GLENCOE PARK DISTRICT
GLENCOE BEACH AND LAKEFRONT ADVISORY GROUP
Tuesday, April 23, 2019 | 7:00 PM
Takiff Center Community Room #1

Consistent with the requirements of the Illinois Compiled Statutes
5 ILCS 120/1 through 120/6 (Open Meetings Act), notices of this meeting were posted.
Location of the meeting is the Takiff Center, 999 Green Bay Rd, Glencoe, IL 60022

A G E N D A

I. Introductions

II. Approval of Minutes – December 11, 2018 Meeting

III. Review of 2019 Beach Schedule, Fees & Events

IV. Operational Planning Update for 2019 Beach Season

V. Water Testing Update

VI. Sand Management/Federal Grant Proposal

VII. Advisory Group Feedback

VIII. Matters from the Public

IX. Other

X. Adjourn

The Glencoe Park District is subject to the requirements of the Americans with Disabilities Act of 1990. Individuals with disabilities who plan to attend this meeting and who require certain accommodations in order to allow them to observe and/or participate in this meeting, or who have questions regarding the accessibility of the meeting or facilities, are asked to contact the Park District at 847-835-3030. Executive Director E-mail address: lsheppard@glencoeparkdistrict.com

DRAFT

MINUTES OF TUESDAY, DECEMBER 11, 2018 GLENCOE BEACH AND LAKEFRONT ADVISORY GROUP MEETING - GLENCOE PARK DISTRICT TAKIFF CENTER – CONFERENCE ROOM #1

The meeting was called to order at 7:08pm by Chair Lutton and roll was called.

Members in Attendance: Josh Lutton (Chair), Andre Lerman, Dudley Onderdonk, Eileen Sirkin, Larry Smith

Staff in Attendance: Director of Recreation and Facilities Bobby Collins, Beach Manager Matt Walker

Public in Attendance: Janet Lerman

Approval of Minutes: A motion was made by Chairman Lutton to approve the minutes of the July 24, 2018 Lakefront Advisory Group Meeting. Member Lerman seconded the motion which passed by unanimous voice vote. No further discussion ensued.

Operational Update: Director Collins and Beach Manager Walker conducted a PowerPoint presentation reviewing the 2018 Annual Beach Report. The presentation was the same one presented to the Board on October 16, 2018.

Advisory Group Feedback: Member Sirkin mentioned we should have a click counter operated by the staff member standing at the Park Ave ramp to determine how many guests are steered towards the cashier rather than being able to walk down without paying. Chair Lutton asked about the process for water testing and expressed concern over the amount of time it takes to complete the test.

Member Lerman asked if it would be possible to auto-renew season passes. Member Lerman also asked if it would be possible to make reservations for our rentals.

Member Smith inquired about a faster process for season token holders to check in. Beach Manager Walker stated that we are working on a solution for this issue. Member Onderdonk inquired about the decking covering the pier needing repairs and he was advised by Director Collins that the Park District is aware of the current condition.

Member Lerman expressed his thanks to the beach staff for their hard work during the course of the summer. Member Lerman inquired about who owns the land at the Halfway House and Park Ave overlook.

Chair Lutton stated the Halfway House is underutilized and asked the committee for ideas to better use it.

Off Season Planning: Director Collins and Beach Manager Walker talked about staffing levels for the 2019 beach season and the popularity of the Aquatics and Sailing Camps.

Matters from the Public: Janet Lerman expressed her thanks to the beach staff for their hard work and commitment to the operation.

Other: None

Adjourn: Chair Lutton moved to adjourn the meeting at 8:15pm. Member Smith seconded the motion, which passed by unanimous voice vote.

Respectfully submitted by,

_____

Bobby Collins
Director of Recreation and Facilities

Beneficial Use of Dredged Material

Section 1122 of the Water Resources Development Act of 2016

Pilot Project Proposal Form

POINT OF CONTACT: Ron Salski, Lake Bluff Park District,
rsalski@lakebluffparkdistrict.org, 847-457-7346

1. Name of Project: Public Beach Protection Pilot in Four Illinois Coastal Communities

2. Purpose of the proposed project

   Illinois Department of Natural Resources' (IDNR) Coastal Management Program (Coastal) convenes the Illinois Sand Management Working Group. The working group is comprised of local and state agencies, and several sections of the U.S. Army Corps of Engineers (USACE), Chicago District (Chicago District). It focuses on ways these organizations can collaborate to protect and restore Illinois' public Lake Michigan shoreline. Our four communities – Village of Lake Bluff, City of North Chicago, Village of Glencoe, and City of Evanston – actively participate in the Illinois Sand Management Working Group. As a part of this group, we are exploring ways to leverage our individual resources to address Lake Michigan shoreline issues in a sustainable and cost-effective way. This pilot project proposal includes: dredging and sand transport, onshore sand placement, native plantings, and beach monitoring. It could serve as an important proof-of-concept of how multiple communities – in close partnership with USACE – can amplify the collective impact of shoreline protection measures; this paves the way for lasting, more holistic public shoreline protection in our region and around the U.S.

   Our proposal would place dredged material from the Waukegan Harbor federal approach channel onshore to protect 54,560 yards of shoreline at 6 sites: Sunset Park and Beach in Lake Bluff; Foss Park in North Chicago; Glencoe Beach in Glencoe; and Dog Beach, Greenwood Street Beach, and Lee Street Beach in Evanston. The proposed project would also support planting of trees, shrubs, and grasses in all four communities that reduce shoreline and bluff erosion and enhance these habitats. These plantings would help dredged material to stay in place and ensure more lasting ecosystem benefits. Through the Illinois Sand Management Working Group, we have an arrangement with state coastal geologist –

Dr. Ethan Theuerkauf – that can use drone technology to three-dimensionally map how the nearshore and shoreline in our four communities responds to pilot project activities. The monitoring methodology will be the same as Illinois Beach State Park's proof-of-concept project, currently funded by the Regional Sediment Management program (more details below). This research will allow us to continue to adapt shoreline management practices based on ecosystem response.

This is a coordinated project among four communities and we are in different stages of lakefront planning. The Chicago District plans dredging activities for Waukegan Harbor federal approach channel two years in advance. Depending on timing for this pilot project program, our proposed project could begin as early as spring 2020. Project communities that are still in the planning phase for erosion control and shoreline enhancement activities would complete and approve all plans before spring 2020. Our proposed project description includes activities outlined in our master plans; but, we recognize that, if selected, project activities may need to be adjusted based on available funds and available dredged material.

The pilot project proposal builds on our existing partnership with the Chicago District. In July 2017, we submitted a letter of intent to the Chicago District to beneficially use dredged material from the Waukegan Harbor approach channel to protect and restore our public parks and beaches (see Appendix A). In the earlier proposal, our communities would pay the difference in transportation costs (similar to an existing arrangement that the Chicago District has with IDNR for placing sand from Waukegan Harbor in the nearshore of Illinois Beach State Park). In February 2018, we received a positive response from the Chicago District that it is considering our request and undertaking an environmental analysis under the National Environmental Policy Act to determine whether such an action would cause any adverse impacts to human health and the environment.

The proposed pilot project meets all criteria outlined below:

a. Reducing storm damage to property and infrastructure

   Current storm damage to our shoreline costs thousands of dollars to repair and endangers important infrastructure, including: piers, break walls, beach access points, boat launches, water pipes, sewer pipes, and roads. For example, in spring 2016, the damage from a single storm at Illinois Beach State Park, which is directly north of the proposed pilot project, cost 15 times more than normal maintenance ($17.19/ cubic yard to truck quarried sand in for emergency onshore nourishment vs. $1.12/ cubic yard for delta transport costs to beneficially use USACE dredged material in the nearshore.) The proposed project would provide much-need protection against shoreline and bluff erosion resulting from higher lake levels, more frequent and severe storms, and greater volumes of stormwater runoff. We currently use quarried sand that is trucked in to address erosion. This method of repair is costly and it damages municipal roads and neighboring habitats.

Our proposed approach of onshore placement of dredged sand would also mitigate these impacts.

b. Promoting public safety

Shoreline modifications (erosion and sediment overwash) cause significant drop-offs at our swimming beaches and endanger beach access points, boat launches, piers, and broader infrastructure like roads. For example, at the Lake Bluff Park District, shoreline erosion prevented access to, and created a two-foot drop-off at, the public access point to the beach. The proposed project could prevent or mitigate the erosion and promote public safety by protecting public access points and infrastructure. Our beaches themselves are also important for public safety. Regional water rescue training takes place at the Glencoe Park District and City of Evanston; Foss Park District has plans to implement similar safety events.

c. Protecting, restoring, and creating ecosystem habitats

The proposed project would include shrub and tree plantings in the cities of North Chicago and Evanston to provide and restore as much as 25,000+ square yards of habitat for migratory birds and other wildlife. (The proposed amount can be scaled, depending on available funding.) It would also include green infrastructure installments (rain gardens and/or bioswales) that will offer new habitat and reduce bluff erosion and Lake Michigan pollution caused by stormwater (see Appendix D for stormwater impacts at Glencoe Beach).

In addition, Glencoe Park District's site already has 24,200 square yards of high-quality bird habitat and all four communities' parks and beaches are home to important beach, dune, and bluff ecosystems. In the proposed project sites, you can find many federally- and state-listed threatened and endangered species, including: Piping Plover, Short-eared Owl, Red-wing Blackbird, Black-crowned Night Heron, Rufa Red Knot, and Mississippi Kite. Proposed project erosion control and dune enhancement activities would help ensure these important species continue to call our communities home. Our project proposal strongly aligns with USACE Chicago District ecosystem projects in the region, where it has protected and restored over 4,000 acres of habitat at 32 sites in its 8+ county area of Illinois and northwest Indiana. All those projects have a critical migratory bird component.

The western shoreline of Lake Michigan is part of a globally significant north-south migratory flyway. The 140-mile portion of the flyway from the urbanized area north of Milwaukee, Wisconsin to east of Portage, Indiana has limited locations where migratory birds can find food, shelter, and protection from hazards (both natural and man-made).

Despite the limited number of stopover sites, this flyway is used by millions of migrant birds including: hawks, falcons, owls, waterfowl, gulls, terns and shorebirds, and an estimated 5,000,000 migrant songbirds (per Chicago Field Museum of Natural History). This flyway extends from the tip of South America to as far north as the Arctic Circle, a distance over 9,000 miles. Birds using this flyway can pass through as many as 14 US States, Canada, Mexico, Central and South America. The economic impact associated with wildlife watching is significant and birding is a major component. According to the U.S. Fish and Wildlife Service in 2011, the number of wildlife watchers in the U.S. (over the age of 16) was nearly 72 million; this generated over $142 billion in economic benefits. The state of Illinois had more than 3 million wildlife watchers generating over $1.3 billion. The habitat projects in these four shoreline communities will add to the bird watching economic output in Illinois and all the states and countries that these birds migrate through.

As noted earlier, we truck in quarried sand to address erosion. This approach uses large and heavy equipment that can impact air quality through its emissions, consume non-renewable fuel, leak fuel or oil, and trample nearby habitats. By placing material pumped from dredges onshore, the project would reduce shoreline erosion and mitigate many of these ecosystem impacts.

d. Stabilizing stream systems and enhancing shorelines

This project would enhance our shorelines by providing safer, healthier, and more ecologically diverse beaches. All four communities plan to plant native groundcover and grasses along our bluffs and the shoreline to restore beach and bluff habitat, protect placed shoreline material, and limit the future impacts of erosion. We propose planting on as much as 35,000+ square yards of habitat to stabilize and enhance our bluffs and shoreline. Coupled with the habitat projects noted in section (c) above, this would be overall 60,000+ square yards of enhanced and stabilized area. (The proposed amount can be scaled, depending on available funding.) The plantings would limit soil erosion and bluff destabilization resulting from higher lake levels, provide additional native plants and greater habitat diversity, and enhance park and beach aesthetics. Proposed raingardens and/or bioswales in the Village of Glencoe would also reduce bluff erosion caused by high stormwater runoff.

e. Promoting recreation

The six proposed project sites in our four communities all include public beaches (see maps in Appendix B). Addressing shoreline erosion in these important public areas will promote recreation in the following ways:

- Re-build the only swimming beach and surrounding area in Foss Park, North Chicago, where extreme erosion and public safety concerns required the park district to close;
- Expand existing swimming areas and promote swimming classes, which is a life skill;
- Offer local fitness programs, yoga classes, and walking and biking trails, which support a healthy lifestyle;
- Improve trail access and protect current trails and neighboring bluffs;
- Promote birding and wildlife watching with protected and restored habitat;
- Increase non-motorized watercraft launches, which improves public access for paddle boards, sail boats, and kayaks; and
- Enable us to continue offering nature and recreational camps.

f. Supporting risk management adaptation strategies

The project's goals for long-term sustainability would allow our communities to implement appropriate adaptation strategies and plan for future changes in lake levels or weather patterns. Beneficial use of dredged material – coupled with plantings and habitat improvements – would protect our shorelines and provide us with the opportunity to consider additional innovative ways to continue to do so. As noted above, we plan to work closely with the state coastal geologist to three-dimensionally map how the nearshore and shoreline in our four communities responds to pilot project activities. This monitoring, along with ongoing assessments of changing environmental conditions, will enable us to be proactive in the implementation of lasting adaptation strategies into the future.

3. Description of the proposed project, including more details on how material will be used beneficially to meet project purposes identified in 2 above

PROJECT DESCRIPTION

Our proposed project would place dredged material from the Waukegan Harbor federal approach channel onshore to protect 54,560 yards of shoreline at 6 sites: Sunset Park and Beach in Lake Bluff; Foss Park in North Chicago; Glencoe Beach in Glencoe; and Dog Beach, Greenwood Street Beach, and Lee Street Beach in Evanston. The proposed project would also support planting of trees, shrubs, and grasses in all four communities that reduce shoreline and bluff erosion, enhance habitats, and capture stormwater runoff.

The proposed project has two components: 1) beneficial use of dredged material from the Waukegan Harbor approach channel (on average, 71,000 cubic yards per year) for public beach nourishment in four communities and 2) plantings for erosion control and habitat enhancements. Overall, the pilot project activities benefit all of Illinois' coastal communities

because it sets up a blueprint for other communities to undertake similar projects (at cost share) with the Chicago District and each other in the future.

This is a coordinated project among four communities and we are in different stages of lakefront planning. The Chicago District plans dredging activities for Waukegan Harbor federal approach channel two years in advance. Depending on timing for this pilot project program, our proposed project could begin as early as spring 2020. Project communities that are still in the planning phase for erosion control and shoreline enhancement activities would complete and approve all plans before spring 2020.

1. Beneficial use of dredged material for public beach nourishment:

The proposed project is a collaborative effort of four Illinois coastal communities – Village of Lake Bluff, City of North Chicago, Village of Glencoe, and City of Evanston. The beneficial use of dredged material from the Waukegan Harbor federal approach channel will be placed onshore to combat rapid shoreline erosion and to enhance 54,560 yards of public beaches, parks, and open space in these communities. Placement of this dredged material would prevent and/or mitigate shoreline erosion, which threatens the local economy, outdoor recreation, key infrastructure, and important wildlife habitat.

Locations where dredged material will be beneficially used include:

- Lake Bluff, Illinois; Sunrise Park and Beach (455 Sunrise Avenue)
    - 6,921 square yard site
    - Requires an estimated 769 cubic yards of material

- North Chicago, Illinois; Foss Park (1901 Foss Park Avenue)
    - Ideal project size would be 9,880 square yards
    - Requires an estimated 4,477 cubic yards of material

*Foss Park plans to rebuild its swimming beach and surrounding beach area, and material required comes from the park master plan and contractor estimates.

- Glencoe, Illinois; Glencoe Beach (55 Hazel Avenue)
    - 14,134 square yard site
    - Requires an estimated 1,500 cubic yards of material

- Evanston, Illinois; Dog Beach (1631 Sheridan Road), Greenwood Street Beach (1401 Sheridan Road), Lee Street Beach (1111 Lake Shore Boulevard)
    - Dog Beach: 2,955 square yard site; Greenwood Street Beach: 5,713 square yard site; Lee Street Beach: 6,722 square yard site; total area: 15,390 square yards
    - Requires an estimated 3,000 cubic yards of material

*Dog Beach has suffered from severe erosion and estimates of needed material are based off Foss Park numbers, as the city may have to rebuild much of the beach. Evanston plans to take additional measures to protect Dog Beach, including building a groin.

Summary of dredged material placement activities		
City or village	Total nourishment area (in sq. yards)	Est. material needed (in cub. yards)
Lake Bluff	6,921	769
North Chicago	9,880	4,477
Glencoe	14,134	1,500
Evanston	15,390	3,000
Overall total	**46,325**	**9,746**

In Village of Lake Bluff, Village of Glencoe, and City of Evanston, beneficial use of dredged material will protect the existing public beaches and parks outlined above. In the City of North Chicago, beneficial use of dredged material will rebuild a former beach and restore and stabilize bluff habitat, both of which have suffered from severe erosion. Please see Appendix B for maps of the proposed sites and Appendices C, D, E and F for park master plans and other relevant planning documents.
As stated in the 2016 Water Resources Development Act, all transportation and placement of dredged material from Waukegan Harbor would be at federal cost. Additional activities such as grading and planting would be cost shared at 65% federal, 35% non-federal, per Section 204 Beneficial Use of Dredged Material.

2. Erosion control and shoreline enhancements

Illinois' coastline is a high-energy system. Our communities plan to take additional steps to ensure that beneficially used dredged material continues to protect our public beaches, parks, and open spaces long into the future. We plan to undertake the following erosion control and enhancement activities to protect our shorelines:

- Lake Bluff, Sunrise Park and Beach
    - Grading of placed dredged material.
    - Planting 2,184 square yards of the park bluff face with native grasses and sedges, with overseeding for desirable native forbs and planting of red oaks once grasses are well-established.
    - Planting 96 square yards of additional beach grass to limit overall beach erosion.
- North Chicago, Foss Park
    - Grading of placed dredged material.

- Plantings of an estimated 90 trees, 200 shrubs, and 440 groundcover and grasses to restore and stabilize a 24,666-square yard bluff area. (This is the ideal project size and can be scaled.)
- Plantings of an estimated 980 groundcover and grasses for restoration and erosion control in a 21,777-square yard beach area. (This is the ideal project size and can be scaled.)

*The Foss Park Master Plan also includes planned installation of a quarrystone breakwater and quarrystone groin. This aspect is not included as a part of this proposed project, but will support efforts to protect the shoreline and keep dredged material in place.

- Glencoe, Glencoe Beach
  - Grading of placed dredged material.
  - An estimated 12,000 square yards of rain gardens, bioswales, and/or plantings to capture stormwater and prevent further bluff erosion.

*Glencoe Beach experiences extreme erosion and bluff destabilization from stormwater runoff. Glencoe Park District is in the process of developing a proposal with several contractors to address this (see Appendix D). As planning moves forward, more specific stormwater management strategies will be identified.

- Evanston, Dog Beach, Greenwood Street Beach, Lee Street Beach
  - Grading of placed dredged material.
  - Plantings of dune grasses along the western edge of Lee Street Beach to limit erosion.
  - Plantings of shrubs and trees at Greenwood Street Beach and Lee Street Beach to provide migratory bird and other wildlife habitat.

Summary of Section 204 ecosystem activities	
City or village	Est. area for erosion control and enhancement (in sq. yards)
Lake Bluff	2,280
North Chicago	46,443
Glencoe	12,000
Evanston	Area to be determined
Overall total	**60,723+**

Proposed project timeline:

This suggested timeline would be adapted based on the potential start time for the WRDA pilot program.

Project activity	Potential timeframe
Glencoe and Evanston finalize and have approved planned restoration activities at project sites	Spring 2018 – Spring 2019
Waukegan Harbor federal approach channel dredging	As early as spring 2020 **Spring 2018-2019 dredging activities are already planned*
Placement of dredged material onshore at North Chicago, Evanston, Lake Bluff, and Glencoe	As early as spring 2020
Planting activities at North Chicago, Lake Bluff, Evanston, and Glencoe	As early as summer - fall 2020

Under Section 204 Beneficial Use of Dredged Material, the shoreline protection and ecosystem restoration activities outlined above would be cost-shared at 65% federal and 35% non-federal. It has cost our four communities altogether about $75,000 annually, on average, to truck in and grade quarried sand to address eroding public shorelines. This would enable our communities to instead put this $75,000 toward erosion control and habitat enhancement activities outlined in the proposed project description above. With a 65% federal cost share, we could leverage our resources to achieve $214,285 worth of ecosystem restoration and shoreline protection work. Receiving the dredged material at 100% federal cost will allow us to extend our resources even further by eliminating the costly and inefficient process of trucking in quarried sand. (Please see #6, description of project costs, for further details.)

ADDITIONAL INFORMATION

Science-based decision making

Through the Illinois Sand Management Working Group, the four communities plan to continue partnering with the state coastal geologist for science-based decision making. In addition to the planned three-dimensional drone shoreline and nearshore mapping in our four communities noted above, the state coastal geologist has another three projects that support the long-term sustainability of this effort.

- A joint project with the U.S. Army Corps of Engineers, Chicago District that uses drone technology and boat-based surveys to track nearshore sediment. This research will test whether nearshore placement mitigates beach and dune erosion at Illinois Beach State Park. The methodology for this study, once tested, could be applied in other areas to explore similar questions. This project will take place from April 2018 – April 2019 and is funded out of the Regional Sediment Management (RSM) program.
- A Great Lakes Restoration Initiative-funded project (through National Oceanic and Atmospheric Administration) in partnership with IDNR staff that assesses Illinois Beach State Park habitat. Data from this research will enable the state to prioritize areas in the park to implement targeted shore protection strategies.
- Ongoing shoreline monitoring at Sunrise Park in Lake Bluff. Data collection started in October 2017 and will be completed in April 2018. This research will provide localized data on shoreline change and aids in the development of targeted shore protection strategies. This data collection method can also be applied in other communities.

4. The name of all non-federal interests planning to act as the sponsor, including any non-federal interest that has contributed to or is expected to contribute toward the non-federal share of the proposed beneficial use project.

    - Lake Bluff Park District
    - Foss Park District (of North Chicago)
    - Glencoe Park District
    - City of Evanston

    As noted above, our four municipalities have a history of partnership and collaboration with each other and the Chicago District through the Illinois Sand Management Working Group. In July 2017, we submitted a letter of intent to the Chicago District to continue working together on erosion in our region.

5. List the U.S Army Corps of Engineers (Corps.) water resources development project(s) that the proposed beneficial use project is associated with.

    There are several U.S. Army Corps of Engineers water resources development projects associated with this pilot project proposal:

    - **Operation and Maintenance of Waukegan Harbor federal navigation harbor**. This involves routine dredging of the approach channel, inner and outer harbor, and advanced maintenance area.
    - **Waukegan Harbor Sec 107 Small Navigation Project.** This project evaluates structural and non-structural alternatives for harbor modification to decrease the harbor shoaling rate.

- **32 constructed USACE Chicago District Aquatic Ecosystem Restoration (AER) projects**. Together, this work totals 4000+ acres of migratory bird habitat along the western shoreline of Lake Michigan. This pilot project proposal would add to the total acreage, increasing the connectivity of resting, feeding, and shelter areas for 325+ species of resident and migratory birds along this globally significant portion of the Upper Mississippi River Flyway. Our pilot proposals are closest to the Fort Sheridan Estuary, Chicago Botanical Gardens, Fort Sheridan Ravine, Rosewood Park, and Lake County Ravine 8. Many of these sites are managed by fellow Illinois Sand Management Working Group participants.
- **Evaluation of the Application of Structure from Motion Topographic Survey for monitoring of Nearshore Placement in Southern Lake Michigan**. This RSM study is a proof-of-concept study to utilize Structure from Motion (SfM) surveys to monitor the efficacy of nearshore, onshore, and alongshore movement of sand following nearshore placement operations. This study will be conducted during the summer of 2018.

6. Provide an estimate to the extent practicable, of the total beneficial use project cost, and the federal and non-federal share of those costs.

   As noted earlier, we submitted a letter of intent to U.S. Army Corps of Engineers, Chicago District for a complementary project in July 2017. The Chicago District is supportive, and we are moving through the review process. At this time, we do not have total beneficial use project costs. However, the Chicago District did a rough cost estimate in 2015 for a neighboring area in Burns Harbor, Indiana for onshore placement of dredged material at Ogden Dunes. This could serve as a high-level proxy for our pilot proposal.

   For the Burns Harbor project, it would cost about $8/cubic yard above current nearshore placement practices, plus an additional $80,000 for equipment mobilization and de-mobilization. On average, 71,000 cubic yards are dredged annually from the Waukegan Harbor Approach. This would amount to an additional $648,000 above current harbor operation and maintenance practices to place the material onshore, a federal cost under this pilot program.

   At present, our four communities have spent an average of $75,000 collectively each year on trucking in quarried sand for shoreline nourishment and grading. As noted above, under the pilot program, we would be able to apply that funding to cost-shared Section 204 Beneficial Use of Dredged Material projects that support habitat protection and restoration, recreation, public safety, reducing storm damage, enhancing shorelines, and other innovative solutions. The 65% federal share of restoration activities would be $139,285 for a project with a 35% non-federal cost-share of $75,000.

   If the four communities were theoretically to apply this whole amount ($75,000) to a cost-shared Section 204 project as a part of the pilot project program, the total federal and non-federal costs could break down as follows:

- 100% of the transportation and placement of dredged material would be federally funded ($648,000 in the example outlined above)
- The non-federal cost-share would be 35% of any additional work worth up to $214,285 based on a budget of $75,000.
- 65% of additional work valued at $214,285 for a total of $139,285 would be federally funded (again, based on a non-federal budget of $75,000)

Estimated Maximum Federal Cost in a Given Year (above regular O&M):

(8*71,000) + (80,000) + (0.65*214,285) = $787,285

Estimated Maximum Non-Federal Cost in a Given Year:

(0.35*214,285) = $75,000

Estimated Maximum Total Project Cost in a Given year:

$862,285

These estimates represent the maximum potential project cost in a given year. Our partnership through the Illinois Sand Management Working Group seeks to leverage our local resources to be more cost-effective overall for our tax payers. As you can see, under this pilot program we could potentially partner in a multi-faceted $862,285 project for our constituents rather than simply trucking in and grading $75,000 of quarried sand.

Table 1: Hypothetical maximum project values for a beneficial use project under the Section 1122 pilot program based on different non-federal contributions over one dredging year.

Non-federal cost-share (35%)	Federal cost-share (65%)	100% federally funded transportation and placement	Total beneficial use project
$75,000	$139,285	$648,000	$862,285
$100,000	$185,714	$648,000	$933,714
$200,000	$371,429	$648,000	$1,219,429

Table 2: Hypothetical maximum project values for a beneficial use project under the Section 1122 pilot program based on a $75,000 non-federal contribution spread out over multiple dredging years.

Number of years	Total non-federal cost-share (35%)	Total federal cost-share (65%)	100% federally funded transportation and placement	Total beneficial use project
1	$75,000	$139,285	$648,000	$862,285
2	$75,000	$139,285	$1,296,000	$1,510,285
3	$75,000	$139,285	$1,944,000	$2,158,285

Since most of the proposed beneficial use project costs are represented by transportation and placement of the material, we could deliver even greater savings to our taxpayers by expanding the project to include multiple dredging cycles. This would benefit our communities and keep this important material in the littoral transport system of western Lake Michigan.

7. Describe, to the extent practicable, an estimate of the anticipated monetary and non-monetary benefits of the proposed beneficial use project with regards to the environmental, economic, and social benefits of the project.

Environmental Benefits: The proposed project would protect and enhance planned and current habitat, provide shoreline protection, and preserve the aesthetic beauty of the lakefront and its open spaces, natural habitats, and wildlife. Through this project, we propose to protect 54,560 yards of public shoreline, parks, and open space and create and enhance 60,000+ square yards of high-quality habitat and natural buffers. As noted above, this area is a globally significant migratory bird flyway. Our communities are also home to federally- and state-listed threatened and endangered species, including Piping Plover, Short-eared Owl, Red-wing Blackbird, Black-crowned Night Heron, Rufa Red Knot, and Mississippi Kite.

- Protects 54,560 yards of shoreline
- Creates or enhances 60,000+ square yards of habitat and natural buffers

Economic Benefits: The proposed project would continue to bolster the local economy, maintain and increase employment, and protect property values. In Illinois, coastal counties are critical to the state's economy through shipping, outdoor recreation and tourism, local businesses, and job creation. In 2014, the coastal economy contributed about $680 billion to Illinois' Gross Domestic Product (GDP), according to the National Ocean Economics Program. Wildlife viewing also boosts our local and state economy, with about 3 million wildlife watchers in Illinois. This can have a huge economic impact, with wildlife viewers spending over 1 billion dollars in Illinois in 2011.

Our communities collect $1,488,289 in visitor and boating fees and $319,106 in camping fees at our parks and beaches. We also employ 240 young adults as lifeguards, gate attendants, aquatic camp counselors, beach attendants, and maintenance personnel each summer.

- Recreation fees (parking, boating, and camping) – $1,807,395
- Job Provided – 240 Young Adults

Additionally, this pilot program would eliminate or decrease the cost to these four communities of trucking in quarry sand at the taxpayer's expense. This would allow us to reinvest these tax dollars into additional shoreline protection and restoration projects, as well as other public services. As calculated above, *this project with Chicago District would enable us to leverage our resources to achieve, overall, an estimated $862,285 worth of work, 46 times the impact of what we would be able to complete, on average, as individual communities*. The proposed pilot program therefore demonstrates the return on investment of collaborative public shoreline management. This work can serve as a blueprint for other communities seeking to beneficially use dredged material for public benefit.

Social Benefits: These shorelines and beaches are open to the public, and the long continuous stretches of parks, beaches, and open space create a wide range of recreational opportunities in an unparalleled lakefront environment. Through proposed and current sites, our communities have a combined 11 public swimming beaches, a dog beach, and both motorized and non-motorized boat launch facilities. Each summer, we offer: volleyball, nature, and youth and teen aquatic camps; parent-child aqua action camps; adult camps; and aquatic counselor-in-training programs.

The proposed project would enhance opportunities for residents and visitors to experience Lake Michigan, local trails, and public parks. These beaches, parks, and open spaces provide important places for neighbors, family, and friends to gather and participate in outdoor activities like running, biking, volleyball, sailing, kayaking, stand up paddle boarding, and experiencing wildlife first-hand.

- Estimated Total Visits during Peak Season of 220,854

8. Describe if local support exists for the proposal.

As the facilitators of the Illinois Sand Management Working Group, the Illinois Department of Natural Resources' Coastal Management Program is very supportive of this proposal. A letter of support from the Director of the Coastal Management Program is included in this application package. The City of North Chicago, Village of Lake Bluff, Lake Bluff Open Lands Association, Village of Glencoe, and City of Evanston are also very supportive, and letters of support can be provided from these organizations as needed.

Moreover, federal and state legislators strongly encourage the local collaboration between our communities and can offer letters of support as needed for this project as well. Many of the federal and state legislators listed below also participate in the Illinois Sand Management Working Group. Federal and state legislators include:

At the federal level:

U.S. SENATORS

Senator Richard Durbin

Washington DC Office:
711 Hart Senate Office Building
Washington, DC 20510
Phone: (202) 224-2152

District Office:
230 S. Dearborn Street, Suite 3892
Chicago, IL 60604
Phone: (312) 353-3899

Senator Tammy Duckworth

Washington DC Office:
524 Hart Senate Office Building
Washington, DC 20510
Phone: (202) 224-2854

District Office:
230 S. Dearborn Street, Suite 3900
Chicago, IL 60604
Phone: (312) 886-3506

U.S. REPRESENTATIVES

9th District of Illinois – Congresswoman Janice Schakowsky

Washington DC Office:
2367 Rayburn House Office Building
Washington, DC 20515
Phone: (202) 225-2111

District Office:
5533 N. Broadway
Chicago, IL 60640
Phone: (773) 506-7100

10th District of Illinois – Congressman Brad Schneider

Washington DC Office:
1432 Longworth House Office Building
Washington, DC 20515
Phone: (202) 225-4835

District Office:
111 Barclay Blvd, Suite 200
Lincolnshire, IL 60069
Phone: (847) 383-4870

At the state level:

ILLINOIS SENATORS

7th Senate District – Senator Heather Steans

Springfield Office:
623 Capitol Building
Springfield, IL 62706
Phone: (217) 782-8492

District Office:
5533 North Broadway
Chicago, IL 60640
Phone: (773) 769-1717

9th Senate District – Senator Daniel Biss

Springfield Office:
417B Capitol Building
Springfield, IL 62706
Phone: (217) 782-2119

District Office:
3706 Dempster Street
Skokie, IL 60076
Phone: (847) 568-1250

29th Senate District – Senator Julie Morrison

Springfield Office:
M115 Capitol Building
Springfield, IL 62706
Phone: (217) 782-3650

Deerfield Office:
700 Osterman Avenue
Deerfield, IL 60015
Phone: (847) 945-5200

30th Senate District – Senator Terry Link

Springfield Office:
321 Capitol Building
Springfield, IL 62706
Phone: (217) 782-8181

District Office:
100 S. Greenleaf
Gurnee, IL 60031
Phone: (847) 623-3006

ILLINOIS REPRESENTATIVES

14th Legislative District – Representative Kelly Cassidy

Springfield Office:
271-S Stratton Office Building
Springfield, IL 62706
Phone: (217) 782-8088

District Office:
5533 North Broadway
Chicago, IL 60640
Phone: (773) 784-2002

17th Legislative District – Representative Laura Fine

Springfield Office:
255-S Stratton Office Building
Springfield, IL 62706
Phone: (217) 782-4194

District Office:
1812 Waukegan Road Suite A
Glenview, IL 60025
Phone: (847) 998-1717

18th Legislative District – Representative Robyn Gabel

Springfield Office:
248-W Stratton Office Building
Springfield, IL 62706
Phone: (217) 782-8052

District Office:
820 Davis Street Suite 103
Evanston, IL 60201
Phone: (847) 424-9898

58th Legislative District – Representative Scott Drury

Springfield Office:
292-S Stratton Office Building
Springfield, IL 62706
Phone: (217) 782-0902

District Office:
425 Sheridan Road
Highwood, IL 60040
Phone: (847) 681-8580

59th Legislative District – Representative Carol Sente

Springfield Office:	**District Office:**
272-S Stratton Office Building	294 Evergreen Drive
Springfield, IL 62706	Vernon Hills, IL 60061
Phone: (217) 782-0499	Phone: (847) 478-9909

60th Legislative District – Representative Rita Mayfield

Springfield Office:	**District Office:**
278-S Stratton Office Building	120 S. Genesee Street
Springfield, IL 62706	Waukegan, IL 60085
Phone: (217) 558-1012	Phone: (847) 599-2800

9. State of the non-federal interest's financial ability to provide a share of the project costs.

   We understand that under this pilot program, 100% of the cost to transport and place dredged material would be federal. We also understand that the costs of ecosystem restoration, and/or additional shoreline protection activities under Section 204 Beneficial Use of Dredged Material would be at a 65% federal and 35% non-federal cost-share. The four agencies listed in this pilot program are able and willing to fulfill this cost-sharing arrangement. We understand that the long-term operation and maintenance of any Section 204 activities would be our responsibility.

APPENDICES LIST

Appendix A: Letter of Intent to USACE Chicago District (July 2017)
Appendix B: Maps of project sites
Appendix C: Foss Park, North Chicago Master Plan
Appendix D: Glencoe Beach and Bluff Stabilization Proposal
Appendix E: Evanston Lakefront Master Plan
Appendix F: Sunrise Park and Beach, Lake Bluff Master Plan
Appendix G: Completed projects and investments protected by this pilot project proposal

Letter of Support from Illinois Department of Natural Resources' Coastal Management Program

July 19, 2017

U.S. Army Corps of Engineers - Chicago District
ATTN: COL Christopher T. Drew, Commander
231 S. LaSalle Street, Suite 1500
Chicago, IL 60604-1437

Dear Colonel Drew:

Illinois Department of Natural Resources' (IDNR) Coastal Management Program convenes the Illinois Sand Management Working Group. The ad-hoc working group is comprised of local and state agencies, and focuses on ways these organizations can collaborate to improve public shoreline management along our northern shore. One key initiative of the working group is the development of a more cost-effective approach to shoreline nourishment in the area.

Our four municipalities actively participate in the Illinois Sand Management Working Group, and all have experienced erosion at our beaches. Previously, trucks have been employed to deliver quarry sand to eroded beach areas on an individual basis at significant expense. For example, in 2016 one of undersigned municipalities paid $22,300 for the delivery of 1,000 tons of sand for beach nourishment. Our communities seek a more cost-effective approach to address this common issue, and believe that the beneficial use of material dredged during federal harbor channel maintenance is worth investigating as a potential alternative to the current method of obtaining sand.

We are aware of an existing agreement between the U.S. Army Corps of Engineers, Chicago District and IDNR to place dredged material from the Waukegan Harbor approach channel into the nearshore area of the Illinois Beach State Park (IBSP) for the purpose of reducing shoreline erosion. We understand that IDNR provides the Chicago District with funds for the cost of placing the sand at IBSP. The Lake Bluff Park District, Glencoe Park District, Foss Park District, and the City of Evanston have an interest in potentially replicating this arrangement. Therefore, we collectively request that the Chicago District initiate the National Environmental Policy Act (NEPA) analyses to consider this same activity within each of our communities.

In addition, we request that the Chicago District engage with the Illinois Department of Natural Resources to investigate the permitting requirements associated with this action. Our goal is a determination of the anticipated costs of both nearshore and onshore placement of dredged material at each of the locations outlined in Attachment A, and the map in Attachment B. We have been engaged in preliminary discussions with members of your staff, and are reaching out to you now based on their recommendations.

On behalf of our agencies, we thank you for your consideration.

Sincerely,

Ron Salski	Kari Cowart	Lisa Sheppard	Lawrence C. Hemingway
Lake Bluff Park District	Foss Park District	Glencoe Park District	City of Evanston
Executive Director	Executive Director	Executive Director	Director

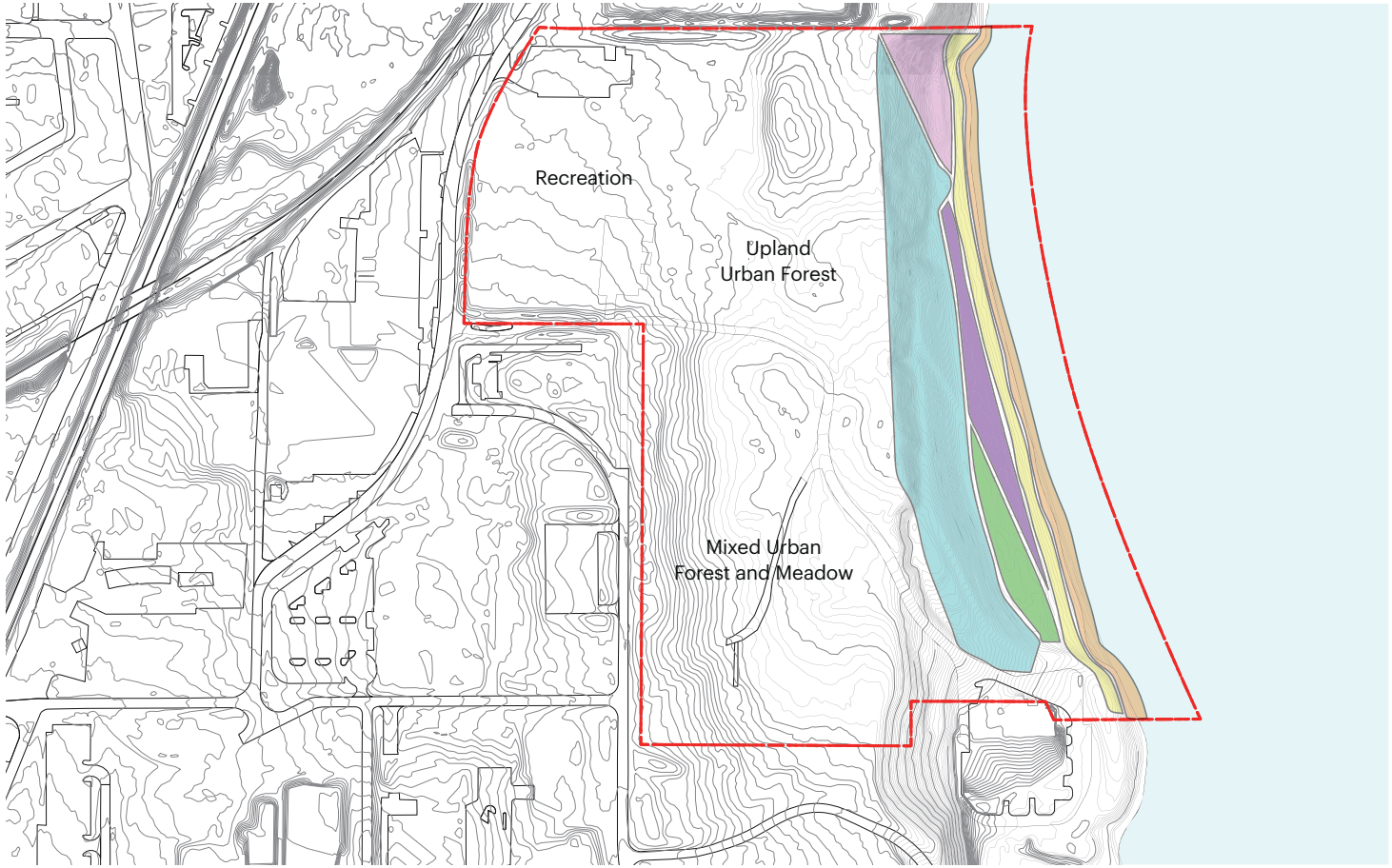
Sunrise Park and Beach

455 Sunrise Avenue, Lake Bluff, IL 60044

- Areas 1-3 requires significant sand nourishment annually resulting in a large expense to the Lake Bluff residents.
- Area 4 is slightly usable but there has been significant erosion.

Foss Park
1901 Foss Park Avenue, North Chicago, IL

EXISTING COASTAL HABITAT



Legend

- Bluff (Opportunistic Trees and Vegetation)
- Eroded Wetland Area
- Low-Land Grassland (Emergent Swale)
- Mid-Land Grassland (Stable)
- Sand/Gravel Beach
- Littoral Zone (Primarily Gravel)

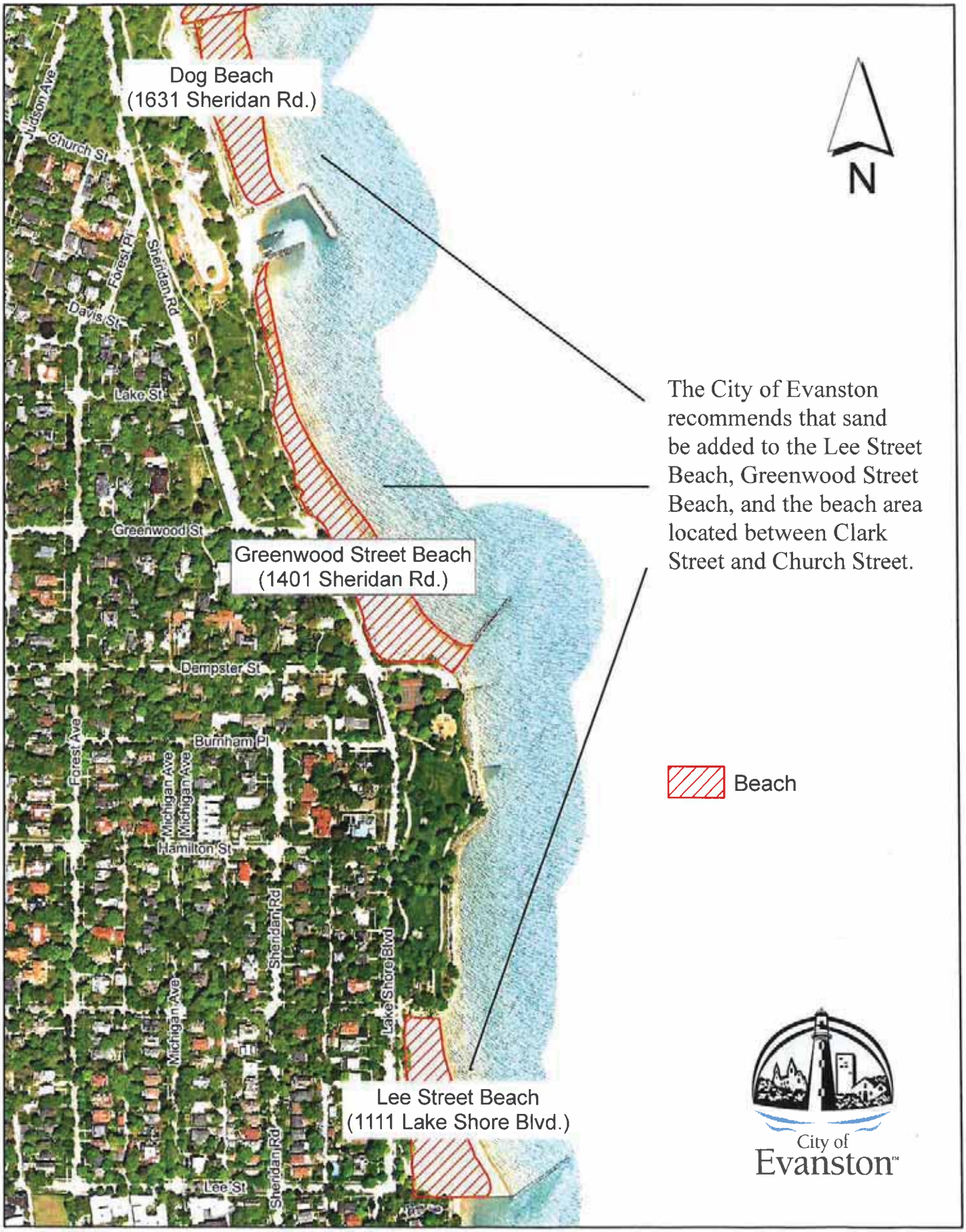
0 250′ 500′ 1000′

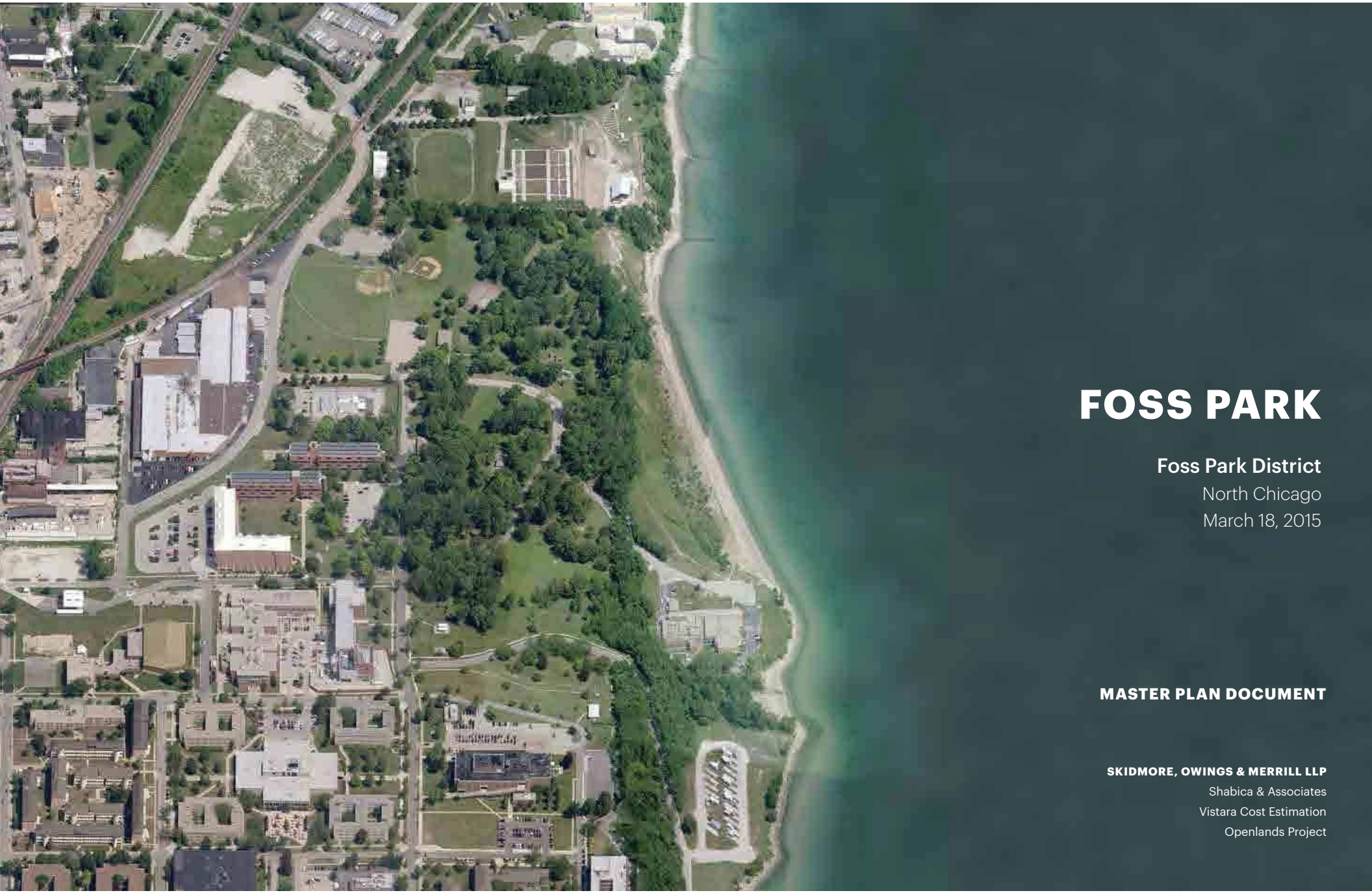
Glencoe Beach Sand Needs Due to Erosion

55 Hazel Ave., Glencoe, IL 60022

- Area 1 is most in need of sand and a lot of it. This would be my recommendation for the first area to target.
- Area 2 is usable currently, but we've seen some strong erosion here this year as well.
- Area 3 is probably able to be regraded, but again the water is getting closer to boats being stored in this area.
- All the arrows indicate a potential larger regrade than we've done in the past. I don't know how much sand we can pull from around the playground, but judging by the boardwalk and the pier, we can take a lot of sand from the back of the beach and move it to the front before we put new sand in these areas.

