BEACH MANAGEMENT PLAN

City of Waukegan, Illinois

December 16, 2016

Cover Image: Tracy Adams, Friends of Waukegan Beach
All aerial imagery courtesy GoogleEarth, dated September 2016

City of Waukegan

BEACH
MANAGEMENT PLAN

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North Beach wetlands, photo courtesy Tracy Adams

executive summary

This Beach Management Plan provides guidance for protecting the City of Waukegan's public beach and dune natural resources, while preserving flexibility for continued recreational use. Recommendations within the document are unique to the needs and interests of the Waukegan community, and are comprehensive through a process of community input and outreach to various partners and resource experts. These recommendations build on past and current planning efforts and strategies are given for implementation of Plan recommendations.

The Beach Management Plan (the Plan) will meet identified needs by providing an outline of desired future beach/dune use, describing where these uses should be and how they will be managed, and outlining maintenance options. The Plan covers the need for permitting and approvals and provides guidelines for how/when these are to be obtained and from which regulatory agency.

The goal of the Plan is to manage Waukegan's unique beach and dune resources in a sustainable manner, both environmentally by protecting the natural areas as plant and wildlife habitat, and economically by allowing the City of Waukegan and partners to maintain these areas into the future.

The study area in the Plan is organized into three management zones including North Beach Park (Dune Area), North Beach, and South Beach (Swimming Beach). For each zone, management recommendations are divided into the following three categories:

- Habitat Management
  Includes habitat management guidelines and identifies wildlife and plant monitoring and invasive species management needs.

- Sand Management
  Includes sand management guidelines for entire beach and nearshore areas. Considers natural dune formation processes and provides management actions to limit dune buildup on South Beach while maintaining healthy dunes in natural areas. Provides design strategies to minimize the need for management action.

- Recreation Management
  Includes beach management and maintenance guidelines for recreational use of the beach. Consideration is given to access points that will protect habitat while facilitating recreational beach use.

South Beach kite boarding, photo courtesy Lisa May

01/ introduction

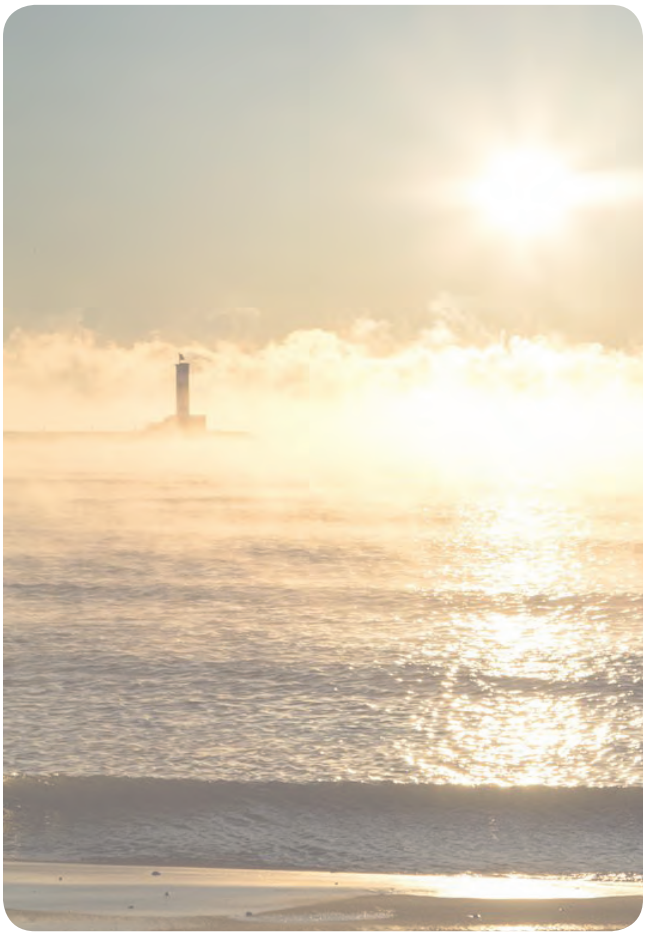
The City of Waukegan's public beaches and dunes are located north of the Waukegan Harbor channel in the Dead River Watershed. The beaches, which are bordered by the North Shore Water Reclamation District and NRG power plant to the north, include Waukegan Municipal South Beach, North Beach, and North Beach Park, which consists primarily of dunes and natural areas.

Both beaches are located within the Waukegan Harbor Area of Concern as identified by the U.S. Environmental Protection Agency for clean-up. In 2016, after many years of effort, much of the industrial contamination once present in the area has been contained, removed, and/or remediated. A brief timeline of lakefront cleanup accomplishments includes:

- 2001: Johns Manville manufacturing buildings demolished
- 2005: Soil cleanup complete at Manufactured Gas & Coke Plant site
- 2006: Eastern-most building at OMC north plant site demolished
- 2010: OMC building demolition
- 2011: Active phase of groundwater cleanup at Manufactured Gas & Coke Plant site complete
- 2013: Environmental dredging of harbor complete
- 2016: BRP building demolition
- 2016: OMC and Johns Manville cleanup efforts nearing completion

The City of Waukegan has a track record of City Council support for the development of a working waterfront that combines a mix of uses (recreational, industrial, commercial, and residential) in an environmentally and economically sustainable manner.

In the year 2002, with site cleanup well underway and a significant amount of lakefront property under City ownership, Waukegan partnered with the Urban Land Institute (ULI) to prepare an advisory report to help move past the area's legacy of industrial contamination. The ULI panel helped to form goals for the future of Waukegan's lakefront and recommended the creation of a Master Plan to create a vision and action agenda for implementation.



Waukegan Harbor Lighthouse, photo courtesy Tracy Adams

Following this recommendation, the City engaged a planning team led by Skidmore, Owings & Merrill LLP, who created the Plan titled "A 21st Century Vision for Waukegan's Downtown and Lakefront", adopted by the City Council in December of 2003. This Plan did indeed establish a long-term vision for the City of Waukegan's lakefront, and created a framework for future development.

In July of 2015, the City of Waukegan, in cooperation with the Waukegan Park District and Waukegan Port District and with funding from the Great Lakes Restoration Initiative through the Illinois Coastal Management Program, tasked the planning/design firm of Edgewater Resources LLC to create an Active Implementation Plan as an effort to realize the vision of the original Master Plan of 2003, specifically related to the immediate harborfront and north harbor areas. The final product of the Active Implementation Plan of 2015 was an updated list of action item recommendations. The development of Waukegan's Beach Management Plan was one of the high-priority action items recommended for completion within two years. City leaders and staff, as demonstrated through the Active Implementation Plan process, understand the critical value of Waukegan's unique sand beaches and dune areas.

2003 Master Plan Vision: Skidmore, Owings, & Merrill LLP

1.1 STUDY AREA DESCRIPTION

The project study area is the City of Waukegan's Lake Michigan lakefront in Lake County, Illinois. The area includes Waukegan's public beaches north of the harbor channel, both South Beach and North Beach, and the adjacent North Beach Park. The two beaches are separated by a U.S. Army Corps of Engineers breakwater called Johnson's Pier, and are bordered on the west by East Sea Horse Drive. The project area is entirely under City of Waukegan ownership, and is currently zoned as Conservation/Recreation.

Current activities in the project area include beach-related recreation such as swimming, kitesurfing, parasailing, and sunbathing. There are sand volleyball courts on South Beach. The Stiner Pavilion, located along the northern edge of the harbor channel, provides opportunities for picnicking and cultural activities such as outdoor concerts. There is currently no permanent restroom structure. Porta-potties are in place near South Beach. The beaches are not staffed with lifeguards. Passive recreation such as hiking and biking take place along Sea Horse Drive. Bird-watching and hiking are popular activities in the dune areas between Sea Horse Drive and Lake Michigan. Public parking borders both South and North Beach to the west, supplying approximately 600 spaces. During summer months, events such as outdoor concerts are held in this area.

While these areas attract visitors year-round, both South Beach and North Beach are extremely popular recreation destinations in the months between June and September, with thousands of visitors on some weekends.

The three distinct zones within the project study area are North Beach Park (50 acres), North Beach (15 acres) and South Beach (11 acres).

According to the USEPA's *Lake Michigan Beaches Bacteria Total Maximum Daily Load (TDML) and Implementation Plan* of 2013, the drainage catchment for Waukegan North Beach and North Beach Park is about 3.5 square miles and contains mostly residential land, roadways, utility/waste facilities, and parks, with smaller areas of wetlands, golf courses, forest/grassland, and land in commercial/industrial use. The drainage area around South Beach is slightly more than 0.5 square miles and contains vacant land, parks, grassland, wetlands, utility/waste facilities, and commercial/industrial development. This half-square-mile area does not drain directly to South Beach, but west to Waukegan Harbor.

South Beach is a southeast-facing embayment flanked by 2 jetties: one facing south called the 'seawall', and the other facing northeast, called 'Johnson's Pier'. Johnson's Pier was built as a breakwater for wave attenuation and was not intended for pedestrian access.

The beaches are part of a sediment transport cell that transports sediment from the Illinois/Wisconsin border southward to Waukegan Harbor. Both beaches are located in the portion of the cell that has conditions favorable for the accumulation of sand, but because South Beach is embayed, it does not receive sand from littoral drift. Sand accretes on the north side of Johnson's pier creating significant sand shoaling, and leaving south beach sand starved. These shoals continue into the federal channel resulting in the need for continuous maintenance dredging. Another presumed source of sand accretion in the federal channel is wind-blown sand from South Beach's southern-most section of beach, which overtops the seawall into the channel. These natural processes decrease the channel depth, which then requires regular dredging to maintain shipping draft needs.

1.2 PURPOSE OF PLAN

The purpose of Waukegan's Beach Management Plan is to provide a clear vision and strategy for the City's management of these valued lakefront recreational and natural resources. Waukegan's beaches provide a valuable recreation opportunity for residents and visitors, all within minutes of downtown. This study area is just one mile south of Illinois Beach State Park, home to over 650 species of plants, abundant wildlife, and the only remaining beach ridge shoreline left in the state of Illinois. By providing resting and foraging habitat to migratory birds, Waukegan's lakefront serves as an important link to Illinois Beach State Park and other natural areas extending northward along Lake Michigan.

Balancing the recreational use of these beaches while maintaining ecological diversity has the potential to provide desired recreational opportunities to the community while educating beach visitors about the global significance of the site as habitat for plants and wildlife.

This Plan may not be able to address all issues related to beach management, but will help to identify which areas need more study, coordination, and discussion.

1.3 GOALS AND OBJECTIVES

Through the preservation and management of its beaches and dunes, Waukegan can use its legacy of industrial contamination to tell the story of what was once here before human intervention – stunning natural areas and sand dunes rich with wildlife – and how some of that is gone, but we have learned how to be better stewards of the land and how human use can be compatible with preservation. These results can be sustained into the future through the implementation of this Management Plan.

Objectives include:

- Reflect the City of Waukegan's unique interests and priorities.
- Use and build on current planning efforts and available data.
- Include public input to create shared and accepted vision.
- Identify fundamental recreational infrastructure needs.
- Contain implementable guidelines and recommendations.
- Protect important habitats within the context of planned recreational uses.
- Provide cost-effective strategies.
- Identify potential roles of other agencies in assisting the City with beach and dune management.
- Identify key partnerships with other agencies to achieve management and monitoring actions.
- Identify reviewing, consulting and permitting needs for planned actions.
- Outline proposed collaborative and cooperative processes to implement necessary management and maintenance.

1.4 RELATED PLANNING EFFORTS

21st Century Vision for Waukegan's Downtown and Lakefront (2003): prepared by Skidmore, Owings & Merrill LLP. This Master Plan represented the culmination of extensive work by City of Waukegan staff and elected officials and the New Harbor City Renaissance Commission. Transformation of Waukegan's lakefront and downtown was planned to be driven by the projected development of up to 4,000 new homes and a combined 1,000,000 square feet of new retail, hospitality, entertainment, education and cultural activity.

The Master Plan explored recommendations for both Waukegan's lakefront and downtown civic spaces. Several action items from the 2003 Plan have been realized today, including strengthening the downtown with such projects as the renovation to the Genesee Theatre, re-establishment of the Waukegan River through streambank restoration projects, and steps toward the creation of an active harborfront district through improvements to Waukegan's Harbor Marina.

Waukegan Harbor Area of Concern Remedial Action Plan (2011): The purpose of this document is to delineate restoration activities and support the recommendation to remove the Restrictions on Recreational Contact (Beach Closings) Beneficial Use Impairment (BUI) in the Waukegan Harbor Area of Concern (AOC).

Beach Health Assessment for Waukegan Harbor South Beach (2013): Prepared by Julie L. Kinzelman, PhD of the Racine Health Department and Tony Oxley, E.I.T. of Miller Engineers & Scientists at the request of the Illinois Department of Natural Resources, Office of Coastal Zone Management. The purpose of the report is to provide additional information on likely sources of E. coli contamination and recommend mitigation and/or best management practices with the potential to improve nearshore surface water quality and reduce the number of beach advisories and closures.

Waukegan Harbor Area of Concern Sustainable Shoreline Plan (2015): The City of Waukegan received a grant to develop this Plan to improve access, beach health, and recreational opportunities. Working with consultant Deigan & Associates, the goal of this Plan is to promote the sustainable use, management, and development of the Waukegan Harbor Area of Concern while protecting critically important habitat and natural resources in an underserved, Environmental Justice community. The plan addresses: a) non-point source pollution and health-impairing contaminants carried by run-off from the parking lot and Sea Horse Drive and litter from recreational beach users; b) necessity for infrastructure to increase and encourage public access and nature based recreation, by designing a shared use trail connecting the coastal area to the train station, as well as the downtown area and bus stops; and, c) necessary infrastructure planning to support coastal economic development in this former industrial area.

This Plan is not yet complete and has only undergone preliminary review.

Waukegan Lakefront Active Implementation Plan (2015): The City of Waukegan, in cooperation with the Waukegan Park District and Waukegan Port District and with funding from the Great Lakes Restoration Initiative through the Illinois Coastal Management Program, tasked Edgewater Resources with the creation of an Active Implementation Plan to realize the vision of the 2003 Master Plan.

The resulting Lakefront Active Implementation Plan contains a thorough inventory and analysis of existing lakefront conditions and provides a framework of economically viable and fully-implementable action item recommendations to help fulfill the vision of the 2003 Master Plan. One of the high-priority action items from the Active Implementation is to draft a Beach Management Plan.

General Beach Improvements (2015-2016): Deigan & Associates

- Inventory of dunes including sensitive habitats, endangered and threatened plant species
- Delineation of beach wetlands, swales, floristic quality index
- Ecological Compliance Assessment Tool (EcoCAT) consultations and responses from Illinois Department of Natural Resources, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers and others on sand relocation and dune grass transplant
- Identification of sand sources for beach nourishment including lab testing of sand sources
- South Beach survey demonstrating current conditions above OHWM.
- Database of E. coli beach closings
- Proposed reconstruction of existing buried plank walk to Johnson Pier
- Beach trailhead plans and entry node features, including wayfinding and access control
- Bioswale design for South Beach
- Preliminary beach grooming guidelines

Port District Master Plan (2016-Ongoing): Edgewater Resources intends to develop a Harbor Master Plan for the Waukegan Port District that will include a land-use plan, identify environmental constraints, and support a viable economic development strategy that will lead to the improvement and redevelopment of the Waukegan Harbor. This effort will build on the work of the 2003 Master Plan and the recently completed Lakefront Active Implementation Plan. The end product will become a road map outlining detailed approaches for addressing environmental issues and identifying key infrastructure improvements on Port District-owned property that will support economic growth and development that is sustainable both environmentally and financially.

