# Finding of No Significant Impact

## Wabash Avenue / Porter Access Site Environmental Assessment

## Indiana Dunes National Lakeshore

### SUMMARY

Pursuant to the National Environmental Policy Act (NEPA) and National Park Service (NPS) NEPA guidelines, the NPS prepared an Environmental Assessment (EA) evaluating the potential impacts of the proposed developments to address traffic, access, resource, aesthetic, and safety problems at the Wabash Avenue / Porter Access Site in the Indiana Dunes National Lakeshore (national lakeshore). Based upon the findings in the EA, the NPS finds that the implementation of the Selected Alternative would not constitute a significant impact upon the environment or the National Lakeshore's resources.

The NPS prepared the EA in compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, (CEQ) regulations implementing NEPA [40 Code of Federal Regulations (CFR) 1500-1508]; NPS Director's Order #12 and Handbook, *Conservation Planning, Environmental Impact Analysis, and Decision-making*; and the National Historic Preservation Act of 1966 as amended, and implementing regulations, 36 CFR Part 800.

### PARK INFORMATION

The national lakeshore is located in northwest Indiana along the south shore of Lake Michigan between Gary and Michigan City, Indiana, approximately 50 miles southeast of Chicago. The park is loosely bounded by Lake Michigan to the north and US-20 to the south. The national lakeshore is separated into an East Unit and a West Unit, with several small non-contiguous satellite areas. A variety of residential, commercial, and industrial developments adjoin the park boundaries, including several small communities that are completely surrounded by national lakeshore land.

Indiana Dunes National Lakeshore was established by the U.S. Congress as a unit of the National Park Service on November 5, 1966, in order to "preserve for the educational, inspirational, and recreational use of the public certain portions of the Indiana Dunes and other areas of scenic, scientific, and historic interest and recreational value in the State of Indiana." The enabling legislation further states that the "lakeshore shall be permanently preserved in its present state, and no development or plan for the convenience of visitors shall be undertaken therein which would be incompatible with the preservation of the unique flora and fauna or the physiographic conditions now prevailing." Under the enabling legislation 8,330 acres of land and water were set aside to create the national lakeshore. Through the efforts of the NPS, conservation organizations, and constituents seeking to expand the boundaries for preservation, there were four subsequent expansion bills (1976, 1980, 1986, and 1992) which increased the size of the park to 15,067 acres.

Today, the national lakeshore welcomes nearly two million visitors each year and offers many amenities such as hiking and horseback riding trails; biking; camping; beach access; visitor center; picnic facilities; and interpretive programs. In addition, the national lakeshore is home to four National Natural Landmarks and one National Historical Landmark.

The national lakeshore is comprised of dunes, oak savannas, swamps, bogs, marshes, prairies, rivers, and forests supporting a great diversity of plant and animal species. Over 1,135 native plant species are distributed throughout the park and more than 350 bird species have been observed within the park.

## PROJECT BACKGROUND

The problems and needs at the site have been recognized for years, and the NPS has attempted to address them. About ten years ago, a modern restroom facility was constructed to replace the portable toilets. The parking areas were improved, and native plant beds were planted between the parking areas and Wabash Avenue. Accessible walkways were installed between Wabash Avenue and the beach. The national lakeshore submitted formal funding requests and secured some donated funds for this project. As recently as 2011, the national lakeshore was working closely with the Town Council on plans for the site. National lakeshore staff made some presentations that provided conceptual drawings for some facilities (e.g., a picnic pavilion and viewing platform). In the fall of 2011, the national lakeshore decided to take a "fresh look" at problems and opportunities at the site. The national lakeshore decided that the EA process under NEPA would be the appropriate action to take to identify possible alternatives and the impacts of those alternatives, and to encourage public participation in the process. Funds were secured for development of the EA, and the project began early in 2012.

## THE SELECTED ALTERNATIVE

After reviewing public comments provided during the 30-day comment period, as well as reviewing all alternatives and the impacts of those alternatives, the NPS has identified a modified Alternative 2 as the Selected Alternative. Public comments were overwhelmingly against creating additional parking at the site; therefore, additional parking will no longer be considered.

Alternative 2 would provide minor improvements to the site and would require cooperation and coordination with the Town of Porter to facilitate them. Improvements would include:

- The sidewalk along Wabash Avenue would be raised, widened, and curbed to provide for greater pedestrian safety.