Evanston Beaches Sand Addition Plan



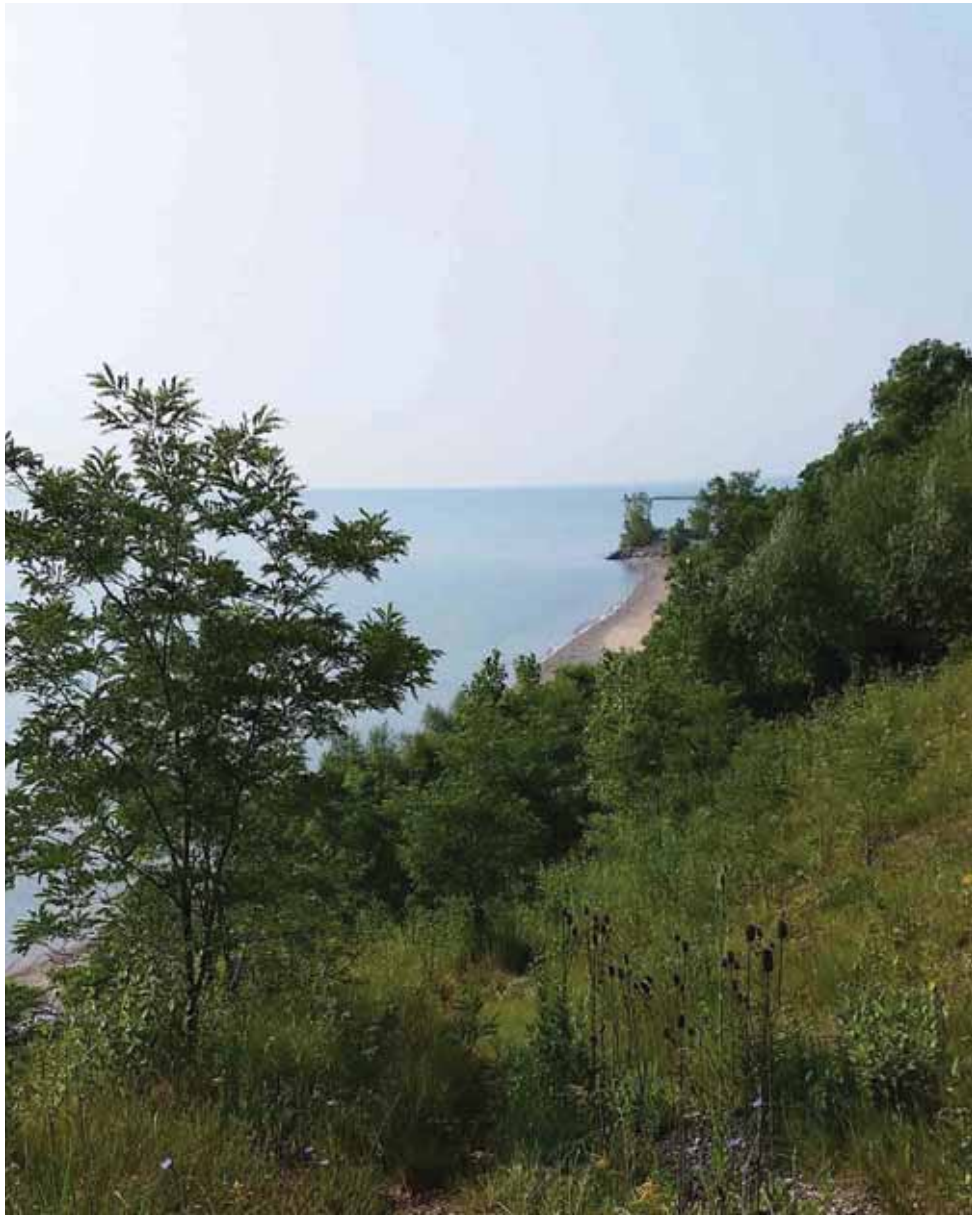


FOSS PARK

Foss Park District
North Chicago
March 18, 2015

MASTER PLAN DOCUMENT

SKIDMORE, OWINGS & MERRILL LLP
Shabica & Associates
Vistara Cost Estimation
Openlands Project



CONTENTS

Foss Park District

Skidmore, Owings & Merrill LLP

Shabica & Associates

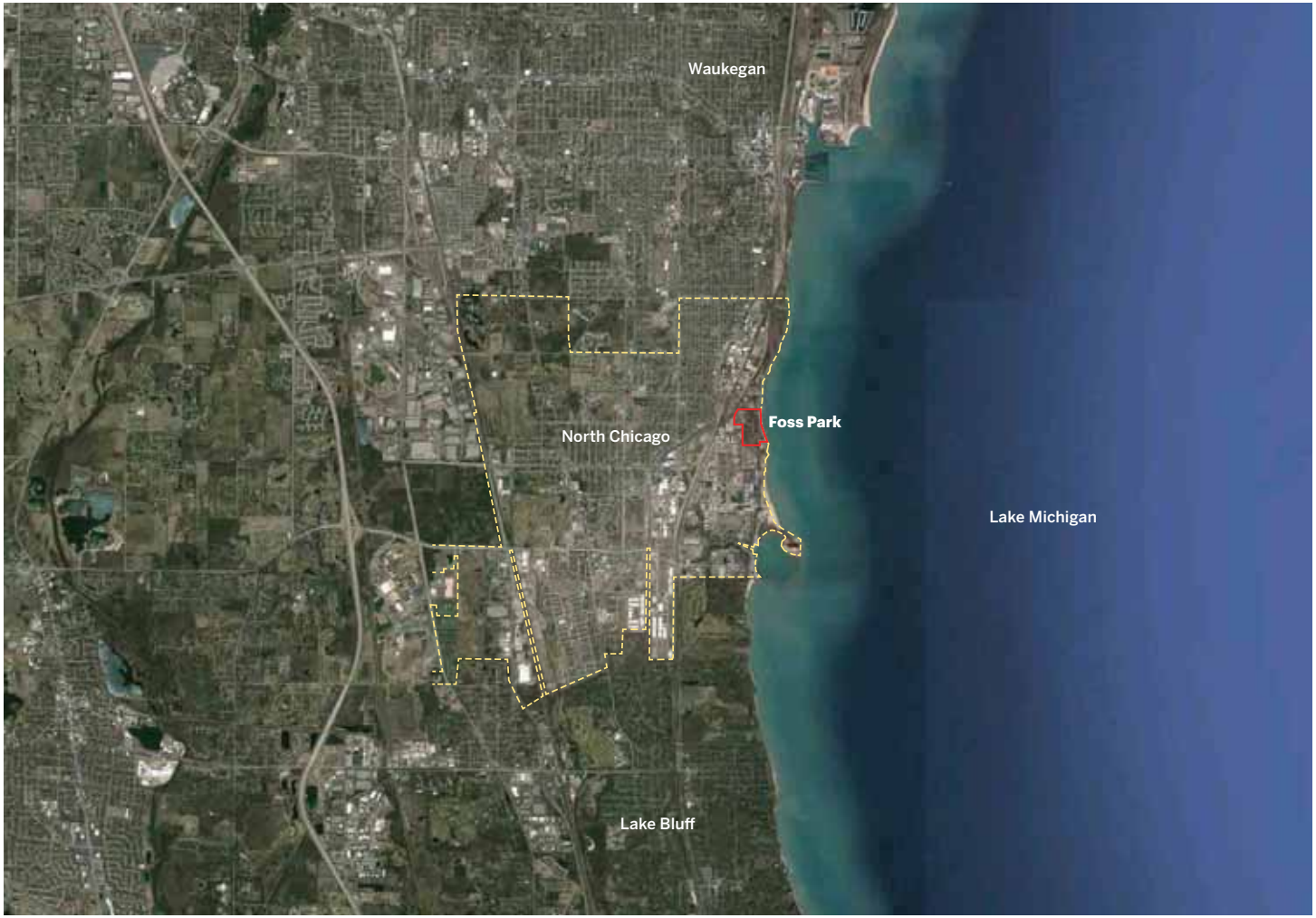
Vistara Cost Estimation

Openlands Project

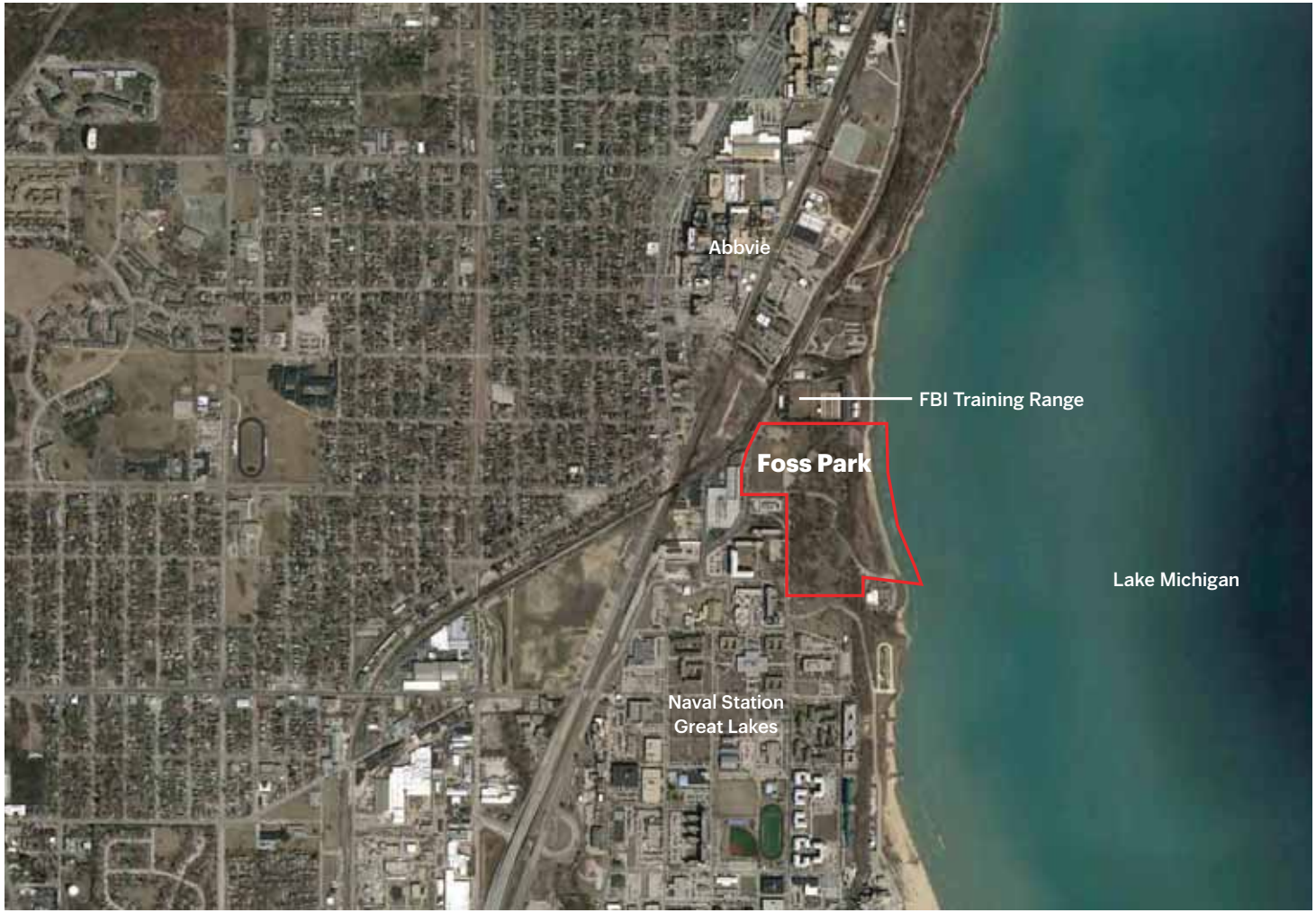
CONTEXT PLANS

Foss Park is located along the shoreline of Lake Michigan in North Chicago, IL. North Chicago is a northern suburb of Chicago and is positioned between Waukegan and Lake Bluff. Foss Park is one of the only large open spaces available to the residents of North Chicago. To the immediate north of the park there is a FBI Training and Firing Range, along with a large wall that separates the park from the facility. The land north of the FBI Firing Range is occupied by Abbvie and an automated water treatment plant. South of the park there is the Naval Station Great Lakes as well as the water pumping and filtration station for the city of North Chicago. West of the park there are two vacant lots that separate it from the adjacent residential community and commercial core. When looking at historical aerials of the area, these vacant parcels seem to have been occupied by some commercial and light industry.

SITE LOCATION



PROJECT CONTEXT



EXISTING CONTEXT AERIAL

0 250′ 500′ 1000′

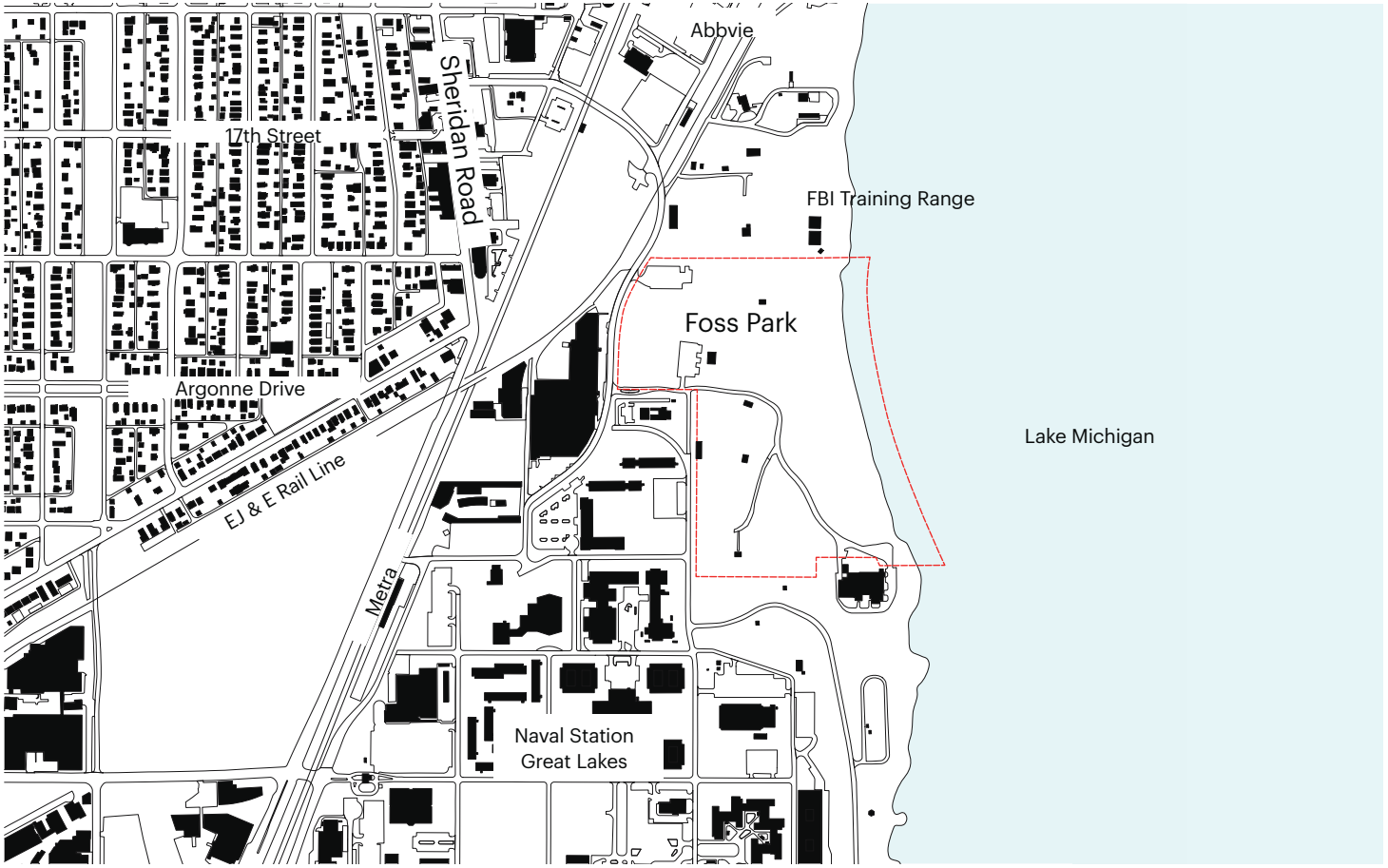
HISTORICAL AERIALS


2011

SITE ANALYSIS

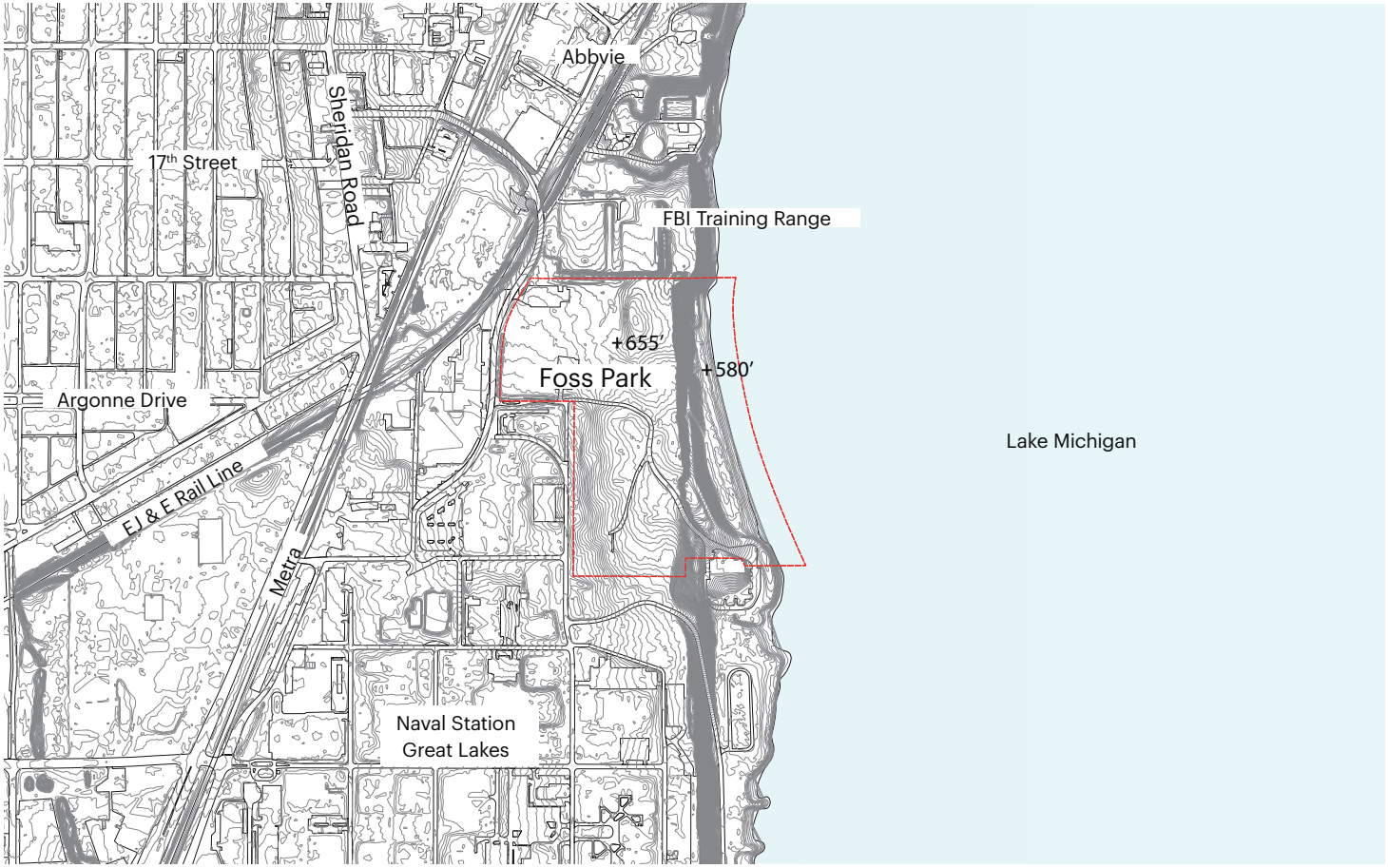
Foss Park is bracketed by two large organizations and is boarded on the west by two sets of railroad tracks; one Metra and the other freight. As a result of this, the adjacent residential community is visually and spatially disconnected from the park. Along the shoreline, there is a large 75 foot bluff that separates the beach from the upland park area. This bluff has been carved out at the southern end of the site for access to the water pumping and filtration plant. When trying to access the park from the Metra station or the residential neighborhoods to the north-west, one must travel under two bridges without sidewalks or wayfinding. When traveling to the site from the south, one must navigate through the Naval Station Great Lakes gates and control points. The existing ecological framework of Foss Park consists of 4 ecological zones; the upland park area, the bluff, the beach/shoreline, and Lake Michigan. In regards to the coastal habitats of Foss Park, there are 6 different zones; the bluff, an eroded wetland area, a low-land grassland area, a mid-land grassland area, a sand/gravel beach, and the littoral zone which is primarily gravel.

EXISTING BUILDINGS



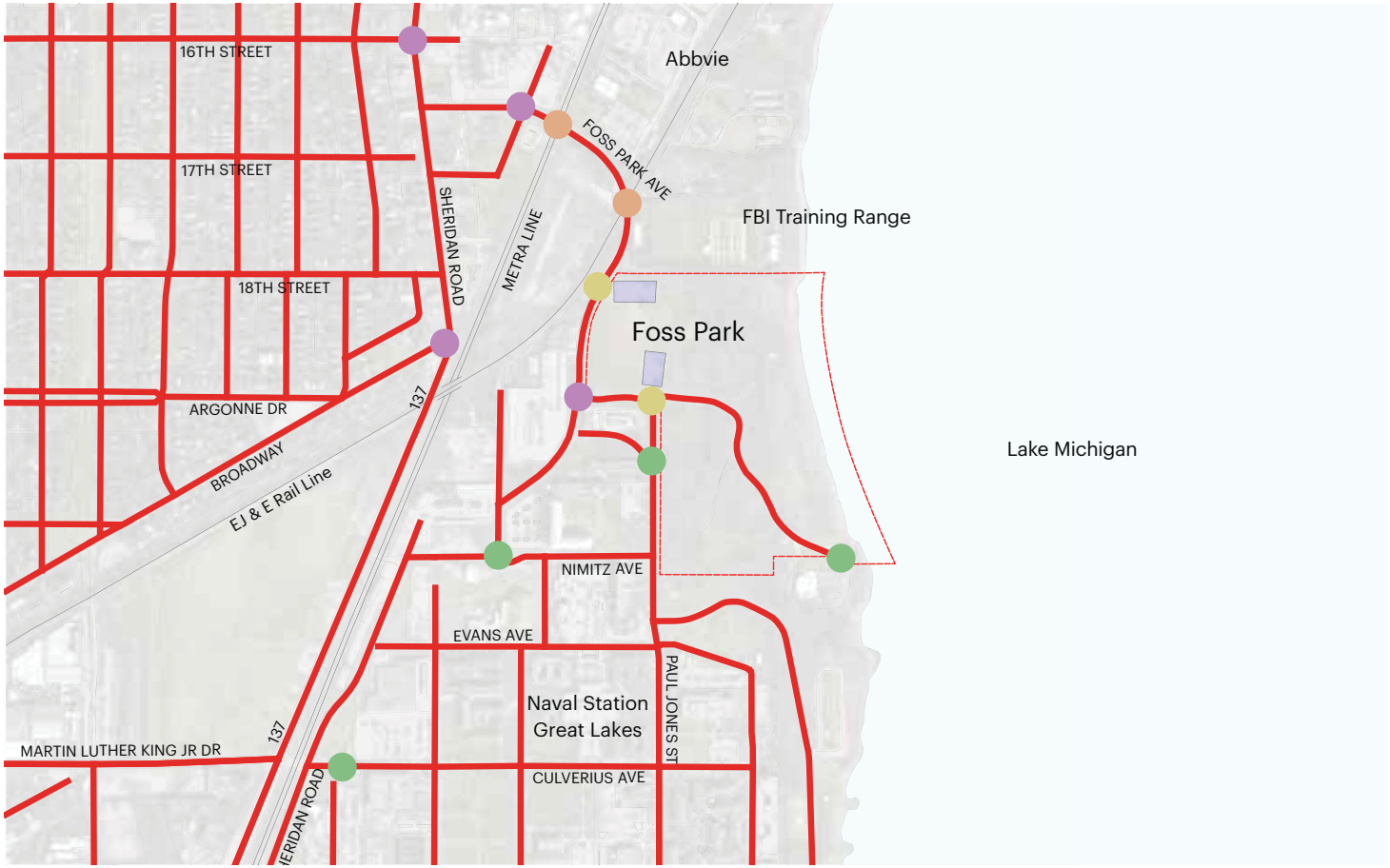
0 250′ 500′ 1000′

EXISTING TOPOGRAPHY



0 250' 500' 1000'

EXISTING SITE ACCESS



Legend

- Controlled Access Points
- Existing Park Entrances
- Key Intersections
- Bridges/Underpasses
- Roadway Framework

0 250′ 500′ 1000′

EXISTING LAND-USE

Legend

- Foss Park
- Abbvie
- Industrial
- FBI Training Center
- Naval Station Great Lakes
- Commercial
- Residential
- Vacant Land

0 250′ 500′ 1000′

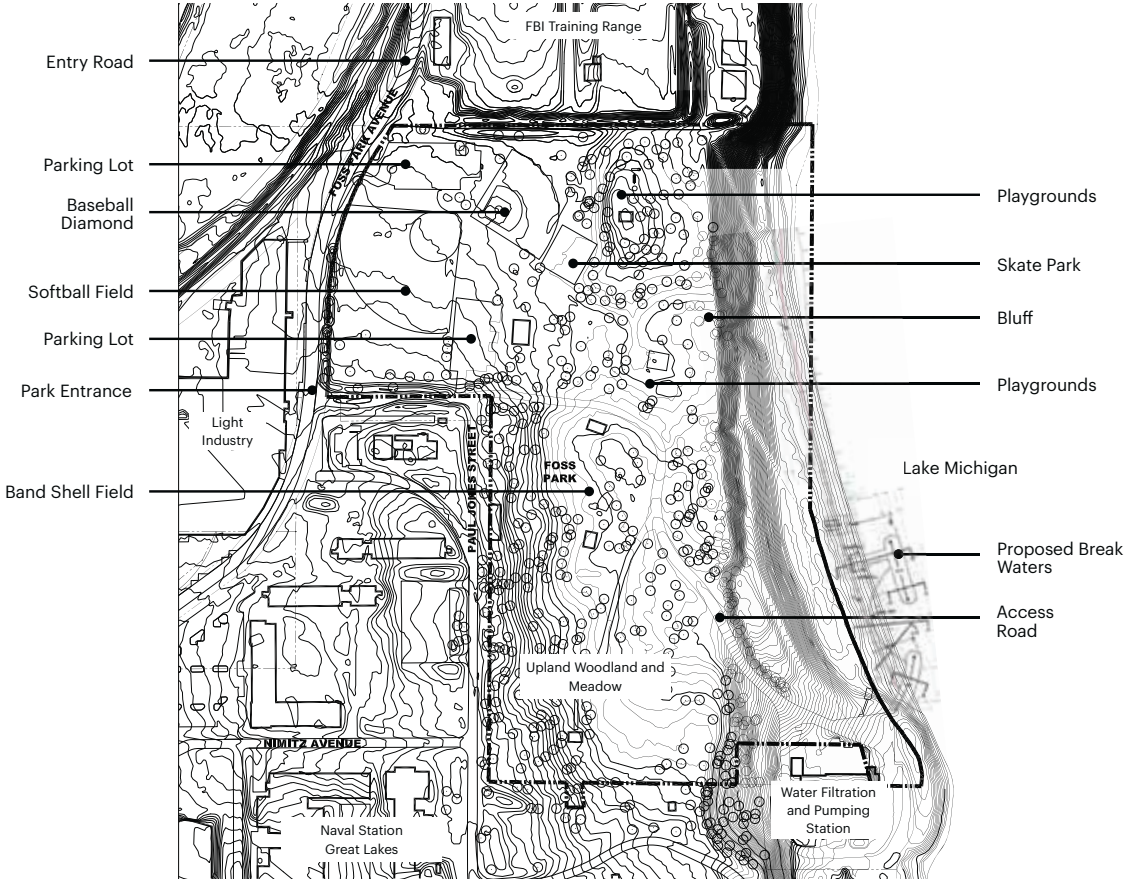
EXISTING ECOLOGICAL FRAMEWORK

Legend

- Upland Park Area
- Bluff
- Beach/Coast Line
- Brownfields
- Lake Michigan

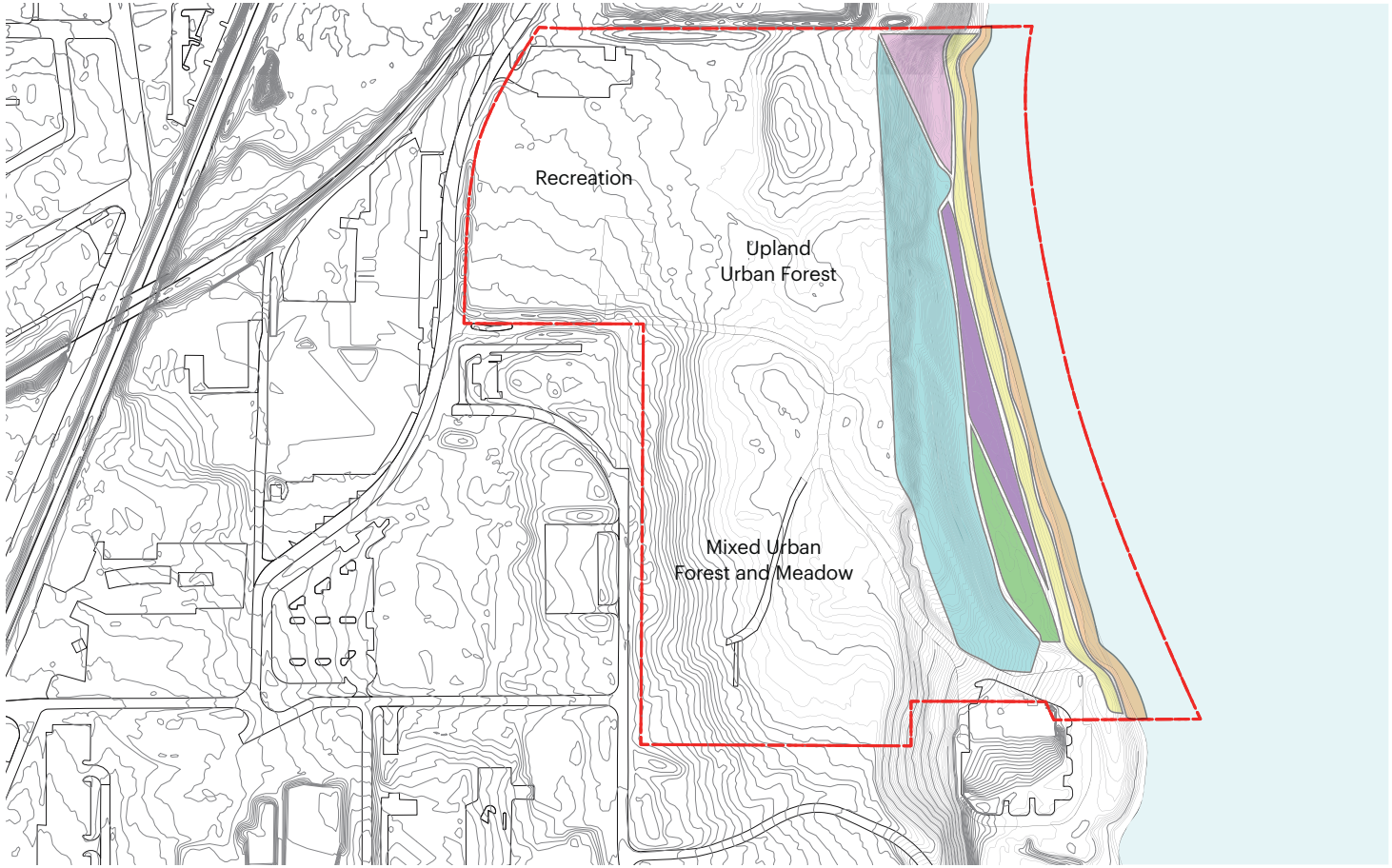
0 250′ 500′ 1000′

SITE PLAN



SITE AERIAL

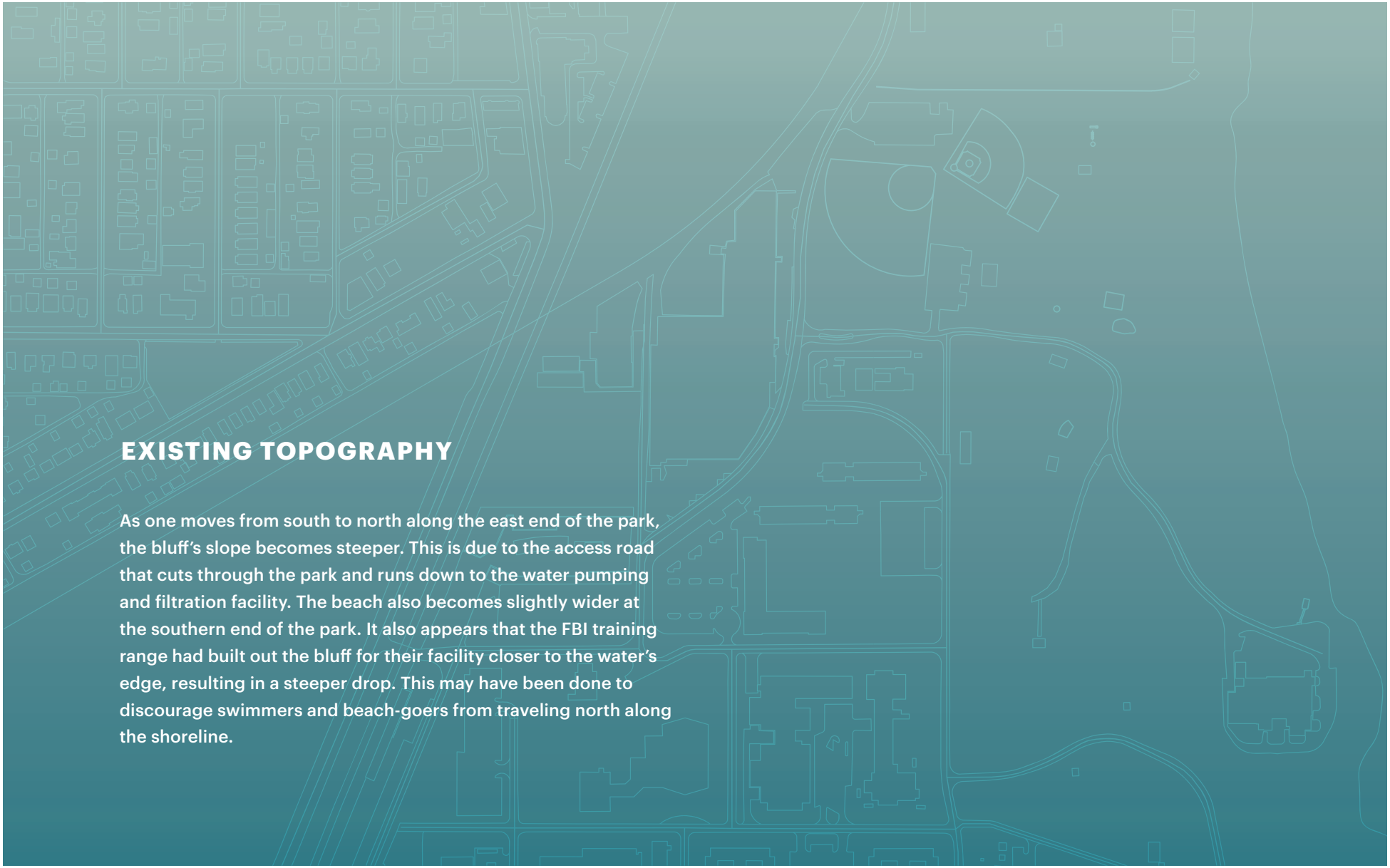
EXISTING COASTAL HABITAT



Legend

- Bluff (Opportunistic Trees and Vegetation)
- Eroded Wetland Area
- Low-Land Grassland (Emergent Swale)
- Mid-Land Grassland (Stable)
- Sand/Gravel Beach
- Littoral Zone (Primarily Gravel)

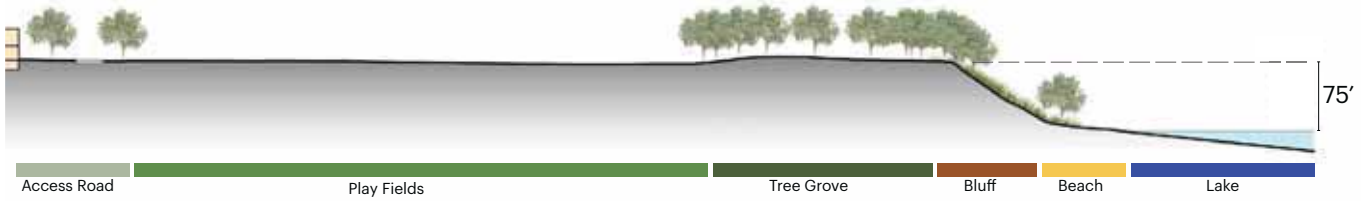
0 250′ 500′ 1000′



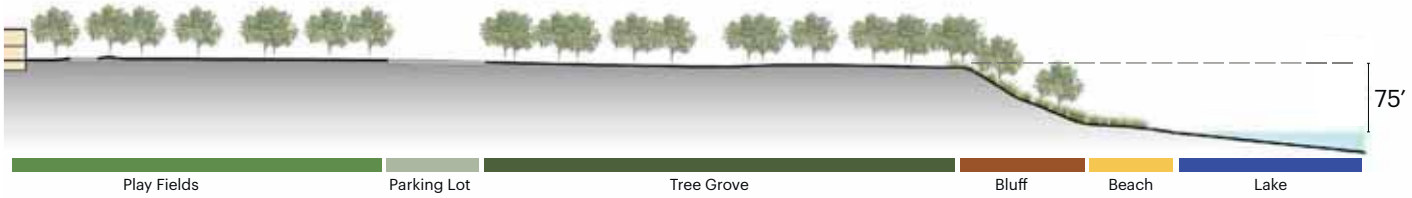
EXISTING TOPOGRAPHY

As one moves from south to north along the east end of the park, the bluff's slope becomes steeper. This is due to the access road that cuts through the park and runs down to the water pumping and filtration facility. The beach also becomes slightly wider at the southern end of the park. It also appears that the FBI training range had built out the bluff for their facility closer to the water's edge, resulting in a steeper drop. This may have been done to discourage swimmers and beach-goers from traveling north along the shoreline.

SITE CROSS SECTIONS



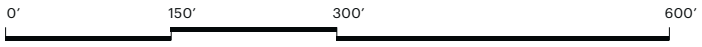
SECTION A



SECTION B

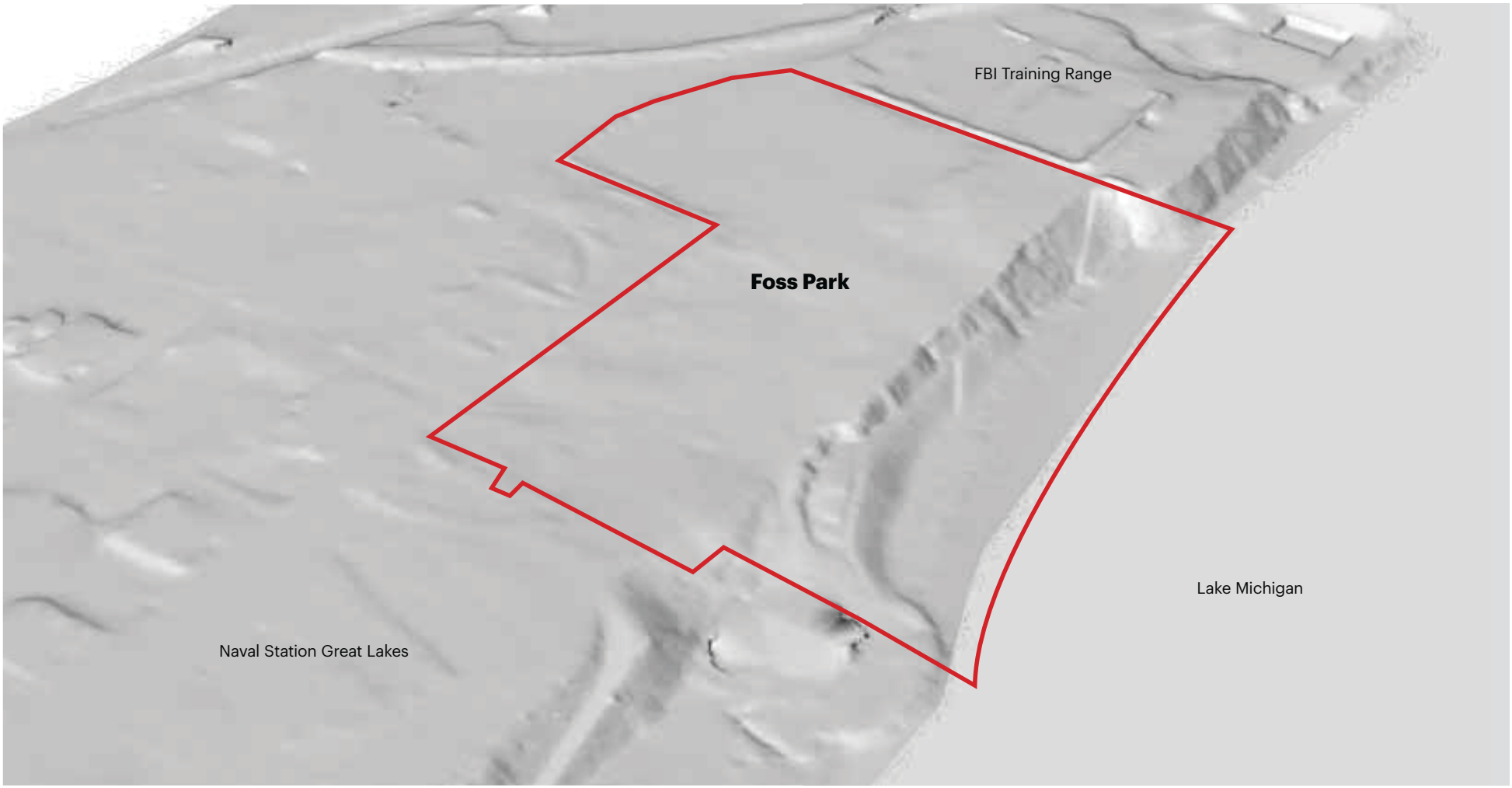
SECTION C

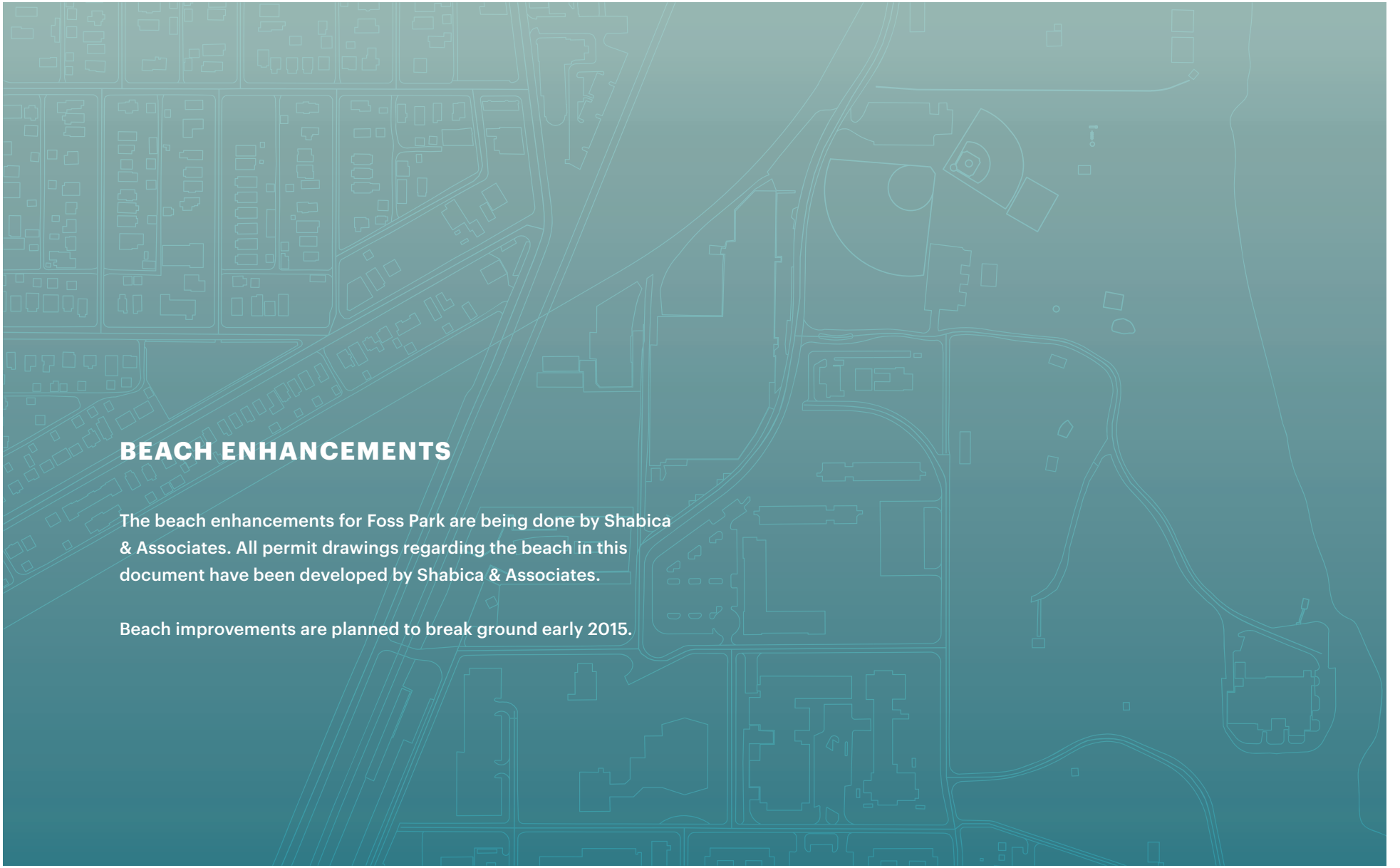
SECTION KEY PLAN



BLUFF PHOTOGRAPHS

TOPOGRAPHIC MODEL



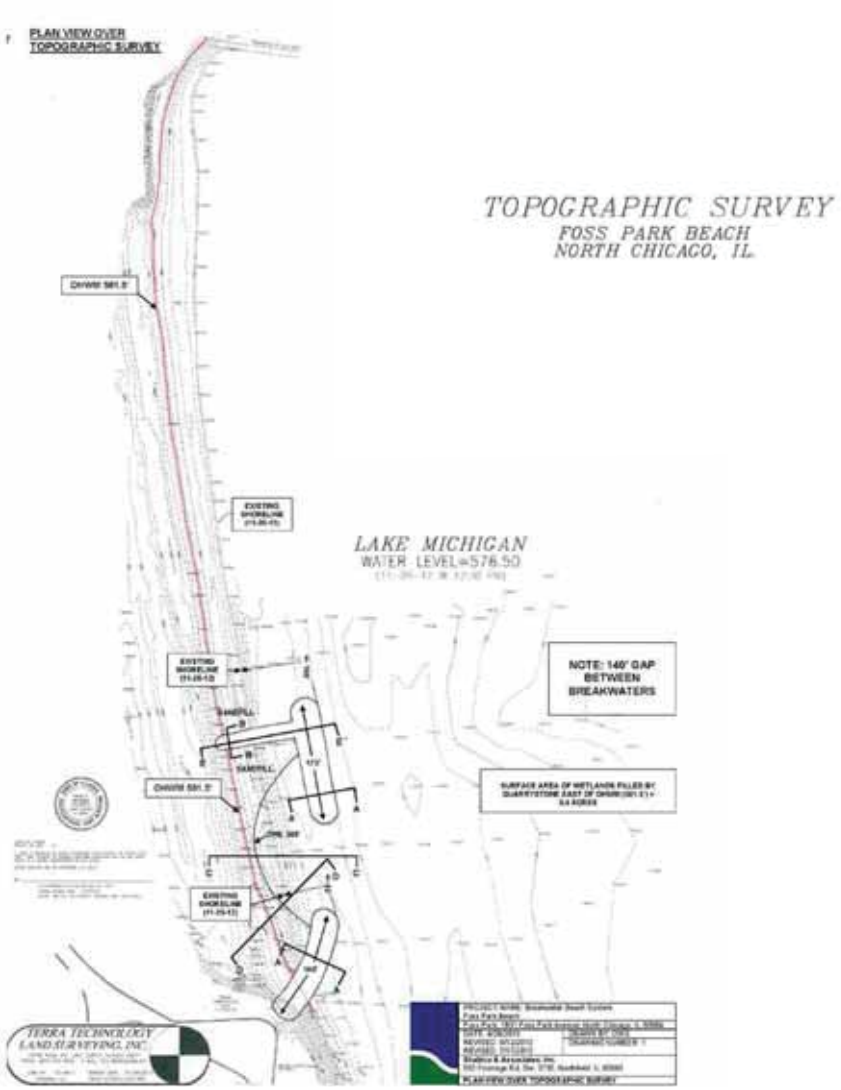


BEACH ENHANCEMENTS

The beach enhancements for Foss Park are being done by Shabica & Associates. All permit drawings regarding the beach in this document have been developed by Shabica & Associates.

