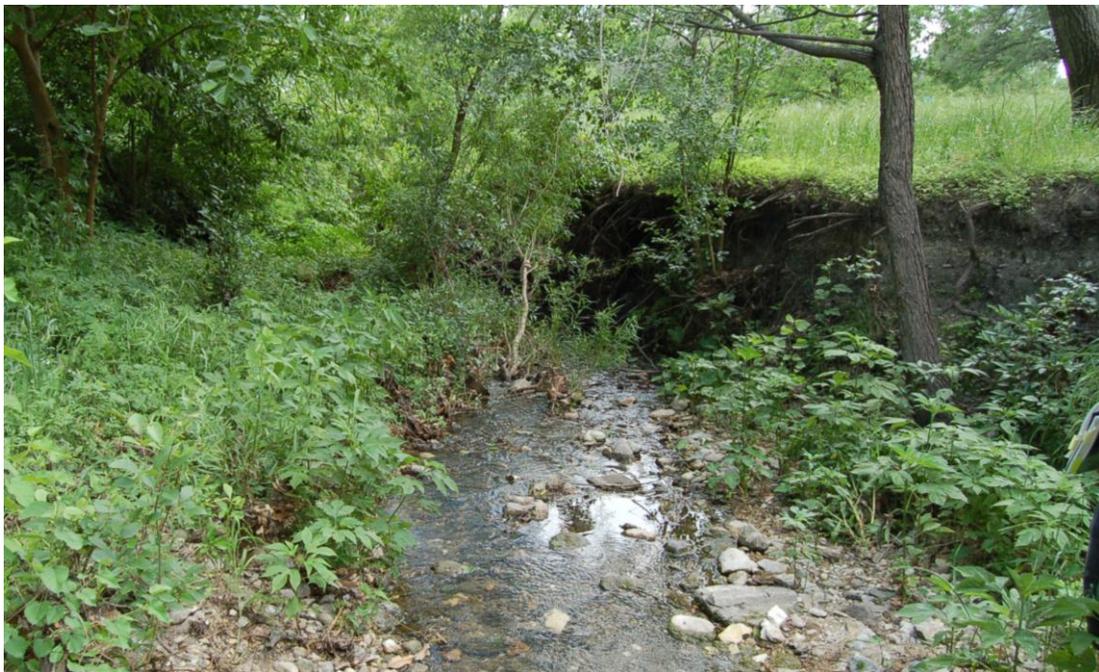


Riparian Zone Restoration (RZR) Upper Boggy Creek, the “*Willowbrook Reach*”



This document outlines restoration plans for the Willowbrook Reach.

Restoring the Willowbrook Reach

The reach of Boggy Creek spanning from Cherrywood to 38 ½ St., known as Willowbrook to residents, is an amazing stretch of stream owned by the City of Austin. The maintenance of this parcel is coordinated by the Watershed Protection Department (WPD)Vegetation Control Program, whose primary method of maintenance has historically been to mow and trim everything on the property, including the stream channel. The goals of this new project are to increase tree cover, support plant and animal diversity, restore the Willowbrook greenbelt to a more natural and resilient riparian state, and reduce the frequency of required maintenance. The City is trying to make these water quality goals complement the goals of the local users of this greenbelt in providing access and recreational enjoyment of a valuable natural amenity.

Steps to Restoration

1) *Initiate a new mowing and maintenance regime.* We propose mowing a 2'-3' edge around the outer border of the property along the streets, allowing space for parked cars and delineating a manicured edge near the streets. The area along the main two trails will also be mowed(see No. 2 below).

2) *Relocate the trail, or footpath.* Healthy, more stable banks are critical for promoting a healthy stream. Human wear-and-tear near the fragile banks can increase rates of erosion. The trail is being moved approximately 10' back from the stream in most places to allow for growth of riparian trees, shrubs and forbs. These plants will help keep the stream shaded (benefit to stream wildlife), slow or prevent erosion with deep roots, lay down and cover the soil during high stream flows, and uptake nutrients.

