



Dallas Park & Recreation

WHITE ROCK LAKE TRAIL EROSION BRIEFING

Park and Recreation
November 7, 2024

Overview

- Purpose
- Background/History
- Project Location and Scope
- Current Infrastructure Protection Plan
- Long Term Solution
- Upcoming TxDOT SH 78 Project
- Next Steps
- Questions

Purpose

- Review Findings of April 2024 Preliminary Engineering Report
- Review Timeline of PKR Actions Following Report Release
- Discuss Current Infrastructure Repair/Protection Plan
- Discuss Funding and Interdepartmental Support
- Discuss Long Term Solution

Background/History

- As an effort to manage the historical erosion issues at the shoreline of White Rock Lake near Garland Road, Planning and Design contracted with Freese and Nichols in early 2024 to provide an evaluation of the erosion which resulted in a report that was produced in April 2024 indicating that the shoreline is being eroded and failure of the trail will occur if something is not done to address the erosion.
- The following timeline outlines steps PKR has taken since the report was released:

Background/History

- Planning and Design staff went and inspected the area on May 10, 2023
 - January 2024: Initiated WRL Trail Preliminary Engineering Report
 - April 2024: WRL Trail Erosion Preliminary Engineering Report issued
 - July 1, 2024: PKR requested that Freese and Nichols look at sheet piling as an option and also discussed this option with DWU on July 3, 2024
 - July 24, 2024: Freese and Nichols told PKR that sheet piling was not a feasible option
 - July 25 - 31, 2024: PKR contacted engineering firms in the Houston area that deal with this situation on a regular basis
 - August 9, 2024: PKR met with Richard Ewer, P.E. of Celerity Engineering. He indicated that sheet pilings were possible but would likely require tie backs under Garland Road
 - August 12, 2024: PKR contacted TxDOT to ask if tie backs under Garland Road would be allowed and was told they would be; TxDOT will want to review the design of the sheet pilings before they are installed
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Background/History

- August 23, 2024: Celerity Engineering submitted their design proposal for the sheet pilings
- September 4, 2024: Funding was requested after review and acceptance of the proposal
- September 9, 2024: DWU confirmed sheet pilings are a good choice based on their experience at Bachman Lake and the speed of installation
- September 13, 2024: PKR Design Staff toured the Bachman Lake sheet piling project
- September 17, 2024: The Design contract was submitted to the City Attorney's Office and the Notice to Proceed is anticipated in November 2024

Project Location and Scope

- Project Location



— Approximate Sheet Pile Installation Limits

Current Erosion

- Current Site Conditions



June 21, 2024



October 31, 2024

Current Infrastructure Protection Plan

Proposed Design

- PKR will construct an erosion control bulkhead in the form of sheet pilings.
- The sheet pilings will be installed from the existing trail adjacent to Garland Road.
- The sheet piling is a permanent solution and will be approximately 1125 linear feet and the trail will abut the sheet piling system.
- Tie-backs will be required under Garland Road and will be allowed per TxDOT. TxDOT will review the design of the sheet pilings before they are installed.

Current Infrastructure Protection Plan

Impacts to Shoreline

- The current vegetation and wildlife habitat between the trail edge and lake edge will be maintained to the maximum extent possible given that the sheet piling system will require some space for installation.
 - The view from the west will be of the sheet piling, but it is anticipated it will be a composite material rather than corrugated steel so it will probably be a charcoal grey neutral color. The sheet piling will be shielded from view partially by vegetation along the shoreline.
 - When completed the look of the existing shoreline will be maintained from both the lake itself and Garland Road and will not reduce the lake capacity or area.
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Current Infrastructure Protection Plan

Pedestrian Rerouting

- For trail users, the intent is to create an alternate trail route during construction.
- PKR is working with TPW and TxDOT on traffic control plans.
- The trail is being monitored to observe any potential changes that would warrant trail closure prior to construction.