Illinois North Shore Sand Management Strategy (2015-Ongoing): an initiative by the nonprofit Alliance for the Great Lakes and funded through a grant from the Illinois Department of Natural Resources, invited policymakers, scientists and businesses to identify issues stemming from the erosion of sand from Evanston, Illinois, north to the Wisconsin state line. The group will gather data on the complicated coastal dynamics of this region and brainstorm regional solutions.

1.5 OBLIQUE IMAGERY

The oblique aerial views on the following pages help to illustrate the existing conditions of the beach and dune areas, including vegetative cover and wetland character. The oblique images also indicate the industrial nature of adjacent land uses.

Oblique images courtesy USACE data, greatlakes.erdc.dren.mil, date of photos 4/7/2012

VIEW 1
E Sea Horse Dr
North Shore Water
Reclamation District
NORTH BEACH PARK
NORTH BEACH

VIEW 2
E Sea Horse Dr
E Sea Horse Dr
NORTH BEACH PARK
NORTH BEACH

VIEW 3
E Sea Horse Dr
E Sea Horse Dr
NORTH BEACH PARK
NORTH BEACH

VIEW 4
E Sea Horse Dr
SOUTH BEACH
NORTH BEACH PARK
Johnson's
Pier

VIEW 5
E Sea Horse Dr
SOUTH BEACH
Johnson's
Pier

VIEW 6
SOUTH BEACH
Waukegan
Harbor
Federal
Channel
Seawall

Volunteer beach clean-up crew, photo courtesy Lisa May

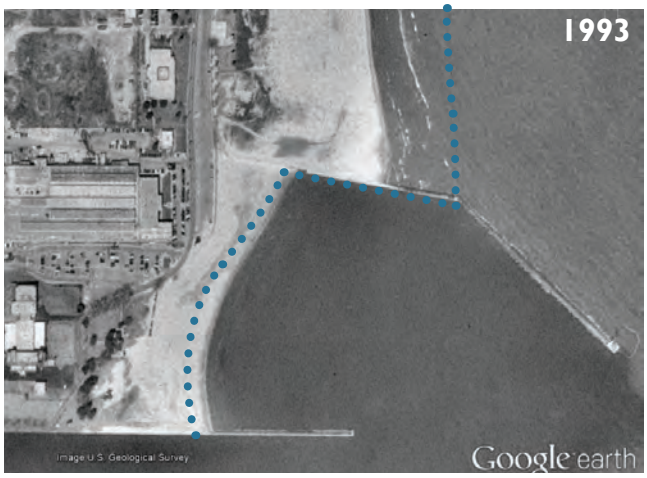
2.1 APPROACH

The Plan approach is to outline recommendations for future beach/dune use and management. It is also to provide guidelines for permit and approval requirements for various activities. One challenge to this approach is that Waukegan's beaches and dunes are dynamic landscapes - constantly changing as sand is carried and deposited by wind and water. Change can happen gradually or rapidly, in the case of severe storms. The movement of sand and the effect of fluctuating water levels is evident when comparing aerial images over time. This Plan aims to address beach management with a degree of flexibility in order to remain relevant despite these ever-changing conditions.

This Plan serves as a baseline for future planning, and provides recommendations based on currently available data on the beaches and dunes as they exist today. In order to address future beach conditions, a critical component of this plan is continued beach monitoring and an annual survey of conditions. Relevant data may come from the local level by Lake County Health Department and at the state level by the Illinois Coastal Mangement Program (ICMP) and Illinois State Geological Survey (ISGS).

It is expected that this Plan will require updates on a regular interval of several years to address changing beach conditions.

= 2016 shoreline



2.2 PUBLIC INPUT

In order to gain insight for the Active Implementation Plan of 2015, the planning team facilitated a number of community outreach meetings and stakeholder sessions. The project area for the Implementation Plan included Waukegan's dunes and beaches, and much of the response from those sessions directly relates to this Management Plan. By listening to the community's concerns and goals, the planning team is better able to form recommendations for public areas that best serve Waukegan's diverse community.

Surveys, both visual and written, were conducted at these public sessions. In summary, the items with the most positive response were:

- Active, family-friendly public spaces
- Spaces for outdoor recreation
- Preservation of natural spaces
- More defined connections between beach and parking, and between beach and pier
- Maintain public spaces, improve Waukegan's image

2.3 RESOURCE EXPERT INTERVIEWS

In April-August of 2016, a number of resource experts and potential project stakeholders were interviewed to help form fully-informed recommendations for this Plan.

The key permitting and regulatory agencies with authority in this area were involved throughout the planning process to ensure appropriate guidance towards implementable management actions.

Each session was loosely guided by the following talking points:

- Overview of the agency/organization and mission.
- Based on the agency's specific perspective, what are concerns about Waukegan's beaches and their management? What are priorities for Waukegan's beaches?
- Where are opportunities to take a leadership role? Where is the best place to start?
- Specific partnerships that would make this Plan more successful.
- Regulatory issues:
  - Which beach activities should require permits? From which agency?
  - Current issues.
  - Problems to avoid/examples to follow.
- Specific design elements that would create a more successful beach habitat?
- Specific design elements that would create a more successful recreational beach?

The following pages contain an overview of the resource expert interviews held between April and August of 2016. The complete list of interviewed stakeholders is listed in the Plan Appendix.

Illinois Department of Natural Resources - Office of Water Resources (OWR)

Role: Mission is to protect, restore, and manage the Illinois Lake Michigan Coast for current and future generations. Regulates below OHWM.

Area of relevance: Entire site as shown on diagram to the right in blue.

Potential partnerships: Permits joint with IEPA, possibly consider 10-year plan for long term permits.

Funding opportunities: Not applicable.

Illinois Department of Natural Resources - Division of Natural Heritage

Role: Advisory role for habitat preservation and invasive species management. Regulatory role in implementation and enforcement of the Illinois Endangered Species Protection Act, including issuing permits for scientific study of endangered species and the Incidental Taking of endangered animals.

Area of relevance: Entire site as shown on diagram to the right in blue.

Potential partnerships: Works with other branches of IDNR.

Funding opportunities: Not applicable.

Illinois Department of Natural Resources - Office of Realty & Environmental Planning (OREP)

Role: Mandatory advisory process with state agencies and units of local government which provides recommendations to minimize or avoid adverse effects to endangered species and designated natural areas. Implementation of the recommendations is discretionary. Indicates whether an Incidental Take Authorization for listed animals is appropriate.

Area of relevance: Beach and foredunes shown in blue are part of the designated Waukegan Beach Illinois Natural Areas Inventory Site, which provides essential habitat for several federally-listed and state-listed species of animals and plants.

Potential partnerships: Advisory role with federal agencies, such as the U.S. Army Corps of Engineers and the U.S. Fish & Wildlife Service. For example, the USACE, according to federal law, must seek the comments of the State's fish & wildlife agency prior to issuing federal permits; OREP serves in that capacity.

Funding opportunities: No access to grant programs, although all grants issued by IDNR must be reviewed by OREP.

Illinois Department of Natural Resources - Coastal Management Program (ICMP)

Role: The ICMP mission is to protect and manage the natural and cultural resources along the Lake Michigan shoreline. Priorities include natural area restoration, sustainable development, public access and recreation, and economic development. ICMP administers Federal Consistency determinations for the Illinois Coastal Area, which involves review of Federal Agency actions, and projects that are funded permitted by Federal Agencies to assure they are consistent with the enforceable policies of the Coastal Program.

Area of relevance: Entire site as shown on diagram to the right in blue.

Potential partnerships: Works with other branches of IDNR and coordinates with federal agencies including USEPA and National Oceanic and Atmospheric Administration (NOAA). ICMP facilitates partnerships through a network of agencies, non-profits, educational institutions, and communities. Works in concert with ISGS on research and data collection that will contribute to better understanding of coastal processes in this region.

Funding opportunities: Coastal management grants, multiple assistance programs.

Illinois Department of Natural Resources - Wildlife Division

Role: Mission is to provide leadership with the restoration, management, and protection of wildlife populations and their habitat to provide citizens and visitors of Illinois with a quality environment.

Area of relevance: Entire site as shown on diagram to the right in blue.

Potential partnerships: Has worked within Illinois Beach State Park and with the Forest Preserve to develop nature trails.

Funding opportunities: Not applicable.

Illinois Department of Natural Resources - Office of Architecture and Engineering

Role: Administers grants, acts as liason between Department and various organizations representing grant recipients, provides oversight and inspection of grant projects.

Area of relevance: Entire site as shown on diagram to the right in blue.

Potential partnerships: Works with other branches of IDNR.

Funding opportunities: Has a number of grants with potential applicability to Waukegan Beach, particularly the Open Space Land Acquisition and Development (OSLAD) grants, which provide a 50% cost-share for the acquisition and development of parks and recreation facilities. Due to the budget impasse, these grants were on hold in 2015/2016, but future funding opportunities should not be overlooked.

Illinois Environmental Protection Agency (IEPA)

Role: Concerned primarily with water quality. Issue 401 certification for deposition of dredged sand (joint permit application with IDNR and USACE). Permit only required once per source. City to test fill annually and submit to IEPA for approval.

Area of relevance: Entire site as shown on diagram to the right in blue.

Potential partnerships: Work with Health Department for lake assessments and stormwater management.

Funding opportunities: Project could be eligible through 319 Clean Water Act for grants if runoff is treated to improve quality before entering Lake Michigan. 60/40 cost share program for watershed management plans.

United States Environmental Protection Agency (USEPA)

Role: Concerned with environmental quality of air, water, and lands, and implements various programs for environmental health. They develop and enforce regulations that protect environmental and human health. USEPA is also the lead Federal Agency for the Great Lakes Water Quality Agreement with Canada, and as such, implements the agreement through programs like the Areas of Concern, Lakewide Action and Management Plans. USEPA also leads the Superfund and other programs that help address legacy pollutants.

Area of relevance: Entire site as shown on diagram to the right in blue.

Potential partnerships: Worked with Citizen's Advisory Group in the past to administer grants.

Funding opportunities: Administers the Great Lakes Restoration Initiative grant programs for habitat restoration, water quality, and education. Also provides GLRI funding to other Federal Agencies including USFWS, USACE, and NOAA to use for Great Lakes priorities.

United States Army Corps of Engineers (USACE) - Planning

Role: Regulates wetlands and waters of the U.S., including any lands below OHWM (581.5).

Area of relevance: Entire site as shown on diagram to the right in blue.

Potential partnerships: Work with City to establish long term permitting strategy for dredging and beach nourishment.

Funding opportunities: Funding available through the Great Lakes Restoration Initiative, the program is called the Great Lakes Fishery and Ecosystem Restoration Program (GLFER). There are also a number of cost-share assistance programs available and can offer technical assistance through the planning process.

United States Army Corps of Engineers (USACE) - Regulatory

Role: Regulates wetlands and waters of the U.S., including any lands below OHWM (581.5).

Area of relevance: Seawall on north side of federal channel, Johnson's Pier, wetlands within upland dunes and beach below OHWM as shown on diagram to the right in blue.

Potential partnerships: Work with City to review permit applications.

Funding opportunities: Not applicable.

Waukegan Park District (WPD)

Role: Operates the majority of Waukegan's public park system, operates recreational programming. Does not manage or maintain City owned property, including this site.

Area of relevance: Recreation programming such as yoga and zumba class takes place on South Beach, as shown in diagram to the right in blue.

Potential partnerships: The Park District does not provide funds to acquire land, but is well versed at managing parks and open space and recreational programming. Potential for cooperative plan with Lake County Forest Preserve District to complete trail systems within Lake County.

Funding opportunities: In-kind services.

Lake County Forest Preserve District (LCFPD)

Role: Manage approximately 31,000 acres of natural land in Lake County, with a focus on preservation and outdoor recreation.

Area of relevance: No Forest Preserve property within project boundary. Potential for trail connection to regional trails, as shown in diagram to the right in blue.

Potential partnerships: The Forest Preserve can acquire land for other entities to manage.

Funding opportunities: The Forest Preserve can provide funds for land acquisition.

Lake County Stormwater Management Commission (LCSMC)

Role: Regulate development within 100 year floodplain and isolated wetlands at elevations above the OHWM of Lake Michigan, but not public bodies of water (Lake Michigan). Help determine floodplain elevations, serve as technical advisors relating to stormwater issues. Provide technical assistance to the community upon request.

Area of relevance: Wetlands on North Beach and North Beach Park, as shown on diagram to the right in blue.

Potential partnerships: Provides Soil Erosion and Sediment Control review services for the USACE and performs inspections on behalf of the USACE. LCSMC has an agreeement with USACE to perform reviews at USACE's request.

Funding opportunities: LCSMC may be contacted to set up a pre-application meeting to make the permitting process more efficient. LCSMC administers the Watershed Management Board Grant program, to which the City could apply.

Lake County Health Department (LCHD)

Role: Promotes health and wellness. Monitors beach and water for E.coli, determines beach closings (typically 6-7/year). Monitors the areas at the beach for safe swimming conditions, including E. coli bacteria levels. Also, operates a predictive modeling station (SwimCast) at South Beach to determine more timely E. coli levels.

Area of relevance: Swimming beaches as shown on the diagram to the right in blue, although North Beach is flushed naturally and doesn't have same issues with water quality as South Beach.

Potential partnerships: Work with U.S. Department of Agriculture to control gull populations. Has completed beach surveys to assess water quality and potential sources of pollution. This information could be used to define boundary of swimming area at North Beach.

Funding opportunities: This work is currently paid for by a grant from Illinois Department for Public Health (through the federal BEACH Act). Prior to this funding, LCHD invoiced municipalities for the monitoring.

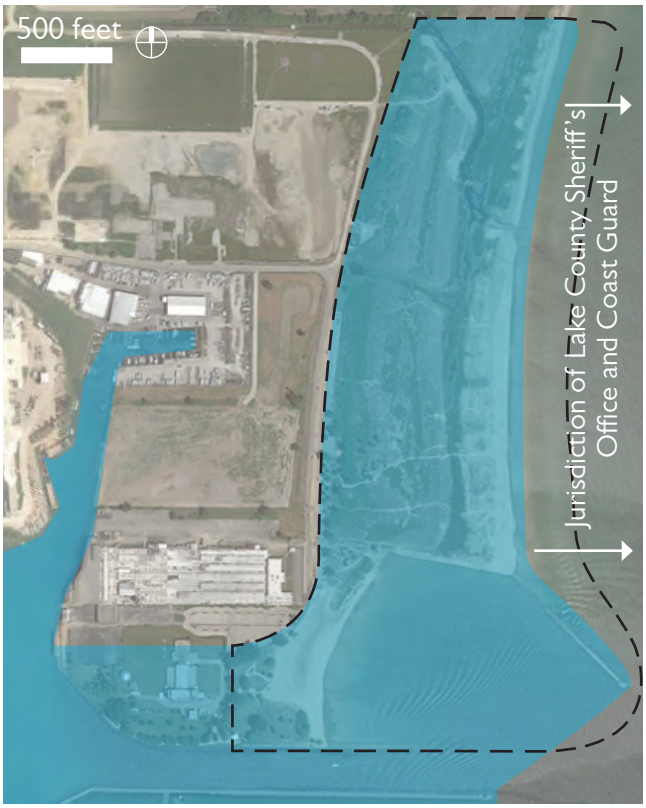
Waukegan Fire Department

Role: Emergency services in fire extinguishment, medical, and other specialized rescue techniques. The Dive Team provides search/rescue, assistance to distressed boats/watercraft within harbor, and extrication/access/transport to lake front visitors in need of medical care.