Beach improvements are planned to break ground early 2015.

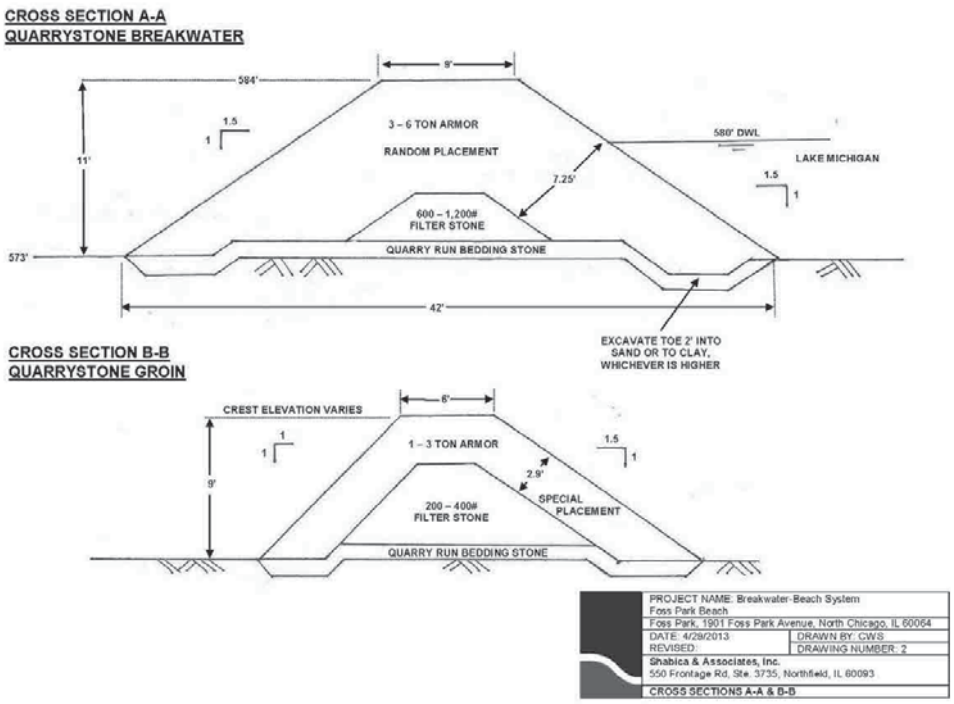
SHORELINE PERMIT DRAWINGS 1
SHORELINE RESTORATION

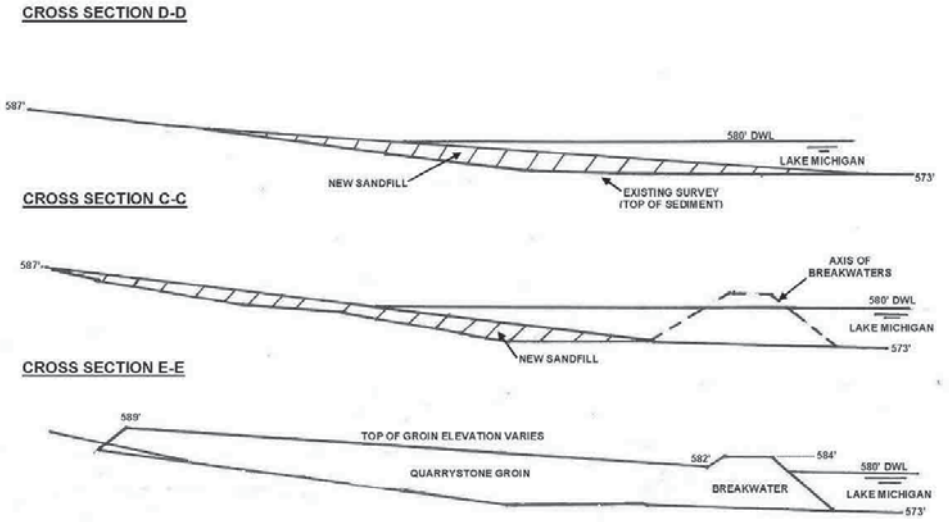


All Elevations IGLD 1985

0′ 50′ 100′

SHORELINE PERMIT DRAWINGS 1
SHORELINE RESTORATION

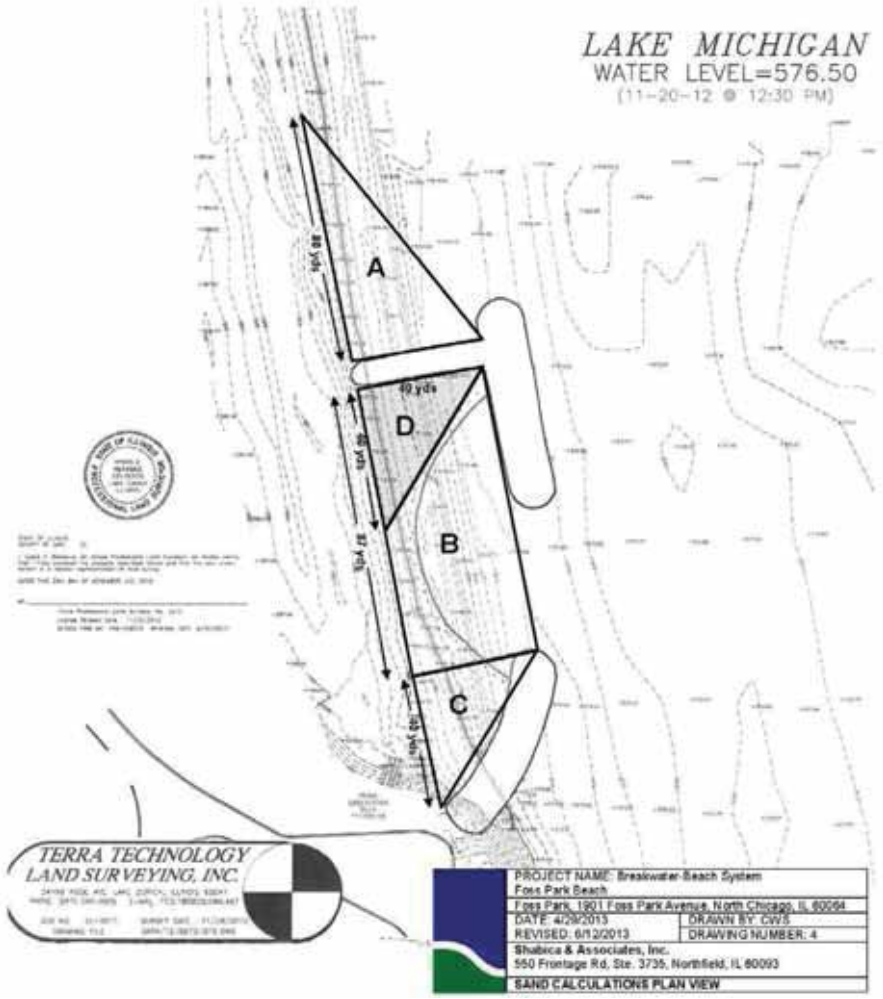


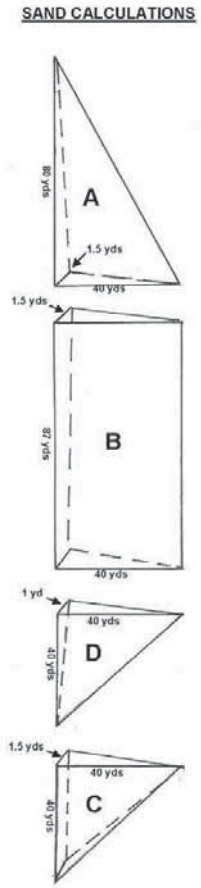


All Elevations IGLD 1985

0′ 6′

SHORELINE PERMIT DRAWINGS 2
SHORELINE RESTORATION





VOL A: $\frac{80 \text{ yds} \times 40 \text{ yds} \times 1.5 \text{ yds}}{6} = 800 \text{ yds}^3$

VOL B: $\frac{87 \text{ yds} \times 40 \text{ yds} \times 1.5 \text{ yd}}{2} = 2{,}610 \text{ yds}^3$

VOL D: $\frac{40 \text{ yds} \times 40 \text{ yds} \times 1 \text{ yd}}{6} = 267 \text{ yds}^3$

VOL C: $\frac{40 \text{ yds} \times 40 \text{ yds} \times 1.5 \text{ yds}}{3} = 800 \text{ yds}^3$

SUBTOTAL:
800 + 2,610 + 267 + 800 = 4,477 yds^3

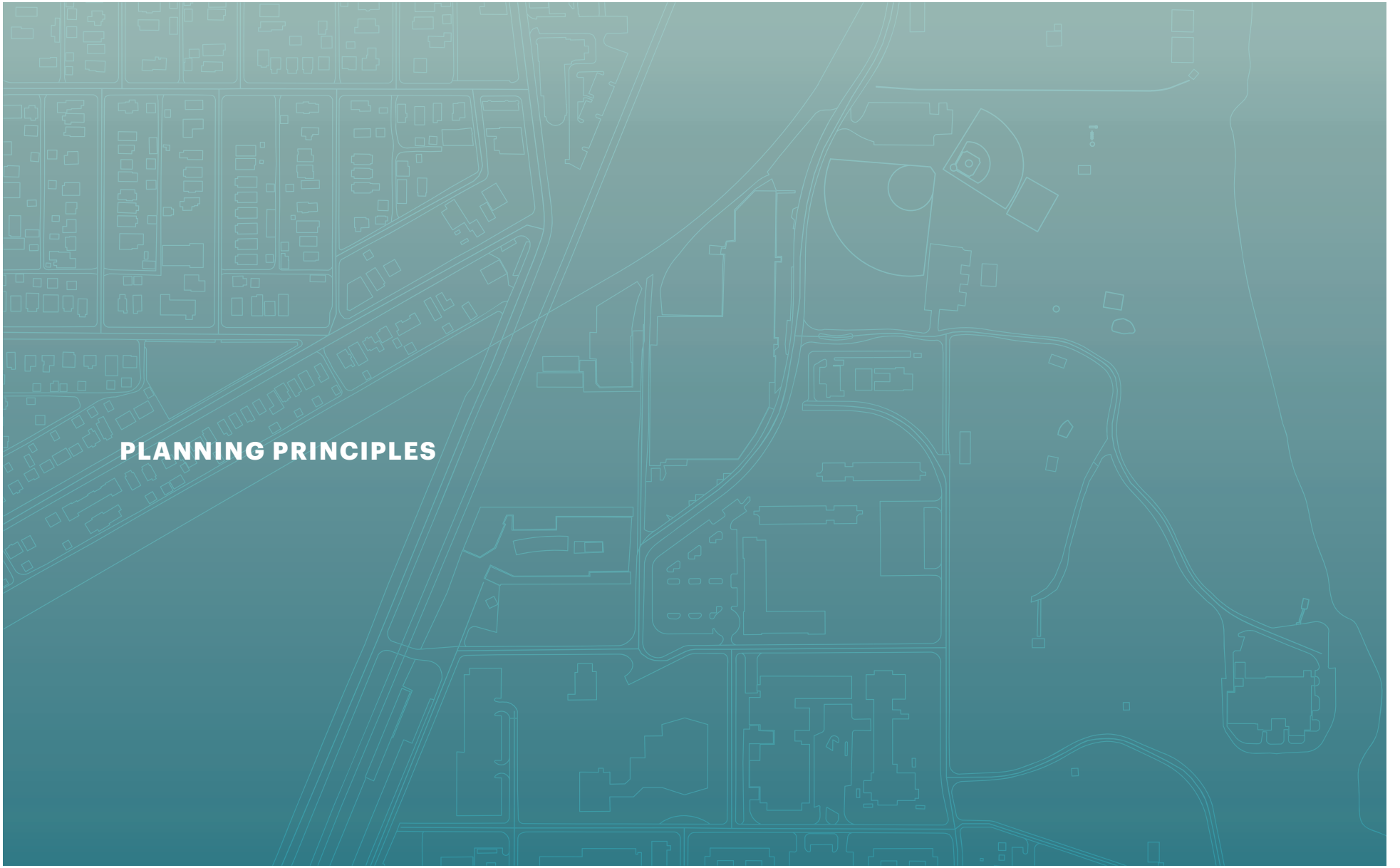
4,477 yds^3 x 1.25 yds/ton = 5,596 tons

5,596 tons x 20% overfill = 1,119 tons

TOTAL:
5,596 tons + 1,119 tons = 6,715 tons

6,715 Tons Clean Sand To Be Placed

PROJECT NAME: Breakwater-Beach System
Foss Park Beach
Foss Park, 1901 Foss Park Avenue, North Chicago, IL 60064
DATE: 4/29/2013
DRAWN BY: CWS
REVISED:
DRAWING NUMBER: 5
Shabica & Associates, Inc.
550 Frontage Rd, Ste. 3735, Northfield, IL 60093
SAND CALCULATIONS



PLANNING PRINCIPLES

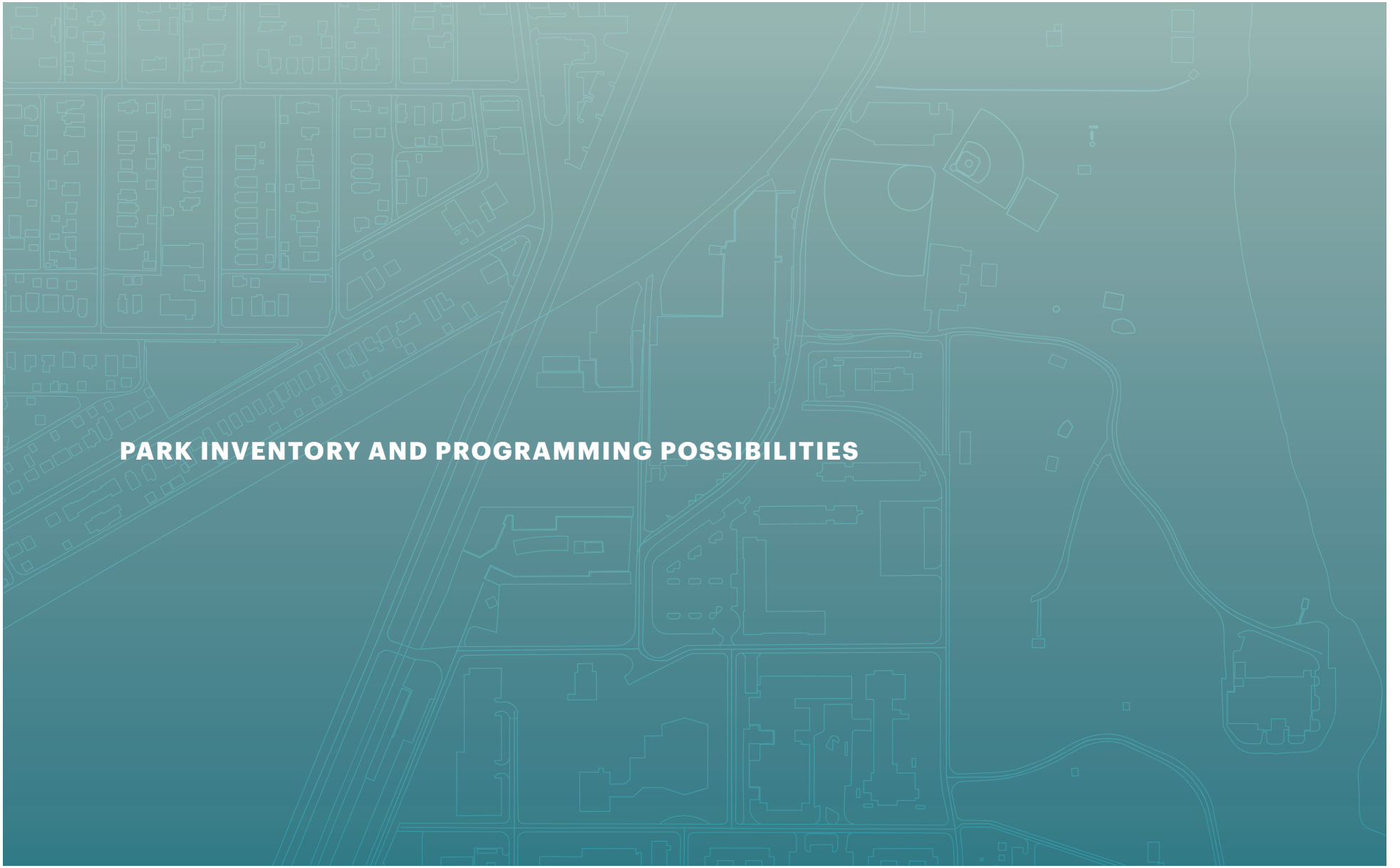
PLANNING PRINCIPLES

1. Improve access and wayfinding between the Park and surrounding neighborhoods.

2. Redefine park programming and evaluate current utilization.

3. Establish a landscape character unique to North Chicago that incorporates naturalized and groomed landscapes.

4. Incorporate coastal habitat areas into shoreline and bluff stabilization strategies.



PARK INVENTORY AND PROGRAMMING POSSIBILITIES

PARK INVENTORY AND PROGRAMMING POSSIBILITIES

Existing Inventory

1 Baseball Diamond

FBI Training Range Wall

1 Softball Diamond

1 Skate Park

4 Shelters/Pavilions with Grills

1 Restroom Facility

2 Playgrounds

1 Swing and Slide Set

1 Overlook/Viewing Platform

2 Off-Street Parking Lots

1 Band shell

1 Concession Stand

Programming Possibilities

Passive

Fishing

Educational Gardens

Community Gardens

Shelters/Pavilions

Off-Street Parking

Restroom Facilities

Vending/Concessions

Picnic Area

Day-Care Services

Active

Tennis Courts

Disc Golf

Lacrosse

Field Hockey

Seasonal Camps

Playgrounds (12+, 5-12, 2-5)

Baseball Field

Softball Field

Basketball Court

Football Field

Soccer Field

Golf/Golf Training

Dog Park

Ecological

Classrooms

Walking Paths/Trails

Nature Trails

Interpretive Center

Waterfront

Boating Launch

Boating Storage

Boathouse

Ice Skating

ANALOGY IMAGERY

1 ECOLOGICAL BEACH RESTORATION

2 STRUCTURED BEACH PROTECTION

3 BLUFF STABILIZATION

4 BIKE AND WATER TRAIL CONNECTIONS

5 UPLAND FOREST & MEADOW

6 ARCHITECTURAL ELEMENTS

7 GREEN INFRASTRUCTURE

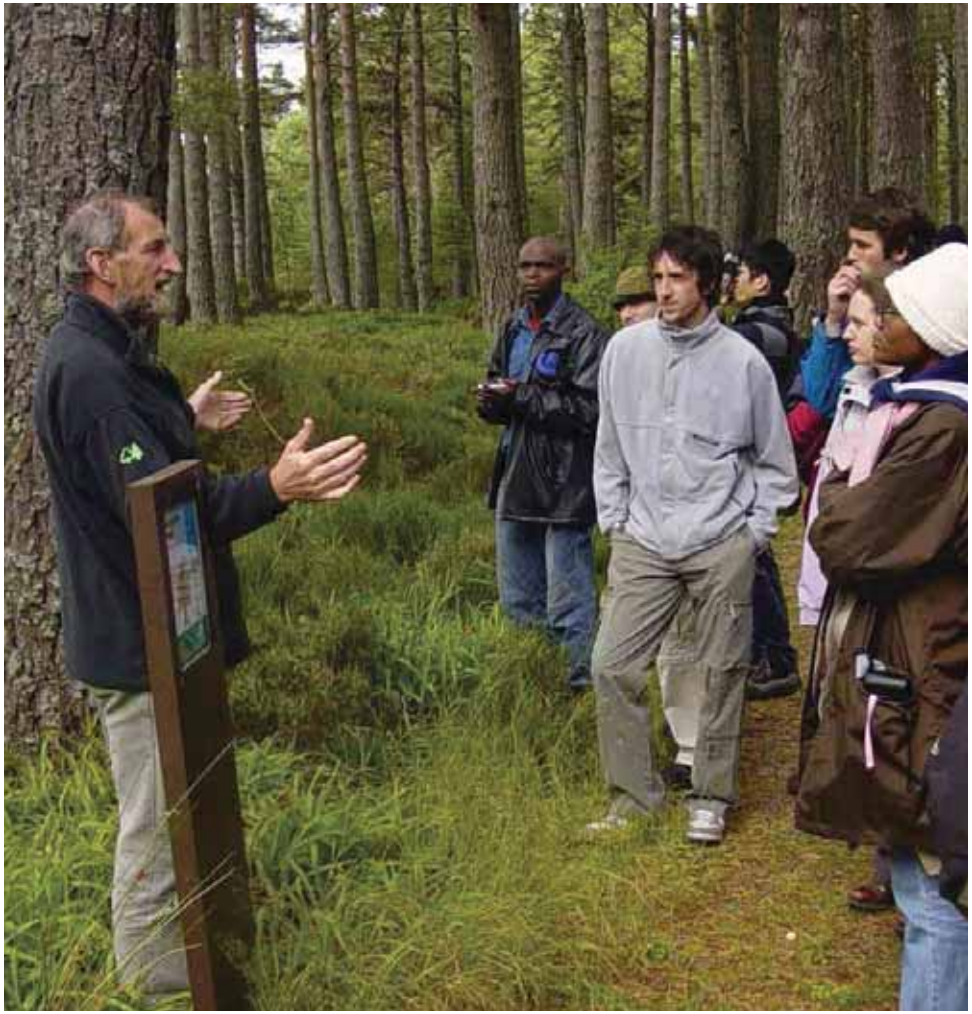
8 PLAY STRUCTURES

9 ACTIVITIES

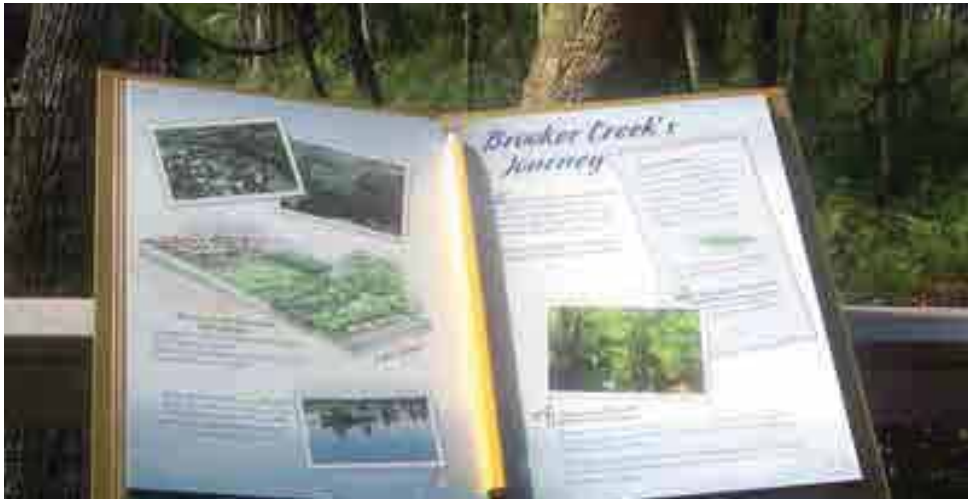
10 SIGNAGE AND WAYFINDING

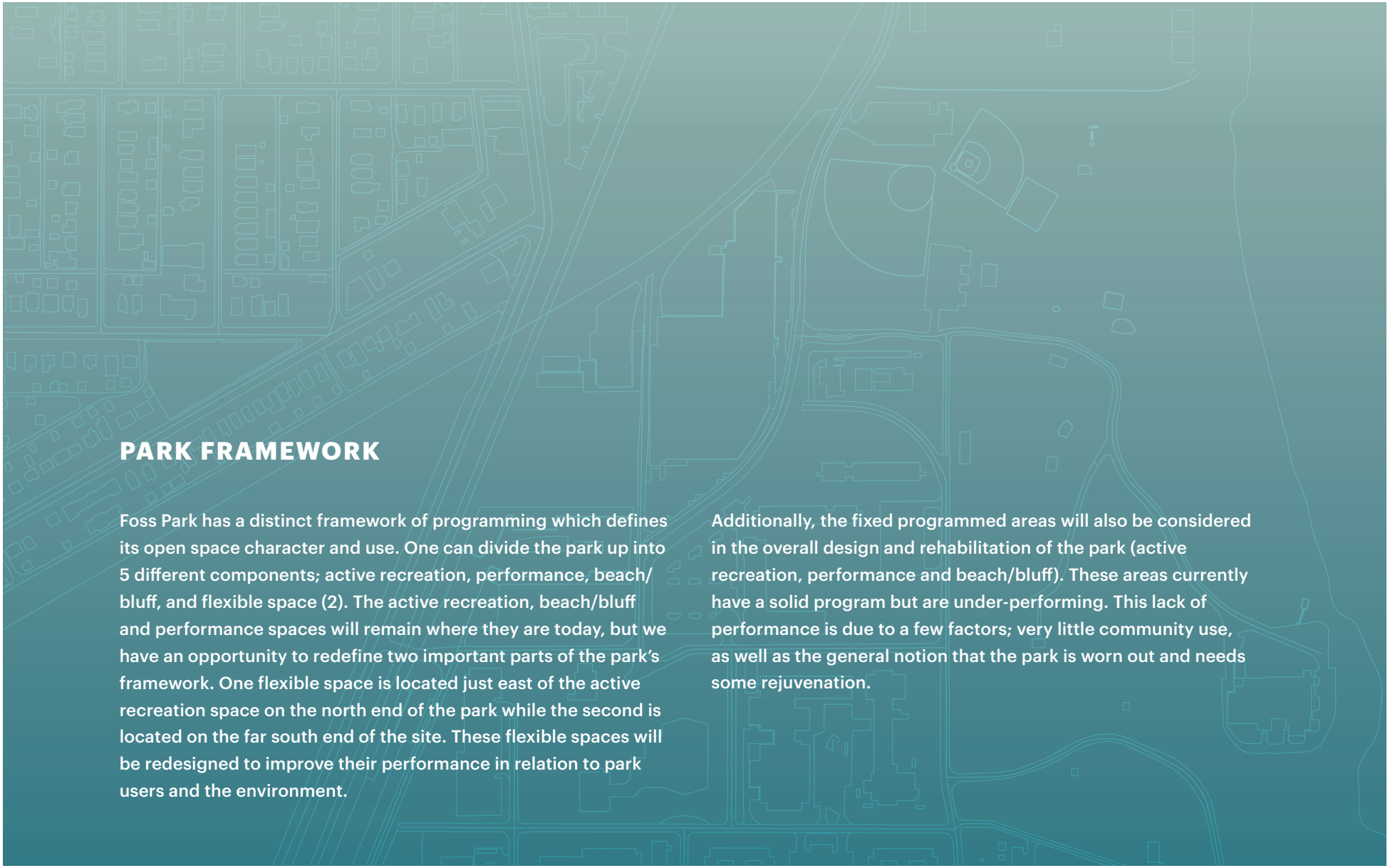
11 ENVIRONMENTAL EDUCATION & COMMUNITY INTERFACE

11 ENVIRONMENTAL EDUCATION & COMMUNITY INTERFACE



12 ENVIRONMENTAL EDUCATION SIGNAGE



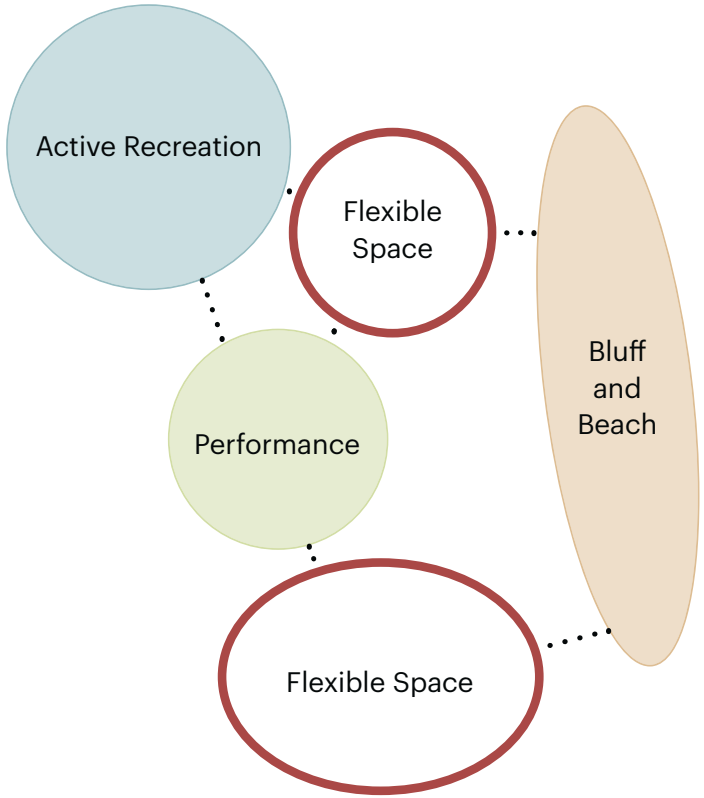


PARK FRAMEWORK

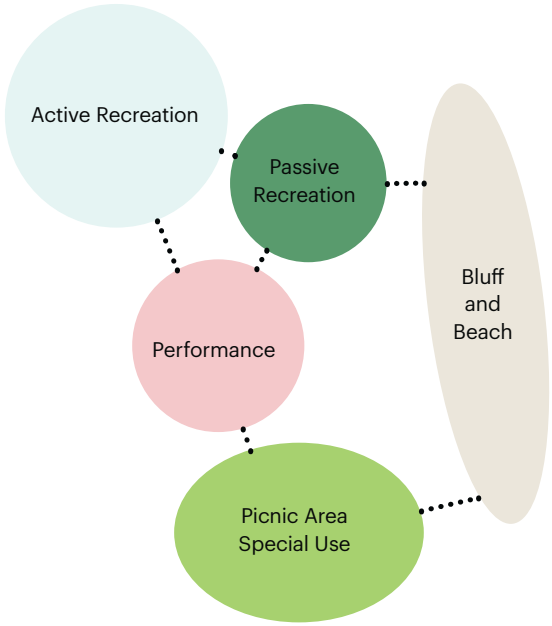
Foss Park has a distinct framework of programming which defines its open space character and use. One can divide the park up into 5 different components; active recreation, performance, beach/bluff, and flexible space (2). The active recreation, beach/bluff and performance spaces will remain where they are today, but we have an opportunity to redefine two important parts of the park's framework. One flexible space is located just east of the active recreation space on the north end of the park while the second is located on the far south end of the site. These flexible spaces will be redesigned to improve their performance in relation to park users and the environment.

Additionally, the fixed programmed areas will also be considered in the overall design and rehabilitation of the park (active recreation, performance and beach/bluff). These areas currently have a solid program but are under-performing. This lack of performance is due to a few factors; very little community use, as well as the general notion that the park is worn out and needs some rejuvenation.

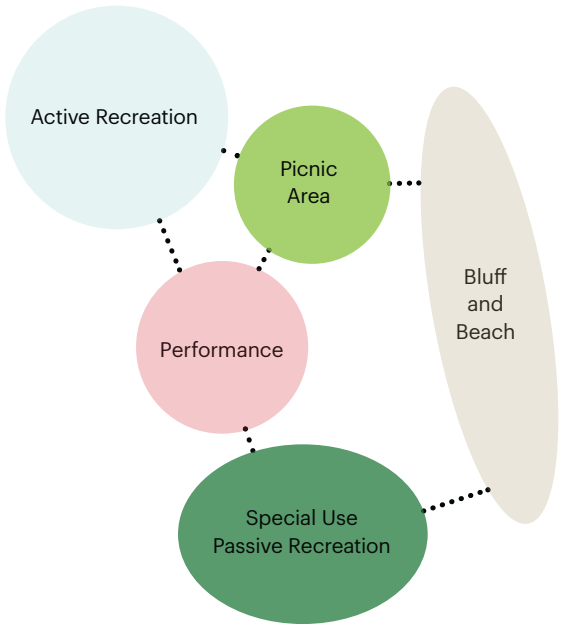
EXISTING PARK FRAMEWORK



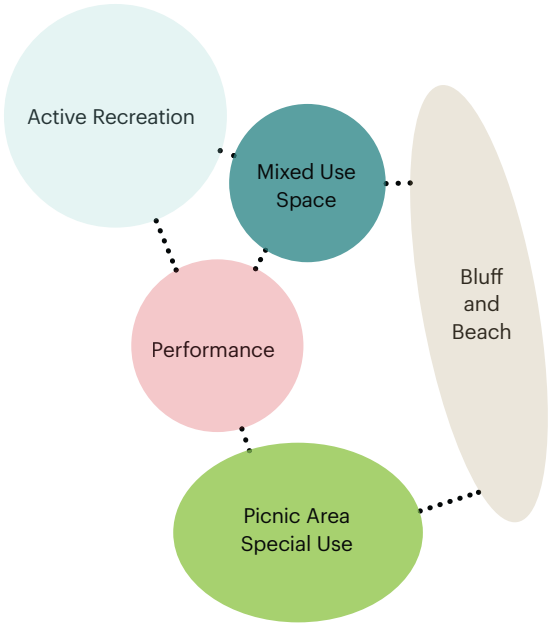
PARK FRAMEWORK OPTIONS



PLAN OPTION CONCEPT 1 FRAMEWORK



PLAN OPTION CONCEPT 2 FRAMEWORK



PLAN OPTION CONCEPT 3 FRAMEWORK

ACTIVE RECREATION EXAMPLES

PASSIVE RECREATION EXAMPLES

PERFORMANCE EXAMPLES

BEACH AND BLUFF EXAMPLES

PICNIC AND SPECIAL USE EXAMPLES

INITIAL ALTERNATIVE PLAN OPTIONS

After studying the existing conditions and performing a site analysis, three plan options were developed. Each design's open space framework has a different arrangement from the next (as outlined in the previous chapter).

The plan options get more and more intensive as you move from option one to option three. The purpose of doing three alternatives is to take elements from each of the plans, like a kit-of-parts, and work with the community and stake-holders to develop a final master plan that everyone had a hand in helping design. Also, the three designs each have a different level of intervention, which is a great option to provide when funding and phasing are large components of the project.

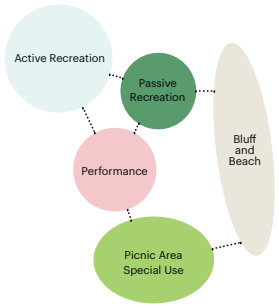
PLAN OPTION 1 - MINIMUM INTERVENTION

Key Proposals

- Vegetated buffer next to FBI wall
- Walking path loop in upland area with an extension to the beach via stairs along the bluff
- Overlook pavilions (3)
- Additional Parking
- Naturalized edge around perimeter of park
- Bluff restoration
- Steps to beach (2)
- ADA ramp to beach (1:12)
- Swimming beach
- Educational boardwalk
- Fire Dept Storage Structure
- Resurfaced basketball courts
- Picnic area connected to beach
- Circular turn-around drop-off area for beach
- Naturalized plantings in the interior of the upland area of the park to define open spaces
- Potential Extension of Concrete Wall

Legend

- Bluff Vegetation
- Mixed Buffer Planting
- Proposed Structure
- Existing Structure
- Existing Canopy Trees



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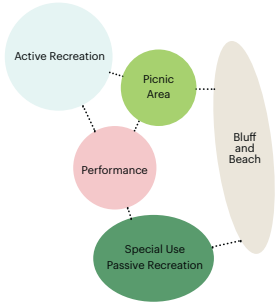
PLAN OPTION 2 - MEDIUM INTERVENTION

Key Proposals

- Picnic area remains in the northern end of the upland park
- Dog Park (1)
- Resurfaced and new parking lots
- Community gardens (2)
- Vegetated buffer next to FBI wall
- Walking path loop in upland area with an extension to the beach via stairs along the bluff
- Overlook pavilions (3)
- Additional picnic pavilions (3)
- Naturalized edge around perimeter of park
- Bluff restoration
- Steps to beach (2)
- ADA ramp to beach (1:20)
- Swimming beach
- Educational boardwalk
- Outlook boardwalk (1)
- Fire Dept Storage Structure
- Redesigned active recreation space
- Resurfaced basketball courts
- Circular turn-around drop-off area for beach
- Naturalized plantings in the interior of the upland area of the park to define open spaces
- Potential Extension of Concrete Wall

Legend

- Bluff Vegetation
- Mixed Buffer Planting
- Proposed Structure
- Existing Structure
- Existing Canopy Trees



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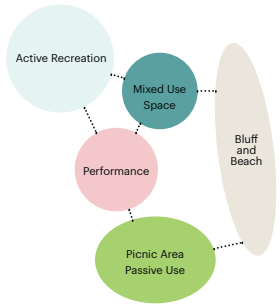
PLAN OPTION 3 - MAXIMUM INTERVENTION

Key Proposals

- Picnic area moved to southern end of upland park
- Resurfaced and new parking lots
- Small community gardens (2)
- Large vegetated buffer next to FBI wall to push center of gravity south
- Large historical feature behind Band-shell Area as new focal point
- Walking path loop in upland area with an extension to the beach via stairs along the bluff
- Overlook pavilions (3)
- Additional picnic pavilions (6)
- Naturalized edge around perimeter of park
- Bluff restoration
- Steps to beach (2)
- ADA ramp to beach (1:20)
- Swimming beach
- Educational boardwalk
- Outlook boardwalk (1)
- Fire Dept Storage Structure
- Redesigned active recreation space
- Resurfaced basketball courts
- Circular turn-around drop-off area for beach
- Naturalized plantings in the interior of the upland area of the park to define open spaces
- Selective thinning of canopy
- Potential Extension of Concrete Wall
- Realign Entry Road Sequence

Legend

- Bluff Vegetation
- Mixed Buffer Planting
- Proposed Structure
- Existing Structure
- Existing Canopy Trees
- Proposed Street Trees



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FINAL MASTER PLAN

The final Master Plan for Foss Park addresses many of the concerns brought up at community and stake-holder meetings. By incorporating these ideas into the design process, it ensures that the final product is a collaboration between the design team and the community/stake-holders. This process ultimately results in a better product for the community and the environment.

This Master Plan document addresses concerns with access and mobility, connectivity to the downtown and residential areas, signage and wayfinding, and water quality improvement. The plan also defines an open space concept and landscape character for Foss Park which includes restoration areas, naturalized areas, passive recreation areas, active recreation areas, performance areas, special use areas and the beach. Embedded in the open space concept of the park is an idea about habitat restoration and education along the bluff and the northern two-thirds of the beach.

In addition to strengthening Foss Park's connection to the adjacent community, this plan will position the park as a stop on the Lake Michigan Water Trail. Also, it can become a destination for bike riders using the Robert McClory Bike Path which is located west of the park and runs north-south through North Chicago.

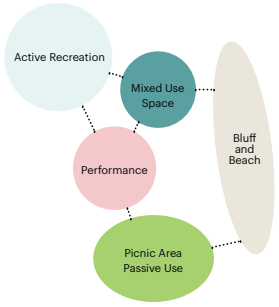
FINAL MASTER PLAN

Key Proposals

- Picnic area moved to southern end of upland park
- Resurfaced and new parking lots
- Small community gardens (2)
- Large vegetated buffer next to FBI wall to push center of gravity south
- Large historical or art feature behind Band-shell Area as new focal point
- Walking path loop in upland area with an extension to the beach via stairs along the bluff
- Overlook pavilions (3)
- Additional picnic pavilions (2)
- Naturalized edge around perimeter of park
- Bluff restoration
- Steps to beach (2)
- ADA ramp to beach (1:12)
- Swimming beach
- Educational boardwalk
- Outlook boardwalk (1)
- Fire Dept Storage Structure
- Redesigned active recreation space
- Resurfaced basketball courts
- Circular turn-around drop-off area for beach
- Naturalized plantings in the interior of the upland area of the park to define open spaces
- Selective thinning of canopy
- Potential Extension of Concrete Wall

Legend

- Bluff Vegetation
- Mixed Buffer Planting
- Proposed Structure
- Existing Structure
- Existing Canopy Trees
- Proposed Street Trees



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ENLARGED PLAN - SPORT AREA

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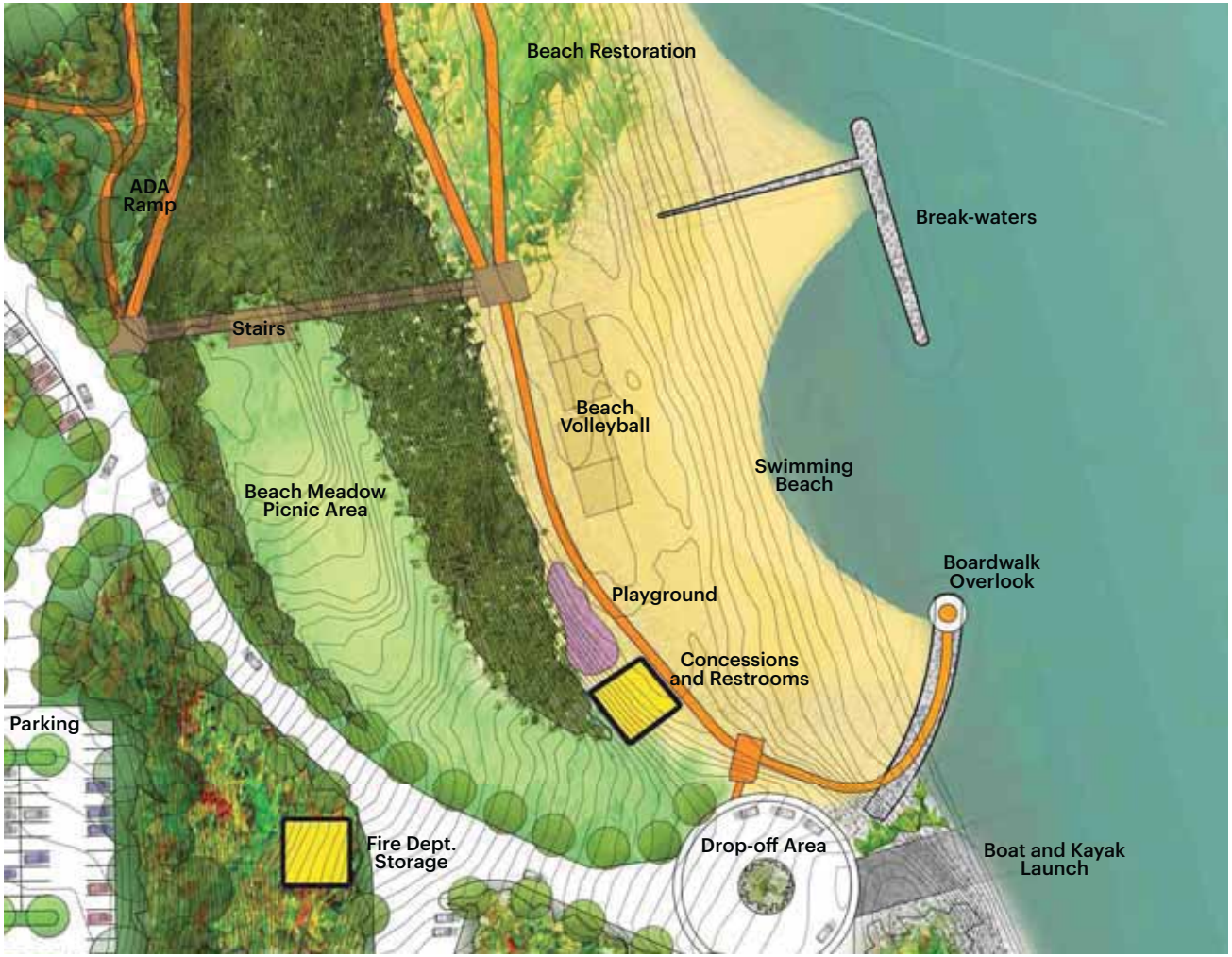
ENLARGED PLAN - BEACH AREA



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FOSS PARK AVE. ENTRY EXPERIENCE - EXISTING

FOSS PARK AVE. ENTRY EXPERIENCE - PROPOSED

ECOLOGICAL RESTORATION AREA - EXISTING

ECOLOGICAL RESTORATION AREA - PROPOSED

PLAN ANALYSIS

POTENTIAL CONTEXT CONNECTIONS

Key Concepts

1. Extended lakefront restoration treatment.
2. Potential link to public transportation (Metra).
3. Green Streets leading to Foss Park.
4. Park potentially expands to adjacent vacant parcel west of site.

