



# SHOAL CREEK WATERSHED ACTION PLAN

## Stakeholder Meeting: July 2018

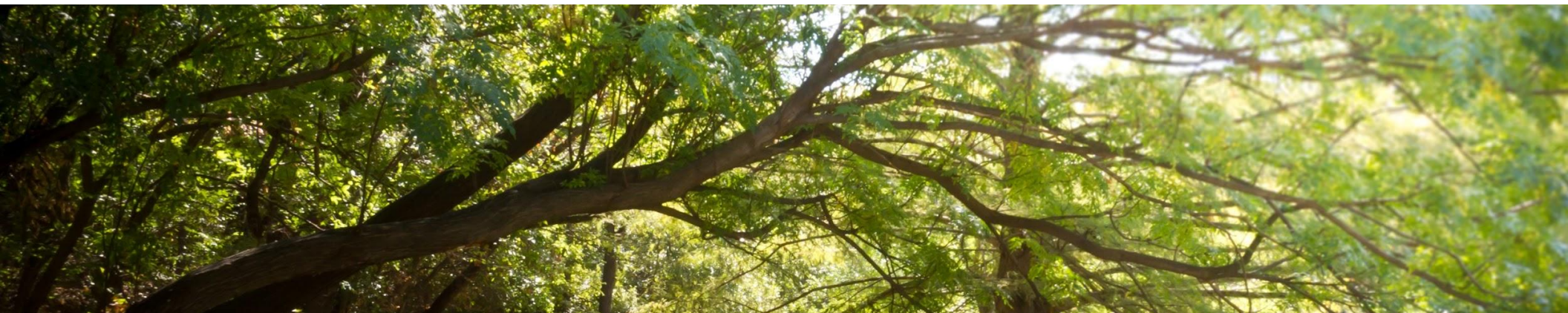




# Welcome & Agenda Overview

## Today's Goals:

- Establish the Steering Committee
- Provide brief overview of Shoal Creek watershed, project goals and progress to date
- Gather stakeholder input on timely decisions





# Self Introductions



# Shoal Creek Watershed - Overview



**Total drainage area  
= 13 miles**



**Total stream length  
= 11 miles**



**27% in Edwards  
Aquifer Recharge  
Zone**



**Contains 53%  
impervious cover**



**30% canopy cover**



**Fully developed,  
urban watershed**







# Water Quality



- Middle & Lower Shoal Creek = Top 15 Water Quality Problem Areas in City
  - Middle Shoal Creek - #5
  - Lower Shoal Creek - #12
- Elevated fecal bacteria and nutrient levels
- It flows right to the creek!
  - Only 21% of impervious cover treated by water quality ponds
  - Vegetated buffer (or filter) missing along creek

*Scoop that Poop!*





# Flooding



***100-year event = 1%  
chance of happening  
each year***

- Flash flood alley + highly developed watershed
- History of floods: 1915, 1960, 1981, 2013, 2015
- Since 1981, over \$65 M spend on mitigation
- Today:
  - Lower Shoal Creek = worst flooding problem in Austin
  - ~265 structures at risk of flooding in 100-year event
  - ~40 roadways at risk of overtopping by more than 6 inches in 100-year event
  - ~13 identified localized flood problem areas
  - Lower Shoal Creek Flood Mitigation Study underway



