

Date: March 28, 2022

To: Mark Israelson, City Manager

From: B. Caleb Thornhill, P.E., Director of Engineering

Subject: Streambank Stabilization Program

History and Streambank Stabilization Program Procedures

The Streambank Stabilization Program dates back to the late 1980's, early 1990's. As a growing City, Plano started receiving concerns from property owners about erosion to local creeks and channels. In 1998, in conjunction with the Cities of McKinney, Allen, and Garland, a manual was developed and was intended to assist in the analysis, planning, design, and construction of streambank erosion control measures. The goal was to provide procedures and design guidance for mitigation of severe erosion problems to reduce the potential for damage to public and private property and the environment. While this document provided design guidelines and criteria for erosion and streambank stabilization, it was written with the intent to provide guidance to private and public property owners for improvements.

The City received over 50 requests to evaluate potential streambank stabilization projects in 2021. This is a nearly 50% increase since 2018. These requests are directed to the Engineering Department via phone calls, emails, or through the City's FixItPlano website. For each request, Engineering staff will determine any prior requests for the property or surrounding area, the limits of the existing drainage/floodplain easement, identify any major structures or utilities, perform a streambank stabilization site evaluation including site evaluation score and review the existing plat language for maintenance responsibility.

During a site visit, City Staff will visit with the property owner about the erosion concern, document the erosion concern with photographs, and fill out the Streambank Evaluation Form for the property. Erosion that is within 15 feet of a "Major Structure" (residence, roadway, drainage/water/sewer utilities) or scores higher than a "1" on a ratio of bank height to distance to edge of easement will require additional investigation.

After the site visit and scoring is performed, a letter to the property owner is prepared by Engineering Staff documenting whether or not the property qualifies for a Community Investment Program (CIP) erosion control project. Typically, property owners that do not qualify, are due to language on the recorded plat for the property stating either:

- "The City will not be responsible for maintenance and operation...or for the control of erosion..."
- "...will be maintained by the individual owners (Owners Association) of the lot or lots...Plano will not be responsible for maintenance and operation...or for the control of erosion."

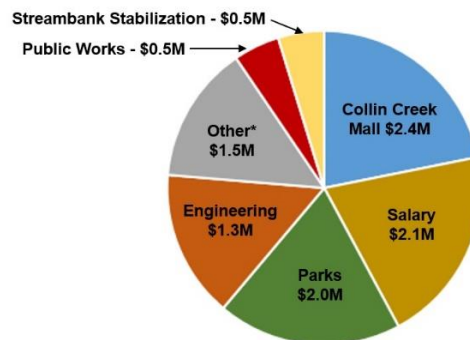
Out of the 54 requests received in 2021, an HOA or individual property owner had maintenance responsibility approximately 25% of the time.

Since 1993, the City of Plano has addressed erosion concerns at 81 properties that qualified under the Streambank Stabilization Program. Currently, the City has 33 properties that qualify for a streambank stability project.

Funding for Streambank Stabilization Program

In 1992, the City of Plano established a Municipal drainage utility system fee. The intent is "...in the public interest to protect the health, safety and welfare of the City of Plano, and the public at large, from loss of life and property caused by surface water overflows, surface water stagnation, and pollution arising from non-source runoff within the service area." In November 2020, that fee was restructured and increased due to the improvements to the Collin Creek Mall culverts. The current revenue is expected to be approximately \$10.3M. A projected breakdown of the uses of that revenue is as follows:

- Collin Creek Mall Culvert Project - \$2.4M
- City Staff Salaries - \$2.1M for 30 staff (citywide) – 22 Public Works, 6 Health, and 2 Engineers
- Parks and Recreation - \$2.0M for drainage projects on City owned park land
- Engineering - \$1.3M for drainage related projects
- Other - \$1.5M for contractual items, materials/supplies (trucks, various equipment, planimetric data), capital outlay/sundry, and technology
- Public Works - \$0.5M for drainage/erosion related projects and debris/sediment removal
- Streambank Stabilization – \$0.5M for erosion problems/concerns at threatened City infrastructure and properties where the plat language does not specify a designated responsible party for addressing erosion.

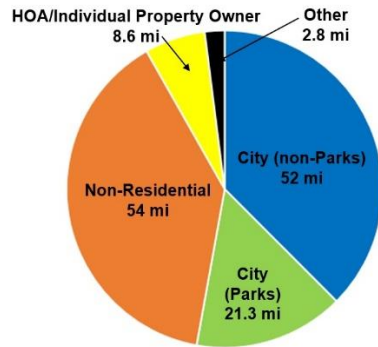


The annual CIP Streambank Stabilization Budget is approximately \$500,000 or 5% of the annual projected Municipal drainage utility system fee. However, when these projects come to fruition, the project costs can exceed \$1.0M per project. Some recent projects include:

- Prairie Creek at Independence – Cost of Construction = \$1.0M
- Rockbrook Drive – Cost of Construction = \$290,000
- Briarcreek Lane - \$586,000

Streambank Stabilization Maintenance Responsibility

The City of Plano has nearly 140 miles of creeks/channels/streams. Of that 140 miles, approximately 8.6 miles is the responsibility of either an HOA or individual property owner.



Plano Streams	
- City (non-Parks)	52.0 mi
- Non-Residential	54.0 mi
- City (Parks)	21.3 mi
- HOA/Individual	8.6 mi
- Other	2.8 mi
Total	138.7 mi

Based on a review of past ordinances, it appears the first time creek maintenance responsibilities is mentioned was 1981. In Ordinance 81-8-5, it states that maintenance responsibilities will be:

- the property owner if the channel side slopes are flatter than 4:1 (4 feet horizontal to 1 foot vertical)
- a maintenance entity other than the individual lot owners if channel side slopes are steeper than 4:1, or
- City of Plano, if channel side slopes are steeper than 4:1 and the area is provided as park or floodway management area

In January 1984, Ordinance 84-1-23 revised the maintenance responsibility wording to the following:

- Dedication of the creek or drainage way to the City.
- Creeks or drainage ways may be owned and maintained by a maintenance entity other than individual lot owners. This entity shall maintain the property on an on-going basis. The property shall revert to the City should the entity fail to satisfactorily maintain it.
- City of Plano, if the area has been designated a floodway or floodplain as part of the City Park system.

In reviewing plats, while the language has changed over the years, most properties developed prior to 1981 have little to no reference to maintenance responsibility. If the drainage and floodway easement language shown on the recorded plat does not specify the responsible entity for the maintenance of the creek, then it has been the policy of the City of Plano to assume responsibility for the stream maintenance.

Next Steps

Staff is requesting City Council guidance on a change in policy to assist Residential/HOA properties currently responsible for stream maintenance by plat. Staff has not determined potential implications to the Municipal drainage utility system fee or budgetary impacts should City Council determine assistance is needed. Per City Council direction, staff would return with potential assistance options and recommendations at a future City Council meeting.