
COMMUNITY POWERED WORKSHOP
The Nature Conservancy
ASAKURA ROBINSON
CENTRAL
WILLIAMSON
CREEK
Greenway
VISION PLAN
DRAFT

Acknowledgments

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Letter From the Community Working Group

Williamson Creek is a gem crossing West to East in South Austin between Oak Hill and McKinney Falls State Park. Residents of the neighborhoods surrounding Williamson Creek have enjoyed this natural beauty for more than 20 years. Community efforts over a number of years, including trash pick-ups, tree planting and the removal of invasive species, have resulted in improving the health of the creek and supporting the native flora and fauna. Central Williamson Creek Greenway is slowly becoming a more welcoming green space for residents to connect with nature and for nature to thrive.

We are thrilled to envision the future of a place we love so dearly with the Central Williamson Creek Greenway Vision Plan. This Vision Plan represents a 12-month process of both Williamson Creek Working Group (WCWG) formal and creative efforts to engage the community and input derived from public engagement. Community engagement activities included: community members recording their own oral histories through WCWG interviews; virtual community picnics virtual mapping enabling community to propose ideas such as food forest planting and hiking trails in and around the creek; several in-person and socially-distanced “Creek Chats” to engage the community; and a final community picnic to unveil the Vision Plan and offer an opportunity to provide community feedback in 2021.

Implementation of the community’s spirited ideas for this plan, in part or entirety, will transform Central Williamson Creek Greenway from its current state to one that will serve nature and the community in the future.

Next steps in this process include: reviewing a final Vision Plan following the consideration of all community comments; presenting this plan to the Environmental Commission and the Parks and Recreation Board; scheduling 2021 Creek Cleanup work days; coordinating invasive species identification and removal; tree planting; identifying funding opportunities to implement the plan; creating the Williamson Creek Hiking Club; and constructing the Williamson Creek Community Labyrinth to increase community activity and overall health.

Thank you to the St. David’s Foundation for providing the grant used to draft this Vision Plan, to Community Powered Workshop for facilitating the process, and to Asakura Robinson for co-creating this Vision Plan with us. We also want to thank members of the City of Austin Working Group for their dedication and time. We are excited to move forward with the support of Austin Parks & Recreation and Watershed Protection Departments and their affiliates. Lastly, we would like to thank and acknowledge those longtime friends who have supported and participated in efforts to maintain Williamson Creek since 2005.

Table of Contents

1: Project Overview

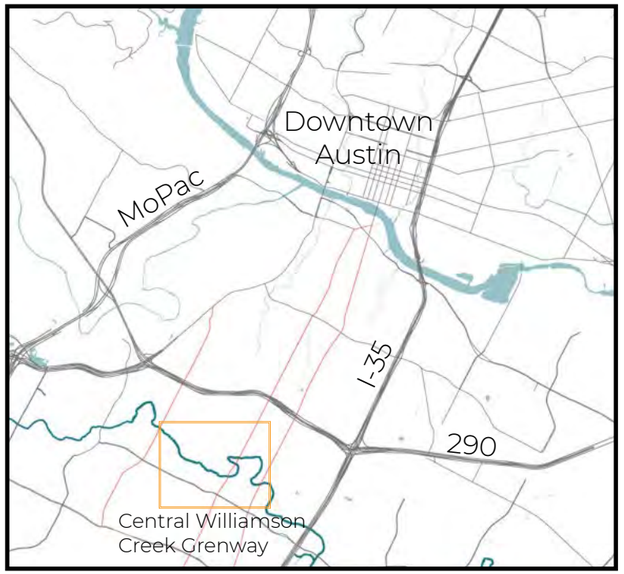
A Note from Community Powered Workshop

Community Powered Workshop (CPW) is an Austin-based non-profit organization of architects and planners with a mission to connect and amplify the voices of communities who have not yet been heard to create powerful places that promote a healthy future and break barriers of systemic injustice through collaborative planning, community driven research and social impact design. We have been building relationships with community members along Central Williamson Creek Greenway in Austin since 2017 to re-imagine this green space as a resilient, healthy and connected area. For this Vision Planning process, CPW facilitated the convening of the Community Working Group to bring local voices and perspectives to the table as well as the City Working Group of staff from primarily the Watershed Protection Department and Parks and Recreation Department. As part of our goal in building long-term, collaborative working relationships between communities and decision-makers, these working groups place community members and City staff on equal footing in the planning process as a way to balance community priorities with the lowest possible impact to the surrounding environment.

Moving forward, we will continue working with residents of the neighborhoods and City departments to apply for grants and garnering city support for implementation to bring the Central Williamson Creek Greenway Vision Plan to life.

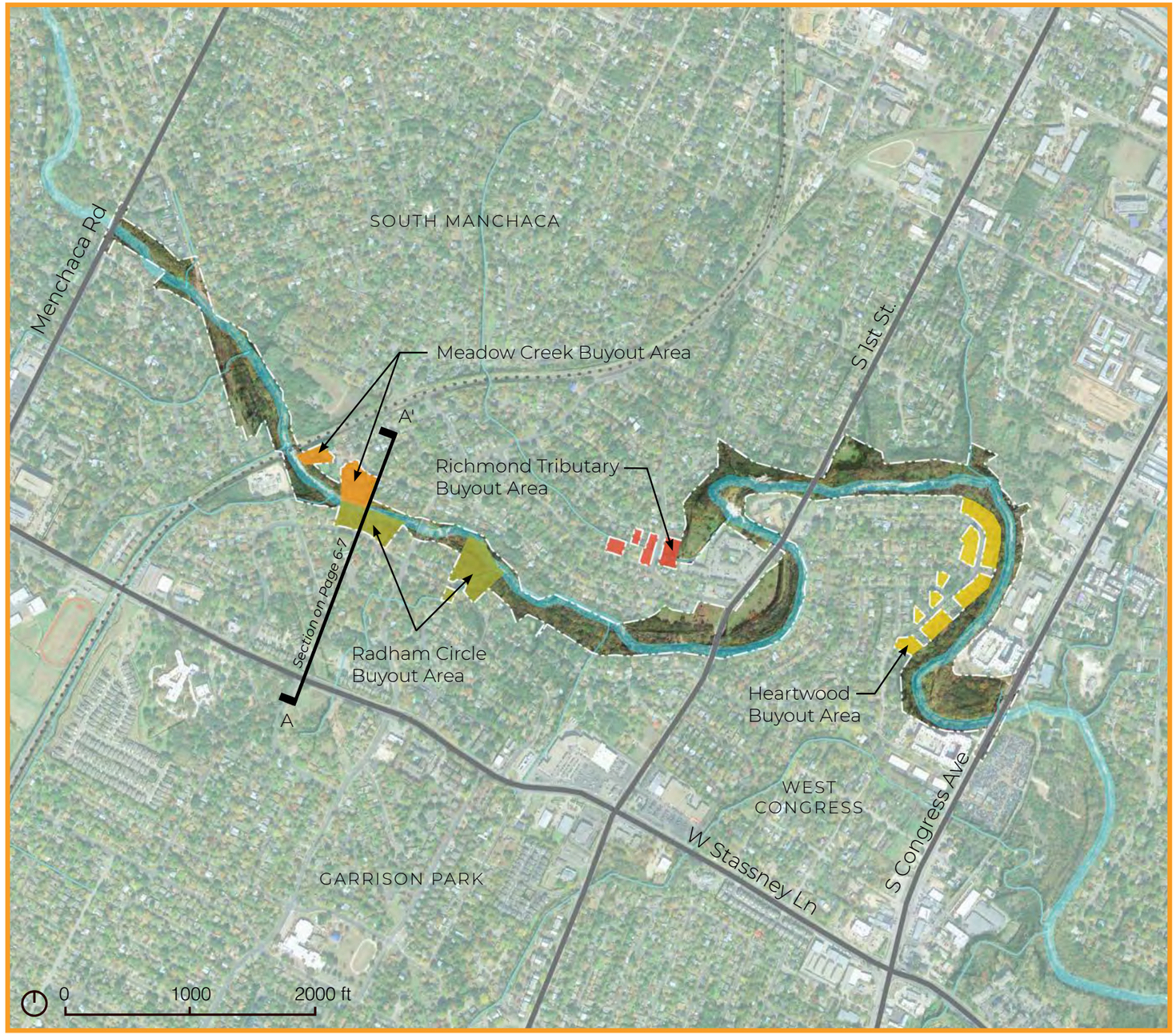
Central Williamson Creek Greenway

Central Williamson Creek is a stretch of nearly continuous greenway along Williamson Creek in Austin, Texas. This section of the creek, which runs for about two miles between S. Congress Avenue and Menchaca Road, and just north of Stassney Lane is located in a primarily residential area of South Austin. Much of the land directly adjacent to the creek is publicly owned by The City of Austin Parks Department and the City of Austin Watershed Protection Department as a result of a floodplain home-buyout project that transitioned formerly residential land into floodable green space. **This land now presents a significant opportunity to create a connected recreational greenway and for a park-deficient community in South Austin.**



Legend

- Meadow Creek Buyout Area
- Radham Circle Buyout Area
- Richmond Tributary Buyout Area
- Heartwood Buyout Area
- Creeks



Data sources: City of Austin Google, The Nature Conservancy, USGS

CENTRAL WILLIAMSON CREEK GREENWAY

Home Buyout Program

The homes in the neighborhood adjacent to and within the Williamson Creek floodplain have experienced repeated destructive flooding over the past two decades, and these floods continue to intensify due to climate change and Austin's rapid growth and land development. Major floods in 1998, 2001, and 2013 prompted a consideration of a buyout program in this area, and in 2015, the first phase of a home buyout program began through a partnership between the City of Austin and the U.S. Army Corps of Engineers. As of 2019, 51 properties have been purchased by the city and demolished to prevent future redevelopment. There are a total of four buyout areas: the Meadow Creek buyout area, Radham Circle buyout area, the Richmond Tributary buyout area, and the Heartwood buyout area (see map on page 9). The land and floodplain recovered from this effort is now owned and maintained by the City of Austin's Watershed Protection Department with the goal of maintaining it as an open, floodable space to protect adjoining residences from flooding.

Community-Driven Open Space

In addition to the home buyout properties, Central Williamson Creek is bordered by about 58 acres of undeveloped parkland owned by the Austin Parks and Recreation Department and 16 acres of residential floodplain buyout properties owned by the Austin Watershed Protection Department. **This publicly owned land adjacent to the rich biodiverse riparian ecosystem of Williamson Creek presents a unique opportunity to connect residents of South Austin to urban ecological systems, recreation, and gathering spaces.**

This opportunity was quickly recognized by residents, and in 2019 community leaders in the Southwood neighborhood partnered with local non-profits and conservation organizations to initiate a series of community engagement and activation events called *Explore! Williamson Creek*. Many community desires emerged, including the desire for a creekside nature trail, social gathering spaces, community gardens, wildlife habitat, and other amenities. The outcome of these activations highlighted the passion community members hold for Williamson Creek and their desire to have a strong voice in the planning and design process. **This vision plan process continues this community-driven effort through an engaged Community Working Group feedback process and a series of Community Workshops.**

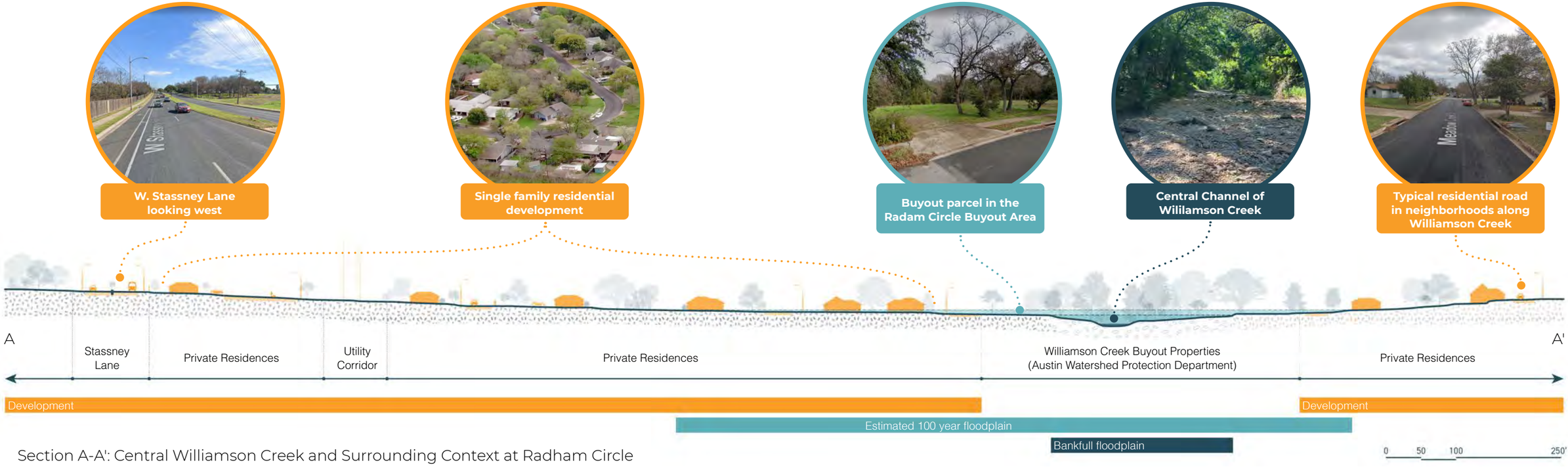
Previous Planning Efforts

City of Austin Neighborhood planning documents addressing South Austin acknowledge Williamson Creek as a priority area for parks and recreation.

South Austin Combined Neighborhood Plan: Create bike lanes on major roads, provide a greenbelt path along Williamson Creek.

Southeast Combined Neighborhood Plan: Add more sidewalks, create hike and bike trail along Williamson Creek, add mixed-use zoning.

Southeast Combined Neighborhood Plan: Maintain Williamson Creek in a natural state, improve pedestrian connections, and develop a new neighborhood park.



Section A-A': Central Williamson Creek and Surrounding Context at Radham Circle

Vision Plan Overview

This Vision Plan report provides a comprehensive guiding vision for the future of the Central Williamson Creek Greenway. The recommendations in this plan were created through close collaboration with a community working group, the City working group, and feedback from the general public.

Chapter 2 | *Pages 21-42*

Vision Plan

The Vision Plan chapter presents the overall designs for the Williamson Creek Greenway from S. Congress Avenue to Menchaca Road, along with examples of more detailed concept designs for two trailheads at Orland St and S. 1st Street and at Meadow Creek Circle.

Chapter 3 | *Pages 43-76*

Developing the Vision

This chapter provides a detailed overview of the four community goals that drove this plan, how they were developed, and each goal's corresponding design strategies utilized in the Vision Plan to achieve those goals.

Chapter 4 | *Pages 77-84*

Community Engagement

This Vision Plan was developed in close collaboration with community members, and this chapter provides an overview of the digital and in-person community engagement process and outcomes.

Chapter 5 | *Pages 85-118*

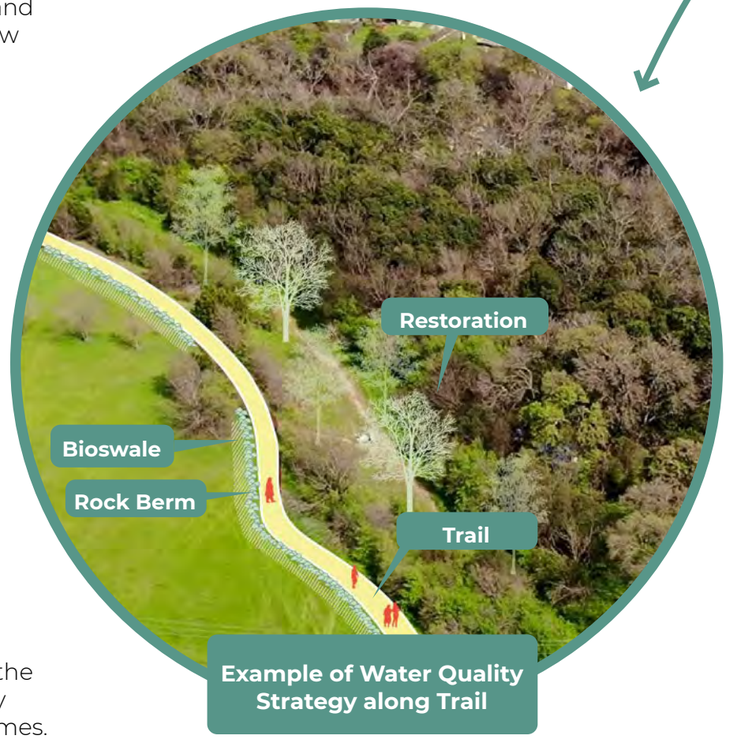
Existing Conditions

The Existing Conditions chapter provides an overview of current ecological, hydrological, and social conditions of the creek and its immediate surrounding neighborhood.

Chapter 6 | *Pages 119-132*

Implementation

Chapter 6 lays out a three-tiered approach to funding and constructing the Vision Plan designs over time based on project effort and feasibility, and provides maintenance recommendations.



Example of Water Quality Strategy along Trail

Community Goals

The following four goals emerged from a design process that listened to and engaged with community priorities through a series of virtual and in-person engagement events, described later in Chapter 4.

1. A RESTORED, BIODIVERSE GREENWAY

The future Central Williamson Creek Greenway will be a healthy, functioning riparian ecosystem, rich with plant and animal life and free from ecologically destructive invasive species. Volunteer and city ecological restoration efforts, green infrastructure installations, and low-impact trails will preserve the creek's wild character, protect sensitive species, and improve water quality.

2. A COMMUNITY-CENTERED GREENWAY

The future Central Williamson Creek Greenway will be a system of trails, parks, community gardens, and other gathering spaces where neighbors and South Austin residents gather to socialize and exercise. Community-built art, urban agriculture, restoration and other projects along the greenway will create a sense of ownership and pride.

3. AN ACCESSIBLE AND VISIBLE GREENWAY

The future Central Williamson Creek Greenway will provide a continuous trail from S. Congress Avenue to Menchaca Road through key land acquisition and low-impact trail construction. Visitors to the greenway will be able to orient themselves through clear wayfinding signage, and learn more about the unique history, ecology, and geology of the creek through educational signage.

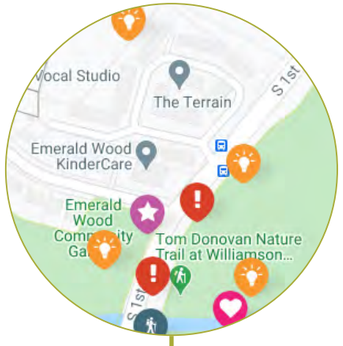
4. AN ACTIVE AND CONNECTED GREENWAY

The future Central Williamson Creek Greenway will be an important public health amenity for the neighborhood and the broader Austin community. It will provide a key east-west connection to South Austin neighborhood resources and public transportation. The trail system will connect all communities to the creek and provide accessible creek experiences for those of all abilities. Mountain biking trails, fitness programming, and community gardens along the trail network will further enhance neighborhood health.

The Design Process

The Central Williamson Creek Greenway Vision Plan was created over a 10-month period of close collaboration and visioning with key community members, City working group members, and the general public.

Feedback on Social Pinpoint Timeline



Greenway Map Activity Open on Social Pinpoint

Creek Idea Card Voting Activity Opens

Greenway Plans available for comment on Social Pinpoint

CWCG Vision Plan Document available for comment on Social Pinpoint for general public.

Social Pinpoint

Social Pinpoint was the online virtual community engagement platform utilized to gather ideas and feedback from the general public throughout this project.

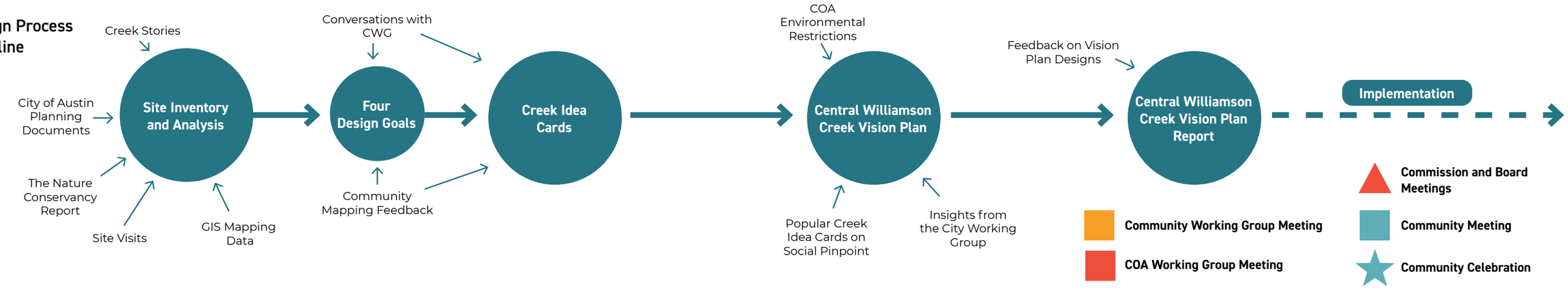
Meetings and Presentations Timeline

Approvals

Parks and Recreation Board

Environmental Commission

Design Process Timeline



Community Working Group

The Community Working Group of eight people living in the neighborhoods adjacent to the creek was established to collaboratively envision the future of the creek and to build community capacity for future implementation of this plan. The group was given a stipend for participation and met monthly to praticipate in collaborative visioning activities with the design team and to provide feedback on design deliverables.

City of Austin Working Group

The City of Austin Working Group was formed to create a group of experts who volunteered their time to provide advice on parks, trails planning, and environmental restoration, as well as an understanding of the City of Austin's legal requirements for proposed designs. The City Working Group was comprised of 11 City of Austin staff members, representing the Parks and Recreation Department, the Watershed Protection Department, and Office of Sustainability, and the Urban Trails program. Two members represented the National Parks Service.

Heartwood Community Garden is a community gathering space along the greenway where neighbors can grow their own food.

Opportunities and Constraints

Williamson Creek is a rich ecological and social resource with great potential for increased use by local residents. It provides local residents with a green space for recreation, relaxation, and gathering. The Heartwood and Emerald Wood Community Gardens serve as hubs of community activity. Due to the Watershed Protection Department floodplain buyout program, there are many vacant areas that could provide more opportunities to interact with the creek.

There are considerations and limitations to increased community access to the creek, however. While PARD and WPD own most of the properties along the creek, some sections are privately owned. This poses challenges to the creation of a continuous east-west trail along the creek. Many city-owned properties, meanwhile, are in the Williamson Creek floodplain. In these areas, site improvements must be low-impact and flood safe. In other areas, the creek's rugged terrain and steep slopes limit access.

Many of these challenges also present opportunities. Rugged trails can present moments to highlight south Austin's unique geology. Properties in the floodplain can host green infrastructure and floodplain restoration. Community members can work together to help manage invasive plant species. Each obstacle presents unique opportunities for creativity, teamwork, and stewardship.

Floodplains

It should be noted that due to a new precipitation study from the National Weather Service known as Atlas-14, the floodplain maps of the entire city will be re-mapped within the next 3-5 years. The floodplains are shown in this document to reflect an estimation of this future update. It reflects these upcoming changes by showing "estimated" 25 year and 100 year flood events. According to the City of Austin's FloodPro "Fully Developed Floodplain" scenario that can be found at https://www.austintexas.gov/floodpro/

Opportunities and Constraints Map

Utility corridor restoration

Limits on building in floodplain

Menchaca Rd.

Protect seeps and springs

Conserve dense tree canopy

Potential trailhead + community space

Railroad divides neighborhood

Bergstrom Spur Urban Trail

Mitigate stormwater outfalls

Protect fringe wetlands

Utilize PARD property outside floodplain

Steep slopes limit access

COA Urban Trails Master Plan Corridor

Highlight unique geological features

Red Leaf School of Music

Heartwood Community Garden

Emerald Wood Community Garden

Discontinuous public property

Rimrock

Expand existing bike network

Opportunity for greenway trail

S 1st St.

Remove invasive species

S Congress Ave

- Stormwater Outfalls
- Rimrock
- Fringe Wetlands
- Springs
- Existing Bike Lanes
- PARD Properties
- WPD Properties

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2: Central Williamson Creek Vision Plan

Overall Vision Plan

This Vision Plan design for the Central Williamson Creek Greenway provides a conceptual trail and open space designs for the creek and the Parks and Recreation and Watershed Protection Department-owned land along the length of the creek.

This overall design details the placement and locations of several design components:

1. Trails

Trail Materials

Austin's 2014 Urban Trails Plan identifies Williamson Creek as a Tier 2 trail, indicating that it should be constructed with a paved material. Throughout the community engagement process for this Vision Plan, the community emphasized their desire for natural, low-impact trails along the greenway. This document recommends mulch or bond-mulch trails to align as closely as possible to community desires. However, a City-led preliminary engineering report and corresponding community engagement are zz zrecommended as the next steps in the process to create a balanced approach to trail development.

Trail Placement

Trail placement along the creek was determined by the following factors:

1. Slope

Slope analyses identify changes in elevation in the land. Areas with a shallow slope were prioritized for trail placement because it is difficult for trail users to walk on steep slopes, and creating a trail on steep slopes requires greater ecological disturbance, and potential for erosion. See page 106for a detailed slope analysis.

2. Property Ownership

The trail placement runs primarily along City-owned PARD and WPD property; however, there are several locations where land adjacent to the creek is privately owned. This plan recommends acquiring easements in those properties. In the meantime, trail users must walk in the City-owned creek bed during dry weather. After rains, trail users must utilize "high water" trails on sidewalks to avoid trespassing on private property. These high water routes are short detours that quickly reconnect to the greenway trail on City-owned property.

3. Sensitive Ecological Features

Central Williamson Creek's biodiversity and unique geological features are a primary draw for visitors; however, these sensitive natural assets must be protected, and are protected legally through the City of Austin's environmental restrictions. According to this code, trails can not be placed within a 50' buffer of a Critical Environmental Feature, which includes seeps, springs, fringe wetlands, and rim rock, without an environmental variance. The placement of the trail along Central Williamson Creek maintains a 50' distance from these features, unless it is absolutely necessary to pass within the buffer zone to provide trail connectivity.