- Methods to improve access to the beach at the end of Wabash Avenue would continue to be explored and implemented in order to meet ADA (Americans with Disabilities Act) standards. [Note: While we generally speak of ADA, the Architectural Barriers Act of 1968 applies specifically to the federal government.] The NPS is proposing some type of temporary "decking" that is firm enough for wheelchairs. Benches have also been considered. Close coordination with the Town of Porter is proposed, since an accessible path is also required from the Town parking lot. This decking could be pulled in the late fall and placed again in late April to protect it from winter wave action.

- The erosion problems associated with the foot-wash station would be corrected so that water does not drain into the sidewalk.

- The dune area on the north edge of the Town parking lot (former home sites) would be restored by killing weeds and planting dune grass. Some additional sand may be added to the site to facilitate dune formation. Over the years, the dune grass will "grow" the dune so it traps the sand from the beach and will help reduce sand deposition on the Town parking lot.

- The NPS, working closely with the Town, would continue to develop options for an "early warning system" for drivers approaching Waverly Road at US-12 to advise them that the parking lots are full.

- The south parking lot would be upgraded (e.g., wheel stops and an improved surface) within the existing footprint.

Modifications to Alternative 2 include:

- A few picnic tables may be placed just east of the north parking lot. These would be set on a gravel base on a trial basis and their use would be monitored. Shelters are not planned.

- A few interpretive waysides would be placed, focusing on the biological and geological resources in the area.

- Measures would be taken to protect the fragile dunes throughout the site. Barriers, such as snow fencing and 4 x 4 posts with vinyl cables, as used in other areas of the national lakeshore, would be placed in needed areas. Signs would be posted and native vegetation plantings or spreading woody debris could be used to discourage social trails. The national lakeshore would also cooperate with the state park to develop ways to eliminate or reduce damage to the dune environment.

The EA considered four other alternatives:

**Alternative 1 - No Action Alternative**

Under Alternative 1, no major developments on the site would occur. National lakeshore staff would continue to manage the site as at present, ensuring that visitors and resources are protected.

**Alternative 3**

Alternative 3 would provide a direct vehicle and pedestrian connection between the north and south parking lots to reduce traffic and backups on Wabash Avenue. Five-foot-wide bike lanes would be constructed along Wabash Avenue to encourage bicycle access to the site and to provide temporary vehicle parking for emergency vehicle access. A picnic facility (group or individual picnic platforms and shelters) would be developed between the Town parking lot and the beach. Compliant paths would be constructed from the parking areas to the beach, from the parking areas to the picnic facility, and from the picnic facility to the beach. An overflow parking lot would be constructed on previously disturbed land for use on busy summer weekends. This lot would be constructed of gravel or some other permeable surface. Additionally, the south parking lot would be upgraded (e.g., wheel stops and improved surface) within the existing footprint. Many of these proposed developments would require Town of Porter cooperation and approval for implementation.

**Alternative 4**

Alternative 4 would provide a variety of improvements to the site. A looped vehicle connection between the north and south parking lots, using the existing Duneland Drive as part of its route, would be developed to reduce traffic and backups on Wabash Avenue. This circulating roadway would increase the space available for moving vehicles when searching for available parking spaces; a distance of 0.2 miles or more is possible to reduce the length of the queues on the existing public street network. Construction of a new looped roadway could utilize emerging concepts for green roadways that define and quantitatively measure roadway sustainability, including permeable pavements, storm water management,

and the use of local materials. Individual picnic platforms and shelters would be constructed east of and adjacent to the two National Park Service (NPS) parking lots. Compliant paths would be constructed from the parking areas to the beach and from the parking areas to the picnic facilities. The south parking lot would be upgraded (e.g. wheel stops and improved surface) within the existing footprint. An overflow parking lot would be constructed on previously disturbed land for use on busy summer weekends. This overflow lot could be constructed along the loop connector, or alternatively, a separate lot could be constructed and located as in Alternative 3. Either lot would be constructed of gravel or some other permeable surface. The sidewalk along Wabash Avenue would be raised, widened, and curbed to provide for greater pedestrian safety. Many of these proposed developments would require Town of Porter cooperation and approval for implementation.