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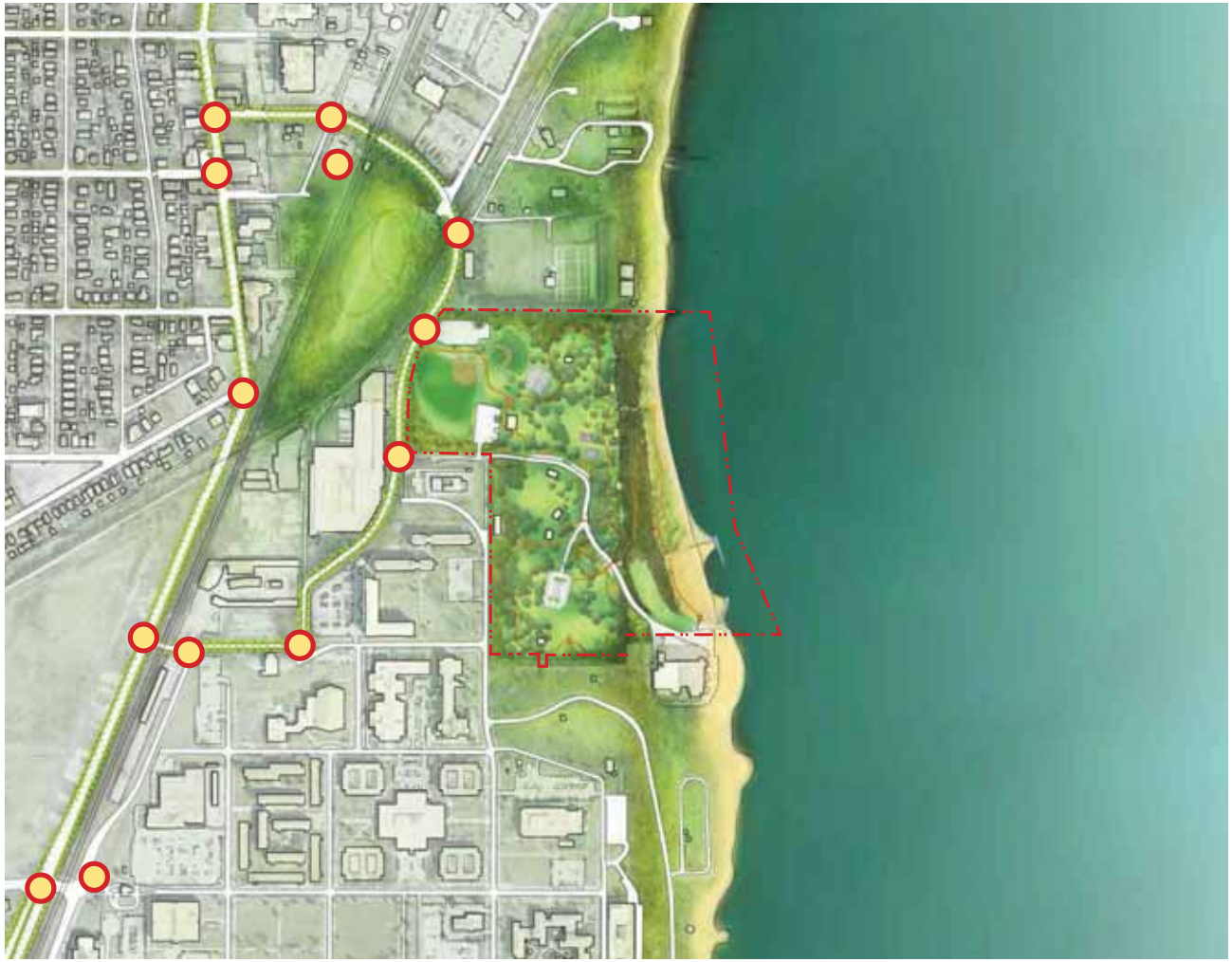
SIGNAGE AND WAYFINDING



Possible Foss Park Signage and Wayfinding locations

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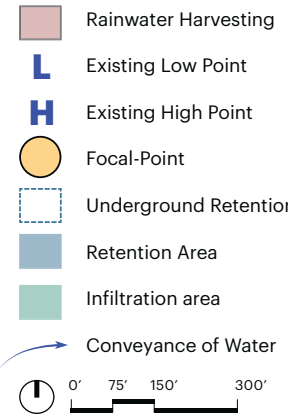
WATER STORY

Key Proposals

The park is divided up into integrated sub systems to capture, infiltrate and retain water during storm events.

- Each parking lot is paired with a rain garden or swale which accepts runoff and either infiltrates or retains the stormwater.
- An underground cistern by the beach will capture and store stormwater for rinsing and restrooms.
- Carving into the high point will produce excess material which will be used to fill the low point, helping prevent water from collecting in the performance seating area during a storm event.
- Harvested rainwater from surface runoff and the concession stand will be used to irrigate adjacent smaller gardens as well as supply the focal point, if it becomes a water feature.
- Each parking lot will have permeable pavers which will allow infiltration in these areas.



ACCESS AND MOBILITY

Key Components

- One vehicular entrance on the west side of the park which brings you into the space.
- One vehicular entrance north of main entrance which leads to the northern parking lot.
- Five different parking locations throughout the park.
- ADA (1:12) ramp down to beach from top of bluff.
- Beach access at round-about in south-east side of park.
- Boat/kayak access in the far south-east corner along shoreline.
- Upland walking path loop which connects to lower boardwalk via stairs to the north and south as well as an ADA ramp to the south.

Vehicular entrance

Parking area

Walking path

Boardwalk

ADA Ramp (1:12)

Beach Access

Boat/kayak Access

POTENTIAL BIRD HABITAT AREAS

Potential Bird Habitat

Observation Station

Look-out Points

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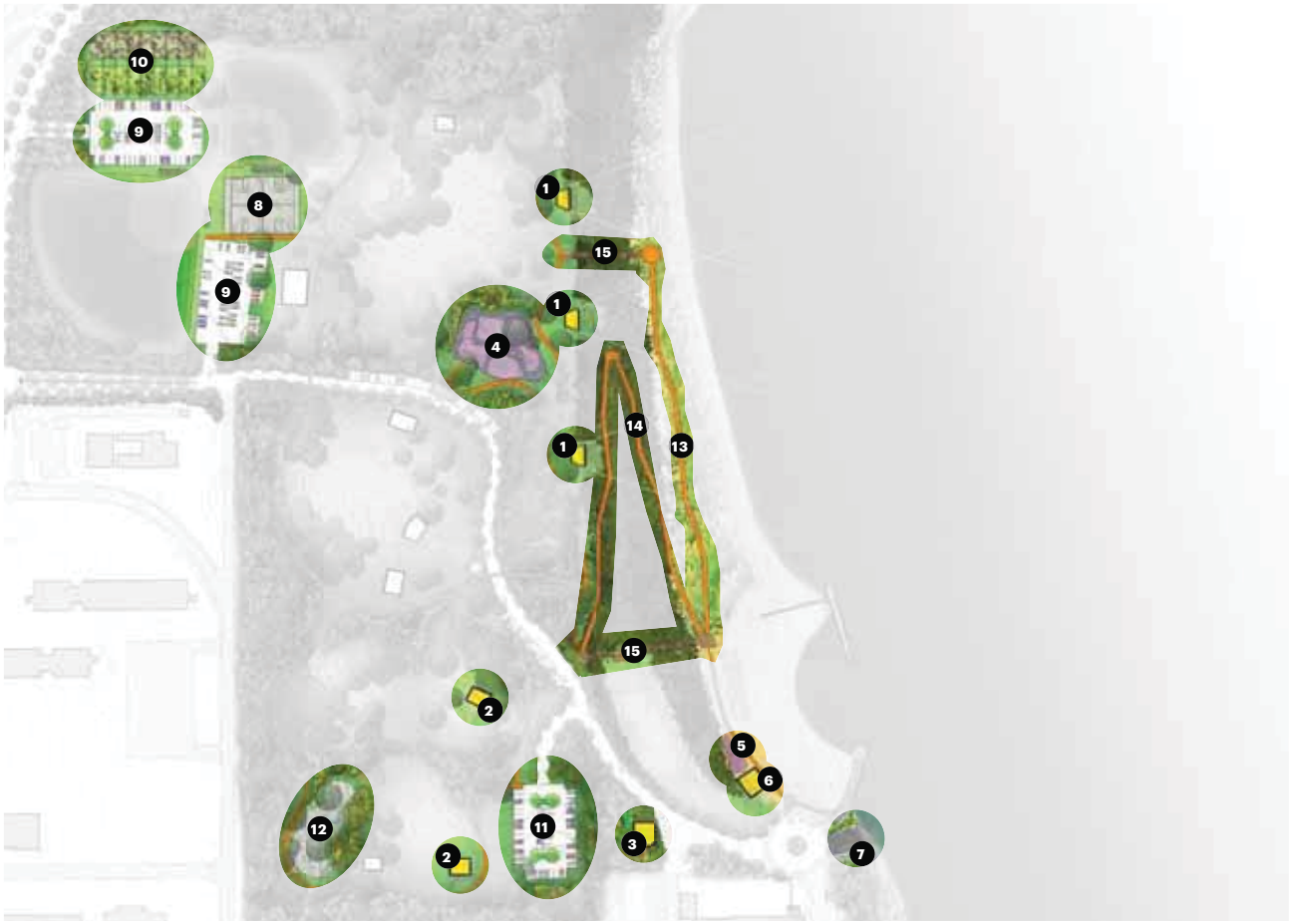
AMENITIES AND CONSTRUCTED ELEMENTS

Key Proposals

1. New park shelters overlooking the bluff (3)
2. New park shelters in upland area of park (2)
3. Fire Dept. storage structure
4. Expanded upland playground
5. New playground by beach
6. New concession stand by beach
7. New boat launch
8. New basketball courts
9. Resurfaced parking lots (2)
10. New community garden
11. New parking lot
12. New Dog Park
13. Educational Boardwalk
14. ADA (1:12) ramp up bluff
15. Stairs up bluff (2)



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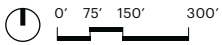
PHASE 1: BEACH ACCESS AND RESTORATION

Phase 1

1. Beach break water
2. Beach meadow landing
3. Bluff restoration and stabilization
4. ADA Ramp and stairs to beach
5. Beach restoration in the north
6. Educational boardwalk along beach restoration area
7. Southern parking lot
8. Drop-off circle
9. Street tree and canopy tree planting within park
10. Fire department structure and boat launch
11. Concession stand at beach
12. Playground at beach
13. Other beach facilities (restrooms, showers, changing rooms, etc.)
14. Develop new signage and wayfinding for park
15. Re-open existing concession stand
16. Develop an educational program for the shoreline restoration area
17. Construct boardwalk overlook on southern breakwater
18. Develop a community garden program
19. Resurface existing roadways within park
20. Add street parking strips along entry road



PHASE 2: UPLAND IMPROVEMENTS AND LANDSCAPE INFRASTRUCTURE

Phase 2

1. Upper park main pedestrian path loop
2. Expand existing playground
3. Create a dog park in the south-west corner
4. Construct 2-3 additional picnic pavilions
5. Develop entry road streetscapes leading to park
6. Selective thinning of canopy
7. Develop vegetated buffers around the perimeter and interiors of the park

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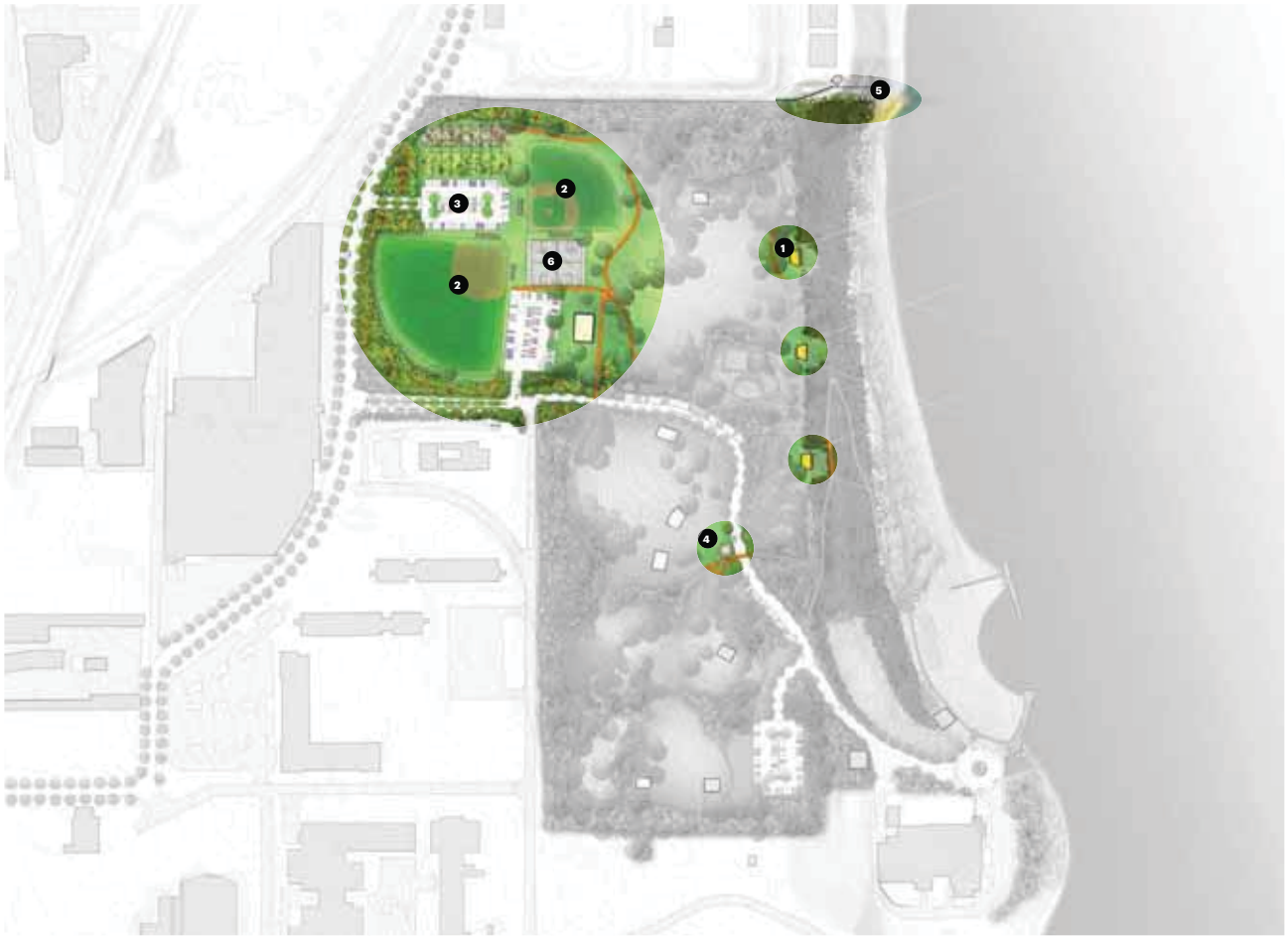
PHASE 3: SPORT IMPROVEMENTS AND SELECTIVE STRUCTURES

Phase 3

1. Add over-look pavilions along bluff edge
2. Re-arrange ball fields
3. Relocate and resurface northern parking lot
4. Commission a local artist to develop the focal point
5. Extend concrete FBI wall (to be done by FBI)
6. Resurface, relocate and rehabilitate basketball courts



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PLANT FAMILY LIST AND QUANTITIES

Total Area, Uplands (SF)	1,360,000
Planting Units (10,000 SF)	136.0

Upland Plant List

		Species
Trees	1	Maple
	2	Oak
	3	Sycamore
	4	Witch-hazel
	5	Hawthorn
	6	Plum/Cherry
	7	Willow
	8	Bald Cypress
Trees per 10,000 SF	4	
Total Upland Trees*	544	

Shrubs	1	Arborvitae
	2	Yew
	3	Juniper
	4	Viburnum
	5	Hydrangea
	6	Ninebark
	7	Dogwood
	8	Sumac
Shrubs per 10,000 SF	10	
Total Upland Shrubs	1,360	

Groundcovers/Grasses	1	Black-eyed Susan
	2	Blue Indigo
	3	Cone Flower
	4	Little Bluestem
	5	Prairie Dropseed
	6	Butterfly Weed
	7	Sporobolus
	8	Cardinal Flower
G/G per planting unit	20	
Total Upland G/G	2,720	

Total Area, Bluff (SF)	222,000
Planting Units (10,000 SF)	22.2

Bluff Plant List

		Species
Trees	1	Birch
	2	Willow
	3	Douglas Fir
	4	Pine
Trees per planting unit	4	
Total Bluff Trees	89	

Shrubs	1	Hazelnut
	2	Wild Plum
	3	Choke Cherry
	4	Sandbar Willow
	5	Nannyberry
	6	Black Haw
Shrubs per planting unit	10	
Total Bluff Shrubs	222	

Groundcovers/Grasses	1	Woodland Brome
	2	Short's Sedge
	3	Bottlebrush Grass
	4	Switch Grass
	5	Tall Anemone
	6	Showy Trickifoil
	7	White Snake Root
	8	Grass Leafed Goldenrod
G/G per planting unit	20	
Total Bluff G/G	444	

Total Area, Beach (SF)	196,000
Planting Units (10,000 SF)	19.6

Beach Plant List

		Species
Trees		
Trees per planting unit	0	
Total Beach Trees	0	

Shrubs		
Shrubs per planting unit	0	
Total Beach Shrubs	0	

Groundcovers/Grasses	1	Marram Grass
	2	Seaside Spurge
	3	American Searocket
G/G per planting unit	50	
Total Beach G/G	980	

* Includes Street Trees

PRELIMINARY COST ESTIMATIONS

NO.	DESCRIPTION	QTY.	UNIT	UNIT PRICE	COST	SUB-TOTAL
	AL = Allowance; CY = Cubic Yard (volume); EA = Each; INST = Instance; LDS = Truck Loads; LF = Linear Foot; LS = Lump Sum; SF = Square Foot Area					
	PHASE 1: BEACH ACCESS AND RESTORATION					
1	Beach break water					By Others
2	Beach meadow landing	37,150	SF			$ 33,070.00
	Trees	20	EA	$600.00	$ 12,000.00	
	Shrubs	196	EA	$75.00	$ 14,700.00	
	Groundcover/ Grasses	980	EA	$6.50	$ 6,370.00	
3	Bluff restoration and stabilization	92,263	SF			$ 97,940.00
	Stabilization	1	AL	$25,000.00	$ 25,000.00	
	Trees	89	EA	$600.00	$ 53,400.00	
	Shrubs	222	EA	$75.00	$ 16,650.00	
	Groundcover/ Grasses	444	EA	$6.50	$ 2,890.00	
4	ADA Ramp and stairs to beach					$ 181,550.00
	Stairs/ Steps	165	LF	$125.00	$ 20,630.00	
	ADA Ramps; ~6 Ft. Wide	6,450	SF	$18.00	$ 116,100.00	
	ADA ramp & stairway landings	2,490	SF	$18.00	$ 44,820.00	
5	Beach restoration in the North - plant restoration	70,100	SF			$ 2,890.00
	Plantings/ Grasses (12-24" on center):		EA	$600.00	$ 2,890.00	
6	Educational boardwalk along beach restoration area (8' wide)	9,800	SF	$12.00	$ 117,600.00	$ 117,600.00
7	Southern parking lot	22,830	SF			$ 148,470.00
	Site Leveling/ Drainage	1,691	CY	$20.00	$ 33,820.00	
	Asphalt & Base	22,830	SF	$2.25	$ 51,370.00	
	Curbs	1,111	LF	$25.00	$ 27,780.00	
	Striping/ Signage (60 Stalls)	60	EA	$50.00	$ 3,000.00	
	Wheel Stops	60	EA	$125.00	$ 7,500.00	
	Site Lighting	1	AL	$25,000.00	$ 25,000.00	
8	Drop-off circle	10,000	SF			$ 56,190.00
	Site Leveling/ Drainage	741	CY	$20.00	$ 14,810.00	
	Asphalt & Base	10,000	SF	$2.25	$ 22,500.00	
	Curbs	395	LF	$25.00	$ 9,880.00	
	Striping/ Signage	1	AL	$1,500.00	$ 1,500.00	
	Site Lighting - lo level	1	AL	$7,500.00	$ 7,500.00	

PRELIMINARY COST ESTIMATIONS

NO.	DESCRIPTION	QTY.	UNIT	UNIT PRICE	COST	SUB-TOTAL
	AL = Allowance; CY = Cubic Yard (volume); EA = Each; INST = Instance; LDS = Truck Loads; LF = Linear Foot; LS = Lump Sum; SF = Square Foot Area					
	PHASE 1: BEACH ACCESS AND RESTORATION					
9	Street tree and canopy tree planting within park *(Incl. Below)*				Included in Landscaping	
10	Fire department storage structure	1,800	SF	$125.00	$ 225,000.00	$ 276,000.00
	Fire Department Boat Launch (Concrete Pad)	3,400	SF	$15.00	$ 51,000.00	
11 /13	New concession stand at beach & other beach facilities	1,500	SF	$125.00	$ 187,500.00	$ 187,500.00
12	Playground at beach	1,540	SF			$ 18,080.00
	Wood Chips	1,540	SF	$2.00	$ 3,080.00	
	Equipment	1	AL	$15,000.00	$ 15,000.00	
14	Develop new signage and way finding for park	1	AL	$25,000.00	$ 25,000.00	$ 25,000.00
15	Re-open existing concession stand	2,800	SF	$75.00	$ 210,000.00	$ 210,000.00
16	Develop an educational program for the shoreline restoration area	1	AL	$20,000.00	$ 20,000.00	$ 20,000.00
17	Construct boardwalk overlook on southern breakwater	2,432	SF	$40.00	$ 97,280.00	$ 97,280.00
	Overlook Sheeting	134	LF		TBD	
18	Develop a community garden program	22,550	SF			$ 149,640.00
	Garden Fencing	1,950	LF	$22.00	$ 42,900.00	
	Soil/ Plant Bedding	835	CY	$38.00	$ 31,740.00	
	Irrigation	1	AL	$75,000.00	$ 75,000.00	

PRELIMINARY COST ESTIMATIONS

NO.	DESCRIPTION	QTY.	UNIT	UNIT PRICE	COST	SUB-TOTAL
	AL = Allowance; CY = Cubic Yard (volume); EA = Each; INST = Instance; LDS = Truck Loads; LF = Linear Foot; LS = Lump Sum; SF = Square Foot Area					
	PHASE 2: UPLAND IMPROVEMENTS AND LANDSCAPE INFRASTRUCTURE					
1	Upper park main pedestrian path loop (~6 Ft. Wide)	22,800	SF	$2.25	$ 51,300.00	$ 51,300.00
2	Expand existing playground	16,300	SF			$ 67,600.00
	Soft Surface	16,300	SF	$2.00	$ 32,600.00	
	Equipment	1	AL	$35,000.00	$ 35,000.00	
3	Create a dog park in the south-west corner	13,700	SF			$ 52,760.00
	Fencing	530	LF	$22.00	$ 11,660.00	
	Surface Prep	1	AL	$41,100.00	$ 41,100.00	
4	Construct 3 additional picnic pavilions (3 x 1,000SF)	3,000	SF	$75.00	$ 225,000.00	$ 240,000.00
	Foundation/ Slab				Incl.	
	Framing				Incl.	
	Tables/ Furniture	1	AL	$15,000.00	$ 15,000.00	
5	Resurface, relocate and rehabilitate basketball courts (Move to Phase 3)				In Phase 3	
6	Develop entry road streetscapes leading to park	2,000	LF			$ 186,000.00
	Trees from Park entrance to North METRA Station	100	EA	$600.00	$ 60,000.00	
	Sidewalks on each side of Road, at 6' W.	24,000	SF	$5.25	$ 126,000.00	
7	Selective thinning of canopy	1	AL	$20,000.00	$ 20,000.00	$ 20,000.00
8	Develop vegetated buffers @ perimeter & interiors of the park	380,000	SF			$ 446,080.00
	Trees	544	EA	$600.00	$ 326,400.00	
	Shrubs	1,360	EA	$75.00	$ 102,000.00	
	Groundcover/ Grasses	2,720	EA	$6.50	$ 17,680.00	
9	Resurface existing (Interior) roadways within park					$ 232,720.00
	Curb/ Gutter (assume 50% replaced)	2,420	LF	$25.00	$ 60,500.00	
	Resurfaced Interior Roadway	57,180	SF	$2.25	$ 128,660.00	
	New lighting (lo-level bollard lights, 100' o.c.)	48	EA	$900.00	$ 43,560.00	

PRELIMINARY COST ESTIMATIONS

NO.	DESCRIPTION	QTY.	UNIT	UNIT PRICE	COST	SUB-TOTAL
	AL = Allowance; CY = Cubic Yard (volume); EA = Each; INST = Instance; LDS = Truck Loads; LF = Linear Foot; LS = Lump Sum; SF = Square Foot Area					
	PHASE 3: SPORT IMPROVEMENTS AND SELECTIVE STRUCTURES					
1	Add over-look pavilions along bluff edge (x3)	2,650	SF	$75.00	$ 198,750.00	$ 213,750.00
	Foundation/ Slab				Incl.	
	Framing				Incl.	
	Tables/ Furniture	1	AL	$15,000.00	$ 15,000.00	
2	Re-arrange ball fields (Drainage excluded)	112,100	SF	$4.00	$ 448,400.00	$ 531,200.00
	5. Relocate and rehabilitate basketball courts (moved from Phase 2 to 3)	13,800	SF	$6.00	$ 82,800.00	
3	Relocate and resurface northern parking lots *(74 Std. Stalls)*	22,000	SF	$2.25	$ 49,500.00	$ 237,450.00
	Lot 1:					
	Site Leveling/ Drainage				Excluded	
	Asphalt & Base	22,000	SF	$2.25	$ 49,500.00	
	Curbs	820	LF	$25.00	$ 20,500.00	
	Striping/ Signage	1	AL	$5,000.00	$ 5,000.00	
	Wheel Stops	74	EA	$125.00	$ 9,250.00	
	Site Lighting	1	AL	$15,000.00	$ 15,000.00	
	Lot 2:					
	Second Northern Parking Lot *(NOT STRIPED)*	19,420	SF			
	Site Leveling/ Drainage				Excluded	
	Asphalt & Base	19,420	SF	$2.25	$ 43,700.00	
	Curbs	700	LF	$25.00	$ 17,500.00	
	Striping/ Signage	1	AL	$5,000.00	$ 5,000.00	
	Wheel Stops	1	AL	$7,500.00	$ 7,500.00	
	Site Lighting	1	AL	$15,000.00	$ 15,000.00	
4	Commission a local artist to develop the focal point	1	AL	$35,000.00	$ 35,000.00	$ 35,000.00

PRELIMINARY COST ESTIMATIONS

NO.	DESCRIPTION	QTY.	UNIT	UNIT PRICE	COST	SUB-TOTAL
	AL = Allowance; CY = Cubic Yard (volume); EA = Each; INST = Instance; LDS = Truck Loads; LF = Linear Foot; LS = Lump Sum; SF = Square Foot Area					
	PHASE 3: SPORT IMPROVEMENTS AND SELECTIVE STRUCTURES					
5	Add street parking strips along entry road *(48 Std. Stalls)*	7,800	SF	$2.25	$ 17,550.00	$ 39,700.00
	Curbs	550	LF	$25.00	$ 13,750.00	
	Striping	48	EA	$50.00	$ 2,400.00	
	Wheel Stops	48	EA	$125.00	$ 6,000.00	
	Signage (Included In Signage Package)				Incl.	
6	Extend concrete FBI wall	145	LF			By Others
	General:					$ 220,740.00
	New Utilities (water, storm, electricity, sewer)	1	AL	$150,000.00	$ 150,000.00	
	Balance of Main pedestrian path loop (~6 Ft. Wide)	14,400	SF	$2.25	$ 32,400.00	Verify
	North Stair/ Landings	1	LS	$38,335.00	$ 38,340.00	Verify

PRELIMINARY COST ESTIMATIONS

ESTIMATOR'S STATEMENT OF PROBABLE CONSTRUCTION COST

SOM

VISTARA

Foss Park District
Foss Park
1901 Foss Park Avenue
North Chicago, IL 60088

Conceptual Estimate | **10/15/2014**

SUB TOTAL					**$**	**4,195,500.00**
GENERAL CONDITIONS	8%				$	335,600.00
BOND & INSURANCE	2%				$	90,600.00
OVERHEAD & PROFIT	5%				$	231,100.00
PHASING	5%				$	242,600.00
TOTAL					**$**	**5,095,000.00**
CONTINGENCY	20%				$	1,019,000.00
CONSTRUCTION TOTAL					**$**	**6,114,000.00**
ARCHITECT / ENGINEER'S FEE	8%				$	489,100.00
PROJECT TOTAL					**$**	**6,603,100.00**

APPENDIX

COMMUNITY FEEDBACK

Community Meeting #1 Feedback:

- Turn skate park back into a basketball court(s) with lights at night
- Have over-looks at the top of the bluff (2-4) with views of the beach and lake
- Add additional picnic shelters as needed
- Fire Dept. needs a structure to store emergency equipment down by beach
- Open concession stand up by the ball fields
- Need additional parking along main entry road
- Screen out unwanted adjacent land uses with edge plantings (native and low maintenance)
- Night volleyball on the new beach
- Concessions at the beach
- Kids playground at beach
- Possibly extend concrete wall at north (to be done by FBI)
- Large buffer at the north by the concrete wall to help screen some of the noise from the gun fire

Community Meeting #2 Feedback:

- Leave the concession stand where it is, as it serves both the ball fields as well as the performance area well where it is currently located
- Put a dog park in the far south west of the park
- Pull the southern proposed parking lot east towards the water pumping station
- Move the educational boardwalk closer to the bluff for more protection against ice in winter
- Playground, changing rooms and concession stand by the beach
- Lighting in both the upland and the beach areas of the park
- Larger playground area in upland area of park
- Smaller (10-15 people) over-look pavilions
- Educational boardwalk to be 6-8 feet wide with areas for seating and signs along the way
- Do no remove any existing structures unless their structural integrity has been compromised
- Maintenance building in the south west area of the site is being demolished

UPLAND PARK AREA
SITE PHOTOS

SHORELINE AND UNDERPASS
SITE PHOTOS

UPLAND PARK
SITE PHOTOS

ROAD TO PUMPING STATION
SITE PHOTOS

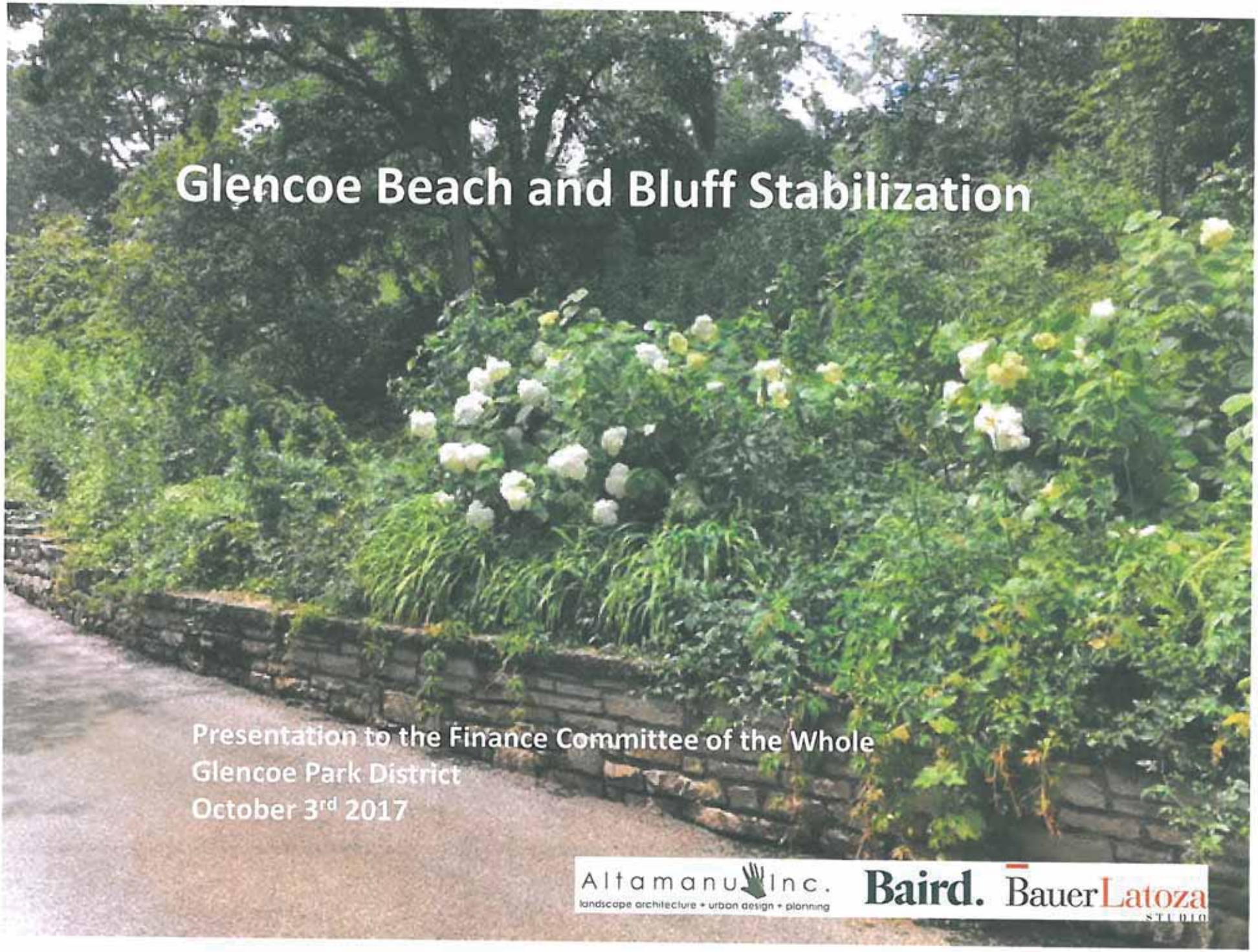
SHORELINE
SITE PHOTOS

SHORELINE
SITE PHOTOS

SHORELINE
SITE PHOTOS

UPLAND PARK AREA
SITE PHOTOS

SOM



Glencoe Beach and Bluff Stabilization

Presentation to the Finance Committee of the Whole
Glencoe Park District
October 3rd 2017

Altamanu Inc.
landscape architecture + urban design + planning

Baird.

BauerLatoza
STUDIO

Project Rationale:
Why it has to be done
Existing Conditions

GLENCOE PARK DISTRICT

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Lakefront Park January 2017: Storm Water & Drainage

Water Flows Across Paths in Park and Along Hazel Ave

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Baird.

BauerLatoza STUDIO

Lakefront Park: Storm Water & Drainage

Water Flows Across Paths and Down Bluff

GLENCOE PARK DISTRICT

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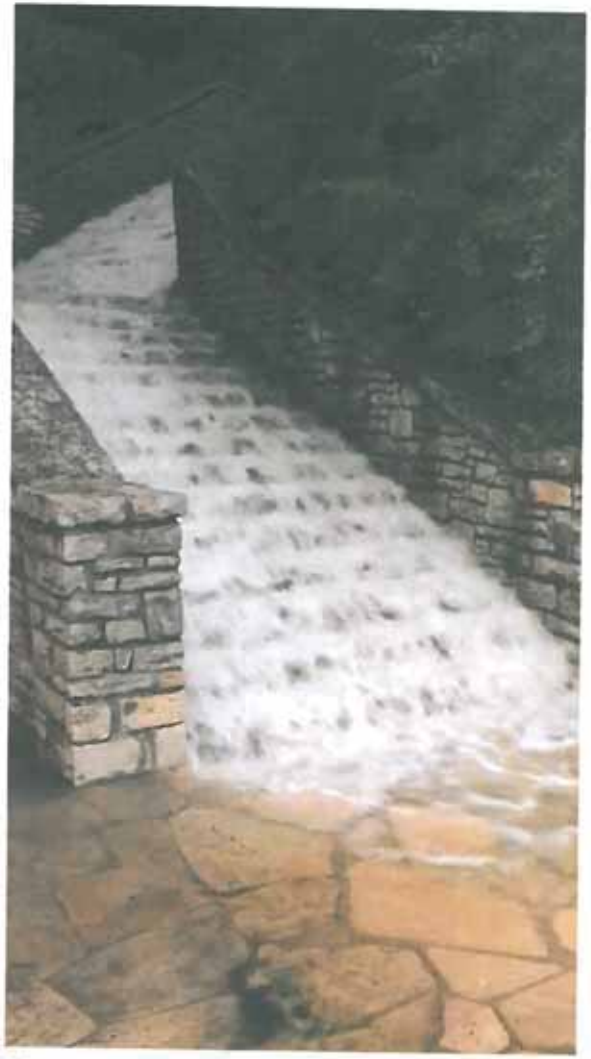
landscape architecture + urban design + planning

Baird.

BauerLatoza STUDIO

Lakefront Park: Storm Water & Drainage



Stairs and Half Way House Inundated after rainfall

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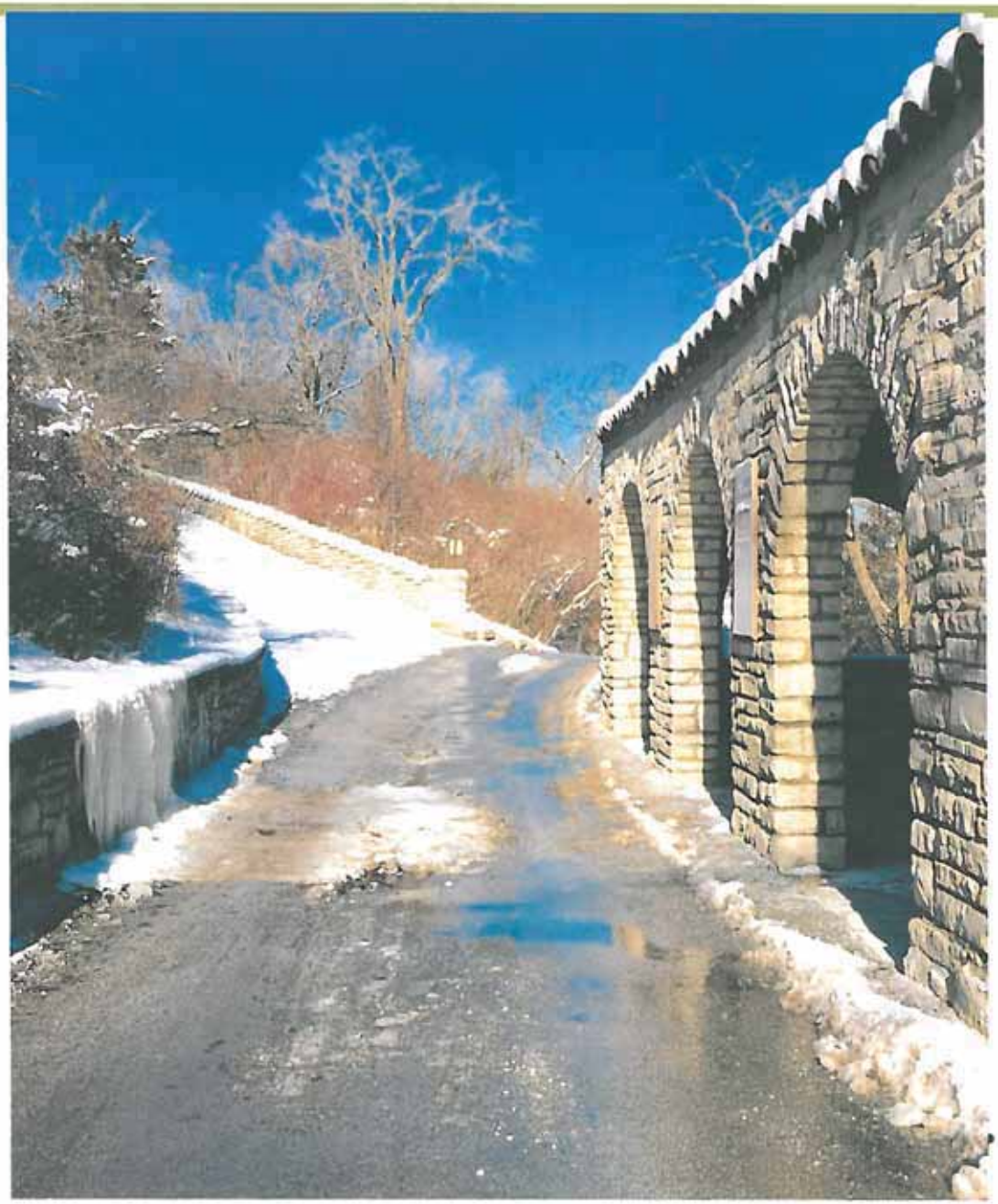
All Seasons: Storm Water & Drainage



Movement in the Bluff and Structural Failure July 7th 2017

Movement in Roadway

Edging/retaining wall giving way

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Structural Failure July 7th 2017

Cribbing Failure – Bluff is pressing down on Beach House

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Project Limits

Not In Scope


EXISTING CONDITIONS
1 GLENCOE BOAT HOUSE (NOT IN SCOPE)
2 NORTH BEACH
3 GLENCOE VILLAGE WATER PLANT (NOT IN SCOPE)
4 OVERLOOK
5 PRECAST CONCRETE CRIB RETAINING WALL
6 ROADWAY CURB
7 NORTH ROADWAY (WITH STONE RETAINING WALL)
8 HALFWAY HOUSE
9 SOUTH BEACH
10 LAKEFRONT PARK
11 STAIRWAY WITH STONE RETAINING WALL
12 SOUTH ROADWAY (WITH STONE RETAINING WALL)
13 BEACH HOUSE
Boat House
Water Plant
LAKE MICHIGAN
GLENCOE

Project Team

Direction from Chris Leiner

" Find the best, Glencoe deserves the best"

GLENCOE PARK DISTRICT

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NORTH LAKE SHORE DRIVE

Altamanu and **Baird** working together on the future design of N. Lake Shore Drive and seven and half miles of Chicago's northern lakeshore

Oak Street Beach Looking North - EXISTING VIEW

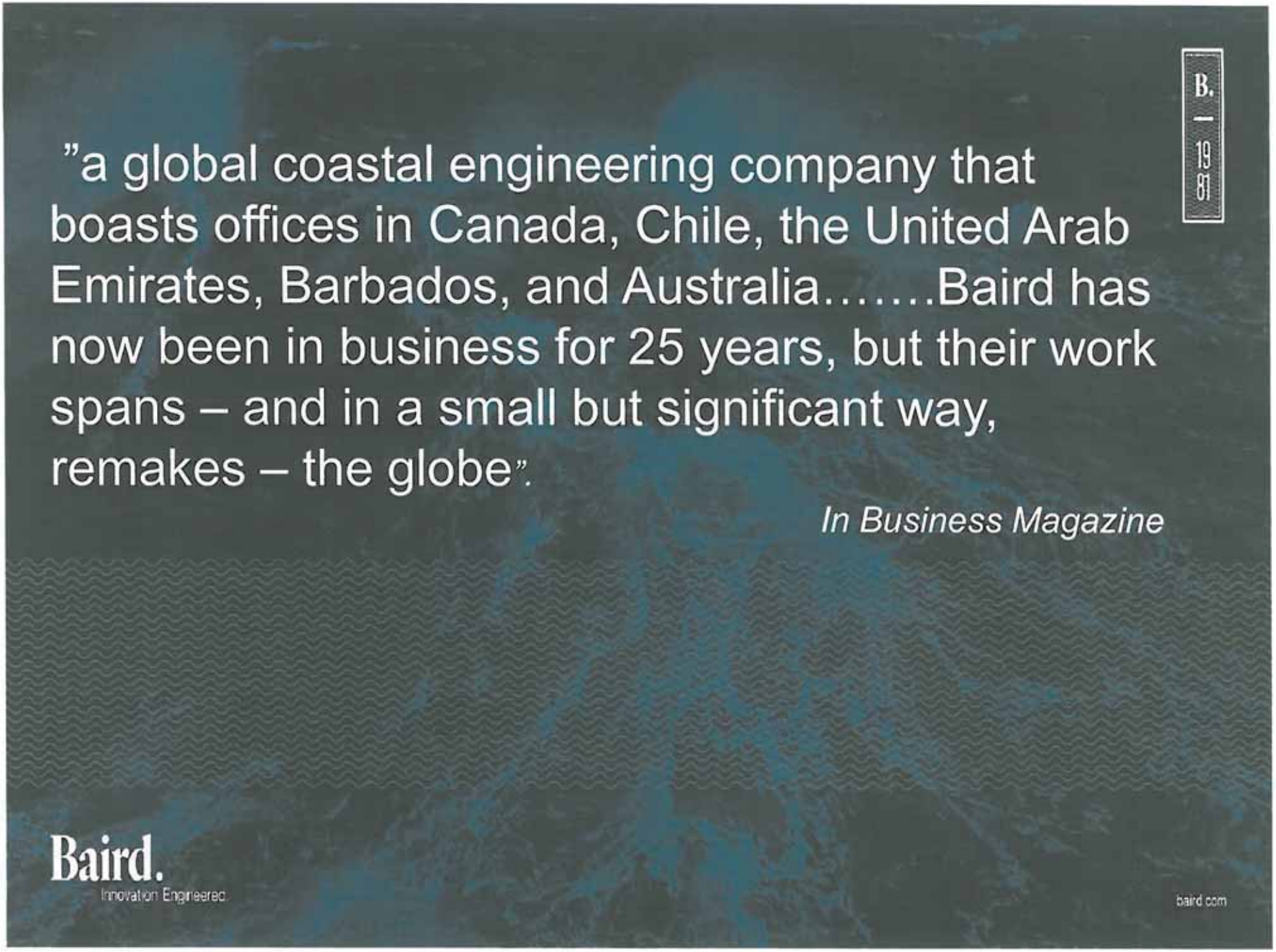
Oak Street Beach Looking North - POTENTIAL VIEW -Option 1

NORTH LAKE SHORE DRIVE

Lars Barber, P.L.A., who is working on NLSD will be the principal in charge for Baird

Oak Street Beach Looking North - EXISTING VIEW

Oak Street Beach Looking North - POTENTIAL VIEW -Option 1


"a global coastal engineering company that boasts offices in Canada, Chile, the United Arab Emirates, Barbados, and Australia.....Baird has now been in business for 25 years, but their work spans – and in a small but significant way, remakes – the globe".
In Business Magazine
B.
Baird.
Innovation Engineered
baird.com

Baird Team

Lars Barber, P.L.A.
Principal in charge and will be reviewing deliverables.

