6:05	6:21	6:31	7:07	8:20	9:45	12:05	1:48
Portage/Ogden Dunes	9:55	11:20	1:46	3:35	5:16	6:11	----	6:37	7:13	8:27	9:51	12:11	1:54
Dune Park	10:03	11:28	1:55	3:44	----	6:21	6:35	6:46	7:22	8:36	10:00	12:20	2:03
Beverly Shores	10:09	11:34	2:01	3:49	5:31	----	6:40	6:52	7:28	8:42	10:05	12:25	2:18

Figure 16: Map of the South Shore Line

Source: NICTD



The South Shore Line mainly serves commuters going into Chicago during the week; however, the rail line was built in between 1901 and 1908 to bring Chicagoans to the Dunes. Both park and NICTD staff acknowledge the South Shore Line is underutilized for accessing the Lakeshore. The stations adjacent to

the Lakeshore range from about one to one-and-a-half miles to the beaches. Table 5 lists access information on the South Shore stations within the Lakeshore. Some visitors might choose to walk or bike this distance, but the access roads they would have to use on do not always have the facilities to safely accommodate them. For families with coolers and children, walking this distance to the beach is not necessarily a viable option.

Table 5: Information on South Shore Stations within the Lakeshore

Information	Miller	Portage/ Ogden Dunes	Dune Park	Beverly Shores
Distance to Millennium Station	36 miles	40 miles	49 miles	55 miles
Time to Millennium Station	65 minutes	71 minutes	80 minutes	86 minutes
Parking Spaces	248	230	519	39
Distance to Beach	1.5 miles	1.5 miles	1.5 miles	1 mile

Currently, the South Shore Line does not allow bicycles on its trains due to the configurations of the cars. However, from in April to October, 2016, NICTD will run a pilot to allow bicycles on select weekend trains. Bicyclists can only get on and off at stations with high-level boarding platforms. The only station near the Lakeshore with high-level boarding platforms is Dune Park. During this pilot, NICTD will continue to explore options for a permanent solution.

The South Shore Line does not currently stop at the Pullman National Monument, which can be accessed by Metra at the stops located at 111th and 115th Streets. The South Shore tracks do run by Pullman National Monument, and NICTD has met with Metra and NPS to discuss future possibilities of rail connections between Pullman and the Lakeshore.