**Alternative 5**

Alternative 5, the Preferred Alternative in the EA, would provide a variety of improvements to the site. A larger parking lot with an approximate 100 vehicle capacity would be constructed on the existing south parking lot and extend east of it to Dabbert Drive. Entrance to this parking lot would be from Wabash Avenue, and vehicles would be notified by signage that this new parking lot is the *only* general parking available. When the parking lot is full, it would be closed, and vehicles would make the short loop back to Wabash Avenue, then be required to turn left (southbound). Vehicles parked in this new parking lot would also be required to turn left (southbound) on Wabash Avenue when exiting. The existing north lot would be open only during the summer months to visitors with valid handicapped placards. In the off-season, the new south parking lot would be closed, and all visitors would use the north parking lot. Adjacent residents and vehicles with valid Town parking permits would have access north on Wabash Avenue. Individual picnic platforms and shelters would be constructed east of and adjacent to the two NPS parking lots. An additional picnic facility (a few individual picnic platforms and shelters) would also be developed between the Town parking lot and the beach. Compliant paths would be constructed from the parking areas to the beach, from the parking areas to the picnic facilities, and from the beach picnic facility to the beach. Many of these proposed developments would require Town of Porter cooperation and approval for implementation.

**Actions Common to all Action Alternatives**

In addition, a number of actions were identified that are common to all action alternatives:

The erosion problems associated with the foot-wash station would be corrected and interpretive waysides would be developed. Measures would be taken to protect the fragile dunes. Barriers, such as snow fencing and 4 x 4 posts with vinyl cables, as used in other areas of the national lakeshore, would be placed in needed areas. Signs would be posted and native vegetation plantings or spreading woody debris could be used to discourage social trails. The national lakeshore would also cooperate with the state park to develop ways to eliminate or reduce damage to the dune environment.

Additionally, options for developing an advanced congested traffic warning sign system would be evaluated. An advanced warning sign to indicate when long traffic queues are present would provide information to motorists wanting to access Porter Beach prior to reaching the queues. Options include a range of sign and message possibilities that assume alternate route markers are used to redirect traffic to State Park Road to reduce congestion near the Porter Beach area, including:

- A series of ground-mounted signs warning of seasonal congestion along Waverly Road.
- A pedestal-mounted warning sign (yellow) with a legend of "Congestion Ahead" may be supplemented with a flashing beacon. Placement of advance signing on Waverly Road is proposed to be 500 feet in advance of State Park Road and on the north leg of the U.S. 12 in-

tersection. The flashing beacon could be activated by using a standard inductive loop that senses the presence of a stopped vehicle on 130th Street.

- Variable message signs may be deployed to provide congestion, beach safety, national lakeshore information, and public safety information as beachgoers approach Porter Beach. Specific information related to congestion may include estimated delay times, alternate route options, and vehicle/pedestrian safety tips. Telephone or Ethernet connections could enable changes to standard messages from a remote location.

Installation of signs may include video surveillance of road conditions to help manage traffic congestion during peak periods. Video surveillance images could be accessed by local public safety agencies and the national lakeshore.

## ALTERNATIVES CONSIDERED AND DISMISSED

In addition to the five alternatives discussed above, the National Park Service also considered the following seven alternatives, either suggested by the public or identified through internal discussions, but dismissed them from further consideration as described in the EA:

- Transfer the NPS land to the Town of Porter or Indiana Dunes State Park.
- Consider a remote parking lot with beach access by tram.
- Perform a beach carrying capacity study to determine maximum beach capacity.
- Split beach traffic and resident traffic further out and provide a way for traffic to turn around and get out without causing more congestion.
- Return the area to its natural state.
- Pavement widening of the existing public roadway network.
- Provide a new public street connection between East Road and Dudley Drive.

## ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA, 42 U.S.C.A. § 4321 et seq., Public Law 91- 190 (1970)), which is guided by the Council on Environmental Quality (CEQ). The CEQ provides direction that "[the] environmentally preferable [alternative] is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Simply, this means the alternative which causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic cultural, and natural resources." (Forty Most Asked Questions Concerning CEQ's NEPA Regulations, 23 March 1981; see also 43 C.F.R Part 46.30.) The NPS required to identify the environmentally preferable, but is not required to select it.

Alternative 2 is the environmentally preferable alternative. It would provide a sidewalk along Wabash Avenue and improve pedestrian beach access. This alternative would have little impact on the natural environment, but would not fully satisfy project objectives, in that a formal picnic area is not provided near the beach and the vehicle circulation problems are not eliminated.

