1. Provide update on dredging feasibility study
2. Discuss main considerations for dredging operations
3. Present potential dredging scenario alternatives
4. Gather input from community and user groups
Meeting Information

Format of Meeting

Part 1 – Main Presentation (1 hour)
  – Feasibility Study Discussion
  – Interactive Questions/Polling

Part 2 – Q&A Session (1 hour)
  – Written answers to questions will be provided after the meeting
• **Q & A Session instructions**
  – *Submit your questions through the Zoom’s chat feature*
    • You can submit questions at any moment of the presentation
  – *We will provide 2 opportunities to answer questions:*
    • Mid point of presentation (10 min)
    • End of presentation (1 hr session)

• **Technical Questions – Zoom Troubleshooting**
  – Stephanie Buckingham will be our technology liaison
  – Chat directly in Zoom
  – E-mail: scb@freese.com

**Meeting Information**

Opportunities for Feedback
Meeting Information

Opportunities for Feedback

• Online Google Form
  tinyurl.com/white-rock-2

• Form will be active until
  July 31, 2020
Poll Questions
Poll Question #1

• What is your primary use of the lake? (Select One)
  – Business Owner
  – Cultural/Entertainment Activities
  – Cycling
  – Hiking/Jogging
  – Homeowner
  – Passive Recreation (ex. bird watching, dog park)
  – Rowing and/or Kayaking
  – Sailing
• What are your main concerns regarding lake dredging? (Select up to Three)
  – Aesthetics Impacts
  – Business Impacts
  – Environmental Impacts
  – Expenditure of Tax Dollars
  – Recreation Impacts
  – Water Quality Impacts
Poll Question #3

• What are the most important goals of this dredging project? (Select up to Three)
  – Improving fish & wildlife habitat
  – Improving lake aesthetics
  – Providing for long-term lake maintenance
  – Restoring lake depth for recreation
  – Improving water quality
Background Information
• Dallas Park & Recreation Department partnering with Dallas Water Utilities on high-level feasibility study including:
  • Approaches
  • Regulatory requirements
  • Costs
  • Potential funding sources
• Freese and Nichols and Brownstone Associate consulting
What is a Feasibility Study?

Feasibility studies are conducted primarily to determine:

- Key goals of the project.
- Alternative solutions and associated costs.
- Potential project roadblocks (risk factors).
- Project requirements and expected timeline.

**NOT** developing engineering plans, permit applications, or formal Environmental Studies.
1. Restore lake depth to enhance watersport recreation.

2. Remove sediment from shoreline area to improve aesthetics for waterside recreation.

3. Minimize negative impacts to aquatic habitat and other environmentally sensitive areas.

4. Evaluate long-term strategies for sustainable sediment control.

Goals & Objectives
Goal: Depth for recreation (8 feet)

- Areas with recreation focus
- Areas with depth < 10 feet
- Other areas identified by stakeholders
Amount of Sediment
Sedimentation Rate Analysis

- Study Estimate
  170,000 CY/year
- Planning purposes
- Based on measured capacity of lake at various points in time
- Demonstrated with a constant loss rate

White Rock Lake - Capacity Loss Due to Sedimentation

1936 Dredging
1955 Dredging
1974 Dredging
1998 Dredging

%Capacity vs. Years

Capacity (cy) vs. Millions

20
15
10
5
0

%Capacity (w/o dredging)
%Capacity (w/historic dredging)
Sediment Sampling
• Collect samples in anticipated dredging areas

• Measure concentrations of Chemicals of Concern (COCs)

• Determine any special handling requirements or limitations on reuse or disposal
• Trace concentrations of some COCs below allowable threshold

• Concentrations of COCs do not pose substantial risk to dredging contractors or lake environment

• Sediment appears to meet criteria for landfill disposal applications

• Additional analysis needed for reuse/land applications

Sampling Results & Conclusions
• Most likely a hydraulic dredge operation based on scale of project and size of lake

• Prefer to pump directly to dewatering/disposal site to minimize impacts to lakeshore

• Return water to lake

• Eliminate “double-handling” if possible

Dredging & Dewatering Method
• Identify City-owned properties for potential dewatering/disposal

• Sites ruled out:
  – Lack of available open space
  – Conflicting land use
  – Location in regulatory floodplain
• Landfill disposal costs $30.50 to $60.00/ton

• More information needed to identify potential land reclamation applications
Environmental Considerations

Photo credit: Katya Mudivarthi (TripAdvisor)
• Feasibility Study considered environmentally sensitive areas around the Lake as part of screening process.
• Local: City of Dallas
  – Floodplain, Construction permits

• State: TCEQ
  – Water Quality Certification

• Federal: USACE – Section 404 Permit
  – May require an Environmental Assessment
Environmental Considerations

Permitting

• State: Texas Parks and Wildlife Department
  – Aquatic Resource Relocation

• State: Texas Historical Commission
  – Cultural Resources

• Federal: US Fish and Wildlife Service
  – Threatened or Endangered Species
Virtual Community Meeting #2 – July 16, 2020

Press Here

To: Everyone

TYPE YOUR QUESTIONS HERE!!!

