

Streambank Stabilization Program Update

Preliminary Open Meeting – April 28, 2025

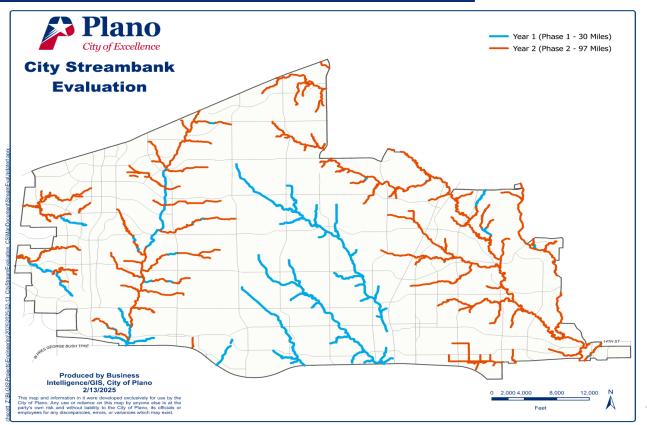
Director of Engineering – Caleb Thornhill Engineer, Sr. – Russell Erskine Engineer, Sr. – Alison Smith

<u>Streambank Stabilization – Update</u>

- Presented program to Council in Preliminary Open Meeting August 8, 2022
- Perform Citywide Streambank Erosion Assessment Approved by Council on December 22, 2022
- 3. Spring 2023 Approx. 30 miles
- 4. Fall/Spring 2023/24 Approx. 97 miles
- 5. Final Database Completed March 2025

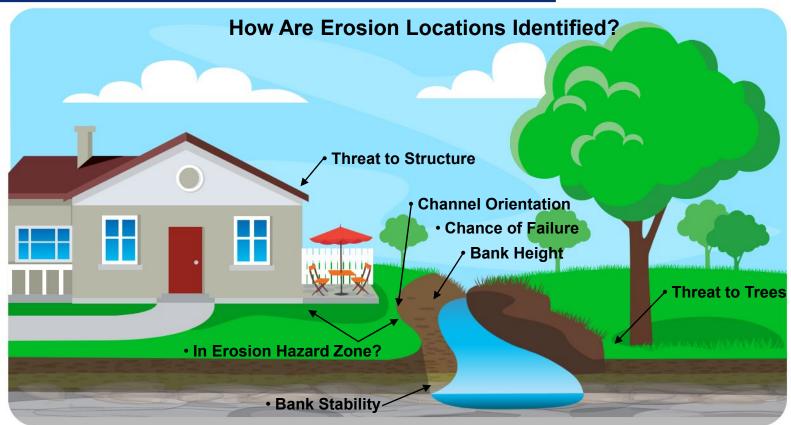


Streambank Stabilization – Update



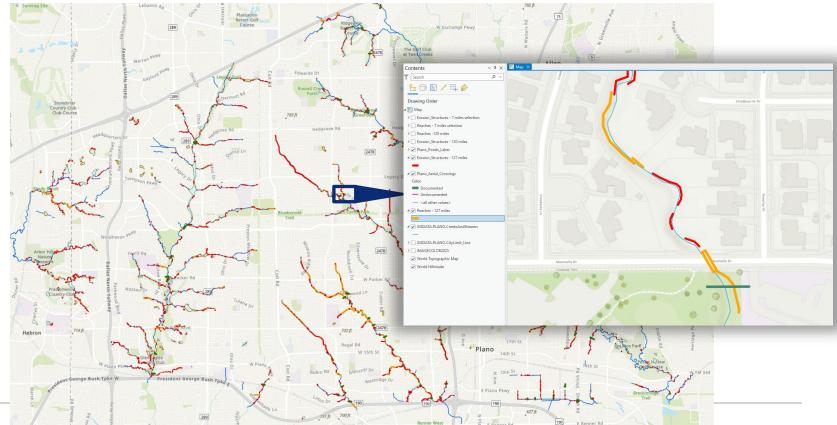


Streambank Stabilization – Update





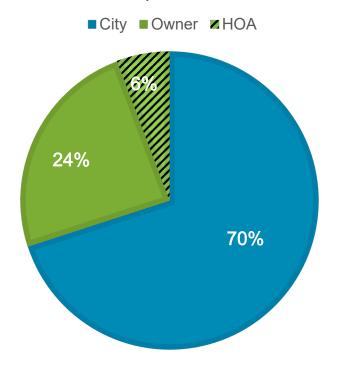
Streambank Assessment in GIS Database





<u>Streambank Stabilization – Update</u>

RESPONSIBILITY (PER PLAT LANGUAGE)



Over 3,000+ Erosion Locations Identified.