## THE SELECTED ALTERNATIVE AND SIGNIFICANCE CRITERIA

As defined in 40 CRF §1508.27, significance is determined by examining the following criteria:

***1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal Agency believes that on balance the effect will be beneficial.***

The Selected Alternative (Alternative 2) would have long-term, minor, adverse impacts to geology and soils and vegetation from the development of a compliant path and picnic table sites. The restored dune in the vicinity of the old home sites would provide a beneficial impact to geology and soils, vegetation, and wildlife. Impacts to wildlife would be short-term, negligible, and adverse from temporary displacement during construction. Impacts to park operations would be long-term, minor, and adverse due to constructing and maintaining the compliant path to the beach. Impacts to adjacent landowners would be long-term, negligible, and beneficial due to improved pedestrian access and lower vehicle-pedestrian conflicts. Impacts to visitor use and experience would be long-term, minor, and beneficial due to increased safety, better access, and improved facilities. Impacts to traffic patterns and volume would be long-term, negligible, and beneficial due to reduced vehicle-pedestrian conflicts. Air quality impacts would be short-term, negligible, and adverse during construction activities.

***2. The degree to which the proposed action affects public health and safety.***

The Selected Alternative (Alternative 2) would provide for a safer visitor experience. A compliant path would provide safe access to the beach and a sidewalk would improve pedestrian safety along Wabash Avenue.

***3. Unique characteristics of the Geographic Area such as Proximity to Historic or Cultural Resources, Wild and Scenic Rivers, Ecologically Critical areas, Wetlands or Floodplains, Park Lands and so forth.***

The site has no unique characteristics, other than functioning as an access site on Lake Michigan. No significant natural or cultural resources exist in the project area.

***4. The degree to which the impacts on the quality of the human environment are likely to be highly controversial.***

The majority of public comments opposed increased parking at the site, as was proposed under Alternative 5 (the Preferred Alternative in the EA). For that reason, Alternative 2 was identified as the Selected Alternative, since it proposes no increased parking.

***5. Degree to which the potential impacts on the quality of the human environment is highly uncertain or involves unique or unknown risks.***

There are no highly uncertain, unique, or unknown risks associated with this project.

***6. Degree to which the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.***

This project is consistent with the 1997 GMP, which calls for picnicking as a national lakeshore use and identifies the need to provide access for people with disabilities. The Selected Alternative does not set precedent for future actions that may have significant impacts and does not represent a decision in principle about a future consideration.

***7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.***

Cumulative impacts were determined by combining the impacts of the Selected Alternative with other past, present and reasonably foreseeable future actions. Cumulatively, the implementation of the Selected Alternative and related park activities near the project area do not constitute a significant impact.

***8. The degree to which the action may adversely affect historic districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, or may cause loss or destruction of significant scientific cultural or historical resources.***

The National Lakeshore completed consultation with the Midwest Regional Office (MWR) of the National Park Service pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800. The MWR concurred with the National Lakeshore's findings that no historic properties will be adversely affected by the project. Since there are no historic properties affected by this undertaking, a memorandum will be submitted to the State Historic Preservation Office (SHPO) (per NPS procedure), when the NEPA process is completed, that identifies the Selected Alternative.

***9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.***

There are no federally-listed threatened or endangered species in the project area and no federally-listed species that would be affected by the project. Piping Plover critical habitat has been designated in Unit IN-1: Indiana Dunes National Lakeshore and Indiana Dunes State Park Beaches, and the critical habitat extends from the western boundary of the Cowles Bog Unit to Kemil Road. However, according to the U.S. Fish and Wildlife Service (Elizabeth McCloskey, local representative, April 27, 2012 email), existing developments, such as the project area, are not critical habitat, even when included within the designated critical habitat boundaries, because they lack the "primary constituent elements," one of which is a low level of disturbance.

***10. Whether the action threatens a violation of Federal, state, or local law or requirements imposed for the protection of the environment.***

The Selected Alternative violates no federal, state, or local law, including environmental protection laws. Consultation with the Indiana Department of Natural Resources has been completed.

## PUBLIC INVOLVEMENT

Internal (agency) and external (public) scoping occurred prior to preparation of this EA. Internal scoping involved an interdisciplinary process to identify issues, develop a public involvement plan, identify data needs, and develop a planning process schedule. An internal scoping meeting was held on February 2, 2012, which was attended by members of the project planning team. Based on this meeting, a public involvement plan was developed that identified two stages in the process in which public comment would be solicited and considered: the public scoping stage and the public review of environmental assessment stage.