Area of relevance: Water and land areas from the lighthouse inland; as shown on the diagram to the right in blue.

Potential partnerships: Law Enforcement for egress/access/extrication to potential emergency response, Lake County Sheriff for emergency incidents outside of the designated water boundaries, The Waukegan Squadron Emergency Response Assistance Team (SERAT) for watercraft emergencies, and the Community Emergency Response Team (CERT) within disaster situations.

Funding opportunities: In-kind services.



Waukegan Police Department

Role: Law enforcement, control beach access, patrol beach with ATV on weekends

Area of relevance: Entire site as shown on diagram to the right in blue. Land only, water is jurisdiction of Lake County Sheriff's Office

Potential partnerships: Lake County Sheriff's Office oversees legal issues on water.

Funding opportunities: In-kind services.

Waukegan Department of Public Works (DPW)

Role: Manages, operates, and maintains extent of public beach property.

Area of relevance: Entire site, not including Lake Michigan, as shown on diagram to the right in blue.

Potential partnerships: Beach Ranger Program. Beach Rangers are employees of the City of Waukegan Public Works Department, and are responsible for various jobs including beach maintenance and public relations at Waukegan's public beaches.

Funding opportunities: In-kind services.

Friends of Waukegan Beach (FoWB)

Role: Maintain Facebook page with beach photos and updates on beach conditions.

Area of relevance: Entire site as shown on diagram to the right in blue.

Potential partnerships: Could provide volunteer help for beach clean ups and migratory bird monitoring.

Funding opportunities: Not applicable.

United States Fish and Wildlife Service (USFWS)

Role: Mission is working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.

Area of relevance: Land that is considered critical habitat for endangered species, as shown on diagram to the right in blue. For details regarding the Final Determination of critical habitat for breeding populations of piping plover, visit https://www.fws.gov/midwest/endangered/pipingplover/chabitat.html. This page provides the legal description of the Illinois critical habitat unit and the essential habitat features of the species.

Potential partnerships: USACE will consult with the USFWS under section 7(a)(2) of the Endangered Species Act. The consultation will at minimum require that the Corps address potential impacts to the federally endangered piping plover and rufa red knot, as well as to designated critical habitat for these birds. In addition, the USFWS reviews permit applications received by the USACE and may have additional comments regarding Migratory Birds or other Federal trust resources.

Funding opportunities: Receives funding through the Great Lakes Restoration Initiative for habitat projects. Also has a coastal program with grant opportunities.

Waukegan Harbor Citizens' Advisory Group (CAG)

Role: The CAG was formed by the IEPA in 1990 to assume a leadership role in developing a remedial action plan (RAP) for the Waukegan Harbor Area of Concern (AOC). The Waukegan Harbor CAG is an organization comprised of members from area businesses, government, non-governmental organizations and the local community. Members work together to identify and overcome obstacles to restoring the beneficial uses of the Waukegan Harbor AOC.

Area of relevance: Entire site as shown on diagram to the right in blue.

Potential partnerships: Have worked with USEPA and Great Lakes Restoration Initiative to secure grants.

Funding opportunities: Not applicable.

Nature Conservancy

Role: Serve as advisors on issues related to Threatened & Endangered species.

Area of relevance: Dunes and North Beach, areas of potential habitat as shown on diagram to the right in blue.

Potential partnerships: Work with school groups and "Friends of Waukegan Beach" on educational programming. Chicago Wilderness Coalition has potential to connect resources and partners. Work with groups on ecological restoration and management.

Funding opportunities: Grants available for engaging diverse urban populations with nature.

Audubon Great Lakes

Role: Protect wild birds' habitat and the economies around those habitats, promote birding to the general public. Serve as advisors on issues related to migratory birds and their habitat. Help determine beach grooming guidelines to help protect nesting sites.

Area of relevance: Dunes and North Beach, areas of potential habitat as shown on diagram to the right in blue.

Potential partnerships: Audubon could organize volunteers to help with bird monitoring efforts and can help educate the public, potentially working with the Beach Ranger program.

Funding opportunities: Collaborative funding through local chapters to support healthy habitats.

NRG (formerly Midwest Generation)

Role: Coal-fired power plant to the north, owns lakefront property.

Area of relevance: Dune/beach area owned by NRG is shown on the diagram to the right in blue.

Potential partnerships: Does not restrict pedestrians from walking shoreline, does not regulate or maintain beach for recreation.

Funding opportunities: Not applicable.

North Shore Water Reclamation District (formerly North Shore Sanitary District)

Role: Water Reclamation District immediately to the north, owns lakefront property.

Area of relevance: Dune/beach area owned by North Shore Water Reclamation District is shown on the diagram to the right in blue.

Potential partnerships: Does not restrict pedestrians from walking shoreline, is not regulated or maintained for recreation.

Funding opportunities: Not applicable.

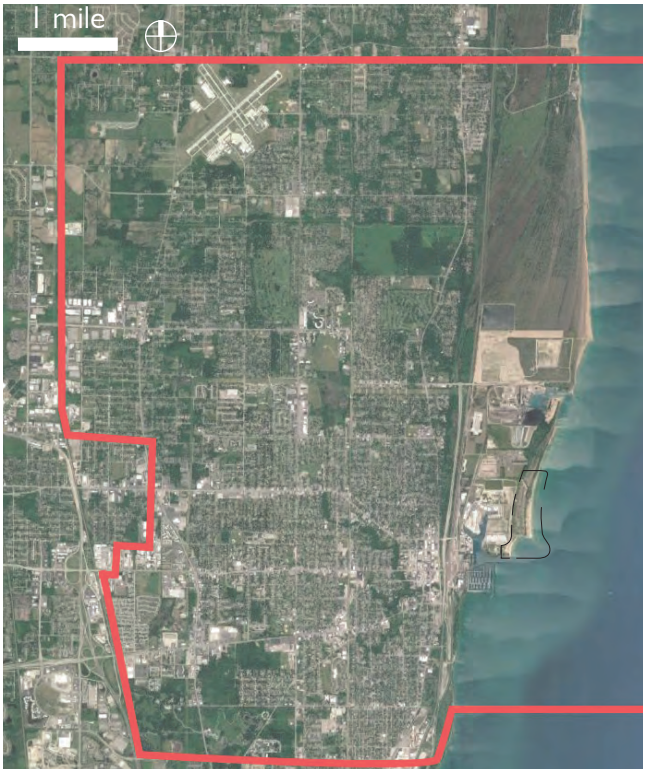
Waukegan Port District

Role: Manages Waukegan Harbor Marina.

Area of relevance: While Port District jurisdiction is the entire area outlined in red on the graphic to the bottom right, actual property ownership is shown on the diagram to the immediate right in blue. The Port District has permitting authority for any construction projects within their jurisdiction 40' in from the Lake Michigan shoreline and 2 miles offshore. It should be noted that while the Port District maintains this permitting authority, they have agreed to defer to the City for actions on the public beaches and dunes and will likely waive permitting fees, but would like to be included in the planning process.

Potential partnerships: Potential boating partnerships, could provide launch location for water trail trips to Waukegan's beaches.

Funding opportunities: In-kind services.



North Beach, photo courtesy Todd Truby

3.1 CHALLENGES TO ADDRESS

Waukegan's Lakefront Active Implementation Plan of 2015 identified a clear need to protect and manage the City's beach and dune resources. This need was made evident through an extensive public input process that included not just the general Waukegan community but also key stakeholders from the City, Port District, and Park District. The outcome of this process was a recommendation to create and implement a beach management plan.

Not having a beach management plan in place has had negative impacts to the beach and dune areas, many of which were expressed during the input process. These issues are critically important to the future ability of Waukegan to be a beach destination. Some impacts include:

- Beach closures due to poor water quality that happen multiple times per year. According to the IEPA's *Lake Michigan Beaches Bacteria TMDL and Implementation Plan* of 2013, gulls (which are attracted by garbage) were the primary source (55%) of bacterial contamination of water at South Beach in 2002, leading to beach closures.

- There is a need for education on the value of the beaches and dunes as habitat for wildlife. Endangered and Threatened Species are common at Waukegan Beach, and a failure to consider their presence could result in civil and criminal liabilities for the City and beach users.

- Despite installation of Big Belly waste receptacles, there is often excessive litter on the beach. Due to budget constraints, the City is dependent upon volunteer crews for periodic cleanup.

- Public restrooms are no longer consistently available or well-maintained.

- Stormwater currently drains from parking lots along Sea Horse Drive directly into sensitive dune areas.

- Access to North Beach from parking areas is not clearly marked, beach-goers follow a number of different paths which disrupts sensitive dune grass and wildlife habitat.

- Sand migration is not managed on a regular schedule, leading to sand accretion north of Johnson's Pier and sand starvation of South Beach, creating low points that hold standing water that have periodically become a public health concern.

- There is a lack of understanding of the permitting/approval process for beach-related actions. Working without a plan is a costly and time-consuming process with the potential for mistakes and political misunderstandings.

These issues demonstrate the need for a comprehensive Beach Management Plan to help guide beach and dune resource planning, and to help regulatory agencies partner effectively to oversee future beach use and management.

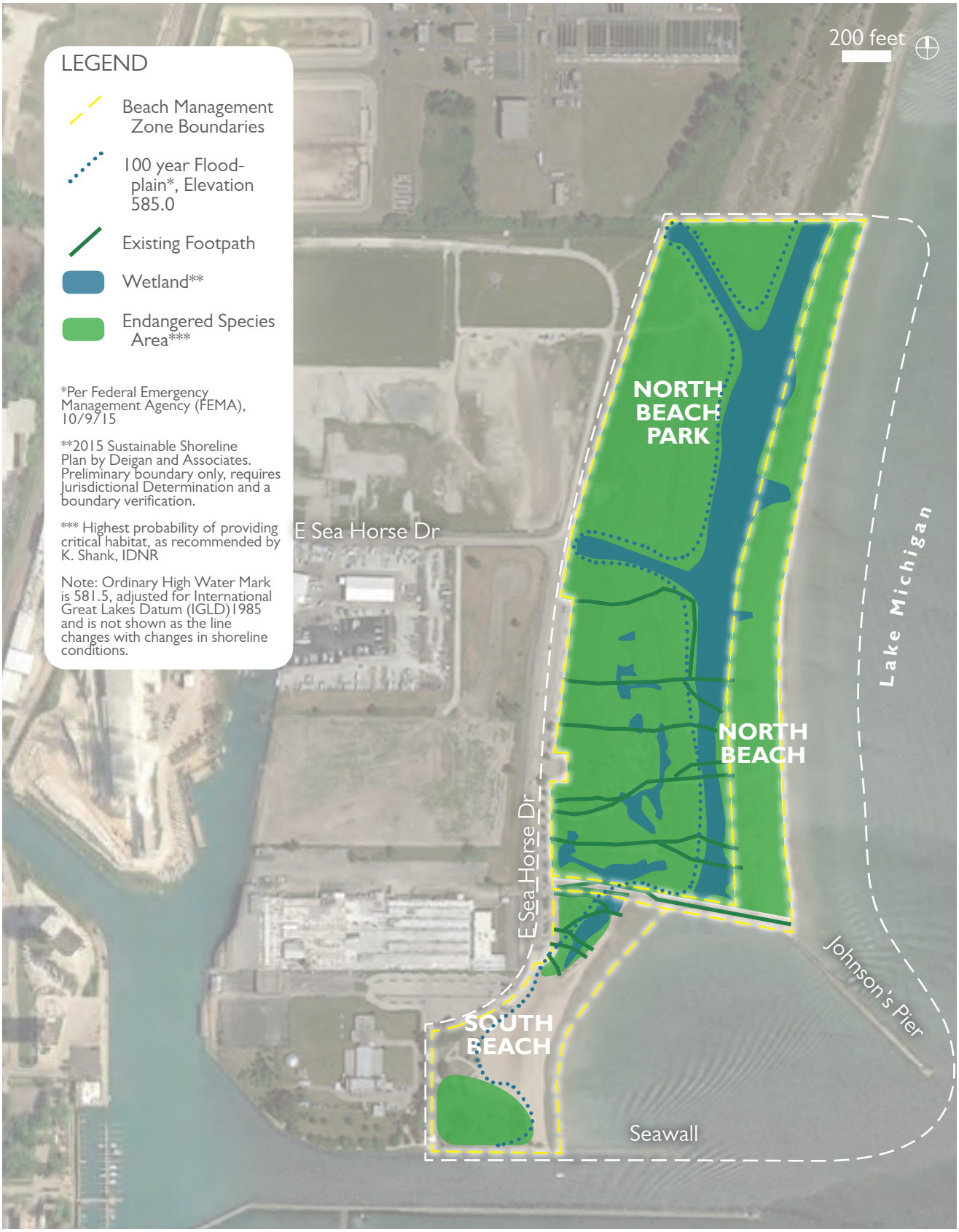


Figure 3A: Existing Site Conditions

3.2 EXISTING SITE CONDITIONS

The project study area contains three distinct management zones: North Beach Park (Dune Area), North Beach, and South Beach (Swimming Beach). The three areas have unique recreational value, landscape character, and habitat quality.

North Beach Park

Description: Dunes from Johnson's Pier to the south to property boundary to the north. Includes wetlands to the east, extending to Sea Horse Drive on the west. Natural in character with beach grass and wetland areas.

Access: Currently accessed by multiple pedestrian footpaths leading from Sea Horse Drive parking lot to open beach. Access is not controlled.

Recreation Amenities: Restroom at parking area. Footpaths through dunes to beach.

Programming: Passive recreation such as walking and bird watching.

Habitat Quality: North Beach Park provides high-quality foraging and nesting habitat within the dunes for a variety of migratory birds and is home to many native dunegrass species. The wetlands are home to many fish species, at least one of which is endangered. Tree species in this zone are invasive.

North Beach

Description: From Johnson's Pier to the south to property boundary to the north (approximately 1/2 mile of beach). From Lake Michigan shoreline on the east to existing wetlands to the west (width varies based on water levels and sand accretion). Passive recreation beach, primarily open sand with beach grass on foredunes.

Access: Johnson's Pier path from the south, trails through dunes connecting to Sea Horse Drive parking lot from the west.

Recreation Amenities: Swimming beach.

Programming: Passive recreation such as parasailing, sunbathing, swimming, and walking. Active recreation includes swimming and other beach activities.

Habitat Quality: The foredunes along the beach provide high-quality habitat for migratory birds, some of which will also build nests in the open sand beach areas. Because this zone contains a swimming beach, the habitat is not as protected from human activities as North Beach Park.

South Beach

Description: From channel seawall to the south to Johnson's Pier to the north. Lake Michigan shoreline to the east to Sea Horse Drive to the west. Active recreation beach, primarily open sand .