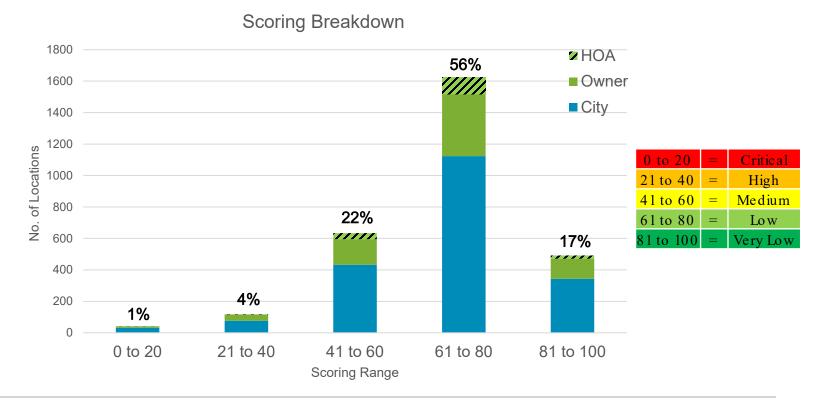


Threat Assessment

Score	Erosion Threat Assessment
0 to 20	Critical - Area with the highest need of erosion protection due to structure location in the Erosion Hazard Setback Zone, failure has occurred or will occur in less than 2 years, channel orientation, bank is not stable, trees have fallen into creek, and/or safety is an issue.
21 to 40	High - Erosion is occurring and a structure is threatened, failure has not occurred but may within 2 years, channel orientation, bank is not stable, tree roots are exposed, or loss has occurred, and safety is an issue.
41 to 60	Medium - Erosion is occurring, threat to structure is low to moderate, failure is 3 to 5 years out, bank stability is an issue, trees may be threatened, and safety might be an issue.
61 to 80	Low - minor signs of erosion, threat to structure is low and potential time to failure is more than 5 years out.
81 to 100	Very Low - little to no signs of erosion, or area has recently been protected from erosion.

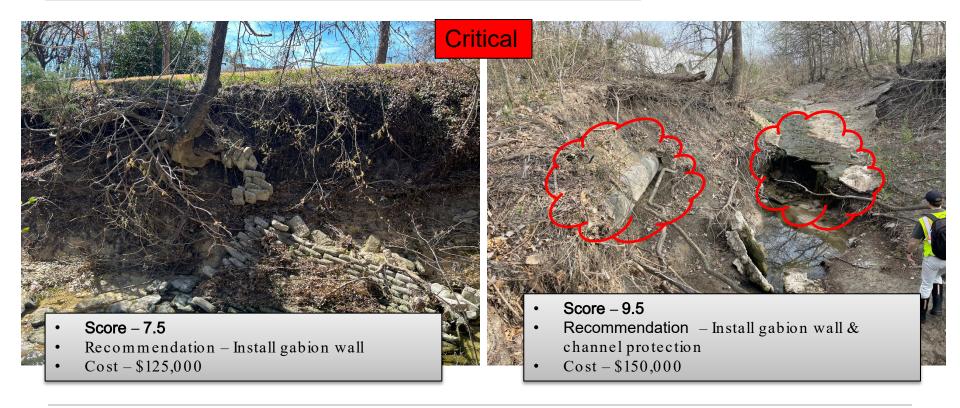


Streambank Stabilization – Update



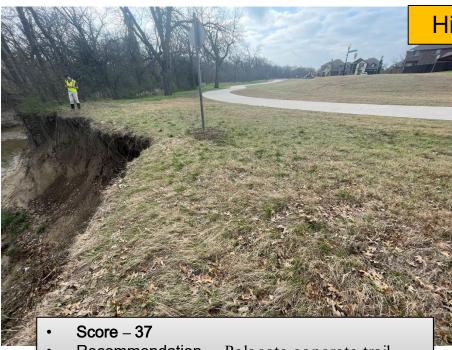


Example Locations Scoring 0 to 20





Example Locations Scoring 21 to 40



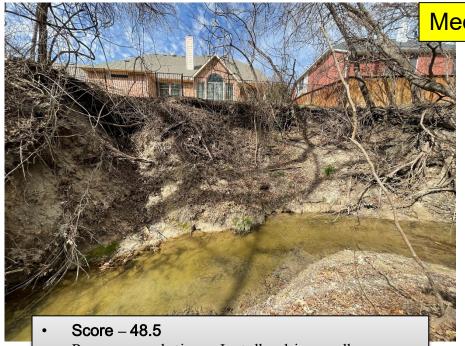
- Recommendation Relocate concrete trail
- Cost \$75,000



- Score 36
- Recommendation Replace headwall and install gabion wall.
- Cost \$575,000



Example Locations Scoring 41 to 60 - Medium



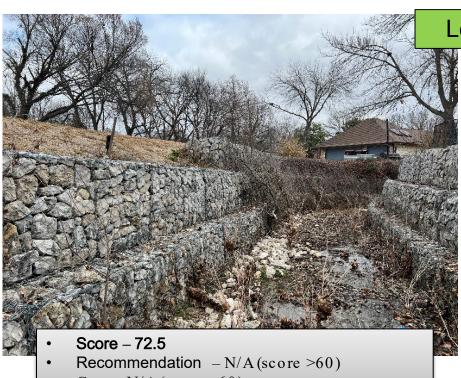
- Recommendation Install gabion wall
- Cost \$325,000