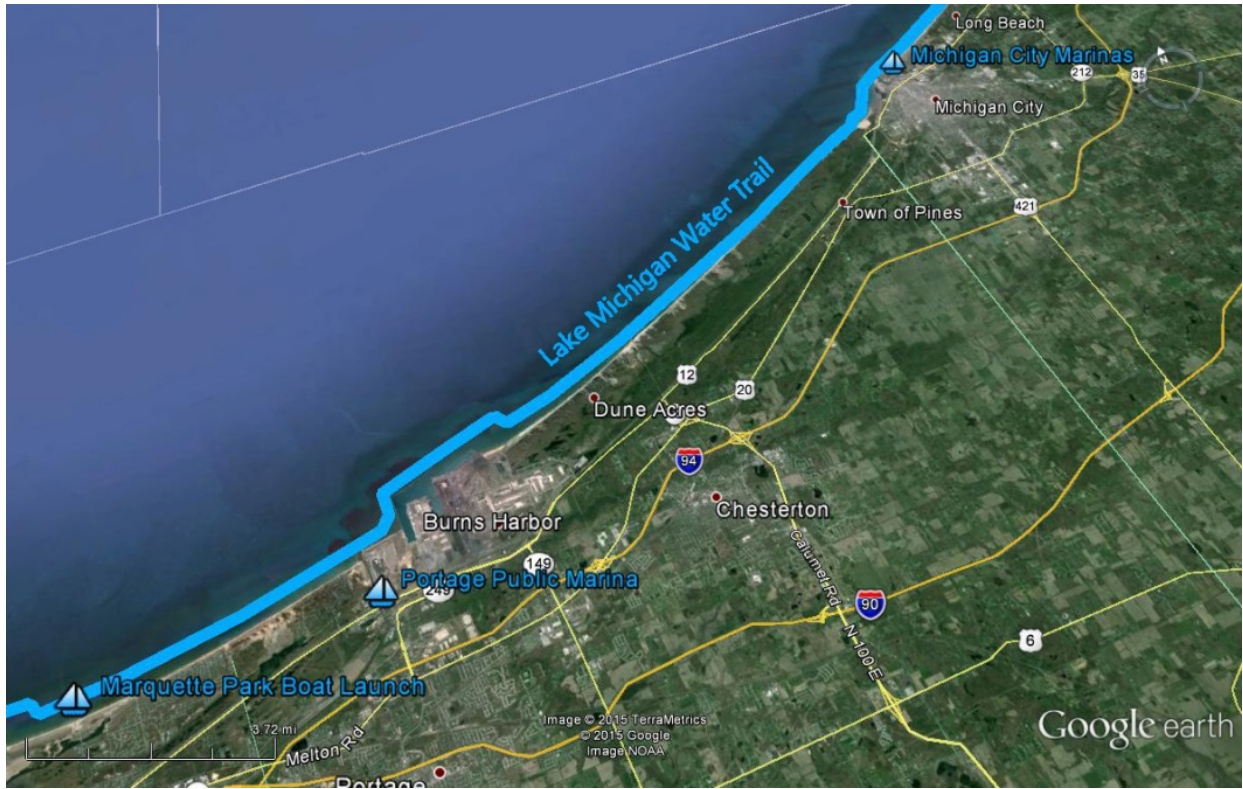
Water

The Lake Michigan Water Trail is a popular kayaking trail that parallels the shoreline of the four states surrounding Lake Michigan. In Indiana, much of the trail runs parallel to the Lakeshore. Hand-carried, non-motorized boats can be launched anywhere from the Lakeshore except West Beach. Kayaks can also be launched from certain areas in the State Park. Paddleboarding and canoeing are generally not recommended on Lake Michigan due to windy conditions and rough water.

Although sailing and powerboating are popular on Lake Michigan, there are no boat launches within the Lakeshore for larger boats. However, a number of launches and marinas are located near the Lakeshore. Figure 17 shows the Lake Michigan Water Trail as well as launch areas for larger boats.

Figure 17: Lake Michigan Water Trail and Launching Areas

Source: Google Earth



Gaps and Challenges

The Lakeshore and its surrounding region offer visitors a number of ways to reach and explore the park and gateway communities, but visitors and residents still face a number of challenges and gaps in the transportation network.

Trail Network

The Lakeshore has a number of trails, but gaps in its trail network often prevent convenient, continuous travel to and throughout the park. Notable gaps are listed below and highlighted in Figure 18 (specifically segments 12 and 14).

Figure 18: Gaps in the Trail Network

Segment 13 is the completed Marquette Trail, and the blue trail to the east of the proposed Lakeshore Connector is the completed Calumet Trail. Source: NIRPC Marquette Greenway Poster Plan



National Lakeshore Connector Route

Connecting the approximately 10-mile gap in the Marquette Greenway between the existing Marquette and Calumet trails has been identified as a priority by local stakeholders. Porter Brickyard Trail, a mile-long peripheral segment at the eastern terminus of the Connector Route, was completed in 2010. Because of the amount of investment required to complete the connector, planners view the connector and other uncompleted parts of the Marquette Greenway as separate segments,⁶ including:

- **Burns Harbor:** NIRPC has funded the planning, design, and engineering of a trail segment that would connect the Dunes Learning Center to Indiana State Road 149. This project covers only a one-mile section of a roughly five-mile trail that would connect the Learning Center to the Town of Portage near the AmeriPlex business park.
- **Ogden Dunes:** Although some residents of Ogden Dunes have expressed concern over the adaptive reuse of a utility corridor in the town for the Marquette Greenway, this roughly half-mile segment would provide convenient, direct access to the trail's amenities, including the nearby Portage Lakefront and Riverwalk. West of Ogden Dunes, a two-mile segment of the Connector Route would connect the terminus of the Marquette Trail to Ogden Dunes. To address privacy and security concerns of residents, the current envisioned alignment runs south of the town's residences along US 12.