A public scoping open house was held at the Indiana Dunes National Lakeshore Visitor Center, from 6:00 p.m.-8:00 p.m. on June 28, 2012, attended by 48 individuals. Four comment cards were received at the open house, and comments were also written on available flipcharts. During the public comment period,

June 28-August 1, 2012, eight public comments were received through the NPS Planning, Environment, and Public Comment (PEPC) website and one direct email. A meeting with some members of the Town Council was held on June 29, 2012 in order to better identify concerns and opportunities. A national lakeshore employee and two contractors participated.

The draft document was made available to the public through the Planning, Environment, and Public Comment (PEPC) website and the national lakeshore, and letters of availability were sent to stakeholders, agencies, and Native American tribes. Solicitation of comments also continued during the formal review period (July 10-August 9, 2013) from agencies and Native American tribes. A press release was distributed to park media outlets and hard copies were available for review at the park Headquarters and Visitor Center. As a result of these public involvement activities, the national lakeshore received 68 pieces of correspondence from the website, two emails, and four typed letters, for a total of 74. The issues addressed by the public in these comments were organized into 13 major subject areas that broadly describe the nature of the contents. (These comment categories are described in the Public Comment Summary). Commenters overwhelmingly rejected any increase in parking, as proposed in Alternative 5, the Preferred Alternative.

## FINDING OF NO SIGNIFICANT IMPACT

Based on my review of the facts and analysis contained in this Environmental Assessment, which is incorporated herein, I conclude that the Selected Alternative for the Wabash Avenue / Porter Access Site within Indiana Dunes National Lakeshore, Porter, Indiana, would not have a significant impact on the human environment either by itself or considering cumulative impacts. Accordingly, the requirements of the National Environmental Policy Act, regulations promulgated by the President's Council on Environmental Quality, and provisions of National Park Service (NPS) Director's Order-12 and Handbook (Conservation Planning and Environmental Impact Analysis and Decision-Making) have been fulfilled. The Selected Alternative will not have a significant effect on the human environment and negative environmental impacts that could occur are primarily minor in intensity. In addition, the Selected Alternative supports the enabling legislation establishing Indiana Dunes National Lakeshore with the intended purpose of preserving for the educational, inspirational, and recreational use of the public certain portions of the Indiana dunes and other areas of scenic, scientific, and historic interest and recreational value in the State of Indiana. The Selected Alternative does not constitute an action that normally requires preparation of an Environmental Impact Statement and one will not be prepared.

Recommended: _____ 11/20/2013
Acting Superintendent, Indiana Dunes National Lakeshore — Date

Approved: _____ 11/27/13
Midwest Regional Director, National Park Service — Date

# Wabash Avenue / Porter Access Site Environmental Assessment

## Indiana Dunes National Lakeshore

## APPENDIX 1: DETERMINATION OF NON-IMPAIRMENT

National Park Service *Management Policies* 2006 require analysis of potential effects to determine whether or not actions would impair park resources. The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service (NPS) managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values.

However, the laws do give the NPS the management discretion to allow adverse impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may, but does not necessarily, constitute an impairment. An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park; or
- identified as a goal in the park's general management plan or other relevant NPS planning documents.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to pursue or restore the integrity of park resources or values and it cannot be further mitigated.

The park resources and values that are subject to the no-impairment standard include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the

superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and

- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. The NPS's threshold for considering whether there could be impairment is based on whether an action will have significant effects.

Impairment findings are not necessary for visitor use and experience, socioeconomics, public health and safety, environmental justice, land use, and park operations, because impairment findings relate back to park resources and values, and these impact areas are not generally considered park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values. After dismissing the above topics, topics remaining to be evaluated for impairment include geology and soils, vegetation, wildlife, and air quality.

Fundamental resources and values for Indiana Dunes National Lakeshore are identified in the 1997 *General Management Plan*. According to that document, all of the impact topics carried forward in this EA are necessary to fulfill specific purposes identified in the establishing legislation of the park; are key to the natural or cultural integrity of the park; and/or are identified as a goal in the park's *General Management Plan* or other relevant NPS planning document.

**Geology and Soils**

According to the 1976 Soil Survey of Porter County, Indiana (Porter 1976), there is only one soil type in the project area, dune land. This steep and very steep, deep, excessively drained map unit is on low sand dunes and beach ridges. These areas are elongated and continue in an almost unbroken line along the shore of Lake Michigan. Included in mapping are narrow bands or lake beach. Also included are small areas of stabilized sand dunes and areas on which dwellings have been built. This unit has poor potential for all uses because of the slopes and instability of the sand. Attempts have been made to stabilize some areas with beach grasses, but the low available water capacity and continuous shifting of the sands make it difficult for plants to grow. The sand moves with the winds and shifts continuously. The slopes and loose sand hinder the use of equipment.

