# Rain to Roots Ambassador Program- *December Meeting*

**Welcome!**

- What is your name?
- Share one word that captures your vision for a future Tempe.

# The Strategy – Green Stormwater Infrastructure

**Benefits of GSI:**

- Supports tree canopy
- Reduces temperatures
- Reduces potable water use
- Mitigates flooding
- Promotes cleaner waterways
- Creates wildlife habitat

Learn more about GSI and its benefits at Sustainable Tempe – Green Stormwater Infrastructure.

Rio Salado Pkwy. & Hardy Dr.

Lemon St. & Dorsey Ln.

# Rain to Roots Master Plan

- **Project Purpose**
  - Expand green infrastructure & urban cooling initiatives.
  - Promote cross-departmental coordination & planning.
  - Identify opportunities for long-term funding.

***Green Stormwater Infrastructure helps us address…***

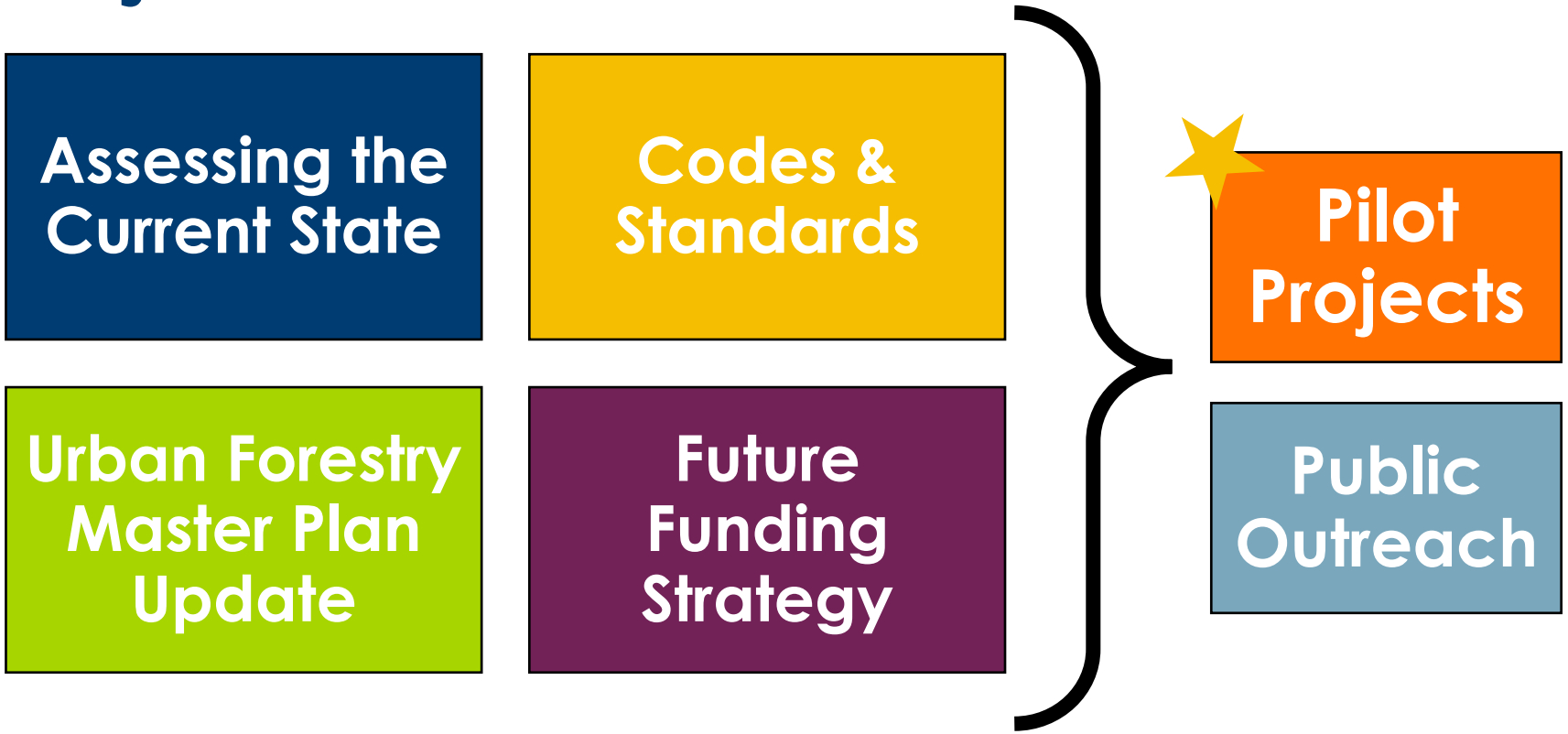

Record-breaking Extreme Heat

Severe Drought & Water Use

Flooding & Water Quality Concerns

Need for Climate-Ready Vegetation

# Project Overview



# Why do Pilot Projects Matter?

- *Pilot projects help us by…*
  - **Demonstrating how GSI works** in a range of settings (streetscapes, parks, multi-use paths, neighborhoods, etc.).
  - **Increasing public awareness** of GSI models & practices.
  - **Testing new codes & design standards**.
  - **Strengthening connections** between city departments.