4. Neighborhood Connectivity

When considering trail placement, community input on common access points to the creek and identification of existing community assets and resources took high priority. This trail placement identifies a network of access points at key intersections, bridges, neighborhoods, and community resources.

2. Vision Plan Elements

Creek Idea Cards

The Vision Plan Elements, which include features such as signage, community gardens, and community message boards, arose from the Creek Idea Card community engagement process outlined in Chapter 4. This involved the development of 50 Creek Idea cards that were voted up or down in popularity by community members. Both popularity and feasibility were taken into consideration when selecting the final cards to be included in the plan as a Vision Plan Element. Each Element corresponds with one of the four overall goals, which can be identified by their color. See pages 24-25 for a full list of Vision Plan Elements and the goals they support.

3. Example Trailheads

Site Selection

Detailed conceptual designs for two key trailheads are included in this plan. The purpose of these designs are to show examples of how activated trailheads and community gathering spaces at key nodes along the trail can further social, ecological, and public health goals. These sites were selected based on hydrological, ownership, and social factors.

Meadow Creek Trailhead

This land is buyout property that is owned by WPD. This site was selected to take advantage of funding offered by the department for ecological restoration and tree planting on buyout property, because it was the largest continuous piece of buyout property and because it straddles both the north and south sides of the creek.

Orland Trailhead

This land is owned by PARD. It was chosen as an example trailhead because it is out of the floodplain, and can thus have built structures or other features that would otherwise be destroyed if they were in the floodplain.

4. Environmental Features

Ecological Restoration

Significant opportunities exist for multiple types of ecological restoration along Williamson Creek:

1. Creek Restoration
2. Woodland Restoration
3. Wildflower Meadows
4. Fringe Wetland Restoration

Opportunities for these four types of restoration are located and identified throughout the Overall Vision Plan. The Chapter 6 Implementation Plan outlines how both volunteer efforts and City-led efforts can work in tandem over time to achieve restoration goals.

Reclaimed Brush Berms

Reclaimed brush berms are neatly stacked piles of fallen branches that provide habitat and cover for small animal species and line paths to improve wayfinding.

Stone Berms

Stone berms slow rainwater flow before it enters the creek, helping to remove some sediments and other pollutants before it enters the creek.

Vision Plan Elements

These vision plan elements included in this design are a result of the “Creek Cards” community engagement process outlined in Chapters 3 and 4.

Goal Key

1. A Restored, Biodiverse Greenway
2. A Community-Centered Greenway
3. An Accessible and Visible Greenway
4. An Active and Connected Greenway

Creek & Woodland Restoration

Environmental Signage

Green Infrastructure

Invasive Species Management

Pollinator Nesting Boxes

Wildflower Planting

BYO Hammock Grove

Community Gardens

Community Message Boards

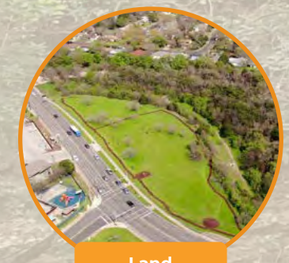
Food Forests

Labyrinth

Nature Play

Music Groves

Bonded Mulch Trail



Land Acquisition

Natural Surface Trail

Wayfinding Signage

Weather Warning Signage

On-Street Bike Lanes

Fitness Programming

Mountain Biking

Vision Plan

- Environmental Education Signage
- Invasive Species Management
- Wildflower Planting
- Pollinator Nesting Boxes
- BYO Hammock Grove
- Community Garden
- Community Message Boards
- Food Forest
- Labyrinth
- Music Grove
- Nature Play Area
- Land Acquisition
- Wayfinding Signage
- Weather Warning Signage
- Fitness Programming
- Mountain Biking

Trailhead
Proposed Trail
Dry Creek Trail
Existing Bike Lanes
Proposed Bike Lanes
High Water Route
Stone Berms
Reclaimed Branch Berm
Tributaries
Geology Highlight
Fringe Wetland Restoration
Seep/Spring
Creek + Woodland Restoration
Green Infrastructure
Rim Rock / CEF
Wildflower Meadow
Food Forest Trees

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Menchaca Rd.
Lansing Dr
Meadow Creek Trailhead
Orland Trailhead
Emerald Wood Dr
Meadow Creek Dr
Ramble Ln
S 1st St
Heartwood Community Garden
Emerald Wood Community Garden
S Congress Ave

Menchaca to Union pacific

Wayfinding Signage

Weather Warning Signage

Pollinator Nesting Boxes

Wildflower Planting

Environmental Education Signage

Invasive Species Management

Mountain Biking

Community Message Boards

Trailhead

Proposed Trail

Dry Creek Trail

Existing Bike Lanes

Proposed Bike Lanes

High Water Route

Stone Berms

Reclaimed Branch Berm

Tributaries

Geology Highlight

Fringe Wetland Restoration

Seep/Spring

Creek + Woodland Restoration

Green Infrastructure

Rim Rock / CEF

Wildflower Meadow

Menchaca Rd

Lansing Dr

Union Pacific Railroad

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Union Pacific to South 1st

Union Pacific RR
Meadow Creek Dr.
Emerald Wood Dr.
Emerald Forest Dr
South 1st St
Ramble Ln.
Meadow Creek Trailhead
1mi
¼
½

- Food Forest
- Community Garden
- Outdoor Classroom
- Wildflower Planting
- BYO Hammock Grove
- Labyrinth
- Invasive Species Management
- Wayfinding Signage
- Community Message Boards
- Nature Play Area
- Pollinator Nesting Boxes
- Weather Warning Signage
- Fitness Programming
- Emerald Wood Community Garden (Existing)

- Trailhead
- Proposed Trail
- Dry Creek Trail
- Existing Bike Lanes
- Proposed Bike Lanes
- High Water Route
- Stone Berms
- Reclaimed Branch Berm
- Tributaries + Creek Centerline
- Geology Highlight
- Fringe Wetland Restoration
- Seep/Spring
- Creek + Woodland Restoration
- Green Infrastructure
- Rim Rock / CEF
- Wildflower Meadow
- Food Forest Trees

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Meadow Creek Trailhead

A group of contiguous floodplain buyout properties west of Emerald Forest Drive presents an opportunity for a major trailhead and community gathering space. Because these properties are within the floodplain, all site improvements must be low-impact and flood safe. Amenities shown here include a fitness lawn, hammock groves, and a labyrinth, providing spaces for neighbors to gather, relax, and stay healthy. Wildflower meadows, pollinator nesting boxes, and green infrastructure help to conserve and improve the creek environment. Other programming ideas include invasive species management, public art, and expansion of existing seating areas.

Community Message Boards

Food Forest

Wildflower Planting

Keep Existing Seating Area

Labyrinth

Food Forest

Invasive Species Management

Natural Trail

BYO Hammock Grove

Fitness Programming

Public Art

Green Infrastructure

SOUTH 1ST TO SOUTH CONGRESS

- Trailhead
- Proposed Trail
- Dry Creek Trail
- Existing Bike Lanes
- Proposed Bike Lanes
- High Water Route
- Stone Berms
- Reclaimed Branch Berm
- Tributaries
- Geology Highlight
- Fringe Wetland Restoration
- Seep/Spring
- Creek + Woodland Restoration
- Green Infrastructure
- Rim Rock / CEF
- Wildflower Meadow
- Food Forest Trees

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Orland Trailhead

Heartwood Dr

Heartwood Food Forest (In Progress)

Heartwood Community Garden (Existing)

Tom Donovan Nature Trail (Existing)

South 1st St.

Creekline Dr

Wood Bine Dr

South Congress Ave.

A

A'

B

B'

2mi

3mi

¼

½

¾

- Food Forest
- Community Garden
- BYO Hammock Grove
- Music Grove
- Fitness Programming
- Nature Play Area
- Community Message Boards
- Outdoor Classroom
- Invasive Species Management
- Environmental Education Signage
- Wildflower Planting
- Pollinator Nesting Boxes
- Wayfinding Signage
- Land Acquisition
- Weather Warning Signage

VIEW NORTHEAST AT TOM DONOVAN PARK

Section A-A':

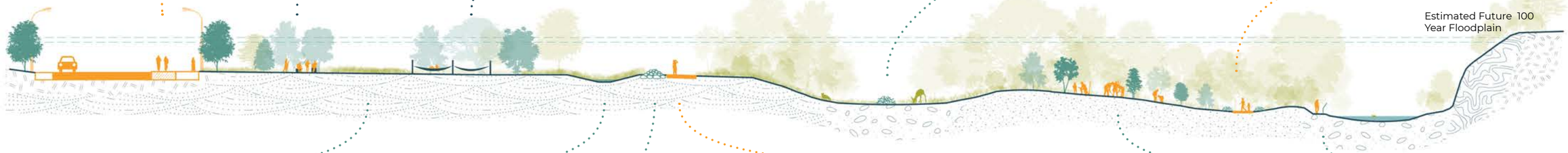
Protected High Water Crossing

Music Grove

BYO Hammock Grove

Reclaimed Brush Berms

Natural Surface Trail



Wildflower Meadows

Green Infrastructture

Stone Berm

Bonded Mulch Trail

Floodplain Restoration

Environmental Education Signage

0 10 25 50 100'

View Northeast at Heartwood Community Garden

Section B-B':

Heartwood Community Garden

On-Street Bike Lanes

Food Forest

Floodplain Restoration

Natural Surface Trail

Estimated Future 100 Year Floodplain
Estimated Future 25 Year Floodplain

Green Infrastructture

Stone Berm

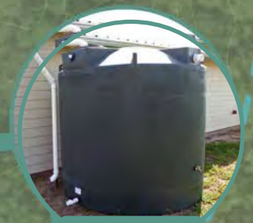
0 10 25 50 100'

Orland Street Trailhead

A PARD-owned site at the intersection of South 1st and Orland streets presents opportunities for creek access and amenities. This property includes areas outside of the floodplain, meaning it can accommodate a wider variety of programming and site improvements. This flexibility allows the site to serve as a potential hub for activities such as community gardening, environmental education, nature play, and invasive species management. The site also features a steep descent into the floodplain. A boardwalk or other more extensive site improvements may be necessary to ensure creek access and connectivity.

Unsafe structures to be demolished


Bike Racks


Water Storage


Outdoor Classroom


Signage


Food Forest

Orland Blvd


Wildflower Planting


Community Garden

S 1st St

Overlook


Nature Play


Invasive Species Management


On-Street Parking


Fitness Programming

Pollinator Nesting Boxes


Natural Trail

0 25 50' N

3:
Developing the Vision

The Future Central Williamson Creek Is...

1. A Restored, Biodiverse Greenway

Design Strategies

- Enhance biodiversity through floodplain restoration
- Preserve the creek's wild character
- Reveal ecology through environmental education experiences
- Balance access with conserving floodplain ecology

2. A Community-centered Greenway

Design Strategies

- Support community-built projects
- Create inviting gathering spaces at key nodes
- Integrate community agriculture and agroforestry

3. An Accessible and Visible Greenway

Design Strategies

- Connect all communities to the creek
- Orient through clear wayfinding
- Reveal the creek's ecology and history
- Prioritize key land acquisition for trail connectivity

4. An Active and Connected Greenway

Design Strategies

- Integrate accessible creek experiences
- Connect to public transportation and community resources
- Create activities for all ages

Articulating Common Goals

The four primary goals and design strategies were developed in close conversation and collaboration with the Central Williamson Creek Community Working Group, The City of Austin Working Group, and the general public. This community engagement process is described in greater detail in Chapter 4.

Creak Idea Cards

"Creek Idea Cards" were used as part of the community engagement process on the digital platform Social Pinpoint and at in-person, socially distanced events to gain an understanding of the types of programs, trails, amenities, and other uses the Community Working Group and general public desired along the trail. These idea cards were organized into four categories, each helping to achieve one of the four main goals of the project.

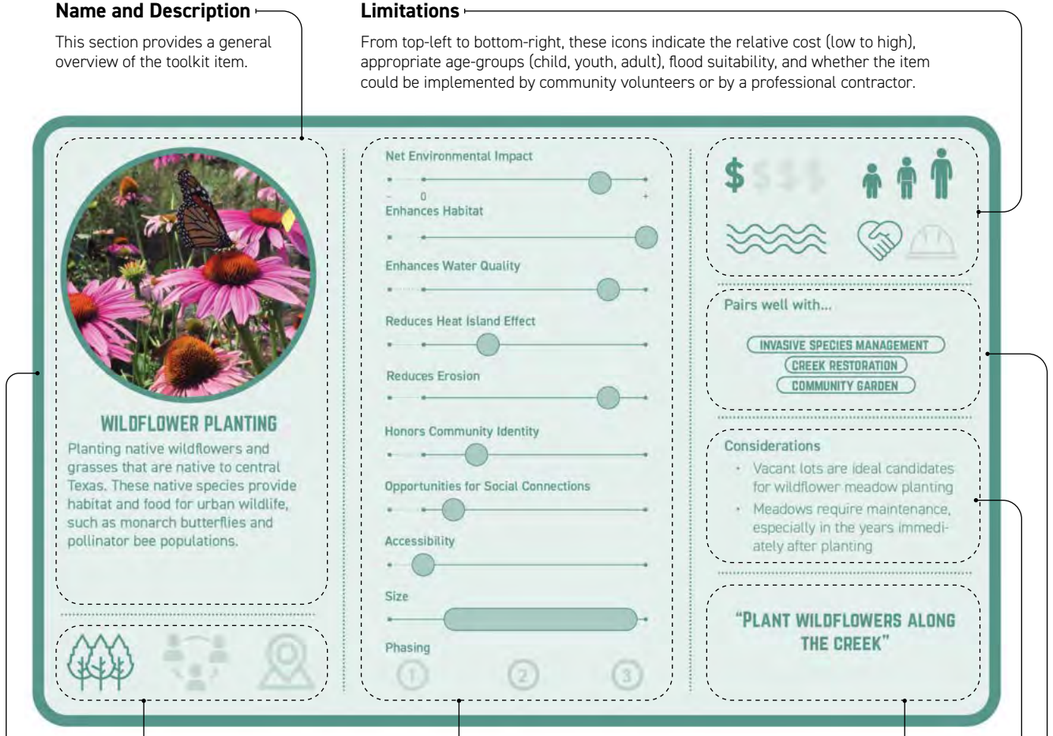
Idea Card Placement

The most popular idea cards were selected by the community using a digital voting activity on Social Pinpoint. After this process, the design team placed the cards along the greenway using information from existing conditions, comments on the cards, other community engagement outcomes, and conversations with the Community Working Group.

Idea Card Key

1. A Restored, Biodiverse Greenway
2. A Community-Centered Greenway
3. An Accessible and Visible Greenway
4. An Active and Connected Greenway

Example Idea Card



Name and Description

This section provides a general overview of the toolkit item.

Limitations

From top-left to bottom-right, these icons indicate the relative cost (low to high), appropriate age-groups (child, youth, adult), flood suitability, and whether the item could be implemented by community volunteers or by a professional contractor.

Goals

These icons indicate which visioning goals the toolkit item supports. From left to right, the goals are "Conserve the Creek Environment," "Represent the Community, and "Make the Greenway Visible and Accessible." A darkened icon indicates that the toolkit item supports the goal.

Sliders

These sliders provide a detailed overview of the various strengths, weaknesses, and opportunities presented by each toolkit item, as well as the appropriate phase or phases during which the item could be implemented.

Community Voices

Toolkit items were developed through community input and feedback. This section displays comments and quotes from community members relevant to the toolkit item.

Considerations

Each toolkit item comes with its own unique design considerations. Look here for important comments, caveats, and information.

Colors

Each toolkit item is color-coded to one of four different categories: Green for nature, blue for community, orange for access and connectivity, and red for active recreation.

Pairings

The success and viability of each toolkit item is strengthened when paired with other complementary items. This section provides some suggested pairings.

GOAL #1: A RESTORED, BIODIVERSE GREENWAY

Design Strategies:

Enhance biodiversity through floodplain restoration

Williamson Creek and its floodplain are home to an abundance of aquatic and terrestrial creatures. However, this habitat is threatened by large swaths of invasive species. Floodplain restoration, including the removal of invasive species, and planting of native species, will increase biodiversity.

Toolkit Items:

Clean-Up Days | Wildflower Planting | Creek Restoration | Pollinator boxes

Preserve the creek's wild character

Central Williamson Creek Greenway will be kept as natural as possible. This reflects the desires of the neighboring community to have as little impact as possible on the ecology of the creek and to preserve the sense of wilderness in the heart of South Austin.

Toolkit Items:

Natural Trails | Wildflower Planting | Creek Restoration

Reveal ecology through environmental education experiences

Educational experiences along the greenway will facilitate the discovery of the unique ecology, hydrology, and geology of the creek environment.

Toolkit Items:

Environmental education | Outdoor Classroom

Balance access with conserving floodplain ecology

The trails along Williamson Creek will maintain a safe distance from critical environmental features, such as seeps and springs, fringe wetlands, and rim rock. Low-impact trail materials and interventions will be prioritized.

Toolkit Items:

Natural Trails | Creek Restoration

Invasive Species Management

Wildflower Planting

Pollinator Nesting Boxes

Environmental Education Signage

Goal 1:
A Restored, Biodiverse Greenway

Goal 1 prioritizes the ecological functioning of Williamson Creek and its floodplain, as well as community-based environmental education experiences. Habitat-creation strategies, including pollinator nesting boxes for bees, bats, and nesting birds, and multiple types of restoration, may be paired with educational signage that explains the ecology and hydrology of the creek and its importance to urban wildlife. Reclaimed branch berms and stone berms slow the flow of water, create habitat, and delineate trail and property edges using natural materials. Green infrastructure infiltrates and filters water before it enters the creek.

Menchaca Rd.

Lansing Dr

Emerald Wood Dr

Meadow Creek Dr.

Ramble Ln

S 1st St.

S Congress Ave

Legend

- Proposed Trail
- Dry Creek Trail
- Stone Berms
- Reclaimed Branch Berm
- Tributaries
- Geology Highlight
- Fringe Wetland Restoration
- Creek + Woodland Restoration
- Green Infrastructure
- Rim Rock / CEF
- Wildflower Meadow
- Est. 25-Year Floodplain
- Est. 100-Year Floodplain

0 500 1000ft

Creek Idea Cards

Wildflower Planting

Planting native wildflowers and grasses that are native to central Texas. These native species provide habitat and food for urban wildlife, such as monarch butterflies and pollinator bee populations.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

$ $ $ $

Pairs well with...

- Invasive Species Management
- Creek Restoration
- Community Garden

Considerations
- Vacant lots are ideal candidates for wildflower meadow planting
- Meadows require maintenance, especially in the years immediately after planting

"Plant wildflowers along the creek"

Clean Up Days

In urban streams like Williamson Creek, trash is often washed into the floodplain from upstream sources or left behind by visitors to the creek. Creek clean-ups are community events where volunteers remove trash and other debris from the creek.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size
N/A

Phasing
1 2 3

$ $ $ $

Pairs well with...

- Invasive Species Management
- Wildflower Planting
- Creek Restoration

Considerations
- Consult with ecological restoration experts to determine plan of removal to minimize herbicide usage and erosion potential.

Invasive Species Management

Removal of invasive species, either by volunteers or professionals. Methods may include hand-pulling plants, herbicide application, or cutting down woody vegetation.

Net Environmental Impact
-

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1

$

- Clean-Up Days
- Wildflower Planting
- Creek Restoration

Considerations
- Consult with ecological restoration experts to determine plan of removal to minimize herbicide usage and erosion potential.

Creek Restoration

Work done to improve the environmental health of Williamson Creek in support of biodiversity, recreation, flood management, and habitat.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

$ $ $ $

Pairs well with...

- Clean-Up Days
- Invasive Species Management
- Wildflower Planting

Considerations
- Consult with ecological restoration experts to determine plan for restoration.

"Erosion has made fencing fall down"

Educational Programming

Immersive educational experiences that seek to educate children and adults about Williamson Creek and Austin's ecological systems.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size
N/A

Phasing
1 2 3

$ $$ $$$

Pairs well with...
- Creek Restoration
- Invasive Species Management
- Outdoor Classrooms

Considerations
- Programming may be coordinated with PARD, or local schools.

Pollinator Nesting Boxes

Many nesting bee species in build nests in aboveground cavities or tunnels in wood or plant stems. Pollinator Nesting Boxes provide nesting resources to bees through the use of hollow bamboo rods or drilled holes in wood.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility
N/A

Size

Phasing
1 2 3

$ $$ $$$

Pairs well with...
- Wildflower Planting

Considerations
- These boxes can be hand-made by the community or bought.

"Add Pollinator Nesting Boxes to help Native Bees. Potentially sponsored by a local business or individuals"

Water Storage

Water storage installations, such as rain barrels or underground cisterns, that are used to store water stormwater that runs off roofs or other surfaces during a rainfall.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility
N/A

Size

Phasing
1 2 3

$$$ $

Pairs well with...
- Parking Lots
- Equipment Sheds
- Public Bathrooms

Considerations
- Water storage should be paired with structures and parking lots to reduce stormwater runoff into the creek.

Green Infrastructure

Green infrastructure, which includes features like rain gardens, bioswales, and permeable pavement, is a way to filter polluted stormwater and infiltrate it into the ground before it washes into Williamson Creek.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility
N/A

Size

Phasing
1 2 3

$$ to $$$$

Pairs well with...
- Parking Lots
- Equipment Sheds
- Public Bathrooms

Considerations
- Green infrastructure should be strategically located to minimize impact of parking lots and other structures on the environment.

GOAL #2: A COMMUNITY-CENTERED GREENWAY

DESIGN STRATEGIES:

Support community-built projects

Improvements to the Central Williamson Creek Greenway have historically been initiated and completed by passionate community members. These community-led projects will be encouraged with funding from local grant-giving organizations.

Toolkit Items:

LABRYINTH | PUBLIC ART

Create inviting gathering spaces at key nodes

Investments in community gathering spaces at PARD and WPD properties will establish new opportunities for community connection and togetherness at trailheads, community gardens, restoration sites, and outdoor education areas along the greenway.

Toolkit Items:

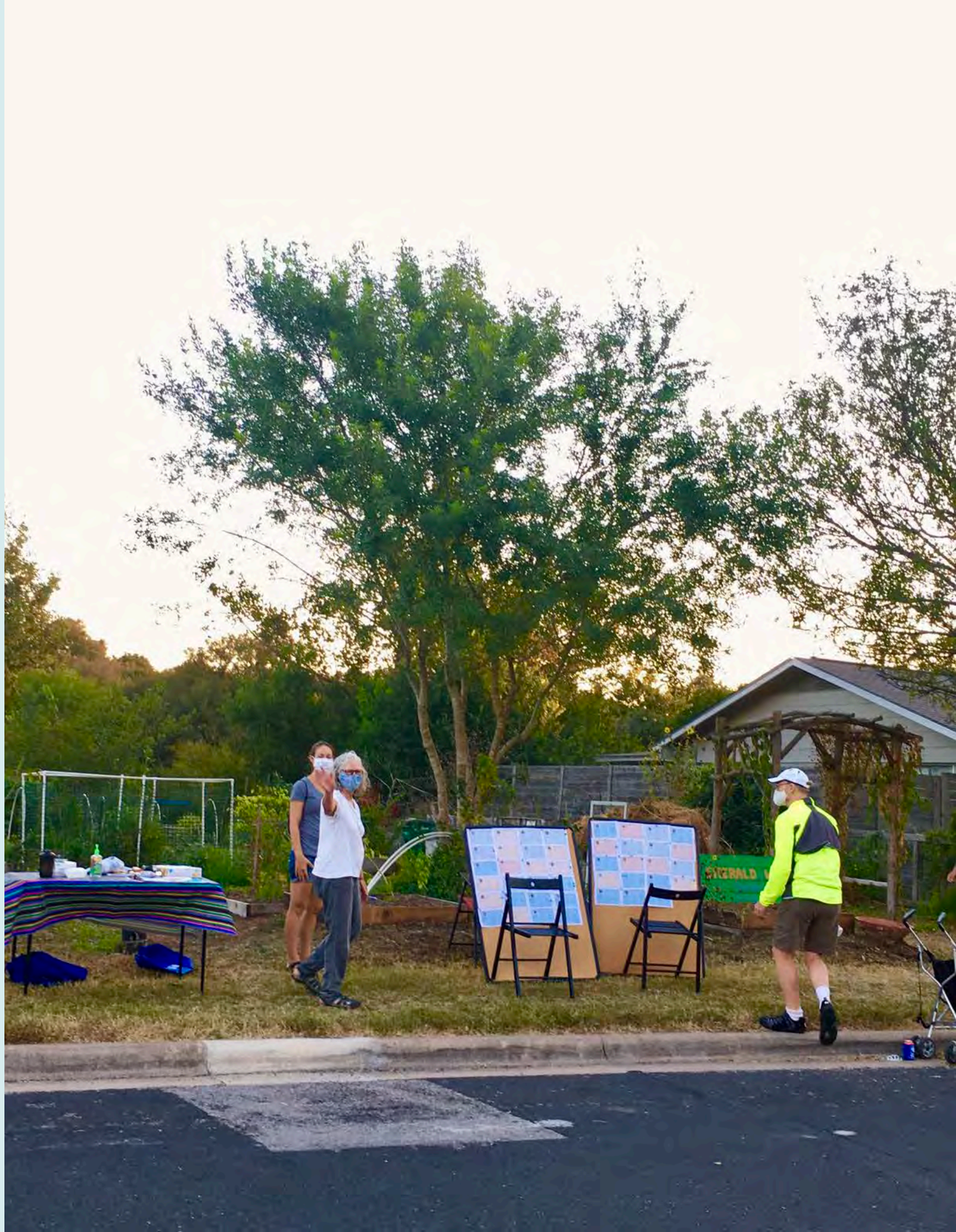
HAMMOCK GROVES | BENCHES | GATHERING SPACES

Integrate community agriculture and agroforestry

There are currently two community gardens along Central Williamson Creek Greenway. As the neighborhood grows, there will be increased interest in establishing more gardens. Much of the buy-out land represents a significant opportunity for groves of fruit and nut trees.