People who use the trails will need to help maintain the new trail by using the new route, which will be initially denoted by a mowed path via the American Youth Works (AYW) crew. Due to the compaction of the soil along the old trail AYW will break up the soil with digging forks and replant it with native grasses and wildflowers.

3) *Removal and maintenance clearing of invasives.* We will begin by removing Johnson grass stands and eventually focus on removal of Ligustrum, Chinaberry, Chinese Tallow, etc

4) *Revegetation.* We will be planting native trees, shrubs, wildflowers and grasses that are site appropriate and beneficial. The first phase of restoration will begin in the upper 1/3 of the reach (Phase 1). This area was chosen because it is beyond the boundaries of the wastewater infrastructure project that will be taking place in the next year. The later parts of planting will coincide with the completion of the wastewater infrastructure relocation project.

5) *Education and Access.* Efforts will be made to improve access to two low water crossings, so greenbelt users can access the stream and cross the property. There may also be an opportunity to install educational signs with information on species, stream ecology, etc.

Timeline

American Youth Works will begin the new mowing regime and invasive species removal later this month. Planting of plants could begin as soon as September 2010.

Funding

Funds for Phase 1 of this project will come from the WPD Vegetation Control Program. This is the program responsible for maintenance of this piece of property. Funds for Phase 2 of the project will come from the water main and wastewater modification project and other City capital improvement funds. It will take more than a year for the entire project to be implemented. One advantage to this is that it will allow the citizens and WPD to make desired changes to the latter phase as the project proceeds.

Benefits

1. Improved water quality.
2. Reduce money and fuel used for mowing riparian zones.
3. Lower heat island effect by providing more shade.
4. Increase riparian zone vegetation.
5. Improve water quality in streams.
6. Increase aquatic habitat for wildlife.
7. Increase terrestrial habitat for wildlife.
8. Reduce stream bank erosion.
9. Increase stream baseflow.

How the Neighborhood can help

Neighbors will have the opportunity to help with planting, maintenance and trash clean up, as they have in the past. The Neighborhood can also help by using the new trail route and abandoning the old trail. If the old trail continues to be used the new trail will not become established and the ecological benefits of having the trail further from the stream will not be realized. Success of the trail relocation will largely be the responsibility of the users of the park.

Long Term Goals

Ultimately, WPD would like to see a climax riparian forest. This is a “legacy” project that will benefit from the patience and assistance of the neighborhood. When the plants first go in they will be small and require a temporary irrigation system to help them survive the dry Texas summers. The first few years of growth for most of these plants



will be slow as they are establishing their root systems. Nearing the third year, depending on climatic conditions, expect to see more established plant communities evolve and by the fifth year the landscape will really start to stabilize. During this next stage the grasses and wild flowers that have been thriving in the sun and water should be less vigorous as the woody plants become taller and intercept more of the sunlight. The tenth year will show the upper canopy trees surpassing the understory plants and setting the structure for a multi-tiered forest. In twenty years the trees will really start to show their height, the understory trees and shrubs will thin out losing some branches and the groundcover will become shorter. In fifty years, the vision is that the neighborhood will have a true Texas forest and stream to enjoy.

Austin Streams Past, Present and Future

Many streams in the Austin area have been altered to accommodate development associated with roads, homes and businesses. In altering these streams some have been denuded of vegetation, covered over, piped, armored with concrete, gabions and stone, or merely diverted and channelized to facilitate the often grid-like pattern that occurs as a city grows. These severely altered streams are then subjected to further degradation from increased flow during storms and a disconnection with their natural riparian zone; the zone along the edges of a waterbody which impacts the health of the stream and amount of baseflow.

To improve conditions on these streams we need to change our perception and management practices. Through a collaborative effort between citizens and city departments the streams can begin to rediscover their heritage. Simple and cost effective measures such as reducing mowing schedules, control of invasive and woody plants, strategic planting of native trees, shrubs, and grasses and the clearing of trash and debris will help bring about the benefits that stream ecosystems offer, including increased plant and animal diversity, reduction in stormwater nutrients, reduced heat island effect, air purification, environmental stewardship education, and aesthetic enjoyment.