# Erosion

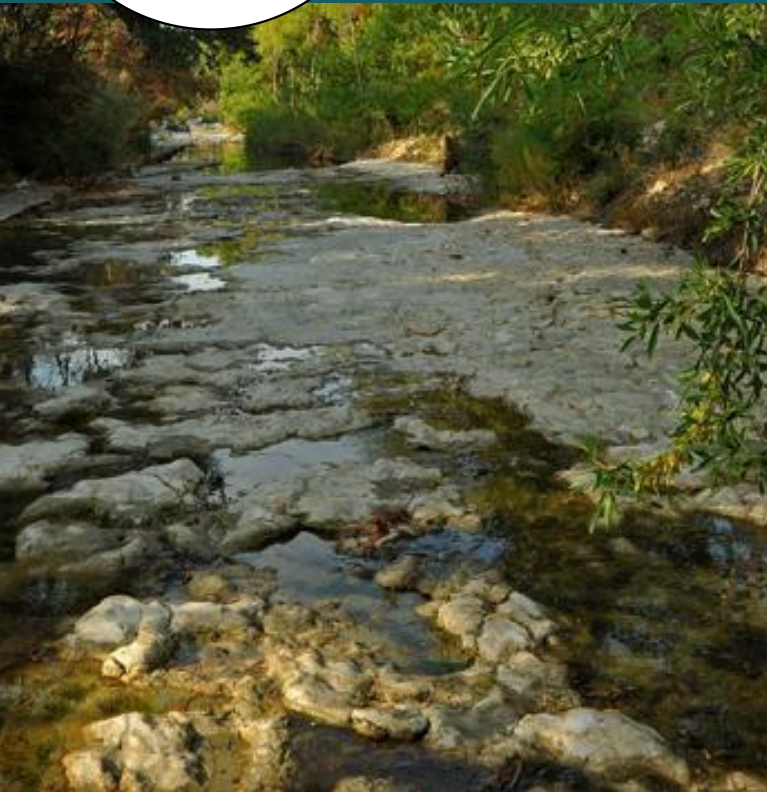


- Fast Water + Lack of Vegetative Buffers = Intense Erosion
- Threatens property, stream stability, water quality, utilities, drainage infrastructure and native habitat
- How Shoal Creek ranks?
  - 3rd most erosion sites in the City
  - 3 of Top 15 Problem Erosion Reaches in Austin





# Springs



- Numerous springs identified along Shoal Creek and still finding more
- Changes with urbanization:
  - Reduced water quality in springs
  - Loss of flow in the creek (base flow)
  - Spring can dry up
  - Some springs increase in flow (urban leakage)
- Additional studies needed to identify opportunities for restoration



# Vision & Project Goal

## Vision:

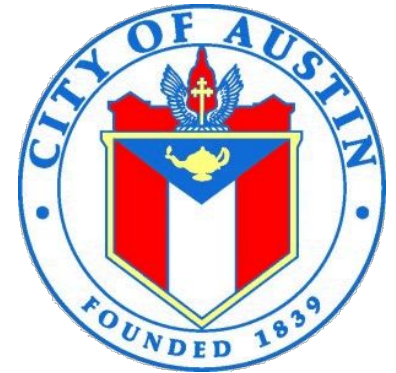
A resilient, healthy and clean Shoal Creek

## Goal:

To identify cooperative, creative solutions to address Shoal Creek's challenges through the development of the creek's 1<sup>st</sup> watershed action plan



# Partners



And Shoal Creek Stakeholders

*This cooperative project is funded in part by the Texas Commission on Environmental Quality (TCEQ) through a United States Environmental Protection Agency (EPA) grant and the Still Water Foundation.*



# *What is a* Watershed Action Plan?

- A community-developed plan to address challenges & create a clean, resilient and healthy watershed

## Steps in the Watershed Planning Process

- Step 1:** • Build partnerships
- Step 2:** • Characterize your watershed
- Step 3:** • Finalize goals and identify solutions
- Step 4:** • Design an implementation program
- Step 5:** • Implement the watershed plan
- Step 6:** • Measure progress and make adjustments



# EPA's 9 Elements of Successful Watershed Plans

*Key Note:* The Shoal Creek Watershed Action Plan will follow this structure & address water quality AND other challenges.

- a. • Identify causes and sources of pollution
- b. • Estimate load reductions expected
- c. • Describe management measures and targeted critical areas
- d. • Estimate technical and financial assistance needed
- e. • Develop an information and education component
- f. • Develop a project schedule
- g. • Describe interim, measurable milestones
- h. • Identify indicators to measure progress
- i. • Develop a monitoring component

# Timeline & Progress to Date

**Winter/Spring 2018:** First Stakeholder Meeting & Site Visit, QAPPs

**Summer 2018:** Establish steering committee, Review existing data, Determine modeling method, Education & Outreach

**Fall 2018:** Draft Characterization Report (challenges)

**Summer 2019:** Draft Watershed Action Plan (solutions), Final Characterization Report

**2020:** Final Watershed Action Plan Report

**Today - 2020:** Stakeholder Engagement & Public Outreach and Education





# Public Participation Plan

*The Public Participation Plan “details the strategy for engaging the public and stakeholders in the watershed planning process for the Shoal Creek Watershed in Austin, Texas. It is a living document that will be regularly visited and updated during the stakeholder process.”*

- Defines Stakeholder Committee, Steering Committee and Working Groups
- Guides Action Plan development including outreach and education strategy



# Stakeholder Committee: Role & Structure

## Purpose:

- Provide insight about public concerns and values, institutional knowledge
- Help bridge scientific research & community efforts
- Help develop the Plan & identify issues, goal, solutions