- Score 59.5
- Recommendation Install gabion wall
- Cost \$575,000



Example Locations Scoring 61 to 80 - Low



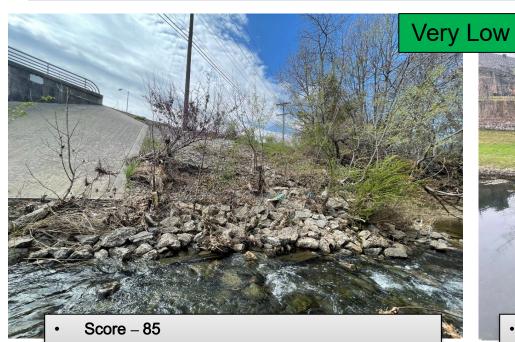
Cost - N/A (score > 60)



- Recommendation N/A (score >60)
- Cost N/A (score > 60)



Example Locations Scoring 81 to 100 – Very Low



- Recommendation -N/A(score > 60)
- Cost N/A (score > 60)



- Score 90
- Recommendation N/A (score >60)
- Cost N/A (score > 60)



Aerial Sewer Crossing Examples



- Recommendation -N/A (score > 60)
- Cost N/A (score > 60)



- Recommendation Add columns and beam, remove existing pier.
- Cost \$75,000



Evaluation Results – Estimated Costs

	Costs		
Ownership	Critical (0 to 20)	High to Medium (21 to 60)	
Private Owner (Residential)	\$650,000	\$29,600,000	
Private Owner (Commercial)	\$2,800,000	\$24,800,000	
Private Owner (HOA)	\$150,000	\$8,650,000	
City	\$5,400,000	\$63,100,000	
City (Parks)	\$1,350,000	\$21,850,000	
Other (DART/ KCS, etc)	\$0	\$2,000,000	
Total	\$10,350,000	\$150,000,000	



Past Streambank Stabilization Projects





Benchmark Comparison – Peer Programs

City	Private Property	HOA Responsible	Notes
Plano	No*	No	*Based on plat language.
Dallas	No*	No	*Bond money used for erosion projects, not drainage fee.
Richardson	Yes*	Yes	*Will help owners if they pay \$5,000. Help Commercial if they pay 50%.
Garland	Yes*	Yes	*Residential: 33/67 *Commercial: 50/50
Frisco	No	No	
McKinney	No*	No	*Will consider a project if there is a safety concern.
Arlington	No	No	



Cost Projections – 20 Years (0-60 score)

	Estimated Cost of Repairs	Expenditures Needed/Year*
City & City Parks	\$91,700,000	\$9,000,000
City Plus Owner (Res)	\$121,900,000	\$12,000,000
City Plus Owner (Res) and HOA	\$130,700,000	\$12,900,000
All Sites (except Other)	\$158,300,000	\$15,600,000

^{*} Includes the increase in cost due to erosion and inflation.

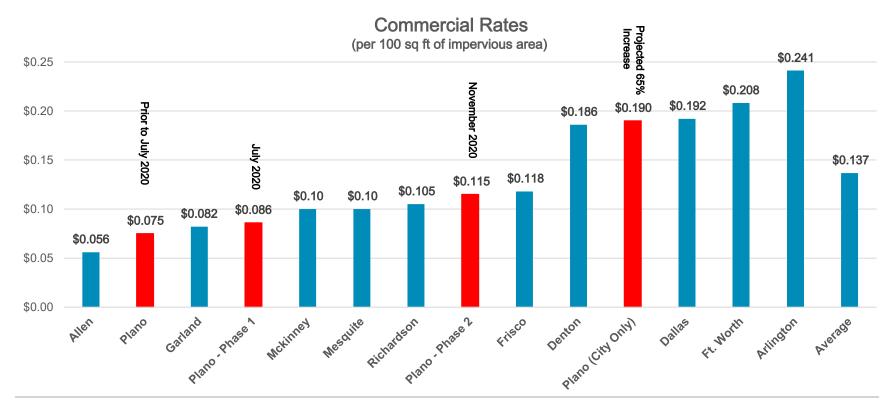


Stormwater Fee – Rate Comparison





Stormwater Fee – Rate Comparison





Impacts to Drainage Fee - Residential





Impact to Drainage Fee – Non-Residential

\$0.300 Owner (Commercial) = \$0.266 \$0.250 Owner (Commercial) = \$0.03 Owner (HOA) = \$0.236Owner (HOA) = \$0.012 Owner (Res) = \$0.224Owner (Res) = \$0.034\$0.200 City and City Parks = \$0.19 City and City Parks = \$0.075 \$0.150 — \$0.100 Current = \$0.115 \$0.050 -\$0.000 Non-Residential Drainage Fee



Next Steps

- Receive feedback
- Present to City Council again Summer 2025
- Establish policy Fall 2025



Streambank Stabilization Assessment