Caleb Barth, P.E. Marine Engineer
Project Manager, data acquisition and structural reviews.

Richard Christensen, P.E., Ph.D.,
Technical lead for bluff stability

Mohammad Dibajnia, P.E., Ph.D.,
Technical lead for coastal processes
(nearshore hydrodynamics, sediment transport,
erosion control and beach protection.)

Presenting Tonight

Brent T. Sumner, P.E.
Senior Marine Engineer

Domestic and International Projects
Projects ranging in size from $300,000 to $350 Million

- Chicago Shoreline Diversey to Fullerton
- Port Hedland, Western Australia
- Oman
- Brazil
- Barbados
- Benin West Africa
- Ghana

B. — 19 81

Glencoe Beach and Bluff Restoration

Finance Committee of the Whole & Special Projects and Facilities Committee
Glencoe Park District

October 3, 2017

Baird.
Innovation Engineered.

baird.com

Baird Overview

- Employee owned Small Business
- Established in 1981
- Team of engineers, planners, scientists, and geomorphologists

- Specialists 100% dedicated to water related projects
- Thousands of marine projects and studies worldwide
- Approximately 74 employees

Baird Capabilities

Areas of Expertise

- Coastal Engineering
- Shore Protection Systems, Beaches & Lagoons
- Bluff Stability
- Waterfronts and Marinas
- Habitat Restoration & Development (Rivers, Wetlands & Islands)
- Ports and Marine Terminals

Professional Skills & Services

- Site Analysis & Field Investigations
- Market Analysis
- Conceptual Design & Feasibility Studies
- Numerical & Physical Model Studies
- Regulatory Coordination
- Final Design
- Construction Related Services

Baird Key Differentiators and Local Project History

Key Differentiators

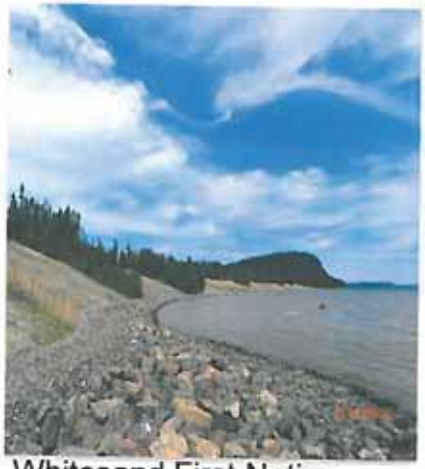
- Specialization has resulted in subject matter expertise
- Highly efficient, talented, and globally experienced staff
- Flexibility and responsiveness (small, efficient group – one team)
- Solving complex problems in the marine environment – globally
- Use of sophisticated tools and expertise to create safe, environmentally responsible, AND operationally optimized marine projects

Baird Project Locations: Southern Lake Michigan

Beach and Bluff Erosion Projects

Port Vincent Development
Port Washington, WI,
Lake Michigan

Rosewood Beach, *Highland Park, IL, Lake Michigan*



Whitesand First Nation
Shoreline
Stabilization
Lake Nipigon, Ontario,
Canada

Forest Park Beach, *Lake Forest, IL, Lake Michigan*

Illinois Interim Shoreline
Study, *Northern Illinois,*
Lake Michigan

Bluff Stability Projects - Key Factors

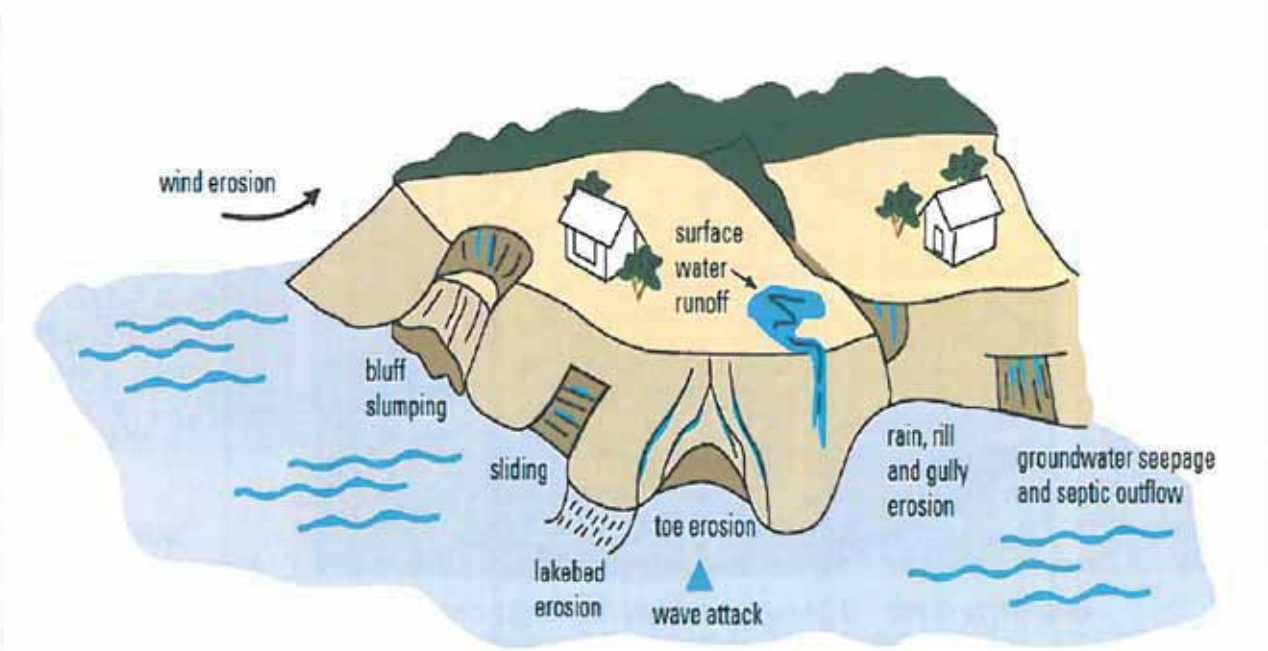


Figure 3: Causes and Effects of Coastal Erosion

- Bluff slope stability and instability
  (soil type, soil properties, steepness of bluff, etc.)
- Surface water runoff
- Groundwater seepage through bluff core & face
- Proper toe protection
  (beach and structure stability, coastal analysis)

Glencoe Project Site – Plan of Action

1. Investigate Site Conditions

2. Review and Analyze Data

- Global and local bluff stability evaluation
- Structural and Geotechnical review
  - Retaining Walls, Halfway House, Beach House Back Wall, Stone Steps, North Bluff Roadway
- Stormwater System review
- Coastal Structure and Beach review

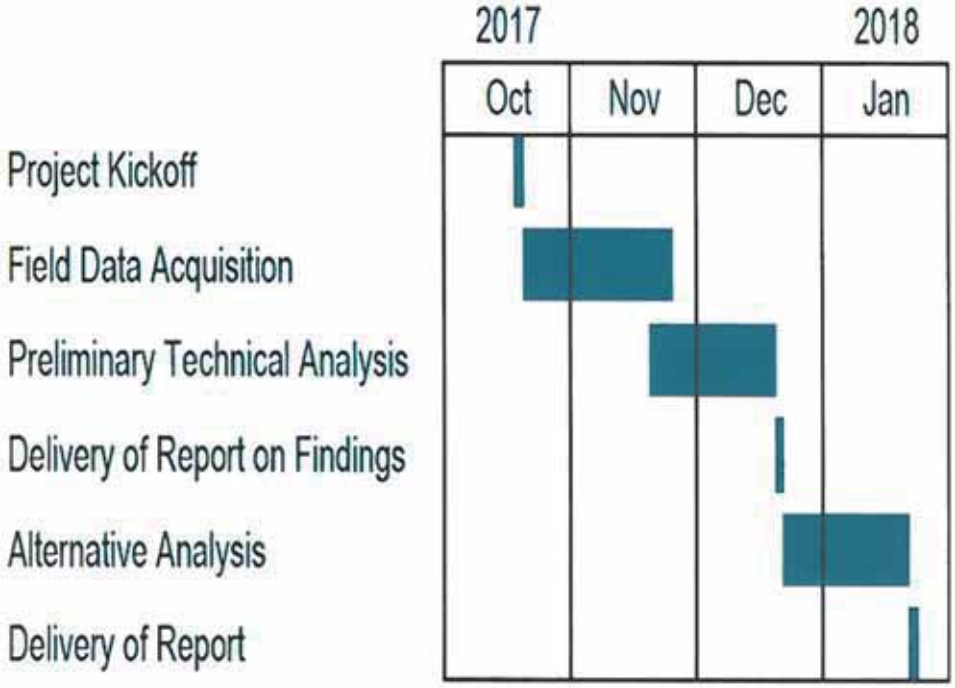
3. Alternative Analysis

Next Steps

Geotechnical Data Acquisition

Accelerated Schedule

- Pending board approval



Project Team

Bauer Latoza Studio

GLENCOE PARK DISTRICT

Altamanu Inc.
landscape architecture + urban design + planning

Baird.

BauerLatoza STUDIO

Project Team

Architecture - Planning - Historic Preservation

Sustainable Design

Local, national, and international markets

more than 30 design awards

Federal, State, and Local Government

MBE and DBE

BauerLatoza STUDIO

Bauer Latoza Studio

BauerLatoza STUDIO

- Founded in 1990
- Award-winning Preservation firm
- Architecture, Interiors, Planning, Restoration & Adaptive Reuse
- Masonry Repairs Experience
- Technically Skilled
- Strong Project Management
- Coordination with Stakeholders

Columbus Monument, Chicago, IL

Museum of Science & Industry, Chicago, IL

Grant Monument, Chicago, IL

Humboldt Park Boathouse, Chicago, IL

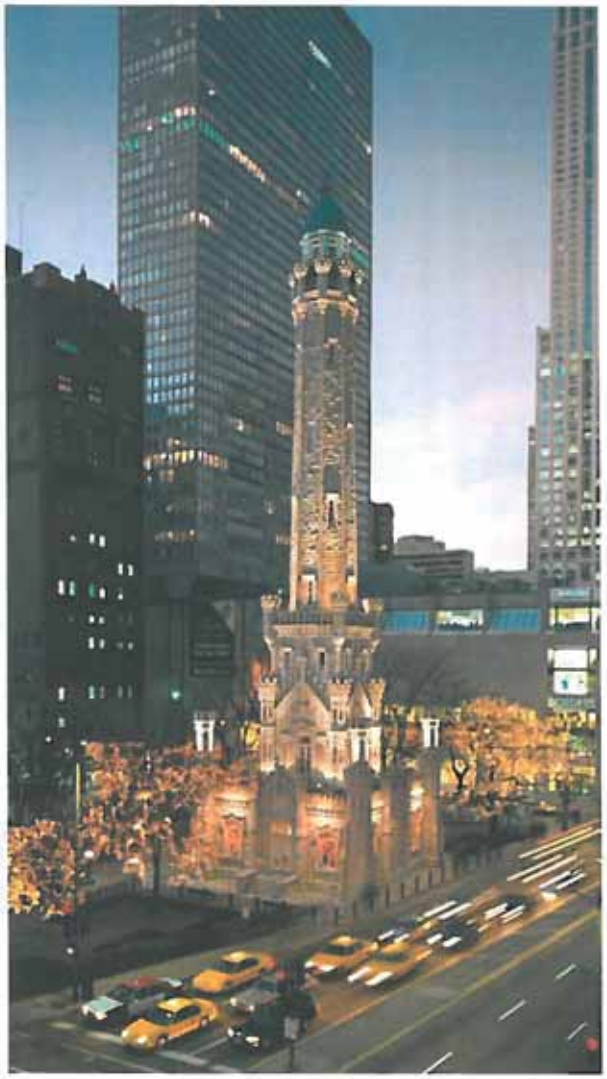
Management of Project Progress & Quality

Team Project Management

- Stakeholder Involvement
- Consultant Team Communication
- Thoroughness at every level is expected
- Coordination and communication are fundamental

Team Quality Assurance Management

- Plan for adequate time and thorough quality control reviews
- QA/QC process will be required at all phases of the project



Bauer Latoza Studio

Edward Torrez, AIA, LEED AP BD+C

- 27 years experience in Architectural Historic Preservation. Serves as an Advisor to the National Trust of Historic Preservation and member of the Illinois Historic Sites Advisory Council.

Andrea Terry, RA, LEED AP

- related skills range from technical expertise with exterior envelopes, to research, interior renovation and preservation planning.

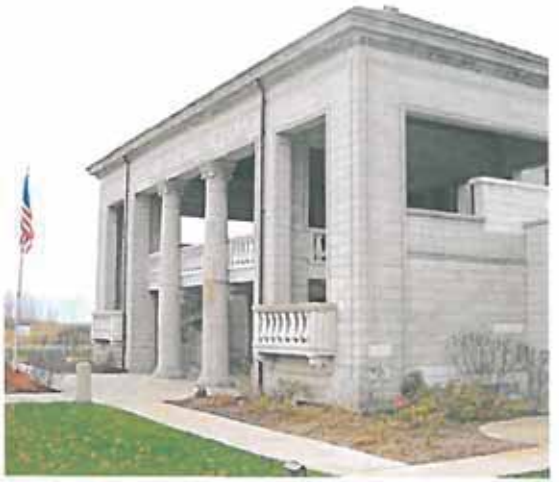
Kirk Sippel, AIA, LEED AP

- is responsible for the design and daily administration of BLS and has served as project architect on a number of award-winning projects

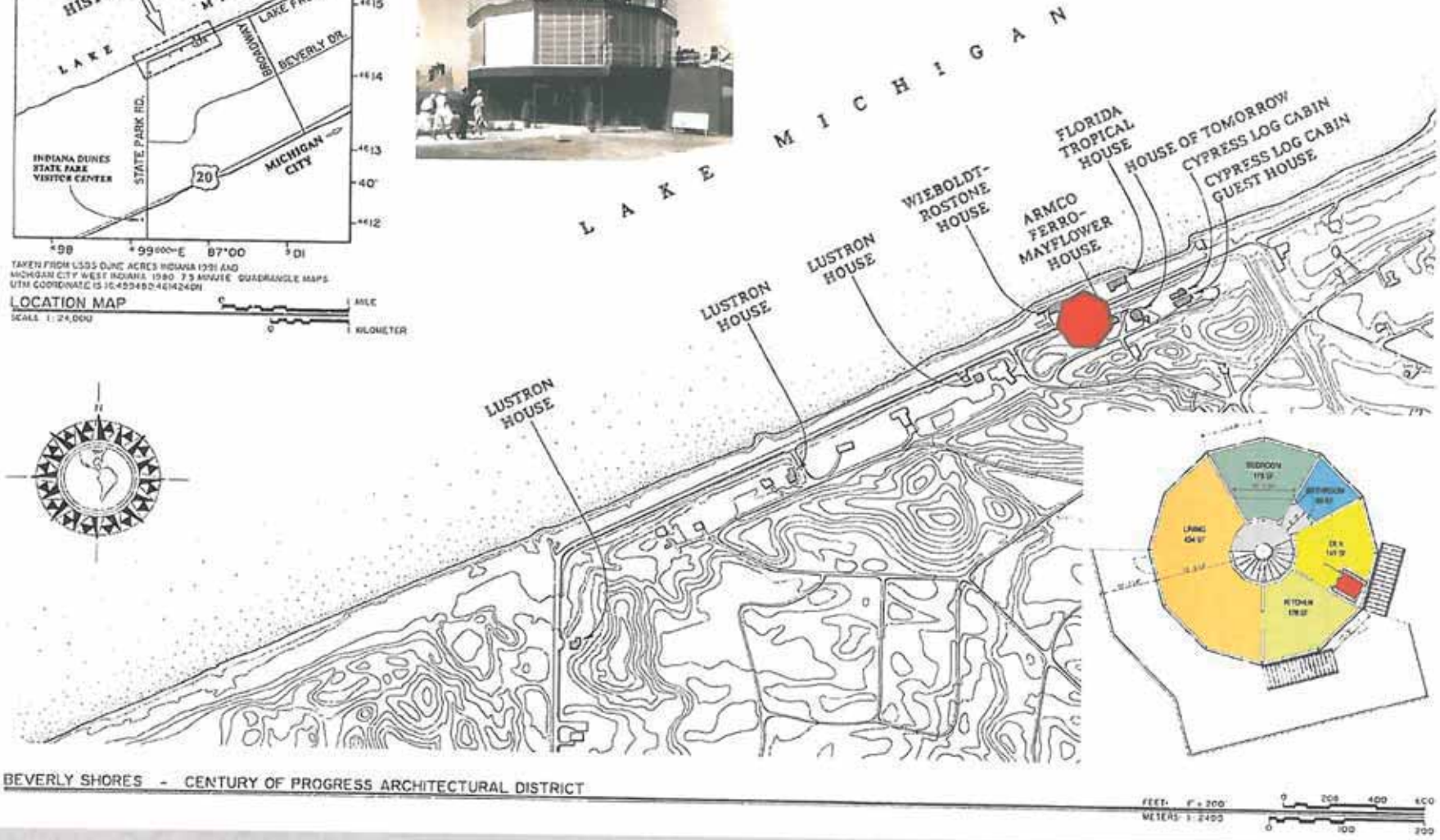
.

Bathing Beach House

BauerLatoza STUDIO

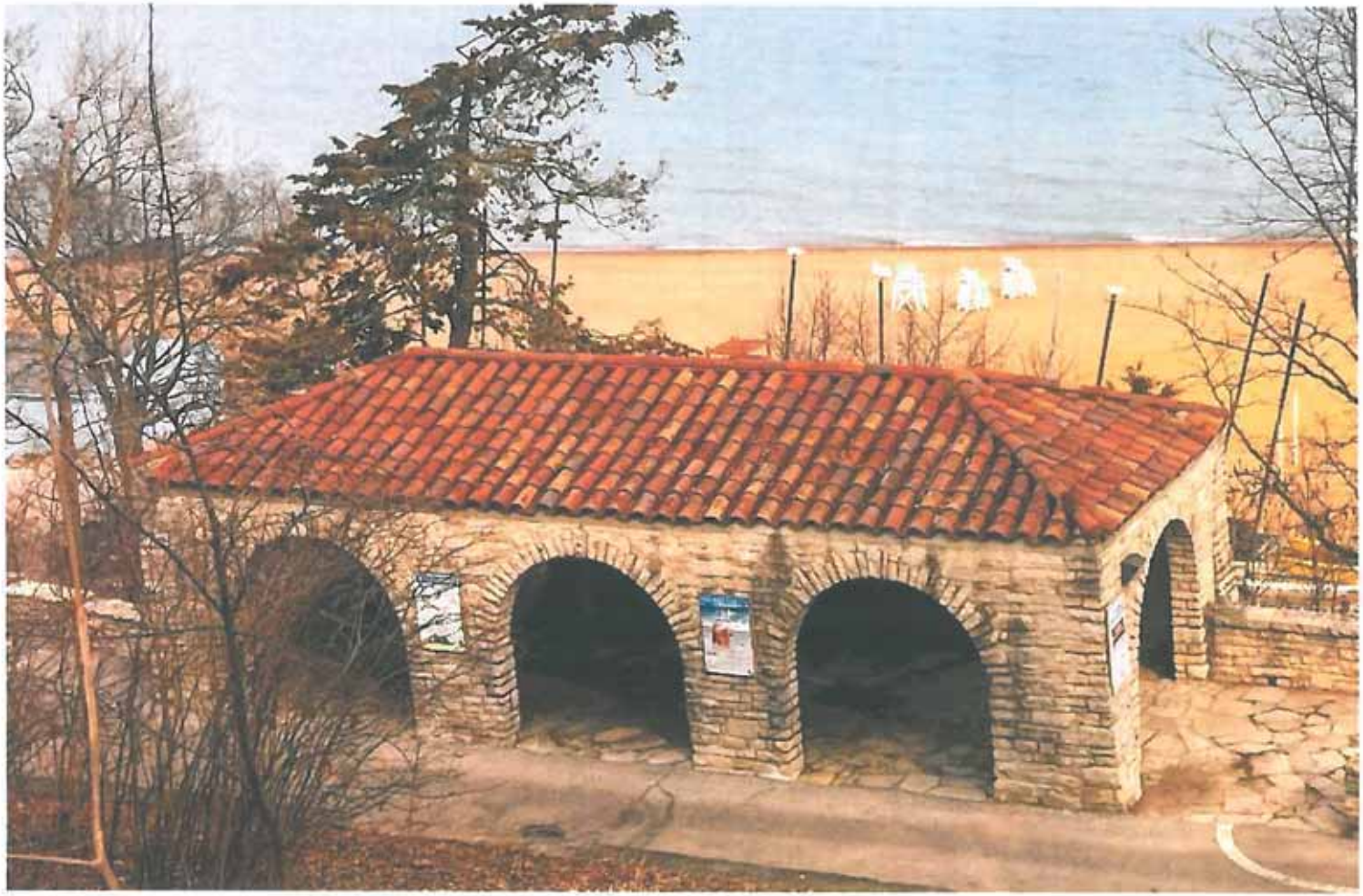


Century of Progress District



Glencoe Beach

BauerLatoza STUDIO



Glencoe Beach

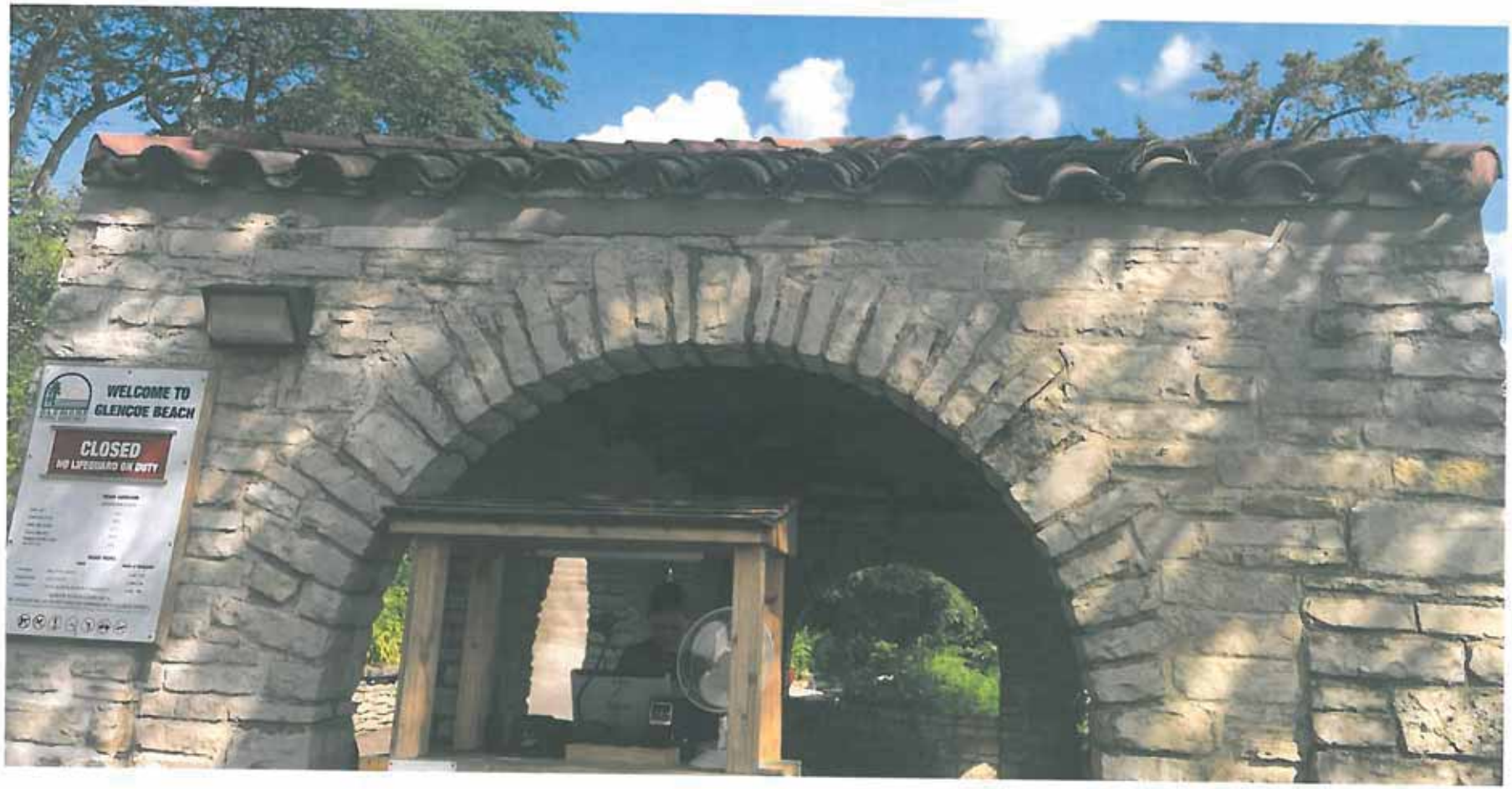
BauerLatoza STUDIO

Glencoe Beach

BauerLatoza STUDIO

Glencoe Beach

BauerLatoza STUDIO




Thank You
DISSCUSSION

Process 1

1.1 Kickoff Meeting

Coordinate detailed scope, budget, schedule, and administrative requirements
PD records
Contact info Village representatives and Glencoe Historical Society.

* Team assumes that coordination with the Village will be primarily the task of the PD

1.2 Historic Data Review

- Historical reports, drawings, other relevant information for the site and structures
- Storm water and other site utility reports and drawings and
- Landownership
- BLS will also carry out additional research into the history of the Architectural Structures. a

The available topographic data will only be applicable for the feasibility study level
Available Lidar data for the nearshore bathymetry should be adequate for the feasibility study.

Process 2

1.3 Field Data Acquisition

On-site assessment observe the existing conditions.

A geotechnical program will provide:

- Data to analyze the stability of the bluff
- Groundwater seepage issues

4 to 5 soil borings and Test pits will be dug

Test Pit Soils

- Visual assessment for characterizing and classifying soil
- Test in-place soil properties of soil
- Presence of ground water

Concrete Foundation

- Concrete weakness - identify exposed rebar or spalled concrete
- Bond between concrete foundation and stacked stone wall
- Horizontal, vertical, or diagonal cracks and bulging or curvature of the walls
- Differential settlement

Stacked Stone Walls and Columns

- Identify stair-step, horizontal, or vertical cracks (larger than hairline)
- Identify bulging walls

Process 3

1.4 Preliminary Technical Analysis

A preliminary technical analysis will be performed to support the development of conceptual alternatives for areas requiring restoration.

1.5 Bluff Global Stability

The global stability of the bluff will be evaluated using the soil borings and a visual assessment of the bluff. The analysis will focus on identifying over-steepened sections of the bluff and/or potential groundwater seepage concerns.
Cross sections will be analyzed to estimate the existing factor of safety of the bluff.

1.6 Bluff/Structure Local Stability

The Team understands the Park District prefers a structural solution
Team will provide a structural and geotechnical review of the structures
Make recommendations for restoration

Process 3

1.7 Storm Water Management

Team will review the existing conditions and general performance of storm water system. The analysis will look at the following components:

Top of Bluff
Regrading or rerouting surface water in the park with an emphasis protect the mature trees

Down Bluff
Collecting, conveying, and/or redirecting the surface water to existing storm water system, Propose new storm water infrastructure if required

Outfall
Review the existing outfalls and proposal of new or updated outfalls if required

1.8 Coastal Review

PD is required to nourish/fill the beach with sand periodically to maintain the desired beach
Baird will perform a cursory coastal review of the beach, groins, and jetty to provide the PD with preliminary concepts to improve the beach system.
The review will employ Baird's in- house data library of similar projects in the region.

Process 3

1.9 Alternative Analysis

Baird will perform an alternative analysis for areas requiring restoration identified during the data acquisition and preliminary technical analysis phase.

- 2 alternatives will be developed and costed.
  Conceptual drawings, consisting of plans and sections.
- The alternative analysis will include a summary of benefits and challenges and recommendations for priority of implementation.

2.1 Preliminary Opinion of Construction Costs

A Preliminary Opinion of Construction Costs will be prepared for each of the conceptual design alternatives for engineering and architectural services.

2.2 Deliverable and Presentation to Staff

The results of the alternative analysis, conceptual drawings and opinion of probable costs will be submitted in a draft report.
The Team will present to PD staff and respond to the comments received during the presentation and incorporate revisions accordingly.

Process 3

2.3 Final Deliverables and Presentation

The results of the study will be compiled into a brief report and a PowerPoint presentation. Altamanu will review the presentation and report with PD staff and make revisions according to their input.
The Team will make a final presentation to the Board of Commissioners.

The following schedule is for discussion purposes only.

Table 3.1: Estimated Schedule for Professional Services **Task** **Duration**

1 – Project Kickoff TBD

2 – Field Data Acquisition 6 weeks*

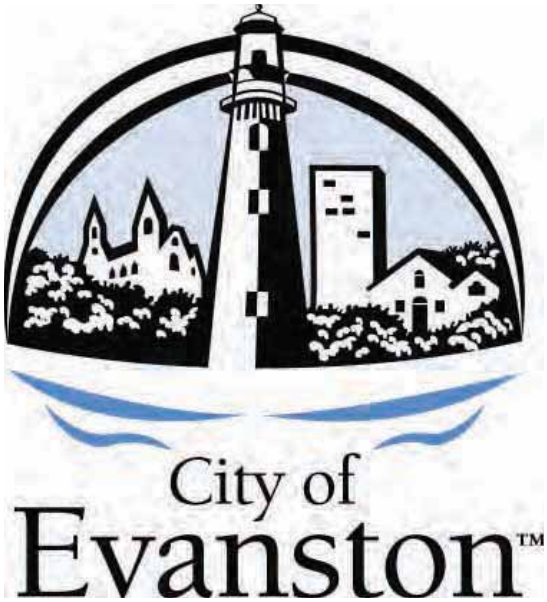
3 – Preliminary Technical Analysis 4 weeks

4 – Alternative Analysis 4 weeks

*Depending on geotechnical contractor's schedule, contract approval through the PD

City of Evanston™

LAKEFRONT MASTER PLAN



Lakefront Master Plan

Parks / Forestry & Recreation Department
City of Evanston
2100 Ridge Avenue
Evanston, Illinois 60201
847.328.2100

June 2008

prepared by

EDAW

in association with

CTE Engineers
McGuire Igleski & Associates Inc.
URBANWorks, Ltd.
Wolff Landscape Architecture, Inc.

Acknowledgements

Parks / Forestry & Recreation

Julia A. Caroll
City Manager

Douglas Gaynor
Director of Parks / Forestry & Recreation

Paul D'Agostino
Superintendent of Parks / Forestry

Bob Dorneker
Superintendent of Recreation

Stefanie Levine, RLA
Parks/Forestry Project Manager

Lorraine H. Morton
Mayor

Ald. Cheryl Wollin
1st Ward

Ald. Lionel Jean-Baptiste
2nd Ward

Ald. Melissa A. Wynne
3rd Ward

Ald. Steven J. Bernstein
4th Ward

Ald. Delores A. Holmes
5th Ward

Ald. Edmund B. Moran, Jr.
6th Ward

Ald. Elizabeth B. Tisdahl
7th Ward

Ald. Ann Rainey
8th Ward

Ald. Anjana Hansen
9th Ward

The Parks / Forestry & Recreation Department
would also like to recognize the
residents of Evanston for their attendance at the public meetings and
their contributions to the Lakefront Master Plan.

Table of Contents

Notes

Executive Summary

The Evanston lakefront park system is a very special environment, providing the community with a range of active and passive recreational opportunities, including beaches, playgrounds, flexible green space, trails, and a range of boating facilities. Additionally, several historic structures located on the waterfront create a sense of place that embodies the character of Evanston, and the parks are framed by beautiful single and multi-family homes that overlook Lake Michigan. In some areas, however, the lakefront parks are showing signs of being "loved to death", and the City of Evanston has recognized the need to create a master plan to ensure that the parks continue to provide high quality amenities that meet the needs of the community long into the future. In addition to providing a clear strategy for future park projects and improvements, the plan will assist the City in making the most of its limited financial resources while providing an effective tool that will support additional fund raising and grant application efforts. Finally, the City of Evanston has recognized the need to reduce the impact of human activities on the environment through more energy efficient structures and systems, expansion of more diverse park landscapes, and encouragement of alternative forms of transportation.

Process

The first step in this process was the development of the Lakefront Vision, completed in early 2007 by a consulting team led by Hitchcock Design Group. The Lakefront Vision was developed through an extensive public outreach process that engaged a wide variety of community stakeholders and established a clear vision for the master plan. The Evanston Lakefront Master Plan was developed through an iterative design process that tested a wide range of ideas and strategies for achieving the goals and objectives outlined in the Lakefront Vision. Three initial concept alternatives were developed and presented to the community. These concepts were refined based on the comments received from the community, and the preferred elements were included in two new concepts. These concepts were presented to the community, and further refined into a single "Draft Consensus Plan" based on community input. Following four presentations of the Draft Consensus Plan in locations throughout Evanston, a number of significant revisions were made, resulting in the Final Consensus Plan that was presented to the City Council and approved in January of 2008. This master plan document further describes this process and outlines in detail all elements of the plan.

Elements

A range of master plan elements are proposed throughout the lakefront parks. These elements include broad strategies that inform more detailed design decisions outlined in the discussions of each segment of the lakefront park system. These elements include sustainable design strategies such as proposing that all new buildings achieve a minimum LEED (Leadership in Energy and Environmental Design) rating of Silver, and providing park lighting that implements "Dark Sky" design strategies and significantly reduces energy use by using LED light fixtures. Landscape strategies are proposed that support an appropriate balance of flexible green space with expansion of native plant ecosystems that require less maintenance and provide habitat.

Accessibility for park users of all abilities is proposed, along with dedicated bicycle and pedestrian pathways throughout the lakefront. Improved pedestrian

access to the lakefront is provided by traffic calming measures intended to reduce vehicle speeds on Sheridan Road to the posted limits, while reducing the length of pedestrian crossings. Connections to all adjacent segments of the City of Evanston Bicycle trail network are proposed.

Improvements to vehicular circulation and problematic intersections are proposed that are intended to reduce pedestrian/vehicle conflicts and ease wayfinding. Existing parking lots are reconfigured to increase efficiency without an overall increase in parking counts or paved area, and off-street parking facilities are proposed to be paved in pervious materials that will reduce stormwater quantities and improve water quality. Modifications to the existing rock shoreline protection system are proposed, with the intent to improve visual access to the lake, reduce the negative visual impact of the rocks, and maintain access control to the waters edge.

Master Plan Areas

The master plan outlines specific recommendations for each parcel or use area along the lakefront. The plans includes specific recommendations for park improvements that provide a broader range of activities for different age groups, such as the Great Lawn that provides lakeside access and flexible green space, or the dedicated bicycle and pedestrian paths that provide accessible routes to all amenities on the lakefront. Specific improvements are proposed to restore popular but worn facilities such as the public boat launch, while also using these improvements to take advantage of littoral drift to make the dog beach less susceptible to rising water levels.

Existing historic elements on the lakefront, such as the lagoon and nearby lagoon building, are preserved and existing nearby conflicting uses are relocated to create a more gracious landscape space around the heart of Evanston's lakefront. Improvements to the lagoon promenade that re-use old street pavers maintain the historic character of the area while minimizing the impacts on the landscape from summer festivals. Lunt Park and Patriots Park, adjacent to the lakefront but separated from the rest of the parks by streets, retain distinct identities but are proposed to be more closely connected to the lakefront parks via improved pedestrian connections.

New restroom structures will replace the outdated existing structures that do not meet federal accessibility requirements. The new structures will establish beach entry points and are located near vehicular drop-offs that support public transit opportunities. These structures will be energy efficient, responsive to the historic character of the lakefront, and provide improved facilities for lifeguard staff and the community.

Renovations to existing park facilities, such as Clark Square or Garden Park, will maintain their historic use and character, while the existing landscape will be supplemented with native species that provide habitat for migratory birds, beautiful native gardens, and an understory landscape that helps define park rooms and uses. Outdated play equipment will be replaced with a play environment that celebrates the special location overlooking Lake Michigan. Imaginative play elements will allow children to create their own games and invent new worlds in place of prescriptive play equipment with defined uses.

At the southernmost end of Evanston, the master plan seeks to restore the

amazing experience of driving along Lake Michigan on Sheridan Road. The narrowing of Sheridan Road, coupled with the expansion of green space and lowered rock revetment will create an open, gracious space that welcomes visitors. No landscape or architectural monument could provide a more compelling entry statement for the City of Evanston than a clear view of Lake Michigan.

Evanston Lakefront Vision

The Evanston Lakefront Vision is the result of a series of focus group sessions and a public workshop lead by the City of Evanston Parks / Forestry and Recreation Department and the consultant team of Hitchcock Design Group, The Institute of Cultural Affairs and Merry Green Promotions Group. The visions, goals and objectives in the Lakefront Vision represent the accrued consensus of visioning participants. Participants included a focus group of community stakeholders representing a wide range of interests, as well as members of the public who were invited to participate in workshop sessions.

The master plan team used the Lakefront Vision as the basis for establishing the initial range of programmatic elements and developing the initial design concepts. One of the key assumptions of the master plan was to value the efforts put forth by the community to share their time and opinions to help create the Vision, and the master plan process would respect the results of that Vision and seek to achieve its goals and implement its objectives.

Overall Vision

"The Evanston Lakefront will carry forward as a unique and sustainable environment that supports the highest and best use of the public lake frontage and respects the delicate balance of its natural ecosystems and user interest."

The Evanston lakefront is unique in its openness and accessibility when compared to other communities along the north shore, and is one of the most compelling reasons people choose to live in Evanston. The majority of Evanston's shoreline is open to the public, and the long continuous stretches of parks, beaches, and open space create a wide range of recreational opportunities in an unparalleled lakefront environment.

What is a "sustainable" environment? The World Commission on Environment and Development defines sustainability as: "Meeting the needs of the present without compromising the ability of future generations to meet their own needs." The master plan process created a public forum for discussion among the residents of Evanston to define the aspects of sustainable design that should be implemented, and to define the highest and best use of its lakefront.

The phrase "respects the delicate balance of its natural ecosystems and user interest" nicely summarizes the primary goal of this master plan. The master plan strikes a balance between these conflicting aims in a reasonable way, as defined by the community. While there was a wide range of voices contributing to the plan, many of them calling for significantly more habitat and removal of existing programmed activity, in the end the community recognized that this is a place for people as well as the environment. As Will McDonough states in the first of the Hannover Principles (The Hannover Principles outline the sustainability goals of the 2000 World Expo, and are regarded as sound principles for sustainable design), we must "Insist on the rights of humanity and nature to coexist in a healthy, supportive, diverse, and sustainable condition." Our society is on the road to creating a more sustainable condition, and this plan takes measurable steps towards this goal.

Evanston Lakefront Vision Goals and Objectives

The Lakefront Vision is described in five elements, including Natural Environment, Access & Circulation, Program Offerings, Facilities, and Administration &

Policy. Within each of these elements, the Vision establishes a concept statement, goal, and series of objectives. The master plan responds to each of these goals and objectives, and the specific actions and recommendations proposed by the master plan are outlined below.

Natural Environment

"The lakefront's natural environment is comprised of a unique and sensitive set of ecological systems that require careful stewardship. It will be enhanced and maintained as a habitat for plant and animal communities as well as a valuable asset for Evanston residents and visitors."

Goal 1: Establish practices and policies to preserve and enhance the lakefront's natural environment.

Objectives:

- ❑ Enhance natural areas for wildlife habitat and passive enjoyment.
  - "Magic Hedge" style landscape plantings have been included at Garden, Clark Square, Lincoln Street Overlook, and Lighthouse parks.
  - "Upland Prairie" native grass plantings have been included near Greenwood Beach, Patriots, Lunt, and Lighthouse parks.
- ❑ Create natural buffers between lakefront transition areas.
  - "Dune Ecology" native grass plantings separate turf areas from beaches throughout the plan.
  - "Magic Hedge" and understory plantings are similarly used to define "landscape rooms" within larger open space areas.
  - Bioswales separate and screen parking areas, while treating stormwater runoff
- ❑ Restore natural dune habitat along specified areas of the lakefront
  - "Dune Ecology" plantings are shown throughout the lakefront, buffering the beaches from turf areas.
  - Non-native species will be removed from the existing dune ecology east of the Water treatment plan, and further restoration is proposed.
- ❑ Develop and install a planting regime emphasizing native, or non-native, zone tolerant landscape plants to improve lakefront aesthetics and decrease required landscape maintenance.
  - All species proposed will be native, or adapted zone-tolerant species.
  - Less-used turf areas will be converted to dune or prairie plantings, which - while requiring intensive maintenance to establish - result in lower maintenance costs, irrigation demand, and fertilizer demand over time.
  - A strategy for "underplanting" the existing mature tree canopy with appropriate tree species will ensure that the mature tree canopy endures over time as existing trees die-off or are damaged.
- ❑ Dedicate an area of undisturbed (not mown, etc.) lakefront space as a bird sanctuary.
  - The area east of the Water Treatment plant will be off limits to people except possible guided tours.
  - Other areas near Patriot's and Lunt Park will have not mown native grasses, but will not exclude people.
- ❑ Maintain the lakefront in accordance with environmentally sustainable best management practices.
  - A strategy for landscape maintenance that minimizes use of pesticides and fertilizers is proposed, along with alternate strategies such as

organic composting.

- ❑ Evaluate natural or engineered shoreline stabilization systems, including off-shore islands, reefs, peninsulas, and/or headlands, which might selectively replace existing rock revetment.
  - A technical analysis of various stabilization options has been reviewed.
  - Based on cost, technical considerations, environmental impact and aesthetic concerns, off-shore islands, reefs, peninsulas and/or headlands have not been proposed.
  - Proposals toward an incremental reduction in the height and quantity of existing rock revetment have been included. The initial step is a comprehensive evaluation of the existing lakefront protection system by a qualified coastal engineer. Primary issues are the determination of defensible lake level and storm event criteria, which determine the size and extent of the structures required. Following an evaluation that determines acceptable heights, we propose:
    - ▷ Lowering the height of much of the revetment to allow visual access to the lake.
    - ▷ Removal of revetment entirely where possible, such as areas protected by groins or other structures.
    - ▷ Use of dune landscape to create natural transition between zones

Access and Circulation

Planning for access and circulation at the lakefront should include a comprehensive strategy to emphasize both connecting the greater Evanston community to the lakefront, as well as improving and connecting trail systems within lakefront parks and open spaces.

Goal 2:
Create a strategy to improve multi-use trail conditions minimizing traffic conflict and emphasizing community connections for all trail users.

Objectives:

- ❑ Evaluate and improve multi-use trails through the lakefront park system.
  - Distinct trail systems for both bicycles and pedestrians have been proposed.
- ❑ Provide adequate trail lighting with sensitivity to both security and dark-sky issues.
  - Dark-sky ("cut-off") compatible light fixtures have been proposed, utilizing low energy demand technologies such as LED or Induction lamps.
- ❑ Construct unobtrusive way-finding signage along the lakefront including directional signage, maps and distance markers.
  - A comprehensive signage system is proposed.
- ❑ Increase and improve secure bicycle parking along the lakefront.
  - Improved bike racks are proposed throughout the lakefront, especially at access points such as restrooms and facilities.
- □ Consider creating separate paths for joggers / walkers and bikers / roller bladers.
  - Distinct trail systems for both bicycles and pedestrians have been proposed.
- ❑ Improve lakefront trail connection to downtown Evanston.
  - Improvements to the pedestrian crossing at the intersection of Davis and Forest should be included in any future improvement

- Significant improvements to pedestrian crossings at Clark, and Church streets are proposed, along with traffic calming strategies such as "bump-outs", which will reduce the pedestrian exposure to vehicular traffic from 40 feet or more to 24 feet.
- Bike trail connections to the Evanston Bike Plan are provided.

❑ Improve southern trail connection to Chicago.
- The elimination of unnecessary traffic lanes on Sheridan Road creates the opportunity to provide separate pedestrian and bike paths east of Sheridan, as well as on street bike lanes on Sheridan. Alternate strategies are provided should the traffic analysis require keeping all four lanes of Sheridan.

❑ Improve connections between lakefront and Northwestern University trail system
- The trail connection between the lakefront and Northwestern is maintained.

Goal 3:
Coordinate transportation resources to improve lakefront-user access while preserving the integrity of lakefront open space and natural areas.

Objectives:

❑ Evaluate and improve lakefront parking without designating additional space for parking.
- Proposed lakefront parking improvements include:
  - ▷ Upgrade of existing pavement sections to pervious paving, reducing peak storm surge.
  - ▷ Upgrade of existing pavement to accepted standard dimensions where necessary, without impacting existing trees.
  - ▷ Protection of users and clear designation of parking areas through traffic calming measures.
  - ▷ Maintain existing distributed character of parking along entire lakefront.
  - ▷ No new parking is provided, with essentially the same quantity of parking maintained.
  - ▷ Improvements to the aesthetic character of the existing boat parking are proposed, along with use of pervious paving and bio-swale treatment of initial stormwater runoff.

❑ Consider permit policy for parking lots immediately adjacent to the lake front.
- Parking management improvements will be proposed.

❑ Evaluate and improve public transportation access from greater Evanston to the lakefront.
- Access points for public transportation have been provided at Greenwood and Clark Street Beaches, as well as the Lagoon area.

❑ Consider providing shuttle service from downtown parking areas to the lakefront.
- Access points for public transportation have been provided at Greenwood and Clark Street Beaches, as well as the Lagoon area.
- Proposals for shared parking are proposed.

❑ Evaluate improving access for boaters to the lakefront from Lake Michigan.
- Comprehensive evaluation and modernization of the existing boat ramp is proposed.

- The boat ramp is proposed to stay in its current location, with no proposed changes to use policies. (No day-use passes, etc.)

- Integrate lakefront trail system with existing Evanston Bike Plan.
  - Bike trail connections to the Evanston Bike Plan are provided.
- Improve bike and pedestrian connections from the lakefront to adjacent neighborhoods.
  - Significant pedestrian safety improvements are proposed throughout, including crosswalks and traffic calming strategies.
  - Proposed trail systems respond to neighborhood points of access.

Facilities

Lakefront facilities will promote the highest and best use of the lakefront through the creation and maintenance of lakefront appropriate facilities. They will support activities of Evanston residents and visitors, be of high-quality, and emphasize environmental and architectural sensitivity.

Goal 4:

Assess existing park facilities and upgrade or replace depending on condition and need. Implement new facilities where there is demand while honoring the lakefront's environmental integrity and surrounding neighborhoods.