Toolkit Items:

COMMUNITY GARDENS | FOOD FOREST



BYO Hammock Grove

Community Garden

Community Message Boards

Labyrinth

Music Grove

Nature Play Area

Food Forest

Goal 2: A Community-Centered Greenway

Goal 2 focuses on the community and social aspects of the greenway. Community-built projects, such as food forests, community gardens, and labyrinths, are placed at major trailheads to create places for social connectedness in the neighborhood. Visitors to the greenway can learn about local events at Community Message boards, where organized volunteer opportunities can be posted.

Menchaca Rd.

Lansing Dr

Emerald Wood Dr

Meadow Creek Dr.

Ramble Ln

S 1st St.

S Congress Ave

Legend

- Proposed Trail
- Dry Creek Trail
- Food Forest Trees
- Est. 25-Year Floodplain
- Est. 100-Year Floodplain

Creek Idea Cards

Labyrinth

A labyrinth is a curving pathway that winds in concentric circles to a central point. Walking into and out of a labyrinth can be a relaxing, contemplative exercise.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

$ $ $ $

Pairs well with...

- Gathering Spaces
- Wildflower Plantings

Considerations
- Labyrinths can be made by community members with stones and other materials found in the floodplain

"It might be cool to have a labyrinth"

Gathering Spaces

Gathering spaces provide places for community members to relax, picnic, and spend time with friends and family. They may include benches, shade structures, outdoor tables, games, or other design features that inspire connection.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

$ $ to $ $ $ $

Context Dependant

Pairs well with...

- Labyrinth
- Trails

Considerations
- Gathering spaces with concrete pads and shade structures can be paired with water storage or green infrastructure to minimize environmental impact.

Community Gardens

Community Gardens in the floodplain of Williamson Creek will provide a place for neighbors to grow food. This may be especially important for those living in multi-family apartment complexes without access to outdoor space to have their own gardens.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

$ $ $ $

Pairs well with...

- Benches
- Public Art
- Gathering Spaces

Considerations
- Community gardens should placed so they are easily accessible by local neighborhoods

"If people push hard enough for community gardens, these two areas are good for urban farming"

Outdoor Classrooms

Outdoor classrooms are gathering spaces where either children or adults can gather in a group setting to learn, listen, and interact with the environment.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

$ $ $ $

Context Dependant

Pairs well with...

- Benches
- Public Art
- Music Groves
- Educational Programming

Considerations
- Outdoor classrooms can be created in collaboration with local schools or other educational institutions

Hammock Grove

Hammock Groves are designated trees or poles where visitors to Williamson Creek can set up their own hammocks to relax and swing.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

$ $ $ $

Pairs well with...

Gathering Spaces
Community Gardens

Considerations
- While hammocks can not be placed permanently in parks, community members can bring their own or set up a hammock-share program.

Benches

A bench is a long seat on which multiple people may sit at the same time. They may be placed along the trail to provide places to rest, or at playgrounds and other gathering spaces.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

$ $ $ $

Pairs well with...

Gathering Spaces
Trails Signage

Considerations
- Benches can be designed to be a form of public art.

Community Message Boards

A community message board may be a small, enclosed bulletin board placed in high-traffic areas to provide a place for community members to advertise community events along Williamson Creek.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

$ $ $ $ to $ $ $ $

Pairs well with...

Gathering Spaces
Signage Trails

Considerations
- Community message boards should be placed along trails in high-traffic areas.

Public Art

Outdoor public art varies, but may be sculptures, artistic benches, or other installations that enhance the identify of the Williamson Creek community and fosters community pride and a sense of belonging.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

$ $ $ $ to $ $ $ $

Context Dependant

Pairs well with...

Gathering Spaces
Creek Restoration
Wildflower Planting
Benches

Considerations
- Public art may be coordinated with Austin's AIPP (Art in Public Places) program.

"Would love to see art from local artist along the trail. Perhaps a featured artist project every 4-6 months."

GOAL #3: AN ACCESSIBLE AND VISIBLE GREENWAY

Design Strategies:

Connect all communities to the creek with low-impact trails

Central Williamson Creek Greenway is a local recreational amenity that should be easily accessible to all surrounding communities through a distributed network of clear, visible trailheads and trails that minimize impacts to the environment.

Toolkit Items:

Natural Trails

Orient through clear wayfinding

Continuous signage along the creek and at trailheads will orient visitors as they enter the creek and make their way along the trail or to neighborhood resources, such as community gardens, schools, and convenience stores.

Toolkit Items:

Signage

Reveal the creek's hydrology, ecology, and history

Central Williamson Creek Greenway has an abundance of interesting natural features, such as rim rock, fringe wetlands, evidence of past volcanic activity. Educational signage along the trail will reveal their stories.

Toolkit Items:

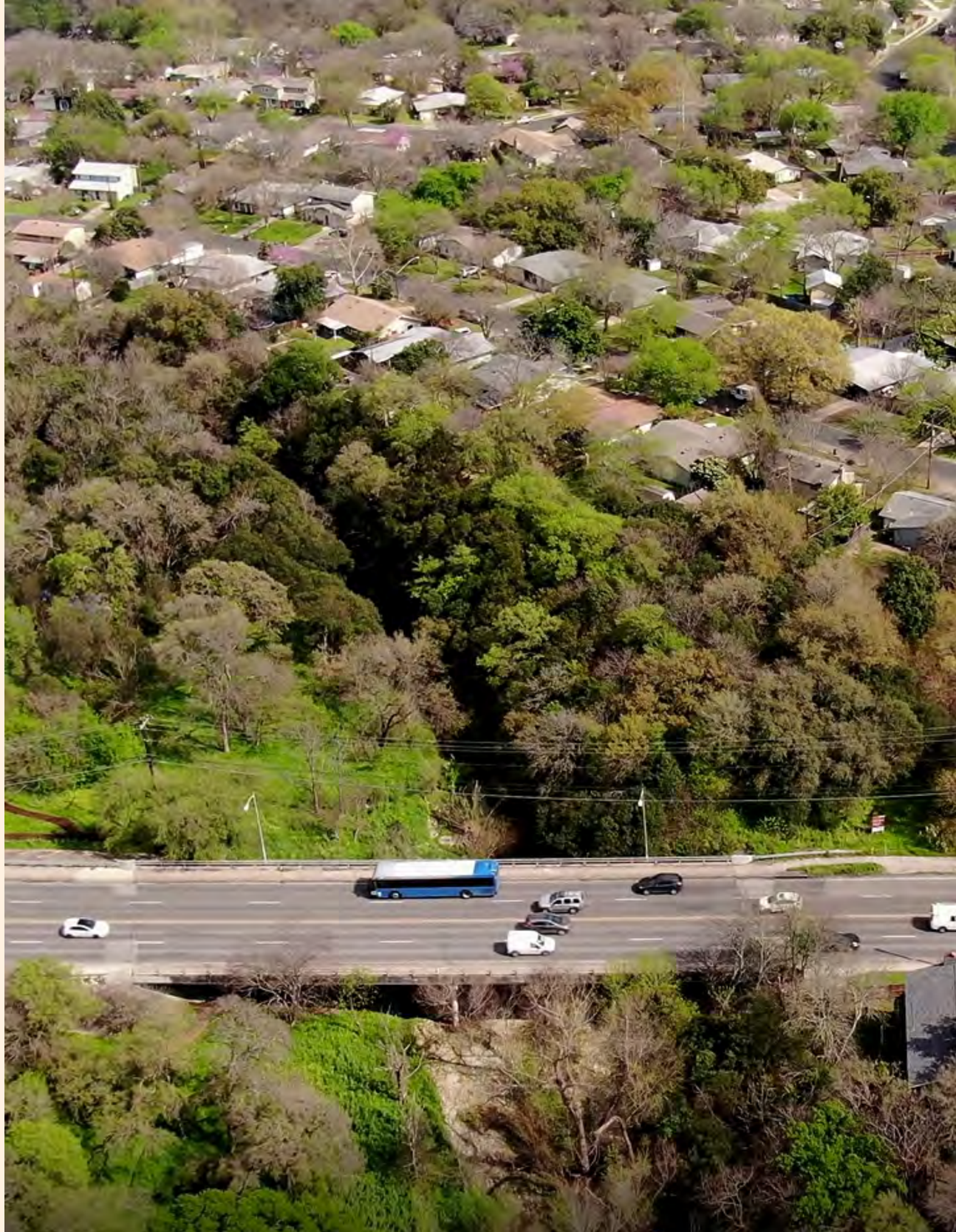
Environmental Education

Prioritize key land acquisition for trail connectivity

Land acquisition from private property owners adjacent to the creek will create a continuous, connected trail along the Central Williamson Creek Greenway.

Toolkit Items:

Land Acquisition



Goal 3: An Accessible and Visible Greenway

Goal 3 highlights the community desire to make the greenway easily accessed and easy to enter from the street. Well-distributed wayfinding signage both on the street and in the greenway will help visitors orient themselves. Weather warning signage will warn community members of predicted storm events and fast-flowing water in the creek. Land acquisition will increase accessibility of the greenway, so visitors can use one, continuous path from S. Congress Avenue to Menchaca Road.

Creek Idea Cards

Natural Trail

Natural trails do not have any paved or aggregate surfacing. They are typically mowed grass or bare soil, and may be covered in a layer of mulch or other decomposable material.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

$ $ $ $

Pairs well with...

- Gathering Spaces
- Benches
- Outdoor Fitness Equipment
- Creek Restoration

Considerations
- Natural trails may be eroded during flood events.

"Connect to patchwork lots via the Richmond trib. On these shady lots, we could do a "figure 8" mulch trail, focus on biodiversity, install benches."

On-Street Bike Lanes

Bike lanes may be placed along roads that access Williamson Creek to provide safe routes of travel for bicyclists from other neighborhoods or major thoroughfares to the Greenway.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

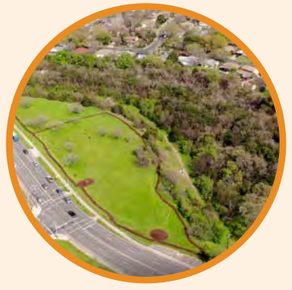
$ $ to $ $ $ $

Pairs well with...

- Green Infrastructure

Considerations
- Bike lanes should connect CWCG to adjacent trails and the neighborhood.

"There's a plan to create a trail following an old rail line starting here, could be a great reason to get a sidewalk/bicycle path extension along Vinson to connect that trail and the Greenway! "



Land Acquisition

Land Acquisition is the process of acquiring property or pieces of property adjoining the creek to create a continuous greenway trail or to create additional public open space.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility
N/A

Size
N/A

Phasing
1 2 3

$ $ $ $

N/A

Pairs well with...

- Trails

Considerations
- Work with PARD to make recommendations on land acquisition.

"There is an abandoned/unused business space right now that has available parking and access to the trail...parks should purchase this space."

Low Water Crossing

Low water crossings provide a bridge across bodies of water for pedestrian and bike access when water levels are low, however, they are designed be allow water to flow over them during a rainstorm or flood event.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing
1 2 3

$ $ $ $ to $ $ $ $

Pairs well with...

- Trails

Considerations
- Low water crossings can act as dams during flood events, causing build-up of trash and debris

"Need bridges to make the pathway easily traversable"

GOAL #4: AN ACTIVE AND CONNECTED GREENWAY

DESIGN STRATEGIES:

Connect to Public Transportation and Community Resources

Completion of a continuous trail along Williamson Creek provides an enormous opportunity for an east-west trail connection throughout south Austin. This trail will connect the surrounding neighborhoods to existing and future destinations, such as bus stops, convenience stores, schools, community gardens, and other community resources.

Toolkit Items:

BIKE RACKS

Design for Accessible Creek Experiences

Central Williamson Creek will provide ADA-accessible creek experiences for those of all abilities.

Toolkit Items:

PATHS

Integrate Activities for All Ages

Trailheads and other community gathering spaces will include active and educational activities for all ages, from outdoor classrooms for children to environmental education signage for all ages. At large trailheads, lawns will provide open spaces for all-ages community events and fitness programs.

Toolkit Items:

FITNESS PROGRAMS

Goal 4: An Active and Connected Greenway

Goal 4 prioritizes active recreation along the greenway and how trail connections to neighborhood bike routes, adjacent urban trails, and neighborhood resources can make Central Williamson Creek Greenway a key east-to-west hike and bike trail that makes active transportation easy and improves community health. The creation of a “high water route” along urban streets (shown in orange) ensures that the trail will be usable even when the creek is flowing after a rain.

Mountain Biking

Fitness Programming

Future Bergstrom Spur Urban Trail

Menchaca Rd.

Lansing Dr

Crosswalk

Emerald Wood Dr

Meadow Creek Dr.

Ramble Ln

S 1st St.

S Congress Ave

Legend

- Proposed Trail
- Dry Creek Trail
- Existing Bike Lanes
- Proposed Bike Lanes
- High Water Route
- ¼ Distance Markers
- Proposed Trail Connections

Creek Idea Cards

Fitness Programming

Fitness programming may include a wide variety of planned group activities led by fitness instructors, including outdoor yoga classes, community hikes, and races.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

N/A

Phasing

1 2 3

$ $ $ $
to
$ $ $ $

Context Dependent

Pairs well with...

Disc Golf

Considerations

- Fitness programming can be coordinated with local gyms or PARD.

Bike Racks

Bike racks provide a place for those visiting Central Williamson Creek Greenway to park and lock their bikes.

Net Environmental Impact
- 0 +

Enhances Habitat

Enhances Water Quality

Reduces Heat Island Effect

Reduces Erosion

Honors Community Identity

Opportunities for Social Connections

Accessibility

Size

Phasing

1 2 3

$ $ $ $

Pairs well with...

Trails Signage Parking Lots

Considerations

- Bike racks should be placed at trailheads and next to parking lots.

4: Community Engagement

Engagement Strategy

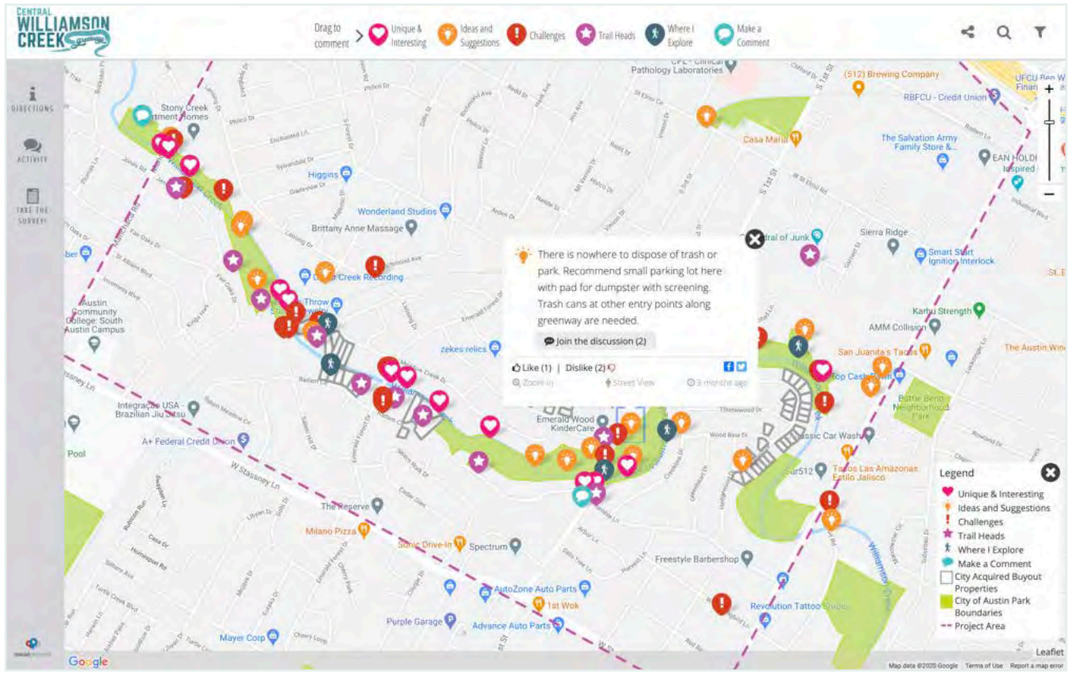
To ensure a process of co-creation of the vision for the Central Williamson Creek Greenway between the consultants and community, an extensive and comprehensive engagement strategy with both the Community Working Group and the general public was planned for this project. However, the COVID-19 crisis began in March 2020 and continued throughout the entirety of the project, much of this engagement shifted from in-person to online, digital engagement with some outdoor, socially distanced "creekside" events, where participants could pick up a "creekpack" of engagement activities in English and Spanish. These activities could also be mailed to community members upon request.

Digital Engagement

The majority of digital engagement took place using a platform called Social Pinpoint. Virtual Community Working Group and City Working Group meetings were held monthly on Zoom (See schedule on pages 14 - 15). Three public meetings were held on Zoom to demonstrate the social pinpoint, present designs, and solicit feedback.

Community Mapping

During the Existing Conditions Phase, community members were asked to use Social Pinpoint to geographically share their ideas, activities, and unique places along the Greenway. Categories included identifying locations for "Unique and Interesting Features," "Ideas and Suggestions," "Trailheads,", and "Challenges." This online mapping activity was open from July 23rd, 2020 to October 13th, 2020.



Toolkit Idea Cards

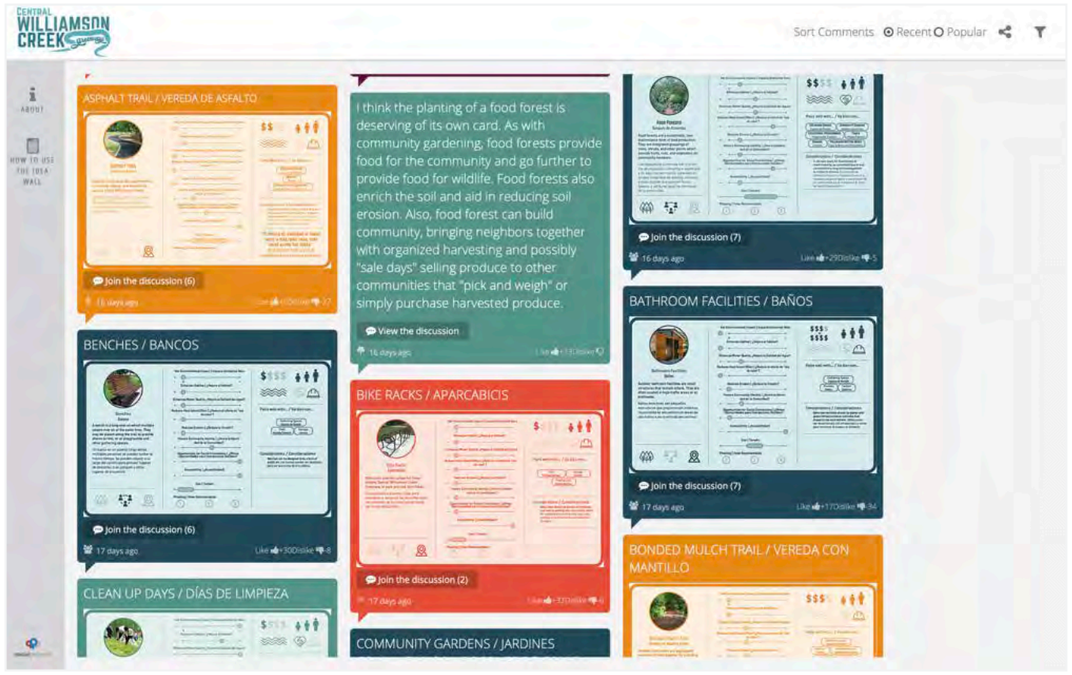
Findings from the Community Greenway Map and outcomes from the Storytelling (see page 91), conversations with the Community Working Group, and other community engagement activities were then used to craft the four primary goals of the Central Williamson Creek Green Vision Plan.

1. **A Restored, Biodiverse Greenway**
2. **A Community-Centered Greenway**
3. **An Accessible and Visible Greenway**
4. **An Active and Connected Greenway**

These four goals guided the development of 52 unique "Creek Idea Cards," each organized into one of the four goal categories. Community members on the Central Williamson Creek Greenway Social Pinpoint website voted on ideas by adding a thumbs up on ideas they wanted to see at the Greenway or a thumbs down on ideas they did not want to see. After voting closed on November 7th, the design team tabulated the votes, and integrated the highest scoring idea cards into the Vision Plan for the Central Williamson Creek Greenway.

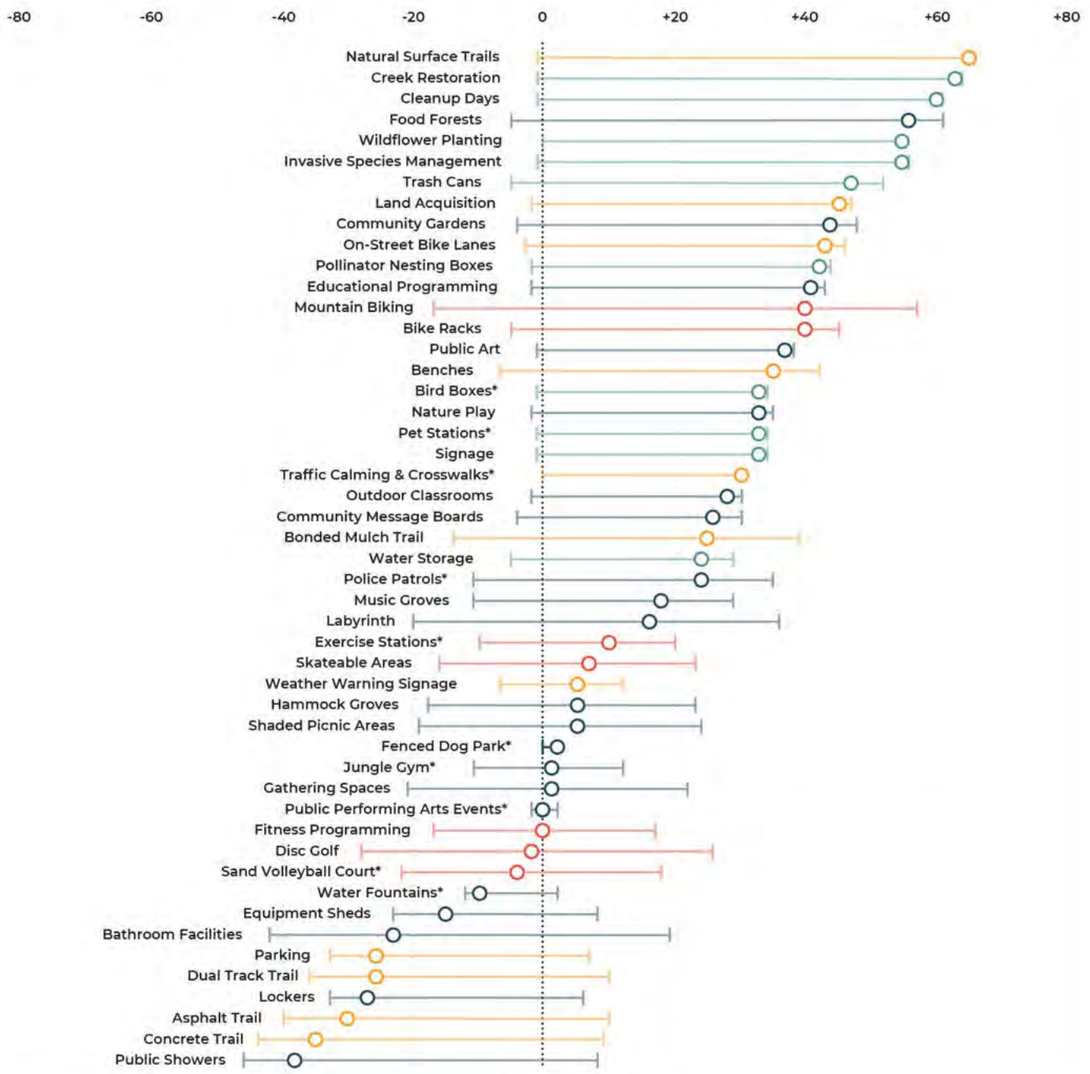
Idea Card Key

1. A Restored, Biodiverse Greenway
2. A Community-Centered Greenway
3. An Accessible and Visible Greenway
4. An Active and Connected Greenway



Idea Card Scores

Once the voting period on Social Pinpoint closed, the results were tabulated and summarized. This graphic shows the net score each creek idea card received. Idea cards received one point when they received a “thumbs up” and one negative point when they received a “thumbs down.” The sum of these points produced the net score.



* Indicates ideas added by community members via Social Pinpoint during feedback period

Vision Plan-
Placement of Creek Idea Cards

After the voting period on Social Pinpoint closed, the idea cards were then placed along the Greenway using information gathered from existing conditions, conversations with the working group, and the initial Social Pinpoint Greenway Mapping Exercise. A conceptual design for the entire greenway, as well as two trailheads at South 1st and Orland streets and Meadow Creek Drive were available for comment until January 18th, 2021.

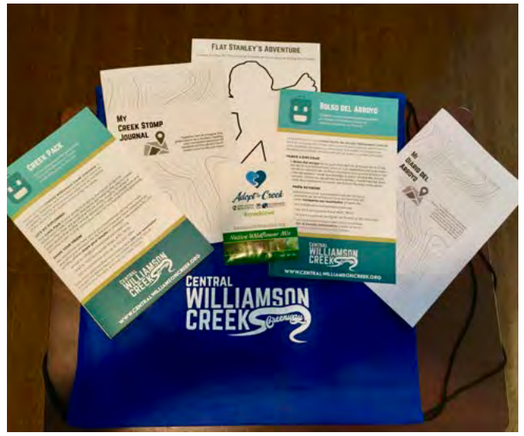
Comment on the Central Williamson Creek Greenway Vision Plan in the forum below!

