

# Green Infrastructure Retrofit:



## Battle Bend Park

Public Meeting: January 30, 2017



# Presenters:

**Lee Sherman**, PE, Watershed Protection Department

**Clayton Ernst**, EIT, Watershed Protection Department

**Darcy Nuffer**, RLA, Watershed Protection Department

**John McKennis**, Parks & Recreation Department

Green Infrastructure Retrofit: Battle Bend Park

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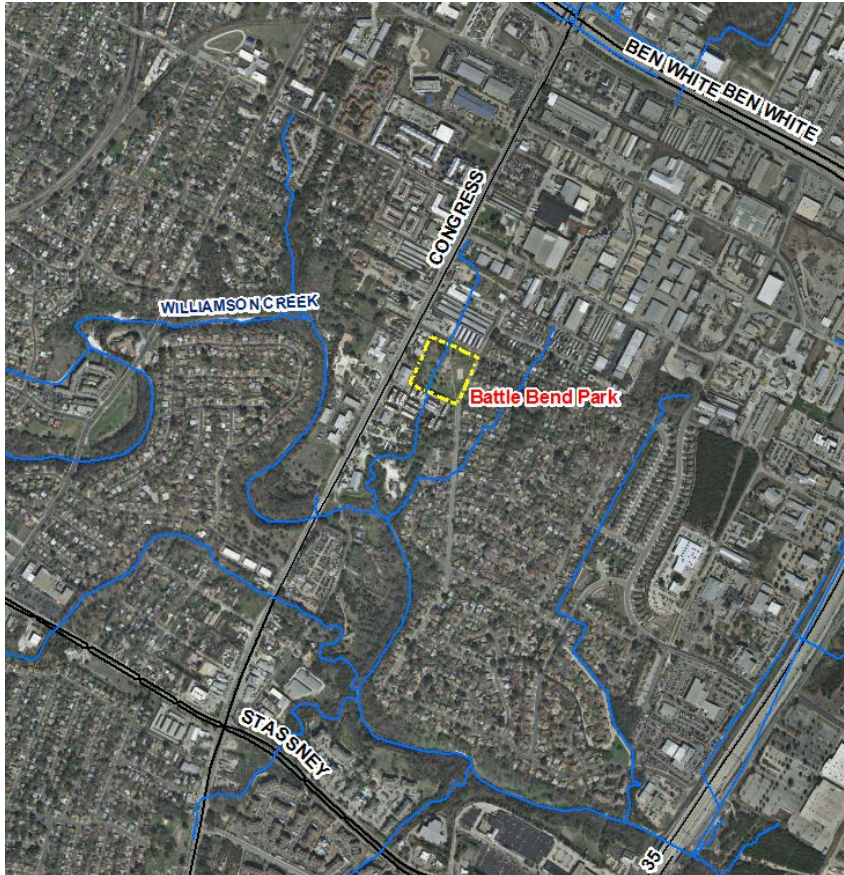
# Agenda



- Summary of previously completed work
- Introduction to this project
  - Project Origin
  - Project Elements
  - Project Schedule and Cost
  - Brief Q&A (*please hold questions until the end*)
- Poster Stations
  - Stations will be staffed by experts in different project themes
    1. Previously completed work
    2. Playing field / water quality control and Trails
    3. Riparian & Ecological Restoration
- Comment Cards
  - You may complete a comment card at any time
  - Include contact information to receive a response



# Battle Bend Park



- Located east of Congress on Sheraton
- Within Williamson Creek Watershed
- Recently Completed Improvements