## Structure:

- Inclusive, open and welcoming to all
- Meets every 3 to 4 months, through early 2020
- Steering Committee - subset voting body
- Working Groups - technical expertise and subject matter insight



# Working Groups: Role & Topics

## Role:

- Delve into particular topics in details
- Set long-term goals, identify concerns, causes, standards in place and areas for improvement
- Provide recommendations on BMPS that can be implemented

## Four Working Groups:

- Water
- Land Stewardship
- Education and outreach
- Implementation



# Steering Committee: Role & Structure



- Voting body of the Stakeholder Committee
- Includes representatives of 8 to 10 key decision-making entities but no specified limit to Steering Committee membership
- Provides guidance and leadership to WAP development and implementation
- Governed by *Ground Rules*
- All decisions shared with full Stakeholder Committee



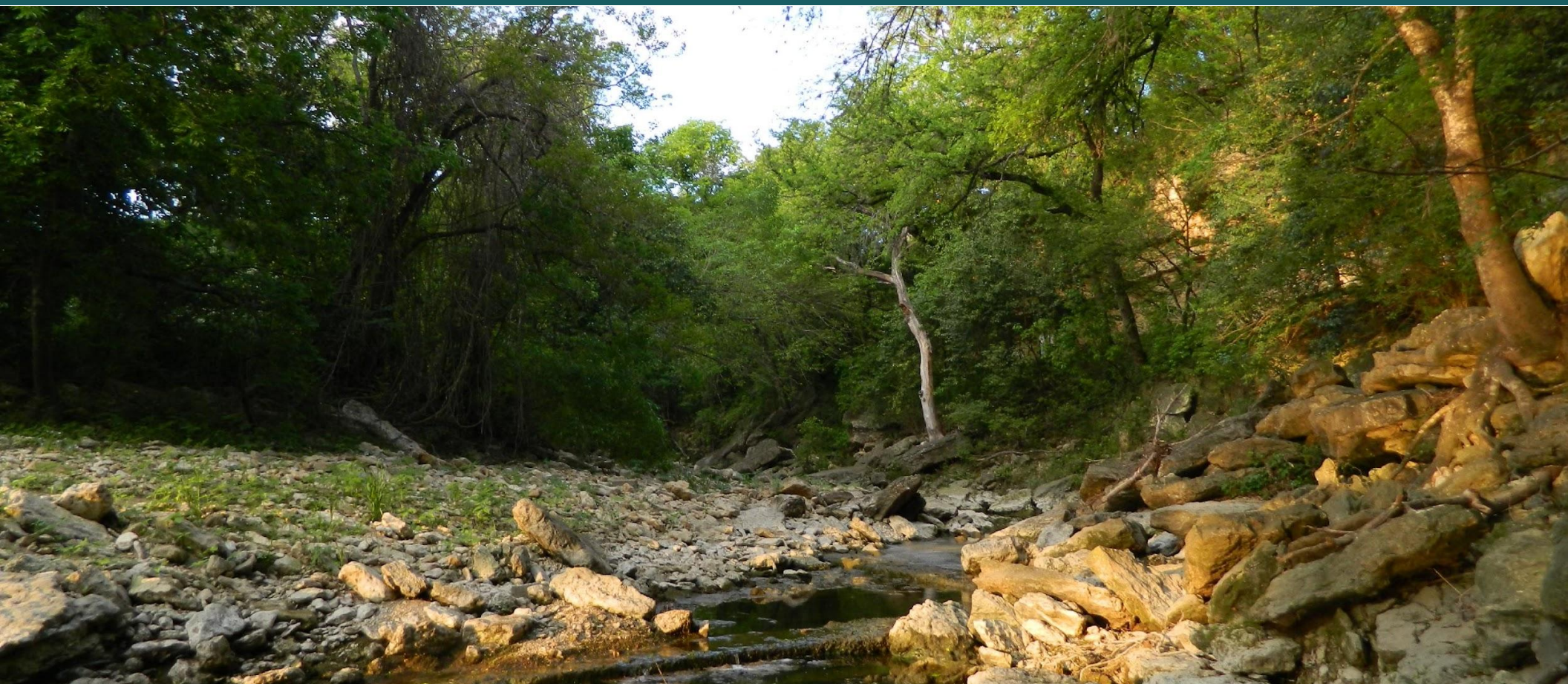
# Steering Committee: Ground Rules

- Establishment of inaugural Steering Committee members
- Establishment of Steering Committee officers
- Provisions for the addition and removal of members
- Provisions for the introduction and consideration of agenda items
- Review and adoption of Steering Committee Ground Rules





# Steering Committee: Elections





# Education & Outreach Strategies



- Leveraging partnerships
- Utilizing SCC outlets
- Additional strategies



# Technical Update

- Review of existing data, information and reports
  - Overview
  - Quality Assurance Project Plan (QAPP)
  - Additional data available?
  - Anything key missing?



