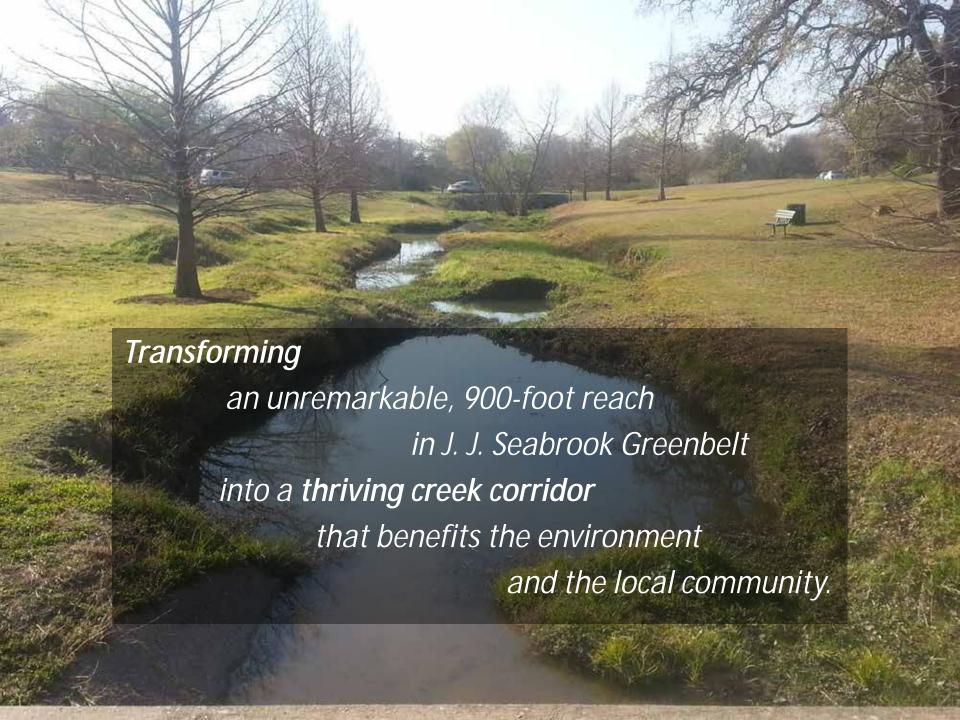
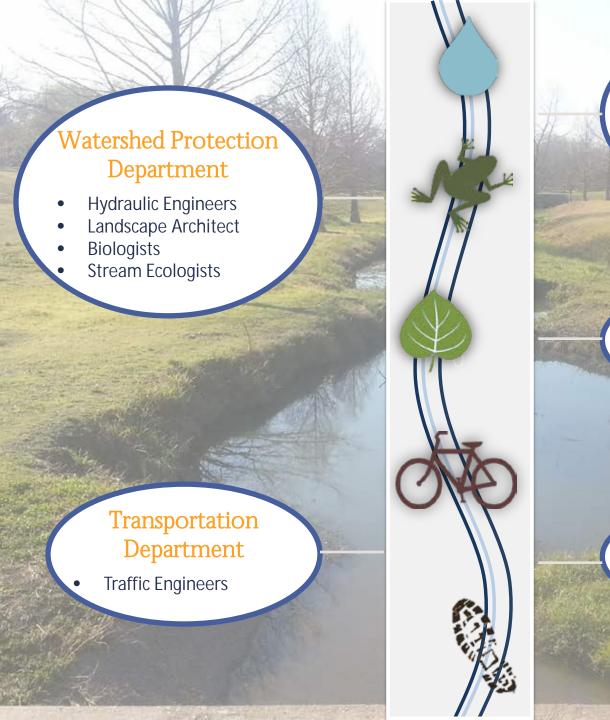


