



Dallas Park & Recreation

Bachman Lake Dredging

Park and Recreation Board
March 4, 2021

Agenda

- Introductions
- Project Background, Objectives and Timeline
- Bachman Lake Dredging Evaluation
- Dredging Process (what to expect)
- Community Engagement/Project Coordination
- Questions?

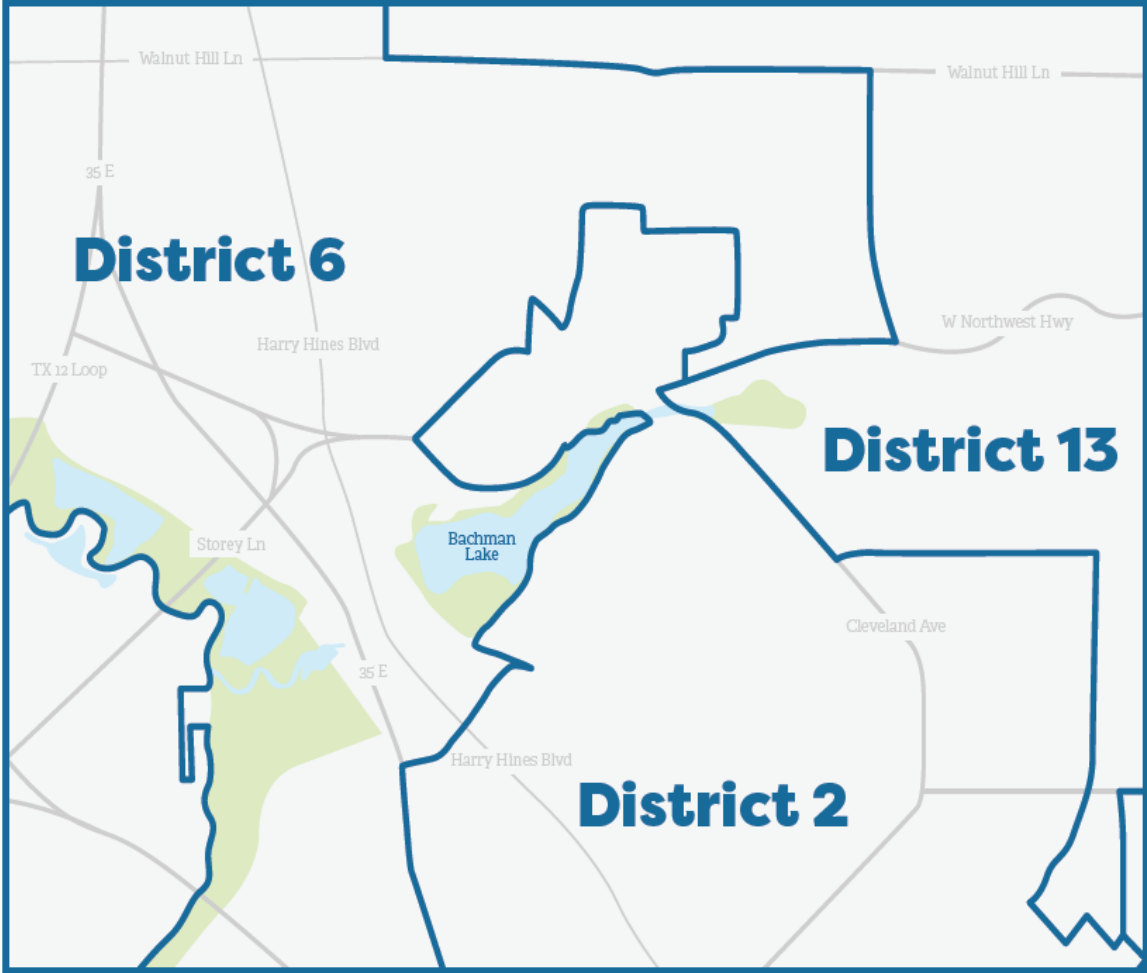
Project Background, Objectives and Timeline