You can download the document from the Site Design section above.

1. Are there any ideas you would like to see at locations we don't currently have shown?
2. Are there any ideas you see that should be removed from their locations because they are not ideal for that location?
3. What do we not have enough of?
4. What do we have too much of?
5. Are there any other community-led ideas that should be added?
6. What are we missing?
7. Do you see anything that doesn't work?

In-Person Engagement

Due to the COVID-19 crisis, in-person engagement was limited to four “Creek Chats,” where Community Powered Workshop and representatives from the Community Working Group facilitated an in-person version of the Creek idea card activity. These events were socially distanced and held outdoors at picnic tables along Central Williamson Creek.



5: Existing Conditions

CENTRAL WILLIAMSON CREEK PROVIDES A PEACEFUL PLACE FOR PEOPLE TO CONNECT WITH NATURE.

COMMUNITY CONTEXT

Demographics

The Central Williamson Creek area is surrounded by about 11,000 residents, mostly living in single-family homes. This is a diverse community both racially and economically. Fifty-one percent of residents are non-white, with 45% of that group identifying as Hispanic/Latinx. Forty-five percent of the neighborhood is low-income and 19% is middle income.[1] This area is considered to be socioeconomically vulnerable, with high levels of linguistic isolation and refugees.

Community Health

According to the Healthy Parks Plan for Travis, Bastrop, and Caldwell Counties, **this neighborhood has high rates of adult heart disease, high cholesterol, poor mental health, and prevalence of stroke.** These poor health outcomes can be aggravated and compounded by other demographic factors, including the area's high socioeconomic vulnerability. **These are important considerations, as parks are critical public health assets that offer free opportunities to be active.** Parks and green space can ease depression and anxiety by providing areas to relax and connect with friends and family. They also cool the surrounding environment and filter out air and water pollutants that can harm health.

1. Low-income is defined as households whose ratio of household income to poverty level was less than 2, calculated from the Census Bureau's American Commu nity Survey.

Prior Engagement

The Central Williamson Creek Vision Plan expands upon a previous community engagement process that began in 2019 through a collaboration between neighborhood community members, Public Green & Wild, The Nature Conservancy, Community-Powered Workshop, and the National Parks Service. Engagement efforts were focused in the Middle Williamson Creek buyout area between Union Pacific Railroad and S. 1st Street. The focus area includes the buyout neighborhoods of Meadow Creek Drive and Radham Circle. The engagement process included four community events as part of a series called *Explore! Williamson Creek*. Three of these events were "Creek Stomps," which involved a short overview on the creek's ecology and hydrology, a guided community hike, and an opportunity for community feedback. The final event invited those who were unable or uninterested in exploring the creek to attend a more traditional focus group format to garner feedback. In addition to these events, the Watershed Protection Department conducted two community feedback surveys at the Richmond Tributary Buyout Area and at Meadow Creek. These surveys were intended to provide feedback to the Watershed Protection Department on how they are currently managing buyout land and how they may manage it in the future to align with community desires. In 2020, the Watershed Protection Department plans on conducting a survey of the Heartwood Buyout area.

Prior Engagement Outcomes

Many themes emerged from the Explore! Williamson Creek focus group, creek stomps, and the Richmond Tributary survey from Watershed Protection Department.

Explore Williamson Creek!

Strengths

Nature and Wildlife

- Natural beauty of the creek
- Escape from the city
- Sense of discovery and joy

Recreation

- Place to hike or walk dogs
- Chance to connect with nature
- Opportunities to exercise

Challenges

People experiencing homelessness

Land Management Strategies

- Dislike for unmanaged lots
- Desire for mowing so areas are more aesthetically pleasing

Opportunities

Creek Trail

- Trails that improve connectivity

Community Spaces

- Areas with picnic areas, swings, and amenities

Neighborhood Stewardship

- Community stewardship events

Watershed Protection Dept.

Richmond Tributary Survey

Current Use

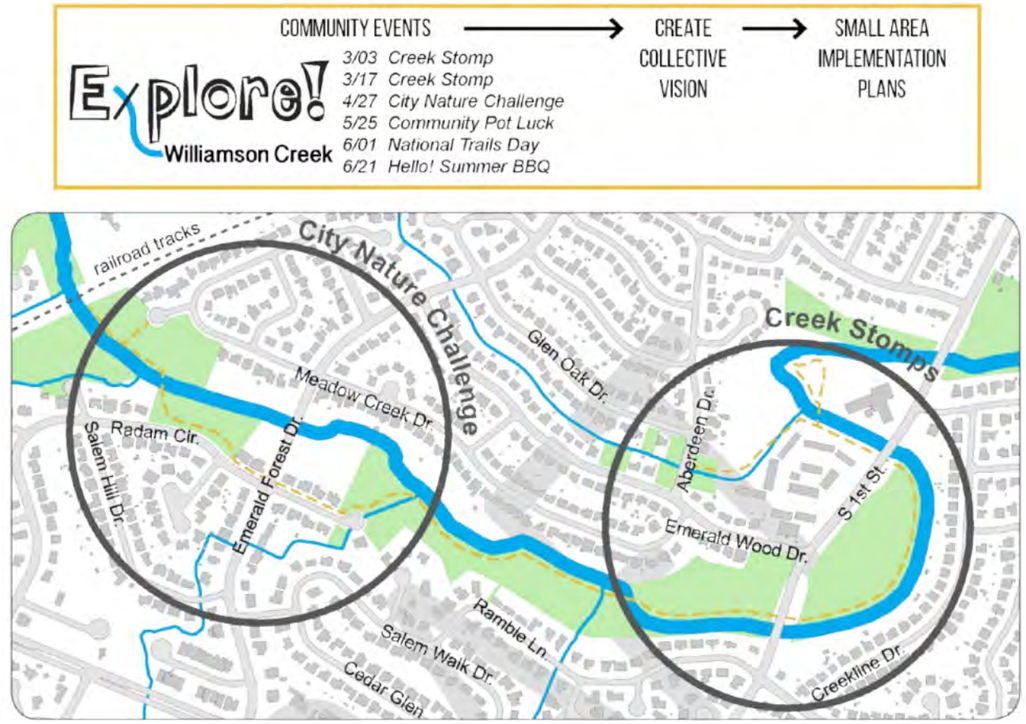
- Area is most commonly used for plant and wildlife observation
- 37% of those surveyed did not use buyout areas for recreation.

Amenities

- 65% of survey participants are in favor of adding community amenities, volunteering, and management practices that benefit water quality and habitat for pollinators.

Buyout Landscape Management

- Half of those surveyed are in favor of low-growing meadows to provide clear lines of sight.
- A majority of participants are in favor of mowing areas near the front of lots and allowing native vegetation to grow near the back of lots by the creek.



Map and schedule of Explore! Williamson Creek Events.

Community Voices

The planning and design of the Central Williamson Creek Greenway emerges out of a close collaboration with community members and builds upon the previous engagement efforts of *Explore! Williamson Creek*. See Chapter 4 for a more detailed overview of the community engagement process for this vision document.

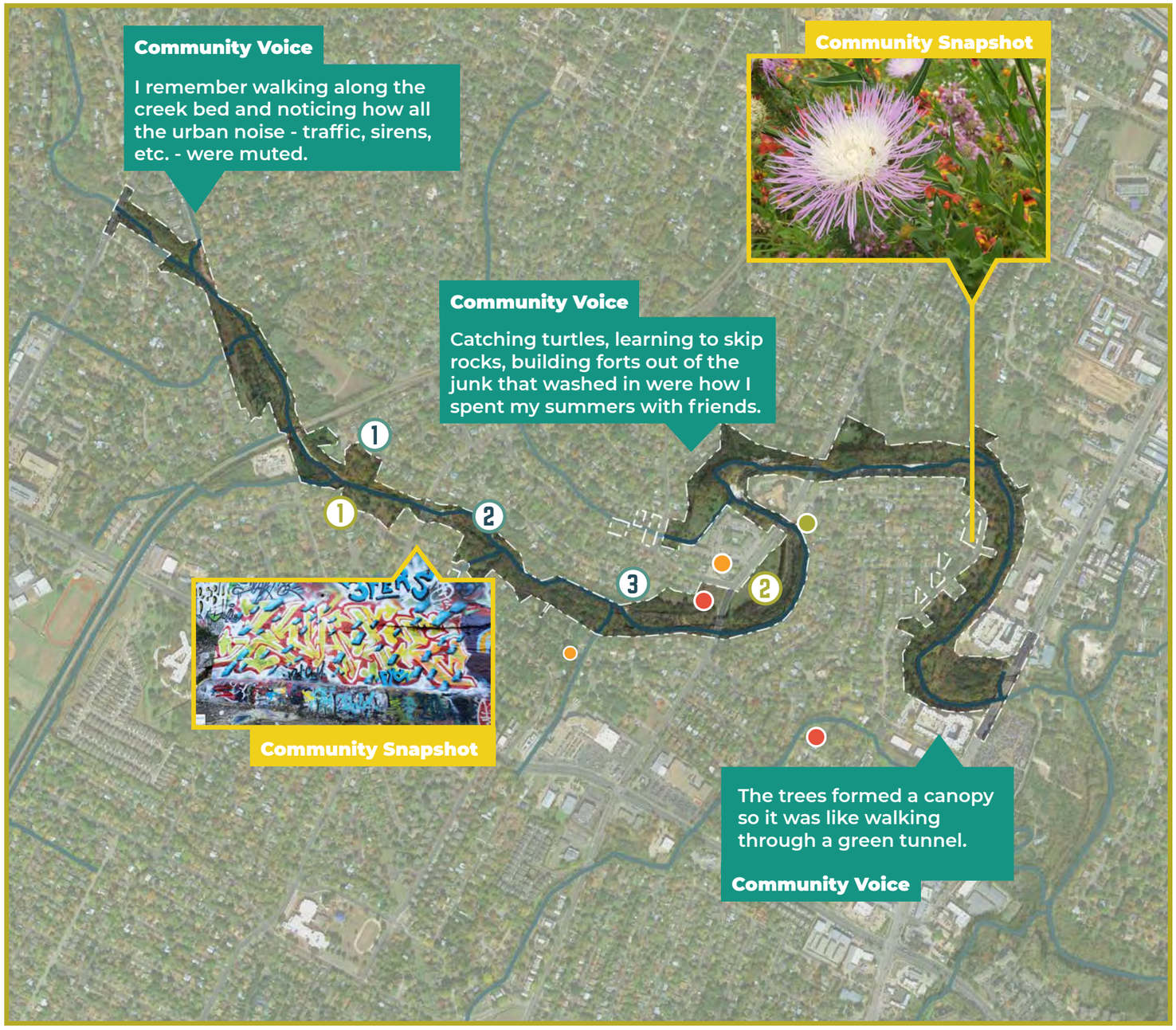
1 **Challenge 1:** Balance conflicting community desires for maintained vs natural open spaces.

2 **Challenge 2:** Balance access with people experiencing homelessness.

1 **Opportunity 1:** Trailhead and Community Gathering Space

2 **Opportunity 2:** Continuous trail along Central Williamson Creek.

3 **Opportunity 3:** Gathering space with community gardens and food forest.



Legend

- Community Garden
- School
- Fresh for Less Site

COMMUNITY

Photo: David Reagan, Flickr

CENTRAL WILLIAMSON CREEK IS A GREEN RIBBON OF BIODIVERSITY THROUGH SOUTH AUSTIN.

Local Ecology

Williamson Creek stretches across the Environmental Protection Agency's Level 3 Edwards Plateau and Blackland Prairie Ecological Regions. The Edwards Plateau ecoregion is characterized by thin limestone or granite soils and the Blackland Prairie region has thick clay soils. Each of these characteristic soils host different types of native plants, thus the **ecotone[2] between these two ecoregions produce conditions that are very biodiverse.**

These open spaces surrounding the creek are rich with biodiversity due to the alluvial sediments and availability of water, which create favorable conditions for a broad diversity of plant and wildlife species. The past few years have seen a community effort to document local biodiversity in Williamson Creek using iNaturalist, a citizen science phone app that identifies and records plant and animal sightings. Both native and invasive plants have been documented along the creek. Citizen scientists have recorded more than 570 nature observations of more than 260 species within the Central Williamson Creek Greenway. While the most observed wildlife species by citizen scientists include common species such as raccoons, woodpeckers, and fox squirrels, many sightings record less common species such as Barred Owl (*Strix varia*), Green Heron (*Butorides virescens)*, and American Basketflower (*Centaurea americana*).

Hayhurst's Scallopwing and Buttonbush

The wildflowers along Williamson Creek provide habitat and forage for urban wildlife.

Roseate Skimmer Dragonfly

2. Ecotone - A region of transition between two biological communities.

Vegetation

Vegetation along Williamson Creek and in its floodplain is dominated by large areas of woody vegetation interspersed with intermittently mowed wildflower meadows in buyout parcels owned by the Watershed Protection Department. Patches of fringe wetlands, especially near seeps and springs, are scattered throughout floodplain. Many areas along the creek are dominated by invasive woody and herbaceous vegetation, most notably stands of Glossy Privet, Giant Reed, and Chinese Tallow. Areas dominated by invasive species should become high priority areas for invasive species management per the City of Austin Invasive Species Management Plan published in 2012.

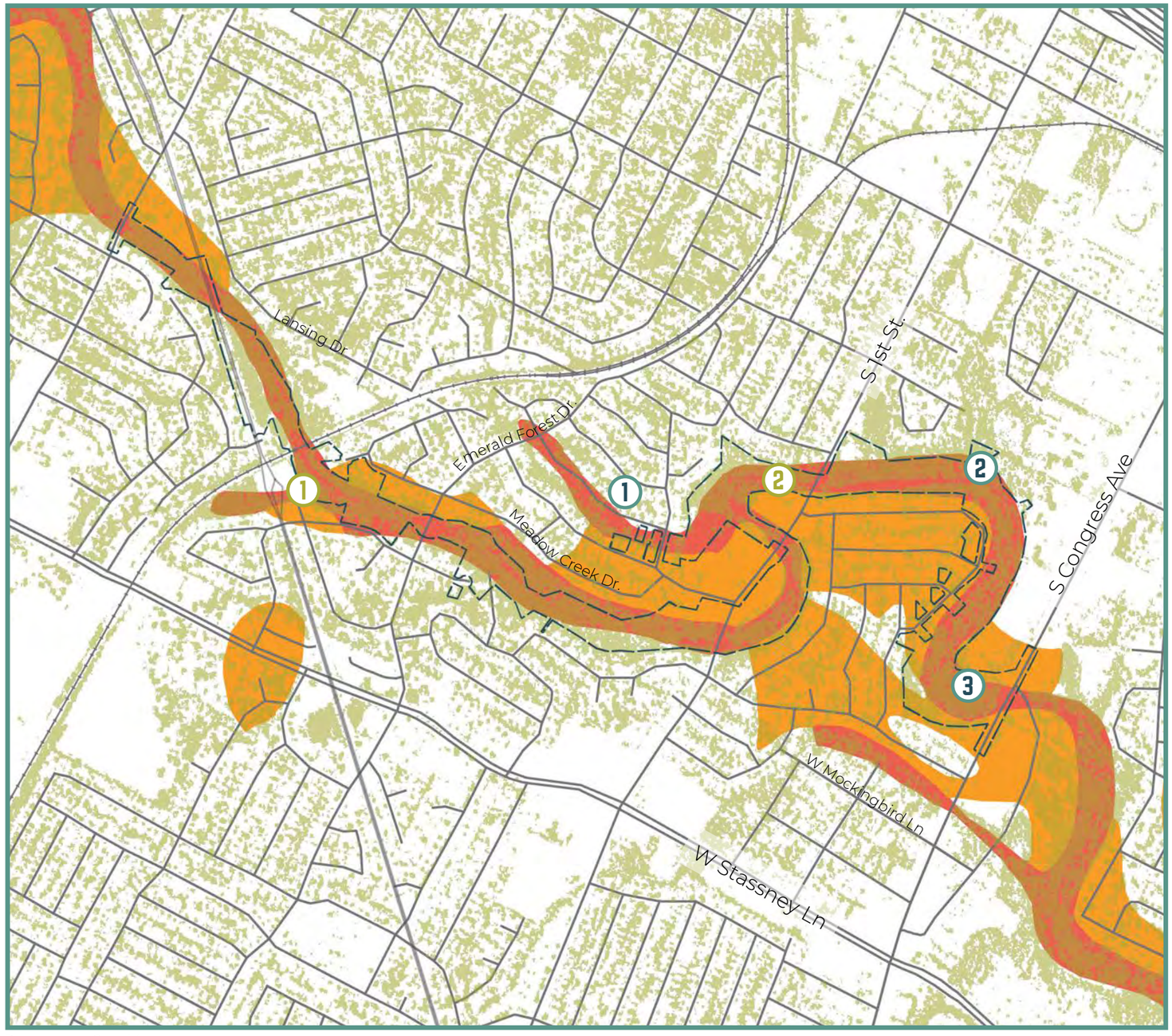
Challenge 1:
Balance sensitive ecology with community access and recreation.

Challenge 2:
Balance invasive species removal with erosion control.

Opportunity 1:
Educational wildflower meadow pocket parks at buyout areas.

Opportunity 2:
Context-sensitive ecological restoration and habitat creation.

Opportunity 3:
Invasive species management of Ligustrum and invasive grasses.



Data sources: City of Austin, iNaturalist, USGS

Legend

- Creekbed soils
- Alluvial soils
- Tree Canopy
- Project Boundary

TREE CANOPY AND SOILS

iNaturalist

iNaturalist is a popular citizen-science app that allows users to document and share plant and animal observations. These observations are geolocated and provide researchers with valuable information about the spatial distribution and ecology of plant and animal species.

Residents and community members of Williamson Creek have used iNaturalist to document the creek's biodiversity through both individual initiative and organized community "bio-blitzes." The map on the right shows the results of these efforts.

Wildlife

The plant and habitat diversity in Williamson Creek allow for a broad range of fish, amphibian, bird, and mammal species to thrive. iNaturalist and previous field surveys conducted by The Nature Conservancy included spiny softshell turtle, green heron, great blue heron, cedar waxwings, and chimney swift sightings. In September 2018, two wildlife cameras were installed in the Central Williamson Creek Greenway with the Austin Wildlife Watch project and Austin park rangers. These cameras documented deer, raccoons, opossums, and coyotes.

Legend

- iNaturalist Wildflower Observation
- iNaturalist Plant Observation
- iNaturalist Wildlife Observation
- Creeks
- Project Boundary

Data sources: City of Austin, iNaturalist, USGS

INATURALIST OBSERVATIONS

Vegetative Inventory

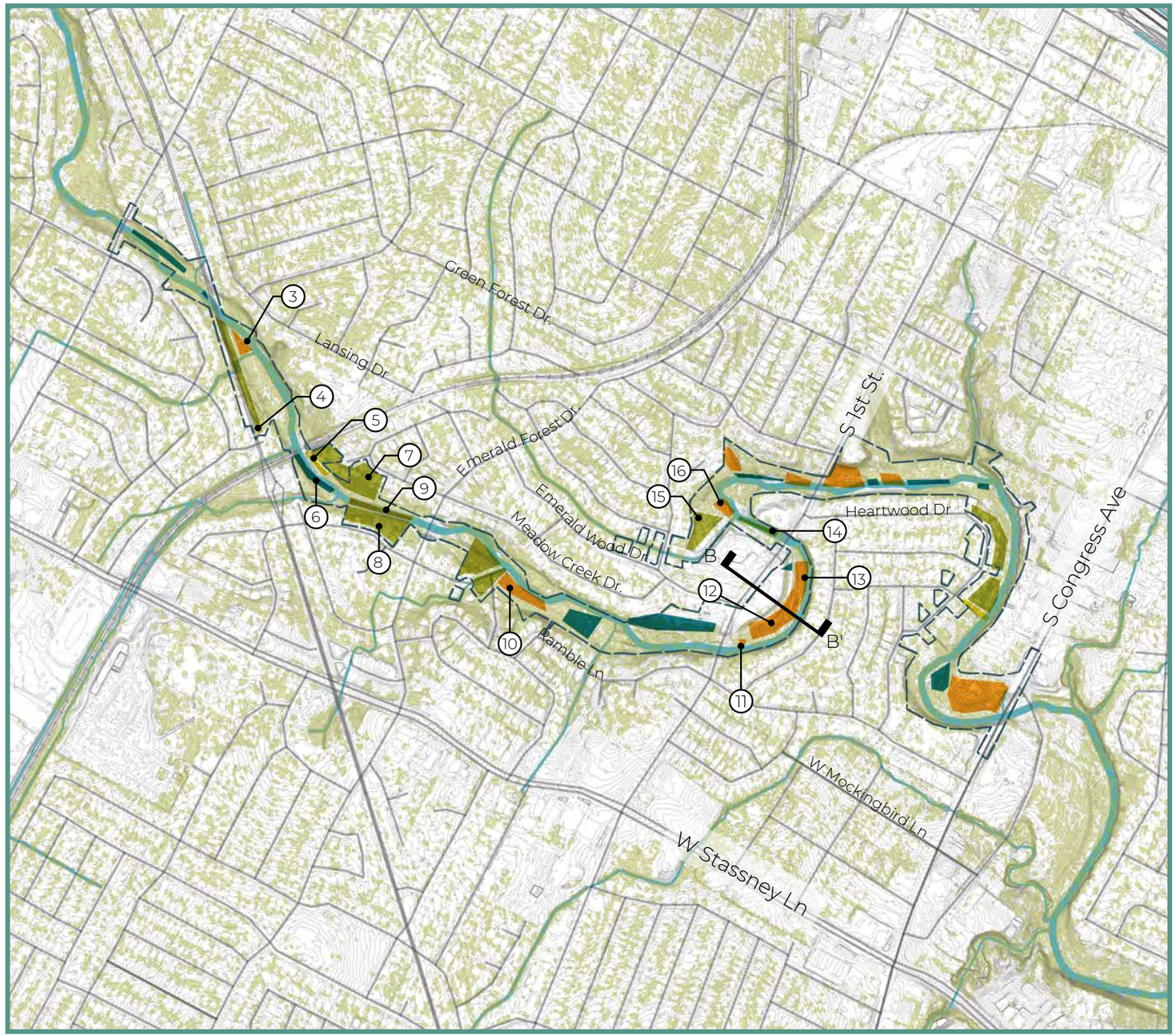
This map was compiled by a series of field surveys completed by The Nature Conservancy intended to document existing vegetation. This inventory will be used to develop a site plan that protects healthy, native vegetation and removes and manages invasive species. In future plan development, patches of native plants and fringe wetlands along the creek may be designated as Vegetation and Soil Protection Zones (VSPZs) as part of the SITES Certification process.

Native wetland fringe along Williamson Creek.

Legend

- Invasive
- Mowed
- Mixed invasive/native
- Native
- Tree Canopy
- Creeks
- Project Boundary

Patch	Description
1	Ash and Hackberry predominate/canopy. Pecans, American Elm, Boxelder dispersed. Some Lilu, Nandina
2	Dense giant ragweed, under power lines
3	Ligustrum, canopy, evidence of some management activities
4	Johnsongrass/Forb, Juvenile Woody (hackberry, cedar elm, pecan) under powerlines
5	Bamboo thicket, some Oaks
6	Dense red oaks along bank
7	Buyout area mowed, large cedar elms, a few pecans, a few live oaks
8	Buyout area mowed, some large DBH trees
9	Ligustrum along bank, some cedar elms
10	Ligustrum, canopy and understory. Towards east, more oaks and cedar elms mixed into canopy
11	Bamboo cluster
12	Grow zone east of trail; ligustrum understory, few cypress and Viburnum near bank. Few large pecans
13	Numerous young cedar elms
14	Yard for apartments, large native trees as partial canopy along bank
15	Detention Pond adjacent Richmond Trib, some forbs/wildflowers
16	Mostly Ligustrum NW of Richmond trib, heritage pecan tree, a few hackberries
	Unnumbered parcels to be classified



Data sources: City of Austin, The Nature Conservancy, USGS

Section B-B' on pp. 24-25

Common Native Herbaceous Plants

- American Water Willow (*Justica americana*)
- Western Ragweed (*Ambrosia psilostachya*)*
- Flame Acanthus (*Anisacanthus quadrifidus var. wrightii)*
- Illinois Bundleflower (*Desmanthus illinoensis*)
- Inland Seaoats (*Chasmanthium latifolium*)
- Plains Coreopsis (*Coreopsis tinctoria*)
- Pigeonberry (*Rivina humilis)*
- Purple Threeawn (*Aristida purpurea*)
- Sideoats Grama (*Bouteloua curtipendula var. curtipendula*)
- Silver Bluestem (*Bothriochloa laguroides ssp. torreyana*)

Common Native Tree Canopy

- American Elm (*Ulmus americana*)
- Ashe Juniper (*Juniperus ashei*)
- Black Willow (*Salix nigra*)
- Box Elder (*Acer negundo*)
- Cedar Elm (*Ulmus crassifolia*)
- Hackberry (*Celtis laevigata*)
- Live Oak (*Quercus fusiformis*)
- Pecan (*Carya illinoiensis*)
- Texas Red Oak (*Quercus texana*)

Common Invasive Herbaceous Plants

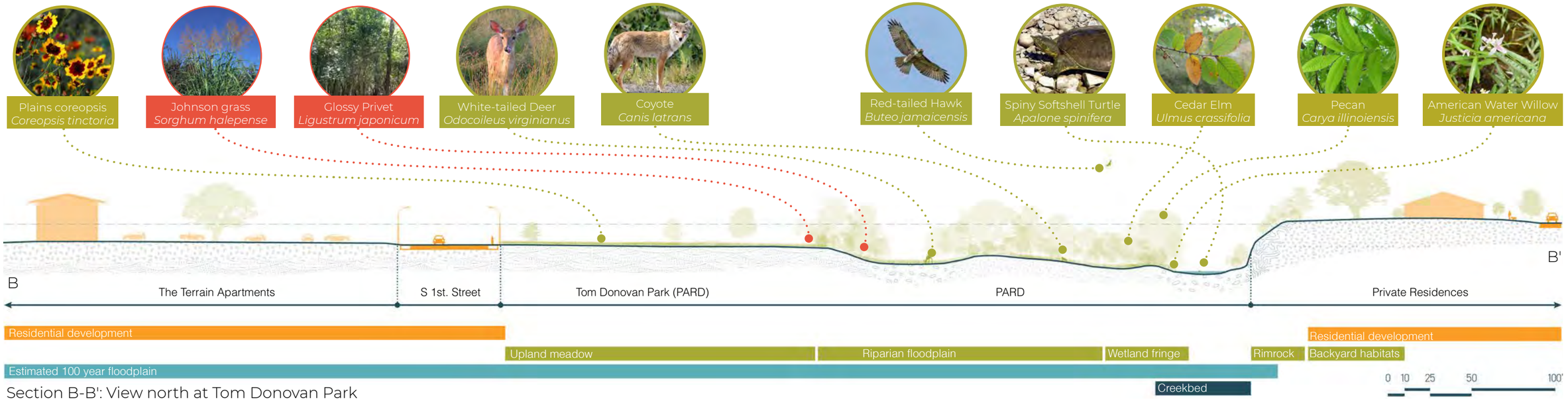
- Bamboo (*Phyllostachys aurea*)
- Barnyardgrass (*Echinochloa crus-galli*)
- Bermuda Grass (*Cynodon dactylon*)
- Garden Cornflower (*Centaurea cyanus*)
- Giant Reed (*Arundo donax*)
- Johnsongrass (*Sorghum halepense*)
- Perennial Ryegrass (*Lolium perenne*)
- Prickly Lettuce (*Lactuca serriola*)
- Rescuegrass (*Bromus catharticus*)
- Silky Bluestem (*Dichanthium sericeum*)
- Tropical Lantana (*Lantana camara)*

Common Invasive Tree Canopy

- Chinaberry (*Melia azedarach*)
- Chinese Privet (*Ligustrum senense*
- Chinese Tallow (*Sapium sebiferum*)
- Glossy Privet (*Ligustrum japonicum*)
- Nandina/heavenly bamboo (*Nandina domestica*)
- Tree of Heaven (*Ailanthus altissima*)

Note - Invasive species are defined by the National Invasive Species Council as "nonnative (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health." However, even native species may be aggressive and outcompete other species, causing ecological harm.