Access: Direct connection to parking lots to the west.

Recreation Amenities: Beach volleyball courts. Bath house and restrooms (future). Food truck promenade. Link to Johnson's Pier.

Programming: Regular beach activities such as sunbathing, swimming, picnicking, sand volleyball. Spaces for yoga, tai chi, dance classes.

Habitat Quality: The majority of South Beach is an open sand swimming beach, limiting the potential as high-quality habitat; although the dunes to the north and south of the beach are home to native dunegrass and could potentially attract nesting birds.

Figure 3B: Existing Sand Conditions

3.3 EXISTING SAND CONDITIONS

Littoral Sand Accretion

This zone is where sand from littoral drift is deposited and builds up against the north side of Johnson's Pier and along the shoreline. This causes the shoreline to move eastward over time. This zone, if dredged, could provide a source of sand for sand-starved areas.

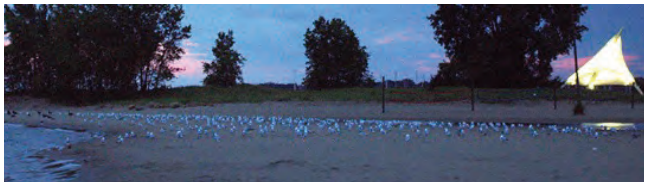
Aeolian Sand Accretion

These zones accumulate wind-blown sand, thus requiring beach grooming and/or sand fencing to maintain current conditions. Along North Beach, accretion causes the foredunes to gradually move eastward. Along the western portion of Johnson's Pier, sand covers the pier and blows into the South Beach swimming area. Along the seawall, sand accumulates against the seawall and then blows into the Waukegan Harbor channel, requiring annual dredging.

Foredunes along North Beach are important to maintain, as they stabilize the shoreline and protect the beach and wetlands from erosion. They serve as a natural windbreak, keeping sand on the beach and out of the wetlands. Gull populations tend to gather on open sand beaches, and dunes with native grasses help prevent these birds from overtaking the beach.

Sand Starvation

Because South Beach is an embayed area, there is a natural tendency for the beach to flatten out, thus creating the issue of standing water. Sand nourishment is required to keep South Beach high and dry for public health and safety.



Overall Geomorphic Processes

Challenges associated with sand management in the Waukegan area include the location and alignment of the breakwaters and piers associated with Waukegan's federal channel and Waukegan Harbor, which accumulate sand and block littoral transport to other downdrift beaches, leading to sand starvation. Johnson's Pier is of paticular interest within this study area, as this breakwater separates North and South Beach. There is currently no method in place to keep wind-blown, or aeolian, sand from drifting over the east/west segment of Johnson's Pier or over the seawall to the south of South Beach. This sand makes its way into the federal channel and contributes to the need for regular maintenance dredging. This Plan aims to address these challenges in an economically sustainable manner, providing the City with strategies to reduce sand accretion in undesirable locations and provide adequate sand nourishment where it is needed.

There is need for additional study once this Plan is complete to fully understand the sediment transport processes within the nearshore Lake Michigan area and within the South Beach embayment. A current initiative by the nonprofit Alliance for the Great Lakes called the Illinois North Shore Sand Management Strategy, funded through a grant from the Illinois Department of Natural Resources, is working to identify issues stemming from the erosion of sand from Chicago north to the Wisconsin state line. The first phase of the project is to identify regional assets and their specific management challenges, and develop action strategies to address those challenges. The project was completed in July, 2016, and the Coastal Program plans to continue facilitating the effort to implement sustainable solutions.

The project's working group has identified the need for more data collection and monitoring before outlinging specific solutions. These solutions will be addressed in the project's second phase.

It is recommended that the City of Waukegan work with the IDNR's Coastal Management Program to coordinate future planning with this initiative, incorporating future data and modeling findings into Plan recommendation updates.

North Beach Park wetlands, photo courtesy Todd Truby

04/ management recommendations

This chapter outlines management zones individually, with recommended action items listed separately for each. However, some recommendations apply to the project study area as a whole. The following is an overview of recommendations for the entire study area.

Research Need
There is need for additional study once this Plan is complete to fully understand the sediment transport processes in the project area.

In order to establish baseline conditions for the shoreline, such as optimal beach elevation to keep sand high and dry, it is recommended that the City work with an engineer to complete an accurate survey of the beaches and to outline proposed elevations and optimal slopes to the water's edge.

Data Collection
The first step in any beach-related action should be the completion of a Jurisdictional Determination and a boundary verification. The most recent wetland delineation was completed in the fall of 2015 by Lake County Planning, Building & Development, but the USACE has not completed a boundary confirmation and the original markers are no longer in place. The results of that delineation are considered to be accurate and were used for this Plan, but the USACE boundary confirmation must be completed to confirm this data. USACE will also require floristic quality evaluations, which are available through the WHCAG under the GLRI grant. This evaluation will help determine which areas require permits for proposed improvements.

Monitoring
Three types of monitoring are needed: water quality monitoring, Endangered/Threatened species monitoring, and beach/dune topographic monitoring.

On-going water quality monitoring is handled through the Lake County Health Department. Currently, LCHD conducts the E. coli monitoring through the federal BEACH (Beaches Environmental Assessment and Coastal Health) Act. Those funds have been declining steadily and may go away altogether. There should be plan in place on how future monitoring will be funded.

Endangered species monitoring is coordinated through the IDNR's Wildlife Division on sites north of the project area.

Beaches and dunes should be surveyed annually to assess conditions. The ISGS can work as a partner as they have been and will continue to conduct long-term monitoring of coastal processes for research purposes, and can coordinate with the City on data sharing. It is recommended that the City work with a consultant to coordinate all data gathered.

Water Quality
There is a need for gull and goose management in all public areas, as gull contamination is the leading cause of beach closures. The comprehensive solution that has been developed with the participation of the WHCAG, IDNR, and IEPA has four primary components: 1) Reduction of favorable gull habitat, 2) Public education, 3) Reduction of potential food sources, 4) Enhanced management and beach grooming.

Development
Consideration should be given to adoption of a City ordinance for future waterfront development, which could require developers to use green infrastructure and help protect beach resources.

Operations
The Beach Ranger Program can supplement regular police patrol on weekends to ensure that beach-goers are following posted rules. Beach Rangers can also assist with daily trash removal.

Education
Beach Rangers can interact with the public to educate them on how to be a steward of their beach. For example, locations of restrooms and litter receptacles, why dogs are not allowed on the beach, and why it's important not to feed the gulls. Signage is needed for Threatened & Endangered species education and to explain why dunes are fragile.

Signage is also needed at beach entrance to alert visitors to current beach conditions. A police officer or Beach Ranger can post conditions daily. A posted web address or scan code (for smart phones) could take visitors to the Health Department website for up-to-date information.

4.1 NORTH BEACH PARK ACTIONS

Figure 4A: North Beach Park

LEGEND

Existing Conditions

- Beach Management Zone Boundary
- 100 Year Floodplain - Elevation 585.0
- Johnson's Pier - pedestrian access prohibited
- Wetland* (estimated north of East Sea Horse Drive)

Proposed Recreational Improvements

- Footpath - sand, 4' wide typical, post-and-cable to mark edges, hand grooming allowed
- Footpath - same as above but 6' wide for emergency All Terrain Vehicle (ATV) access
- Footpath - same as above but with potential for expansion to 15' wide machine-groomed emergency vehicle access corridor
- Boardwalk - to span wetland areas, hand grooming allowed
- Pedestrian Barrier

Proposed Sand Management

- Dune Protection Area - no grooming, habitat protection zone

*2015 Sustainable Shoreline Plan by Deigan and Associates

Note: Ordinary High Water Mark is 581.5, adjusted for International Great Lakes Datum (IGLD)1985 and is not shown as the line changes with changes in shoreline conditions.

NORTH BEACH PARK ACTIONS

Habitat Management

Recommended Action Items:

- Stormwater management: Use bioswales between parking lots and dunes to keep contaminants from draining directly to beach. Install curb and gutter to drain to bioswales where appropriate.

- Habitat Management Plan for piping plover (see Appendix for details on critical habitat):
  - o Construction of boardwalks should avoid nesting season, which is April-September.
  - o Mark 200' buffer zone as 'off limits' when nesting sites are identified, educate the public about why these nests are important.
  - o Work with U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Services on control methods for predators such as raccoons and feral cats.

- Coordinate wildlife and plant monitoring with existing birding groups.
- Implement an invasive species control plan.
- Encourage tourism through birding: classes, outings, informational kiosk. Advertise as a 'bird-friendly beach'.
- Regular police presence needed to enforce order.
- Beach Rangers to educate and redirect beach users, collect trash, answer questions, supplement police presence.
- Signage (bilingual): do not disturb wildlife, stay on designated paths, no dogs. Signs should face both beach and parking area, and should encourage positive activity when possible, emphasis should be on education and not penalties. Educate beach users to make them feel ownership of the area and help them protect it.
- Control beach access across dunes with marked paths, 4' wide, one path to be 6' wide for rescue ATV access.

- Need better garbage management - dumpsters needed, as existing receptacles can't hold large trash bags and these tend to be left sitting next to receptacles. Then bags are torn open by gulls or blown away. Dumpsters would require measures to prevent illeagal dumping, such as locking devices and security cameras.
- Consider renaming this park to help identify the dunes and raise awareness, as 'North Beach Park' does describe the unique dune habitat located here.
- Educate visitors through interpretive signage about the site's natural history such as springs with healing powers, water cycle, story of cleanup in area.

Sand Management
Recommended Action Items:

- No sand grooming recommended in this zone, with the exception of hand grooming marked trails as needed to keep markers visible. Work with natural grading when engineering pathways, zigzag paths to extent possible to limit sand erosion and to make sand less attractive to gulls.

Recreational Management
Recommended Action Items:

- Design access points to beach that facilitate recreational beach use while protecting habitat. Reduce existing trails to four, let others return to natural state. Only two of these four trails to cross the main north/south wetland area.

- Boardwalks over wetlands:
  - o Hand-driven posts when possible, to avoid fill within wetlands.
  - o If state-funded, the Illinois Interagency Wetland Policy Act of 1989 may apply and require some mitigation for portion of wetland crossed, even where there is no fill involved. Replacement ratio might be 5:1 or 10:1, depending on the determination of aquatic resource quality.
  - o City authorization required to remove listed plants, per Illinois Endangered Species Protection Act.
  - o Construction potentially could involve Endangered/Threatened (E/T) permitting, as well, since listed fishes are present within wetlands.

- Public education component: outdoor classroom. Start with simple seating, such as driftwood logs.

- Connect to regional trails, provide amenities for cyclists such as bike racks and route maps.

- Install temporary fence along Sea Horse Drive during large events to protect dunes and increase police patrols in dune areas during these events.

- An emergency vehicle access corridor within North Beach Park is not required based on input received for this Plan. However, if determined to be necessary in the future, the proposed location is shown on the preceding plan. It is recommended that any future access drive be maintained with regular grooming. Future engineering studies would determine the need for a load-bearing surface and snow fencing to control drifting sand.

4.2 NORTH BEACH ACTIONS

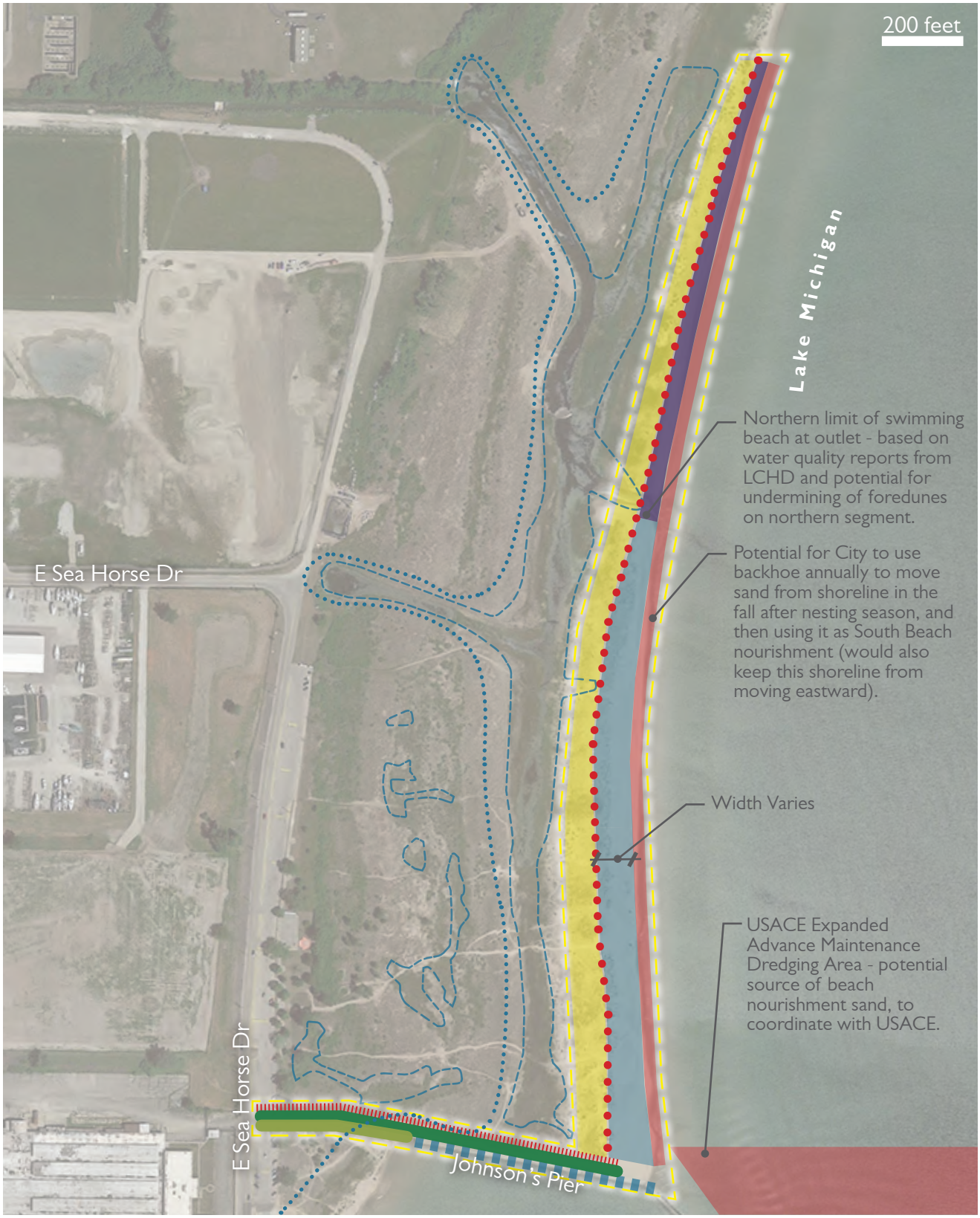


Figure 4B: North Beach

LEGEND

Existing Conditions

- Beach Management Zone Boundary
- 100 Year Floodplain - Elevation 585.0
- Johnson's Pier - pedestrian access prohibited
- Wetland* (estimated north of East Sea Horse Drive)

Proposed Recreational Improvements

- Emergency Vehicle Access - load bearing surface, 15' wide, grooming allowed, access to North Beach
- Existing Johnson's Pier Pedestrian Promenade - to be excavated, regular sand removal allowed

Proposed Sand Management

- Dune Protection Markers at Regular Intervals - to mark limits of beach grooming, subject to most current survey data
- Dune Protection Area - no grooming, habitat protection zone
- Active Recreation Beach Grooming / Beach Nourishment Zone - maintained as needed for active swimming beach use**
- Passive Recreation Beach Grooming / Beach Nourishment Zone - no regular grooming, only as conditions warrant to maintain baseline beach conditions**
- Dredging Zone - annual dredging allowed, pending discussion with USACE
- Snow Fence - to capture aeolian sand, will eventually be buried to create a new dune, planted with dune grass to stabilize

*2015 Sustainable Shoreline Plan by Deigan and Associates

** Ensure permit conditions are met prior to grooming

Note: Ordinary High Water Mark is 581.5, adjusted for International Great Lakes Datum (IGLD)1985 and is not shown as the line changes with changes in shoreline conditions.