Bachman Lake

- Dam built in 1901
- Originally used for Water Supply
- Converted to Recreational Use in 1960's
- Last Dredged in 2002 to achieve 8-foot depth



Council Districts

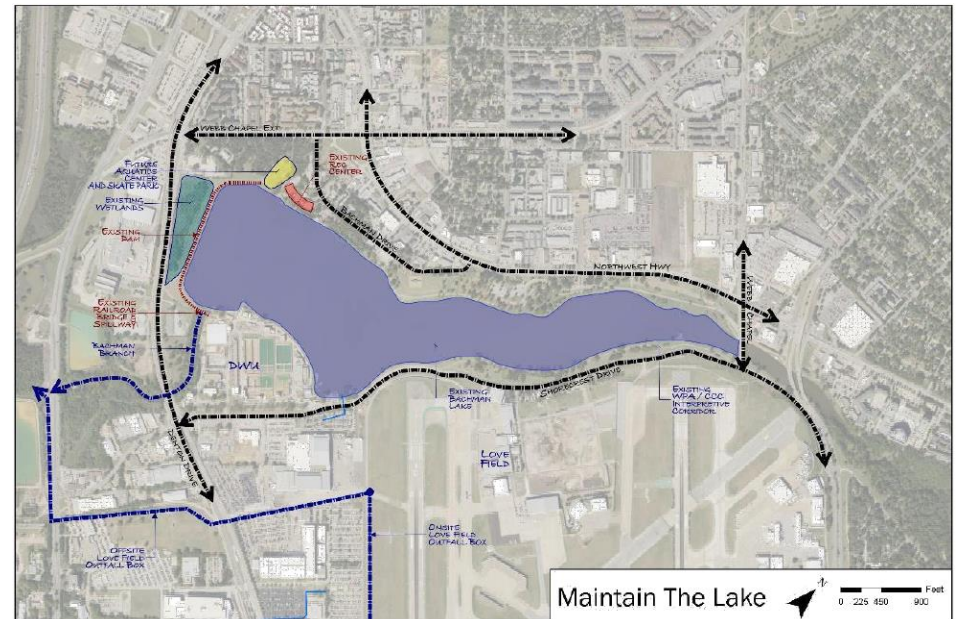


Bachman Lake - Key Features



Project Drivers

- 2016 Love Field / Bachman Lake Feasibility Study
- Bachman Lake Task Force Recommendation to “Maintain the Lake”
- Provide Design, Bidding, and Construction for Lake Dredging and Bachman Lake Dam and Spillway Reconstruction



Project Objectives

- **Remove sediment to return lake to recreational levels**
- Update hydrology and hydraulics of the Bachman Dam and Spillway
- Meet required regulatory flood capacity
- Address Bachman Dam structural and stability recommendations

Effects of Sedimentation

- Excessive debris buildup from sedimentation can reduce lake depths
- High sediment levels affect recreational activities and reduce reservoir capacity
- Shallow water depth can lead to invasive aquatic vegetation problems



Project Timelines

Timeline	Project Activity
June 2020	Dredging Design and Field Work Tasks for Freshwater Mussel Survey, Bathymetric Survey, Cultural Resources, Topographic Survey, and Geotechnical Investigation.
Late Summer 2020	Public & Bachman Lake Stakeholders Meeting to present project overview and gather input. August 2020 meeting with Friends of Bachman Lake (FoBL).
Winter 2020 – Spring 2021	Complete Dredging Design and Advertisement for Dredging Bids. Complete Dam Rehabilitation Final Design Report. Public & Bachman Lake Stakeholders Meeting to present Project Update
Spring/Summer 2021	Open Bids for Dredging Services, Council Consideration of Dredging Construction Contract Begin Final Design Phase 2A of Dam Rehabilitation
Summer/Fall 2021	Begin Bachman Lake Dredging Work
Fall 2021	Complete Dam Rehabilitation Design and Advertisement for Bids
Winter 2021/2022	Completion of Bachman Lake Dredging and Demobilization. Council Consideration of Dam Rehabilitation Construction Contract
Spring 2022	Begin Dam Rehabilitation Construction
Summer 2023	Completion of Dam Rehabilitation Construction and Demobilization