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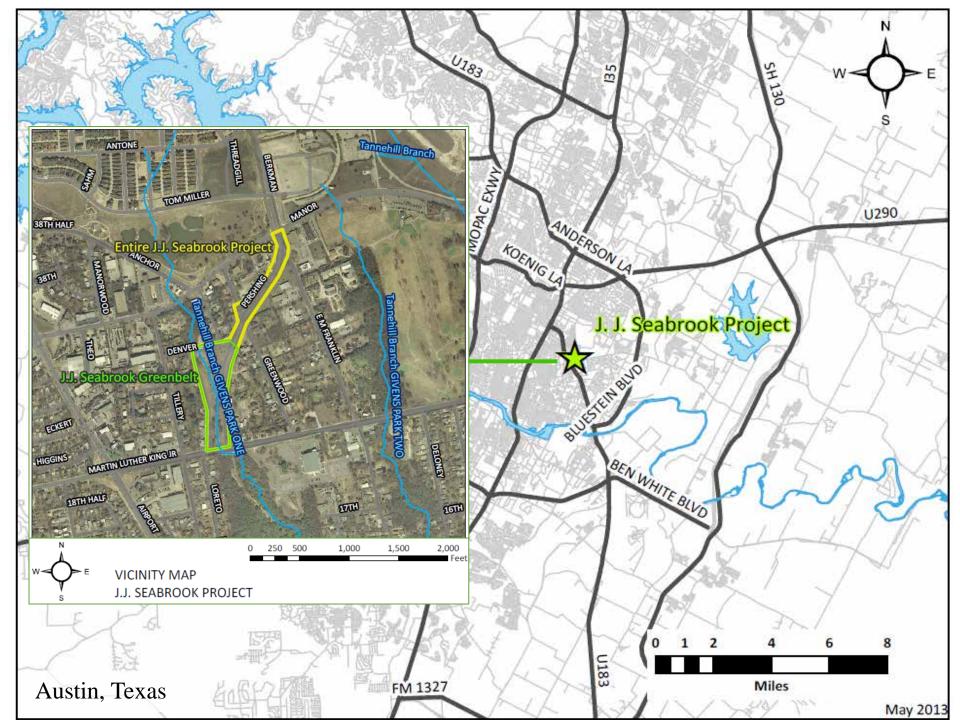
Public Works Department

- Civil Engineers
- Bike and Urban Trail Program

Parks and Recreation

Trails Coordinator

J.J. Seabrook Neighborhood Association















Existing Conditions Assessment

- Performed TXRAM (Texas Rapid Assessment Module) to assess existing conditions
- Established baseline metrics for future monitoring
 - EII: Environmental Integrity Index
 - RFA: Riparian Functional Assessment

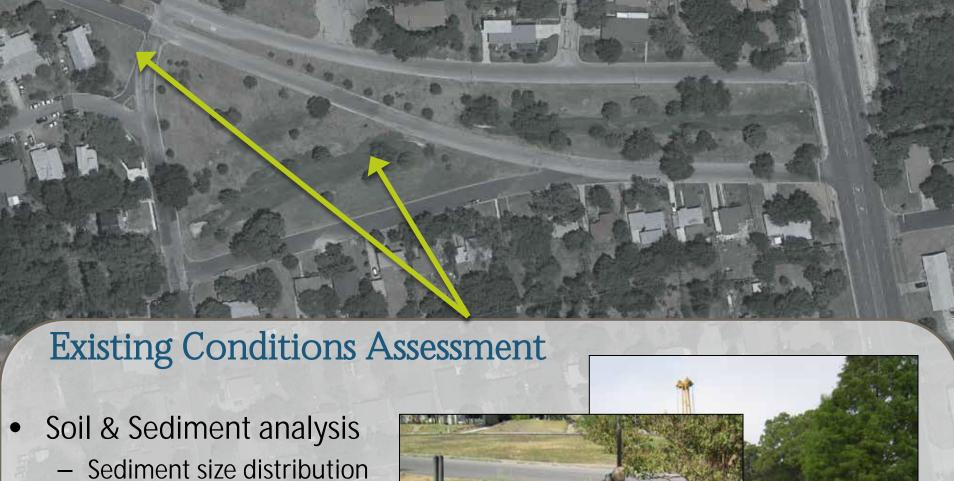




Existing Conditions Assessment



- Measured metrics at reference reach downstream to inform design
 - Bankfull widths & depths
 - Riffle/pool spacing, depths
 - Sediment size distribution