**Mill Ave. & 13th St. Median**

# EXISTING GSI PILOT PROJECTS IN TEMPE, AZ


## LEGEND

1. GROVE OF ARIZONA CITIES AND TOWNS PARK
2. TEMPE TRANSPORTATION CENTER
3. LEMON ST. & DORSEY LN. POCKET PARK
4. 12TH ST. & MILL AVE. MEDIAN
5. S. COLLEGE AVENUE

# 1 GROVE OF ARIZONA CITIES AND TOWNS PARK: WATERSHED MANAGEMENT GROUP PILOT PROJECT

## GSI features on this project include:

### curb openings

- direct flow of water into bioswale,
- control sedimentation

### bioswales

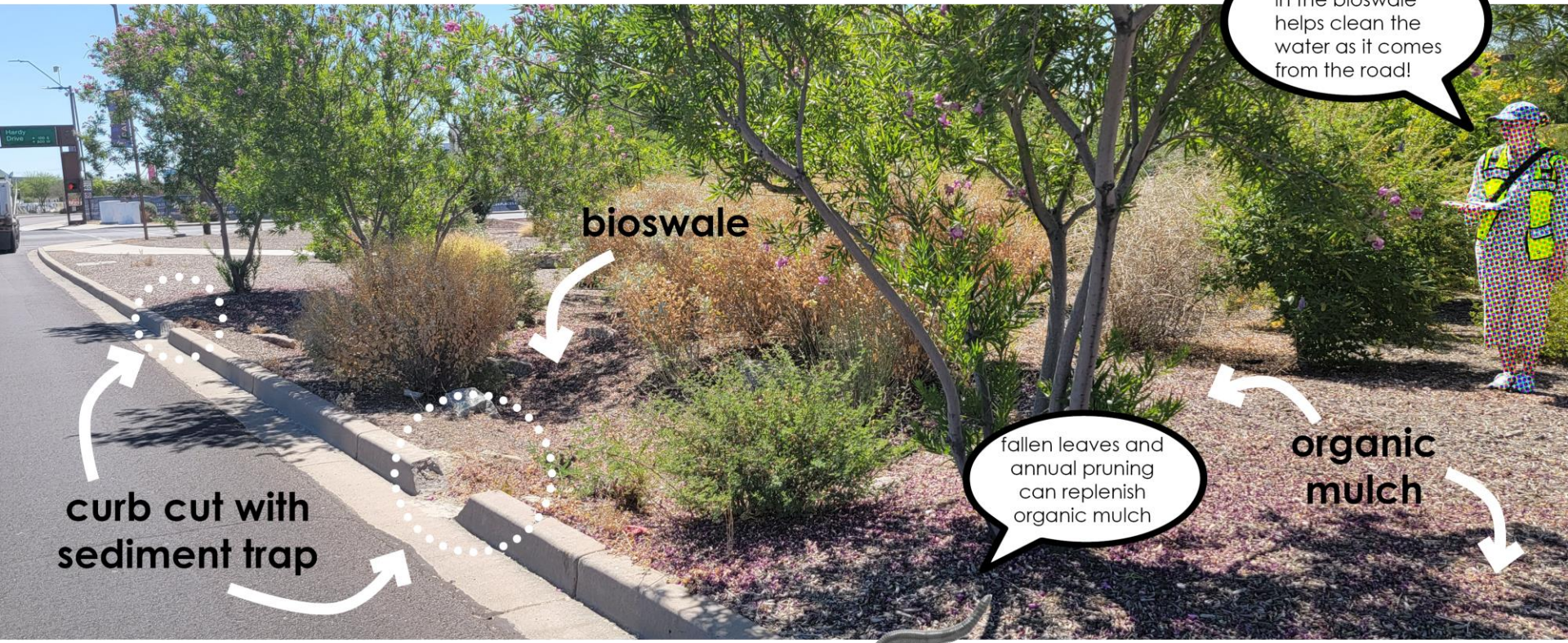
- slows water down,
- increase infiltration,
- improves water quality,
- increase habitat