⁶ See NIRPC's slide on the National Lakeshore Connector for more information: <http://www.nirpc.org/media/3607/mgposterplanfinalside2.pdf>

- **Portage.** A segment just over one mile long would connect the Burns Harbor and Ogden Dunes segments along State Route 249.

Douglas Center to Broadway

The Douglas Center for Environmental Education is less than four miles from Broadway, the commercial center of Gary. Extending the existing Marquette Trail 3.5 miles from the Center to Broadway (see number 12 on the map above) would provide new recreational and transportation opportunities to both visitors and residents in Gary.

Safety

Visitor safety is a key concern for the NPS, and the Lakeshore wants to ensure that people have safe access to the park and are also safe while traveling within it. This section discusses safety concerns in, and connecting to, the park.

Lack of safe bicycle and pedestrian infrastructure accessing the lakeshore

There are multiple trail networks within the Lakeshore for both pedestrians and bicyclists, but many of the roads used to access the park are designed for vehicles and do not have sidewalks or bicycle lanes. Additionally, the Lakeshore lacks safe bicycle and pedestrian connections to the South Shore Line. Below is an overview of the current status of pedestrian and bicyclist access to the park from each of the four South Shore stations within the park.

Beverly Shores Station: This station is approximately a mile from the beach. There is a sidewalk running along the west side of Broadway between the station and Beverly Road, and sidewalks on both sides of Broadway from Beverly Road to the beach, allowing for safe pedestrian access to Lake View Beach. The station does not have high level platform boarding, so bicycles would not be allowed on or off the South Shore Line under the conditions of the proposed 2016 pilot.

Dune Park Station: This station has high level platform boarding, so bicycles will be allowed to get on and off the South Shore Line for the 2016 bicycles on train pilot. Indiana Dunes State Park is accessible from this station, and the State Park recently built a 10-foot wide multi-use trail alongside the access road for people walking and bicycling into the park. The State Park beach is approximately 1.4 miles from Dune Park station, and the 0.8 mile multi-use trail goes from the station to the main gates of the State Park. Porter Beach is the closest Lakeshore site to the Dune Park Station (about 1.5 miles away), which can be accessed using a combination of the Calumet Trail and Waverly Road; however, there are no bicycle lanes or sidewalks along this road.

Portage/Ogden Dunes Station: This station is approximately 1.5 miles from the Portage Lakefront and Riverwalk. Currently, there is no safe pedestrian route from this station to the Portage Lakefront. This is due to the proximity of Midwest Steel facilities and highway infrastructure. This station does not have high level platform boarding, but it does have a handicap access ramp. An additional 180-space parking lot was constructed at the Portage Lakefront and Riverwalk in late 2015 and will be available for the 2016 peak visitation season. Portage visitors will be able to walk from the parking lot to the Lakefront on a paved trail.