*Native plant species with an * next to their names indicates that these plants are aggressive and may harm biodiversity in the Williamson Creek ecosystem.*



Section B-B': View north at Tom Donovan Park

CENTRAL WILLIAMSON CREEK IS EASY TO GET TO BY BUS, BIKE, AND ON FOOT.

GREENWAY ACCESS

Neighborhood Access

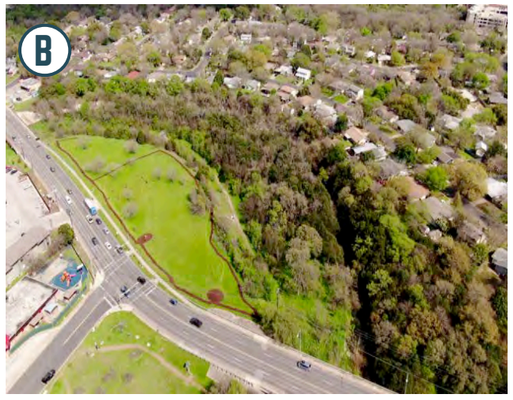
The neighborhoods along Central Williamson Creek have a robust sidewalk network, creating good pedestrian connectivity for the adjoining neighborhoods. Emerald Forest Drive provides a dedicated bike lane for traveling in the north-south direction, and StassneyLane provides a bike lane for travelling in the east-west direction. In the future, the CAMPO 2035 plan hopes to augment S. Congress Avenue S. 1st Street, and MenchacaRoad to become safe, designated "bike corridors." In the meantime, the surrounding neighborhood roads of mostly low-traffic residential homes offer a safe alternative to high-traffic thoroughfares like S. Congress Avenue and Menchaca Road. The City of Austin Urban Trail Network is actively working on a plan to develop the abandoned Bergstrom Spur Right-of-Way as an urban trail. The 2014 City of Austin Urban Trails Plan also proposes the creation of additional car-free regional connections via the Williamson Creek Greenway and the Union Pacific right-of-way. Central Williamson Creek is served by the 1, 3, 10, 311, and 801 bus.

Creek Access

Access to the creek itself can be a challenge. Many informal trails and entrances have been created by community members. However, they occur sporadically through the greenway and do not provide a connected path along the entirety of the Central Williamson Creek Greenway. Access to these informal trails are frequently found at the mowed, grassy buyout parcels and under the bridges where S. 1st Street, S. Congress Avenue, and Menchaca Road cross Williamson Creek.

Creek entrance from the north side of S. Congress Avenue

South 1st Street is a common access point to Williamson Creek.



This major entryway along S. 1st Street is adjacent to a large, grassy park and the Emerald Wood Community Garden.

1 **Challenge 1:**
Steep slopes at potential access points at major road crossings.

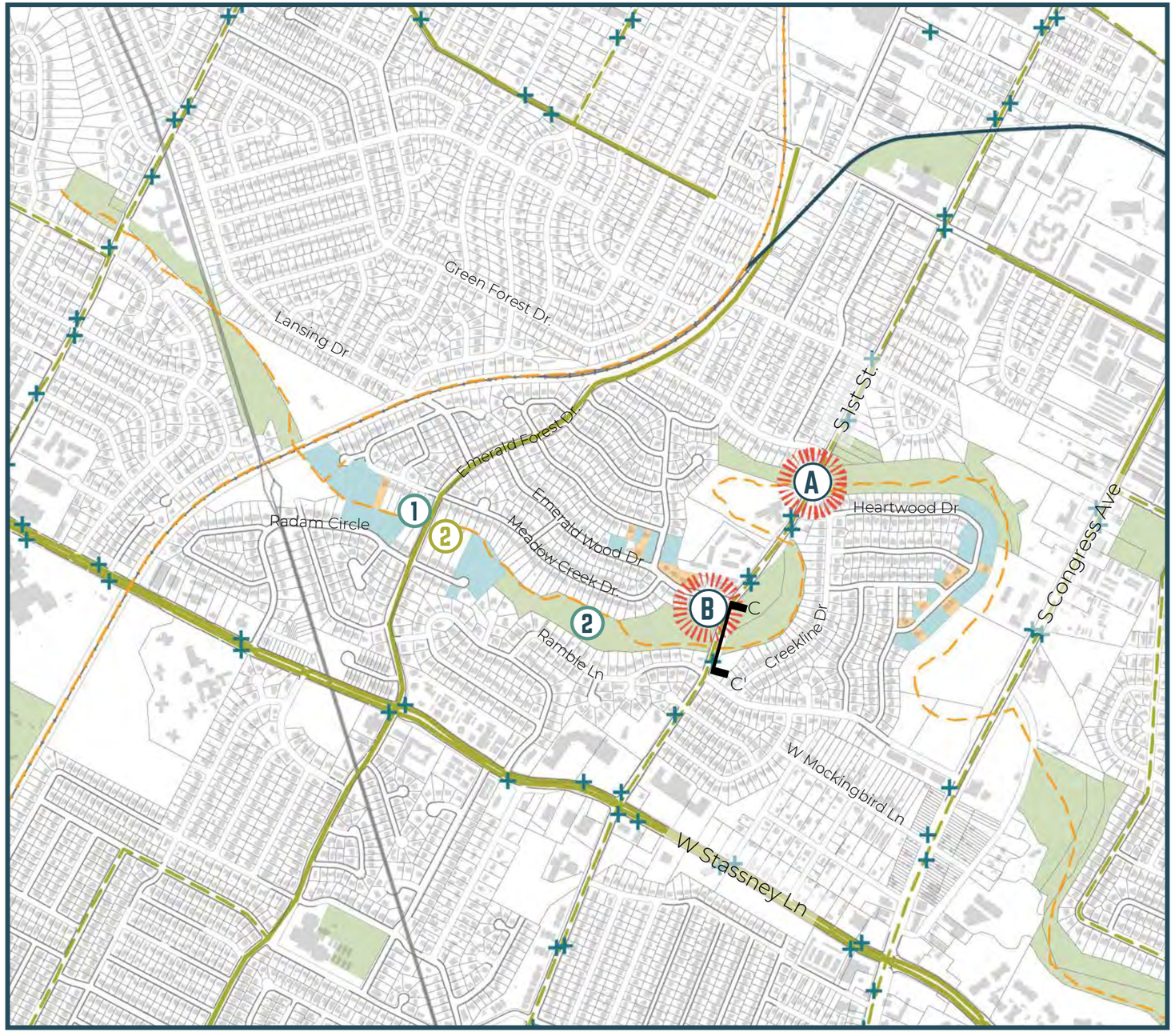
2 **Challenge 2:**
Discontinuous publicly owned property along the creek.

1 **Opportunity 1:**
Easements along private property to allow access.

2 **Opportunity 2:**
Continuous, accessible trail along entirety of Central Williamson Creek.

Legend

- Community-Identified Access Points
- CMTA Bus Stops
- Bicycle Lanes
- CAMPO 2035 Bicycle Corridors
- COA Urban Trails (2014 Plan)
- Bergstrom Spur (In Progress)
- Sidewalks
- Floodplain Buyout Lots (Owned by Watershed Protection Dept.)
- Floodplain Buyout Lots (Eligible)
- COA Parks (Owned by Parks and Recreation Dept.)



Data sources: City of Austin, Google

Section C-C' on pp. 34-35

CIRCULATION AND ACCESS

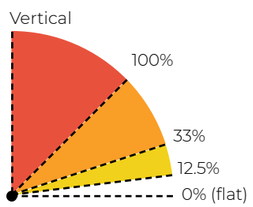
Slope

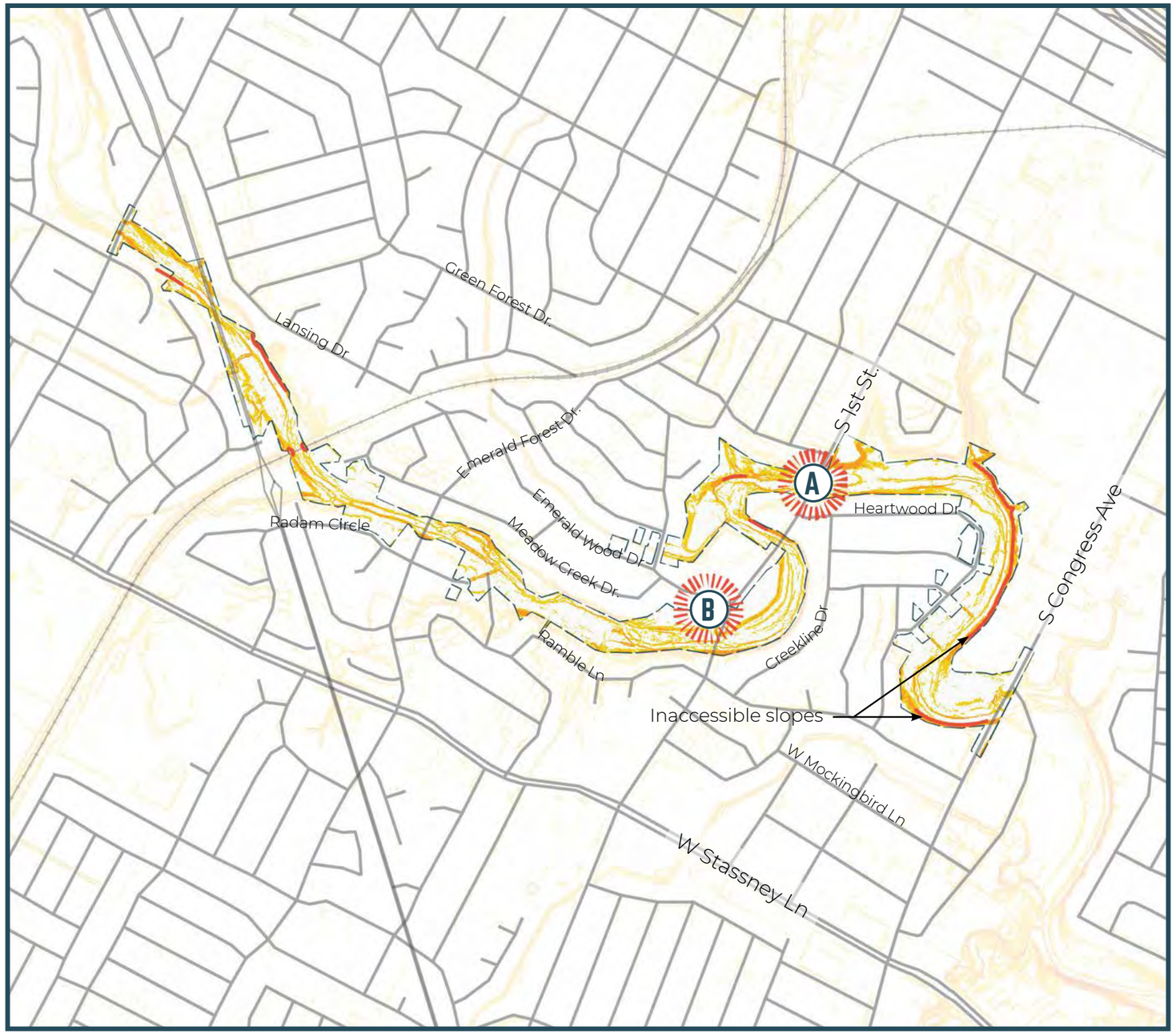
Access to Central Williamson Creek is hindered by the area's rugged topography. In some areas, the creek's erosive force has eaten into its banks, exposing steep rock faces dozens of feet tall. Erosion's effects are less dramatic in other places, but still make it difficult to experience the creek. This map shows the locations of these steep areas, illustrating their relationship to the adjacent street grid and the limitations they place on access to Williamson Creek.

Steep conditions are often due to limestone outcroppings along the creek.

Legend

- Community-Identified Access Points
- Moderate slopes (12.5 - 33.3%)
- Steep slopes (33.3% - 100%)
- Extremely steep slopes (>100%)



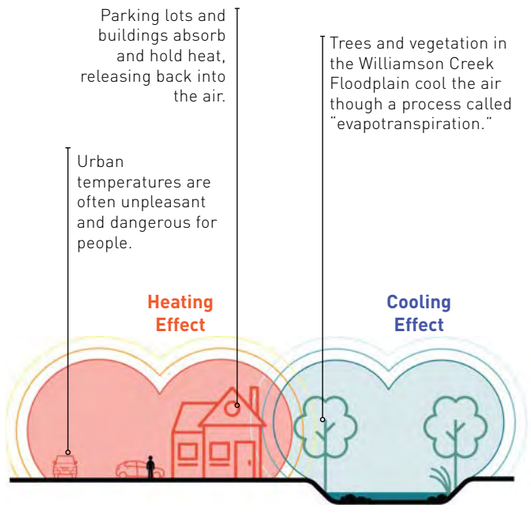


Data sources: City of Austin, Google

SLOPE

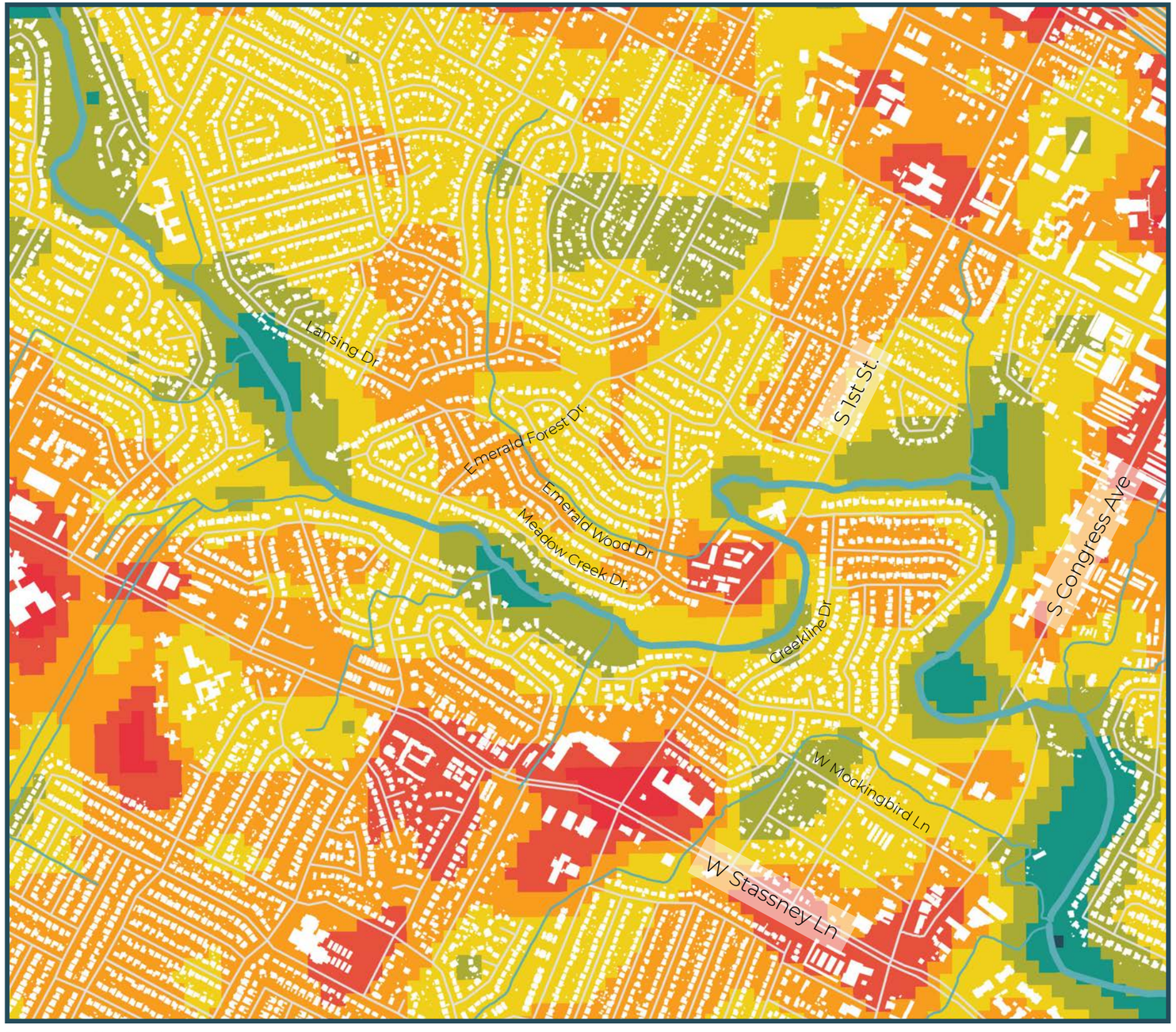
Urban Heat

In the summer and early fall, walking and biking on Austin's hot streets is uncomfortable and puts at-risk groups including the very young, the elderly, and those with pre-existing conditions at risk for heat-related illness. The trees and vegetation along Central Williamson Creek creates a cool ribbon through a hot city. A future hike and bike trail along the creek would provide a safer and more comfortable transportation or exercise route than paved neighborhood streets and sidewalks.



Legend

- 84°F - 86°F
- 86°F - 88°F
- 88°F - 90°F
- 90°F - 92°F
- 92°F - 94°F
- 94°F - 96°F
- 96°F - 98°F
- Building Footprint
- Roads
- Creeks



Data sources: City of Austin, LANDSAT

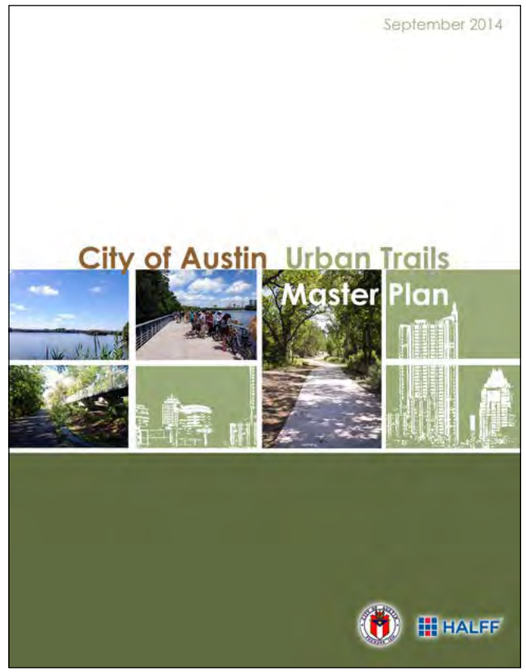
URBAN HEAT ISLANDS

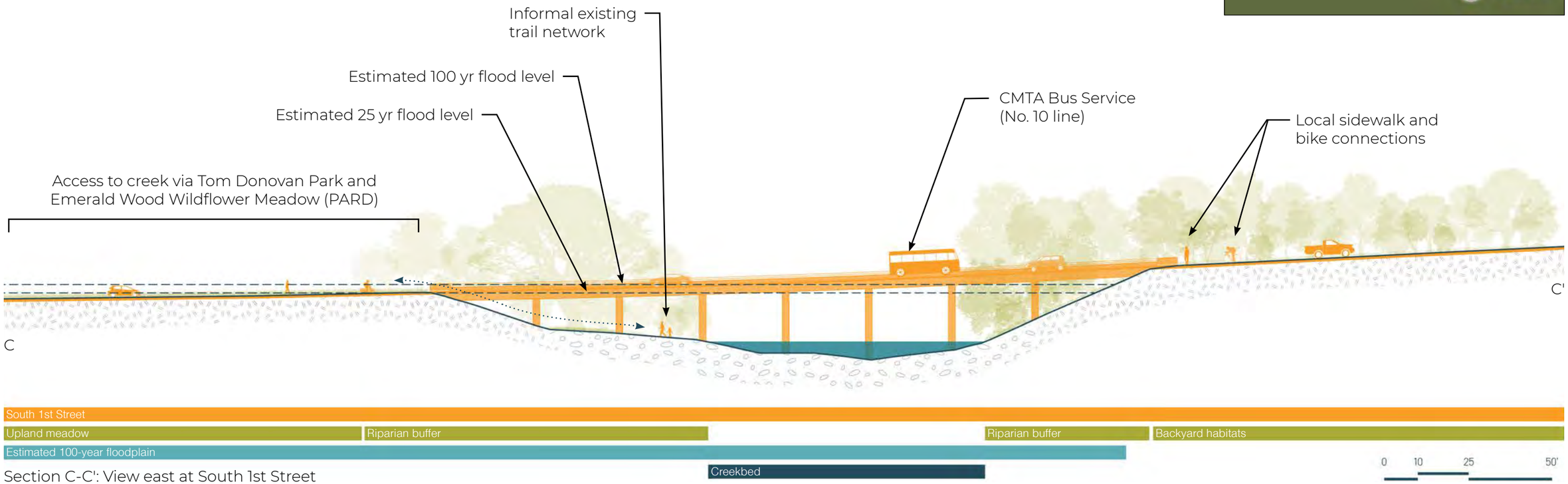
Trailheads

While there are currently no formal trailheads providing access to the Central Williamson Creek Greenway, many community members noted accessing the creek at several bridges that cross the creek. The section below illustrates where the creek flows underneath S. 1st Street bridge. This area presents an opportunity to provide more formalized access to the creek in the future.

Previous Planning Efforts

Austin Urban Trails Plan (2014): This plan identifies an opportunity for a trail along the Williamson Creek for three miles from Onion Creek to South Menchaca Road. It rates this trail as a Tier II priority, due to its proximity to major employers, public and private schools, access to transit, access to public places, and potential for completing gaps in existing on-street sidewalks or bike facilities.





Section C-C': View east at South 1st Street

Photo: Austin Parks Foundation

CENTRAL WILLIAMSON CREEK IS TRANSFORMED WHEN IT RAINS.

HYDROLOGY

Williamson Creek Watershed

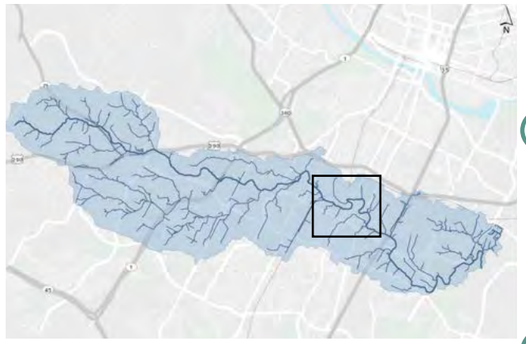
Beyond the Greenway Vision Plan area, Williamson Creek stretches almost 19 miles across South Austin from its headwaters just west of the intersection of Highway 71 and Covered Bridge Drive to where it empties into Onion Creek just east of 1-35 at McKinney Falls State Park. This water then flows from Onion Creek into the Colorado River, where it travels across east Texas and empties into the Matagorda Bay and the Gulf of Mexico. The Williamson Creek Watershed, which contains Williamson Creek and its tributaries, covers 30.25 square miles. Thirty percent of the Watershed's land falls within the Edwards Aquifer Recharge Zone, land that is regulated by development code to ensure the continued function and quality of the Edwards Aquifer, a critical underground water source for central Texas. The Central Williamson Creek area drains 72.5% of the Williamson Creek Watershed (about 22 square miles). About 34% of the Williamson Creek Watershed is covered by impervious surfaces. Land use within the watershed is comprised by 41% single family homes, 9% apartments and condos, and 9% greenbelts. Tree canopy covers 38% of the watershed, and this high number is likely due to high residential land use and greenbelts within the watershed. A high percentage of trees surrounding the greenbelt may help alleviate some flooding.