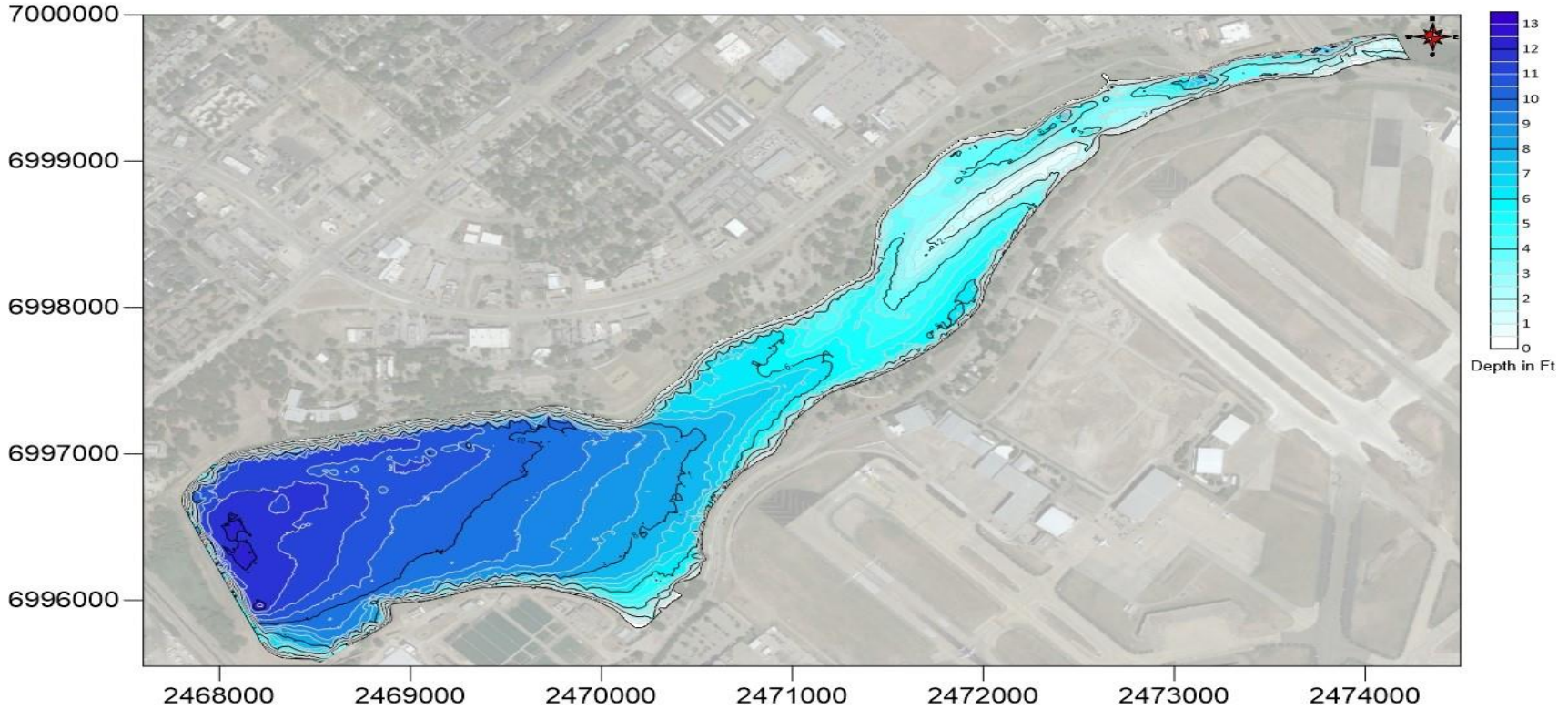
Dredging Evaluation

Completed Field Activities - Permitting and Design

- Topographic Survey of Lake for Dam Design
- Fresh Water Mussel Survey for Corps of Engineers (USACE)
- Bathymetric Survey to Estimate Dredging Volume
- Geotechnical Investigation for Dam Design
- Waters of the US Survey for Wetlands Delineation
- Cultural Resources Survey for Permitting