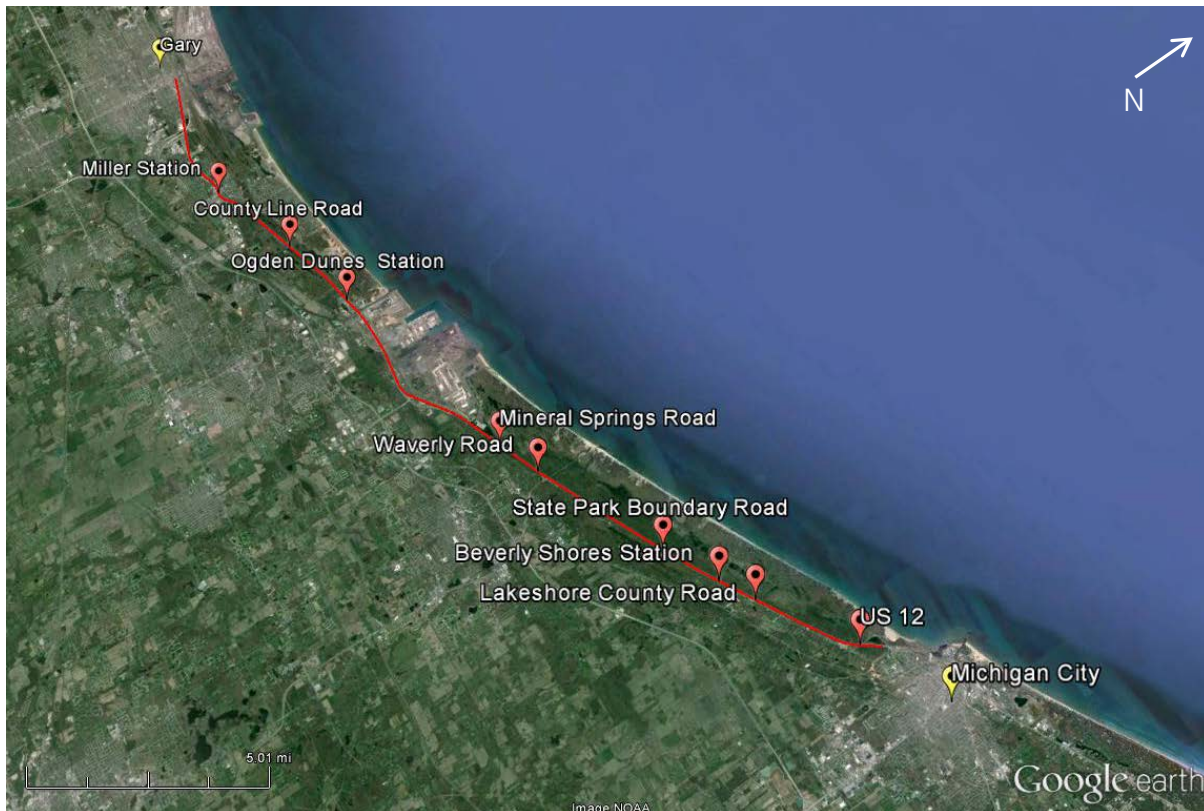
Miller Station: The Miller station is approximately a half mile from the Douglas Environmental Learning Center, and there are adequate sidewalk connections between the station and Learning Center. There are also adequate sidewalk connections to the Gary Lake Street Beach from this station; however, it is 1.5 miles from the station to the beach. The Miller station does not have high level platform boarding, so bikes would not be allowed to get on or off the South Shore Line at this station.

Active railway crossings

Indiana's economy is dependent on the movement of goods and people through its rail system, and rail lines near the park include the Chicago, South Shore, and Bend (CSSB); the Norfolk Southern; Amtrak; the Elgin, Joliet, and Eastern; and the CSX rail road.⁷ The CSSB railway tracks run near, and at times, within the Lakeshore. At-grade rail crossings are a safety concern at the Lakeshore, both for crossings on trails and highways. The rail lines can cause frequent delays for residents of the communities near the Lakeshore as well as for visitors accessing the park. Figure 19 below shows the South Shore Line tracks (in red) and the crossings that are in or near the Lakeshore. The markers show crossings and are labeled with the station or intersecting road.

Figure 19: South Shore Rail Crossings within the Lakeshore

Source: Google Earth



Limited railroad capacity

According to INDOT's 2011 Rail Plan, it is predicted that freight rail volumes in Indiana will increase by 50 percent between the years 2009 and 2040, increasing annually by 1.4 percent each year. At the same time, NICTD has the goal of improving capacities and speeds of the South Shore Line. According to NICTD, reducing commute times to downtown Chicago has the potential to significantly impact the economies of communities close to the South Shore Line. Increases in both freight and passenger rail volumes will impact the Lakeshore, potentially bringing more visitors the park, but also creating more challenges if freight volumes continue to grow without major crossings and track expansions or

⁷ See the 2011 Indiana State Rail Plan for more information. Available at: http://www.in.gov/indot/files/Rail_JanFinal_Report_011712.pdf

improvements. In addition, while some improvements have been made to move towards high speed rail in the region, there have not been any concrete plans to build new tracks at this time.