NORTH BEACH ACTIONS

Habitat Management

Recommended Action Items:

- Stormwater management: It is important to note that the physical characteristics of this beach change with flow of stormwater from the two wetland channels. For this reason, the recommended northern limit of the swimming beach coincides with the point where stormwater periodically overtops the foredunes and empties into Lake Michigan. The area where the wetland breaks through can be marshy and is not ideal for a beach groomer to drive through. Water quality tends to be lower in this area due to this stormwater overflow, according to the LCHD.

- Habitat Management Plan: There is always the risk a nesting pair of E/T bird species will select a site within the swimming beach groomed sand area. It is for this reason that an Incidental Take Authorization (ITA) should be sought which addresses the potential for taking listed birds. Due to the rarity of nesting attempts, the State may not be able to issue an ITA for the Common Tern or the piping plover; it must be able to find that the proposed taking will not jeopardize the continued existence or the recovery of the listed species in Illinois.

- During nesting season, the swimming beach should be carefully monitored, possibly have birding groups volunteer to look for nesting sites. Birding groups could also teach Beach Rangers how to identify these well-camouflaged nests.

- Encourage tourism through birding: classes, outings, informational kiosk. Advertise as a 'bird-friendly beach'.

- Regular police presence needed to enforce order.

- Beach Rangers to educate and redirect beach users, collect trash, answer questions, supplement police presence.

- In order to protect plants and maintain foredunes, which in turn protect wetlands and limit beach erosion, the foredunes need markers to mark limits for beach groomer. These should be located at limits of existing beachgrass.

- Signage (bilingual): do not disturb wildlife, stay on designated paths, no dogs. Signs should face both beach and parking area, and should encourage positive activity when possible, emphasis should be on education and not penalties. Educate beach users to make them feel ownership of the area and help them protect it.

Sand Management
Recommended Action Items:

- Groom swimming beach once per week, as needed during spring and summer months. Grooming allowed up to dune markers and 5' from open water. Groomer to gain access along accessible drive north of Johnson's Pier. Additional grooming allowed when needed due to weather conditions or excessive litter on beach.

- Utilize design strategies that minimize management needs:
  - o Snow fence north of emergency vehicle access to capture aeolian sand deposits traveling south from North Beach Park. Once dune is formed, plant with beach grass to stabilize. This will also help prevent unwanted dune formation on South Beach. This fencing should consist of natural materials.

  - o Swale between snow fence and access drive would help direct stormwater and control erosion.

- Shoal and accretion prevention:
  - o Potential for annual shoreline sand harvesting (after beach and bird nesting season) to manage lakeward accretion that creates shoaling and fills shipping channel. This sand could be dredged with a backhoe and transported to South Beach for nourishment. Would require beneficial reuse permit, and would depend on testing for sand quality - may be suitable only for base material.
  - o Potential for hydraulic dredging of sand north of Johnson's Pier. Removing sand in this zone would prevent it from traveling into the federal shipping channel. For this reason, there is potential to coordinate efforts with the USACE to explore funding strategies.

Recreational Management
Recommended Action Items:

- Access: Maintain load-bearing emergency vehicle access drive north of Johnson's Pier to provide ADA access, groomer access, and emergency vehicle access to North Beach. This drive would require a load-bearing surface and would require snow fence and regular grooming. The snow fence would capture sand and become buried as a new dune forms. Once in place, the new dune can be planted with beachgrass for stabilization.

- Coordinate kite flying and kite surfing activities so as not to disturb nesting sites.

- Add water trail stop with kayak rack and posted map.

4.3 SOUTH BEACH ACTIONS

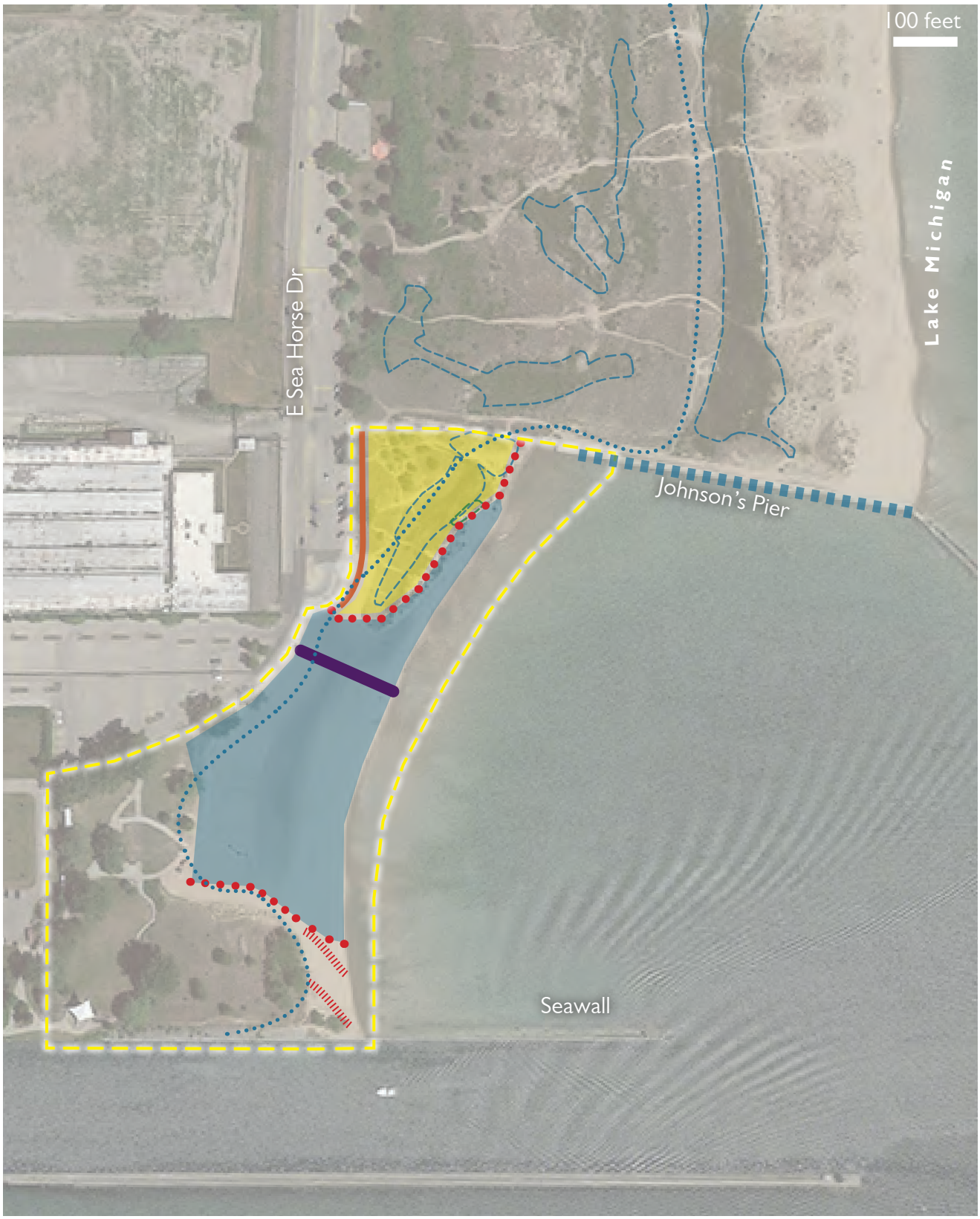


Figure 4C: South Beach

LEGEND

Existing Conditions

- Beach Management Zone Boundary
- 100 Year Floodplain - Elevation 585.0
- Johnson's Pier - pedestrian access prohibited
- Wetland*

Proposed Recreational Improvements

- Mobi-Mat (or equivalent) Accessible Beach Access Mat
- Pedestrian Barrier

Proposed Sand Management

- Dune Protection Markers at Regular Intervals - to mark limits of beach grooming, subject to most current survey data
- Dune Protection Area - no grooming, habitat protection zone
- Active Recreation Beach Grooming / Beach Nourishment Zone - maintained as needed for active swimming beach use**
- Snow Fence - to capture aeolian sand, will eventually be buried to create a new dune, planted with dune grass to stabilize

*2015 Sustainable Shoreline Plan by Deigan and Associates

** Ensure permit conditions are met prior to grooming

Note: Ordinary High Water Mark is 581.5, adjusted for International Great Lakes Datum (IGLD)1985 and is not shown as the line changes with changes in shoreline conditions.

SOUTH BEACH ACTIONS

Habitat Management

Recommended Action Items:

- Stormwater management: Bioswales needed between parking lots and beach to keep contaminants from draining directly to beach. Install curb and gutter to drain to bioswales where appropriate.

- Habitat Management Plan: While unlikely to happen at this site as it is a popular recreation destination, there is always the risk that a nesting pair of E/T bird species will select a site within the swimming beach groomed sand area. It is for this reason that an Incidental Take Authorization (ITA) should be sought which addresses the potential for taking listed birds. Due to the rarity of nesting attempts, the State may not be able to issue an ITA for the Common Tern or the piping plover; it must be able to find that the proposed taking will not jeopardize the continued existence or the recovery of the listed species in Illinois.

- During nesting season, the swimming beach should be carefully monitored. Birding group volunteers to look for nesting sites. Birding groups could also teach Beach Rangers how to identify these well-camouflaged nests.

- Regular police presence needed to enforce order.

- Beach Rangers to educate and redirect beach users, collect trash, answer questions, supplement police presence.

- Need better garbage management to discourage gulls - dumpsters needed.

- Dunes at South Beach are not critical habitat equal to that of North Beach Park, but still serve a purpose to protect water quality, need markers to mark limits of grooming and protect plants. These should be located at limits of existing beachgrass.

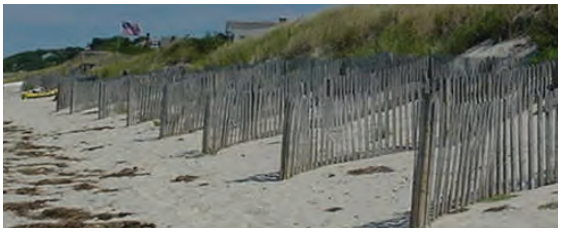
- Signage (bilingual): don't feed birds or disrupt wildlife, stay on designated trails, no dogs on the beach. Signs should encourage positive activity when possible, emphasis should be on education and not penalties. Educate beach users to make them feel ownership of the area and help them protect it.

Sand Management

Recommended Action Items:

- Sand: Groom regularly (once per week in shoulder seasons, 2-3 times per week during hottest summer months, as needed). Grooming allowed up to dune markers and 5' from open water. "Wet" grooming (through standing water) allowed above OHWM.

- Utilize design strategies that minimize management needs:
  - Temporary snow fencing along southern portion of beach to capture aeolian sand that blows into the federal channel. Once sand covers fence, dunegrass should be planted to stablize and maintain this new dune, which will keep sand on South Beach and out of the



channel.
  - o Extend temporary snow fencing across entire beach, west to east at approximate 100' spacing, in winter months to keep sand in place.

- Maintain South Beach to an elevation such that standing water is eliminated. Engineering study required to determine optimal beach elevation to stay high and dry, and resulting slope of beach to water. Annual nourishment needed to maintain beach at these standards.
  - o Optimal slope of beach in prime swimming area should not exceed 1 foot vertical to 6 feet horizontal (16%), to allow for a smooth transition into shallow water. This aligns with recommendations from the Waukegan Park District Risk Management Agency's Management Guidelines, published in 2000.

Recreational Management
Recommended Action Items:

- Access: Provide accessible, portable beach pathway such as Mobi-Mat for ADA access at a location to provide the shortest possible distance between parking and shore. The slope of the accessible mat shall not exceed a 5% slope to allow full accessibility.

- Small business opportunities at South Beach (cabana rental, equipment shuttle service, trash service, kayak rental).

- Trash: Need dumpsters to supplement Big Belly receptacles. Emphasis should be on regular trash pick up, particularly on weekends. The Illinois Coastal Management Program may be able to fund dumpsters. The Big Bellys are a good start, but only for garbage that fits into the receptacle. Groups using beach on weekends can generate large garbage bags that do not fit in a Big Belly, and therefore are left sitting next to the receptacle, out in the open and suspectable to wind, gulls, raccoons, etc.

- Public education component: outdoor classroom.

- Add water trail stop with kayak rack and posted map.

- Post beach closures in a location outside of user entry fee area.

- Connect to regional trails, provide amenities for cyclists such as bike racks and maps.

- Restrooms with showers and drinking water needed.

- Picnic pavilion could generate revenue to help pay for beach maintenance.

Seawall, photo courtesy Todd Truby

05/ regulatory overview

5.1 PERMITTING/REGULATORY SUMMARY

The following chart summarizes the action items from Chapter 04 that may require additional oversight and permitting from regulatory agencies. For a list of agency contact information, see Appendix.

ACTION ITEM	LEAD AGENCY*	PERMIT REQUIRED
Habitat Management		
Construction of bioswales	IDNR	Consultation required
Disturbance of nest and/or eggs from public beach area that has been determined to be an Endangered/Threatened species	IDNR & USFWS	Incidental Take Authorization Incidental Take Permit - application to include a Habitat Conservation Plan
Sand Management		
Sand grooming above OHWM	USACE	None
Sand grooming below OHWM	USACE	Regional permit
Sand nourishment on South Beach	IEPA & USACE	Testing required, 401 Certification Beneficial Reuse Permit
Land-side dredging from North Beach	USACE & IDNR OWR	10 year Individual 404 Dredging Permit Consultation required
Recreation Management		
Construction of boardwalks with concrete foundations through wetland in North Beach Park	USACE	Regional permit #3 or #5
Construction of load-bearing access path through North Beach Park if passing through existing wetland	USACE	Regional permit #3: Impact wetland for transportation

Note: although each permit has a different lead agency, permit applications are written jointly to USACE, IDNR, and IEPA. USFWS Incidental Take Permit is a separate application.
The Waukegan Port District maintains permitting authority 40' in from shoreline and should be included in all planning efforts.