# Old Gazebo





# New Gazebo





# Old Playground





# New Playground



# Old Basketball Court





# New Basketball Court



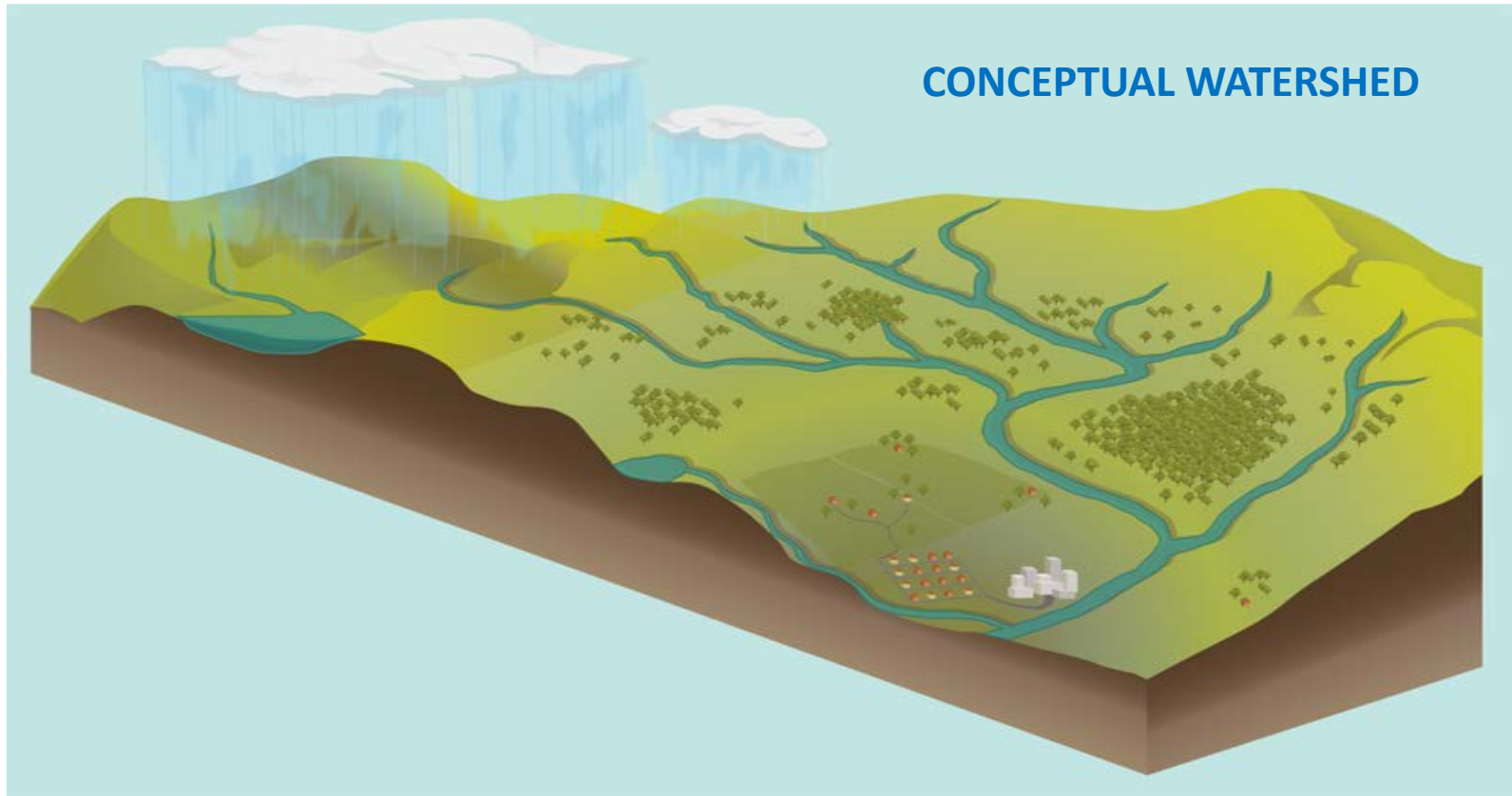


# Proposed Next Phase of Park Improvements



- Joint City of Austin (COA) project
  - Watershed Protection Department (WPD)
  - Parks and Recreation Department (PARD)
- Builds upon recently completed work in the park
  - Adds recreational amenities that would be otherwise cost prohibitive for PARD
  - Increases traffic and community use of historically under-utilized park area
- Opportunity for water quality improvement