Bachman Lake Water Depth

Bachman Lake Water Depth Contour Map



Coordinate System: SP Texas North Central (FIPS 4202)
Unit: US Survey Feet
Survey Date: July 8 - July 21, 2020
Horizontal Datum: NAD 83
Vertical Datum: NAVD 88

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Dredging Alternatives

- Four options evaluated:
 - Hydraulic dredging with mechanical dewatering
 - Hydraulic dredging with basin dewatering
 - Mechanical dredging
 - Dry Lakebed
- Evaluation Criteria included:
 - Cost
 - Schedule
 - Ease of Permitting
 - Constructability
 - Environmental Impact During Construction

Dredging Alternatives

Table 2: Dredging Alternatives Summary

	Cost	Schedule	Ease of Permitting	Constructability	Environmental Impact During Construction	Final Ranking
Dry Lakebed Excavation	4	4	4	4	4	4
Hydraulic Dredging w/ Basin	3	2	3	3	3	3
Hydraulic Dredging w/ Mechanical dewatering	1	1	1	1	1	1
Mechanical Dredging	2	3	2	2	2	2

Ranking 1 to 4 with 1 being most favorable and 4 least favorable.

Dredging Alternatives (not recommended)

- Dry Lakebed Excavation
 - Most expensive – up to \$30M
 - Most time consuming – 18 months estimated
 - Most difficult to permit/construct
 - Largest community impact
- Hydraulic dredging with basin dewatering
 - Second most expensive – potentially in excess of \$26M
 - Requires large area to construct basin; 8 to 10 months minimum
 - Size and location of basin drives cost, permitting, and environmental impact
- Mechanical dredging
 - Cost estimated at up to \$26M
 - Most time consuming after dry lakebed excavation – about 11 to 12 months
 - Requires area for drying material

Recommended Alternative

- Hydraulic dredging with mechanical dewatering
- Material to be removed: 352,000 cubic yards
- Provides minimum depth across lake of 8 feet
- Material taken to local landfill for daily cover
- Estimated cost of \$19-21M
- Construction duration of 8-10 months
- DWU land at Bachman Lagoon to be used for dewatering and hauling