Between rainfalls, Williamson Creek almost completely dries out, leaving occasional standing pools of water.

Many seeps and springs arise from the rocky outcropping that runs along both banks of Williamson Creek.

Flooding

Austin averages about 34 inches of rainfall per year, with May, June, and October being the wettest months of the year. Rainfall tends to come in intense, short storm events that cause flash floods. Severe rain events can cause dramatic changes in the volume of water flowing through Central Williamson Creek, transforming the space from what is mostly a dry, rocky creekbed into a rapid stream of water. While flooding is an important part of the creek system and provides water flows for plant and animal species, these extreme rainfall patterns pose a threat to those living along Williamson Creek. (Continued on next page.)



- Williamson Creek
- Tributary
- Williamson Creek Watershed

1 Challenge 1: Help mitigate flooding of homes.

2 Challenge 2: Balance trail and amenity placement with destructive flood events.

1 Opportunity 1: Green infrastructure and other floodwater storage opportunities.

2 Opportunity 2: Education around urban flooding and climate change.

3 Opportunity 3: Improve stormwater outfalls to better conserve creek water quality.

Legend

- Buyout Lots
- Estimated 25-year floodplain
- Estimated 100-year floodplain
- Creeks
- Rimrock
- Seep/spring
- Wetland
- Stormwater Outfall
- Project Boundary
- Watershed Boundary
- Buildings
- Paved Surfaces

Data sources: City of Austin, FEMA, USGS

HYDROLOGY

This flood risk is exacerbated by climate change and land development in the Williamson Creek watershed, making Central Williamson Creek a highly flood-prone area. Major floods in 1998, 2001, 2013, and 2015 prompted a buyout program that has seen 51 properties purchased by the City, demolished, and converted into open space owned by the Watershed Protection Department. This Williamson Creek Flood Risk Reduction program helps to mitigate the risk of damage to property by removing houses that have experienced repeated flooding out of the floodplain and maintaining these areas as floodable open spaces.

Water Quality

The 2017 Watershed Protection Department Integrity Index report found that the Watershed has a very good overall condition for aquatic life, water quality, contact and non-contact recreation, and habitat and sediment quality. However, there are many stormwater outfalls that empty into Williamson Creek, bringing stormwater runoff with pollutants from roads, parking lots, and other impervious surfaces into Williamson Creek. These common pollutants may include pesticides, fertilizers, construction debris, used car oil, and trash.

Critical Environmental Features

The City of Austin defines Critical Environmental Features as natural features that protect and enhance water quality. As of June 2020, The Williamson Creek Watershed has twenty-nine known springs and seeps, fifteen rimrock/bluff locations, and 55 wetland sites. These three images of rimrock, a seep, and a wetland were all found along Central Williamson Creek.

Rimrock

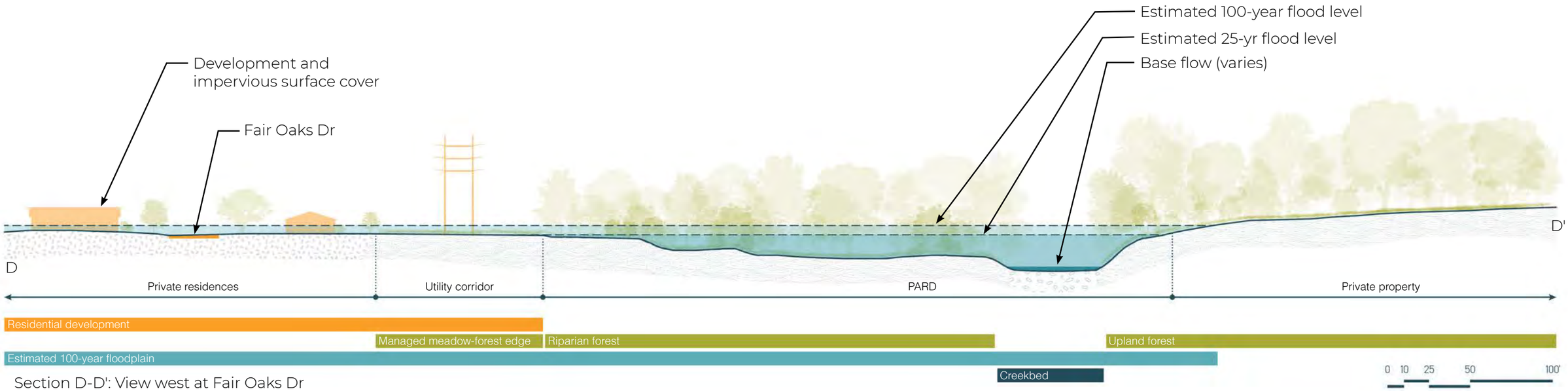
Rimrock and bluffs are outcroppings of rock that exceed a 60% slope, have a 5 foot rise, and a 40 foot length.

Seep

Springs and seeps are locations where ground water reaches the surface and begins to flow overland.

Wetland

Wetlands along Williamson Creek are identified by the type of vegetation found within them.



Section D-D': View west at Fair Oaks Dr

6: Implementation

IMPLEMENTATION STREAM

OVERVIEW

The Vision Plan encompasses three tiers of project effort and feasibility: Tier 1: Community- and non-profit-led; Tier 2:" City-led with community volunteer and engagement opportunities; and Tier 3: Large-scale community-led projects. Some ideas can have different levels of effort, and therefore may appear in more than one tier. All ideas, once implemented, will have perpetual maintenance requirements following their completion.

Tier 1 Projects

Community -led collaborations with City of Austin landowners Watershed Protection, and PARD. They can involve work and support with non-profits such as Austin Parks Foundation and Keep Austin Beautiful. All projects must have prior approval by City of Austin property owners.

Nature Trails

Creek and Woodland Restoration

Fitness Programming

Food Forest

Community Gardens

Mountain Bike Trails

Invasive Species Removal

Labyrinth

Music Grove

Seating

Pollinator Nesting Boxes

Tier 2 Projects

These are City of Austin landowner projects of $50,000 dollars or less. They are part of the missions and plans of WPD or PARD, but require advocacy from the community. The community may also be involved for portions of these projects such as planting days.

Nature Play

Green Infrastructure

Wildflower Meadows

Community Message Board

Bonded Wood Mulch Trail

BYO Hammock Grove

Tier 3 Projects

Projects that require long-term study and funding by City of Austin landowners that will total more than $50,000 dollars and require major construction. Funds and grants may be raised on behalf of the community to implement these projects.. They will have required community engagement on their further development and route to implementation.

Land Acquisition and Easements

On-street Bicycle Lanes

Sidewalk-Shared Use Path

Green Infrastructure (Large Scale)

Maintenance

All projects, no matter the size, will require maintenance for ensured community and environment health and safety. Similar to implementation, these have levels of engagement and operations. As City-owned public land, community-led efforts must be approved by the property owner.

For Tier 1 community and City -partnered projects, a maintenance agreement must be developed and approved by City of Austin. Tier 2 and 3 projects should be maintained per City code and operations; however, the City may partner with non-profits and community groups to perform maintenance.

ONGOING CITY OF AUSTIN PROJECTS

OVERVIEW

There are several projects in an array of planning and implementation stages adjacent to the Central Williamson Creek Greenway.

Flood Plain Buyout Cleanups

The Watershed Protection Department has severl projects underway to clean-up floodplain buyout lots. Such improvements include using split-rail fences to denote property boundaries, and removal of driveway concrete and debris.

2014 Urban Trails Master Plan

The 2014 Urban Trails Master Plan identified Williamson Creek as a location for a Tier II trail. The proposed trail is a 12-foot wide concrete trail. The Urban Trails Master Plan is currently being updated and looking to assess which Tier II trails should be moved to Tier I.

During the community engagement process for Central Williamson Creek Greenway, community members expressed a strong desire for trails within the greenway to be natural trails. This was stated in community meetings and shown in the Creek Ideas Card voting. As such, the Central Williamson Creek Vision Plan shows primarily Nature Trails and Mountain bike trails with small accessible loops at trailheads. For street biking and connectivity, the Vision Plan proposes a 'High Water Route'- a series of bike lanes and shared-use paths out of the floodplain that would connect to existing and planned bicycle and sidewalk networks. This would further support an Urban Trail if it moves forward at a later date. The 'High Water Route' could also serve as a framework for a streetside urban trail in the Central Williamson Creek Greenway area.

The next phase for a Tier I trail would be for the City of Austin to commission a Preliminary Engineering Report from a team of consultant licensed engineers and landscape architects. This phase also requires community engagement. The Visioin Plan recommends that the Central Williamson Creek Greenway community leaders and working group to be included as stakeholders in this process.

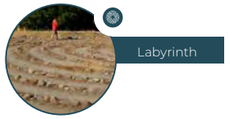
Middle Williamson Creek Flood Risk Reduction - Engineering Feasibility Study Phase 2

Middle Williamson Creek Flood Risk Reduction -Engineering Feasibility Study Phase 2 The study reviews methods to reduce flood risk over an area of Williamson Creek between West Gate Blvd and Congress Avenue. Some options requiring construction include: flood walls, which would consist of wall segments protecting specific areas from flooding; channel modifications, which would require excavation at some locations along the creek in order to increase the flow capacity; construction of detention ponds; or a diversion, which would allow water spilling out of the creek to be diverted through underground pipes in order to bypass areas at risk of flooding. The above options are being considered individually or as a combination. Another option considered is voluntary buyouts of homes at risk of flooding. Each of the options is being evaluated for flood reduction effectiveness, cost, as well as environmental impacts. Social impacts will also be evaluated once community engagement is conducted, after the draft feasibility report is available. This community engagement is expected to take place in February or March 2021.

More collaboration with the community is needed so that the creek environment should be improved, conserved and remain natural in appearance.

IMPLEMENTATION BY IDEA

IDEA	 Pollinator Nesting Boxes	 Invasive Species Management
TIER 1	Many plans for these boxes can be found online. Nest boxes consist of a house with a roof and an infill of material such as bamboo and twigs. The house, roof and post must be wood, sourced from a non-threatened tree species. For more information on materials refer to the materials appendix. The infill may be constructed from materials found on the greenway- in particular from material salvaged from the invasive species removal efforts. http://www.xerces.org/sites/default/files/2018-05/12-015_02_XercesSoc_Nests-for-Native-Bees-fact-sheet_web.pdf	Invasive species removal at the Tier 1 level includes community volunteers leading a Watershed Protection or PARD approved clean-up day, that can also be supported by local non-profits such as Keep Austin Beautiful or the Austin Parks Foundation. Removal will be done by hand only and can include pulling herbaceous noxious weeds such as Johnson Grass, Bermuda Grass, using weed wrenches to remove mid-sized shrubs such as Nandina and tree girdling to remove Ligustrum spp. No herbicides may be used as part of this effort. Similarly no motorized mechanical equiment may be used as part of these efforts.
TIER 2		Projects at the Tier 2 level are led by Watershed Protection or PARD but can include community volunteers as well as non-proift organizations that contract with Watershed Protection or PARD such as The Other Ones Foundation and Texas Conservation Corps. Projects can also include machine removal of invasive trees.
TIER 3		Projects in this Tier will be a component of a large scale project that is greater than $50,000 in value. Projects will be responsible for removing any invasive material within their limit of construction.
MAINTENANCE	In order to keep nest boxes safe for pollinators - the infill materials- sticks, bamboo etc- must be replaced once a year during the winter - between late January to early February. Old infill may be scattered away from the nest box to decompose. Also, box keepers should watch for any infestations and spider webs to ensure bees are safe from predators.	Invasive Species removal sites require continued maintenance. Often the soil has a continued seed bank of invasive species that will emerge following the removal of established plants. Quarterly inspections and seedling removals are recommended to ensure that sites are not recolonized. Addionatlly, native seeds and plugs should be installed at removal areas.

IDEA	 Signage	 Labyrinth
TIER 1	Informal trail markers such as cairns may be implemented to mark distances and direction along trail.	A labyrnith may be a community -led project with City approval on all aspects of the design. Labyrinth may be constructed of rock berms from native stone quarried within a 100-mile radius of the site. Configuration of the Labyrinth should allow water to drain. Stone berms should not be greater than 18-inches in height.
TIER 2	Signage in this tier includes weather warnings, community message boards, educational information and interpretive signs, trail distance markers. These signs can be up to 6ft in height and must follow the materials guidelines outline in Appendix X.	
TIER 3	This scale of signage will include monument signs and park rules. These signs require a third-party professional fabrication and are often included as a component of a larger project.	While a labyrinth could be designed and constructed as part of a larger project, the Vision Plan recommends community input and engagement. The abyrinth was conceived of as a mindful way to bring community members together.
MAINTENANCE	Signs should be made of durable material that will withstand exposure to elements such as cut metal and stone. Detailed educational signage with images should be placed in the shade to reduce fading over time. Maintenance should be performed on signs once a year to remove dirt, graffiti.	Typical maintenance will include a yearly inspection of the Labryinth. Tier 1 Labyrinths will require weed removal and should also be inspected after a flood event. Any shifted material should be restored to its original condition.

IMPLEMENTATION BY IDEA - CONT.

IDEA	 Creek + Woodland Restoration	 Nature Trail
TIER 1	At the Tier 1 level, community members and non-profits may partner with City approval to plant native trees, perennials and grasses to improve the environment. A list of acceptable species is provided in Appendix X Plant Species.	Nature Trails may installed with City of Austin approval by community members or community members in partnership with non-profits such Keep Austin Beautiful and Austin Parks Foundation. Nature Trails should consist a 6-foot-wide pathway. The pathway material should be single grind hardwood mulch that does not contain invasive seeds.
TIER 2	Tier 2 restorations may involve small-scale site grading, planting and temporary irrigation. These projects will be conducted in part by City of Austin, and may also involve non-profits and community volunteers for some aspects of the work.	Projects in the Tier 2 category could be a typical nature trail, but with City of Austin supported installation. Also, Tier 2 includes projects where technical review and skills are required to install nature trails, such as traversing steep slopes. In these cases City of Austin property owners may work within their department or contract with local trail building non-profits such as the Texas Conservation Corps.
TIER 3	Tier 3 projects involve large scale improvements to the environment and creek. The projects may include repairing eroded banks, hydrologic engineering and changes to the creek, soil analysis and improvement and ecological restoration of wetlands and riparian areas.	
MAINTENANCE	Quarterly monitoring, weeding, and invasive species removal are recommended for project sites at all scales. Supplemental water until plants are established recommended where feasible.	Trails should be maintained per City of Austin standards. Community groups can assist in maintaining trails through cleanup days and replenishing the mulch. After storm events trails should be checked for debris and washout.

IDEA	 Wildflower Planting	 Music Grove
TIER 1	Due to technical nature, all wildflower meadow seedings should be implemented by City of Austin property owner.	Tier 1 music grove can involve informal seating areas distanced from private property. Natural elements may be used for seating material such as stumps and boulders between 18-24-inches in height.
TIER 2	Wildflower meadows can be established by City of Austin property owners. Establishing a meadow can be a multiyear process. Community members can advocate for meadows.	Tier 2 improvements could enhance music grove areas by providing an accessible route in permeable paving, accessible seating.
TIER 3		
MAINTENANCE	Wildflower meadows must be maintained according to City of Austin requirements to ensure they are functioning correctly.	Music groves should be maintained biannually to be kept clean and clear.

IMPLEMENTATION BY IDEA - CONT.

IDEA	 Community Message Boards	 Green Infrastructure
TIER 1		Recommended that community members who own property consider cisterns or rain gardens with native plants to treat and slow the water entering the greenway.
TIER 2	Community Message boards should be constructed of a non-threatened North American hardwood or suitable reclaimed lumber. Design can be initiated by the community but must be reviewed and finalized by the City of Austin property owner.	All green infrastructure projects on City of Austin property should have review by a civil engineer to ensure they are sized correctly. Small scale GI such as raingardens, vegetated swales, rock berms and curb cuts are recommended to allow for run off absorption and treatment prior to entering Williamson Creek. Recommend looking for opportunities whenever a projects is mobilized, such as a driveway removal at a floodplain buyout or demolition of existing structure. Add excavation work into these plans and keep access to water for establishment of planting.
TIER 3	If not already implemented, this should be included into trailhead projects that fall into Tier 3.	The greenway has an opportunity for large scale green infrastructure projects. These projects include diverting stormwater outlets into biofiltration or wetland areas along the creek, and creating larger basins at manholes coinciding with flood plain buyouts. These interventions will require designs my licensed civil engineers and landscape architects and should also function as community and environmental amenities, with opportunities for recreation and incorporation of native plants.
MAINTENANCE	Recommended that neighborhood organization or community group partner in responsibility with City of Ausitn property owners. Excellent way to share about upcoming community events and organizations.	Green infrastructure elements must be maintained according to City policy listed under the Environmental Criteria Manual.

IDEA	 Community Gardens and Food Forests	 Nature Play
TIER 1	Examples of Food Forest at Tier 1 include expanding existing community gardens wtih Fruit Trees and Food Forest area. Food forests can also be established, similar to community gardens working with City of Austin property owners.	For safety reasons all play elements must be Tier 2 or higher.
TIER 2	At the Tier 2 level, City of Austin property owners could work with non-profits and land managers to establish a series of Food Forests within the Greenway. Community engagement would be recommended to optimize longterm maintenance and care.	Tier 2 features include imaginative play elements that do not require safety fall surfacing. Elements may include tree step stones, vine tunnels, child-sized raised garden beds. These require design, review and approval by City landowners could be installed by
TIER 3	Food forests are a recommended part of large scale improvements. Maintenance group must be established for successful implementation.	Tier 3 Nature Play elements include a combination of active and imaginative play elements. Any play element requiring a safety surface will fall in this category. Such elements include balance beams, swings, climbable elements. Community engagement will be required for these designs.
MAINTENANCE	Maintenance can vary depending on size of Food Forest. At a minimum plan for watering plants through establishment, quarterly weeding and developing a harvest schedule.	Maintenance varies depending on the play type. All play elements should be maintained by City of Austin.

IMPLEMENTATION BY IDEA - CONT.

IDEA	 Bonded Mulch Trail	 Land Acquisition
TIER 1		At the Tier 1 scale community members could advocate with the City and land owners to establish easements for parkland or acquire additional buyout properties along the greenway. In particular, community groups partnering with private land owners could establish a series of easements that would allow for more continuous trail and park areas through the greenway.
TIER 2		
TIER 3	Bonded wood mulch trails will be fully accessible routes that require grading and design by professional engineer and landscape architect to implement. Installation must be performed by a third-party contractor.	Tier 3 includes land aquisition by the City, such as additional floodplain buyouts. It also includes dedication of park and trail easements for developments adjacent to the greenway.
MAINTENANCE	Bonded mulch trails should be cleaned yearly by spraying a clear coat material to keep the surface well bound and prevent wear from eroding the surface layer.	

IDEA	 Fitness Programming	 On-Street Bike Lanes
TIER 1	At the Tier 1 level, this could included hiking groups and non-profit programming in existing open spaces such as yoga in the park. Paid activities require permission from the City of Austin	
TIER 2	Projects at this level can include maintaining a mowed area for activity use, small grading projects, elements such as metal bars for pull ups or limestone block or boulders to use as aids in kinesthetic and body weight exercises.	
TIER 3	This would include commercial-grade activity equipment such as a hand-cycle or recumbent bike. Equipment of this type must include an accessible route and safety surfacing. Equipment should be located at trailheads out of the flood plain only. Additional community engagement is required for type of equipment. Smaller elements noted in Tier 2 could also be incorporated into Tier 3 projects.	On street bike lanes require design and review by Austin Transportation Department. Community members can advocate for bike lanes by contacting the ATD.
MAINTENANCE		On street bike lanes should be maintained by City of Austin per City standards.

People Experiencing Homelessness

Austin's parks and open spaces are places where all community members gather to enjoy trails, build social capital, and access Austin's urban nature. Due to the diversity of groups and interests of Austin residents, it is not surprising that conflict may arise between park users. Conflicts between neighborhoods, park users, and unsheltered individuals living in Austin's parks has become an ongoing issue in Austin, and Williamson Creek is no exception. In the past decade, the City of Austin has seen a significant uptick in unsheltered individuals residing in Austin's Parks. This is due to a variety of factors, including Austin's ongoing affordable housing shortage crisis and population growth. In 2019, Austin City Council enacted a set of ordinances that permitted people experiencing homelessness to sit, sleep, lie, and camp in most public spaces. The homelessness crisis was further exacerbated by 2020's COVID-19 crisis, when the number of unsheltered individuals rose 45% from 2019 to 2020[1].

Across the city, residents and park users have voiced concerns over the symptomatic impacts of Austin's housing and homelessness crisis, such as the presence of unsheltered individuals in parks, and their associated tents, belongings, and refuse. There have been many calls to remove encampments in parks and open space. However, this is a short-term response that may only hinder efforts by support services and unsheltered individuals seeking long-term housing solutions. Park clean-ups also strain city department resources, draining time and money away from parks improvements city-wide. The displacement of people experiencing homelessness from parks in this manner also further entrenches homelessness. After a clean-up, displaced individuals may simply relocate to a new area on public land, making it difficult for organizations that provide support services to locate them to connect them to housing and other resources. When clean-ups dispose of people's belongings, this further burdens unsheltered individuals. They must then use their limited financial means to purchase or procure more blankets, tents, or supplies needed to survive living outdoors and limits their ability to spend money on food, transportation, and shelter.

Fully addressing the causes of homelessness is a complex and long-term undertaking that is outside the scope of this Vision Plan. In the short-term, taking an empathetic and communicative approach may help ameliorate conflicts. At Central Williamson Creek Greenway, the following approaches are recommended:

1. Prioritize project implementation in areas along Williamson Creek that will not displace people experiencing homelessness, work with the city to implement projects with participation of unsheltered individuals.

2. Post the names and contact information of resources like The Other Ones Foundation (TOOF) to community message boards. Many unsheltered individuals are not aware of community resources available to help them secure shelter, personal hygiene, food, access to the internet, and other necessities.

3. Temporarily employ unsheltered individuals on land improvement projects. The City of Austin contracts with The Other Ones Foundation (TOOF) on projects like trail-building and invasive species removal. Consider coordinating between the COA and TOOF on appropriate projects along the greenway, including:

- Creation of Nature Trails
- Creek and Woodland Restoration
- Community Gardens
- Invasive Species Removal
- Pollinator Nesting Boxes
- Signage Installation

Invest in neighborhood public education around unsheltered individuals, emphasizing the following ideas:

- Those experiencing homelessness are part of our community.
- It is possible for anyone to experience homelessness.
- Everone is welcome to use public parks and open spaces
- Those experiencing homelessness may face life-long issues, such as poverty, mental health concerns, physical ailments, and/or addiction.
- Public complaints may strain park resources.
- Public complaints that result in displacement may hinder long-term efforts to find housing for unsheltered individuals. homelessness.

4. Educate the neighborhood about the newly expanded Integral Care-EMCOT (Expanded Mobile Crisis Outreach Team) a branch of 911 that responds to all mental health-related 911 calls that do not present an imminent threat to public safety without the involvement of city or county police. Neighbors can be directed to request a mental health professional to resolve conflicts rather than police in an effort to stem the potential for police violence against an unsheltered individual and to better address non-violent crisis with the correct training.

5. Support affordable housing in the community. Connect with organizations like HousingWorks Austin, Austin Housing Coalition, and Reform Austin.

6. Advocate for trash cans and trash removal services to service these communities. Support shelterless individuals in taking a land stewardship approach to the spaces they inhabit by providing the resources to remove trash and refuse from the site as well as through educational programs on local ecology and general stewardship principles.

Austin-Based Resources

The Other Ones Foundation
Provides employment and case management

Ending Community Homelessness Coalition
Plans community-wide strategies to end homelessness

Austin Resource Center for the Homeless
City-owned men's shelter

Austin Shelter for Women and Children
Emergency shelter for adult women and their dependents

Front Steps
Offers emergency shelter

United Way for Greater Austin
Connects people to a wide range of services

Mobile Loaves and Fishes
Provides food, clothing, hygiene products, and housing

1 https://www.austinecho.org/about-echo/homelessness-in-austin/

7: Afterword & Appendices

Afterword

The Central Williamson Creek Greenway Vision Plan has been created to guide future greenway improvements and to support fundraising efforts for both community-built and City of Austin-built projects by identifying four primary goals envisioned for the future of the Greenway. These goals, along with their corresponding design strategies, were created from both community input and trail, parks, and ecological design best practices.

Upon approval from the City of Austin's Parks and Recreation Board, this plan is to become a planning document of record, reflecting the desires of the Community Working Group, and the general public to create an ecologically sound and inclusive vision for the future of Central Wililamson Creek Greenway. With strategic investment and further design, Central Williamson Creek Greenway has the potential to become a major asset to the growing neighborhood and Austin Community.

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Recommended Plant List

Native Texas plants should always be selected for woodland restoration, wetland restoration, wildflower planting, and green infrastructure along the greenway. The following is a short list of example species. Consult resources the Lady Bird Johnson Wildflower Center for more information on plant species selection.