Topography on the site ranges from nearly flat on the Lake Michigan beach to the 40 percent slopes on the sand dune in the northeast area of the site, adjacent to the Indiana Dunes State Park. Elevations at the site range from about 580 feet above sea level at Lake Michigan to 670 feet above sea level at the top of the dune in the northeast area.

Water drains in a generally northerly direction toward Lake Michigan. Water draining down Wabash Avenue pools at the northern end of the road. Drainage from the National Park Service foot wash station, as well as surface drainage off Wabash Avenue, causes erosion of sand near the accessible decking on the Lake Michigan beach.

Lake Michigan storm events, particularly in the fall, winter, and spring, can highly erode the beach. As recently as last winter, a storm resulted in 25-foot waves that eroded the beach, causing 10- to15-foot sand cliffs. Low lake levels lessened the damage that might have occurred. High lake levels in 1986 eliminated any beach, and many seawalls and groins were required to be constructed as a result. Dune-bluff erosion during the March 9, 1998, blizzard and high lake levels threatened the two houses located near the beach, just north of the current restroom building.

During low lake levels, such as in 2003 and currently, wide beaches form, creating a deceptive appearance of safety for existing coastal structures. While wide beaches are great for recreation, they are no match for the erosive forces of Lake Michigan, especially when high lake levels are combined with massive storms that attack the shoreline and highly erodible beaches and dunes.

Geology is mentioned in one of the purpose statements for the national lakeshore: "To preserve, restore, and protect outstanding ecological and biological diversity along with the geological features that characterize the southern shore of Lake Michigan." Soils are important because they determine the ecological diversity of the national lakeshore.

Under the Selected Alternative, all of the proposed developments are on previously disturbed soils. The existing north and south parking lots would not change in size. The sidewalk along Wabash Avenue, in an area of disturbed soils, would be raised, widened, and curbed to provide for greater pedestrian safety. A compliant path would be constructed on previously-disturbed areas from the end of Wabash Avenue onto the beach. The erosion problems associated with the foot-wash station would be corrected. The dunes between Lake Michigan and the Town of Porter lot (old home sites) would be restored. Measures would be taken to protect other dunes on the site. Barriers, such as snow fencing and 4 x 4 posts with vinyl cables, as used in other areas of the national lakeshore, would be placed in needed areas. Signs would be posted and native vegetation plantings or spreading woody debris could be used to discourage social trails. The national lakeshore would also cooperate with the state park to develop ways to eliminate or reduce damage to the dune environment. The placement of a few picnic tables to the east of the north parking lot would be on previously disturbed soils. The tables would be placed on a gravel base, rather than on concrete, so they can easily be removed if underutilized.

Implementation of the Selected Alternative would produce long-term, minor, and adverse impacts to geology and soils due to the development of a sidewalk along Wabash Avenue, a compliant path from the end of Wabash Avenue to the beach, and a few small picnic table sites. However, the development is minor in scale and would be on previously-disturbed areas. Dune restoration and protection and correcting the foot wash station erosion are beneficial impacts of the Selected Alternative. The Selected Alternative would not result in impairment of the national lakeshore's geology and soils.

## Vegetation

Because no project-specific inventory of vegetation had been conducted at the site, the NPS retained the services of a contractor to conduct such inventory. Based on this inventory conducted in August 2012, four land cover types were identified: beach/foredune community, dry sand prairie community, heavily degraded/no natural community identity, and developed/structures.

Within the beach/foredune community, high-quality areas of foredune are present. These high-quality foredune areas are dominated by marram grass (*Ammophila breviligulata*, state watch list) and sand reed (*Calamovilfa longifolia* var. *magna*). Also present in this area are dwarf fragrant sumac (*Rhus aromatica* var. *arenaria*, state rare) and dune goldenrod (*Solidago racemosa* var. *gillmanii*, state threatened). The invasive Siberian elm (*Ulmus pumila*) is also present. This community is bisected by active foot trails. Two areas of high-quality dry sand prairie community are found on the site. One area is dominated by little bluestem (*Andropogon scoparius*) and sand reed, with multiple populations of dwarf fragrant sumac. Non-native trees such as black locust (*Robinia pseudoacacia*) and Lombardy poplar (*Populus nigra "Italica"*) are encroaching in this area. The other area is dominated by little bluestem, sand reed, and marram grass, with some occurrences of dwarf fragrant sumac. The remainder of the site (heavily

degraded foredune and heavily degraded woods) is considered low-quality in terms of natural areas, since it has been disturbed by past activities.