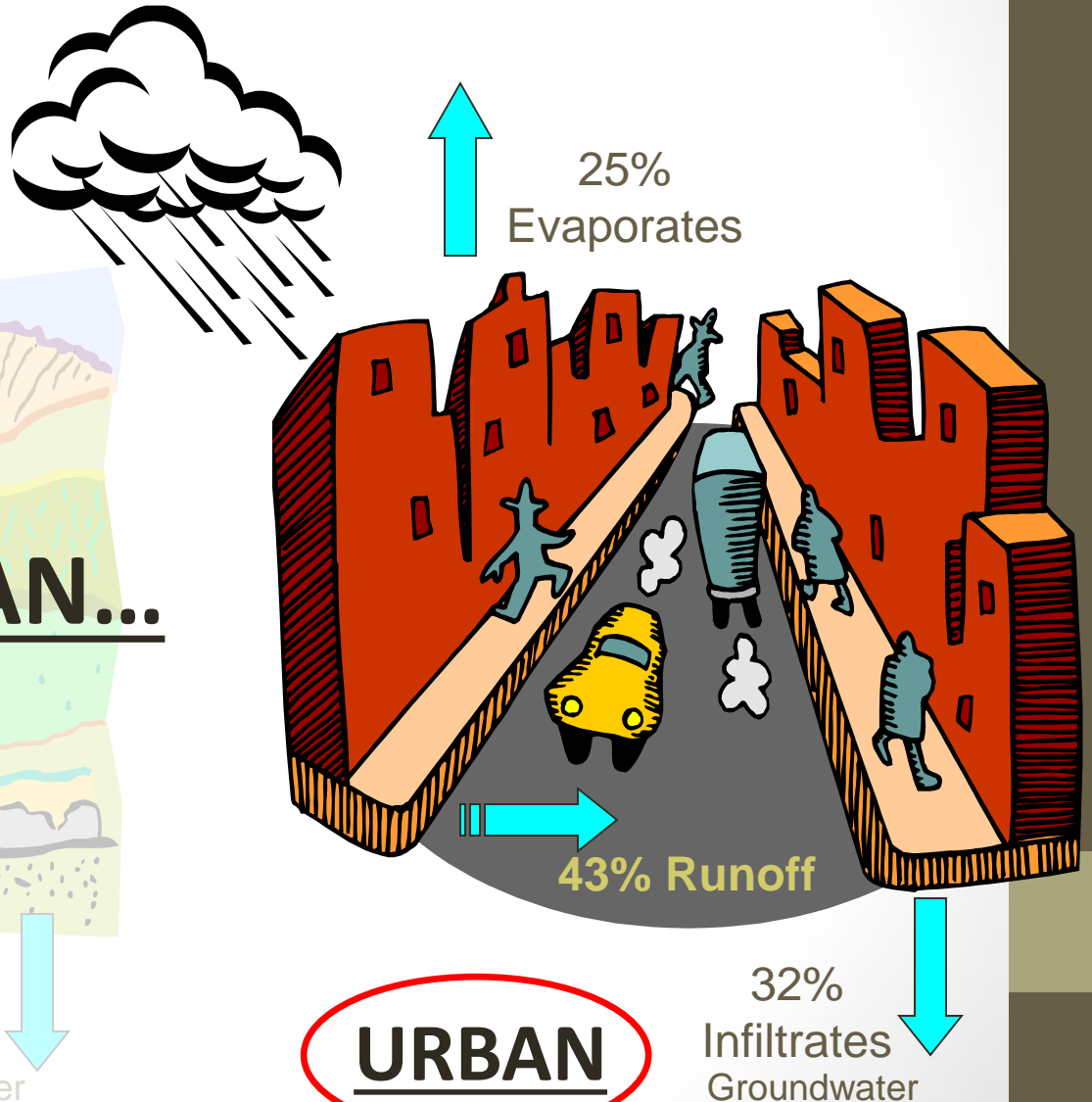