	Forbs	Grasses		Shrubs	Trees
Wetland	American Water-willow (Justica americana) Obedient Plant (Physostegia virginiana), Swamp Milkweed (Asclepias incarnata), Spiderwort (Tradescantia spp.), Rosemallow (Hibiscus laevis), Virginia Iris (Iris virginiana)	Bushy Bluestem (Andropogon glomeratus), Cherokee Sedge (Carex cherokeensis), Purple Threeawn (Aristida purpurea)		Buttonbush (Cephalanthus occidentalis), Globe Mallow (Sphaeralcea ambigua)	Black Willow (Salix nigra)
Woodland	Turkscap (Malaviscus arboreus), Red Columbine (Aquilegia canadensis), River Fern (Thelypteris kunthii)	Southwestern Bristle Grass (Setaria scheelei), Cherokee Sedge (Carex cherokeensis), Inland Sea Oats (Chasmanthium latifolium)		Virginia Sweetspire (Itea virginica), American Beautyberry (Callicarpa americana), Redbud (Cerces canadensis), Yaupon Holly (Ilex vomitoria), Flame Acanthus (Anisacanthus quadrifidus)	Curly mesquite (Hilaira belangeri), Cedar Elm (Ulmus crassifolia), American elm (Ulmus americana), Pecan (Carya illinoinensis), Hackberry (Celtis occidentalis), Box Elder (Acer negundo), Live Oak (Quercus virginiana), Texas Red Oak (Quercus buckleyi)
Wildflower Meadow	Illinois Bundleflower (Desmanthus illinoensis), Bluebonnet (Lupinus texensis), Black-eyed Susan (Rudbeckia hirta), Zexmenia, Gayfeather (Liatris mucronata), Butterflyweed (Asclepias tuberosa), Standing Cyrpress (Ipomopsis rubra), Horsemint (Monarda citiodora), Plains coreopsis (Coreopsis tinctoria)	Purple threeawn (Aristida purpurea), Sideoats grama (Bouteloua curtipendula), Silver bluestem (Bothriochloa saccharoides), Green Sprangletop (Leptochloa dubia),		N/A, Woody vegetation should be used sparingly in wildflower meadows.	N/A, Woody vegetation should be used sparingly in wildflower meadows.
Green Infrastructure	Coneflower (Echinacea purpurea), Wax Mallow (Malaviscus arboreus var. drummondii), Bergamot (Monarda fistulosa), Blood Sage (Salvia coccinea), Obedient Plant, Blue Mistflower	Indiangrass (Sorghastrum nutans), Sideoats Grama (Bouteloua curtipendula), Switchgrass (panicum virgatum)		Buttonbush (Cephalanthus occidentalis), Southern Wax Myrtle (Myrica cerifera), American Beauty Berry (Callicarpa americana)	Bald Cypress (Taxodium distichum)

Recommended Materials Criteria

Selecting sustainable and safe materials for construction along Williamson Creek will ensure the continued health of the creek and lessen the environmental impacts of construction and development. Learn more about these strategies through the Sustainable Sites Initiative (sustainablesites.org).

Recommendation	Intent	Strategy 1		Strategy 2	Strategy 3	More Resources
Use sustainable wood sources	Many commonly-used landscape wood products are sourced from thretened tree species or threatened ecosystems. Minimize impact on these species by purchasing sustainably-sourced wood from non-threatened tree species.	Review the Convention on International Trade in Endangered Species (CITES) website to review the status of tree species and ensure that is not threatened with extinction or listed as requiring trade controls to avoid utilization incompatible with their survival. www.cites.org/eng/resources/species.html		Review the Internationan Union for Conservation of Nature's "Red List of Endangered Species to ensure the species is not in danger of extinction. www.iucnredlist.org.	Use recycled plastic, composite lumber, or another material instead of wood.	
Use salvaged materials and plants	Salvaging landscape materials from on-site or from re-use suppliers like a member of the Building Materials Reuse Assocation is an effective way to divert waste from landfills and conserve financial resources. Salvaged plant materials also conserves native, local plant genetic pools.	Identify salvaged materials suppliers or local demolition and construction projects. Search diirectories of reuse stores here: Building Materials Reuse Association, www.buildingreuse.org Habitat for Humanity's ReStore, www.habitat.org/env/restores.aspx		Get in touch with a local native plant conservation group. Many of these groups "rescue" native plants from construction sites, and may be able to provide locally-sourced salvaged plants.		Green Building Research Guide's searchable database, www.greenguide.com/exchange/search.html Reuse Development Organization, www.redo.org
Use materials with a high recycled content	Use of new materials with a high recycled content reduces resource extraction and diverts materials away from landfills and into the production of new materials.	Speak with local materials suppliers about products that may help achieve this goal. Examples of some materials include plastic lumber with recycled content, asphalt with recycled asphalt aggregate, and high recycled content steel.		Learn more about recycled products and industry materials recycling. The U.S. EPA Industrial Materials website: www.epa.gov/industrialmaterials The U.S. EPA's Comprehensive Procurement Guidelines www.epa.gov/cpg		California Department of Resources and Recycling, Recycled Content Products Directory, www.calrecycle.ca.gov/RCP/default.asp

Recommendation	Intent	Strategy 1		Strategy 2	Strategy 3	More Resources
Use regional materials	Sourcing regional landscape materials and plants has many benefits, including reducing the use of fossil fuels used for transportation, supporting local economies, increasing the demand and therefore the future supply of native plants, and supporting regional identity through the use of local materials.	Soils, compost, mulch , boulders, and aggregate sourcing should occur within 50 miles of the project site.		Plant material should be grown and supplied within 250 miles of the site.	The extraction, harvest or recovery, and manufacture of all other materials should occur within 500 miles of the site.	For more information about materials and resources, consult the U.S. Green Building Council's website: leedcasestudies.usgbc.org/materials.cfm?ProjectID=189. JW Thompson and K Sorvig, Sustainable Landscape Construction: A Guide to Green Building Outdoors (Washington, D.C., Island Press, 2000.
Use materials that will not harm the health of Williamson Creek or human health.	Use materials that do not contain chemicals known to harm human health or aquatic health. Prioritize materials that have chemical inventories, life-cycle information and hazard assessments. In addition to eliminating harmful chemical runoff, do not use materials that contribute sediment or aggregate to the creek.	Specify products from manufacturers who can provide chemical inventories covering all chemicals in each life cycle stage of the product. Manufacturers should also report all known hazards and their concentrations.		Use materials without topical finishes or other chemical additives whenever possible.	Learn more about chemicals in building products by consulting Pharos Project's Chemical and Material Library at www.pharosproject.net/material.	United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS), www.osha.gov/dsg/hazcom/ghs.html. Green chemicals standards are listen through NSF/GCI/ANSI 355 Greener Chemicals Products and Processes Information Standard, www.nsf.org/business/sustainability/product_greener_chemicals.

Opinion of Probable Costs - Area 1 - Tier 1

IDEA	QUANTITY	UNIT	UNIT COST	SUBTOTAL	Comments
Invasive Species Removal					Costs for this phase could be further reduced by partnering with City of Austin or a local non profit for use of tools rather than purchasing or renting equipment. Costs in this section indicate approximate cost to purchase equipment. Tier 1 invasive species removal to involve a group of community volunteers with approval by the City of Austin property owner.
Weed Wrench	3	EA	$ 189.00	$ 567.00	
Loppers	4	EA	$ 50.00	$ 200.00	
Mattock	2	EA	$ 50.00	$ 100.00	
Shovel - Round Point	4	EA	$ 50.00	$ 200.00	
Aborist Hand Saw	2	EA	$ 75.00	$ 150.00	
Tree Paint	10	EA	$ 6.00	$ 60.00	
Tree Girdler Tool	4	EA	$ 222.00	$ 888.00	
General Conditions Sub-Total				**$ 2,165.00**	
Seating - Informal, Wilderness					May be boulders or logs adjacent to nature trail where uses can rest. Provide informal seating every 1/8-mile for broader access. Assumes labor by volunteers with permission from City of Austin property owners.
Boulders - Existing		EA	$ -	$ -	Community members may not move existing boulders, but may take advantage of them by locating a natural trail nearby so long as the area is outside of the critical environmental feature setback zone.
Logs - Existing		EA	$ -	$ -	Logs may be cut into 4-feet in length or smaller and placed near the trail. No native trees may be cut by community members to create logs.
Logs - Invasive Species Removal		EA	$ -	$ -	Large trees removed in Tier 2 efforts may be reclaimed for informal seating near trail.
Seating Sub-Total				**$ -**	
Nature Trail - 1 mile					Assumes labor by volunteers with permission from City of Austin property owners.
Mulch - Wholesale	293	CY	$ 40.00	$ 11,733.33	First grind mulch placed 3-inches thick on a 6ft wide nature trail. Collaborate with City of Austin property owner ~~Cost may be reduced by partnering with local non-profit such as Keep Austin Beautiful, or City of Austin~~ property owners PARD or WPD
Wood Chipper Rental		DAY	$ 400.00	$ -	
Mulch - Invasive Species		CY	$ -	$ -	Use branches 6-inches or larger. Ensure no branches or seeds are placed into the wood chipper. Grind the mulch twice. Mulch from invasive species removal may be used to reduce cost of retail mulch.
Nature Trail - 1 mile Sub-Total				$ 11,733.33	
Mountain Bike Trail - 1 mile					Assumes labor by volunteers with permission from City of Austin property owners.
Shovel - Round Point	4	EA	$ 50.00	$ 200.00	No digging over 6-inches to level the trail.
Loppers	4	EA	$ 50.00	$ 200.00	For pruning branches 2-inch diameter in size or less adjacent to the trail. Blade must be washed in bleach between every new tree.
Aborist Hand Saw	2	EA	$ 75.00	$ 150.00	For pruning branches 2-inch diameter in size or less adjacent to the trail. Blade must be washed in bleach between every new tree.
Tree Paint	10	EA	$ 6.00	$ 60.00	All pruning areas must be covered in tree paint.
Natural Trail - 1 mile Sub-Total				$ 610.00	
Pollinator Nesting Boxes					Assumes labor by volunteers with permission from City of Austin property owners.
Wood Boards	2	EA	$ 10.00	$ 20.00	2x4x8 Rough Sawn Atlantic Cedar - untreated
Fasteners	1	EA	$ 10.00	$ 10.00	3-inch Wood Screws
Dried bamboo	0	LS	$ -	$ -	Harvest from invasive species removal
Drill Bit	1	EA	$ 12.00	$ 12.00	3/8 Drill Bit
4x4 Wood Post	1	EA	$ 24.00	$ 24.00	4x4x8 Rough Sawn Atlantic Cedar - untreated cut to 3ft length
CREEK RESTORATION - TREES					Tier 1 Planting for Area 1tree plantings include small 5 gallon trees sourced from Tree Folks NeighborWoods Program or a similar non-profit source. Community members and community gardens could also partner with non profits to propogate native trees for the greenway. Assumes labor by volunteers with permission from City of Austin property owners.
Native Shade Tree	60	ump Su	$ -	$ -	Tree Folks NeighborWoods Program
Native Ornamental Tree	60	EA	$ -	$ -	Tree Folks NeighborWoods Program
Mulch	3	CY	$ 40.00	$ 133.33	Organic, shredded hardwood mulch for trees and display planting areas.
Planting Bed Soil	3	CY	$ 65.00	$ 216.67	Organic topsoil from Organics by Gosh or similar to add to planting areas and tree pits.
Subtotal Planting				$ 350.00	
CREEK RESTORATION - PLANTS					Tier 1 Planting for Area 1 includes accent planting at trailheads and restoration planting with native trees, grasses and perennials at invasive species removal areas. Community volunteers to collaborate with City of Austin and nonprofits to receive wholesale or discounted prices on materials. Community members and community gardens could learn from local organizations such as Native Plant Society of Texas to propogate native plants and save costs. Assumes labor by volunteers with permission from City of Austin property owners.
Native Grass Live Root Bunch	50	EA	$ 20.00	$ 1,000.00	Bunches of live roots of native grasses.
Shrub/Cacti	30	EA	$ 20.00	$ 600.00	1 Gal. containers of native cactii
Native Perennials	200	EA	$ 10.00	$ 2,000.00	4" pot of native plants planted at trail heads
Vine	30	EA	$ 15.00	$ 450.00	4" pot native vine to be planted along fences or vertical elements
Mulch	130	CY	$ 40.00	$ 5,200.00	Organic, shredded hardwood mulch for trees and display planting areas.
Planting Bed Soil	100	CY	$ 65.00	$ 6,500.00	Organic topsoil from Organics by Gosh or similar to add to planting areas and tree pits.
Subtotal Planting				$ 15,750.00	

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Opinion of Probable Costs - Area 1 - Tier 2

Item	Quantity	Unit	Unit Cost	Extension	Comments
Bonded Hardwood Mulch Loop Trail				**$ 82,929.88**	
At Menchaca Road Trailhead				$ 29,605.11	1/8 mile loop
General Conditions					
Mobilization	1	LS	5%	$ 1,357.65	5% of Project Subtotal
Stabilized Construction Access	30	SY	$ 15.00	$ 450.00	
SWPPP maintenance	3	Month	$ 8.00	$ 24.00	
Safety and PPE	1	LS	$ 500.00	$ 500.00	
Job Site Supervision		WK	$ 100.00	$ -	projected job duration in weeks
Job Site Fencing and Gate		LF	$ 3.80	$ -	Perimeter only
Bond		LS	0.15%	$ 40.73	0.15% of Project Subtotal
Insurance		LS	2%	$ 543.06	2% of Project Subtotal
Fencing Screen	200	LF	$ 2.00	$ 400.00	
Fence Sand Bags	20	EA	$ 5.50	$ 110.00	1 per 10 LF
Tree Protection Fencing					
Temporary Chainlink fence	200	LF	$ 3.00	$ 600.00	5' ht. per details, with sandbags for stability
Arborist/Forester consultation	3	Month	$ 125.00	$ 375.00	
Hardscape					
Bonded Hardwood Mulch	1,980	SF	$ 12.50	$ 24,750.00	6ft wide hardwood mulch with binder
Grading /Drainage					
Site Grading	147	SY	$ 3.10	$ 454.67	Grading for accessibility
At Utility Corridor				$ 53,324.77	1/4 mile loop
General Conditions					
Mobilization	1	LS	5%	$ 1,357.65	5% of Project Subtotal
Stabilized Construction Access	30	SY	$ 15.00	$ 450.00	
SWPPP maintenance	3	Month	$ 8.00	$ 24.00	
Safety and PPE	1	LS	$ 500.00	$ 500.00	
Job Site Supervision		WK	$ 100.00	$ -	projected job duration in weeks
Job Site Fencing and Gate		LF	$ 3.80	$ -	Perimeter only
Bond		LS	0.15%	$ 40.73	0.15% of Project Subtotal
Insurance		LS	2%	$ 543.06	2% of Project Subtotal
Hardscape					
Bonded Hardwood Mulch	3,960	SF	$ 12.50	$ 49,500.00	6ft wide hardwood mulch with binder
Grading /Drainage					
Site Grading	293	SY	$ 3.10	$ 909.33	Grading for accessibility
Seating -Accessible, Park				**$ 5,000.00**	
Bench	2	EA	$ 2,500.00	$ 5,000.00	City of Austin PARD benches
Waste Receptables at Trailheads				**$ 15,000.00**	
Litter Receptacles	3	EA	$ 2,500.00	$ 7,500.00	City of Austin PARD standard
Recycling Receptacles	3	EA	$ 2,500.00	$ 7,500.00	City of Austin PARD standard
Community Kiosk				**$ 1,500.00**	
Message Board	1	EA	$ 1,000.00	$ 1,500.00	4ftx6ft wood frame message board with roof
Weather Warning Signage				**$ 1,800.00**	
Metal Post Sign	3	EA	$ 600.00	$ 1,800.00	Galvanized aluminum post set in concrete, reflective aluminum sign
Geology Interpretive Sign				**$ 1,000.00**	
Metal Sign	1	EA	$ 1,000.00	$ 1,000.00	Galvanized aluminum post set in concrete, reflective aluminum sign
Wildflower Meadow				**$ 98,786.11**	
At Utility Corridor					Can be done in phases
Wildflower Hydroseed	159,000	SF	$ 0.50	$ 79,500.00	
Reclaimed Branch Berm				**$ -**	
Branches 3-inch Diameter		LS	$ -	$ -	
Rock Berm				**$ 833.33**	
9-12-inch Rock	42	CY	$ 20.00	$ 833.33	Rock berm 1'-6" height max

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Opinion of Probable Costs - area 1 - tier 3

Bike Lanes				**$ 10,600.00**	
Jentsch Court					Extension of Jones Road bike lanes east across Menchaca to neighborhood trailhead
Striping	530	LF	$ 20.00	$ 10,600.00	City of Austin standard
Flexible Delineator	35	EA	$ 40.00	$ 1,413.33	Flexible Delineator between bike lane and vehicular lane spaced 15ft o.c.
Lansing Drive					Extension of Jones Road bike lanes east across Menchaca to neighborhood trailhead
Striping	3,400	LF	$ 20.00	$ 68,000.00	City of Austin standard
Flexible Delineator	227	EA	$ 40.00	$ 9,066.67	Flexible Delineator between bike lane and vehicular lane spaced 15ft o.c.
High Water Route				**$ 26,000.00**	
Sidewalk on Menchaca to Kings Hwy					Extension of Jones Road bike lanes east across Menchaca to neighborhood trailhead
Thermoplastic Pavement Markings	1,300	LF	$ 20.00	$ 26,000.00	High traffic pavement markings for wayfinding to indicate high water route
Green Infrastructure				**$ 280,355.46**	
Stormwater Quality Feature adjacent to Stony Point Apartments				$ 280,355.46	Large stormwater quality feature intercepting stormwater outfall into creek
General Conditions				**$ 51,331.76**	Section to be used when Asakura Robinson is the Prime.
Mobilization		LS	5%	$ 13,082.35	5% of Project Subtotal
Stabilized Construction Access	300	SY	$ 15.00	$ 4,500.00	
SWPPP maintenance	8	Month	$ 8.00	$ 64.00	
Safety and PPE	8	LS	$ 500.00	$ 4,000.00	
Job Site Supervision	96	WK	$ 100.00	$ 9,600.00	projected job duration in weeks
Job Site Fencing and Gate	3,000	LF	$ 3.80	$ 11,400.00	Perimeter only
Bond		LS	0.15%	$ 392.47	0.15% of Project Subtotal
Insurance		LS	2%	$ 5,232.94	2% of Project Subtotal
Fencing Screen	1,200	LF	$ 2.00	$ 2,400.00	
Fence Sand Bags	120	EA	$ 5.50	$ 660.00	1 per 10 LF
Tree Protection Fencing				$ 4,000.00	
Temporary Chainlink fence	1,000	LF	$ 3.00	$ 3,000.00	5' ht. per details, with sandbags for stability
Arborist/Forester consultation	8	Month	$ 125.00	$ 1,000.00	
Demolition				$ 10,105.19	
Tree Removal	**2**	EA	$ 10.00	$ 20.00	Invasive Species only
Clearing and grubbing of vegetation	**14,000**	SF	$ 0.35	$ 4,900.00	
Soil Removal	**519**	CY	$ 10.00	$ 5,185.19	
Grading /Drainage				$ 88,881.48	
Site Grading	**14,000**	SF	$ 3.10	$ 43,400.00	
Landscape Area Drains	2	EA	$ 2,000.00	$ 4,000.00	Civil to provide connections
Bioinfiltration Media	519	CY	$ 80.00	$ 41,481.48	
Planting				**$ 126,037.04**	
Ornamental Grass	3,780	EA	$ 25.00	$ 94,500.00	1 Gal. mix of grasses and perennials- must meet ECM diversity requirements
Mulch	130	CY	$ 65.00	$ 8,425.93	3"
Top Soil Fine Grading	156	CY	$ 65.00	$ 10,111.11	4"
Irrigation	4	ZN	$ 2,500.00	$ 10,000.00	
Irrigation Meter	1	EA	$ 3,000.00	$ 3,000.00	2" meter

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Opinion of Probable Costs - area 2 - tier 1

IDEA	QUANTITY	UNIT	UNIT COST	SUBTOTAL	Comments
Invasive Species Removal					Costs for this phase could be further reduced by partnering with City of Austin or a local non profit for use of tools rather than purchasing or renting equipment. Costs in this section indicate approximate cost to purchase equipment. Tier 1 invasive species removal to involve a group of community volunteers with approval by the City of Austin property owner.
Weed Wrench	3	EA	$ 189.00	$ 567.00	
Loppers	4	EA	$ 50.00	$ 200.00	
Mattock	2	EA	$ 50.00	$ 100.00	
Shovel - Round Point	4	EA	$ 50.00	$ 200.00	
Aborist Hand Saw	2	EA	$ 75.00	$ 150.00	
Tree Paint	10	EA	$ 6.00	$ 60.00	
Tree Girdler Tool	4	EA	$ 222.00	$ 888.00	
General Conditions Sub-Total				**$ 2,165.00**	
Seating - Informal, Wilderness					May be boulders or logs adjacent to nature trail where uses can rest. Provide informal seating every 1/8-mile for broader access. Assumes labor by volunteers with permission from City of Austin property owners.
Boulders - Existing	NA	EA	$ -	$ -	Community members may not move existing boulders, but may take advantage of them by locating a natural trail nearby so long as the area is outside of the critical environmental feature setback zone.
Logs - Existing		EA	$ -	$ -	Logs may be cut into 4-feet in length or smaller and placed near the trail. No native trees may be cut by community members to create logs.
Log Stumps - Invasive Species Removal	30	EA	$ -	$ -	Large trees removed in Tier 2 efforts are reclaimed for stumps at outdoor classrooms and music grove.
Seating Sub-Total				**$ -**	
Nature Trail - 1 mile					Assumes labor by volunteers with permission from City of Austin property owners.
Mulch - Wholesale	293	CY	$ 40.00	$ 11,733.33	First grind mulch placed 3-inches thick on a 6ft wide nature trail. Collaborate with City of Austin property owner or non-profit for reduced cost.
Wood Chipper Rental		DAY	$ 400.00	$ -	Cost may be reduced by partnering with local non-profit such as Austin Parks Foundation, or City of Austin property owners PARD or WPD
Mulch - Invasive Species		CY	$ -	$ -	Use branches 6-inches or larger. Ensure no branches or seeds are placed into the wood chipper. Grind the mulch twice. Mulch from invasive species removal may be used to reduce cost of retail mulch.
Nature Trail - 1 mile Sub-Total				$ 11,733.33	
Mountain Bike Trail - 1 mile					Assumes labor by volunteers with permission from City of Austin property owners.
Shovel - Round Point	4	EA	$ 50.00	$ 200.00	No digging over 6-inches to level the trail.
Loppers	4	EA	$ 50.00	$ 200.00	For pruning branches 2-inch diameter in size or less adjacent to the trail. Blade must be washed in bleach between every new tree.
Aborist Hand Saw	2	EA	$ 75.00	$ 150.00	For pruning branches 2-inch diameter in size or less adjacent to the trail. Blade must be washed in bleach between every new tree.
Tree Paint	10	EA	$ 6.00	$ 60.00	All pruning areas must be covered in tree paint.
Natural Trail - 1 mile Sub-Total				$ 610.00	
Pollinator Nesting Boxes					Assumes labor by volunteers with permission from City of Austin property owners. Quantities of materials will be sufficient for up to 6 nesting boxes.
Wood Boards	6	EA	$ 10.00	$ 60.00	2x4x8 Rough Sawn Atlantic Cedar - untreated
Fasteners	3	EA	$ 10.00	$ 30.00	3-inch Wood Screws
4x4 Wood Post	1	EA	$ 24.00	$ 24.00	4x4x8 Rough Sawn Atlantic Cedar - untreated cut to 3ft length
Subtotal Planting				$ 126.00	
CREEK RESTORATION - TREES					Tier 1 Planting for Area 2 tree plantings include small 5 gallon trees sourced from Tree Folks NeighborWoods Program or a similar non-profit source. Community members and community gardens could also partner with non profits to propogate native trees for the greenway. Assumes labor by volunteers with permission from City of Austin property owners.
Native Shade Tree	60	jmp Su	$ -	$ -	Tree Folks NeighborWoods Program
Native Ornamental Tree	60	EA	$ -	$ -	Tree Folks NeighborWoods Program
Mulch	3	CY	$ 40.00	$ 133.33	Organic, shredded hardwood mulch for trees and display planting areas. To reduce cost, community members may apply for a grant from Austin Parks Foundation.
Planting Bed Soil	3	CY	$ 65.00	$ 216.67	Organic topsoil from Organics by Gosh or similar to add to planting areas and tree pits.
Subtotal Planting				$ 350.00	
CREEK RESTORATION - PLANTS					Tier 1 Planting for Area 1 includes accent planting at trailheads and restoration planting with native trees, grasses and perennials at invasive species removal areas. Community volunteers to collaborate with City of Austin and nonprofits to receive wholesale or discounted prices on materials. Community members and community gardens could learn from local organizations such as Native Plant Society of Texas to propogate native plants and save costs. Assumes labor by volunteers with permission from City of Austin property owners.
Native Grass Live Root Bunch	50	EA	$ 20.00	$ 1,000.00	Bunches of live roots of native grasses.
Shrub/Cacti	30	EA	$ 20.00	$ 600.00	1 Gal. containers of native cactii
Native Perennials	200	EA	$ 10.00	$ 2,000.00	4" pot of native plants planted at trail heads
Vine	30	EA	$ 15.00	$ 450.00	4" pot native vine to be planted along fences or vertical elements
Mulch	130	CY	$ 40.00	$ 5,200.00	Organic, shredded hardwood mulch for trees and display planting areas. To reduce cost, community members may apply for a grant from Austin Parks Foundation.
Planting Bed Soil	100	CY	$ 65.00	$ 6,500.00	Organic topsoil from Organics by Gosh or similar to add to planting areas and tree pits.
Subtotal Planting				$ 15,750.00	