5.2 REQUIRED PERMITS BY MANAGEMENT TYPE

Habitat Management

- Federal and state permit required for action concerning piping plover
- A state permit is required for action concerning the common tern
- City authorization is needed for any incidental harm to state-listed plants present throughout the area

Sand Management

- USACE regional permit required for grooming below OHWM
- USACE individual permit required for dredging
- USACE standing permit for regular beach grooming, including above and below OHWM
- Work with USACE to articulate how much sand is needed for nourishment of South Beach and how much can be moved under Beneficial Reuse Permit
- Develop 10 year plan for beach nourishment, update every 10 years and reapply for permits. Sand can come from outside source, City would test fill annually and submit to IEPA. This HAS to be informed by an understanding of the effect of lake level cycles on shoreline processes.
- Dredging at North Beach from toe-of-bluff lakeward would require an OWR permit (could be 10-year maintenance plan)

Recreation Management

- Event permits through City Licensing Committee in cooperation with Fire Department

5.3 REQUIRED PERMITS BY GEOGRAPHIC AREA

North Beach Park

- USACE permit required for any improvements within wetlands.
- Incidental take authorization for activities with E/T animals (not plants, which are nonetheless a local regulatory issue, because the City must formally authorize or restrict the incidental take of the listed plants it owns).

North Beach

- USACE permit required to groom sand below OHWM. Markers needed for grooming operator.
- Permit required for sand dredging as it is deposited against Johnson's Pier.
- Coordination with USFWS on piping plover critical habitat; time frames for certain activities during piping plover season (April 15-August 15).
- USACE permit and IEPA water quality certification for dredging or sand movement below OHWM.

South Beach

- USACE permit required to groom sand below OHWM.
- Permit required to remove sand from Johnson's Pier.
- Permit required for beach nourishment for any areas below OHWM. Markers needed for grooming operator.
- If the vegetated areas within South Beach contain E/T species, the same regulatory issues apply as those at North Beach Park.

5.4 PERMITTING REQUIREMENT OVERVIEW

The most significant permitting agencies regarding planned improvements in this Plan are the U.S. Army Corps of Engineers, the Illinois Environmental Protection Agency, and the Illinois Department of Natural Resources. Permit applications are written jointly to these three agencies, but each has a different focus and priority.

The standard State of Illinois joint application form includes copies for the USACE and the IEPA. Consultation with the Illinois Historic Preservation Agency and the IDNR Office of Realty and Environmental Planning and IDNR Office of Water Resources (OWR) is also required.

Projects and planned improvements may need federal consistency determination from Illinois Coastal Management Program (ICMP) for federal funded or permitted actions.

It is important to note that regulatory jurisdiction changes based on the OHWM, currently at 581.5 for Lake Michigan, adjusted from International Great Lakes Datum (IGLD)1985.

When are permits needed?

Federal Permitting Requirements

U.S. Army Corps of Engineers:

USACE permits are necessary for any work, including construction and dredging, in the nation's navigable waters and in wetlands. Any adverse impacts to the aquatic environment are offset by mitigation requirements, which may include restoring, enhancing, creating and preserving aquatic functions and values.

Activities not covered by standing regional permits will require an individual permit. Regional permits cover activities with minimal impacts such as dredging of no more than 25 cubic yards below the OHWM. When in doubt as to whether a planned activity needs a permit, contact the Chicago District regulatory office.

Since three to four months is normally required to process a routine application involving a public notice, you should apply as early as possible to be sure you have all required approvals before your planned beginning date. For a large or complex activity that may take longer, it is often helpful to have a "pre-application consultation" or informal meeting with the USACE during the early planning phase of your project. You may receive helpful information at this point, which could prevent delays later. When in doubt as to whether a permit may be required or what you need to do, call the Chicago District regulatory office.

Applicable Permits:
404 Individual Dredging Permit

"Letter of Permission" can be written for Emergency Actions - a type of permit issued through an abbreviated processing procedure which includes coordination with Federal and State fish and wildlife agencies, as required by the Fish and Wildlife Coordination Act, and a public interest evaluation, but without the publishing of an individual public notice.

When acquiring permit through the USACE, they, as a Federal agency, will need to consult with the USFWS under section 7(a)(2) of the Endangered Species Act. The consultation will at minimum require that the USACE address potential impacts to the federally endangered piping plover, as well as to designated critical habitat for the piping plover. In addition, the USFWS reviews permit applications received by the USACE and may have additional comments regarding Migratory Birds or other Federal trust resources.

U.S. Fish & Wildlife Service

The Endangered Species Act of 1973 (ESA) specifically charges the Secretaries of the Interior and Commerce with the responsibility to identify, protect, manage, and recover species of plants and animals in danger of extinction. If "take" of a listed species is likely to occur than authorization from the USFWS is required. "Take" is defined in the ESA as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species. Harm may include significant habitat modification. Under section 10 of the ESA, a habitat conservation plan must be developed by the non-Federal entity as part of their application for an incidental take permit.

State Permitting Requirements

Illinois Environmental Protection Agency:

The IEPA is responsible for protecting and enhancing the quality of air, land and water resources. It is the Illinois EPA's priority to enhance air quality, reduce contamination of the land through prevention and cleanup, and to have clean and safe water.

By Illinois requiring permits, it ensures that all federal and state environmental standards are being achieved. The Illinois EPA is comprised of three bureaus which require permitting:

- Bureau of Air - for projects that emit air pollution, not applicable
- Bureau of Land - for projects that dispose of industrial waste
- Bureau of Water - for projects that discharge treated or untreated wastewater or stormwater associated with construction site activities and dredging (401 water quality certification), boardwalk construction within dune wetland areas may apply if concrete footings are used (considered fill within wetlands)

Illinois Department of Natural Resources:

Any activity along the Lake Michigan shoreline that is located at or below the OHWM requires a permit from the IDNR-OWR. In cases where the OHWM is lakeward of the existing bluff, the toe of the bluff will be used to determine the Department's jurisdiction. Both the IDNR-OWR and the USACE define the OHWM as an elevation of 581.5 ft. International Great Lakes Datum-1985 (IGLD-85). IDNR-OWR permits are issued jointly with the IEPA for work on Lake Michigan's shoreline. The following two types of shore protection permits are issued for work in Lake Michigan:

1. General Permit No. 1-LM
This permit is issued for minor shore parallel protection projects that do not exceed a length of 300 ft., and which meet the special conditions of that general permit. Examples of these projects would be stone revetments or steel sheet pile bulkheads built at the toe of a bluff. This permit does not require the issuance of a public notice but does require IEPA approval. A copy of the terms and special conditions of this permit can be obtained by contacting the IDNR's Lake Michigan Management Section.

2. Individual Permits
All other types of shore protection projects proposed within or adjacent to the waters of Lake Michigan require a regular permit from the Department. Examples of these types of projects include but are not limited to:

- Revetments (longer than 300 ft.)
- Seawalls/Bulkheads (longer than 300 ft.)
- Groins
- Breakwaters/Offshore Structures
- Beach Nourishment
- Piers
- Modifications to existing structures

These types of projects require the issuance of a public notice as specified in Section 3704.60. While this Section specifies a public notice period of at least 21 days, IDNR-OWR will extend the public notice period for shore protection projects to 30 days. These projects are reviewed by IDNR-OWR personnel for compliance with Part 3704 Rules, and also require IEPA approval prior to a permit being issued.

The USFWS has a regulatory role regarding federally-listed E/T animals, such as the piping plover. The incidental taking of a federally-listed animal requires permits from both USFWS and IDNR, and experience has shown the requirements of such permits may differ. The planned and managed taking of any endangered or threatened species is always highly controversial and fraught with legal pitfalls. For example, any federal permit of this sort must also comply with the National Environmental Policy Act (NEPA), which increases time and financial costs drastically.

It is the Division of Ecosystems and Environment which is responsible for the Endangered Species Consultation Program. While this is an advisory role, it is a mandatory advisory process with state agencies and units of local government which provides recommendations to minimize or avoid adverse effects to endangered species and designated natural areas, although implementation of the recommendations is discretionary. It does indicate whether an Incidental Take Authorization for listed animals is appropriate. The division also plays an advisory role with federal agencies, such as the USACE and the USFWS. For example, the USACE, according to federal law, must seek the comments of the State's fish & wildlife agency prior to issuing federal permits; the IDNR Office of Realty & Environmental Planning (OREP) serves in that capacity. OREP does not have access to any grant programs, although all grants issued by IDNR must be reviewed by OREP.

Illinois Coastal Management Federal Consistency Review Procedures:

Consistency Applications
Applications to demonstrate federal consistency do not require fee nor application form. The application must include information reasonably required to determine whether an activity would be compliant with state law. A federal consistency application is initiated when the ICMP receives this information for one of the following:

- A consistency determination from a federal agency conducting an activity.
  - Indicate location of project (provide map), project start date and duration, and extent of work to be conducted onsite.
  - Provide information for contact person including: name, title, mailing address, email address, phone and fax number.
  - Letter should either state: "The proposed activity complies with Illinois' approved coastal management program and will be conducted in a manner consistent with such policies" or "The proposed activity does not comply with Illinois' approved coastal management program"
- A copy of an application for a federal license, from the license applicant, accompanied by a federal consistency certification.
  - Provide a copy of the application for a federal license or permit
  - Provide information for contact person including: name, title, mailing address, email address, phone and fax number. Indicate location of project (provide map), project start date and duration, and extent of work to be conducted onsite.
  - Letter should either state: "The proposed activity complies with Illinois' approved coastal management program and will be conducted in a manner consistent with such policies" or "The proposed activity does not comply with Illinois' approved coastal management program."
- A copy of an application for federal financial assistance accompanied by a federal consistency certification.
  - Copy of application for federal financial assistance (should indicate funding source drawn from and granting authority)
  - Provide information for contact person including: name, title, mailing address, email address, phone and fax number.
  - Indicate location of project (provide map), project start date and duration, and extent of work to be conducted onsite.
  - Letter should either state: "The proposed activity complies with Illinois' approved coastal management program and will be conducted in a manner consistent with such policies" or "The proposed activity does not comply with Illinois' approved coastal management program."

The letter should be sent to:
Federal Consistency Coordinator
Illinois Coastal Management Program
Illinois Department of Natural Resources
160 N LaSalle, Ste 700
Chicago IL 60601

Local Permitting Requirements

Lake County Health Department (LCHD):
Although the LCHD does not have regulatory authority, it is recommended that they review any proposed actions for coordination purposes.

The Department recommends compliance with the Illinois Swimming Code that states no dogs in swimming areas. Other municipalities along Lake Michigan have an exemption from the Act; however, it is recommended that a separate beach, potentially south of Akzo Nobel where there is no high-quality habitat, could be designated as an off-leash area.

Lake County Stormwater Management Commission (LCSMC):
The LCSMC regulates development within the 100 year floodplain and isolated wetlands at elevations above the OHWM. LCSMC may be contacted to set up a pre-application meeting to make the permitting process more efficient.

There is likelihood that a Lake County Watershed Development Permit (WDP) issued by the LCSMC (instead of City of Waukegan) will be needed because the project would be a Public Development within the FEMA floodplain and the Watershed Development Ordinance does not delegate that to City of Waukegan.

About the Watershed Development Ordinance (WDO):
The goal of the Lake County Watershed Development Ordinance (October 13, 2015) is to ensure that new development does not increase existing stormwater problems or create new ones. The WDO establishes minimum countywide standards for stormwater management, including floodplains, detention, soil erosion/sediment control, water quality treatment, and wetlands.

The WDO is implemented at the local level. Forty of the 52 municipalities in Lake County are standard Certified Communities (May 8, 2015). The designation allows those communities to enforce WDO standards within their own jurisdictions, except for isolated wetlands. LCSMC reviews isolated wetlands unless a community becomes "Wetland Certified."

Jurisdictional Determination:
The WDO provides standards for the isolated wetlands no longer under the jurisdiction of the USACE. If a project may impact a wetland, you are required to submit a Jurisdictional Determination to determine if the wetland is an Isolated Waters of Lake County (IWLC) or a Water of the U.S. (WOUS).

LCSMC, USACE, USDA - Natural Resources Conservation Service, and the Lake County Soil and Water Conservation District have intergovernmental agreements in place to ensure proper and appropriate soil erosion and sediment control measures are installed and maintained on development sites. The four agencies meet quarterly to coordinate on potential site violations.

Figure 5A: Permitting Requirements

LEGEND

- USACE/IEPA joint permit required for dredging or sand nourishment
- IDNR Office of Water Resources permit required for construction projects (toe-of-bluff lakeward)*
- IEPA permit required for beneficial use deposition of dredging spoils
- FEMA Floodplain Fill, regulated by Lake County Stormwater Commission (from line lakeward)

Note: Work below OHWM requires joint permit with all three agencies.

*Consultation process required throughout all areas.

Johnson's Pier, photo courtesy Todd Truby

6.1 POTENTIAL PARTNERSHIPS

Habitat Management

Potential Partnerships:

- IDNR: Consultation
- USFWS: Advisory role for E/T species
- Nature Conservancy: Advisory role for E/T species
- Great Lakes Audubon: Monitoring
- Lake County Health Department: Coordinate USACE permits
- USDA Animal Plant Health Inspection Services: Consultation on gull control and invasive predator control
- Lake County Forest Preserve: Expertise on natural resource management
- Waukegan Park District: Green Initiatives Program
- Lake Forest Open Lands Association: Environmental Education and Leadership Programs
- Chicago Botanic Garden: Plant Science and Conservation Programs. An agreement was signed in October of 2016 for plant studies at the beach.

Sand Management

Potential Partnerships:

- USACE: Navigation channel dredging as potential source for sand nourishment
- IDNR-OWR: Consultation (no permitting required)
- IDNR-CMP: Regional efforts on sand management issues, monitoring, research, technical support
- ISGS: Coordination and sharing of data

Recreation Management

Potential Partnerships:

- Waukegan Park District: Recreation programming, potential cooperative plan with Lake County Forest Preserve to complete trail systems within Lake County
- Lake County Forest Preserve: Potential bicycle trail connection (can purchase land for trails, Park District maintains them), potential for establishment of a similar policing and education system

General

- USACE: Work with City to establish long term permitting strategy for dredging and beach nourishment.
- IEPA: Work with Health Department for lake assessments and stormwater management.
- USEPA: work with WHCAG to coordinate grants.
- "Friends of Waukegan Beach" could help with operations.
- Nature Conservancy: Work with school groups and "Friends of Waukegan Beach" on educational programming. Chicago Wilderness Coalition has potential to connect resources and partners.
- Lake County Stormwater Management: Can work with USACE to expedite permitting process by helping with soil erosion and sedimentation inspections.

Governmental Partnerships

The City and Park District could continue to collaborate on the improvements such as the food truck promenade, Sea Horse Drive improvements, parking expansion, trail connections, etc. With the beach improvements underway, and the adjacent lands under management by the most appropriate agencies, the final cleanup and removal of the nearby abandoned structures and infrastructure should be completed.

Other partnerships that should be considered are all other units of government that will benefit from well-managed public beaches, including Lake County (of which Waukegan is the County Seat), The Waukegan Port District, and possibly Waukegan Township.

6.2 FUNDING STRATEGIES

There are several key approaches to funding immediate and longer term improvements that should be considered:

- Pursue all available grant funds from State and Federal sources
- Private philanthropy and local businesses
- Public/private partnerships that leverage private development efforts to fund construction of infrastructure and public improvements
- User fees and charges, where appropriate and in-line with other waterfront communities in the region, to offset ongoing operations and maintenance costs
- Expand partnerships with other local units of government and transfer operations where appropriate to the agency that is most focused on that operation to make the most effective use of taxpayer dollars

State and Federal Grants

Despite past limitations on State grant funding, Waukegan should not rule out State grants over the long term and Federal grants in the near term. Collaboration with multiple agencies could be beneficial with competitive grant funding. At the state level, a variety of funding and grant sources are available through the Illinois Department of Transportation, including the Illinois Transportation Enhancement Program. Additional programs in support of stormwater best management practices, bicycle trails, habitat expansion, and naturalized shoreline protection are available from the IDNR. Additional state agencies that provide a range of programs for community based conservation include Illinois Clean Energy Community Foundation Grants, Illinois Environmental Protection Agency, and the Illinois Historical Preservation Agency. Open Space Lands and Development grants may also be available.