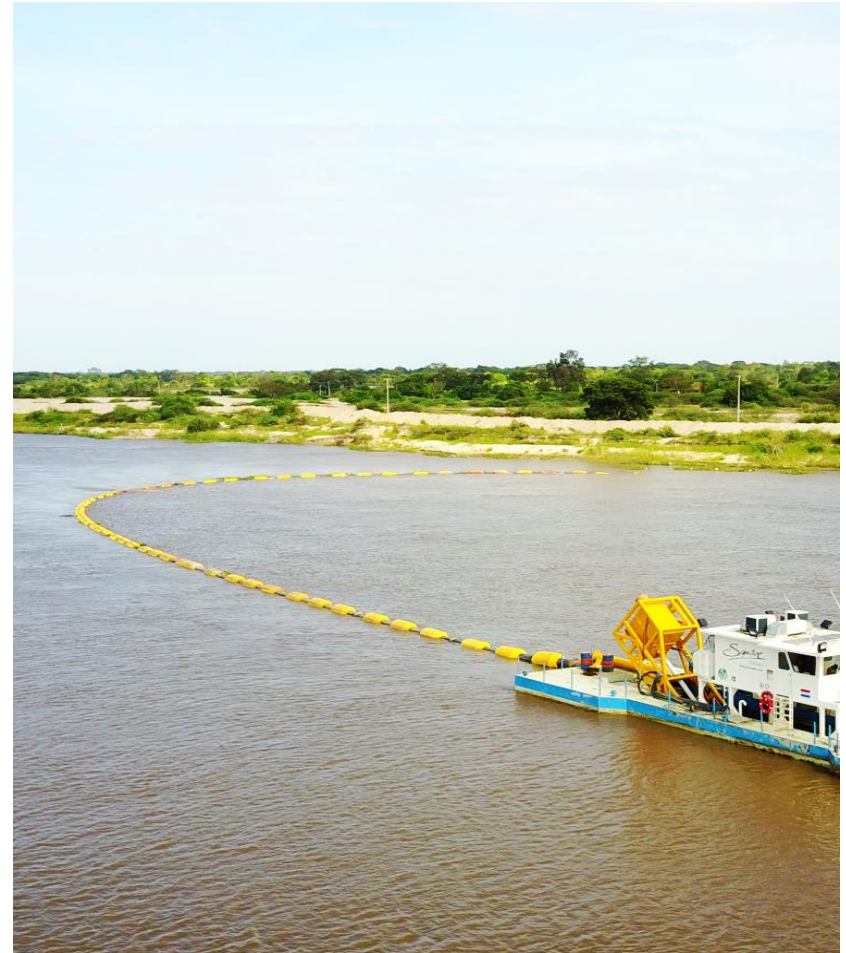
Dredging Process (what to expect)

Typical Hydraulic Dredging Barge



Bachman Lake Dredging Setup

- Loosened material removed by dredging equipment will be transported for dewatering
- Dredged material from Bachman Lake to be transported to the offsite dewatering area



Pipe Route to Dredging Sediment Processing Site



Bachman Lake Dredging Dewatering

- Removal of water from dredged sediment and other solid material
- **Why? For ease of transport of dredged material and reduced hauling cost**
- Excavated material will be trucked to a landfill for daily cover



Community Engagement & Project Coordination

Community Engagement

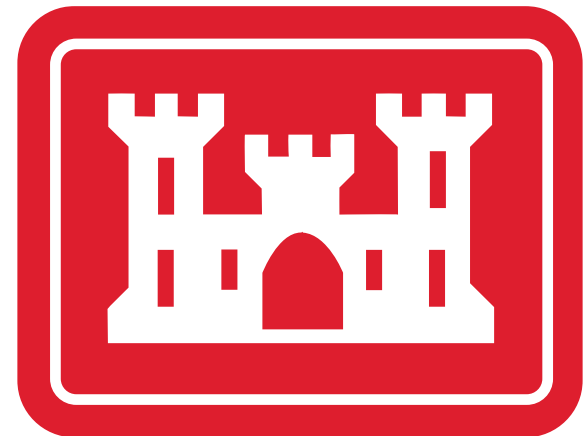
- First Public Meeting w/Friends of Bachman Lake (FoBL) – August 10, 2020
- Second community meeting w/FoBL – Feb. 8, 2021
- Periodic project updates:
 - Council Districts 2, 6 and 13
 - Former Love Field/Bachman Lake Task Force Members
 - Friends of Bachman Lake
 - June 2020 and February 2021
- Conversations with Rowing Club and Other Stakeholders
- Project information resources:
 - website - <https://bachmanlakedam.com/>
 - Facebook, Twitter and Instagram - [@bachmanlakedam](#)
 - Questions or Inquiries - info@bachmanlakedam.com

Project Coordination

- Corps of Engineers (USACE) and Parks & Wildlife (TPWD)
- Periodic project updates to Stakeholder Depts (June 2020 and February 2021)
- Shared plans and reports with Parks Dept. and other departments
- Communicate with Aviation for Love Field Good Neighbor meetings
- Communicate with Sanitation regarding traffic and use of dewatering site – adjacent to waste transfer station

Dredging Permit Approved

- US Army Corp of Engineers
- Approved on Dec. 18, 2020





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Questions?