



Dallas Park & Recreation



**White Rock Lake Dredging
Park and Recreation Board
August 15, 2019**

Purpose

- Background information
- Prior dredging of White Rock Lake
- Recent condition of lake
- Proposed feasibility study for dredging of lake
- Next steps



Background

History of White Rock Lake*

- Before it was a lake, the land was a collection of farms owned by Daniel and Cox families
- In 1909, a severe drought prompted city commissioners to consider building a reservoir on White Rock Creek
- City of Dallas purchased the land for White Rock Lake between 1907 and 1910
- Construction of the lake began in March 1910 and was completed in September of 1911

* Historical information in the presentation courtesy of the Dallas Municipal Archives and *From Water Supply to "Urban Oasis" A History of White Rock Lake Park*

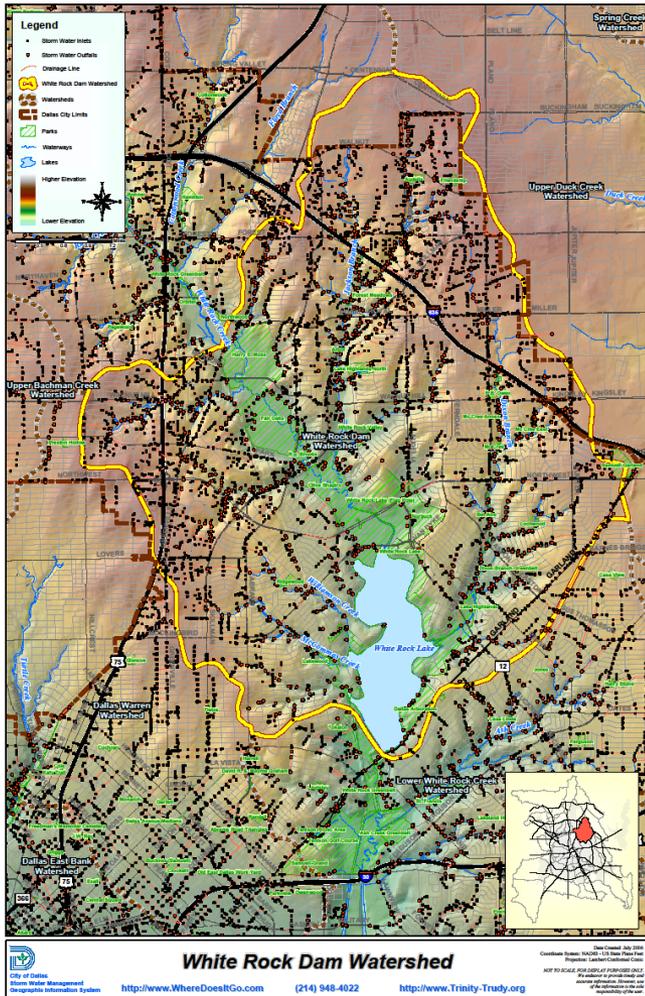
Background

History of White Rock Lake - continued

- In his “City Plan for Dallas” in 1910-11, urban planner George E. Kessler recommended that all city land around White Rock reservoir “be maintained in public hands and used for park purposes”
- In September 1911, reservoir contained 800,000,000 gallons of water
- In 1913, Dallas’ first chlorinated water is dispensed by White Rock pump station
- In 1929, Dallas ceased using White Rock Lake for water supply when Lake Dallas in Lewisville was completed
- Supervision of the parkland of White Rock Lake was transferred from Dallas Water Utilities to the Dallas Park Board in 1929 as White Rock Lake Park was created

Background

History of White Rock Lake - continued



- Lake is fed by nine tributaries, including White Rock Creek, and was created as a reservoir for the City of Dallas, due to a water shortage in Dallas
- Dam controls a drainage area of about 100 square miles
- Lake covers over 1,000 acres
- Previous dredges of the lake occurred in 1937, 1955, 1974, and 1998 (approximately every 18-24 years)