Vehicle crashes

Roadway safety is a key concern for the Lakeshore, and it is crucial to ensure that visitors arriving by vehicle, foot, or bike can get into the park safely. Below is a crash analysis for US 12 and US 20, the main roads linking sites in the Lakeshore, using 2007-2014 crash data from INDOT. US 20 generally sees heavier traffic volumes than US 12 and, therefore, more vehicle crashes. South of Ogden Dunes, for example, US 20 and US 12 have a 2011 Average Annual Daily Traffic Count (AADT) of 11,646 and 3,240, respectively.⁸ Similarly, south of Indiana Dunes State Park, US 20 and US 12 have 2011 AADT of 11,065 and 3,126, respectively. Table 6 lists the total number of crashes on US 12 and US 20 for the years 2007 to 2014.

Table 6: Crashes on US 12 and US 20

Source: INDOT 2007-2014 crash data

Type of Crash	US-12	US-20
Fatal	3 (1%)	17 (1%)
Injury	154 (26%)	426 (26%)
Property Damage Only	440 (74%)	1,209 (73%)
Total Crashes	597	1,652

Discrepancies in crash factors on the two routes may be related to their traffic volume. Whereas factors on US 12 are more related to speed, factors for crashes on US 20 may be more related to a volume of vehicles (e.g., unsafe breaking and improper turning). According to the INDOT data, the top five factors for crashes on US 12 are:

1. Animals or objects in the roadway (27 percent),
2. Failure to yield the right of way (15 percent),
3. Ran off the road (12 percent),
4. Following too closely (10 percent), and
5. Speed too fast for weather conditions (7 percent).

The top five factors for crashes on US 20 are:

1. Animals or objects in the roadway (17 percent),
2. Failure to yield the right of way (15 percent),
3. Following too closely (12 percent),
4. Unsafe braking (9 percent), and
5. Improper turning (7 percent).

Table 7 and Table 8 list the locations with the most crashes at US 12 and US 20 intersections, respectively, between 2007 and 2014. State Routes 149 and 249 are in the top-two crash locations for both US 12 and 20, likely due to a high volume of cross-traffic. State Routes 149 and 249 have a 2011 AADT of 5,299 and 21,193, respectively, between US 12 and 20. Waverly is also in the top four crash locations for each highway.

⁸ 2011 AADT data captured from INDOT's Interactive Traffic Data Map, available at: <https://entapps.indot.in.gov/TrafficCounts/>.

Table 7: US 12 Intersection Crash Locations

Source: INDOT 2007-2014 crash data

Intersecting Roadway	Crashes
State Route 149	26
State Route 249	18
Mineral Springs Road	13
Waverly Road	11
State Route 49	10