There are no federally endangered or threatened plant species present on the site. Three plant species on the Indiana list of endangered, threatened, and rare species are present: Jack pine (*Pinus banksiana*, state rare), dwarf fragrant sumac, and dune goldenrod. Jack pine only occurs in the NPS-developed planting beds around the north parking lot, which might be impacted by widening the sidewalk.

Vegetation is an integral part of the national lakeshore's purpose and significance, being directly or indirectly mentioned in both park purpose statements and all four significance statements:

The purpose of the national lakeshore is (italics added):

1) To preserve, restore, and protect outstanding *ecological and biological diversity*, along with the geologic features that characterize the southern shore of Lake Michigan.
2) To provide access for large, diverse populations to experience *natural scenic open spaces*, historic features, as well as educational, scientific, inspirational, and recreational opportunities.

The significance of the national lakeshore includes the following (italics added):

1) The national lakeshore is the natural laboratory from which Dr. Henry Cowles described his theory of *ecological succession*, and it offers outstanding opportunities for scientific research due to the outstanding plant diversity (nearly 1,200 native species) and complexity of its natural systems.
2) The wind-driven sand dunes at the national lakeshore are over 13,000 years old and have a rare east-to-west orientation. This mosaic of dunes and interdunal areas gave rise to the establishment and retention of a complex juxtaposition of *eastern deciduous forests, prairies, savannas, wetlands, pannes, and boreal forests* on which dune successional stages and processes can be observed in close proximity to each other.
3) The national lakeshore, as one of the first parks specifically created to bring national parks close to urban areas, provides outstanding *scenic beauty* and varied outdoor recreational activities on the Lake Michigan shoreline.
4) The landscape of the national lakeshore tells the story of 10,000 years of settlement, urbanization, industrialization, and the rise of *environmental conservation and restoration.*

The sidewalk proposed along Wabash Avenue is in a heavily degraded area with no natural community identity. The compliant path from the end of Wabash Avenue to the beach would be sited to avoid sensitive plant species or other vegetation. The old home site dune area between Lake Michigan and the Town of Porter lot would be restored. Measures would be taken to avoid disturbing sensitive plants in that area, such as dwarf fragrant sumac *(Rhus aromatica* var. *arenaria)* and dune goldenrod (*Solidago racemosa* var. *gillmanii).* Measures would also be taken to protect other dunes on the site. Barriers, such as snow fencing and 4 x 4 posts with vinyl cables, as used in other areas of the national lakeshore, would be placed in needed areas. Signs would be posted and native vegetation plantings or spreading woody debris could be used to discourage social trails. The national lakeshore would also cooperate with the state park to develop ways to eliminate or reduce damage to the vegetation of the dune environment. The placement of a few picnic tables to the east of the north parking lot would be on previously disturbed soils, with no sensitive vegetation.

Implementation of the Selected Alternative would produce long-term, minor, and adverse impacts to vegetation due to due to the development of a sidewalk along Wabash Avenue, a compliant path from the end of Wabash Avenue to the beach, and a few small picnic table sites. However, the development is minor in scale and would be on previously-disturbed areas. Dune restoration and protection are beneficial impacts of the Selected Alternative. The Selected Alternative would not result in impairment of the national lakeshore's vegetation.

**Wildlife**

The national lakeshore is home to not only a diverse population of plants, but also a diverse wildlife population. Forty-six species of mammals, 15 species of amphibians, 22 species of reptiles, 71 species of fish, 60 species of butterflies, and 60 species of dragonflies and damselflies are present. This biological diversity is one of the most significant features of the national lakeshore, and a primary reason for its establishment. Because the national lakeshore is located in several ecological transition zones, the wildlife diversity is many times greater than most areas of similar size. Remnant species from past climatic changes have survived in sheltered habitats. The moderating effect of Lake Michigan, along with the great variety of habitats in close proximity, explains much of the plant and animal diversity.