Background

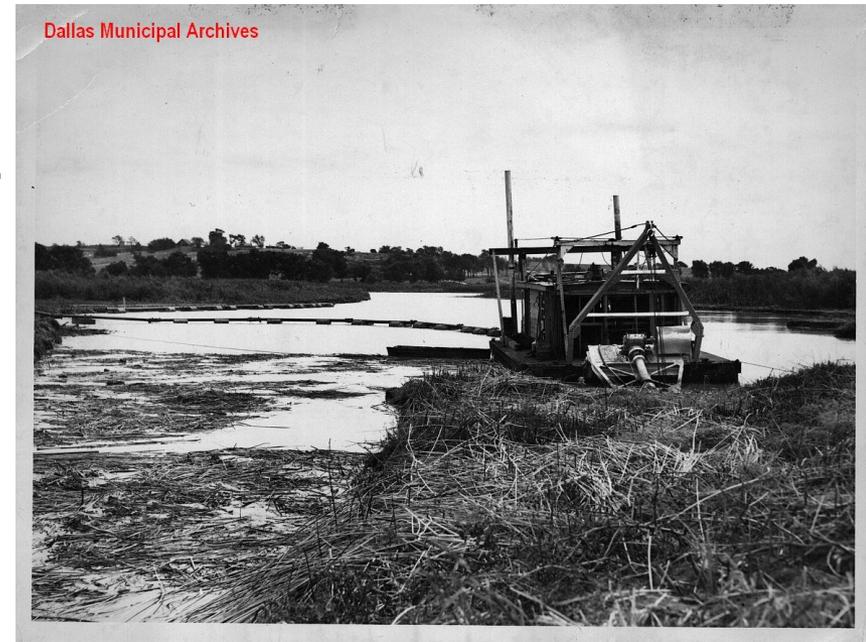
Use of White Rock Lake Park

- Main entrance is located at 8300 East Lawther Drive and includes a variety of outdoor activities
 - 9.33 mile hike and bike trail
 - Audubon Society-designated bird watching area and wetlands site
 - Picnic areas
 - Rental facilities: Winfrey Point and Big Thicket
 - Fishing piers, sailing and rowing facilities
 - Meeting and event facility, the White Rock Bath House Cultural Center
 - Dallas Arboretum

History of White Rock Lake Dredging

1937

- Dredging, or silt removal, began in 1937 using a specially-built dredge called the Joe E. Lawther after the former Dallas mayor
- In three and a half years, 500,000 tons of sediment removed and 90 acres of land reclaimed
- In 1937, the dredge sank at Dixon's Branch but was repaired and returned to service



History of White Rock Lake Dredging

1955-1956

- Lake was dredged for the second time
- Over 15,000 cubic yards of sediment was removed



History of White Rock Lake Dredging

1996-1998

- Fourth and last dredging completed in 1998
 - Last study that preceded the dredging was in 1994
 - Engineering firm found that the sediment impacted oxygen levels in the summer, which could threaten the fish population
- Dredging project was managed by Public Works Department
- Approximately 3,000,000 cubic yards of sediment removed

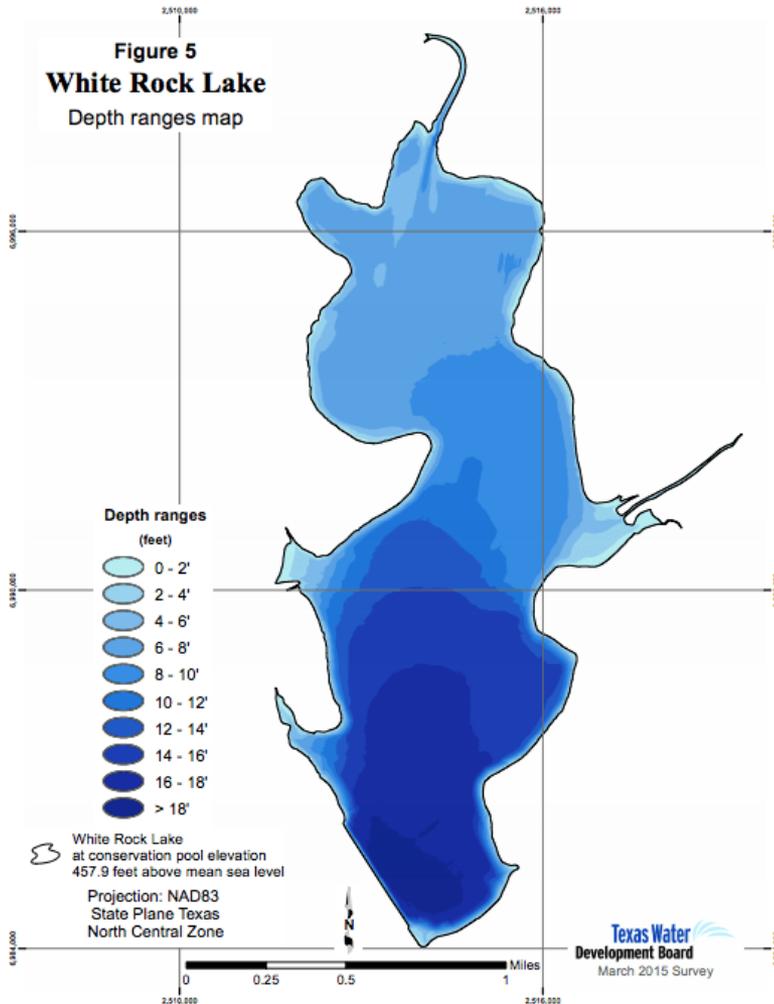
History of White Rock Lake Dredging

1996-1998

- Cost savings were realized when a landowner needed his gravel pit filled in Hutchins, Texas
 - Dredge boat pumped sediment from the bottom of the lake through 24-inch pipes straight into the pit for nine months
 - Pump inhaled a mixture of water and silt and sent it to the pit, filling 200 acres of the pit with 4 to 5 feet of sediment
- 1998 dredging funding
 - 1995 Bond Funds - \$9M
 - DWU Revenue Bonds - \$9M
 - Reimbursed with stormwater revenues