Remember to Submit Your Questions
Alternative Scenarios
• Potential alternatives developed to restore and maintain lake level in desired areas
• Four potential alternatives
  – Data available for City interpretation
• Costs are presented as a range (low and high) including a contingency to cover unknowns

Dredging Alternatives
Overview
Dredging Alternatives

Baseline Scenario

- Dredging every 20-25 years on average
- Recurrent periods with impacts to recreation
- $50 - $88 million recurring (20-year cycle)
- $3.0 - $5.3 million annualized cost over 50-yr period
Dredging Alternatives

Alternative 1

- Large initial dredge project followed by more frequent large dredge projects
- $50 - $88 million upfront
- $32 - $56 million recurring (12-year cycle)
- $3.6 - $6.3 million annualized cost over 50-yr period

Graph:
- 1998 Dredge Operation
- Periodic Dredging (every 12-yrs) ~ 2,000,000 cy
Dredging Alternatives

Alternative 2

- Large initial dredge project followed by annual maintenance
- $19 - $34 million upfront
- $4 - $6 million annual maintenance
- $4.2 - $6.7 million annualized cost over 50-yr period
Dredging Alternatives
Alternative 3

- Attain desired lake level after 13 years followed by annual maintenance
- $7 - $12 million first 12 years
- $4 - $6 million annual maintenance
- $4.5 - $7.4 million annualized cost over 50-yr period
Dredging Alternatives

Alternative 4

- Large periodic dredging projects with interim maintenance dredging

- $35 - $88 million upfront and every 20+ years

- $7 - $12 million recurring (3-year cycle)

- $4.4 - $8.5 million annualized cost over 50-yr period
• Conceptual sizing based on sediment rate analysis and 10-year maintenance schedule: 120 acres

• USACE jurisdiction (protected wetlands) – Individual Permit

• Unlikely to be a permittable sediment reduction alternative
## Dredging Alternatives Comparison

<table>
<thead>
<tr>
<th>Dredging Scenario</th>
<th>Description</th>
<th>Recurring Impacts to Recreation Activities</th>
<th>Total Cost (Millions – 2020 $)</th>
<th>Annualized Cost (Millions – 2020 $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline (Historical)</td>
<td>Large Dredging Projects (20-25 yr cycle)</td>
<td>Yes</td>
<td>150 – 265</td>
<td>3.0 – 5.3</td>
</tr>
<tr>
<td>Alternative 1</td>
<td>Large Dredging Projects (12 yr cycle)</td>
<td>No</td>
<td>178 – 314</td>
<td>3.6 – 6.3</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>One Large Dredging Project + Annual Maintenance Dredging</td>
<td>No</td>
<td>208 – 333</td>
<td>4.2 – 6.7</td>
</tr>
<tr>
<td>Alternative 3</td>
<td>Annual Maintenance Dredging Phase 1 – First 12 yrs Phase 2 – Year 13 onwards</td>
<td>Yes</td>
<td>226 – 370</td>
<td>4.5 – 7.4</td>
</tr>
<tr>
<td>Alternative 4</td>
<td>Large Dredging Projects (20-yr cycle) + Small Maintenance Dredging (3-yr cycle)</td>
<td>No</td>
<td>218 – 423</td>
<td>4.4 – 8.5</td>
</tr>
</tbody>
</table>

*All alternatives evaluated over a 50-year period*
Poll Questions – Dredging Alternatives
• Are temporary lake use disruptions by annual maintenance dredging activities acceptable?
  – Acceptable
  – Neutral
  – Unacceptable
  – Unsure
Poll Question #2

• How long would impacts to recreational activities at White Rock Lake (due to sediment build-up) be acceptable?
  – None
  – Impacts for up to 6 months
  – Impacts for up to 5 years
  – Impacts for up to 10 years
• Considering budget constraints, which area(s) of White Rock Lake should be given priority for dredging? (Select up to Three)
  – Boat House
  – Boat Launch
  – West Lawther
  – Mockingbird/Dog Park
  – Sailing Clubs
  – Bath House
  – Sunset Bay

Poll Question #3
Poll Question #4

What factor(s) matter most to you when considering dredging approach? (Select up to Three)

- Total project cost
- Annual maintenance cost
- Recreation impacts
- Environmental impacts
- Disruption of lake access
- Sustainability of solution
• Based on what you have seen presented today, which potential alternative is your preference?
  – Baseline – Large capital projects every 20-25 years
  – Alternative 1 – Periodic large dredge every ~12 years
  – Alternative 2 – Initial large dredge with annual maintenance dredging
  – Alternative 3 – Annual maintenance dredging only
  – Alternative 4 – Periodic large dredge (~20 yrs) & maint. dredging (~3 yrs)
Funding & Next Steps
Funding Opportunities

- City funding likely to be through bonds
  - General Obligation (longer term)
  - Certificate of Obligation (shorter term)
- Limited to no grant/loan funding available for recreational dredging
- Potential alternative sources:
  Lake User Fees, Special Tax Districts
<table>
<thead>
<tr>
<th>Activity</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procure Funding (Timing TBD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permitting (local, state, federal)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Review &amp; Comment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dredging Operations &amp; Disposal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Potential Obstacles & Concerns

1. Project Cost
2. Dewatering/Disposal Location
3. Environmental Permitting
1. Continue coordination with stakeholder groups.
2. Identify dewatering/disposal, possible reuse opportunities.
3. Evaluate potential funding sources during budget planning.
4. Scale operation to available funding using base data developed for study.

Recommendations

Photo credit: Dallas Park and Recreation Department
Questions