At the federal level, a range of programs are available, including The Transportation Equity Act for the 21st Century, known as Tea-21, which is the primary source of federal funding for greenways.

U.S. Environmental Protection Agency

- Great Lakes Restoration Initiative (GLRI): Federal agencies use GLRI resources to strategically target the biggest threats to the Great Lakes ecosystem and to accelerate progress toward long term goals. Works with non-federal partners to implement protection and restoration projects.

U.S. Fish & Wildlife Service

- National Coastal Wetlands Conservation Grant Program: Annually delivers conservation dollars to protect and restore coastal wetlands. Funding is provided through the Sport Fish Restoration and Boating Trust Fund.

Illinois Department of Natural Resources

- Recreational Grants-in-Aid Programs:
  - Open Space Land Acquisition and Development Grant
  - Boating Access
  - Park and Recreational Facility Construction Act (PARC) Grant
  - Trails Programs

- Illinois Biodiversity Field Trip Grant application - Teachers may apply to receive funds for natural resources-related field trips with their students.

- Schoolyard Habitat Action Grants (available to schools, nature centers and youth groups)

- Volunteer Fire Assistance Grant Program (VFA Program) - During the past two years approximately thirty wildland fire training classes have been presented around the state through the Illinois Fire Service Institute.

- Special Wildlife Funds Grant Program - The Office of Resource Conservation provides grants through the Illinois Habitat Fund, State Pheasant Fund, State Furbearer Fund, and the Migratory Waterfowl Stamp fund that are funded by Illinois sportsmen through the purchase of Habitat Stamps and Migratory Waterfowl Stamps. Together these programs are designed to protect, acquire, enhance or manage wildlife habitat and to support limited research and educational programs to further advance this mission. The Illinois Wildlife Preservation Fund Grant Program is designed to preserve, protect, perpetuate and enhance non-game wildlife and native plant resources of this state through preservation of a satisfactory environment and an ecological balance. Additionally, the Maintenance of Wildlife Rehabilitation Facilities That Take Care of Threatened or Endangered Species portion of the Illinois Wildlife Preservation Fund is intended to keep these facilities in a state of good repair necessary to provide safe and sanitary conditions for the species and the staff.

Illinois Coastal Management Program

- Communities and non-profits along the Illinois Lake Michigan shoreline can apply for grants to protect, restore, and manage the Illinois Lake Michigan Coast for current and future generations. Grants are available to fund Sustainable Coastal Planning, Coastal-related Environmental Education and Outreach, and Small Grants to protect and enhance our Lake Michigan coastal resources.

Illinois Environmental Protection Agency

- Grants Available to Control Nonpoint Source Pollution. Funds can be used for the development, update, and implementation of watershed management plans including the development of information/ education programs and for the installation of best management practices. Illinois EPA receives these funds through Section 319(h) of the Clean Water Act and administers the program within Illinois. The maximum funding award is 60 percent of the total project cost. The program period is two years unless otherwise approved. This is a reimbursement program.

IEPA's Section 319(h) Nonpoint Source Pollution Control Financial Assistance Program (a.k.a. Section 319(h) Grant Program) is designed to provide grant funds for projects that prevent, eliminate, or reduce water quality impairments caused by nonpoint source pollution. Performance measures for the program are outlined in Chapter 7 (Short- and Medium-Term Objectives and Milestones) of Illinois' Nonpoint Source Management Program (Illinois EPA, 2013). Nonpoint source (NPS) pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands and even our underground sources of drinking water. It has been determined that over 60% of the (national) documented water pollution problem can be traced to nonpoint sources.

NPS pollution control project types include:

- Implementation of an approved Watershed-Based Plan
- Development of a watershed-based plan
- Development of a Total Maximum Daily Load (TMDL) implementation plan
- Best Management Practice (BMP) Implementation
- Information and Outreach
- Technical Assistance
- Monitoring.

U.S. National Park Service

- Land and Water Conservation Fund

Private Foundations

- ComEd provides funds for project lighting

Private Philanthropy and Local Businesses
Given the prominence of Waukegan's lakefront and the contribution that improving the lakefront will create in terms of overall quality of life, local corporate and private citizens may wish to support the efforts of the City by funding major elements. Strategies that include naming opportunities have proven beneficial to both the community and the donor, and are an excellent way for a private donor to leave a legacy in honor of a loved one.

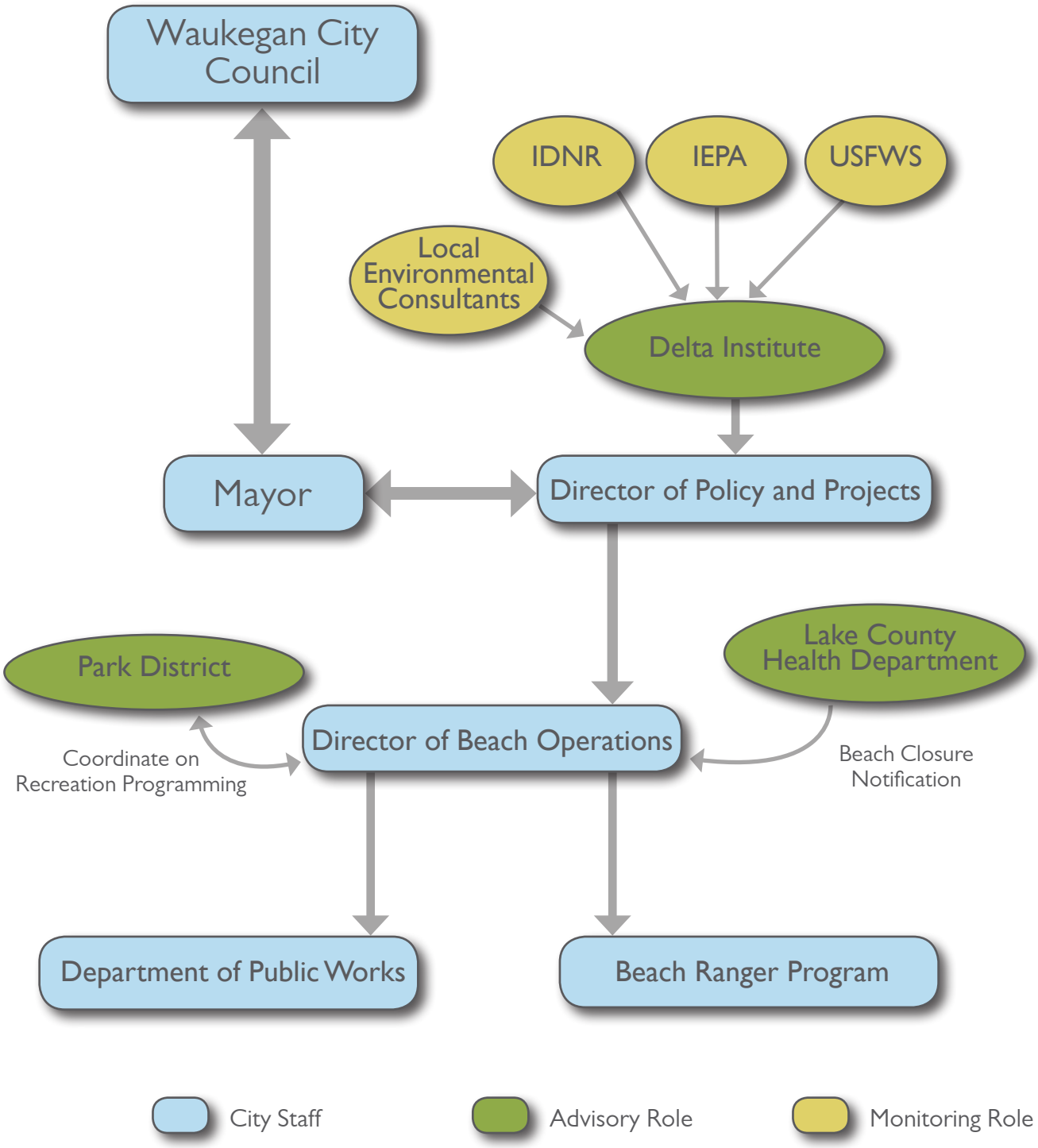
The Illinois Association of Park Districts provides an extensive list of grant sources, including private corporations and foundations. The list includes dozens of private and corporate foundations that focus on funding a wide variety of public recreational programs and infrastructure.

User Fees
User fees, including beach access charges and parking fees, are a potential source of revenue that should be considered. It is very important to assess the impact on the fees on usage to ensure that local residents, in particular low-income residents, are not excluded from public amenities. The long term goal would be to reduce any user fees to the minimum necessary to manage the operation, while the broader improvements generate funds and operating infrastructure to manage facilities at lower costs. Work in phases based on potential funding streams: seawall repair, wetland restoration, public access, etc.

Funding for Monitoring
The monitoring done by Lake County Health Department, including the predictive modeling, at the beaches is currently paid for by a grant from Illinois Department of Public Health (through the federal BEACH Act). This funding has been declining steadily over the years and we expect it to go away in the near future. Prior to this funding, LCHD invoiced the municipalities for the monitoring. If grant funding goes away, the City may have to consider how it plans to pay for the monitoring.

6.3 COMMUNICATION STRATEGY FOR BEACH OPERATIONS

The following chart outlines the recommended path of communication regarding beach-related actions. The chart is intended to help clarify how decisions are made, and how best to keep all parties informed of beach-related actions.



6.4 RECOMMENDED OPERATIONS SCHEDULE

DAILY ACTIVITIES

- Litter removal - lock dumpsters at night
- Grooming of South Beach
- Post beach closures if needed

WEEKLY ACTIVITIES

- Grooming of North Beach Active Recreation Zone
- Water-quality monitoring

MONTHLY ACTIVITIES

- Monitor beach conditions
- Wildlife monitoring
- As needed: grooming of North Beach Passive Recreation Zone

ANNUAL ACTIVITIES

- Dredge sand from North Beach
- Nourish South Beach
- Complete survey of beach conditions including topography and changes in shoreline condition

6.5 PROJECT PRECEDENTS

The following projects, all located within a 5-mile radius of Waukegan, have received funds through the Great Lakes Restoration Initiative. The Great Lakes Restoration Initiative was launched in 2010 and is an organized effort to utilize funding from various federal agencies to protect and restore the water resources of the Great Lakes.

2016

Bull Creek Restoration Project, USEPA. $446,603

The project will restore sections of Bull Creek east of Sheridan Road in Beach Park. Includes aquatic habitat enhancement, streambank restoration, and erosion management techniques. Provides a long-term solution to the stream downcutting and widening and streambank erosion that is occurring within the project work areas.

2014

Lakewide Management Plan/ Remedial Action Plans, IDNR. $900,000

This project will provide capacity for the IDNR to assist with the development and implementation of Lakewide Management Plans for Lake Michigan, as well as Remedial Action Plans for an Area of Concern. The agency will assess ecosystems, quality-assure data, remediate problems in order to delist Beneficial Use Impairments; and control nutrients, invasive species and habitat loss lakewide.

Staus of Benthos and Plankton in Waukegan Harbor AOC, Dept. of Interior-USGS MI. $150,000

Data collected by the USGS in 2015 will be compared with Battelle data from 2012 and other available historical data to help determine if the Benthos BUI can be removed.

Waukegan Harbor AOC-Fish Tissue Analysis, IDNR. $120,000

This project funds a sampling effort to collect fish from Waukegan Harbor AOC and reference sites for the first round of post-dredging fish tissue analysis for PCB and mercury contaminants. The objective will be met through fish sample collection, contaminant analysis, and comparison of results between samples collected in the north basin of Waukegan Harbor and a reference site. These activities contribute towards the removal of the Restrictions on Fish and Wildlife Consumption BUI in the Waukegan Harbor AOC.

2013

Lakewide Management Plan/ Remedial Action Plans, IDNR. $550,000

This project will provide capacity for the IDNR to assist with the development and implementation of Lakewide Management Plans for Lake Michigan, as well as Remedial Action Plans for an Area of Concern. The agency will assess ecosystems, quality-assure data, remediate problems in order to delist Beneficial Use Impairments; and control nutrients, invasive species and habitat loss lakewide.

Waukegan River Riparian Zone Enhancements, City of Waukegan. $175,000

The City of Waukegan, located on Lake Michigan, will install green infrastructure along a 180-foot segment of the Waukegan River approximately 1,000 feet upstream of its outfall to Lake Michigan. This segment of the river currently flows through degraded or temporarily repaired concrete culverts. This project will remove the concrete culverts, improve on the temporary repairs, remove an abandoned railroad trestle, and restore this segment of the river to a more natural open channel flow with protected banks and soil-stabilizing plantings. The project will improve the opportunity for infiltration along the river channel, help eliminate the scouring and erosion currently taking place, improve habitat, and generally improve the water quality of the Waukegan River as it enters Lake Michigan.

2012

Waukegan Harbor, IL - Strategic Navigation Dredging, Dept. of Defense-USACE. $56,000

Waukegan Harbor is a Federal navigation channel located along the western shore of Lake Michigan and within the Waukegan Area of Concern. The proposed project is to plan, design, and dredge approximately 100,000 cubic yards of sediments from the navigation channel for placement at an upland site. The project will support the removal of the dredging restriction Beneficial Use Impairment and delisting of the Area of Concern. FY12 funds were used to complete plans and specifications for Waukegan outer harbor dredging. Project construction is to be completed through an Economy Act agreement between the USEPA and USACE.

2011

Illinois LaMP and RAP Support, IDNR. 550,000

This project will provide capacity for the Illinois Department of Natural Resources to assist with the development and implementation of Lakewide Management Plans for Lake Michigan, as well as Remedial Action Plans for an Area of Concern. The agency will assess ecosystems, quality-assure data, remediate problems in order to delist Beneficial Use Impairments; and control nutrients, invasive species and habitat loss lakewide.

Waukegan Harbor, IL - Strategic Navigation Dredging, Dept. of Defense-USACE. $154,000

Waukegan Harbor is a Federal navigation channel located along the western shore of Lake Michigan and within the Waukegan Area of Concern. The proposed project is to plan, design, and dredge approximately 100,000 cubic yards of sediments from the navigation channel for placement at an upland site. The project will support the removal of the dredging restriction Beneficial Use Impairment and delisting of the Area of Concern. FY11 GLRI funds were used to complete the feasibility study (DMMP).

2010

Illinois LaMP and RAP Support, IDNR. 550,000

This project will provide capacity for the Illinois Department of Natural Resources to assist with the development and implementation of Lakewide Management Plans for Lake Michigan, as well as Remedial Action Plans for an Area of Concern. The agency will assess ecosystems, quality-assure data, remediate problems in order to delist Beneficial Use Impairments; and control nutrients, invasive species and habitat loss lakewide.