Opinion of Probable Costs - Area 2 - Tier 2

Item	Quantity	Unit	Unit Cost	Extension	Comments
Bonded Hardwood Mulch Loop Trail				**$ 29,605.11**	
At Meadow Creek Trailhead				$ 29,605.11	1/8 mile loop
General Conditions					
Mobilization	1	LS	5%	$ 1,357.65	5% of Project Subtotal
Stabilized Construction Access	30	SY	$ 15.00	$ 450.00	
SWPPP maintenance	3	Month	$ 8.00	$ 24.00	
Safety and PPE	1	LS	$ 500.00	$ 500.00	
Job Site Supervision		WK	$ 100.00	$ -	projected job duration in weeks
Job Site Fencing and Gate		LF	$ 3.80	$ -	Perimeter only
Bond		LS	0.15%	$ 40.73	0.15% of Project Subtotal
Insurance		LS	2%	$ 543.06	2% of Project Subtotal
Fencing Screen	200	LF	$ 2.00	$ 400.00	
Fence Sand Bags	20	EA	$ 5.50	$ 110.00	1 per 10 LF
Tree Protection Fencing					
Temporary Chainlink fence	200	LF	$ 3.00	$ 600.00	5' ht. per details, with sandbags for stability
Arborist/Forester consultation	3	Month	$ 125.00	$ 375.00	
Hardscape					
Bonded Hardwood Mulch	1,980	SF	$ 12.50	$ 24,750.00	6ft wide hardwood mulch with binder
Grading /Drainage					
Site Grading	147	SY	$ 3.10	$ 454.67	Grading for accessibility
Food Forest				**$ 14,000.00**	
Meadow Creek Trailhead on Meadow Creek Circle	1	EA	$ 7,000.00	$ 7,000.00	
Meadow Creek Trailhead on Radam Circle	1	EA	$ 7,000.00	$ 7,000.00	
Seating - Informal, Wilderness				**$ 8,000.00**	
Boulders	20	EA	$ 400.00	$ 8,000.00	4x6 Limestone boulders. Refer to materials list for additional requirements.
Waste Receptables at Trailheads				**$ 25,000.00**	
Litter Receptacles	5	EA	$ 2,500.00	$ 12,500.00	City of Austin PARD standard
Recycling Receptacles	5	EA	$ 2,500.00	$ 12,500.00	City of Austin PARD standard
Community Kiosk				**$ 1,500.00**	
Message Board	2	EA	$ 1,000.00	$ 1,500.00	4ftx6ft wood frame message board with roof
Weather Warning Signage				**$ 2,400.00**	
Metal Post Sign	4	EA	$ 600.00	$ 2,400.00	Galvanized aluminum post set in concrete, reflective aluminum sign
Geology Interpretive Sign				**$ 4,000.00**	
Metal Sign	4	EA	$ 1,000.00	$ 4,000.00	Galvanized aluminum post set in concrete, reflective aluminum sign
Wildflower Meadow				**$ 105,620.37**	
At Meadow Creek Trailhead				$ 18,638.89	
Soil Removal	278	CY	$ 10.00	$ 2,777.78	
Site Grading	278	SY	$ 3.10	$ 861.11	
Wildflower Hydroseed	30,000	SF	$ 0.50	$ 15,000.00	
At Emerald Wood Floodplain Buyouts				$ 46,597.22	May be done in phases by each lot.
Soil Removal	694	CY	$ 10.00	$ 6,944.44	
Site Grading	694	SY	$ 3.10	$ 2,152.78	
Wildflower Hydroseed	75,000	SF	$ 0.50	$ 37,500.00	
At Emerald Wood Floodplain Buyouts				$ 40,384.26	May be done in phases.
Soil Removal	602	CY	$ 10.00	$ 6,018.52	
Reclaimed Branch Berm				**$ -**	
Branches 3-inch Diameter		LS	$ -	$ -	
Rock Berm				**$ 833.33**	
9-12-inch Rock	42	CY	$ 20.00	$ 833.33	Rock berm 1'-6" height max

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Opinion of Probable Costs - Area 2 - Tier 3

Bike Lanes				**$ 99,733.33**	
Radam Circle				$ 27,200.00	
Striping	1,200	LF	$ 20.00	$ 24,000.00	City of Austin standard
Flexible Delineator	80	EA	$ 40.00	$ 3,200.00	Flexible Delineator between bike lane and vehicular lane spaced 15ft o.c.
Meadow Creek Circle Drive				$ 15,866.67	
Striping	700	LF	$ 20.00	$ 14,000.00	City of Austin standard
Flexible Delineator	47	EA	$ 40.00	$ 1,866.67	Flexible Delineator between bike lane and vehicular lane spaced 15ft o.c.
Emerald Wood Drive				$ 56,666.67	
Striping	2,500	LF	$ 20.00	$ 50,000.00	City of Austin standard
Flexible Delineator	167	EA	$ 40.00	$ 6,666.67	Flexible Delineator between bike lane and vehicular lane spaced 15ft o.c.
High Water Route				**$ 88,000.00**	
Emerald Wood Drive					
Thermoplastic Pavement Markings	2,500	LF	$ 20.00	$ 50,000.00	High traffic pavement markings for wayfinding to indicate high water route
Radam Circle					
Thermoplastic Pavement Markings	1,200	LF	$ 20.00	$ 24,000.00	High traffic pavement markings for wayfinding to indicate high water route
Meadow Creek Circle Drive					
Thermoplastic Pavement Markings	700	LF	$ 20.00	$ 14,000.00	High traffic pavement markings for wayfinding to indicate high water route
Green Infrastructure				**$ 149,610.28**	
Rain Garden on Meadow Creek Circle Buyouts				$ 149,610.28	Series of raingardens intercepting stormwater from MeadowCreek Drive before entering the storwamter inlet and creek
General Conditions				**$ 51,331.76**	Section to be used when Asakura Robinson is the Prime.
Mobilization		LS	5%	$ 13,082.35	5% of Project Subtotal
Stabilized Construction Access	300	SY	$ 15.00	$ 4,500.00	
SWPPP maintenance	8	Month	$ 8.00	$ 64.00	
Safety and PPE	8	LS	$ 500.00	$ 4,000.00	
Job Site Supervision	96	WK	$ 100.00	$ 9,600.00	projected job duration in weeks
Job Site Fencing and Gate	3,000	LF	$ 3.80	$ 11,400.00	Perimeter only
Bond		LS	0.15%	$ 392.47	0.15% of Project Subtotal
Insurance		LS	2%	$ 5,232.94	2% of Project Subtotal
Fencing Screen	1,200	LF	$ 2.00	$ 2,400.00	
Fence Sand Bags	120	EA	$ 5.50	$ 660.00	1 per 10 LF
Tree Protection Fencing				$ 4,000.00	
Temporary Chainlink fence	1,000	LF	$ 3.00	$ 3,000.00	5' ht. per details, with sandbags for stability
Arborist/Forester consultation	8	Month	$ 125.00	$ 1,000.00	
Demolition				$ 3,765.93	
Tree Removal	**2**	EA	$ 10.00	$ 20.00	Invasive Species only
Clearing and grubbing of vegetation	**5,200**	SF	$ 0.35	$ 1,820.00	
Soil Removal	**193**	CY	$ 10.00	$ 1,925.93	
Grading /Drainage				$ 35,527.41	
Site Grading	**5,200**	SF	$ 3.10	$ 16,120.00	
Landscape Area Drains	2	EA	$ 2,000.00	$ 4,000.00	Civil to provide connections
Bioinfiltration Media	193	CY	$ 80.00	$ 15,407.41	
Planting				**$ 54,985.19**	
Ornamental Grass	1,404	EA	$ 25.00	$ 35,100.00	1 Gal. mix of grasses and perennials- must meet ECM diversity requirements
Mulch	48	CY	$ 65.00	$ 3,129.63	3"
Top Soil Fine Grading	58	CY	$ 65.00	$ 3,755.56	4"
Irrigation	4	ZN	$ 2,500.00	$ 10,000.00	
Irrigation Meter	1	EA	$ 3,000.00	$ 3,000.00	2" meter
Stormwater Quality Feature on Radam Circle Buyouts				$ 133,031.39	Large stormwater quality feature intercepting stormwater outfall that current lets out into Williamson Creek.
General Conditions				**$ 54,234.76**	Section to be used when Asakura Robinson is the Prime.
Stabilized Construction Access	300	SY	$ 15.00	$ 4,500.00	
SWPPP maintenance	8	Month	$ 8.00	$ 64.00	
Safety and PPE	8	LS	$ 500.00	$ 4,000.00	
Job Site Supervision	96	WK	$ 100.00	$ 9,600.00	projected job duration in weeks
Job Site Fencing and Gate	3,000	LF	$ 3.80	$ 11,400.00	Perimeter only
Bond		LS	0.15%	$ 392.47	0.15% of Project Subtotal
Insurance		LS	2%	$ 5,232.94	2% of Project Subtotal
Fencing Screen	1,200	LF	$ 2.00	$ 2,400.00	
Fence Sand Bags	120	EA	$ 5.50	$ 660.00	1 per 10 LF
Tree Protection Fencing				$ 4,000.00	
Temporary Chainlink fence	1,000	LF	$ 3.00	$ 3,000.00	5' ht. per details, with sandbags for stability
Arborist/Forester consultation	8	Month	$ 125.00	$ 1,000.00	
Demolition				$ 4,151.48	
Storm Inlet Removal	1	EA	$ 500.00	$ 500.00	
Small Drain/Inlet Removal	1	EA	$ 250.00	$ 250.00	
Manhole Removal	1	EA	$ 500.00	$ 500.00	
Tree Removal	**2**	EA	$ 10.00	$ 20.00	Invasive Species only
Clearing and grubbing of vegetation	**4,000**	SF	$ 0.35	$ 1,400.00	
Soil Removal	**148**	CY	$ 10.00	$ 1,481.48	
Grading /Drainage				$ 28,251.85	
Site Grading	**4,000**	SF	$ 3.10	$ 12,400.00	
Landscape Area Drains	2	EA	$ 2,000.00	$ 4,000.00	Civil to provide connections
Bioinfiltration Media	148	CY	$ 80.00	$ 11,851.85	
Planting				**$ 45,296.30**	
Ornamental Grass	1,080	EA	$ 25.00	$ 27,000.00	1 Gal. mix of grasses and perennials- must meet ECM diversity requirements
Mulch	37	CY	$ 65.00	$ 2,407.41	3"
Top Soil Fine Grading	44	CY	$ 65.00	$ 2,888.89	4"
Irrigation	4	ZN	$ 2,500.00	$ 10,000.00	
Irrigation Meter	1	EA	$ 3,000.00	$ 3,000.00	2" meter

Opinion of Probable Costs - Area 3 - Tier 1

IDEA	QUANTITY	UNIT	UNIT COST	SUBTOTAL	Comments
Invasive Species Removal				**$ 2,165.00**	Costs for this phase could be further reduced by partnering with City of Austin or a local non profit for use of tools rather than purchasing or renting equipment. Costs in this section indicate approximate cost to purchase equipment. Tier 1 invasive species removal to involve a group of community volunteers with approval by the City of Austin property owner.
Weed Wrench	3	EA	$ 189.00	$ 567.00	
Loppers	4	EA	$ 50.00	$ 200.00	
Mattock	2	EA	$ 50.00	$ 100.00	
Shovel - Round Point	4	EA	$ 50.00	$ 200.00	
Aborist Hand Saw	2	EA	$ 75.00	$ 150.00	
Tree Paint	10	EA	$ 6.00	$ 60.00	
Tree Girdler Tool	4	EA	$ 222.00	$ 888.00	
Seating - Informal, Wilderness				**$ -**	May be boulders or logs adjacent to nature trail where uses can rest. Provide informal seating every 1/8-mile for broader access. Assumes labor by volunteers with permission from City of Austin property owners.
Boulders - Existing	NA	EA	$ -	$ -	Community members may not move existing boulders, but may take advantage of them by locating a natural trail nearby so long as the area is outside of the critical environmental feature setback zone.
Logs - Existing		EA	$ -	$ -	Logs may be cut into 4-feet in length or smaller and placed near the trail. No native trees may be cut by community members to create logs.
Log Stumps - Invasive Species Removal	30	EA	$ -	$ -	Large trees removed in Tier 2 efforts are reclaimed for stumps at outdoor classrooms and music grove.
Nature Trail - 2 miles				**$ 23,466.67**	Assumes labor by volunteers with permission from City of Austin property owners.
Mulch - Wholesale	587	CY	$ 40.00	$ 23,466.67	First grind mulch placed 3-inches thick on a 6ft wide nature trail. Collaborate with City of Austin property owner or non-profit for reduced cost.
Wood Chipper Rental		DAY	$ 400.00	$ -	Cost may be reduced by partnering with local non-profit such as Austin Parks Foundation, or City of Austin property owners PARD or WPD
Mulch - Invasive Species		CY	$ -	$ -	Use branches 6-inches or larger. Ensure no branches or seeds are placed into the wood chipper. Grind the mulch twice. Mulch from invasive species removal may be used to reduce cost of retail mulch.
Mountain Bike Trail - 1 mile				**$ 610.00**	Assumes labor by volunteers with permission from City of Austin property owners.
Shovel - Round Point	4	EA	$ 50.00	$ 200.00	No digging over 6-inches to level the trail.
Loppers	4	EA	$ 50.00	$ 200.00	For pruning branches 2-inch diameter in size or less adjacent to the trail. Blade must be washed in bleach between every new tree.
Aborist Hand Saw	2	EA	$ 75.00	$ 150.00	For pruning branches 2-inch diameter in size or less adjacent to the trail. Blade must be washed in bleach between every new tree.
Tree Paint	10	EA	$ 6.00	$ 60.00	All pruning areas must be covered in tree paint.
Pollinator Nesting Boxes				**$ 126.00**	Assumes labor by volunteers with permission from City of Austin property owners. Quantities of materials will be sufficient for up to 6 nesting boxes.
Wood Boards	6	EA	$ 10.00	$ 60.00	2x4x8 Rough Sawn Atlantic Cedar - untreated
Fasteners	3	EA	$ 10.00	$ 30.00	3-inch Wood Screws
Dried bamboo	0	LS	$ -	$ -	Harvest from invasive species removal
Drill Bit	1	EA	$ 12.00	$ 12.00	3/8 Drill Bit
4x4 Wood Post	1	EA	$ 24.00	$ 24.00	4x4x8 Rough Sawn Atlantic Cedar - untreated cut to 3ft length
CREEK RESTORATION - TREES				**$ 350.00**	Tier 1 Planting for Area 2 tree plantings include small 5 gallon trees sourced from Tree Folks NeighborWoods Program or a similar non-profit source. Community members and community gardens could also partner with non profits to propogate native trees for the greenway. Assumes labor by volunteers with permission from City of Austin property owners.
Mulch	3	CY	$ 40.00	$ 133.33	Organic, shredded hardwood mulch for trees and display planting areas. To reduce cost, community members may apply for a grant from Austin Parks Foundation.
Planting Bed Soil	3	CY	$ 65.00	$ 216.67	Organic topsoil from Organics by Gosh or similar to add to planting areas and tree pits.
CREEK RESTORATION - PLANTS				**$ 15,750.00**	Tier 1 Planting for Area 1 includes accent planting at trailheads and restoration planting with native trees, grasses and perennials at invasive species removal areas. Community volunteers to collaborate with City of Austin and nonprofits to receive wholesale or discounted prices on materials. Community members and community gardens could learn from local organizations such as Native Plant Society of Texas to propogate native plants and save costs. Assumes labor by volunteers with permission from City of Austin property owners.
Native Grass Live Root Bunch	50	EA	$ 20.00	$ 1,000.00	Bunches of live roots of native grasses.
Shrub/Cacti	30	EA	$ 20.00	$ 600.00	1 Gal. containers of native cactii
Native Perennials	200	EA	$ 10.00	$ 2,000.00	4" pot of native plants planted at trail heads
Vine	30	EA	$ 15.00	$ 450.00	4" pot native vine to be planted along fences or vertical elements
Mulch	130	CY	$ 40.00	$ 5,200.00	Organic, shredded hardwood mulch for trees and display planting areas. To reduce cost, community members may apply for a grant from Austin Parks Foundation.
Planting Bed Soil	100	CY	$ 65.00	$ 6,500.00	Organic topsoil from Organics by Gosh or similar to add to planting areas and tree pits.

DISCLAIMER ON THE OPINION OF PROBABLE CONSTRUCTION COST

This opinion of probable construction cost is made on the basis of Asakura Robinson's experience and qualifications and represents Asakura Robinson's best judgment as an experienced and qualified professional generally familiar with the industry. However, since Asakura Robinson has no control over the cost of labor, materials, equipment, or services furnished by others, or over the Contractor's methods of determining prices, or over competitive bidding or market conditions, Asakura Robinson cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from opinions of probable construction cost as prepared by Asakura Robinson.

Opinion of Probable Costs - Area 3 - Tier 2

Item	Quantity	Unit	Unit Cost	Extension	Comments
Bonded Hardwood Mulch Loop Trail				**$ 29,605.11**	
At Orland Trailhead				$ 29,605.11	1/8 mile loop
General Conditions					
Mobilization	1	LS	5%	$ 1,357.65	5% of Project Subtotal
Stabilized Construction Access	30	SY	$ 15.00	$ 450.00	
SWPPP maintenance	3	Month	$ 8.00	$ 24.00	
Safety and PPE	1	LS	$ 500.00	$ 500.00	
Job Site Supervision		WK	$ 100.00	$ -	projected job duration in weeks
Job Site Fencing and Gate		LF	$ 3.80	$ -	Perimeter only
Bond		LS	0.15%	$ 40.73	0.15% of Project Subtotal
Insurance		LS	2%	$ 543.06	2% of Project Subtotal
Fencing Screen	200	LF	$ 2.00	$ 400.00	
Fence Sand Bags	20	EA	$ 5.50	$ 110.00	1 per 10 LF
Tree Protection Fencing					
Temporary Chainlink fence	200	LF	$ 3.00	$ 600.00	5' ht. per details, with sandbags for stability
Arborist/Forester consultation	3	Month	$ 125.00	$ 375.00	
Hardscape					
Bonded Hardwood Mulch	1,980	SF	$ 12.50	$ 24,750.00	6ft wide hardwood mulch with binder
Grading /Drainage					
Site Grading	147	SY	$ 3.10	$ 454.67	Grading for accessibility
Food Forest				**$ 14,000.00**	
Heartwood Community Garden	1	EA	$ 7,000.00	$ 7,000.00	
Orland Trailhead	1	EA	$ 7,000.00	$ 7,000.00	
Seating - Informal, Wilderness				**$ 16,000.00**	
Boulders	40	EA	$ 400.00	$ 16,000.00	4x6 Limestone boulders. Refer to materials list for additional requirements.
Waste Receptables at Trailheads				**$ 30,000.00**	
Litter Receptacles	6	EA	$ 2,500.00	$ 15,000.00	City of Austin PARD standard
Recycling Receptacles	6	EA	$ 2,500.00	$ 15,000.00	City of Austin PARD standard
Community Kiosk				**$ 1,500.00**	
Message Board	2	EA	$ 1,000.00	$ 1,500.00	4ftx6ft wood frame message board with roof
Weather Warning Signage				**$ 3,600.00**	
Metal Post Sign	6	EA	$ 600.00	$ 3,600.00	Galvanized aluminum post set in concrete, reflective aluminum sign
Geology Interpretive Sign				**$ 4,000.00**	
Metal Sign	4	EA	$ 1,000.00	$ 4,000.00	Galvanized aluminum post set in concrete, reflective aluminum sign
Wildflower Meadow				**$ 71,759.72**	
At Heartwood Drive Floodplain Buyouts				$ 71,759.72	May be done in phases by each lot.
Soil Removal	1,069	CY	$ 10.00	$ 10,694.44	
Site Grading	1,069	SY	$ 3.10	$ 3,315.28	
Wildflower Hydroseed	115,500	SF	$ 0.50	$ 57,750.00	
Reclaimed Branch Berm				**$ -**	
Branches 3-inch Diameter		LS	$ -	$ -	
Rock Berm				**$ 5,000.00**	
9-12-inch Rock	250	CY	$ 20.00	$ 5,000.00	Rock berm 1'-6" height max

DISCLAIMER ON THE OPINION OF PROBABLE CONSTRUCTION COST

generally familiar with the industry. However, since Asakura Robinson has no control over the cost of labor, materials, equipment, or services furnished by others, or over the Contractor's methods of determining prices, or over competitive bidding or market conditions, Asakura Robinson cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from opinions of probable construction cost as prepared by Asakura Robinson.

Opinion of Probable Costs - area 3 - tier 3

Bike Lanes				**$ 74,800.00**	
Ramble Lane				$ 56,666.67	
Striping	2,500	LF	$ 20.00	$ 50,000.00	City of Austin standard
Flexible Delineator	167	EA	$ 40.00	$ 6,666.67	Flexible Delineator between bike lane and vehicular lane spaced 15ft o.c.
Meadow Creek Circle Drive				$ 18,133.33	
Striping	800	LF	$ 20.00	$ 16,000.00	City of Austin standard
Flexible Delineator	53	EA	$ 40.00	$ 2,133.33	Flexible Delineator between bike lane and vehicular lane spaced 15ft o.c.
High Water Route				**$ 50,000.00**	
South 1st Street					
Thermoplastic Pavement Markings	2,500	LF	$ 20.00	$ 50,000.00	High traffic pavement markings for wayfinding to indicate high water route
Boardwalk				**$ 120,000.00**	
Orland Trailhead					
Wood Boardwalk with Steel Structure	400	LF	$ 300.00	$ 120,000.00	Boardwalk with 42-inch guardrails to create ADA route to nature trails and creek
Green Infrastructure				**$ 613,961.85**	
Rain Garden on Heartwood Drive Buyouts				$ 94,637.87	Series of raingardens intercepting stormwater from MeadowCreek Drive before entering the storwamter inlet and creek
General Conditions				**$ 51,331.76**	Section to be used when Asakura Robinson is the Prime.
Mobilization		LS	5%	$ 13,082.35	5% of Project Subtotal
Stabilized Construction Access	300	SY	$ 15.00	$ 4,500.00	
SWPPP maintenance	8	Month	$ 8.00	$ 64.00	
Safety and PPE	8	LS	$ 500.00	$ 4,000.00	
Job Site Supervision	96	WK	$ 100.00	$ 9,600.00	projected job duration in weeks
Job Site Fencing and Gate	3,000	LF	$ 3.80	$ 11,400.00	Perimeter only
Bond		LS	0.15%	$ 392.47	0.15% of Project Subtotal
Insurance		LS	2%	$ 5,232.94	2% of Project Subtotal
Fencing Screen	1,200	LF	$ 2.00	$ 2,400.00	
Fence Sand Bags	120	EA	$ 5.50	$ 660.00	1 per 10 LF
Tree Protection Fencing				$ 4,000.00	
Temporary Chainlink fence	1,000	LF	$ 3.00	$ 3,000.00	5' ht. per details, with sandbags for stability
Arborist/Forester consultation	8	Month	$ 125.00	$ 1,000.00	
Demolition				$ 1,100.56	
Tree Removal	**2**	EA	$ 10.00	$ 20.00	Invasive Species only
Clearing and grubbing of vegetation	**1,500**	SF	$ 0.35	$ 525.00	
Soil Removal	**56**	CY	$ 10.00	$ 555.56	
Grading /Drainage				$ 13,094.44	
Site Grading	**1,500**	SF	$ 3.10	$ 4,650.00	
Landscape Area Drains	2	EA	$ 2,000.00	$ 4,000.00	Civil to provide connections
Bioinfiltration Media	56	CY	$ 80.00	$ 4,444.44	
Planting				**$ 25,111.11**	
Ornamental Grass	405	EA	$ 25.00	$ 10,125.00	1 Gal. mix of grasses and perennials- must meet ECM diversity requirements
Mulch	14	CY	$ 65.00	$ 902.78	3"
Top Soil Fine Grading	17	CY	$ 65.00	$ 1,083.33	4"
Irrigation	4	ZN	$ 2,500.00	$ 10,000.00	
Irrigation Meter	1	EA	$ 3,000.00	$ 3,000.00	2" meter
Stormwater Quality Feature on Englewood Drive Outfall				$ 519,323.98	Large stormwater quality feature intercepting stormwater outfall that current lets out into Williamson Creek.
General Conditions				**$ 51,331.76**	Section to be used when Asakura Robinson is the Prime.
Mobilization		LS	5%	$ 13,082.35	5% of Project Subtotal
Stabilized Construction Access	300	SY	$ 15.00	$ 4,500.00	
SWPPP maintenance	8	Month	$ 8.00	$ 64.00	
Job Site Fencing and Gate	3,000	LF	$ 3.80	$ 11,400.00	Perimeter only
Bond		LS	0.15%	$ 392.47	0.15% of Project Subtotal
Insurance		LS	2%	$ 5,232.94	2% of Project Subtotal
Fencing Screen	1,200	LF	$ 2.00	$ 2,400.00	
Fence Sand Bags	120	EA	$ 5.50	$ 660.00	1 per 10 LF
Tree Protection Fencing				$ 4,000.00	
Temporary Chainlink fence	1,000	LF	$ 3.00	$ 3,000.00	5' ht. per details, with sandbags for stability
Arborist/Forester consultation	8	Month	$ 125.00	$ 1,000.00	
Demolition				$ 22,881.11	
Storm Inlet Removal	1	EA	$ 500.00	$ 500.00	
Small Drain/Inlet Removal	1	EA	$ 250.00	$ 250.00	
Manhole Removal	1	EA	$ 500.00	$ 500.00	
Tree Removal	**2**	EA	$ 10.00	$ 20.00	Invasive Species only
Clearing and grubbing of vegetation	**30,000**	SF	$ 0.35	$ 10,500.00	
Soil Removal	**1,111**	CY	$ 10.00	$ 11,111.11	
Grading /Drainage				$ 185,888.89	
Site Grading	**30,000**	SF	$ 3.10	$ 93,000.00	
Landscape Area Drains	2	EA	$ 2,000.00	$ 4,000.00	Civil to provide connections
Bioinfiltration Media	1,111	CY	$ 80.00	$ 88,888.89	
Planting				**$ 255,222.22**	
Ornamental Grass	8,100	EA	$ 25.00	$ 202,500.00	1 Gal. mix of grasses and perennials- must meet ECM diversity requirements
Mulch	278	CY	$ 65.00	$ 18,055.56	3"
Top Soil Fine Grading	333	CY	$ 65.00	$ 21,666.67	4"
Irrigation	4	ZN	$ 2,500.00	$ 10,000.00	
Irrigation Meter	1	EA	$ 3,000.00	$ 3,000.00	2" meter

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