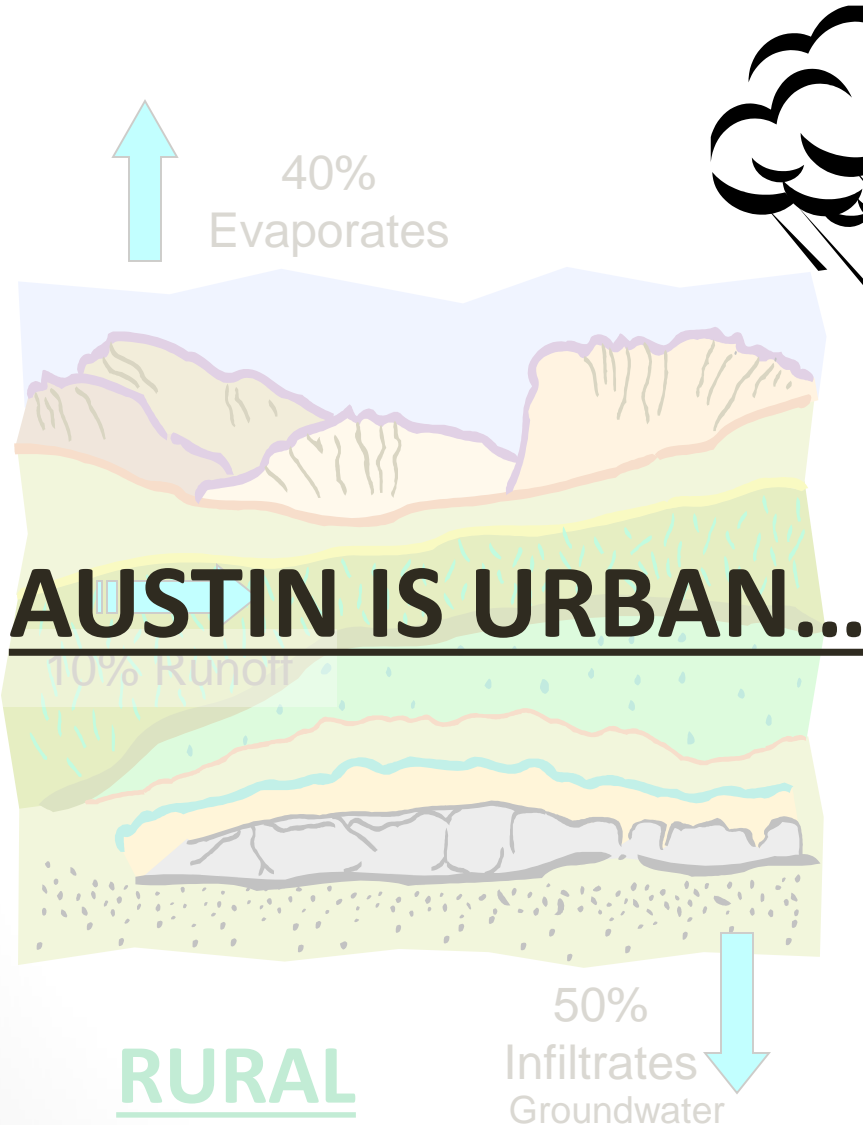
# Introduction