Objectives:

- Provide adequate lighting for park facilities, with sensitivity to both security and dark-sky issues. Consider energy efficient alternatives such as solar-power or LED lighting.
  - Dark-sky ("cut-off") compatible light fixtures have been proposed, utilizing low energy demand technologies such as LED or Induction lamps.
- Create cohesive, high-quality design scheme for new site amenities including buildings, lighting, signage, benches, trash receptacles, and picnic facilities.
  - A complete "kit-of-parts" for all site furnishings that complements the design of existing and proposed structures will be provided.
- Renovate, or if necessary, reconstruct, existing restroom facilities and beach houses, including evaluation of relocating facilities to optimize their use and access.
  - The existing restroom structure at Lighthouse Beach is proposed to be completely renovated, and an additional structure on the south side of the existing ramp is proposed to provide equipment storage for the lifeguard staff, minor concession space, and space for the staff to control entry and collect fees.
  - The Lighthouse facility is recommended to be LEED
  - The historic Lagoon Building shall remain
  - All other restroom structures are proposed to be replaced with LEED Silver or better structures.
  - New restroom structures will be relocated to provide points of entry to each beach, as well as to serve both beach and park users.
- Improve and modernize existing boat facilities to support boater use.
  - Existing non-motorized boat storage facilities are proposed to be upgraded, with new storage racks designed specifically for the various types of watercraft, increasing the number of boats that can be stored

while using less space.
    - Comprehensive evaluation and modernization of the existing boat ramp is proposed.
- ❑ Consider increasing the number of carry-in access points for non-motorized watercraft.
    - A "water trail" is proposed, which will create points of access for visiting non-motorized watercraft at each beach.
    - Allowances for additional carry-in access points are still under consideration, and is primarily a policy issue. No additional parking is proposed to support additional access.
- ❑ Develop an effective plan for a new emergency response system.
    - Proposed improvements include:
        - ▷ Lifeguard storage, office, and communication facilities will be provided with new/renovated restroom facilities at each beach.
        - ▷ Improved access and storage for waterfront emergency craft is proposed.
        - ▷ Additional foot or bicycle patrols of the lakefront may be considered.
- ❑ Evaluate demand for concession facilities and implement temporary or seasonal facilities if needed.
    - Public feedback has suggested that minor concession facilities associated with new restroom structures are acceptable. "Minor" facilities have been described as prepackaged or refrigerated foods, drinks, and necessities such as sunscreen, while excluding significant facilities such as grills or kitchens.

Programming

Evanston's lakefront programming will preserve the lakefront's unique natural environment by balancing passive and active recreational uses. Future programming for the lakefront will be based on the highest and best use of Evanston's lake frontage.

Goal 5:
Emphasize a balance between natural unprogrammed lakefront with a variety of lakefront appropriate activity programming to engage all users and generate limited revenue, while honoring the lakefront's environmental integrity and surrounding neighborhoods.

Objectives:

- ❑ Dedicate lakefront space that is unprogrammed and conducive to a quiet natural environment.
    - Significant areas of unprogrammed, quiet spaces have been proposed throughout the lakefront.
- ❑ Expand lakefront opportunity for non-motorized recreational lake use, such as swimming, kayaking, canoeing, and sailing.
    - Increased capacity for storage of watercraft is proposed, along with more access to the lakefront through the water trail proposal.
    - Expanded swim beach areas may be considered.
- ❑ Consider increasing restrictions on motorized boat use.
    - There are clear groups who support maintaining the existing boat ramp, and additional groups that support eliminating the boat ramp.
    - The majority favors maintaining the boat ramp in its current location, but improving its functionality to minimize long term maintenance

costs.
    - Proposed management of the boat launch facility to enforce the highest standards of safety, behavior, and best practices to prevent potential pollution (no fuelling of watercraft, for example) are included.
- ❑ Encourage lakefront community and cultural events by providing dedicated areas along the lakefront.
    - Community and cultural events are supported by providing an improved lagoon promenade that allows festivals to occur with reduced impact to the park landscape and attendant maintenance and repair issues. Re-use of existing stocks of brick road pavers would be in character with the historic nature of the Lagoon area, while providing a pervious surface of re-used materials that meet sustainability objectives.
    - The proposed Great Lawn provides ample opportunity for community and cultural events.
- ❑ Develop recreational and educational programming that serves all Evanston residents and visitors throughout the year.
    - Additional programs are proposed, including guided habitat tours, bird watching opportunities, and interpretive signage.
- ❑ Focus on educational and recreational program offerings that are appropriate to the lakefront and do not require extensive facility construction.
    - The proposed educational activities outlined above require little more than appropriate landscape plantings and signage.
    - Additional educational facility construction is limited primarily to landscape improvements or upgrading of existing facilities. All new proposed structures would be LEED Silver or better.

Administration and Policy

Lakefront policies and administration will promote equitable access for users, including fee schedules and barrier free physical access (per federal and state accessibility laws) all framed within a financially responsible plan for lakefront maintenance and administration.

Goal 6:
Develop and implement lakefront policies that support and fund a balance of high-quality lakefront appropriate programming and promote physical and financial accessibility for all users.

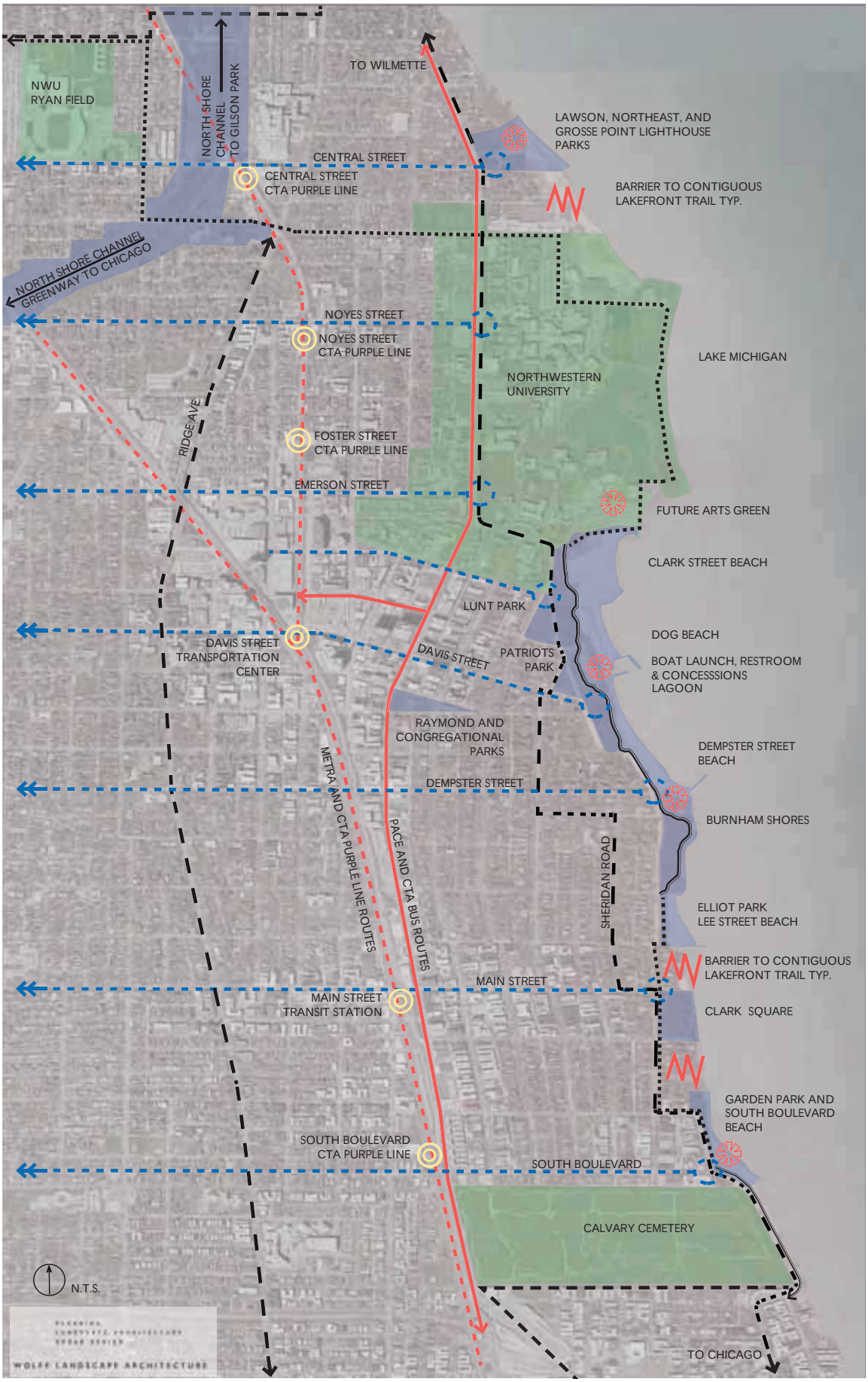
Objectives:

- ❑ Devise and implement a plan and policy to dedicate passive and active spaces at the lakefront.
    - A balance of passive and active spaces is provided.
- ❑ Upgrade all lakefront facilities to comply with federal ADA and state IAC accessibility laws.
    - All existing facilities will be renovated or replaced to meet ADA and IAC requirements
    - All areas of the park, and all amenities, will be made accessible by paved pathways.
    - All beaches will be made accessible via flexible decking.
- ❑ Evaluate policies addressing commercial use of the lakefront.
    - No "private" commercial uses are proposed.
    - Minor "public" commercial uses are proposed, including small

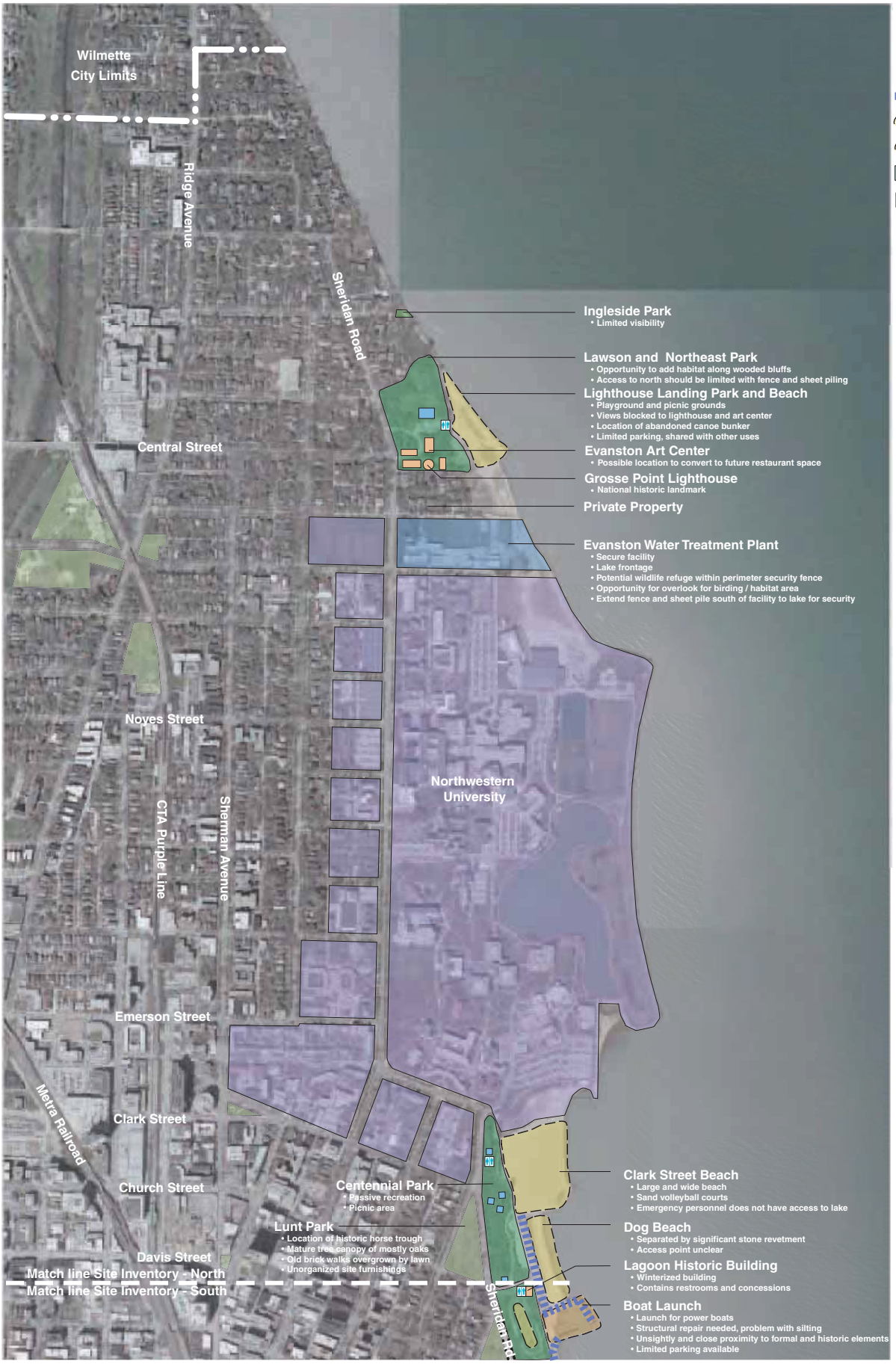
concession facilities at new restrooms, and a small gift shop or café intended to supplement funding for maintenance of the Evanston Arts Center.

- ❑ Program and fund an adequate maintenance schedule for lakefront facilities (e.g. restrooms) and landscaping.
  - Strategies are proposed to minimize the costs and maintenance requirements for the lakefront.
- ❑ Evaluate park facility operating hours and adjust to suit users' needs.
  - Ongoing hours of operations will be determined by user's needs and within the limitations of funding.
- ❑ Evaluate extending restroom operating hours to include all seasons.
  - Extending hours of operations will be determined by user's needs and within the limitations of funding.
  - All new facilities will be capable of year round use, without requiring complex winterization.
- ❑ Create policy (including a review of water access fees) that balances economic sustainability and access affordability.
- ❑ Recommend that the City include the entire Evanston lakefront, including private property, as part of the master plan.
  - The entire lakefront has been considered in this plan.
  - No new requirements have been proposed for private property, although potential recommendations for voluntary habitat enhancement will be provided.

Existing Conditions

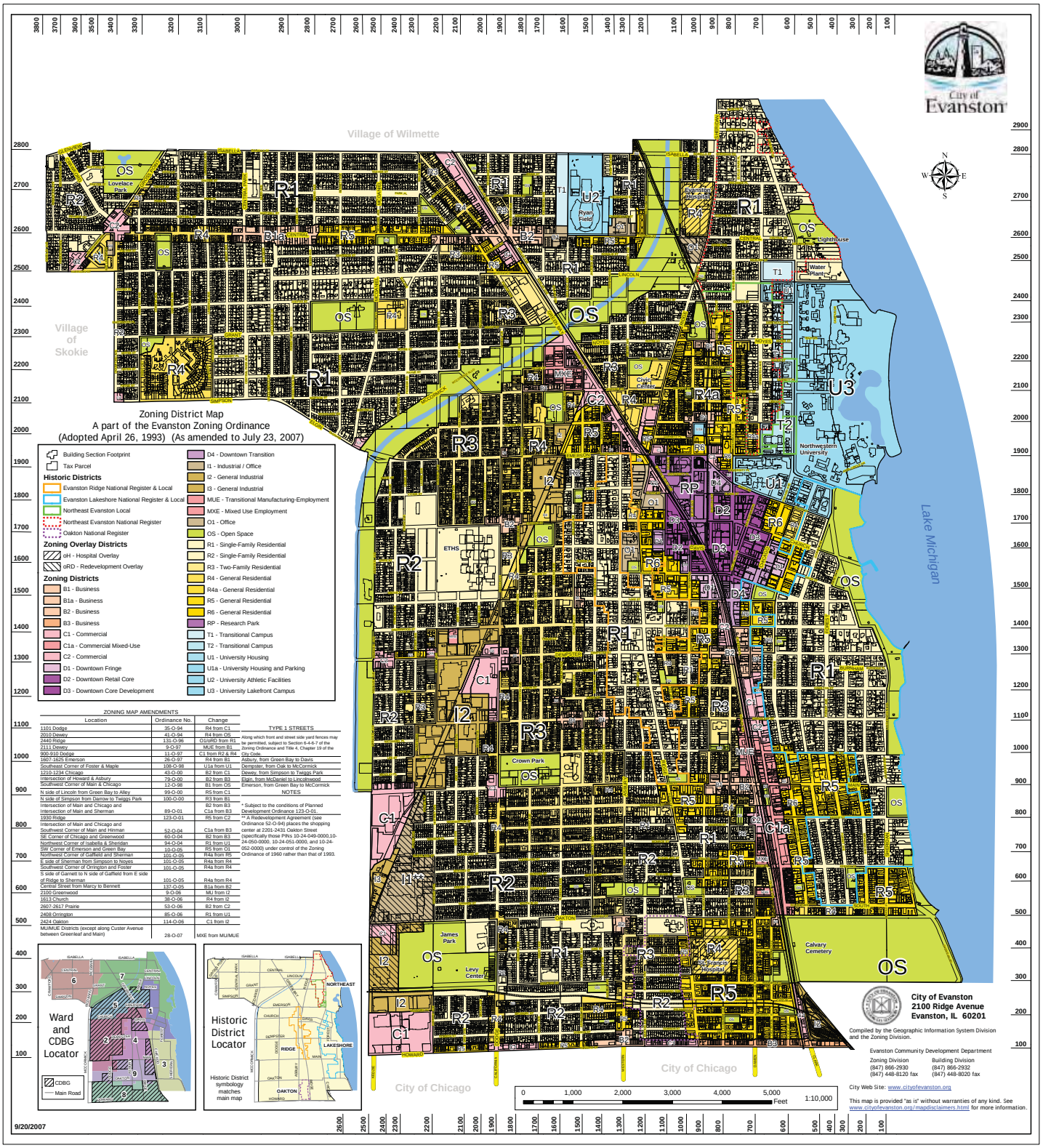


Site Inventory - North

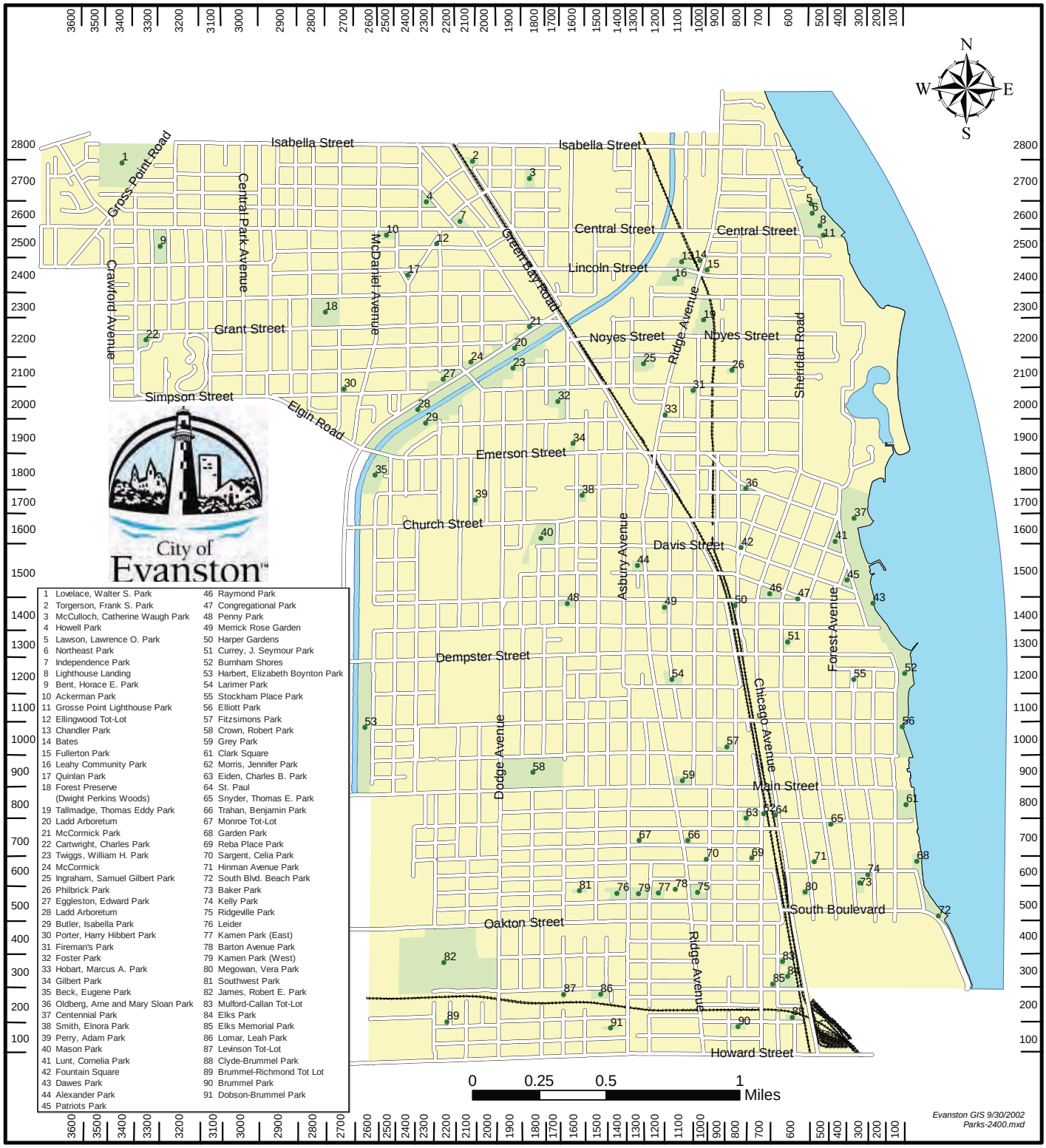


Site Inventory - South

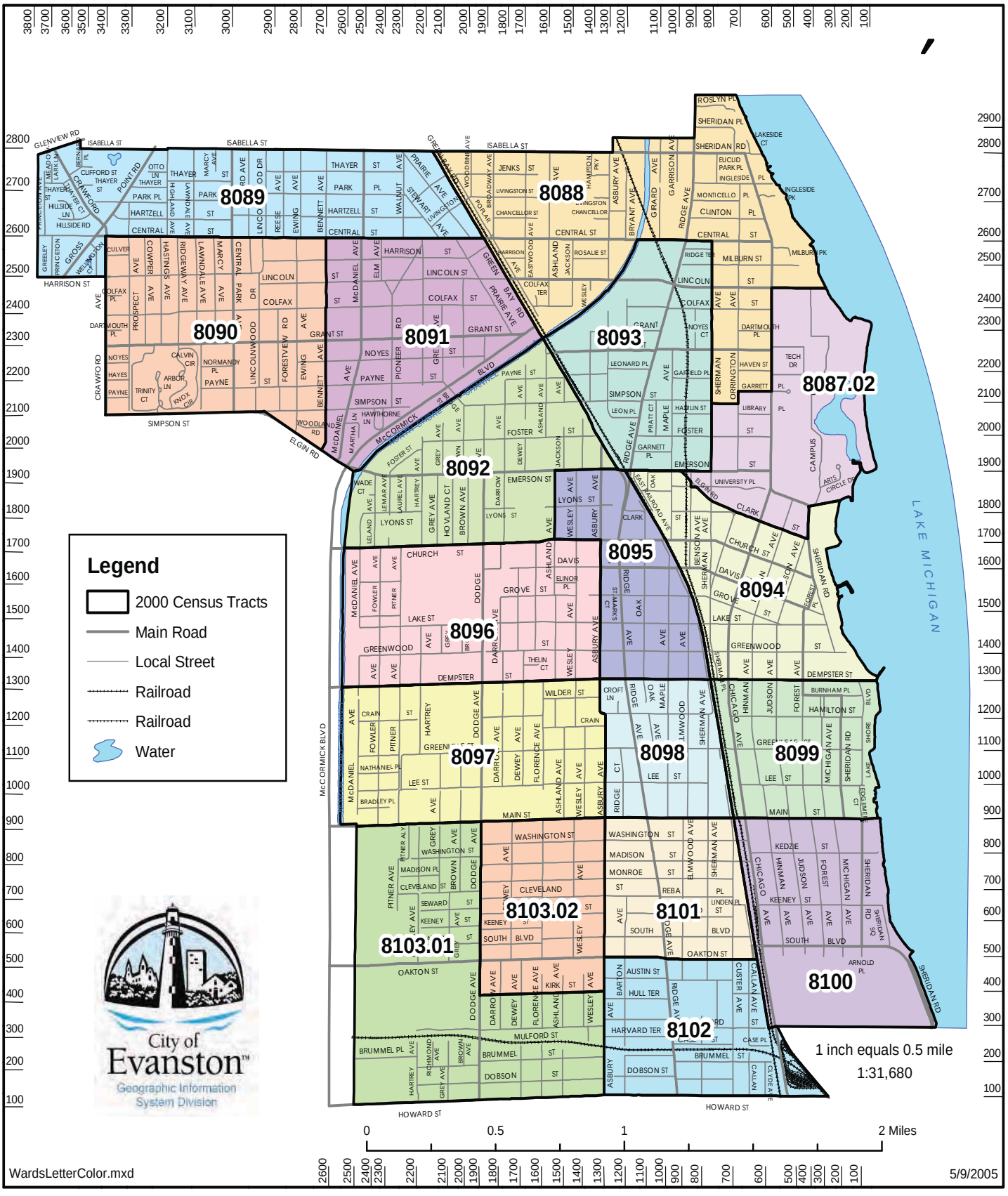
City of Evanston Zoning



City of Evanston Parks



City of Evanston Year 2000 Census Tracts



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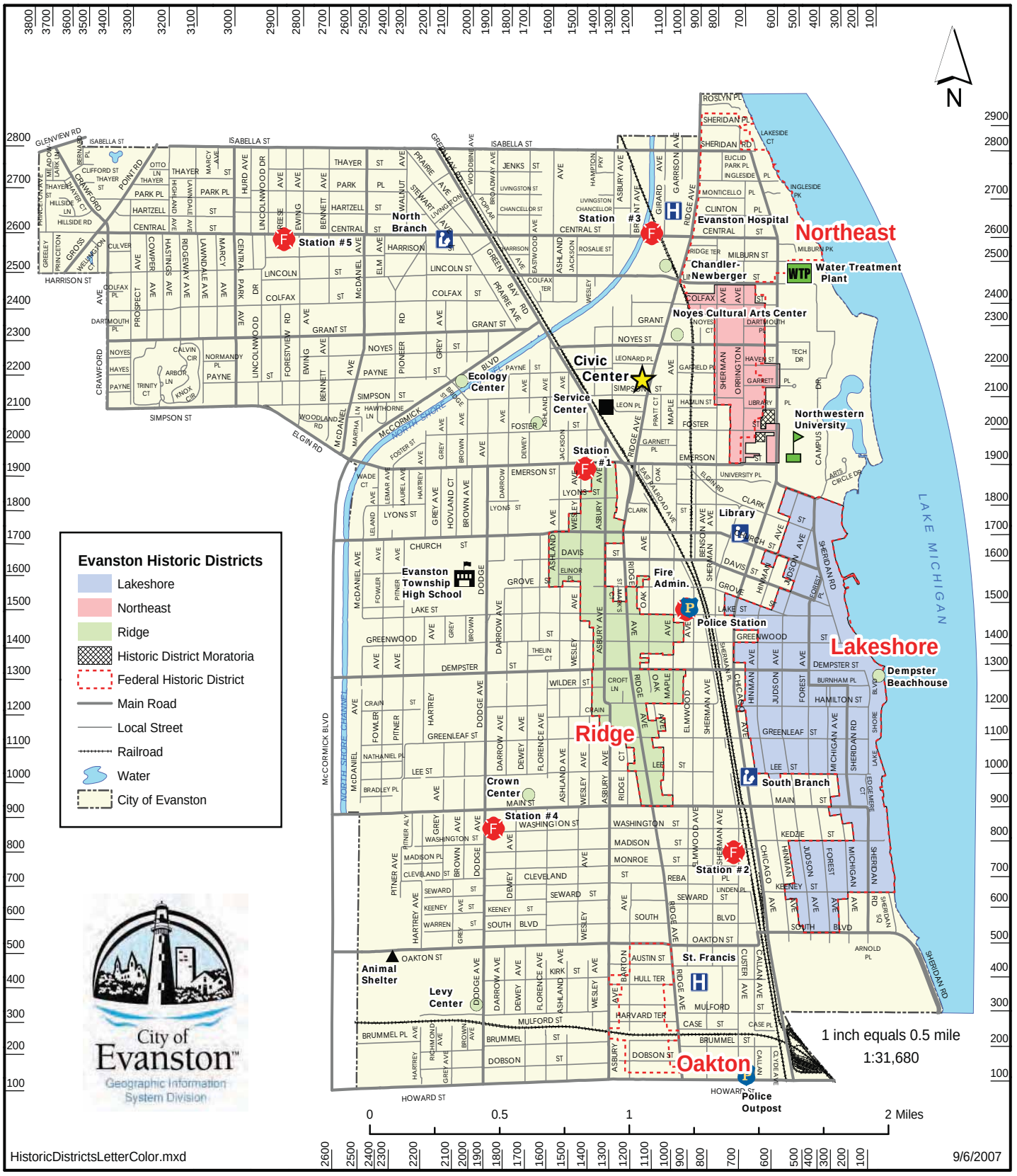
City of Evanston Local and Federal Historic Districts



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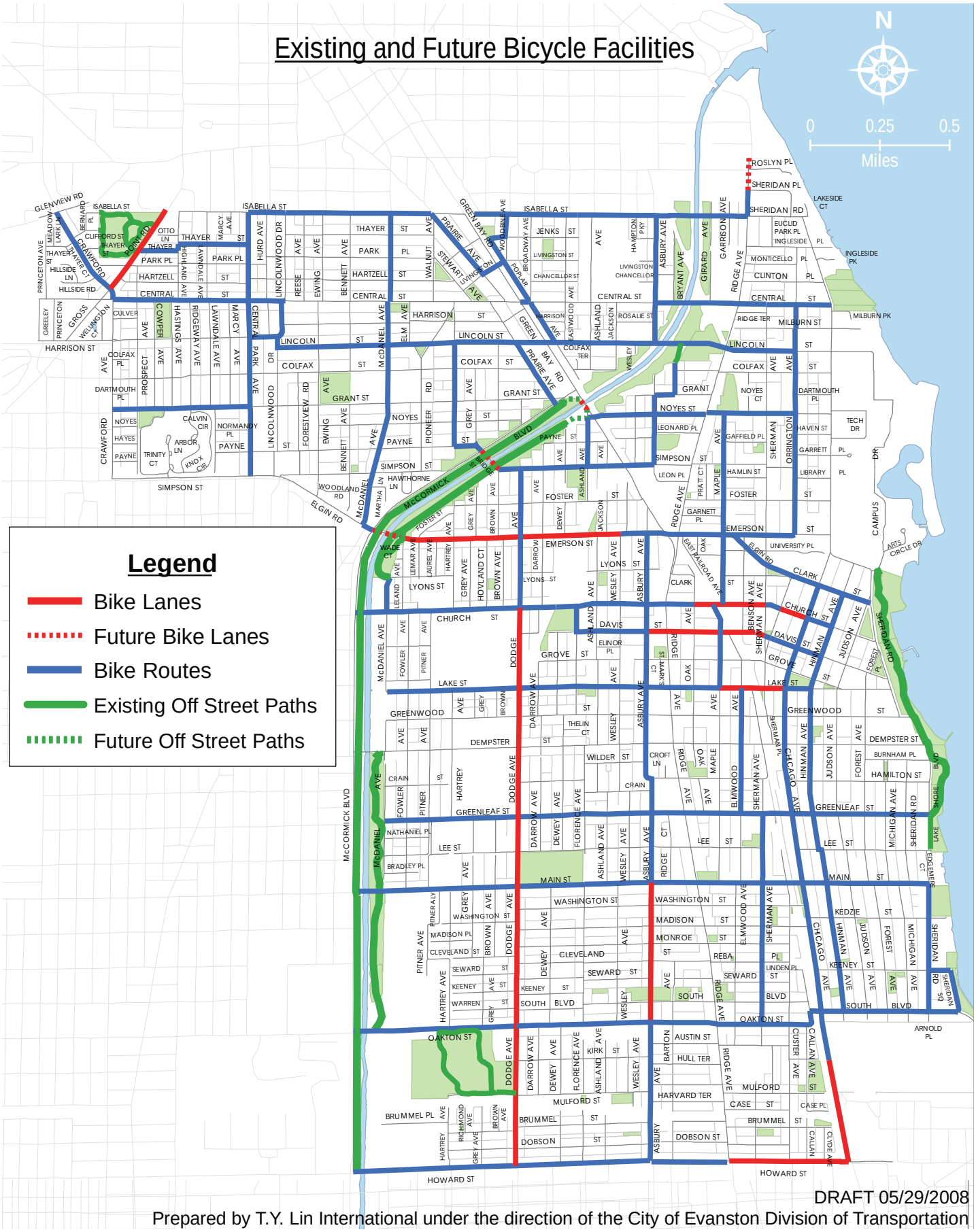
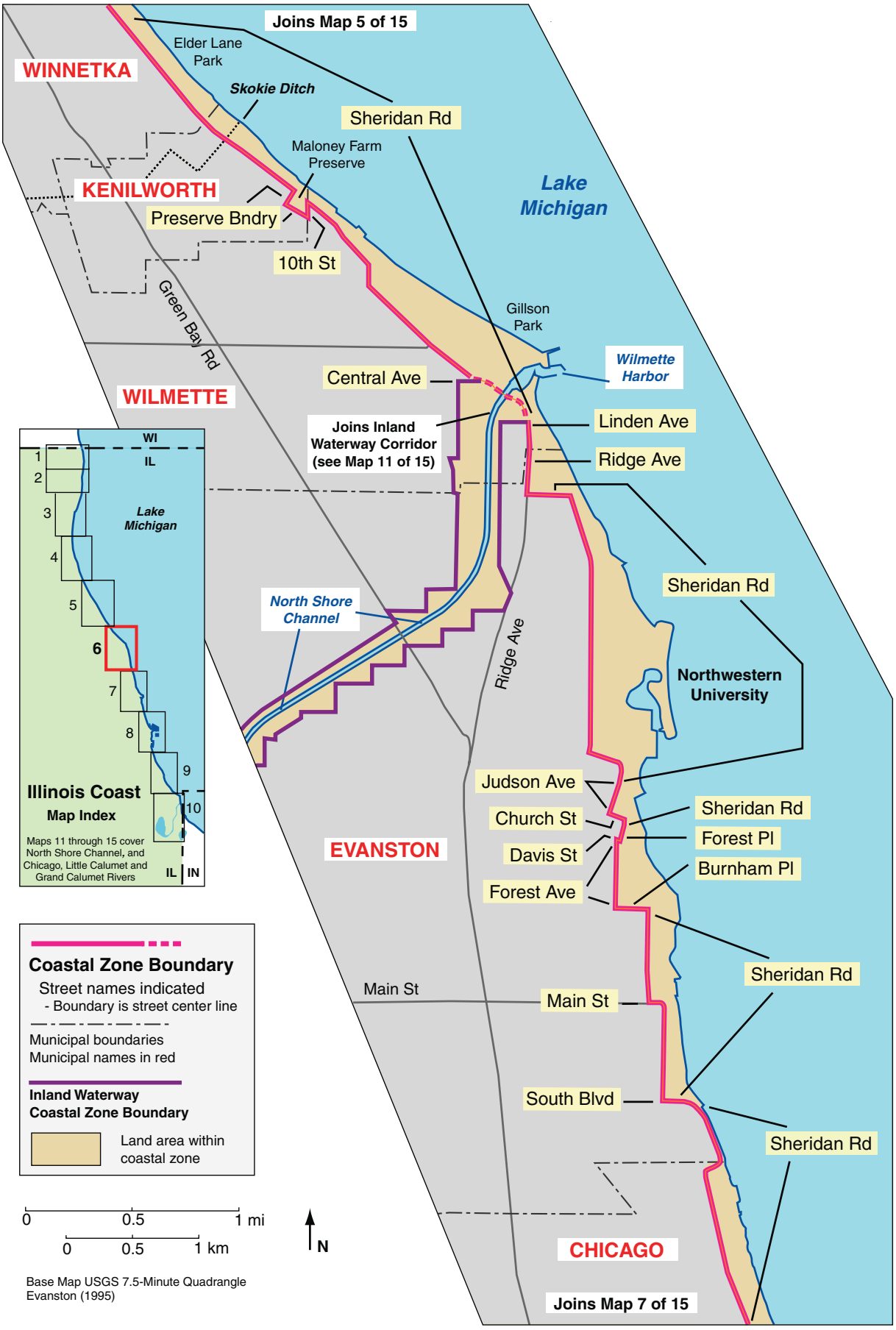
Existing and Future Bicycle Facilities



DRAFT 05/29/2008

Prepared by T.Y. Lin International under the direction of the City of Evanston Division of Transportation

Illinois Coastal Management Program Coastal Zone Boundary



Base Map USGS 7.5-Minute Quadrangle
Evanston (1995)

Chicago Transit Authority Northern Map

Sunrise Park and Beach
Waterfront Master Plan

Lake Bluff Park District

Anticipated Adoption January 27, 2014

Table of Contents

Letter from the Board President

Dear Lake Bluff Park District Community,

On behalf of the Board of Commissioners, I am pleased to announce the completion of the Sunrise Park and Beach Waterfront Master Plan. This is the first large-scale improvement plan created for the site since the south beach improvements in 1990's. It incorporates thoughtful planning expertise and rich community input. We are confident that this new Master Plan preserves the beauty of Lake Bluff while it also charts the way toward an expanded and detailed view of how the beach may serve the public for years to come.

The Waterfront Master Plan encourages sustainable development that lays a foundation for enhancing natural areas, expanding recreational activities, and encouraging life-long recreation.

The Board of Commissioners along with the Park District staff and the Sunrise Park and Beach Advisory Committee look forward to fully utilizing this plan to facilitate the improvements proposed over the next 20-30 years. We invite continued communication and community input as we proceed. Our commitment to the purposeful, on-going investment to this site will enhance the experience of living in our wonderful Park District community.

With deepest regards,

Kevin Considine
Board President

Board of Commissioners

The Waterfront Master Plan would not be possible without the support and input from the Lake Bluff Park District Board. Thank you to each member who has given and continues to give of their time freely to guide the future of the Park District.

Kevin Considine	Board President
Rob Douglass	Vice President
Bob Wallace	Treasurer
Kurt Gronau	Commissioner
Kauri McKendry	Commissioner
Susan Ehrhard	Commissioner
Brock Gordon	Commissioner

Advisory Committee

The Advisory Committee gave of their time to hold community forums, attend meetings as well as working to understand the needs of the community for this site. This was an on-going commitment for over two years. A very big thank you to each member for all their time and efforts that were extended above and beyond to create a plan that meets the needs and desires of the community.

Geoff Surkamer	Chair
Jill Danly	Member
Pat Faligant	Member
Bill Hermann	Member
Jim Salanty	Member
Tom Terrill	Member
Sophie Twichell	Member
Kauri McKendry	Park District Representative
Bob Wallace	Park District Representative
Steve Christensen	Village Representative

Park District Staff Focus Group

Ron Salski	Executive Director
Ed Heiser	Superintendent of Facility Services / Head Golf Professional
Jim Lakeman	Superintendent of Recreation, Safety, and Outreach Services
Rob Foster	Superintendent of Golf, Parks, and Facility Maintenance

Consultants

Upland Design Ltd.	Landscape Architect / Land Planners

In association with:

Legat Architects	Architect
Shabica & Associates, Inc.	Coastal Engineer
P. Clifford Miller, Inc.	Bluff Management Consultant / Landscape Architect

Executive Summary

A Master Plan begins with a realistic evaluation of the assets and the liabilities of the facility or venue. At Sunrise Park and Beach, this evaluation involves physical site conditions, community opinions, and the emotional considerations that have made this site a success. The objective of this evaluation is to determine what is good, what is marginal, and eliminating some of the pieces that are not functioning to the their fullest potential.

Sunrise Park and Beach has created fond memories for generations. Because of its well known and loved place in the community, we must be mindful that the existing product is a good one with a solid reputation for public recreation. There is a good balance between historical content and recreational opportunities. Our goal is to honor that balance while bringing new life to the site. As the project moves forward, this plan is a living document that needs to reflect the evolving ideas and vision of the Lake Bluff community.

The experience of our project team allowed us to take a holistic, collaborative and realistic approach to the assessment, the planning and the implementation of a renovated Sunrise Park and Beach. Our mission was to be highly creative with the planning and new concepts, while never losing sight of the site infrastructure and “responsible design”. This was all done while collaborating with the Advisory Committee and the listening to the needs of the community.

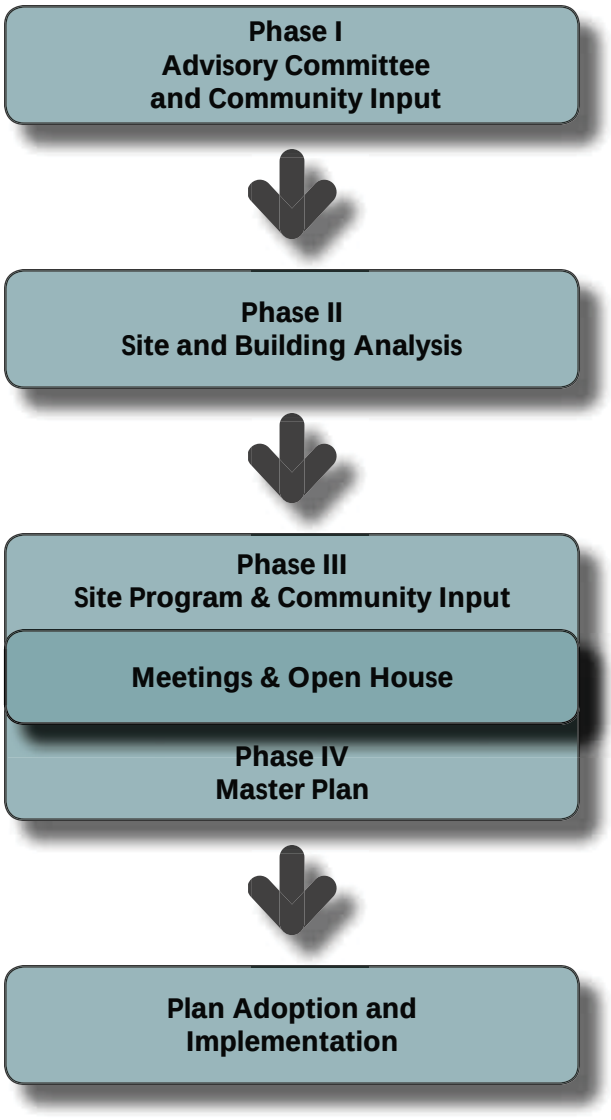
Project Approach

A four-phase approach was delineated to create the Sunrise Park and Beach Waterfront Master Plan.

In Phase One, the Advisory Committee held numerous committee and public input meetings developing needs and ideas to improve Sunrise Park and Beach. This feedback was a critical phase assisting Upland Design team to generate concepts and improvements.

Phase Two began with a site inventory and analysis of the site. This included a review of the beach and lakefront, bluff vegetation, existing shelters, NSSD building, pedestrian paths as well as vehicular circulation and adjacent land use. The information is presented with site photos and written format. These are included in the document accompanied with a summary of findings.

Phase Three concentrated on the site program as it was compiled through input from the Park District Board, Advisory Committee. This phase overlapped into the final phase - creation of the Master Plan. This allowed the Board, Advisory Committee members and the public to continue to give input and feedback on the documents as they were developed and ensured that the plan met the needs of the community and the larger vision for Sunrise Park and Beach.



Chapter 1

Site and Building Analysis

Sunrise Park and Beach sits along approximately 1,800 feet of Lake Michigan's western shore. The park and beach invite the community to enjoy one the only public beach in Lake Bluff. Rustic in design, the park and beach are known for its connection to nature along the bluffs of northern Illinois. The site is used year round as a location for walking, enjoying the lake front, and boating. During the summer, the site gets an increase in users with swimming, picnicking and beach volleyball along with Park District programs.

Existing beach amenities include:

- Two guarded swimming beaches
- Playground equipment
- Two shelters with fireplaces
- Charcoal grills
- Restroom facilities
- Complimentary games
- Complimentary beach chairs
- Kayak rental

Beach and Lake Front

Sunrise Park and Beach is considered a hidden gem among Lake front beaches. The beach underwent major improvements in the late 1990's to stabilize and expand sand areas. Shabica and Associates, Coastal Engineers, created and implemented an improvement plan. Work included the addition of large stones at the base of the bluff to protect it from further erosion. Today, those stones are partially buried in sand and bluff soils.

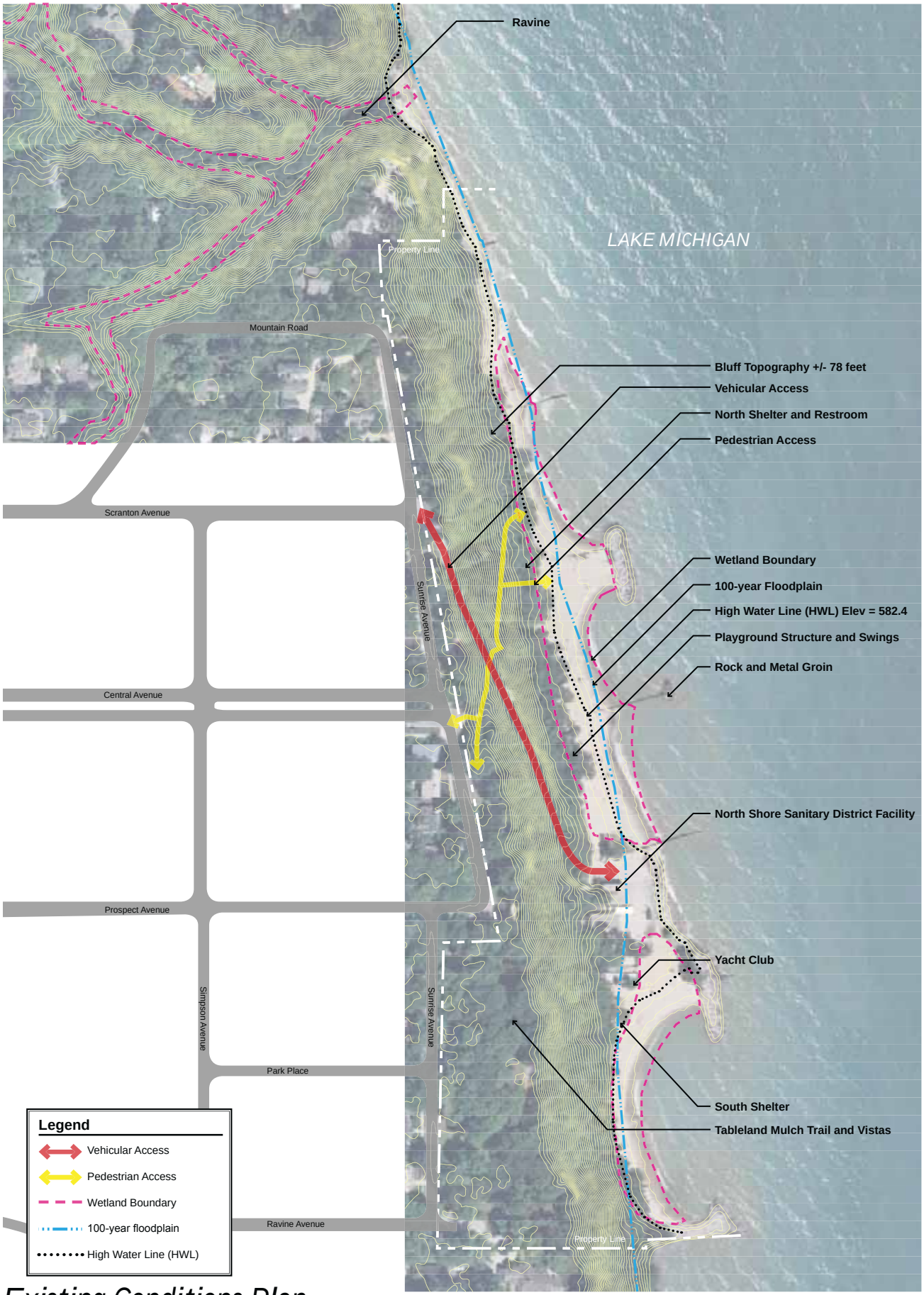
In order to maintain sand on the beach and reduce wave action, coastal groins extending into the lake are strategically located. These are made up of corrugated steel, rock, or a combination of the two. The various groins range in condition. Most of the stone groins are in good condition, however most of the steel groins have holes worn through them.

Recommendation:
The groins should be reviewed for current condition. Action should be taken to ensure continued protection of the beach through the groin system.