Recent Conditions

White Rock Lake Depths*

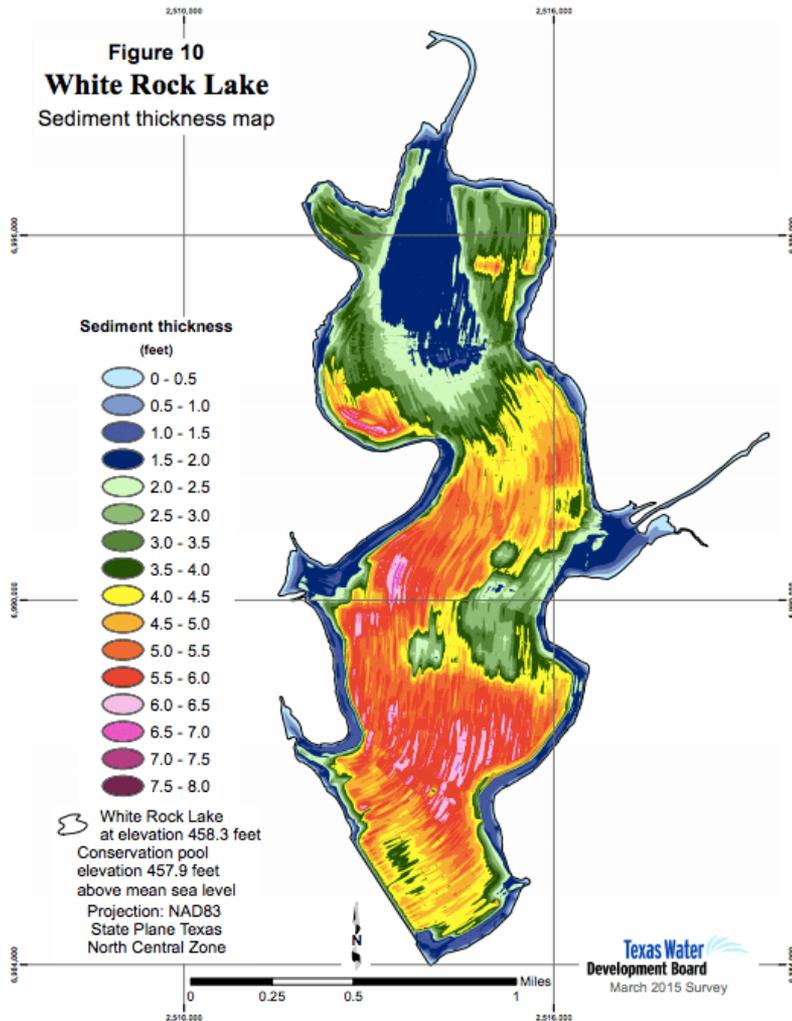


- In 2014, the Texas Water Development Board and the U.S. Army Corps of Engineers partnered for a study on the lake depth
- The lake contained 10,230 acre-feet of water, down from the original volume of 18,000 acre when it was built
- Sediment was 6-8 feet in some places throughout the lake

* Information courtesy of Texas Water Development Board and the *Advocate Lakewood/East Dallas*

Recent Conditions

White Rock Lake Sediment*



- The study found sediment was 6-8 feet in some places throughout the lake
- The southern and western areas of the lake had the most sediment
- They estimated that without dredging, the lake would fill with sediment by 2034

* Information courtesy of Texas Water Development Board and the *Advocate Lakewood/East Dallas*

Recent Conditions

- In the 20+ years since White Rock Lake has been dredged, silt and sediment have continued to fill the lake
- White Rock Creek stretches 30 miles north to Frisco and 8 miles south before flowing into the Trinity River
- Over the last 30 years, booming construction and development replaced the farms and forests that once straddled the creek, creating more erosion and adding to the sediment in the lake

Proposed Feasibility Study

- There is considerable community advocacy for dredging White Rock Lake
- Propose partnering with Dallas Water Utilities to commission a high level study to include
 - Approaches for dredging
 - Regulatory requirements for dredging approach
 - Probable costs associated with design and dredging activities
 - Potential funding sources

Next Steps

- Park and Recreation Board to consider use of Recreation Program Fund, not to exceed \$100,000 for feasibility study
 - August 15, 2019 agenda
- Consultant contract for Council consideration Fall/Late 2019





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