Increasing Knowledge of Illinois Fish Advisories, Illinois Department of Public Health. $127,497

This project proposes to improve the effectiveness of Illinois Fish Advisories along Lake Michigan and statewide.

Waukegan Harbor Area of Concern Restoration, Waukegan Harbor AOC Citizens Advisory Group. $1,433,350

This project will: 1) restore and expand a green buffer to preserve vital habitat and water quality for near shore species; 2) gather baseline biological data for the Waukegan Extended Area of Concern; 3) prevent erosion and sedimentation in the riparian near shore, wetland and upland reaches of the Dead River watershed; and 4) provide greater infiltration and stabilization of at least 160 acres riparian inflows to Lake Michigan.

6.6 NEXT STEPS

Permitting Agency Coordination
To optimize efficiency in the planning effort and to ensure that implementation of the plan is in compliance with permitting requirements, it is recommended that the City and Planners coordinate a meeting with the relevant Federal and State agencies that may be involved in funding or authorizing activities at Waukegan Beach.

Partner Outreach
A recommended early step to Plan implementation would be for the City to contact the Lake County Stormwater Management Commission's regulatory and wetland staff to schedule a pre-application meeting. Establishing this partnership would help streamline the entire permit application process.

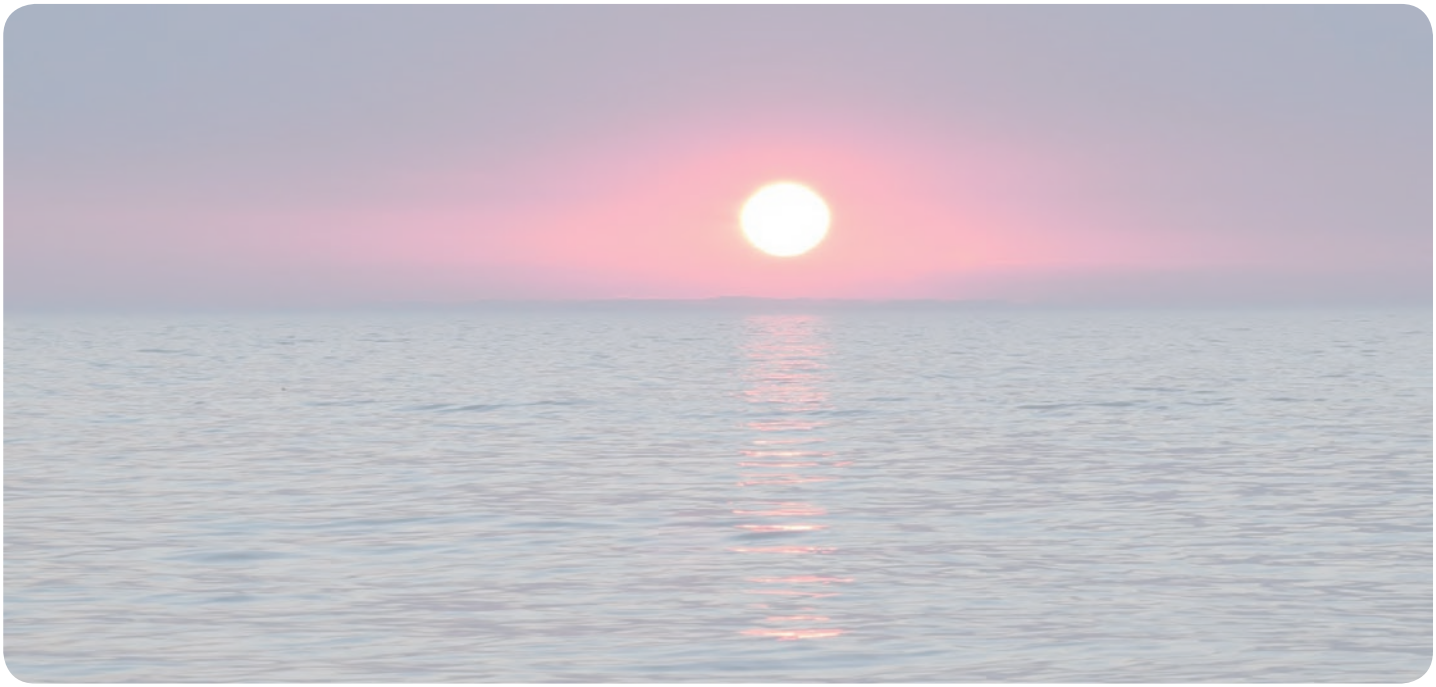
Coordination with Existing Efforts
City staff should continue to collaborate with other entities who are currently working on projects that affect Waukegan's beaches. Proposed beach and dune improvements by Deigan & Associates should be reviewed to ensure compliance with this Plan.

Beach and Dune Monitoring
The key to implementation of this Plan will be accurate data gathered by site monitoring. Relevant data may come from the local level by Lake County Health Department and at the state level by the Illinois Coastal Management Program (ICMP) and Illinois State Geological Survey (ISGS).

Additional Research
The Illinois North Shore Sand Management Strategy is an ongoing effort to better understand coastal dynamics. Data from that effort could help inform future beach actions, erosion control strategies, and sand management.

Engineering Study of South Beach
A detailed survey of existing conditions of South Beach, including current limits of dunes and topography, is needed to determine sand nourishment needs and optimum grading to keep the beach free of standing water. It is possible that this task could be conducted most efficiently by the ISGS. If coordinated with their on-going efforts, sharing of data may be possible, limiting direct costs to the City.

Sunrise over Lake Michigan, photo courtesy Nancy Tonkin



Sunrise over Lake Michigan, photo courtesy Todd Truby

7.1 PROJECT STAKEHOLDERS

Project Steering Committee

City of Waukegan
- Mayor Wayne Motley
- Noelle Kischer-Lepper, Director of Policy and Projects
- Steve Sabourin, Senior Planner

Park District
- Greg Petry, Executive Director

IDNR
- Diane Tecic, Coastal Management Program Director

Resource Experts/Stakeholders

City of Waukegan
- Russ Tomlin, Director of Community Development
- David Motley, Director of Communications
- Tom Hagerty, Director of Public Works
- Chief Wayne Walles, Police Department
- Chief George Bridges, Fire Department

Council Members
- Lisa May, 7th Ward Alderman
- David Villalobos, 4th Ward Alderman

Park District
- Tanya Brady, Risk Management

Illinois Department of Natural Resources
- Ethan Theuerkauf, Coastal Geologist, Illinois State Geological Survey, Illinois Department of Natural Resources Coastal Management Program
- Keith Shank, Acting Chief, Division of Ecosystems & Environment, Office of Realty & Environmental Planning
- Jim Casey, Chief, IDNR/OWR, Lake Michigan Management Section
- Brad Semel, Natural Heritage Biologist
- Maggie Cole, Natural Heritage Biologist
- Dan Ludwig, Regional Wildlife Biologist–North and East Central IL

Consultants
- Gary Deigan, Principal, Deigan & Associates, Environmental Consultants
- Katie Kult, Project Engineer, Deigan & Associates, Environmental Consultants
- Jay Womack, Director, WRD Environmental, Ecological Landscape Design
- Dr. Julie Kinzelman, Beach Management Specialist

Waukegan Port District
- Grant Farrell, Chairman of the Board
- Randy Podolsky, Board Member

U.S. Fish & Wildlife Service
- Kristopher Lah, Endangered Species

U.S. Army Corps of Engineers
- Kathy Chernich, Chief, East Section Regulatory Branch
- Mike Murphy, Regulatory Branch
- David Bucaro, Chief, Economic Formulation & Analysis Section
- Tim Kroll, LRD Regional Integration Team Endowed Chair
- Jennifer Miller
- Jeffrey K. Zuercher, Project Manager, Chicago District

Illinois Environmental Protection Agency
- Darren Gove, Division of Water Pollution Control, Permit Section
- Amy Walkenbach, Manager, Watershed Management Section

U.S. Environmental Protection Agency
- Scott Cieniawski
- Karen Rodriguez
- Danielle Green

The Nature Conservancy
- John Legge, Chicago Conservation Director

Audubon Great Lakes
Nat Miller, Director of Conservation, Chicago Region

Lake County Forest Preserve District
Randy Seebach, Director of Planning and Land Preservation
Deb Maurer

Lake County Stormwater Management
Mike Prusila, Water Resource Professional

Lake County Health Department
Mike Adam, Senior Biologist

NRG
Fred Veenbaas, Senior Environmental Compliance Specialist

North Shore Water Reclamation District
Dave Miller, Deputy Executive Director

Delta Institute
Bill Schleizer, title
Eve Pytel, Director of Strategic Priorities

Lake County Planning, Building & Development
Daniel Krill, CWS, Principal Wetland Specialist

Waukegan Harbor Citizens' Advisory Group
Susie Schreiber
Joe Hmieleski, formerly with Lake County Stormwater Management
Penny Bouchard, formerly North Shore Sanitary Environmental Compliance
Tom Chefalo, formerly Lake County Planning Department
Don Wilson

7.2 CONTACT INFORMATION

This contact information for individuals involved with the creation of this Plan is current as of 9/14/16. This page may be updated and replaced as needed.

USACE:

Chicago District Regulatory Office:
Regulatory Branch
231 South LaSalle Street, Suite 1500
Chicago, Illinois 60604

Phone (312) 846-5530
Fax (312) 353-4110
lrcregweb@usace.army.mil

Kathy Chernich, Chief, East Section: (312) 846-5531
Dave Bucaro, Planning Section: (312) 846-5583

IDNR:

Regulatory Programs Questions : (217) 782-4427

Office of Water Resources:
Michael A. Bilandic Building
160 N. LaSalle Street, Suite S-703
Chicago, IL 60601

Diane Tecic, Coastal Management Program Director: (312) 814-0665

Lake Michigan Management Section:
Jim Casey, Lake Michigan Programs: (312) 793-5947

Division of Ecosystems and Environment, Endangered Species Consultation Program: Keith Shank, Acting Chief, Division of Ecosystems & Environment: (217) 785-5500

IEPA

Division of Water Pollution Control:
Darren Gove, Permitting Section: (217)524-3033

USFWS

Kristopher Lah, Endangered Species: (847) 381-2253 x.15

7.3 PIPING PLOVER CRITICAL HABITAT

The USFWS encourages conservation of the following primary constituent elements of piping plover critical habitat:

(1) sand, gravel, or cobble beaches or spits;
(2) shoreline length > 0.2 kilometers (approx. 220 yards) of gently sloping sand beach;
(3) sand beach area of > 2 hectares (approx. 5 acres);
(4) > 50 meters (approx. 55 yards) where beach width is > 7 meters (approx. 8 yards) or > 7 meters sand and cobble between dune and treeline;
(5) distance from waterline to treeline > 50 meters;
(6) sparse vegetation with < 50% herbaceous or woody cover;
(7) protective cover - small herbaceous patches, cobble, gravel, or debris (driftwood, wrack, root masses, dead shrubs);
(8) potential for the dynamic ecological processes that create and maintain habitat (e.g., erosion, accretion, plant succession, lake-level fluctuations; episodic storm events;
(9) low level of disturbance from human activities or domestic animals.

Visit https://www.fws.gov/midwest/endangered/pipingplover/chabitat.html for more information.

WAUKEGAN
City of Progress Illinois
100 N. MLK Jr. Ave. - Waukegan, IL 60085
847-599-2500 - www.waukeganil.gov

Wayne Motley, Mayor
Maria M. LaCour, City Clerk
Dr. John Schwab, Treasurer

3
CITY OF WAUKEGAN MINUTES
NOVEMBER 21, 2016

	Noelle for their help. The Aldermen have received a copy of this policy earlier today.
PROCLAIM SATURDAY NOVEMBER 26th, 2016 AS SMALL BUSINESS SATURDAY APPROVED	**RESOLUTIONS/ PROCLAMATIONS/ APPOINTMENTS Cont.:** 6. Motion by Alderman Seger, seconded by Alderman Villalobos to Proclaim Saturday November 26th, 2016, the Saturday after Thanksgiving, as Small Business Saturday. MOTION PASSED
APPROVE THE WAUKEGAN BEACH MANAGEMENT PLAN APPROVED	**COMMITTEE REPORTS / MOTIONS:** **ECONOMIC DEVELOPMENT COMMITTEE REPORT, CHAIRMAN ALDERMAN MAY:** 7. Motion by Alderman May, seconded by Alderman Valko to approve the Waukegan Beach Management Plan prepared by Edgewater Resources. Ald. May explained this plan was presented by Edgewater Resources. This plan would help make decisions on the sands and natural area by the lakefront to protect the habitat and dunes. It is a grant-funded plan. She and Mayor Motley are very proud of the plan presented by Edgewater Resources. Mayor Motley thanked Alderman May for working with him to ensure the utilization of the lakefront natural and recreational areas. ROLL CALL: AYES: Aldermen Cunningham, Seger, Moisio, Villalobos, Newsome, TenPas, May, Valko and Taylor NAYS: None ABSENT: None MOTION PASSED
APPROVE THE PROGRAM YEAR 2017 COMMUNITY DEVELOPMENT BLOCK GRANT ALLOCATIONS APPROVED	**FINANCE COMMITTEE REPORT, CHAIRMAN ALDERMAN VALKO:** 8. Motion by Alderman Valko, seconded by Alderman Cunningham to approve the Program Year 2017 Community Development Block Grant (CDBG) allocations as presented. Ald. Valko explained CDBG has nine stakeholders in its Stakeholder Participation Panel. There were 23 applications asking for money, he read some of the requesters. The City is also a recipient of some of those funds. ROLL CALL: AYES: Aldermen Cunningham, Seger, Moisio, Villalobos, Newsome, TenPas, May, Valko and Taylor NAYS: None ABSENT: None MOTION PASSED
APPROVE A CONTRACT WITH CAYENTA TO PROGRAM AN INTERFACE WITH AN AUTOMATED METER READING SYSTEM. APPROVED	9. Motion by Alderman Valko, seconded by Alderman Cunningham to approve a contract with Cayenta to program an interface between Cayenta Utility (Water & Sewer Billing) and Professional Meters Inc. (PMI) automated meter reading system for an amount not to exceed $53,430.00 budget code 555 916027693. Ald. Valko explained that Cayenta is program used by the City of Waukegan to take in payments. The PMI is an automated meter reading system that will transfer data to Cayenta. The data will transfer hourly to have a better real time read and answer questions for the residents. ROLL CALL: AYES: Aldermen Seger, Moisio, Villalobos, Newsome, TenPas, May, Valko and Taylor NAYS: Alderman Cunningham ABSENT: None MOTION PASSED

Equal opportunity to participate in programs of the Illinois Department of Natural Resources (IDNR) and those funded by the U.S. EPA and other agencies is available to all individuals regardless of race, sex, national origin, disability, age, religion or other non-merit factors. If you believe you have been discriminated against, contact the funding source's civil rights office and/or Equal Employment Opportunity Officer, IDNR, One Natural Resources Way, Springfield, 62702-1271; (217) 785-0067;TTY (217) 782-9175. Information may be provided in an alternative format if required. Contact the IDNR Clearinghouse at (217) 782-7498 for assistance.

In cooperation with the Illinois Department of Natural Resources and its Illinois Coastal Management Program, this Plan is made possible through a grant by the U.S. Department of Commerce and the National Oceanic and Atmospheric Administration Program.