Water Levels

Lake Michigan water levels cycle higher and lower with up to a 6' vertical difference. During the 2012 and 2013 beach season, the lake levels were historically low giving a large beach area. During the 1990's the lake levels were much higher giving a much shorter beach.

Recommendation:
Planning must take into account the varying levels of water that effect the erosion and amount of beach available.



Existing Conditions Plan

Bluff and Native Plantings

Native planting along the bluff are a necessity to the health of the bluff system. There are various vegetative communities represented between the tableland at Sunrise Avenue and the beach. Seventy-six feet of grade changes creates the bluff that Lake Bluff is named for.

A Bluff Vegetative Management Report was created by P. Clifford Miller and Associates in 2012-2013. The report identifies major woodlands, mesic forest and meadows located on the bluff with an extensive review of each vegetative community. As part of the report, suggested vistas along Sunrise are identified that fit with the site and vegetation.

At the base of the bluff near the NSSD building, the Lake Bluff Open Lands Association (LBOLA) maintains a native prairie and beach grass area. The Waterfront Master Plan incorporates both the LBOLA area and the Bluff Vegetative Management Report as part of the overall plan.

Tableland and Mulch Trail

Along Sunrise Avenue between the road and the edge of the bluff, there is a large lawn area with deciduous trees creating a shaded park area. The area, called the tableland, is used for viewing the lake, weddings, events and general park play.

At the edge of the bluff, a mulch path runs along Sunrise Avenue and the tableland. There are twenty-three memorial benches scattered along the trail. Additionally, a bike rack, rail fence and signage can be found along Sunrise Avenue.

Overall the park has a worn look along Sunrise Avenue.

Recommendation:
Add landscaping to improve the look, designate locations for entry signage, do not allow any additional memorial benches, and group benches where possible.

Vehicular Parking and Access

The partnership between the Park District, Village of Lake Bluff, and the North Shore Sanitary District (NSSD) has had a significant impact on the vehicular access to the beach. The road that leads down the bluff was built for maintenance access of the NSSD facility. When the road is not being used for service of the buildings, Park District staff, Lake Bluff Yacht Club, and park users are able to utilize the road for drop-off purposes including maintenance equipment and larger personal items when the shelters are rented. Two ADA parking stalls are also located near the NSSD building for users to access the beach. Parking at the beach is prohibited except the used listed above.

Vehicular on-street parking is available along the east west streets as posted by signage. No parking is allowed along Sunrise Avenue. All parking east of Moffett Road is prohibited after 9:00 PM unless a special parking permit is obtained from the Park District.

Pedestrian Access

There are a variety of paths for users to enjoy the site. At the top of the bluff on the tableland, there are multiple vistas that can be viewed along the mulch trail with seating opportunities along the path. Access down the bluff to the beach includes the following routes.

At the south end, a gravel trail is accessible between Prospect Avenue and Central Avenue. This path is lit with bollards in variety of conditions. At Central Avenue, the main entrance to the site, a flight of wooden stairs meet up with the south gravel trail. This middle option is available for more able bodied patrons.

Due to the low traffic and with it being gated most of the time, a third option down the bluff is the use of the paved asphalt road at Scranton Avenue. Although not publicized as a pedestrian access, users use this as the north access down the bluff.

Yacht Club

Lake Bluff Yacht Club is a private member based Sunfish sailing club. It provides sailing programs, including racing instruction, family participation, and social activities. Located south of the NSSD building, the Yacht Club has primary access to the lake on the south beach as designated by a sign. The Yacht Club leases the property which is owned by the Village.

Dog Beach

Located at the northern edge of the existing beach, the designated dog beach area allows visitors to bring their canine companions to enjoy the lake. This area is gated at the south with a split rail fence and has signage posted with the rules and regulations. North of the dog beach is an area of stone and concrete rubble which is part of the site but currently un-welcoming for beach use. The beach sand is more gravelly at the dog beach than other beach locations making it less desirable.

Playground

The playground area is located just north of the NSSD building and centrally located along the beach. Close to the toe of the bluff, there is no designation between the playground area and beach. The playground surfacing which is beach sand, does not meet current standards. The playground is at an age where replacement is desired.

Sand Volleyball Court

One sand volleyball court is centrally located on the beach and oriented north-south. The court is available for use on a first come, first serve basis unless it is scheduled for a tournament. The posts are aluminum and along with the net, they are showing signs of wear.

Existing Signage

Signage at the park and beach include park identification, wayfinding, and regulation signs. These are located throughout the site.

At Central Avenue, a site sign welcomes patrons to one of the main entrances. A safety and regulation sign is also at the top of the bluff. This sign identifies when lifeguards are on duty and the swimming conditions. This sign is not particularly clear on swimming conditions.

Recommendation:
The swimming condition should be replaced with an updated sign. An additional sign should be placed at the other entrances to the beach along the top of the bluff and all signage on site should be reviewed to create a congruent and welcoming message.

Ravine

Adjacent to the northern end of the park, there is a ravine between the bluffs. There is an easement in the middle of the ravine that is owned by the Village and the slope of the ravine on either side is privately owned. A foot trail can be seen at the bottom of the ravine, however it is not marked as a trail. Residents use this ravine as a rail to the lake front.

Recommendation:
Pursue the possibility to create a formal agreement between the Village and the Park District for permanent access to Sunrise Park and Beach using the ravine.

Restroom and Storage Building

The restroom and storage building is a one story residential style building with a hipped roof with cedar fascia and soffit and standard three tab architectural shingles. The west end of the building is partially built into the hillside and the east side faces Lake Michigan. There are two small windows on the west side of the building, two doors on the east side, and one door on the north side. The building has no particular architectural style, and it does not reflect the character of the neighborhood.

The roof is in average condition, and while the shingles are stained and rather old looking, they do not appear to be in danger of failing. It appears the building has been re-roofed, as there are some areas where another layer of shingles underneath this roof can be seen. The cedar fascia and soffit on all four sides of the roof is in very good condition, and appears to have been recently repainted.

On the outside of the building, all of the original doors and windows have had sheet steel doors or window covers fabricated and installed over the original openings, and they have been anchored directly into the face brick. The condition of these door covers is very poor, as they are dented, rusty and generally beat up. Aesthetically, they detract from the appearance of the building and have an industrial look that is not appropriate for a building of this type.

There are two toilet rooms in this facility, and the condition of these two rooms is identical. The exterior walls and some of the interior dividing walls are yellow glazed concrete block. The interior wet walls are covered with Fiberglass Reinforced Plastic (FRP) panels which is not very attractive. There are a couple of fluorescent lights on the ceiling and an exhaust fan can be heard when operating.

The condition of the plumbing fixtures is average for a building of this age. The floor itself is an epoxy coating over the concrete slab which has worn off in many locations. The lavatory countertop is a solid surface material which is in fairly good shape.

There are two main concerns with the toilet rooms. First, the condition of the toilet rooms themselves is very unappealing in terms of general finishes, colors and condition. Second, the toilet rooms are not ADA accessible. There is no accessible toilet, urinal or sink, and the entry sequence into each room is very tight and does not provide the required maneuvering clearances. Due to the small size of each room, in order to remodel them and make them accessible, one toilet would have to be removed in order to provide the proper size facility. If an option is to renovate this building, both toilet rooms should be currently gutted and remodeled to ADA compliant facilities.

At the south side of the building, there are two rooms. The one room in the southwest corner contains fire alarm, electrical and plumbing equipment, including a sewer ejector pump. The southeast room is cluttered with a small refrigerator, coat hooks, old furniture, equipment, etc. The condition of this room is acceptable for storage, but not for an actual work space.

Recommendation:
Based on the assessment of this building, it is possible to renovate the building to bring it up to current standards. However, the building is so small, and lacks architectural character, so another option for consideration would be to build a new building, in an appropriate style, that provides the necessary space and facilities and represents the character of Lake Bluff.

North End Picnic Shelter

The construction of the picnic shelter is very similar to the restroom and storage building. It uses the same brick, roof structure, shingles, fascia and soffit. However, this building has a perimeter partial height wall around three sides of the building, and the east side is completely open to the lake. There is an exposed concrete slab, which is in generally good condition. The stone fireplace in the corner of the building is in generally good condition, although it would benefit from a good cleaning.

The condition of the brick around this building is very similar, with the same amount of cracking and broken bricks. On top of the partial height brick walls is a concrete sill which is in average to slightly below average condition, with some cracking. It would benefit from a good cleaning.

The columns supporting the roof structure are 4" square painted steel columns in pairs, except for at the corners, where they are grouped in three. Their condition is very good, and they appear to have been recently painted.

The underside of the ceiling is 4' x 8' sheets of grooved plywood, painted to match the fascia and soffit, and is in generally very good condition. There are two light fixtures mounted to the underside of the ceiling, which are not particularly attractive.

The main concern of this facility is that, like the building to the north, there is no architectural style to this building. These two buildings together appear to be nothing more than simple brick boxes with hipped roofs on top. While there are no imminent concerns on this facility regarding structural integrity, we feel that for a park and as special as Sunrise Park, something more in keeping with the architecture of Lake Bluff should be implemented.

A functional concern regarding these buildings is the fact that there is not ADA accessible route to get to the buildings from the parking lot.

South End Picnic Shelter

The South shelter was built in the 1990's and is generally in very good condition. The style is similar to the north shelter and includes a large fireplace. Like the north shelter, the back wall is a knee wall and there is no ADA accessible route to access this shelter. No rest rooms existing at the south beach.

Recommendations:
The North Shelter, South Shelter and Restroom should meet current accessibility standards including a route to each.

If toilet facilities are desired at the south end, it is recommended that a new, separate facility be constructed on this portion of the beach.

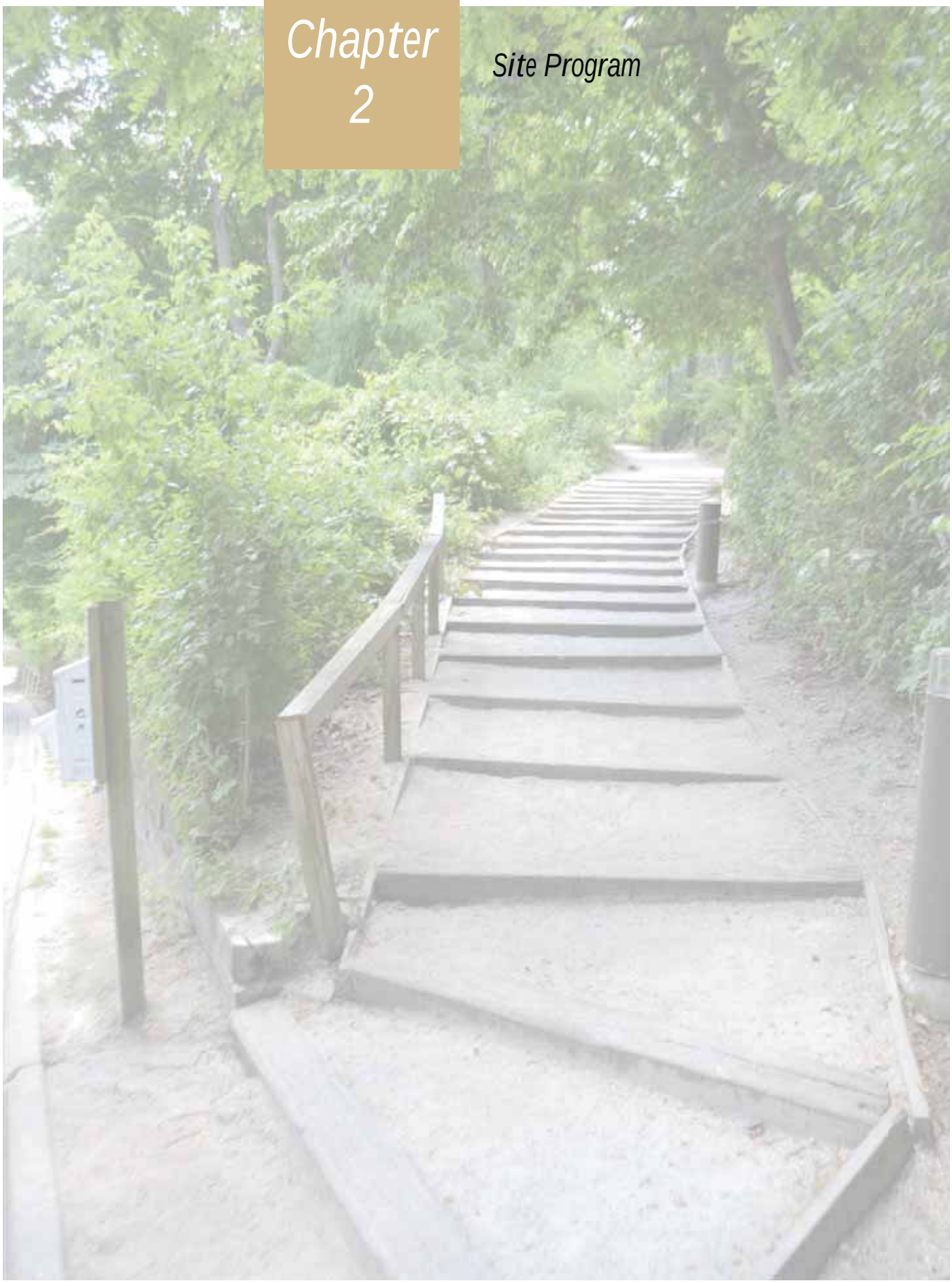
Existing Sanitary Pumping Station

Between the beach at the north end and the south end, at the bottom of the driveway leading down from the bluff, a existing which is owned by the North Shore Sanitary District (NSSD). The building itself is a simple, utilitarian two story flat roofed brick building with no architectural style at all. Its location, between the two ends of the beach, is less than desirable, as visitors to the beach need to walk past it, through the parking lot, to get to one end of the beach to the other. There is no option to relocate the building.

Recommendation:
Relocate the emergency generator to make better use of the asphalt area and reduce the visual clutter. To improve the look of the NSSD buildings, either design a new façade that could be built over the existing building or install a metal screen for vines.

Chapter 2

Site Program



In order to create a foundation on which to successfully develop a master plan,the planning process begins by defining the site program. The site program is based on all the input and work gathered by the Advisory Board along with the professional assistance of P. Clifford Miller and Associates, Shabica and Associates and the staff of the Lake Bluff Park District.

The program was presented at a public meeting with the both the Advisory Committee and Park District Board. The following program and images are the elements and amenities that the group agreed would form the program for the site.

Program Elements

- Sense of Entry
- Pedestrian Access
- Vehicular Access
- Restore / Enhance Natural Areas
- Recreational Opportunities
- NSSD Building
- Restrooms, Shelters & Storage
- Technology
- Aesthetics

Planning includes understanding the opportunities and challenges that each site, community and project present. Below are the major items identified during the early planning process:

Opportunities

- Community Involvement
- Lake Michigan
- Amazing Site
- Grant Funding

Challenges

- Site Access
- NSSD Building
- Lake Michigan
- Bluff

1 - Sense of Entry

The site has amazing views of Lake Michigan from the entry at the bluff to walking out on the beach. The walks, overlooks and entries should capture the beauty and views that make this site great. Incorporating signage and sculpture at entry points and on pathways can enhance the experience. Finally, pathway lighting should allow a safe access to the beach while meeting dark sky criteria and low bollard type lighting.

2 - Pedestrian Access

Access to all amenities is important. At both beach side and the path down the bluff, a stable slip resistant durable material must be used to achieve this. Whereever possible, materials should be natural to fit the site. Capturing views and adding lookouts along the path to the beach is also a key component to consider as implementation moves forward.

3 - Vehicular Access

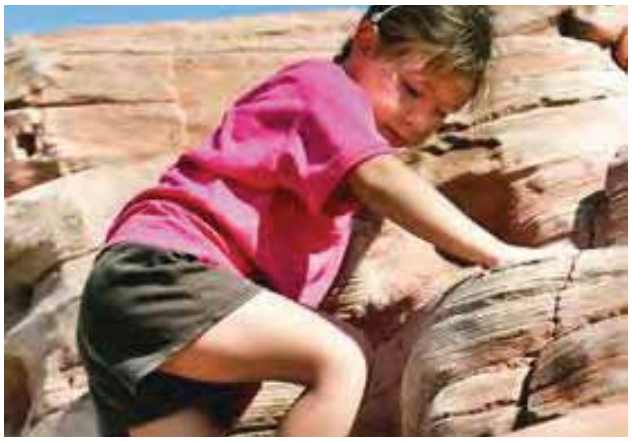
Understanding the need for vehicular access down the bluff, it is important to limit the use of heavy traffic flow down a road that is used primarily by pedestrians and service vehicles. Through retractable bollards and an electronic key pad, limited access of vehicular traffic can be achieved.

4 - Restore / Enhance Natural Areas

Following the recommendations set forth in the Bluff Vegetative Management Report, existing vistas shall be maintained. Additional understory plantings at the tableland as well as areas for native dune grass should be incorporated. The natural systems of the bluff and beach are part of the site that should be respected. Part of this restoration includes the removal of construction debris located on the bluff.

5 - Recreational Opportunities

Recreational activities are a integral part of the site. Where ever these can be improved or expanded while fitting into the natural beach setting, they should be. Amenities that meet the communities desired include a nature playground, swimming, sand volleyball, fishing, continued boat access and beach use with canine companions. New uses may include interpretive signage for the natural areas and accessible pathways for people of all abilities to access the site elements.



6 - NSSD Building

The NSSD building, generator and utilities at the beach site have created strong negative opinions. Being centrally located, the area is an eyesore between the south and north beach areas. Major improvements to this area should include a visual barrier or wall to ensure the functionality of the pump house is maintained while improving the aesthetics. Finally, a connection between the south and north beaches would create a better use of the site.

7 - Restrooms, Shelters & Storage

Adding to the rich historic presence on the beach, all new restroom and shelter buildings should follow the architecture of the Village of Lake Bluff and the surrounding residential areas. Building architecture and color palette should maintain the character of Lake Bluff.

8 - Technology

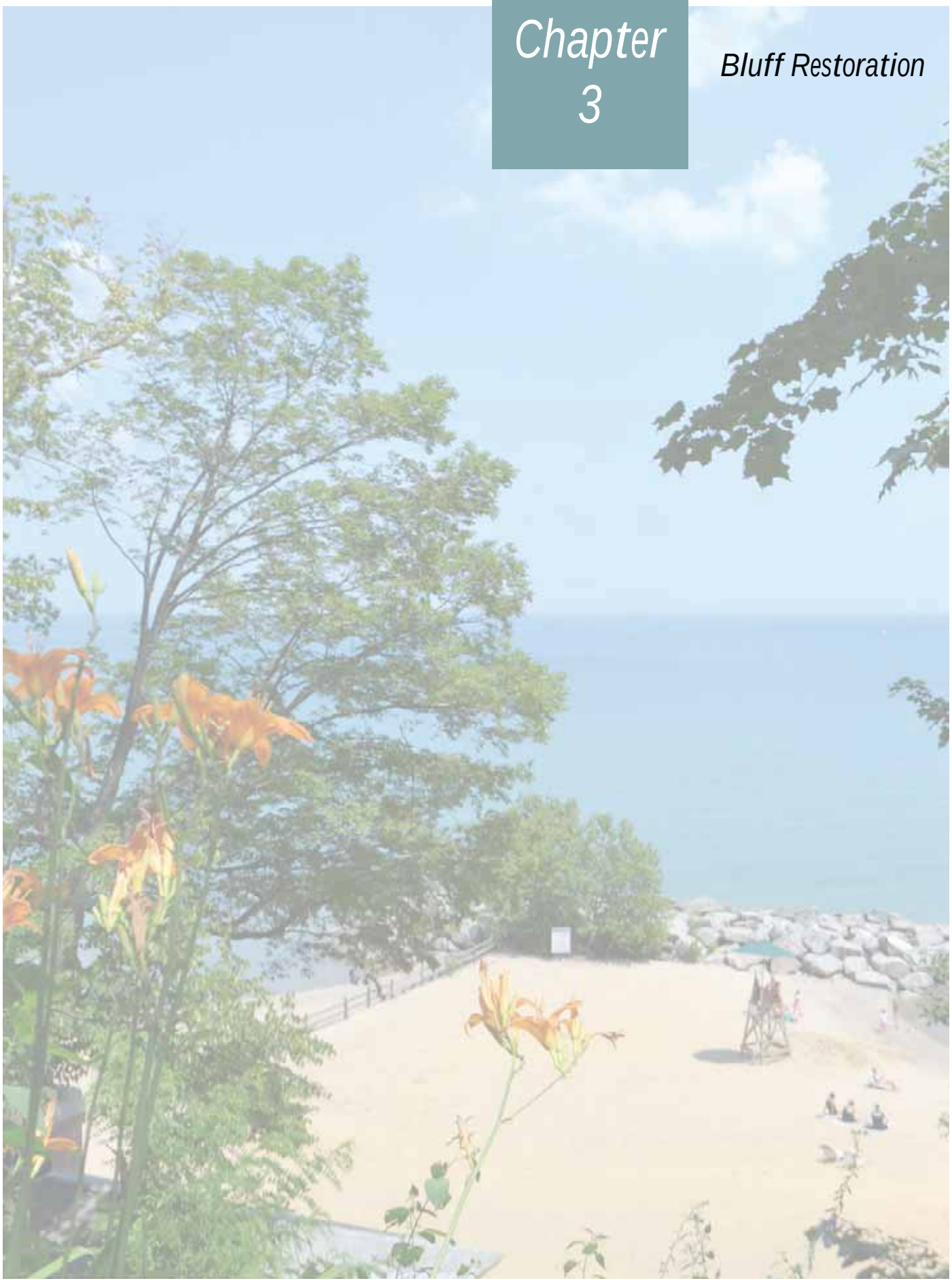
Technology as a non intrusive element at the site will increase visitor use with wi-fi capabilities and safety with added emergency telephones. Also, this will allow Park District staff to be more efficient with access to their main computer system. These elements may be less of a physical improvement than overall system upgrades for the Lake Bluff Park District.

9 - Aesthetics

The aesthetics of the site should maintain an existing natural look and feel. Improvements should complement the natural beauty of the bluff and beach while enhancing views and access as visitors move through the site. Elements that create visual clutter should be eliminated.

Chapter 3

Bluff Restoration



A focused bluff restoration and management manual along Sunrise Park and Beach was prepared by P. Clifford Miller, Landscape Artistry. This involved an extensive study of the site and coordination of priorities with the Park District Board, staff, and community members. The following section includes the final report as adopted by the Board of Commissioners and Advisory Committee.

Sunrise Park and Beach

Bluff Vegetative Management Manual
Addendum to Management Report July 2012

P. Clifford Miller, Inc.
May 2013

Landscape Architecture Natural Areas Management

Sunrise Park and Beach
Bluff Vegetative Management Plan

Manual for Restoration

As an addendum to the Sunrise Park and Beach Bluff Vegetative Report, this manual is intended to provide the technical support and act as a resource for the implementation of the restoration work outlined in the report. The existing conditions, recommendations, and overall goals for the plant communities present on the bluff are identified in the report and this manual describes the detailed procedures required to achieve said results.

As outlined in the report, the primary goal of the vegetative management on the bluff is to protect and restore the mesic forest throughout the central core by improving the quality and diversity of the native vegetation, while maintaining the meadows framing the forest on the north and south, and the transition zones between the two.

The management objectives needed to achieve this goal include, but are not limited to: amelioration of soil erosion; the elimination, or at least the reduction of, competition by herbaceous and woody exotic and invasive plants; increased diversity of the understory and ground layer vegetation in all sections of the forest and field; and maintain the vistas without compromising the vegetative integrity of the forested slope. It is important to maintain the priority of vegetation over view if the primary goal is to be achieved

The prescriptions for restoration are given in bullet point format for each of the five major management zones pictured in the map “Plant Communities and Management Zones” in the 2012 report. As three of the five zones refer to the same plant community and are based on quality assessments, it is worth noting that the eventual goal will be to only have three zones of management. This will simplify the long term stewardship.

Open Successional Meadow – South & North

These meadows are overrun with advantageous trees, shrubs, Eurasian grasses and Crown Vetch (Coronilla varia) throughout. Staghorn Sumac (Rhus typhina) and Willow (Salix sp.) were the most frequent invasive native shrubs observed. Basically, the meadows are fast disappearing due to aggressive colonization of several woody plant species. Removal of such and the introduction of controlled burning will be the primary methods by which we gain control of these areas.

Restoration prescriptions:

- Spot treat exotic herbs with Round-Up (glyphosate), starting in spring with garlic mustard and goutweed. Spray/treat the crown vetch, in summer when vetch is in bloom and continue indefinitely on an as needed basis. It will take several applications and a couple of years to gain back control of the areas infested with the vetch. Use Round-Up early in the season or, if advantageous grasses are present use 2,4-D. Garlon 3A (triclopyr) and Clopyralid with a surfactant are most effective mid to late season.
- Cut and treat the aggressive native and exotic brush and young trees (except for mesic forest species on perimeters) when the herbaceous layer is dormant or approaching dormancy, except in areas devoid of any desirable forbs, where treatment can occur at any time. When feasible, frozen ground is preferred on sensitive slopes/soils. In winter treat stumps/cut stems with Garlon 4. Follow up with spot spraying of basal sprouts as necessary with 2,4-D or Round-Up, again, dependent on surrounding vegetation.
- During each ensuing late winter or spring, plant, using plugs or by overseeding, native grasses and sedges (see bluff seed mix) on cleared areas largely devoid of existing desirable herbaceous vegetation.
- After the undesirable exotic herb vegetation is gone and grasses are well established, overseeding with desirable native forbs can be done every winter for 3 years.
- Burn every 2 to 3 years to keep any invasive shrubby vegetation under 3 feet in height. Occasional cutting and stem treatments will be required every few years (or ongoing under regular stewardship) to prevent the woody vegetation from reestablishing colonies.

Scrub Woodland

Two small scrub woodlands lie on either end of the forest. Both appear to have formed on highly altered sections of the slope proper; to the south mainly through dumping of concrete rubble several decades ago and to the north, severe erosion and slumping of the slope, also appearing to have occurred many years ago. They are dominated by a dense "jungle" of young, second growth, invasive woody trees, saplings and shrubs, and exotic woody plants. Little native herbaceous layer is present, although small patches of the more aggressive species of native plants are sporadically found throughout, as are a few of the mesic forest trees, such as basswood (Tilia americana). Complete restoration of all strata and the ground layer would be needed. If they were converted to a mesic forest to increase the acreage of this community, they would still not add forest continuity, since the adjacent meadows separate them from the central core forest. This fact, combined with the tremendous amount of labor needed to restore these communities, makes these areas a low priority, with the return not necessarily warranting the investment. It is recommended that any work in these two zones be held off until all other units are completely restored.

Mesic Forest "C"

Two areas of "C" quality mesic upland forest are present, as shown in the 2012 report map. Both are severely disturbed. The southerly one requires a less complex management regimen. It has large characteristic mesic forest canopy trees (Sugar Maple (Acer saccharum), Basswood (Tilia americana), and Red Oak (Quercus rubra)), but little subcanopy or quality understory, and a very depauperate herbaceous layer. Such low diversity and structurally altered communities take a long time to repair. Furthermore, in these Mesic Forest "C" areas, large populations of exotic species are present in all strata, including Norway Maple (Acer platanoides) and Black Locust (Robinia pseudoacacia) in the canopy, Tartarian Honeysuckle (Lonicera tatarica) in the understory, and, in the herb layer, a very large colony of Goutweed (Aegopodium podoagaris). Oriental Bittersweet (Celastrus orbiculatus) dominates some of the areas at the expense of most other woody plants. On the native side, dense Chokecherry (Prunus virginiana) colonies are present and create areas of deep shade.

Restoration prescriptions:

- Spot treat Garlic Mustard and Goutweed colonies with Round-Up (glyphosate) starting mid-spring, carefully avoiding sections with vernal wildflowers present, then treat entire colonies again with Round-Up in late summer after the vernal wildflowers have gone dormant.
- Begin removal of exotic tree species by cutting and removing trunks after the herbaceous layer has gone dormant or in winter, treating stumps with Garlon 4 (triclopyr). Aggressive native shrub species and non-native colonizers like Honeysuckle (Lonicera sp.) and Burning Bush (Euonymus sp.) are to be cut and treated as well.
- In the following late winter or early spring seed in native grasses and sedges (see bluff seed mix).
- Plant areas cleared of exotic trees with young Red Oaks and other trees from the recommended plantings list in spring or fall (not necessary where existing canopy trees are present in mixed sizes). Potted woody plant material is recommended for ease of handling and to minimize disturbance to the bluff slope soil profile.
- As control of the non-native herbs nears completion and the stands of native sedges and grasses become established, overseeding with desirable native forbs (see page 37 in report) can commence. Species already present in the Mesic Forest “A” units should be in the earliest plantings. The fleshy seeds of many of our vernal flowers will need to be collected, perhaps at Ravine Park and nearby private properties by informed volunteers as part of a Work Day or such, and immediately sown, as they need to be ‘fresh from the vine’ and do not typically succeed in establishment as a part of the commercially available seed mixes.
- Also at this time begin the planting of native shrubs and small trees, such as Viburnum, Amelanchier species, and others (see page 36 in report).
- Selectively thin areas of Chokecherry in winter and plant sedges and native forest herbs in them the following spring.
- Throughout the restoration, check for and spray resprouts of exotic shrubs and trees with Garlon 3A or Round-Up late spring through late summer.
- Continue all phases of this process until control of exotic herbs is the only task remaining.

The second area of Mesic Forest "C" is located at and around the juncture of the access roads. Construction of these roads occurred in what was once Mesic Forest "A", therefore the extent of this high quality area has been reduced from 50 feet to 100 feet southward and along the roadways themselves. Many cultivated garden flowers and shrubs were planted along and above the roadways, and Creeping Bellflower (Campanula rapunculoides) has usurped much of the land above and near the roads. Soil erosion is occurring around exposed tree roots and below the concrete walls. The restoration regime for this "C" area includes all of those listed above for the southern "C" forest plus the following simultaneously:

- Remove (or salvage) all cultivars, both herbaceous and woody, near and along the roads in fall (except, perhaps, the daylilies along the upper roadway).
- In areas opened up by the removal of cultivars, plant native grasses, small shrubs and forbs, all found in the existing mesic forest, during the following spring.
- Treat exotic Bluebells and Garlic Mustard with Round-Up in early spring.
- Install erosion control matting in any bare soil already present or created by the salvage operation.
- Cut and treat colonies of Burning Bush (Euonymus alatus) and other ornamental woody plant material and apply Garlon 3A in early fall or Garlon 4 in late fall and winter.

The Mesic Forest "C" areas are the third priority for management.

Mesic Forest "B"

Two areas of "B" mesic upland forest lie on the slopes and tableland of Sunrise Park and Beach. The tableland portion of the southern section is mowed routinely and managed as a park-like grove of old canopy oaks and maples with no understory or herbaceous layer, except for the lawn. See the 2012 report, pages 17 and 29, for specific management recommendations.

Aside from the tableland, the two "B" areas have more stratification, an older canopy, and a more diverse native understory and herbaceous layer than the "C" areas, but all are still below the standards for high quality woods. Removal of exotic trees and shrubs is still needed, and both the

understory and herbaceous layer need enrichment. The latter has some diversity and populations of conservative species, but total cover is low. Soil erosion is severe in a few places and has undercut some canopy trees on the steep upper slopes, exposing root systems. Because of the hostile growing conditions in these areas, herbaceous plantings will probably not establish well enough to be effective in minimizing the erosion. Dense Chokecherry copses are frequent and without most herbaceous species beneath them.

Restoration prescriptions:

- Cut large colonies of Burning Bush and other alien shrubs in winter and treat stumps with Garlon 4; because of steep slopes and much exposed ground after removal, plant native woodland grasses and sedges there the following spring. A cover crop of annual rye (Lolium multiflorum) or sections of erosion control blanket may be necessary. A word of caution is necessary, as annual rye is thought to be allelopathic (subdues the growth of surrounding plants, like a Walnut tree) and known to slow the establishment of the preferred plants.
- Cut and remove scattered Norway Maples and Black Locust trees in winter and treat stumps with Garlon 4. In the canopy areas that open up as a result of the removals, plant small Red Oaks if enough available light is present.
- In the first spring, after clearing of the unwanted woody vegetation, plant a mix of rapidly growing native grasses, on bald slopes and around and below exposed canopy tree root systems; monitor annually and consider replenishment and shrub planting if erosion is not checked.
- Thin dense Chokecherry colonies by cutting only, and plant native shrubs such as Witchhazels (Hamamelis sp.), Pagoda Dogwood (Cornus alternifolia), Serviceberry (Amelanchier sp.), and other shrubs as per the planting lists in the report, in the openings around them; such understory plantings are recommended throughout the “B” sections.
- Increase population sizes of existing herbaceous species through seeding in late winter and planting plugs, if feasible; add species not found in the “B” zones, using the list on page 36 of the 2012 report.

The Mesic Forest “B” areas are the second priority for management action.

Mesic Forest "A"

The two Mesic Forest "A" remnants are examples of what a high quality forest community should look like, both structurally and compositionally, although the latter could use enrichment with additional conservative forest forbs as the herbaceous layer is the weakest component in the composition. The "A" forests have a mixed age canopy with well-spaced trees, several strata, a nearly full complement of characteristic shrub species, and a forb component of forest herbs usually found in many grade B high quality forest remnants which are on the Illinois Natural Areas Inventory. Some exotic species require treatment as they are in low numbers now and easily controlled. The lower than expected ground cover (typical of INAI grade A forests) may be due to the presence of Chokecherry clones, which have only dead leaves and bare soil beneath them. The brief management prescription for these "A" remnants is as follows:

- Cut any exotic shrubs in winter and treat stumps with Garlon 4. Monitor for resprouts.
- Seed in native herbs, sedges, and grasses on a few steep bare soil areas. Again, annual rye or erosion control fabric may be necessary, depending on the location.
- Thin and/or completely remove some of the dense copses of Chokecherry and replace with native herbaceous and/or non-colonizing shrub plantings; repeat such plantings in other areas lacking woodland forbs.
- Consider reintroducing some conservative species, in particular those often occurring on bluff top forests and in ravines elsewhere in the North Shore region. Plants like Hepatica acutiloba, Phlox divaricata, and Anemone thalictroides would all be welcome additions to the Park. One group of species not yet observed in the Sunrise Park and Beach forest is the woodland ferns, such as Fragile Fern (Cystopteris fragilis) and Marginal Shield Fern (Dryopteris marginalis).

Needless to say, the Mesic Forest "A" areas are the highest priority for management.

Three additional site-wide restoration items should be discussed in closing.

As shown on the attached graphic, the ultimate goal is to reduce the total of management zones to three: the mesic forest, the meadows, and the

transition areas between the two. As stated previously, this will aid in simplifying the long term maintenance.

As stated earlier, it would be highly advantageous to the upper bluff, bluff crest, and tableland trees if an area allowing for the restoration of a 5 to 30 foot wide strip of forest on the ledge above the bluff was set aside. Currently this area is either mowed or maintained as a wood-chipped trail. This intersection of the lawn with the slope creates a stark edge effect which negatively alters the structure and composition of the bluff forest for an unknown but significant distance into it. Leaf blowing directed into the forest buries areas which would otherwise contain native herbaceous plants. Wood chips drifting into the forest alter the soil conditions. At the nearby Ravine Park, some strips of very diverse dry mesic forest buffer the mesic ravine forest from the adjacent mowed lawns and roadways. It is recommended that the dry mesic strips of forest at Ravine Park be used as a structural and compositional blueprint (eco-modeling) for the restoration of the ledge areas at Sunrise Park and Beach, in the areas where similar light conditions exist. Plantings could be selected so as to not interfere with the viewsheds.

Finally, one of the most significant species in the mesic forest at Sunrise Park and Beach is Red Oak. Both the 2012 report and the field work for this manual noted that reproduction of this oak is occasionally occurring in the sapling and subcanopy layers. Periodic (3-year intervals) inspection of the forest should analyze all layers, including the herbaceous stratum, for continued Red Oak reproduction. If this is declining, understory and subcanopy gaps need to be created, especially near existing mature Red Oaks, through removal and/or thinning of selected Sugar Maple, Basswood, and other shade tolerant and shade-creating woody plants. This will facilitate natural oak regeneration and/or facilitate the successful planting of Red Oak saplings. Keeping sections of the mesic forest open enough to support the regeneration of Red Oak will also ensure adequate light is reaching the forest floor, helping to maintain a healthy herbaceous component.

In summary, this manual should be integrated and coupled with the 2012 management report. Together they will ensure that this significant natural area and asset to the community can remain as such in perpetuity. This manual should not be interpreted as unchangeable and ironclad. As the restoration proceeds, management and restoration alterations may be necessary, based on any observed deviations from paths leading to the goal

of creating and maintaining a high quality mesic upland forest on the bluff at Sunrise Park and Beach.

General Notes:

The use of herbicides in this project is recommended for the following reasons; to maximize the level of control with the least amount of labor costs; and to minimize the damage to the existing soil profile on the bluff slope. The chemicals suggested for use are typical of native restoration projects and are meant for use only by trained and licensed professionals. Spot treatments and other techniques should be utilized to minimize the need for their use.

PLANT COMMUNITIES MANAGEMENT MODELS

SUNRISE PARK
Lake Bluff Park District
5.10.2013

MESIC FOREST
native high-quality canopy, diverse understory & herbaceous layer

MESIC FOREST CANOPY ONLY
native overstory minus most forest understory & herbaceous layer

TRANSITON ZONE
intersection of forest & meadow comprised primarily of elements of both

MEADOW
native plant community comprised of shrub copses, grasses & forbs

PCM LANDSCAPE ARTISTRY INC

Chapter 4

Master Site Plan

Process

Two concepts were prepared and presented at the public open house for Sunrise Park and Beach. All comments received at the open house or through email were compiled and reviewed. Through this process, a number of strong ideas were evident. These include:

1. New restrooms are a high priority.
2. The nature playground fits the site well.
3. Screening the NSSD building and adding a path between north and south beaches is desired.
4. The island of stone with the swim platform was desired by many.
5. Stair access off Mountain Road is a good idea but requires additonal review and public input.
6. Reduce paving where possible, but accessibility is desired.

To meet the communities needs and desires, the two concepts plan presented were combined into one. The plan incorporates each of the items above along with the majority of elements shown in Concept A. To reduce paving, the proposed patio in front of the new north restroom/shelter building was reduced to an access path only. Additionally, the existing path on the tableland is shown. This path is suggested to move just west of the existing mulch path to protect the bluff from erosion.

Accessibility Requirements

The Federal 2010 ADA Standard for Accessible Design and the State of Illinois Accessibility Code are the legal standards for accessibility at all parks. When unique facilities are provided for public use, each facility type needs to have a route that meets accessibility standards to each unique element. Sunrise Park and Beach is a unique site with a number of unique facilities. To meet the Federal and State standards, the following improvements are required:

Pedestrian routes down the bluff should be updated to meet the stair tread design and handrail requirements. The walking surface should be stable and slip resistant and meet both cross slope and running slope standards. The new path and stairs is generally proposed within the same footprint of the existing pedestrian routes.

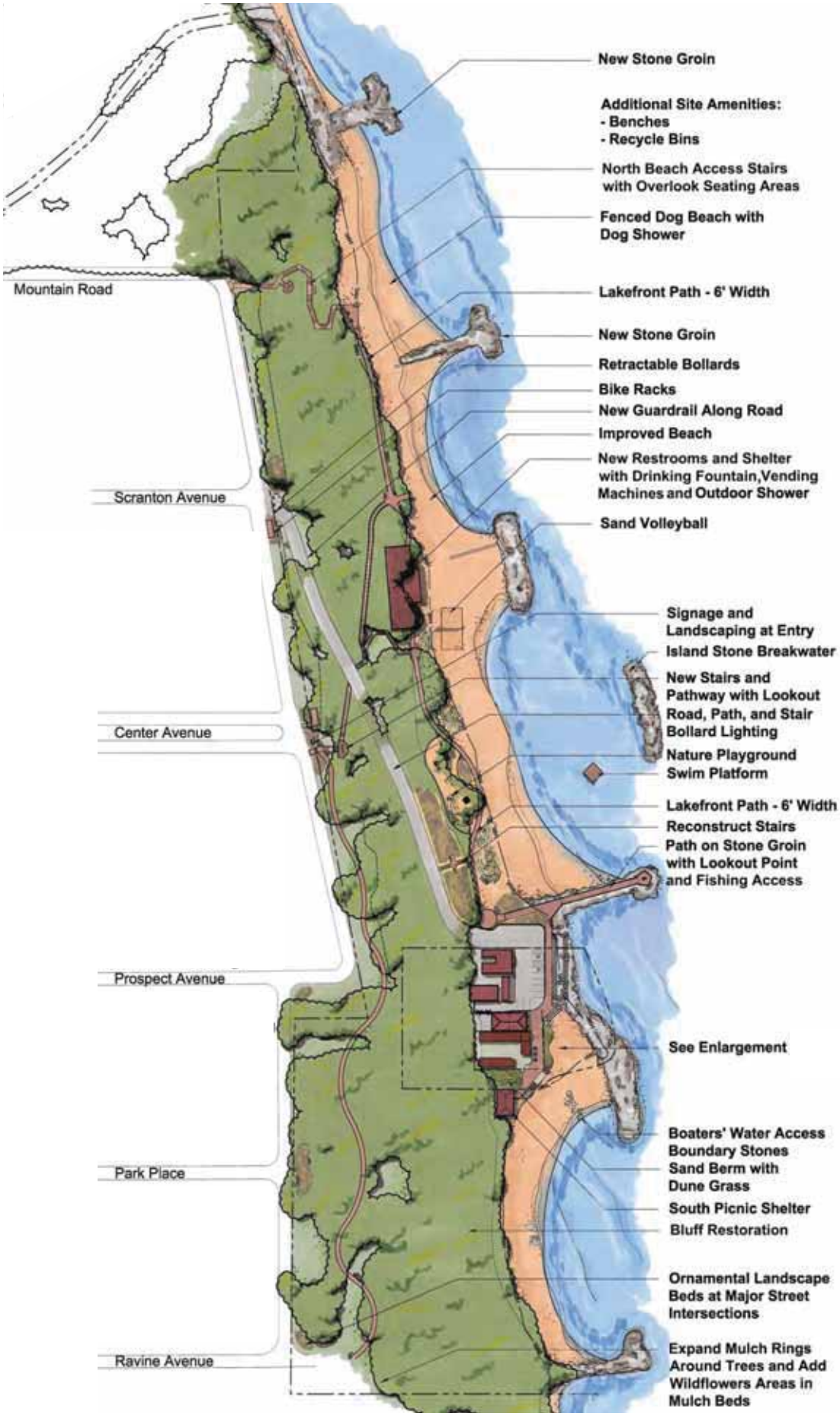
Pedestrian routes along the beach should connect the pedestrian and vehicular circulation routes and ADA parking to each major amenity. This includes the shelters, restrooms, yacht club, lookout point, playground, and dog beach with various points of beach front along the way.

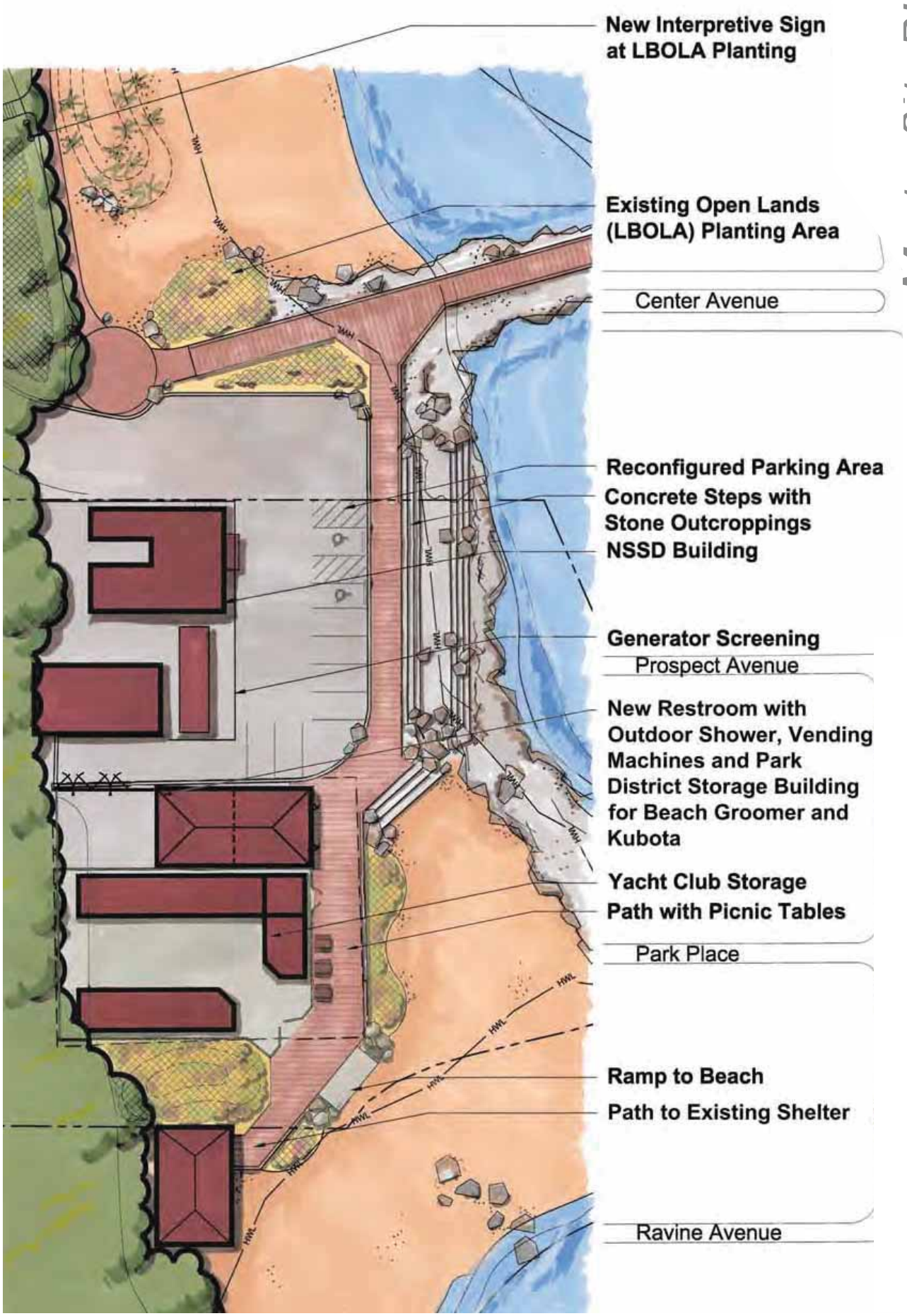
The playground surfacing and play features shall meet the Federal standards for play equipment accessibility. A sand colored rubber surface is suggested to blend into the natural environment while meeting both safety and accessibility standards.

All newly built elements including restrooms and site furniture should meet Federal and State standards for accessibility.

Accessibility Recommendations

Because the beach is a unique feature for the District, elements within it are required to be accessible. To protect the natural feel of the beach, pathway width has been minimized to a suggested 6’ width. Pathway materials should meet the Federal and State requirements including being stable and slip resistant. Materials for the pathway could include a boardwalk, concrete and asphalt, but in all cases should complement the natural feel of the beach. Additionally, dune grasses and berms have been added to expand the natural feel onto the beach along the new path.


