DISCUSSION TOPICS

• Background

• Condition assessment

• Prioritization of Sites

• Urgent Need Sites

• Longer-term Repair Sites

• Recommendations
BACKGROUND

• Since 2013, Lake Michigan water levels have risen 6 feet and are nearing historic highs

• During recent storms, the high water levels have eroded beaches and significantly damaged armoring systems throughout Evanston

• The damage must be addressed to protect the shoreline, park system and adjacent infrastructure

• SmithGroup hired in February 2020 on an emergency basis to evaluate conditions, identify repair needs and prepare construction documents for urgent issues
CONDITION ASSESSMENT

Step 1: Conduct a Detailed Site Survey

• Examine each public lakefront property
• Perform a drone survey to collect topographic information and aerial photography
CONDITION ASSESSMENT

Step 2: Evaluate and Prioritize Each Site

Assessment based on 3 factors:
• Physical condition observed during survey
• Vulnerability to flood risk
• Usage / site criticality to operations
CONDITION ASSESSMENT

Step 3: Create a Road Map of Repair Needs

- Identify immediate (urgent) versus longer-term repair sites
- Develop conceptual design strategies
- Assess potential repair costs

Table 1a: Condition Assessment Summary (Shore Protection Features)
### PRIORITIZATION OF SITES

<table>
<thead>
<tr>
<th>Park Name</th>
<th>Condition Ranking</th>
<th>Likelihood Ranking</th>
<th>Usage</th>
<th>Overall Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenwood Beach North</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>3.8</td>
</tr>
<tr>
<td>Elliot Park South</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>Dempster Launch Facility</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>Garden Park North</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3.5</td>
</tr>
<tr>
<td>Sheridan Road Revetment</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>3.5</td>
</tr>
<tr>
<td>Clark Square</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>3.0</td>
</tr>
<tr>
<td>Dempster Beach</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>3.0</td>
</tr>
<tr>
<td>Water Treatment Plant</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>3.0</td>
</tr>
<tr>
<td>South Boulevard Beach North</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>Garden Park South</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>Lee St Beach South</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>Lee St Beach North</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>Elliot Park North</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>Dog Beach</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>2.5</td>
</tr>
<tr>
<td>Clark St Beach</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>Lighthouse Beach</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>2.5</td>
</tr>
<tr>
<td>Church St Launch Ramp</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>2.5</td>
</tr>
<tr>
<td>South Boulevard Beach South</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2.3</td>
</tr>
<tr>
<td>Dawes Park</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2.3</td>
</tr>
</tbody>
</table>
URGENT NEEDS SITES

GREENWOOD BEACH NORTH

ELLiot PARK SOUTH

DEMPSTER STREET FACILITY
URGENT NEEDS SITES

GARDEN PARK

SHERIDAN ROAD
URGENT NEEDS SITES

Greenwood Beach (north)

Issues
• Revetment failure
• Stone stability compromised

Short-Term Recommendations
• Regrade and adjust revetment stone at restroom
• Add temporary flood barrier south of restroom
URGENT NEEDS SITES

Elliot Park (south)

Issues
• Revetment undermined and unstable
• Revetment disintegrated and susceptible to flooding

Short-Term Recommendations
• Regrade and adjust revetment stone
• Add temporary flood barrier
URGENT NEEDS SITES

Dempster Street Beach House

Issues
• Significant sand transport
• Flooding in beach house facility

Short-Term Recommendation
• Rehabilitate revetment along a 60 linear foot section adjacent to the beach house
URGENT NEEDS SITES

Garden Park (north)

Issues
• Narrow and insufficiently high crest protection
• Overtopping during storm events leading to park erosion

Short-Term Recommendations
• Rehabilitate revetment along a 120 linear foot long section at the north end of the park
URGENT NEEDS SITES

Sheridan Road

Issues

• Loss of stone revetment material
• Minimal crest protection in some areas
• Crest stones significantly larger than underlying revetment material
• Varying revetment slopes

Short-Term Recommendations

• Rehabilitate revetment along a 400 linear foot section on the north end of the roadway
## URGENT NEEDS SITES

<table>
<thead>
<tr>
<th>Priority</th>
<th>Location</th>
<th>Summer 2020 *</th>
<th>Fall 2020</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Greenwood Beach North</td>
<td>Regrade slope and stabilize wall at restroom ($50k)</td>
<td>Install temp flood protection ($75k - $150k)</td>
<td>Install structure to protect beach ($2m - $5m)</td>
</tr>
<tr>
<td>2</td>
<td>Elliot Park South</td>
<td>Stabilize wall ($50k)</td>
<td>Install temp flood protection ($75k - $150k)</td>
<td>Rehab 800lf of revetment ($1m - $3m)</td>
</tr>
<tr>
<td>3</td>
<td>Dempster St. Beach House</td>
<td>N/A</td>
<td>Rehab 60 lf of revetment ($75k - $150k)</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>Garden Park North</td>
<td>N/A</td>
<td>Rehab 120 lf of revetment ($100k - $200k)</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>Sheridan Road</td>
<td>N/A</td>
<td>Rehab 400 lf of revetment (750k - $1.5m)</td>
<td>Rehab 1000 lf of revetment ($2m - $5m)</td>
</tr>
<tr>
<td></td>
<td>Priority 1-4 Est. Costs</td>
<td>$100k</td>
<td>$325k - $650k</td>
<td>$3.0m - $8.0m</td>
</tr>
<tr>
<td></td>
<td>Sheridan Road Est. Costs</td>
<td>$750k - $1.5m</td>
<td>$2.0m - $5.0m</td>
<td></td>
</tr>
</tbody>
</table>

* * Required prior to opening to public
LONGER-TERM REPAIR SITES

- Each lakefront site has unique characteristics and concerns
- Solutions, costs and recommendations still under review
FUNDING

2020 General Obligation Bond

• Additional $750,000 debt issue
• Approximately $55,000/year for 20 years
LAKE LEVEL PREDICTIONS

Army Corps of Engineers Weekly Forecast (4/24/20)

Lake Michigan water levels are:

- 3 inches higher than March 2020
- 11 inches higher than April 2019
- 36 inches higher than average April water levels
## URGENT NEEDS SITES

<table>
<thead>
<tr>
<th>Priority</th>
<th>Location</th>
<th>Summer 2020 *</th>
<th>Fall 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Greenwood Beach North</td>
<td>Regrade slope and stabilize wall at restroom ($50k)</td>
<td>Install temp flood protection ($75k - $150k)</td>
</tr>
<tr>
<td>2</td>
<td>Elliot Park South</td>
<td>Stabilize wall ($50k)</td>
<td>Install temp flood protection ($75k - $150k)</td>
</tr>
<tr>
<td>3</td>
<td>Dempster St. Beach House</td>
<td>N/A</td>
<td>Rehab 60 lf of revetment ($75k - $150k)</td>
</tr>
<tr>
<td>4</td>
<td>Garden Park North</td>
<td>N/A</td>
<td>Rehab 120 lf of revetment ($100k - $200k)</td>
</tr>
<tr>
<td>5</td>
<td>Sheridan Road</td>
<td>N/A</td>
<td>Rehab 400 lf of revetment (750k - $1.5m)</td>
</tr>
<tr>
<td></td>
<td>Priority 1-4 Est. Costs</td>
<td>$100k</td>
<td>$325k - $650k</td>
</tr>
</tbody>
</table>

* Required prior to opening to public