## WHAT IS URBANIZATION?

- Paving of land surfaces via construction of roadways, parking lots, buildings...
- When rain falls, less water can soak into the ground
- More water runs off to fill storm drains, creeks and rivers with **more flow, faster**

# Introduction





# Introduction



**Flooding**

Example: Shoal Creek near 15<sup>th</sup> Street



# Introduction



**Erosion**

Examples: Fort Branch Creek, Boggy Creek



# Introduction



## Water Quality

Example: McKinney Falls (Williamson Creek)



# Battle Bend Park Watershed

- Drainage area about 25 acres
- 62% impervious (paved surfaces)
- Mainly industrial, commercial uses on land
- **Result?**





# Battle Bend Park Watershed



Poor water quality of runoff



# Battle Bend: Project Elements

- Multifunctional water quality pond/playing field
- Re-build stream channel in center of park (Daylight)
- Restore riparian zone with native species
- Create new accessible walkway with pedestrian bridge over stream channel



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# What is “Daylighting”?





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*Exposing a previously covered river, stream, or stormwater drainage, combined with restoration of the channel to achieve a more natural form*

Example: JJ Seabrook Stream Restoration in East Austin



# Riparian & Ecological Restoration

- Natural channel design to create riffles and pools
- Establish a **Grow Zone** along the restored channel
- Emphasize Native Riparian Vegetation
  - Bunchgrasses
  - Facultative wetland species
- Invasive species management
  - Remove priority invasives: Ligustrum, Chinaberry





# Riparian Restoration

## *Grow Zone Examples*



## *Saturated Zone Examples*





# Enhanced Infiltration with Native Plants

Lawn grass

## Root Systems of Prairie Plants

The fundamental basis for encouraging use of native plant species for improved soil erosion control in streams and stormwater facilities lies in the fact that native plants have extensive root systems which improve the ability of the soil to infiltrate water and withstand wet or erosive conditions. Native plant species, like those listed in this Guide, often have greater biomass below the surface. In this illustration, note the Kentucky Bluegrass shown on the far left, which, when compared to native grass and forb species, exhibits a shallow root system. Illustration provided by Heidi Natura of the Conservation Research Institute.

Kentucky  
Blue Grass  
*Poa  
pratensis*

Lead  
Plant  
*Amorpha  
canescens*

Missouri  
Goldcrod  
*Solidago  
missouriensis*

Indian  
Grass  
*Sorghastrum  
nutans*

Compass  
Plant  
*Silphium  
laciniatum*

Puccupine  
Grass  
*Stipa  
spartea*

Heath  
Aster  
*Aster  
ericoides*

Prairie  
Cord Grass  
*Spartina  
pectinata*

Big Blue  
Stem  
*Andropogon  
gerardi*

Pale  
Purple  
Cosflower  
*Echinacea  
polluta*

Prairie  
Dropseed  
*Sporobolus  
heterolepis*

Side Oats  
Gramma  
*Bouteloua  
curtipendula*

False  
Bonaset  
*Kuhnia  
esparatoroides*

Switch  
Grass  
*Panicum  
virgatum*

White  
Wild Indigo  
*Baptista  
leucantha*

Little  
Blue Stem  
*Andropogon  
scoparius*

Reins  
Weed  
*Silphium  
perfoliatum*

Purple  
Prairie  
Clover  
*Petalostemon  
purpureum*

June  
Grass  
*Koeleria  
cristata*

Cylindric  
Blazing Star  
*Liatris  
cylindracea*

Buffalo  
Grass  
*Buchloe  
dactyloides*



# Multifunctional Pond/Play Field



Example: Shoal Creek Restoration Project in Pease Park

# Design Objectives for Pond/Field

- Stormwater treatment
  - Playing field will clean & filter dirty stormwater during rain events
- Recreational amenity
  - Pond will be dry most of the time
  - Once filled, it will empty after 48 hours of dry weather.
- Avoid any nuisance conditions
  - Ponding time is shorter than mosquito breeding cycle
  - Underdrain will prevent permanent ponding in field and saturated zone