- Geotechnical borings
- Infiltration rates
- Ecological assessment by environmental scientists









J.J. Seabrook Stream Restoration, Rain Garden and Urban Trail Project



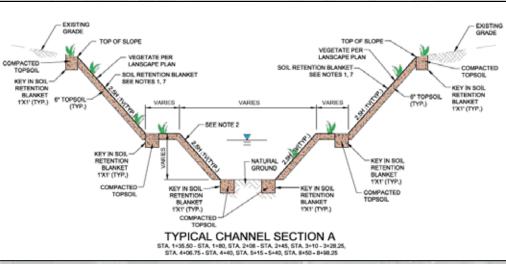






Stream Restoration Design









Erosion reveals soil column

Onsite Soil Preservation



Store and utilize onsite soils from channel bed and banks

- Soil is important to successful revegetation
- The reuse of a site's topsoil is a sustainable practice of a limited resource that preserves beneficial seed bank & soil microbes.
- Soil testing used to determine nature of extant soils, and type and amount of amendment needed



Revegetation Plan

"Ecological landscape": a designed landscape based on science of ecology. Not a duplicate of nature, but a complex system modeled after nature.

- Not putting things back to the way they once were
- Going forward applying knowledge of nature – design goals & natural processes go hand in hand
- Jumpstart the process: seeds, live roots, plugs, seedlings, small container plants
- Not static succession







Mowed

First Year Growth

5 to 10 Years

Other considerations:

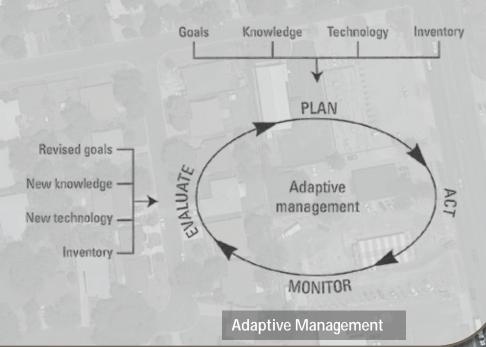
- Pubic safety
- Stakeholder expectations/opinions
- View corridors
- Aesthetics