Table 8: US 20 Intersection Crash Locations

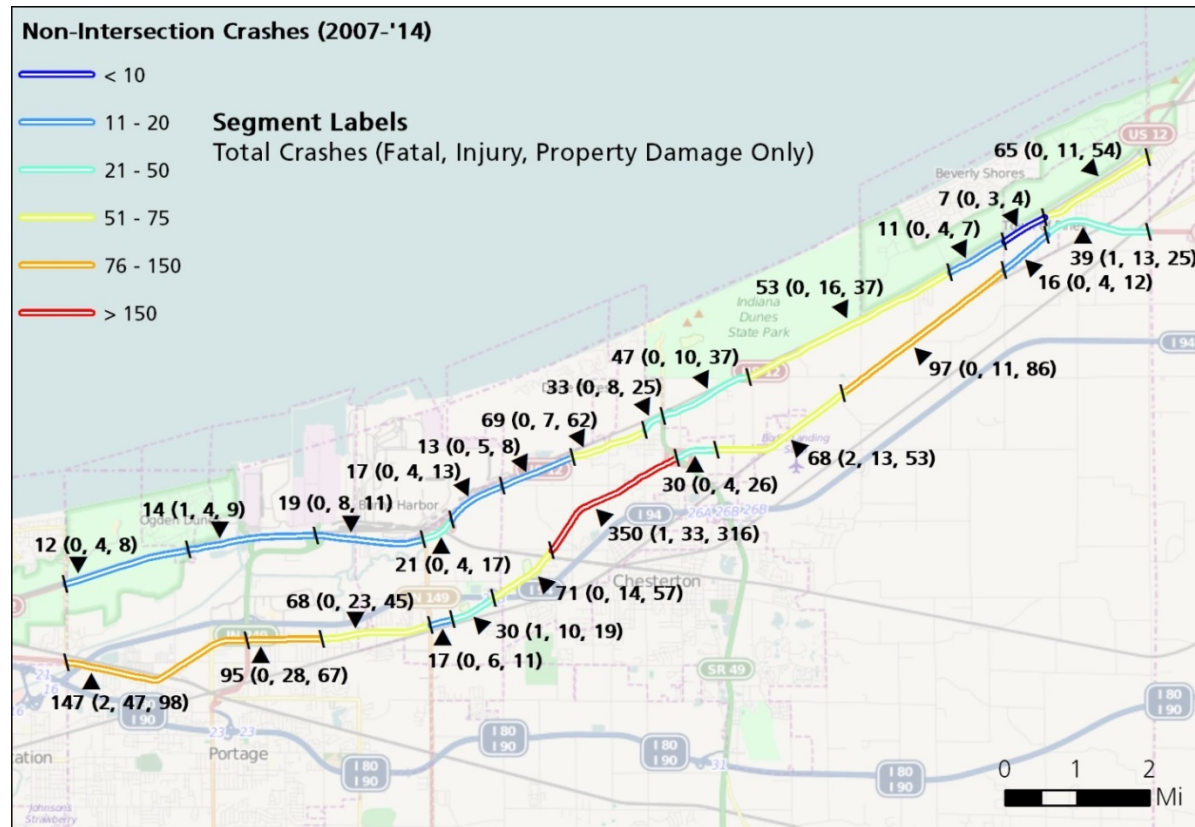
Source: INDOT 2007-2014 crash data

Intersecting Roadway	Crashes
State Route 249	64
State Route 149	40
Waverly Road	37
State Route 520	33
Crisman Road	31

Figure 20 illustrates the number of non-intersection crashes by segment on US 12 and US 20 (US 12 is the northernmost route; US 20 is below) and breaks down the number of crashes by those with fatalities, injuries, or property damage only. With this information, the Lakeshore and its stakeholders can identify locations that need special traffic safety mitigation, either through engineering, education, or enforcement.

Figure 20: Crashes by Segment on US 12 and US 20

Source: Volpe Center with INDOT crash data



Congestion

During peak summer months, vehicle congestion and parking are major challenges at the Lakeshore. An average of 350,000 visitors access the Lakeshore during July, the park’s busiest month. This is nearly five times as many visitors during the off-season in December and January. As Figure 3 suggests, congestion is not an issue during off-season months and is mainly limited to the summer months.

Road congestion

During peak summer weekends, traffic moves slowly into the Lakeshore at all access points. Traffic can back up onto US 12, causing further congestion, delays, and safety concerns.

Parking lot capacity

Parking is a challenge during the summer months that negatively impacts the visitor experience. Parking is free in the Lakeshore except at West Beach, where there is a \$6 per vehicle fee. In total, there are 1,004 parking spaces in the Lakeshore (not including Mount Baldy, which is temporarily closed). As mentioned above, Lakeshore staff report that the parking lots east of the Burns Harbor Waterway reach capacity by 10:00 AM on weekends, and 11:00 AM on weekdays between Memorial Day and Labor Day. Full parking lots cause visitors to park on access roads and other unauthorized places. Parking lot capacities are available in Table 1. This unauthorized parking damages resources and also creates safety concerns, especially when people start walking in the road from their vehicles to the beach. The Lakeshore’s gateway communities are generally very discouraging of outside traffic, prohibiting visitor parking within their limits.

Traveler Information

To minimize travel disruptions and disoriented visitors, who often become unsafe drivers, it is important that visitors can easily find key information for planning their visit to the Lakeshore and can locate the park and various destinations within it. The Lakeshore conveys information to visitors through its website, visitor centers, and wayfinding signage throughout the park.

Wayfinding

Wayfinding in the Lakeshore continues to be a challenge. Often, visitors end up at park Headquarters when looking for various trails and beaches. The park has many different access points and is fragmented, which can make navigating the park challenging. The 2010 Transportation Study noted that the Lakeshore created a wayfinding plan around the same time of the study.