More than 350 species of birds have been identified in the area along the entire southern shore of Lake Michigan, with 113 of these being regular nesters. The national lakeshore also provides habitat for feeding great blue herons and ideal nesting habitat for the heron. Due to maturing forests, the pileated woodpecker is making a comeback in the national lakeshore and the red-shouldered hawk, though a state species of concern, is nesting in good numbers. Sandhill cranes and great egrets have begun nesting in the area in the last three years due to wetland restoration efforts. Common resident species include mallard, blue jay, American crow, great horned owl, song sparrow, ring-billed gull, house finch, and northern cardinal. Summer breeding species include pied-billed grebe, red-shouldered hawk, sora, Acadian flycatcher, yellow-billed cuckoo, and chestnut-sided warbler.

The national lakeshore is also a focal point for migrating avian species. Spring and fall migrants include numerous wildfowl species, olive-sided flycatcher, Swainson's thrush, solitary vireo, Cape May warbler, bay-breasted warbler, and many other species.

During spring, the Lake Michigan shoreline channels numerous migrating raptor species through the East Unit, along the dune ridge tops. About a dozen raptor species, including red-tailed hawk, bald eagles, peregrine falcons, sharp-shinned hawks, American kestrels, and turkey vultures, take advantage of uplifting south breezes on their northward journey. Thousands of migrating raptors and sandhill cranes have been identified and are counted annually by volunteer birdwatchers.

Most mammals have relatively stable populations. They include white-tailed deer, woodchuck, coyote, red fox, red squirrel, eastern gray squirrel, beaver, striped skunk, eastern chipmunk, muskrat, meadow vole, eastern cottontail, and white-footed mouse. High white-tailed deer populations are a concern, however, and the national lakeshore completed a *Deer Management Plan/Environmental Impact Statement* in 2012 to address this issue.

Because no project-specific wildlife inventory had been conducted at the site, the NPS retained the services of a contractor (Cardno JFNew) to conduct such inventory. Based on this inventory conducted in August 2012 in conjunction with the vegetation inventory described above, 21 birds, nine insects, two mammals, and one reptile were observed.

The Indiana DNR stated that there are no documented significant natural features at the site in a letter to the contractor dated August 1, 2012. However, the Indiana Natural Heritage Data Center lists three state-

listed animals that have been documented within 0.5 miles of the project: Western Slender Glass Lizard (*Ophisaurus attenuatus attenuates*), Karner Blue Butterfly (*Lycaeides Melissa samuelis*), and Bunchgrass Skipper (*Problema byssus*). None of these species were documented in the August 1, 2012 survey.

Wildlife is generally mentioned in the national lakeshore's purpose statement #1 ("biological diversity") and significance statement #1 ("complexity of natural systems").

Under the Selected Alternative, developments would be sited on previously-disturbed soils that provide little high-quality wildlife habitat. Some temporary displacement would occur during construction activities, creating short-term, negligible, and adverse impacts, but no habitat would be lost. Long-term, beneficial impacts to wildlife would occur by restoring the old home sites on the dune north of the Town of Porter lot and by dune habitat restoration and monitoring activities through the project area. The Selected Alternative would not result in impairment of the national lakeshore's wildlife.

**Air Quality**

The national lakeshore is a Class II air quality area under the Clean Air Act, as amended. A Class II designation indicates the maximum allowable increase in concentrations of pollutants over baseline concentrations of sulfur dioxide and particulate matter, as specified in Section 163 of the Clean Air Act. Further, the Clean Air Act provides that the federal land manager has an affirmative responsibility to protect air-quality-related values (including visibility, plants, animals, soils, water quality, cultural resources, and visitor health) from adverse pollution impacts.

Construction activities, including equipment operation and the hauling of material, could result in temporarily increased vehicle exhaust and emissions, as well as inhalable particulate matter. Construction dust associated with exposed soils would be controlled, if necessary, with the application of water or other approved dust palliatives. In addition, any hydrocarbons, nitrogen dioxide, sulfur dioxide emissions, as well as airborne particulates created by fugitive dust plumes, would be rapidly dissipated because the location of the park and prevailing winds that allow for good air circulation.

Implementation of the Selected Alternative would result in some short-term, negligible, and adverse impacts to air quality from fugitive dust due to construction activities associated with the sidewalk along Wabash Avenue, the compliant path, correcting the foot-wash station erosion problems, installing gravel bases for the picnic tables, upgrading the south parking lot, and dune restoration activities. The Selected Alternative would not add any long-term degradation to air quality or result in impairment of the national lakeshore's air quality.