# Design Renderings



## Legend

- Existing tree
- Proposed tree
- Limit of construction





# Design Renderings





# Design Renderings

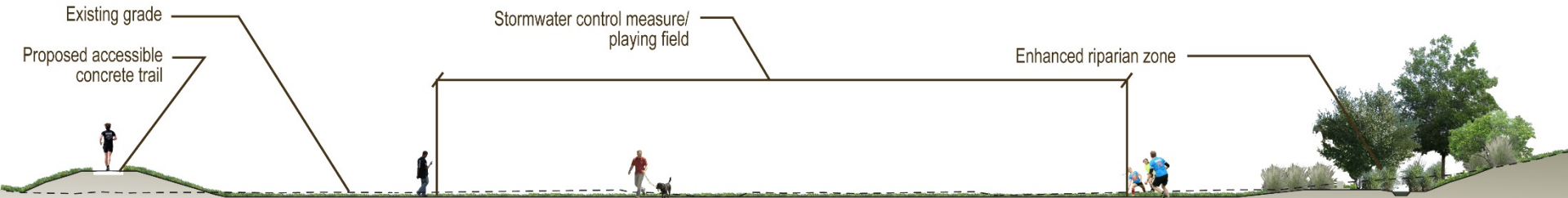


- Legend**
- Existing tree
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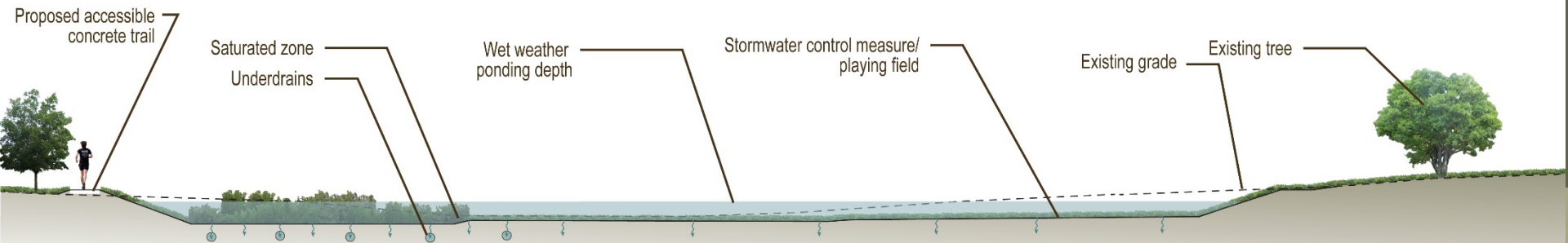
# Design Renderings

A



*Rectangular play area approx. 80 ft x 100 ft*

B

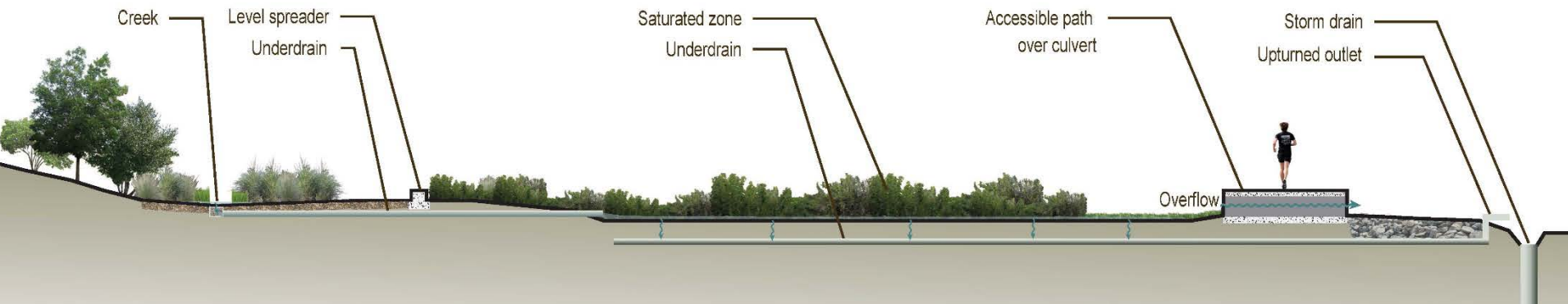


*Ponding depth = 2 feet in play area  
3 feet in saturated zone*



# Design Renderings

C



*Saturated Zone enhances pollutant removal*

*Draw down time: 48 hours*

# Project Schedule & Costs

- Timeline:
  - Design: 2017
  - Permitting: 2017-18
  - Bid & Construction: 2018-19
- Estimated budget of \$900,000
  - Your drainage utility fee (DUF) at work



# Staying Updated

- **Potential Neighborhood Impacts During Construction**
  - Closure of Southwest corner of park during construction
    - East side playscape/basketball courts will remain open
  - Construction entrance on Sheraton and/or Suburban
- A **follow-up public meeting** will be held before construction
- Check for updates on **Project Website:**

<http://www.austintexas.gov/battlebendwaterquality>

# Questions or Comments?



- Also please fill out comment cards or speak with WPD Staff at Poster Stations



# Thank you for your attention!

## Contact Information

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