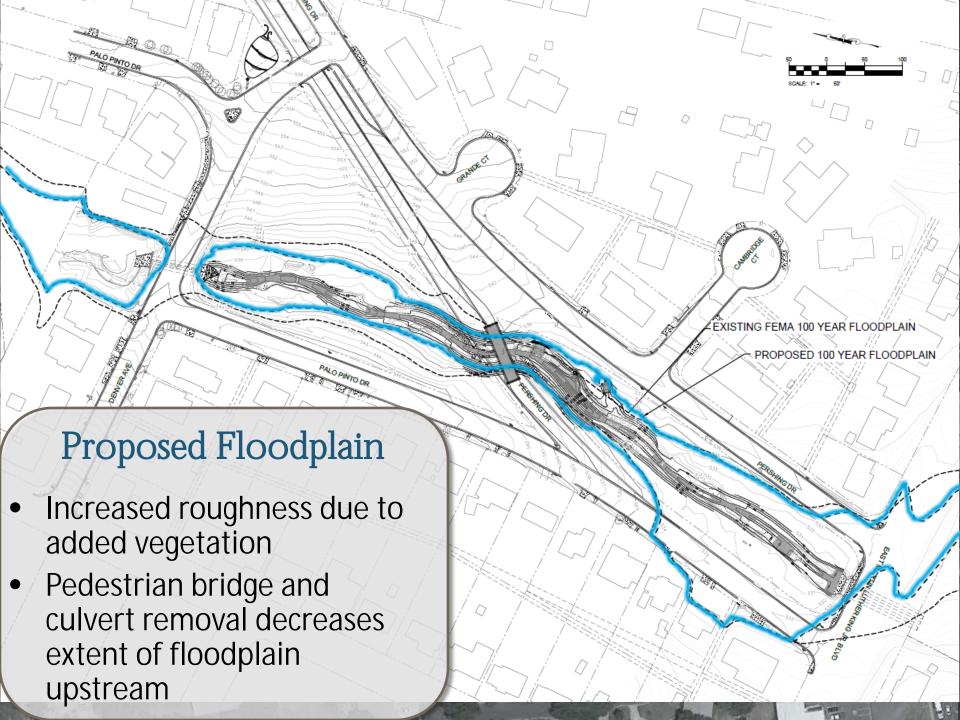




Riparian Adaptive Management Plan

- Outlining a flexible, objective-based extended landscape maintenance regime
- Set targets
 - Vary by maintenance year
 - Vary by planting zone
- Alternative project delivery method:
 Competitive Sealed Proposal







Log Habitat Features

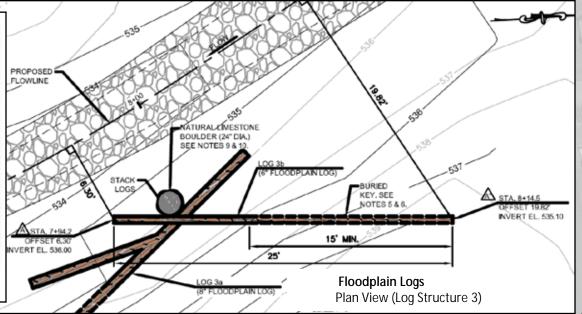
- Habitat diversity
- Variable flow regime
- Refuge from predators
- Source of organic

nutrients into food-chain

Sustainably utilize onsite

wood sources

WILLOW # 126 LOOKING EAST FROM WEST BANK





Spring Enhancement

- Highlight a previously hidden natural amenity
- Establish niche habitat for flora & fauna
- Improve aesthetics with natural limestone ledgerock

Spring Outcropping
Rendering By Susan Kenzle





Water Quality Improvements

- Slow water and encourage infiltration prior to entrance into storm drain & creek
- Where possible, shorten storm drains in greenbelt
- Construct a water quality swale within greenbelt





Water Quality Improvements



- Reducing pavement width on southbound Pershing Dr.
- Two swales
 - Along urban trail
 - Within greenbelt, shortening storm pipe
- Two rain gardens
 - At Pershing & Denver
 - At Pershing & Greenwood



Urban Trail and Park Trail

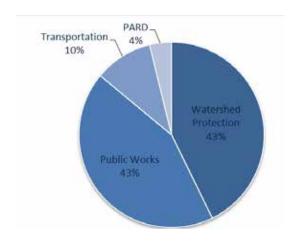
- Convert southbound Pershing Drive to a bike and pedestrian trail, a key piece of a regional bike trail plan
- Construct decomposed granite hike and bike trail within the greenbelt
- "Boulder hop" crossings for residents to explore the creek



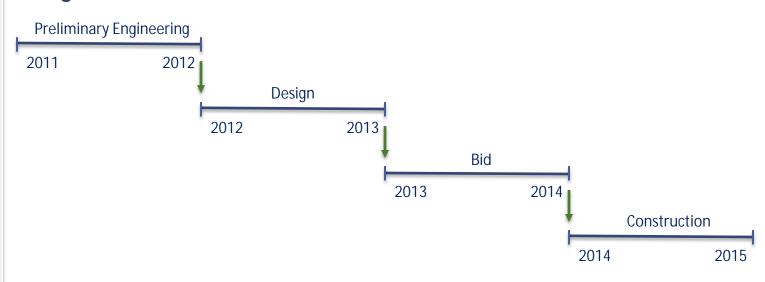


Project Cost Summary

Department	Contribution
Watershed	\$840,000
Public Works	\$850,000
Transportation	\$200,000
PARD	\$75,000
TOTAL	\$1,965,000