Parking lot and access conditions

The majority of parking lots at the Lakeshore are paved, with the exception of a couple gravel lots. The parking lots are generally in good condition, but with a high number of visitors in the summer, there is potential for degradation. Accessing the parking lots can be challenging for visitors in the three peak summer months when queues for parking spaces can back up onto US 12. Lakeshore staff report that there are about 12 weeks in the summer months (between Memorial Day and Labor Day) when the parking lots throughout the Lakeshore are full before noon (except for the West Beach lot). There are currently no systems in place to give visitors estimates of delays while waiting for parking, when parking lots are at capacity, or which parking lots still have available space.

Online information and trip planning

The Lakeshore's website has basic information about accessing the park, operating hours and seasons, and fees. The website has maps of the Visitor Center, Environmental Education Center, beaches, trails, horse trails, and bicycle trails. Some of the maps appear to be outdated and are scanned copies of black and white maps, which are not the most user-friendly. The website is not designed to be used on a smartphone or similar device.

Generally, the information on the website would allow someone to research the park and plan a visit. The design of the website is not the most intuitive, however, and it does take some time to find information. Additionally, the website has park alerts, but does not have any alerts about parking lot capacity or congestion that may delay access to the park on busy days.

Multiple Gateway Communities

The cities and towns of Beverly Shores, Burns Harbor, Chesterton, Dune Acres, Ogden Dunes, Pines, Portage, Porter, Gary, Michigan City, and Valparaiso are all in close proximity to the Lakeshore. The following communities have direct access to Lake Michigan: Dune Acres, Ogden Dunes, and Porter, and Gary. These communities prohibit parking on their streets for visitors accessing the Lakeshore and only allow residents to park in their lots.

The residents of these gateway communities generally support the park, but wish to balance their privacy with visitor access to the Lakeshore. The Lakeshore must work with multiple stakeholders in each community, making it complex to pursue activities that impact the residents of these places.

Key Concerns

Based on the existing conditions analysis and the Lakeshore's goal to move towards a more multi-modal transportation system, the park and partners should consider the following key concerns going forward. While traffic safety is prioritized in this list, other key concerns are not necessarily listed in any order.

- **Congestion and traffic safety**
As a result of the majority of visitors using automobiles to access the Lakeshore, congestion and traffic safety are problems during busy summer weeks. There is no way for visitors to know which parking lots are full, which can create long queues that back up onto US 12. Additionally, many of the roads accessing the park are two lane roads with little or no shoulder. This can create issues with safety for pedestrians and bicyclists accessing the Lakeshore. Any improvements or changes made to parking or roadways within the park should consider potential impacts on congestion and traffic safety.
- **Parking lot capacity**
Lakeshore staff report that there are about 12 weeks in the summer months when the parking lots throughout the Lakeshore are full before noon. Staff noted that the West Beach lot, which is the largest lot and the only lot with a fee, tends to have spaces still free while the smaller, free lots fill quickly. With limited funds and environmental concerns, it is unlikely that more parking lots will be built to accommodate visitors.
- **Trail connections**
Completing the Marquette Greenway would provide hikers and bicyclists a seamless, safe, and convenient route from gateway communities to sites within the Lakeshore. Segments to complete the Marquette Greenway have been identified, but a lack of funding has prevented its completion.
- **Bicycle and pedestrian connections from rail to lake**
The Lakeshore has four South Shore stations near its boundaries. Currently, the Beverly Shores and Miller stations have adequate sidewalk connections to locations within the park. Pedestrian and bicyclist access to the Lakeshore from the Dune Park and Portage/Ogden Dune stations is limited due to lack of sidewalk and bicycle facilities. While the South Shore line will run a pilot in 2016 to allow bicycles on the train, its success across the Lakeshore may be limited; within the park boundaries, passengers with bikes will only be able to board and exit the train at the Dune Park station.
- **Underutilization of alternative modes**
As mentioned previously, the NPCA 2010 visitor survey results showed that 91 percent of respondents arrived to the Lakeshore by automobile. Alternative modes, such as bicycling, transit, and walking are underutilized to and within the Lakeshore, partly because of the discontinuous nature of Lakeshore property and visitor sites. A lack of adequate infrastructure throughout the Lakeshore also hinders the use of alternative transportation.

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