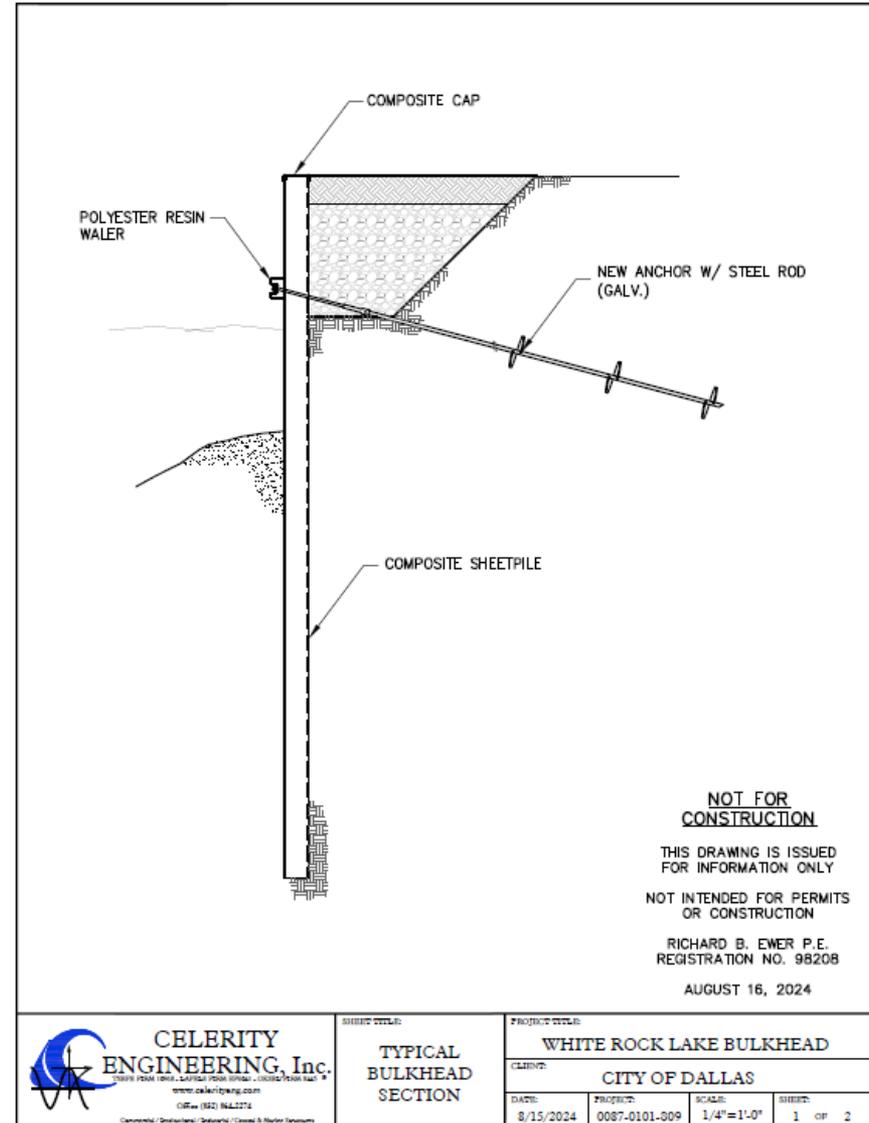
Current Infrastructure Protection Plan

Funding and Timeline

- PKR is still in discussion regarding funding for mitigation efforts and Interdepartmental support
- PKR anticipates the design will take approximately 3 months from NTP, procurement for construction will take 3 months and construction will take approximately 6 months

Current Infrastructure Protection Plan

- Typical Sheet Pile Section



Current Infrastructure Protection Plan

- Example Sheet Pile Photos



Long Term Solution

- Erosion is a persistent problem at many area lakes and is generally caused by wave action generated by wind blowing across the surface of the water as well as the rise and fall of the water level following a storm.
- The area at that south end of White Rock Lake which is currently eroding has a low rock structure about 18" tall which was probably constructed at what was then water's edge, but overtime it has probably been overtopped by fluctuating lake levels and the wave action which occurred at the higher lake levels, so it does not afford protection currently.

Long Term Solution

- The sheet piling system currently proposed will not be overtopped by wave action as it will be ten feet tall to match the trail elevation.
 - Shoreline will be inspected on an annual basis to track amount of erosion occurring in areas without sheet piling
 - When erosion approaches a point that the trail could potentially be damaged, erosion control methods will be implemented
 - Methods to address erosion include:
 - sheet piling
 - hard armor (rock riprap and gabion mattresses)
 - plantings
 - combination of sheet piling, armoring and planting
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TxDOT SH 78 Project

- TxDOT will install a permanent traffic barrier in place of the temporary water barrier on the west side of Garland Road from East Lawther Drive to San Rafael Drive
 - The construction contract has been awarded by TxDOT and the contractor is expected to mobilize November 4, 2024
 - The inside SB lane will be closed starting November 6, 2024 (tentative)
 - Low-profile concrete traffic barriers will be installed and there will only be two SB lanes open during the project
 - Project completion is expected mid-March 2025
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Next Steps

- \$89M of unfunded erosion issues within the park system
- Not accounted for in the bond program
- Continue to proceed with inspections and having erosion fixed
- PKR will continue to keep requesting funding in future bond programs to address erosion throughout the entire park system

Questions (?)



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