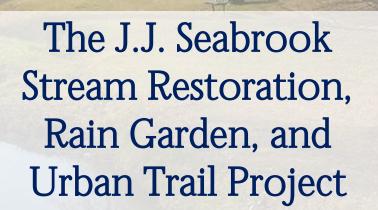


Project Timeline









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Inventory vegetation at reference site

Use WPD Riparian Research and expertise

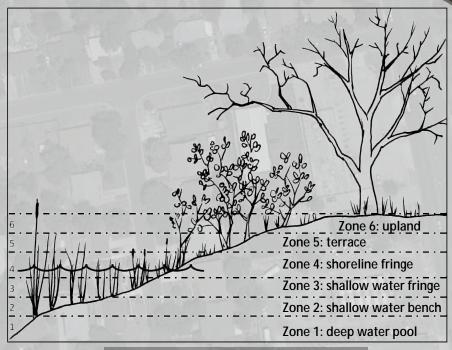
Commercial Availability



Revegetation Plan

Tailor vegetation to proposed conditions

- Reshaping of channel
- Proposed hydrology: pools, hydrologic zones



Hydrologic Zones (Hoag, et al. 2011)



Revegetation Plan: zones

Emergent Plant Zone

Stabilizers

- 10+ species
- Sedge, rush, forbs
- Salvaged
- Plugs, live roots
- Seeds

Spikerush

Colonizer

COIOTIIZCI

Wetland Fringe Zone

~10 species: forbs

Seeds

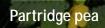


Blackland Prairie Zone

- ~40 species
- Forbs, grasses

Seeds



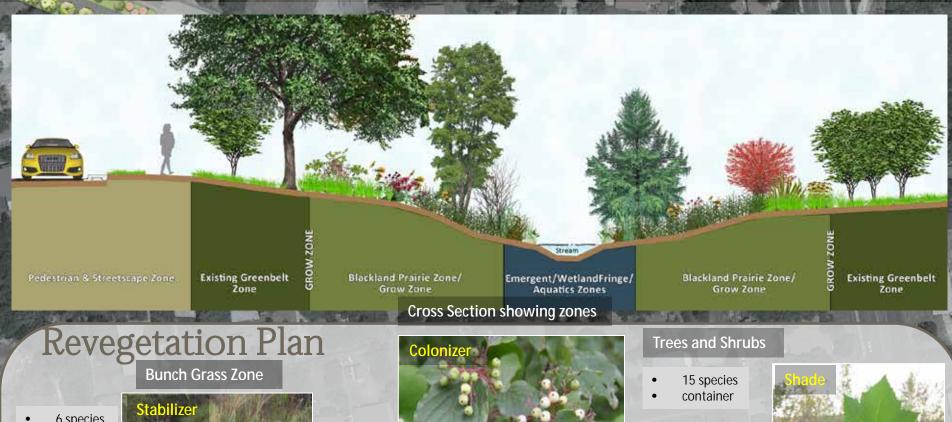


Lemon mint

Source: texasriparian.org Watercress Water pennywort

Illinois Bundleflower

Spiderwort



6 speciescontainer



Stabilizer

Switchgrass





Bald Cypress



Buttonbush

American sycamore

Sources: texasriparian.org, Sara-tx.org

1



Revegetation Plan

Tailor vegetation to proposed elements

- Riffles
- log habitat structures
- stormwater retrofits
- boulder "hops"





Source: texasriparian.org

- Anchor
- Stabilize
- Soften