# Water Quality Modelling

## Purpose

- Quantify pollutant loadings for the current and future conditions
- Identify necessary pollutant load reductions to meet project goals
- Will assess water quality measures and management techniques that can improve stormwater quality. Includes stormwater basins, LID options, land use change, etc.
- Guide water quality improvement recommendations

## Pollutants Evaluated

- Total suspended solids, nutrients, and bacteria (defined by the grant)

# SELECT and Load Duration Curves

- Chosen based on input from the City, aligned with the project budget, and commonly used tools in WPPs
- Best tools to use with the available data and project budget
- Data available from the City and project partners, key data includes:
  - Land use, water quality, flow, topography and soils, animal populations
- Watershed will be divided into multiple subareas
- Pollutant loads will be calculated/prioritize subareas with the highest loads
- Assess water quality management options
- Share findings with the stakeholder committee to obtain guidance



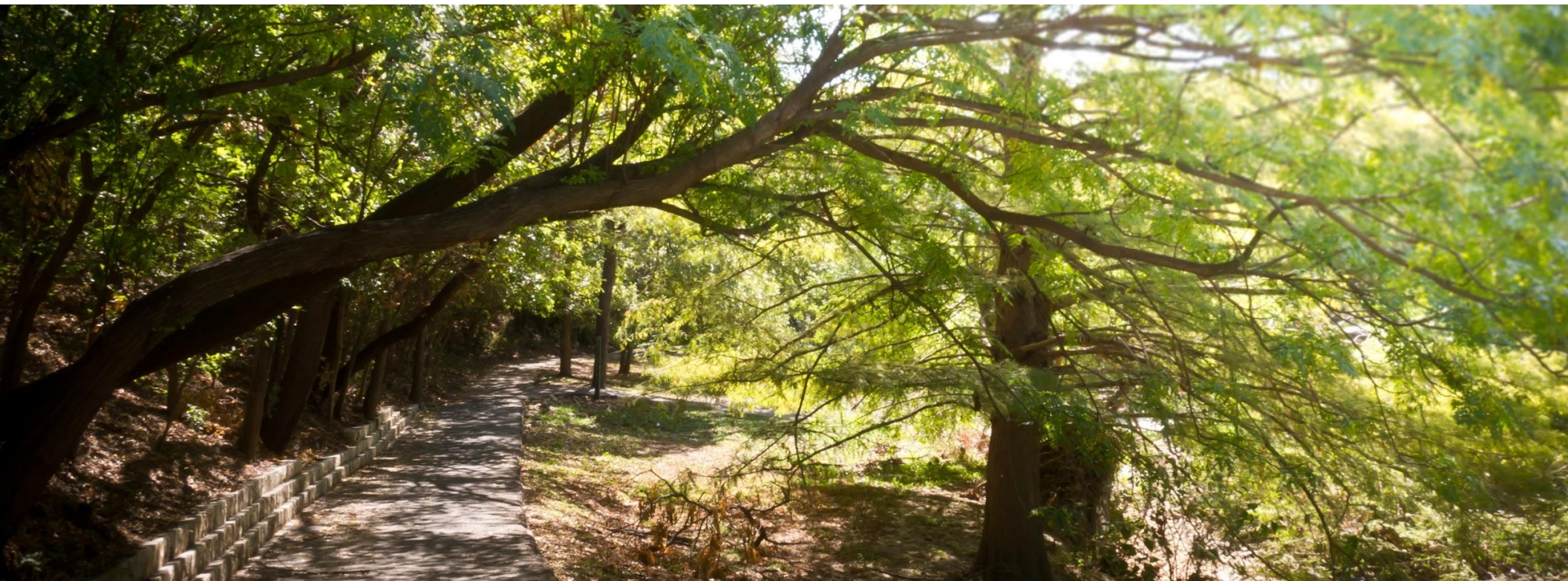


# Summary & Next Steps



- **Save the date**
  - August 29 - Stakeholder Committee Meeting
  - October 9 - Stakeholder Meeting, Working Groups & Texas Watershed Steward Workshop
- **PSA** - Coming soon to your inbox





# Stakeholder Comments & Questions