New Stone Groin
Additional Site Amenities:
- Benches
- Recycle Bins
North Beach Access Stairs with Overlook Seating Areas
Fenced Dog Beach with Dog Shower
Mountain Road
Lakefront Path - 6' Width
New Stone Groin
Retractable Bollards
Bike Racks
New Guardrail Along Road
Improved Beach
New Restrooms and Shelter with Drinking Fountain,Vending Machines and Outdoor Shower
Scranton Avenue
Sand Volleyball
Signage and Landscaping at Entry
Island Stone Breakwater
New Stairs and Pathway with Lookout
Road, Path, and Stair Bollard Lighting
Center Avenue
Nature Playground
Swim Platform
Lakefront Path - 6' Width
Reconstruct Stairs
Path on Stone Groin with Lookout Point and Fishing Access
Prospect Avenue
See Enlargement
Boaters' Water Access
Boundary Stones
Sand Berm with Dune Grass
Park Place
South Picnic Shelter
Bluff Restoration
Ornamental Landscape Beds at Major Street Intersections
Ravine Avenue
Expand Mulch Rings Around Trees and Add Wildflowers Areas in Mulch Beds


New Interpretive Sign at LBOLA Planting
Existing Open Lands (LBOLA) Planting Area
Center Avenue
Reconfigured Parking Area
Concrete Steps with Stone Outcroppings
NSSD Building
Generator Screening
Prospect Avenue
New Restroom with Outdoor Shower, Vending Machines and Park District Storage Building for Beach Groomer and Kubota
Yacht Club Storage
Path with Picnic Tables
Park Place
Ramp to Beach
Path to Existing Shelter
Ravine Avenue

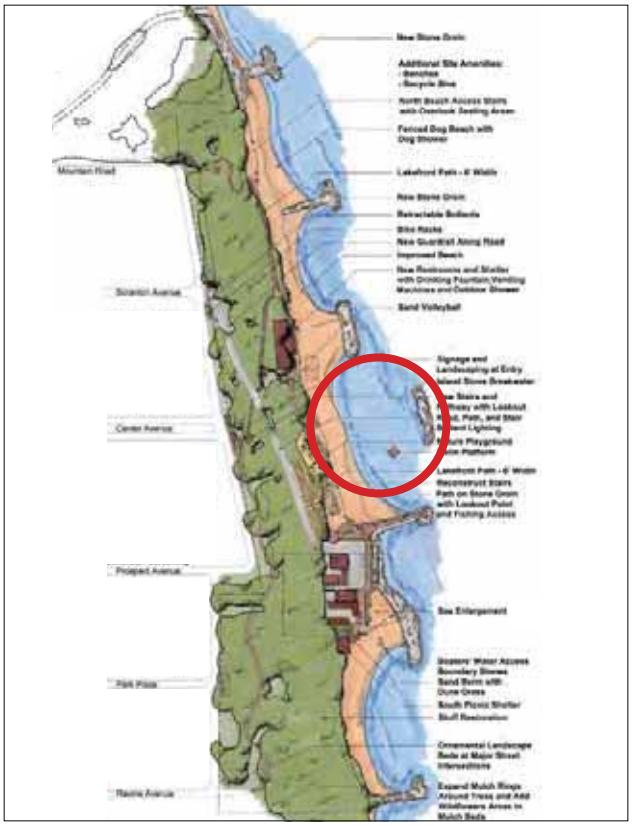
Expanded Beach with Rock Island and Swim Platform

Location Central Beach

Users Seasonal Public

Key Features Installation of the rock island expands the length of uninterrupted beach by removing a metal groin. The stone island breakwater reduces the wave action and allows a swim platform to be added. Finally, the depth of the beach will be slightly increased providing more beach.

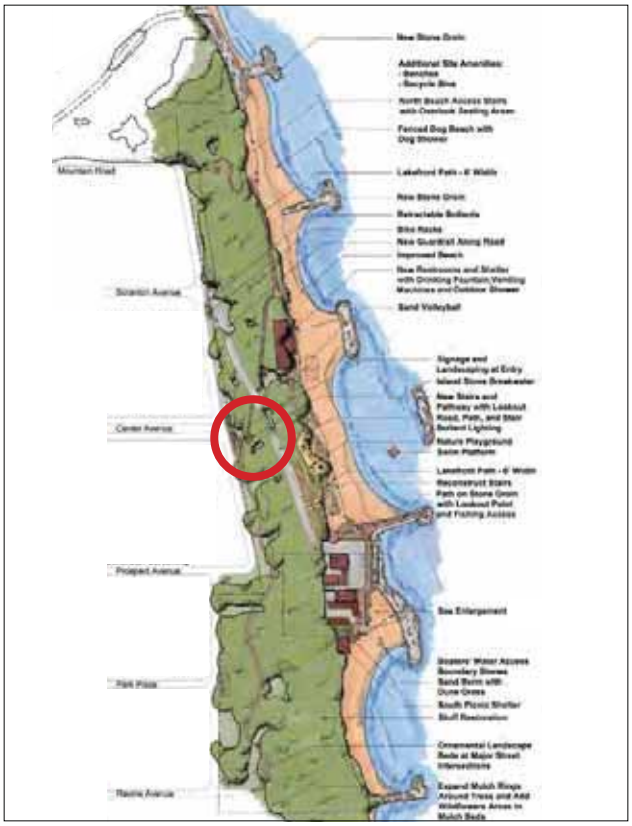
Location Map

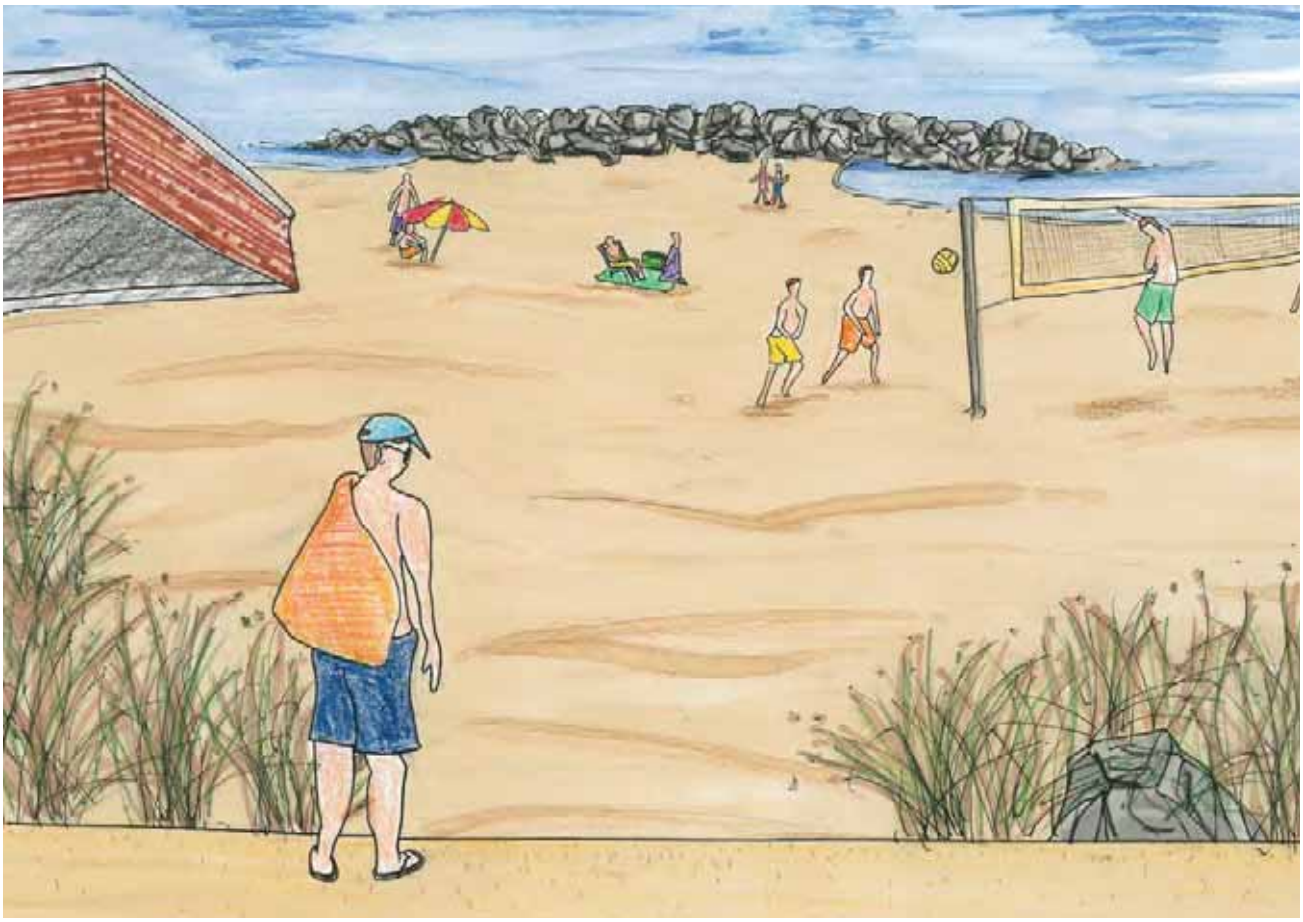


Lookout Vista at Bluff

Location	Bluff Pathway
Users	Year-Round Public
Key Features	Walking along the pathway down the bluff, a resting area with vistas of the lake are opened as you sit within the tree canopy.

Location Map





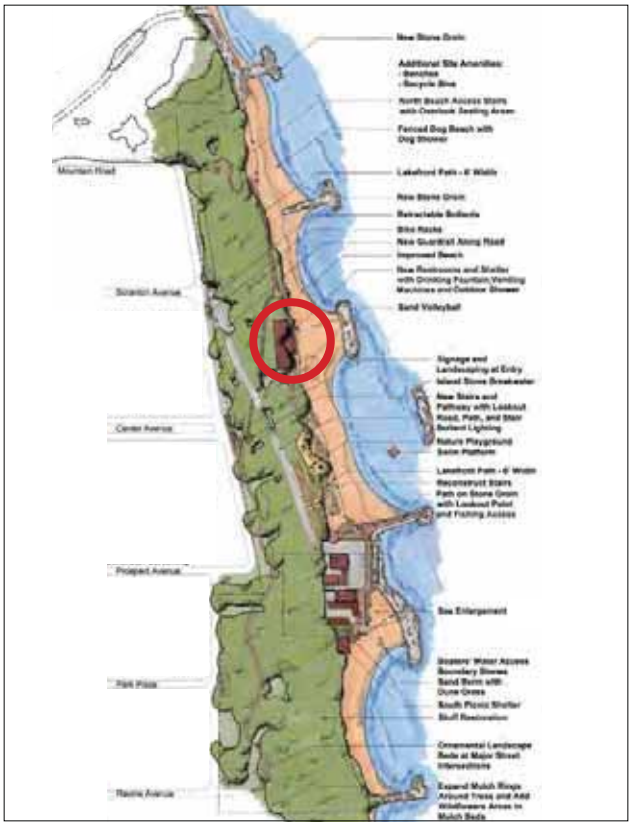
View From Under Shelter Building

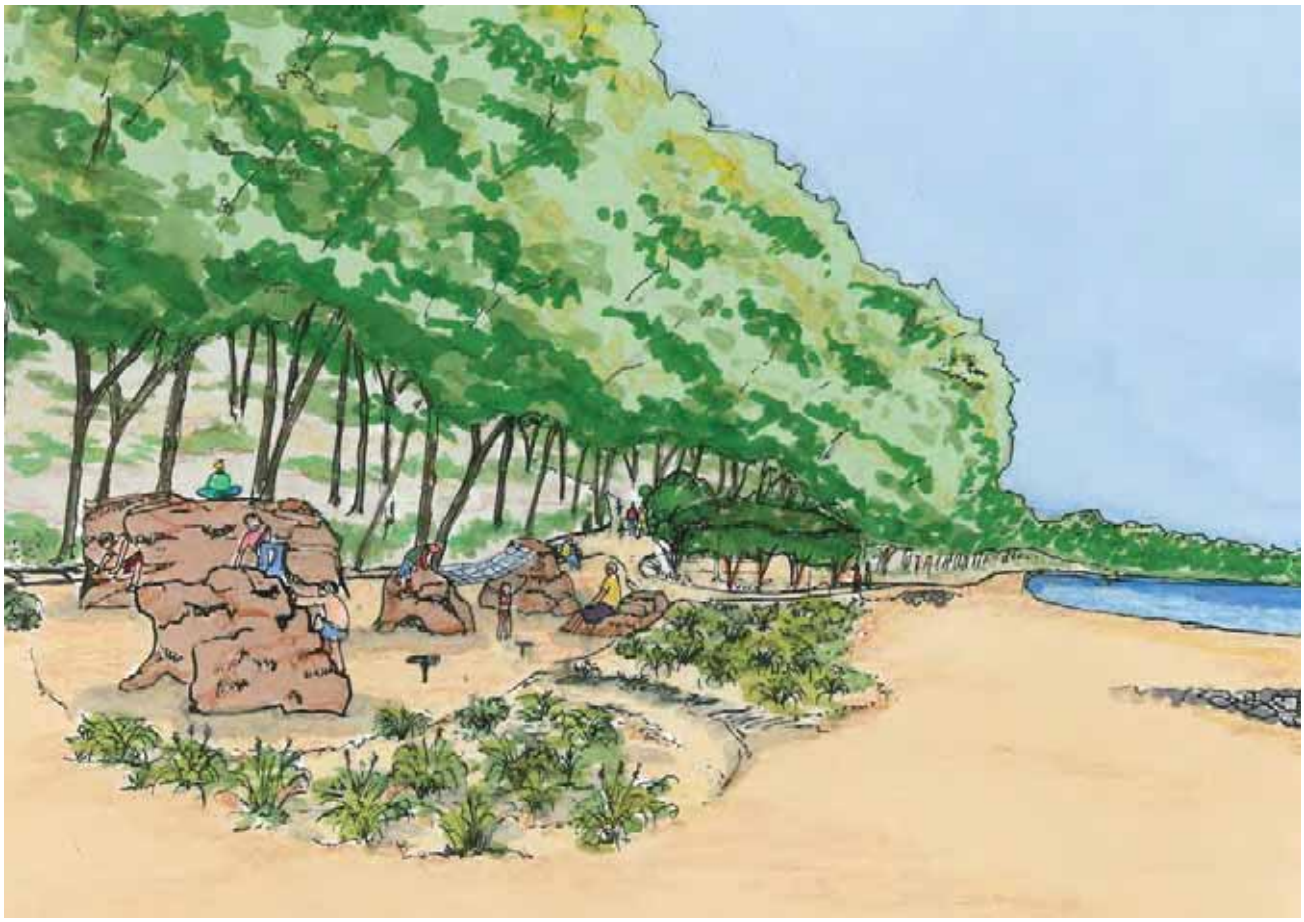
Location Central Beach at North Shelter

Users Year-Round Public & Seasonal Beach Users

Key Features View of the beach with volleyball court and sun bathing areas. A prime location for the lifeguard station, as it becomes the central point of the beach area. New dune grasses and rock outcroppings enhance the natural beach look while creating new habitat.

Location Map

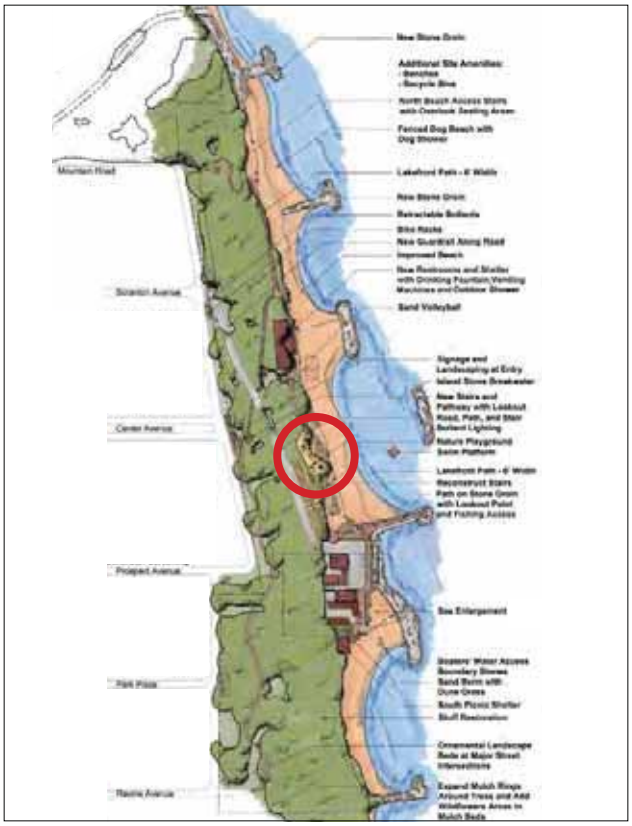




Nature Playground

Location	Central Beach at Bluff
Users	2-12 Year Old Children
Key Features	As a nature-based environment, this playground consists of rocks, climbing nets, spinners and swings. The surface will be a rubber safety surfacing that matches the beach color. Additional use of dune grasses surround key spots of the playground area.

Location Map



Beach Access Along Lakefront Path

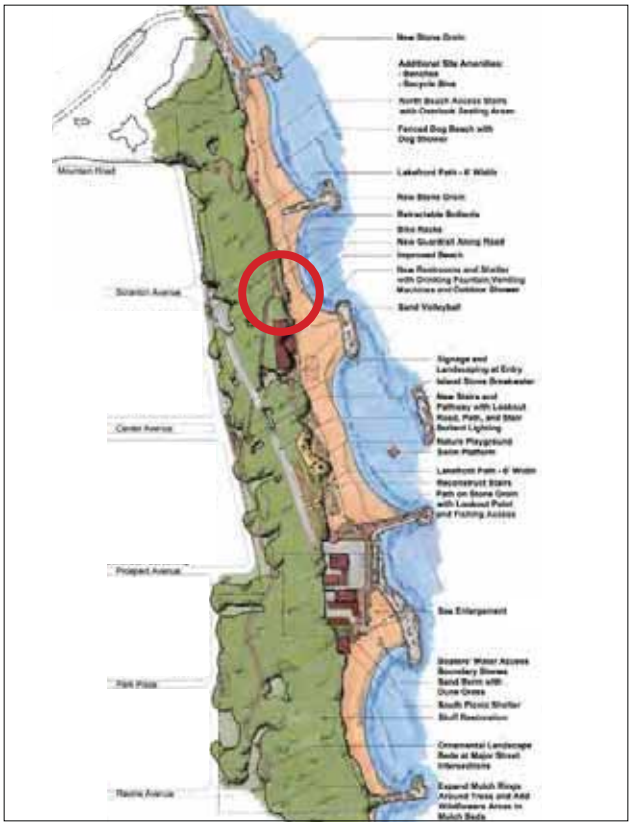
Location Central Beach

Users Year-Round Public

Key Features Resting Area and Beach Entry

Walking down the bluff path, the view at the bottom opens up to a mini plaza space that is has seating and ornamental plantings that frame the view of the lake. This location is also connected to the main lakefront path that goes north and south. Community input included creating spaces that minimize the paved footprint at each entry.

Location Map



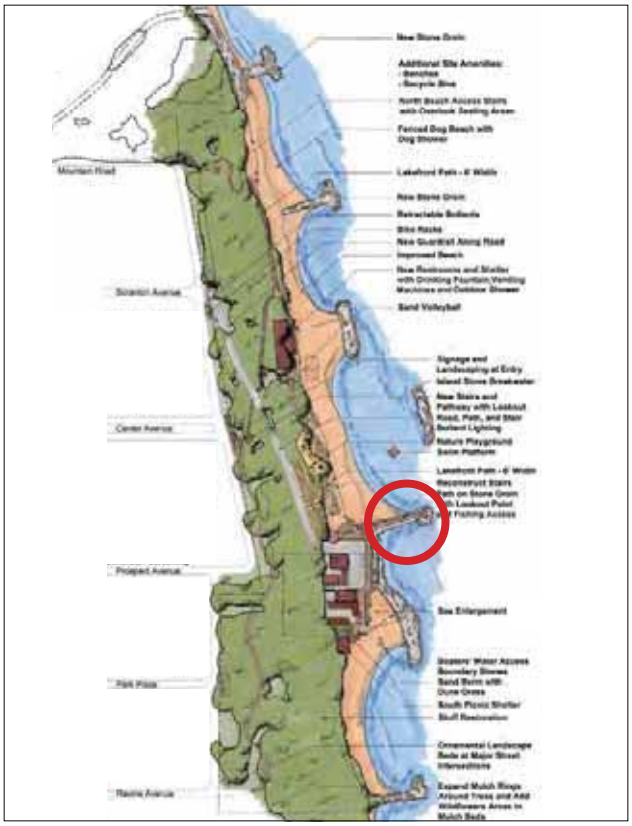
Path on Stone Groin with Lookout Point

Location Parking Lot and Lakefront Path

Users Year-Round Public
Fisherman
Resting / Contemplative Area

Key Features An extension into the water, the lookout point is built upon the existing metal groin. The added benefit of a path system allows patrons of all abilities the experience of being out on lake.

Location Map



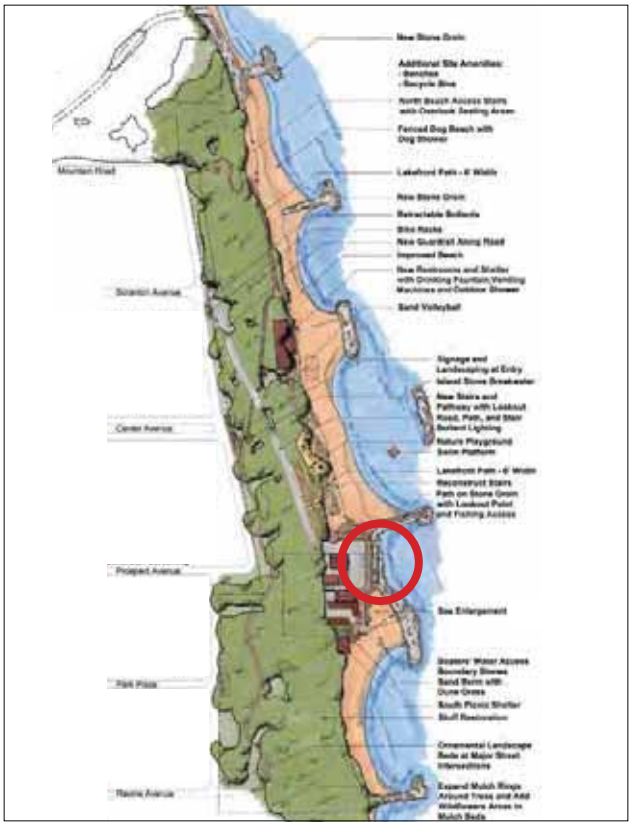
Steps with Stone Outcropping

Location East of the NSSD storage facility and Along the Lakefront Path

Users Year-Round Public
Resting / Contemplative Area

Key Features The existing large rock barrier between the parking and the lake will be enhanced with concrete stairs, rock outcropping and a pedestrian path way connecting the north and south beaches. The space will allow visitors to interact with the water or sit and enjoy the view. Stairs are aligned with the length of the parking lot and step down with stone at the lake edge.

Location Map

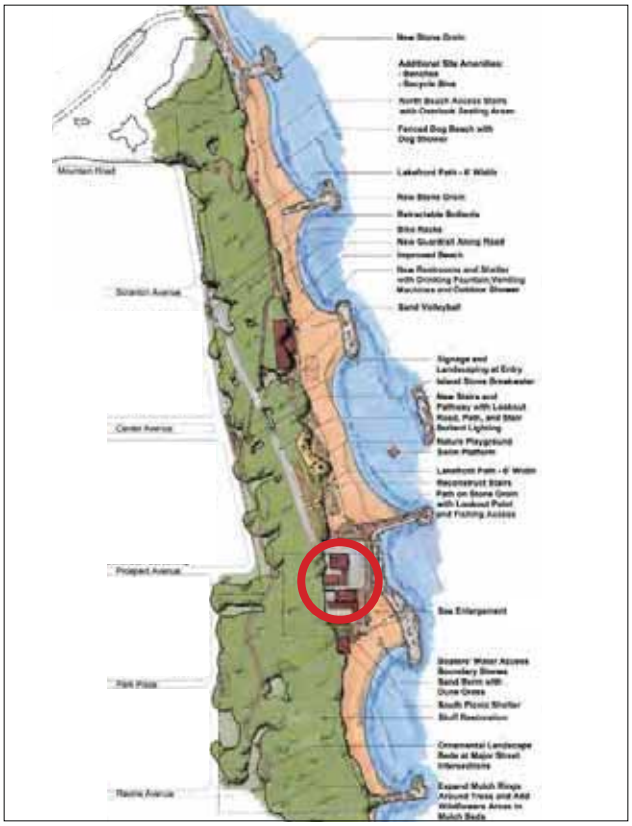


NSSD Building Green Screen

Location On top of NSSD storage facility

Key Features A visual metal screen around the NSSD building that grows live plant material. The screen can also provide an attractive barrier along the main vehicular entrance to the beach and the existing utilities and generator.

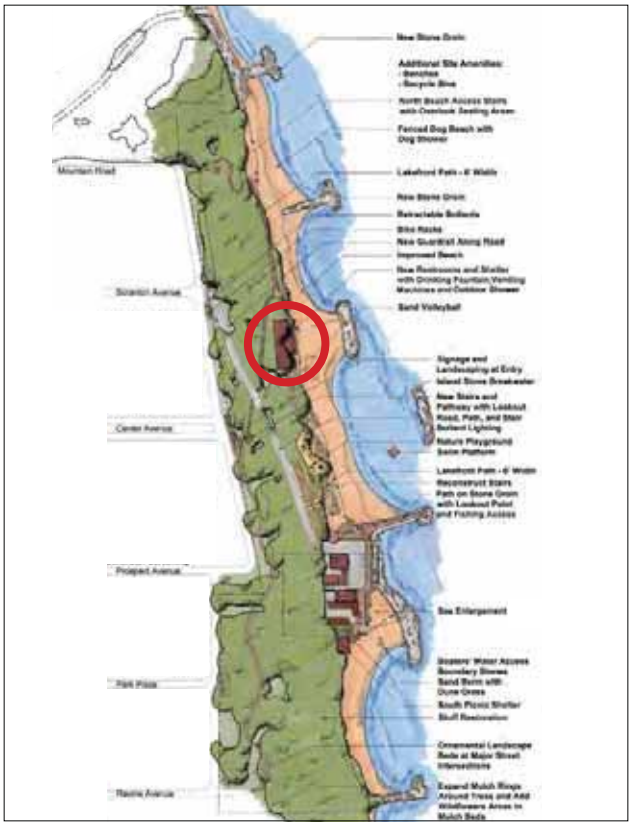
Location Map

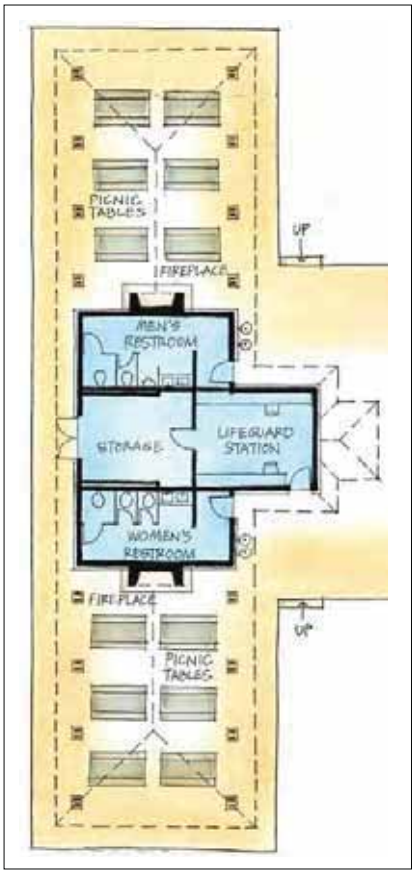


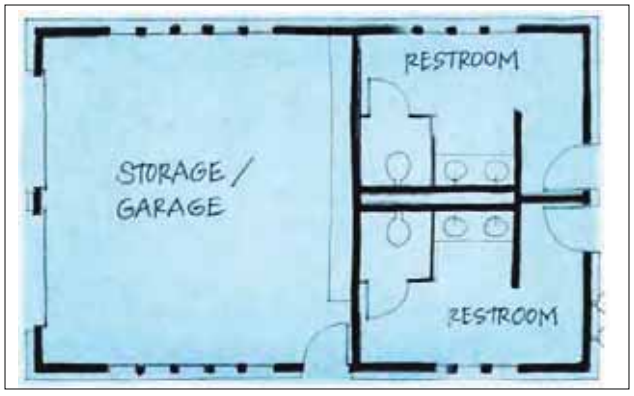
North Restroom and Shelter Building

Location	Central beach at the existing shelter location
Users	Seasonal Public Private Rental Park District
Key Features	The north building includes a separate women's and men's restroom with water fountains, a storage / lifeguard facility for Park District staffing, and shelters on either side of the main core to accommodate both drop-in and rental use at the same time.

Location Map



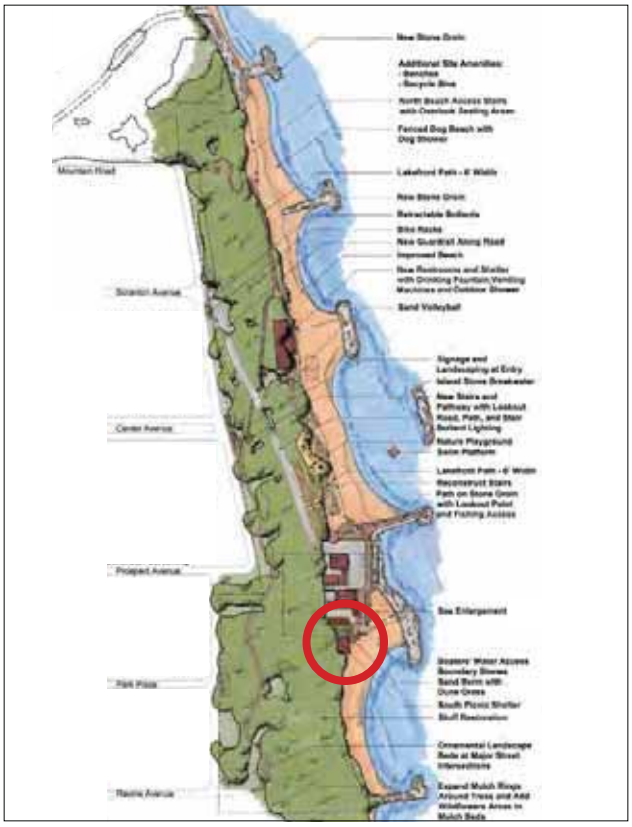

PICNIC TABLES
UP
FIREPLACE
MEN'S RESTROOM
STORAGE
LIFEGUARD STATION
WOMEN'S RESTROOM
FIREPLACE
UP
PICNIC TABLES



South Restroom and Storage Building

Location	On top of NSSD storage facility
Users	Seasonal Public Park District
Key Features	The south restroom includes two family restrooms and water fountains for public use, and a storage / garage facility for Park District use of sand groomers and a Kubota.

Location Map



Chapter 5

Appendix

Bluff Restoration Phasing Strategy

Phase 1 (2013-14) $40,000
Removal of Invasive Woody Material and Treatment

Phase 2 (2014) $30,000
Removal of undesirable Trees and monitor/management

Phase 3 (2015-17) $75,000
Plant native trees and shrubs and overseed and monitor/management

Phase 4 (2018-2023) $75,000
Monitor and Management

Total: $220,000

Master Plan Budget and Phasing Strategy

The Park District continues to work with private donors and public agency funding sources to implement the Master Plan vision for Sunrise Park and Beach. Though resident and staff input, a phasing strategy was discussed to address priorities when funding becomes available. Phasing is as listed below.

LOCATION	ESTIMATED BUDGET	PHASE I 1-3 years	PHASE II 4-9 years	PHASE III 10-19 years	FUTURE 20-30 years
Beach Improvements					
Expanded North Beach - Dog and People Beach	**$ 139,000.00**		$ 139,000.00		
Improved and Expanded North Beach - People Beach	**$ 338,000.00**		$ 338,000.00		
Central Beach and Breakwater	**$ 829,000.00**			$ 829,000.00	
Lake Michigan Fishing and Viewing Pier	**$ 209,300.00**				$ 209,300.00
Boat Drop-Off Area	**$ 8,000.00**		$ 8,000.00		
Sand Volleyball Court	**$ 7,000.00**		$ 7,000.00		
Nature Playground	**$ 313,000.00**		$ 313,000.00		
South Beach Improvements	**$ 19,000.00**		$ 19,000.00		
Subtotal	**$ 1,862,300.00**				
Restroom Buildings					
Restroom Building Renovation	**$ 80,500.00**	$ 80,500.00			
North Restroom / Shelter Building	**$ 665,000.00**				$ 665,000.00
South Restroom and Storage Building	**$ 287,000.00**		$ 287,000.00		
Subtotal	**$ 1,032,500.00**				
Pedestrian Access					
Central Pedestrian Access Stairs - to North of Restroom	**$ 327,000.00**				$ 327,000.00
Central Pedestrian Access Stairs - to South of Restroom	**$ 150,000.00**	$ 150,000.00			
Restroom Area Exterior Paving Improvements	**$ 48,500.00**		$ 48,500.00		
Beach Pedestrian Access Path - Parking Lot to North Restroom	**$ 68,000.00**		$ 68,000.00		
Bluff Path along Sunrise Avenue at Tableland	**$ 40,000.00**				$ 40,000.00
Mountain Avenue Stair Access	**$ 314,000.00**			$ 314,000.00	
Reconstruct at Grade Stairs at LBOLA Plantings	**$ 27,000.00**				$ 27,000.00
Subtotal	**$ 974,500.00**				
Site Furnishings					
Bike Storage	**$ 12,765.00**			$ 12,765.00	
Entry Signage	**$ 5,000.00**		$ 5,000.00		
Interpretive Signage	**$ 8,000.00**		$ 8,000.00		
Subtotal	**$ 25,765.00**				
Restoration and Landscape Improvements					
Bluff Restoration	**$ 220,000.00**		$ 220,000.00		
Sand Berms and Dune Grasses	**$ 30,000.00**		$ 30,000.00		
Landscape Enhancements along Sunrise Avenue	**$ 36,000.00**		$ 36,000.00		
Subtotal	**$ 286,000.00**				

	ESTIMATED BUDGET	PHASE I	PHASE II	PHASE III	FUTURE
SUBTOTAL		**$ 230,500.00**	**$ 1,526,500.00**	**$ 1,155,765.00**	**$ 1,268,300.00**
COMPOUND INFLATION (3% YEARLY)		**$ 21,373.57**	**$ 350,902.46**	**$ 644,879.21**	**$ 1,387,238.55**
TOTAL OF ITEMS	**$ 4,181,065.00**	**$ 251,873.57**	**$ 1,877,402.46**	**$ 1,800,644.21**	**$ 2,655,538.55**

LOCATION	ESTIMATED BUDGET	PHASE I	PHASE II	PHASE III	FUTURE
Projects at or Adjacent to NSSD Building					
Path Connection from North to South Beach Areas	**$ 277,000.00**	TBD / Coordination with NSSD Construction			
NSSD Screening and Plantings	**$ 79,000.00**	TBD / Coordination with NSSD Construction			

	DESCRIPTION	QUANTITY	OPERATIONAL COST	5 YR FIXED ASSET	LARGE CAPITAL
Personnel Services					
Lifeguards	$12.00x2=$24.00x74 days	2	$ 1,776.00		
Outside Guest Service Associate	$10.00x1=$10.00x74 days	2	$ 740.00		
Training (CPR, 1st Aid)	$90x3=$270		$ 270.00		
		Subtotal	**$ 2,516.00**	**$ -**	**$ -**
Commodities					
Uniforms	Addt'l uniforms for staff additions		$ 240.00		
Facility Equipment (Beach Chairs, etc.)	Beach Chairs	15x25.00		$ 375.00	
	Life Guard Chair	1		$ 1,000.00	
	1st Aid Equipment (supplies)		$ 250.00		
	1st Aid Equipment (backboard)	1		$ 500.00	
	AED	1		$ 2,700.00	
	Bicycle Rack	1 @ $600		$ 600.00	
	Benches	1 @ $700		$ 700.00	
	Signage				$ 12,000.00
	Grill	2 @ 800		$ 1,600.00	
	Garbage cans	3 @ $500		$ 1,500.00	
	Picnic Tables	2 @ $1,250		$ 2,500.00	
Ground Supplies (Sand)			$ 2,000.00		
		Subtotal	**$ 2,490.00**	**$ 11,475.00**	**$ 12,000.00**
Contractural Services					
Misc. Supplies used for maintaining	gasoline, garbage bags, etc.		$ 2,500.00		
Electricity	No change		$ -		
Water/Sewer	20% above total spent in 2013		$ 15.00		
Refuse	20% above total spent in 2013		$ 575.00		
Contractual Services-Other (Security)	Additional Security	1	$ 19,500.00		
		Subtotal	**$ 22,590.00**	**$ 11,475.00**	**$ -**
Capital Asset					
Beach Cleaner (Purchase 2018)		1			$ 85,000.00

	OPERATIONAL COST	5 YR FIXED ASSET	LARGE CAPITAL
SUBTOTAL	**$ -**	**$ -**	**$ 85,000.00**
TOTAL	**$ 27,596.00**	**$ 22,950.00**	**$ 97,000.00**
GRAND TOTAL OF ALL FUNDS			**$ 147,546.00**

Operational Cost Summary

Operation Expenses and Capital Equipment are a critical aspect of a Master Plan and typically, the expenses are overlooked when approving a project. Therefore, estimated operation expenses and capital equipment are included in the Master Plan as the Park District would need to find additional funding to support the expenses.

COMPOUND INFLATION (3% YEARLY)

Phase 1 (2014-2016)	
Additional Annual Operational Exper	$ -
Small Capital (one time expense)	$ -
Large Capital (one time expense)	$ 12,484.80
Total	**$ 12,484.80**

Phase 2 (2017-2022)	
Additional Annual Operational Exper	$ 32,333.12
Small Capital (one time expense)	$ 26,889.58
Large Capital (onetime expense)	$ 99,591.05
Total	**$ 158,813.74**

Phase 3 (2023-2032)	
Additional Annual Operational Exper	$ 39,413.89
Small Capital (one time expense)	$ -
Large Capital (one time expense)	$ -
Total	**$ 39,413.89**

Lake Bluff Park District

APPENDIX G: Completed or planned community projects protected by this effort

This pilot project would add value by protecting completed or planned projects in the four communities. These investments include: established plantings at the Lake Bluff Park District in 1985 & 1987; a breakwater repair project at the Lake Bluff Park District in 2014; a bird sanctuary project in City of Evanston completed in 2016; a planned breakwater and road repair at the Glencoe Park District; and a significant harbor project in City of Evanston in 2018.

1985 & 1987 – Prairie along shoreline
Volunteers and a local non-profit agency, Lake Bluff Open Lands, coordinated a project with the Park District to install mesic prairie to reduce bluff erosion. The project also planted marram grass to create a sand prairie in front of the park parking lot.

2014-Breakwater and Road Damage
The Lake Bluff Park District project installed large armor stone to protect a 3-foot by 3-foot gap in a breakwater. Erosion severely damaged the breakwater, and the gap endangered beach-goers using park bathrooms, the playground, and park shelter. The project cost taxpayers $41,951.

2016- Bird Sanctuary Project completed in 2016
The purpose of the project was to protect, restore, and expand a bird habitat at the City of Evanston's Clark Street Beach that would create habitat suitable for migratory birds and other native wildlife. This area is estimated to be between 2 and 2.5 acres in size and habitat activities cost the City of Evanston $175,000.

2015-18- Beach/Bluff Retention and Stair Repair

The proposed project would limit damage to Village of Glencoe and Glencoe Park District break walls and a pier structure, and the associated repairs. A dollar value has not yet been placed on repair costs. This proposed pilot project would reduce costs associated with beach/bluff retention, stair repair, and Village of Glencoe water main relocation that have cost tax payers an estimated at $143,807 from 2015 - 2017.

2018- Harbor Project
The harbor is located along Evanston's lakefront just east of Church Street and serves season permit holders of trailer-launched power boats up to 22 feet in length, sailboats between 15 and 22 feet in length, and personal watercraft (jet skis). The $600,000 project plans to construct a structure that will minimize damage to the boating pier from wave action. It will also reduce sand infiltration into the harbor area, which in turn should decrease the quantity of dredging work performed each year and allow the material to remain in the littoral drift.

Diane Tecic
Director, Illinois Department of Natural Resources' Coastal Management Program
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March 12, 2018

U.S. Army Corps of Engineers
Headquarters
Civil Works
441 G Street NW
Washington, DC 20314-1000

To Whom It May Concern:

The Illinois Department of Natural Resources' (IDNR) Coastal Management Program (Coastal) is pleased to support Lake Bluff Park District, Foss Park District, Glencoe Park District, and City of Evanston's joint pilot project proposal under Section 1122 of the 2016 Water Resources Development Act.

Shoreline change in Illinois can be rapid and costly. For example, Illinois Beach State Park is located directly north of the four communities submitting this proposal, is one of the most visited state parks, and is home to diverse habitats and species. At the state park, some areas have lost 30 feet of shoreline in a matter of months. Erosion throughout the region threatens key infrastructure like municipal water intake structures and roads, endangers parks, beaches, and public access points, and washes away stretches of important coastal habitat.

Our coastal communities recognize that protecting Illinois' shoreline requires collaboration and innovation. The joint proposal of these four agencies is a testament to this successful approach. Coastal works hand-in-hand with communities to develop regionally-impactful and sustainable strategies for shoreline change. We convene the Illinois Sand Management Working Group, an initiative that began in 2015. Leaders and managers from 12 communities apply the best-available science to pilot cost-effective regional shoreline management strategies, address policy and permitting challenges, and engage local communities. This pilot project proposal and a complementary proposed project currently under review by the U.S. Army Corps of Engineers Chicago District are the direct results of continued community collaboration through the Illinois Sand Management Working Group.

We will continue to support our coastal communities in this important work. If you have any questions about our agency's enthusiastic support for this application, please feel free to contact me at 312-814-0665 or Diane.Tecic@illinois.gov.

Sincerely,

Diane Tecic
Director, IDNR Coastal Management Program

Water Resources Development Act (WRDA) Illinois Pilot Project

Safe use of Waukegan dredged material to protect against shoreline loss

Above: Dredging in the Waukegan Harbor Approach Channel (IDNR, 2015)

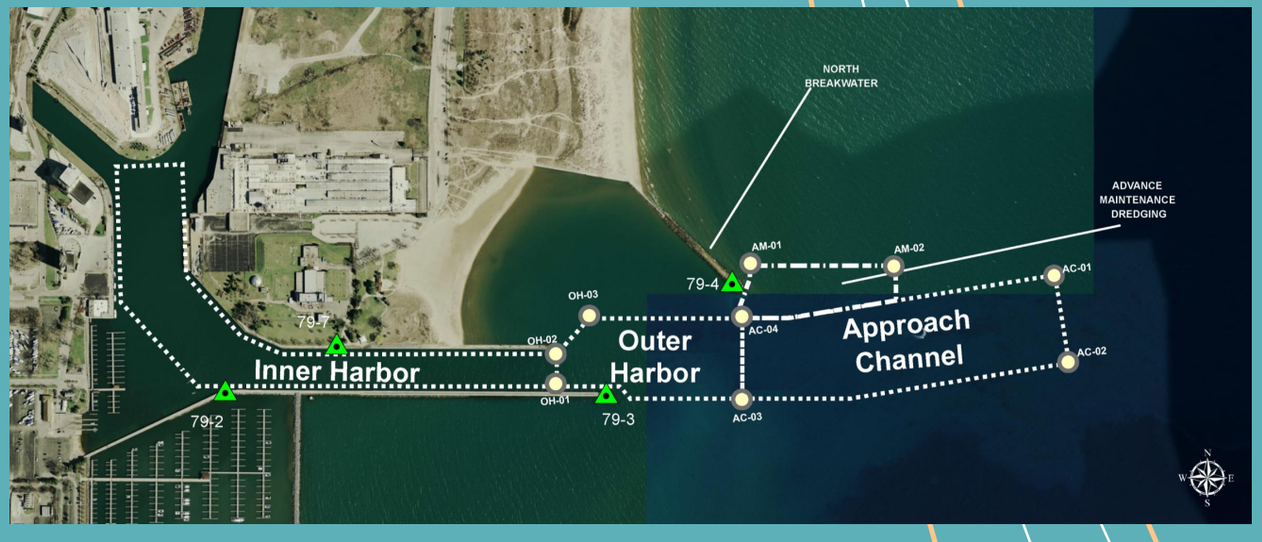
The 2016 Water Resources Development Act (WRDA), a national law, directs the US Army Corps of Engineers (USACE) to identify ten pilot projects for the beneficial use of material removed from regular maintenance of federally-authorized ports, harbors, and navigation channels. This reflects a growing national interest in using clean dredged material, such as lake sand, in a more sustainable and cost-effective manner.

Four Illinois coastal communities – City of Evanston, Glencoe Park District, Lake Bluff Park District, and Foss Park District of North Chicago – developed one of the selected pilot projects – the only one in the Great Lakes region. In partnership with USACE, Chicago District, the communities will protect 55,000 yards of public parks and beaches from shoreline loss caused by high water levels using dredged material from Waukegan Harbor. The pilot program is projected to have a budget of $10 million, and most project costs will be covered by the USACE. This assistance will maintain important public lakefront in a cost-effective way. The planning phase for the project will begin in summer 2019.

Where is the sand coming from?

Lake sand moves into ports and harbors by wave action. Before the sand can continue its natural course along the lakefront, it can be trapped by manmade structures and natural features. USACE annually dredges clean sand from the Waukegan Harbor Approach Channel. The sand moves into the channel and prevents safe navigation, especially by large commercial ships. In the past, USACE has placed the sand south of the harbor in Lake Michigan, where it often does not reach sand-starved shorelines where it is most needed. This project would instead place the clean material on or near community beaches, where it can enhance recreation, maintain lakefront access, and improve habitat. In the past, communities have had to purchase and truck sand in from quarries, a costly and unsustainable process.

Below: Locations of current Operation and Maintenance dredging in the Waukegan Harbor Approach Channel and Advanced Maintenance Dredging Area (USACE, 2019)



What will the sand look like & how do we know the sand is safe?

At Waukegan Harbor, dredging is carried out in the harbor using large barges with cranes to scoop up sand. The sand can then be placed on a beach via pipeline in a process called hydraulic offloading. When the sand arrives on community beaches, it may look darker than the quarry sand typically used because it has less exposure to oxygen under water. But it is certainly clean and safe.

The International Joint Commission (IJC) declared Waukegan Harbor an Area of Concern in 1987. Waukegan Harbor received this designation in part because of nearby superfund areas - the Johns Manville property and the Outboard Marine Corporation site. Many partners have invested significantly in the area's clean up. In 2013, the United States Environmental Protection Agency (USEPA) dredging removed all but trace levels of contamination (particularly polychlorinated biphenyls or PCBs) from inner harbor sediment. The Waukegan Harbor Approach Channel has never experienced PCB contamination. USACE has conducted water quality and sediment monitoring in the Approach Channel, as required by Illinois Environmental Protection Agency (IEPA) approvals. USACE has found no contaminants of concern in its monitoring.

Both the Illinois Attorney General's office and USACE independently monitored for asbestos fibers in the Waukegan Approach Channel to ensure that no contamination is present. All studies concluded that there is about a one-in-a-million risk in asbestos exposure from the channel sediment.

USACE shares community concerns for the protection of public health and safety. It follows the Great Lakes Testing Manual guidance developed by USEPA and USACE for characterizing sediment to ensure that it is clean and safe for use on our Lake Michigan beaches. USACE complies with the Clean Water Act and with 401 Water Quality Certifications issued by IEPA.

For more information or to review the data from these reports and other studies, please visit:

- https://www.dnr.illinois.gov/cmp/Pages/sandmanagement.aspx
- https://www.lrc.usace.army.mil/Missions/Civil-Works-Projects/Waukegan-Harbor-Dredging/

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