### organic mulch

- reduces urban heat island effect,
- improves soil nutrient content,
- retains water and soil moisture


VICINITY MAP

# 1 GROVE OF ARIZONA CITIES AND TOWNS PARK: WATERSHED MANAGEMENT GROUP PILOT PROJECT

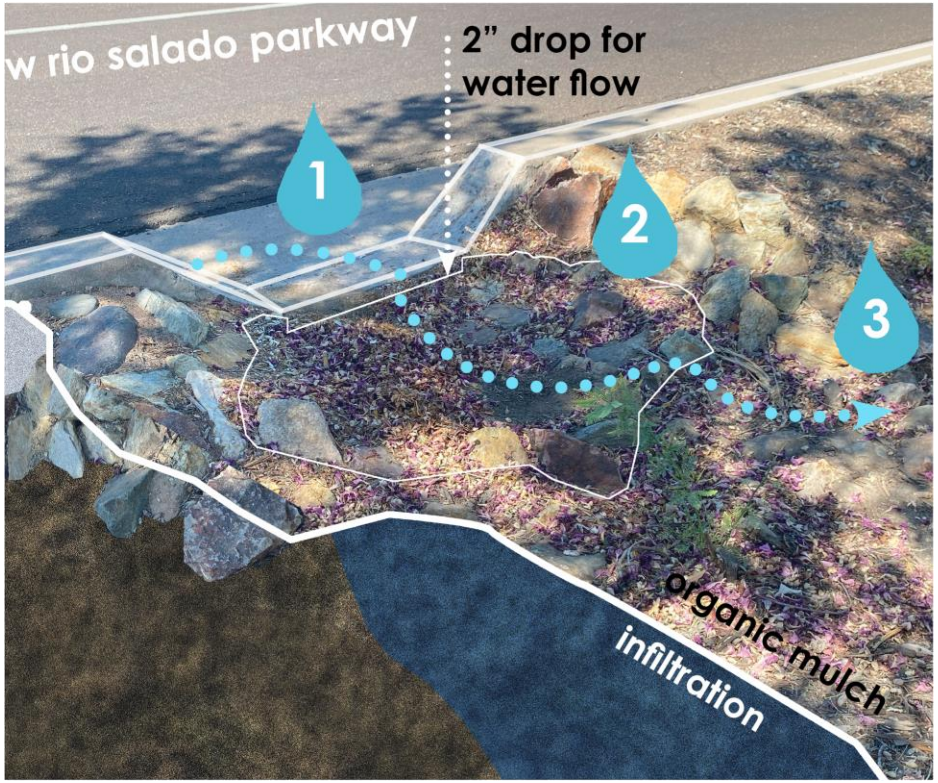


# 1 GROVE OF ARIZONA CITIES AND TOWNS PARK: WATERSHED MANAGEMENT GROUP PILOT PROJECT

# 1 GROVE OF ARIZONA CITIES AND TOWNS PARK: WATERSHED MANAGEMENT GROUP PILOT PROJECT

## ANATOMY OF A CURB CUT:

1. curb opening captures water before it reaches the storm drain
2. sediment trap allows water to initially pool to collect sediment and prolong the life of the feature
3. water flows into bioswale where plants continue to clean nonpoint source pollution



# 2 TEMPE TRANSPORTATION CENTER

## GSI features on this project include:

### cisterns

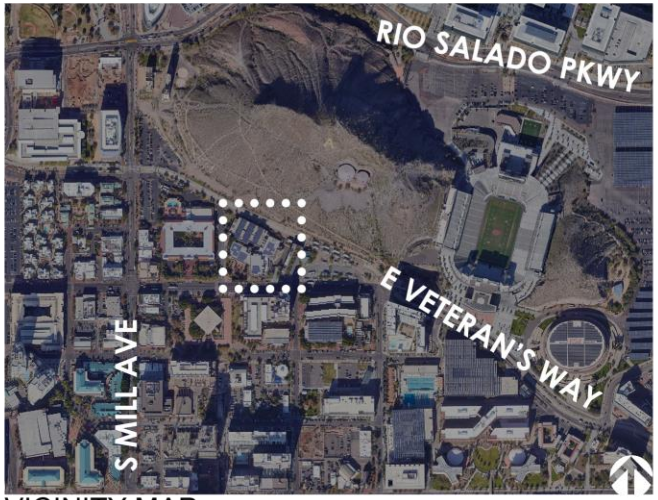
- water collection,
- water storage,
- water reuse,
- supplements potable irrigation

### greywater collection

- reduce demand for potable water

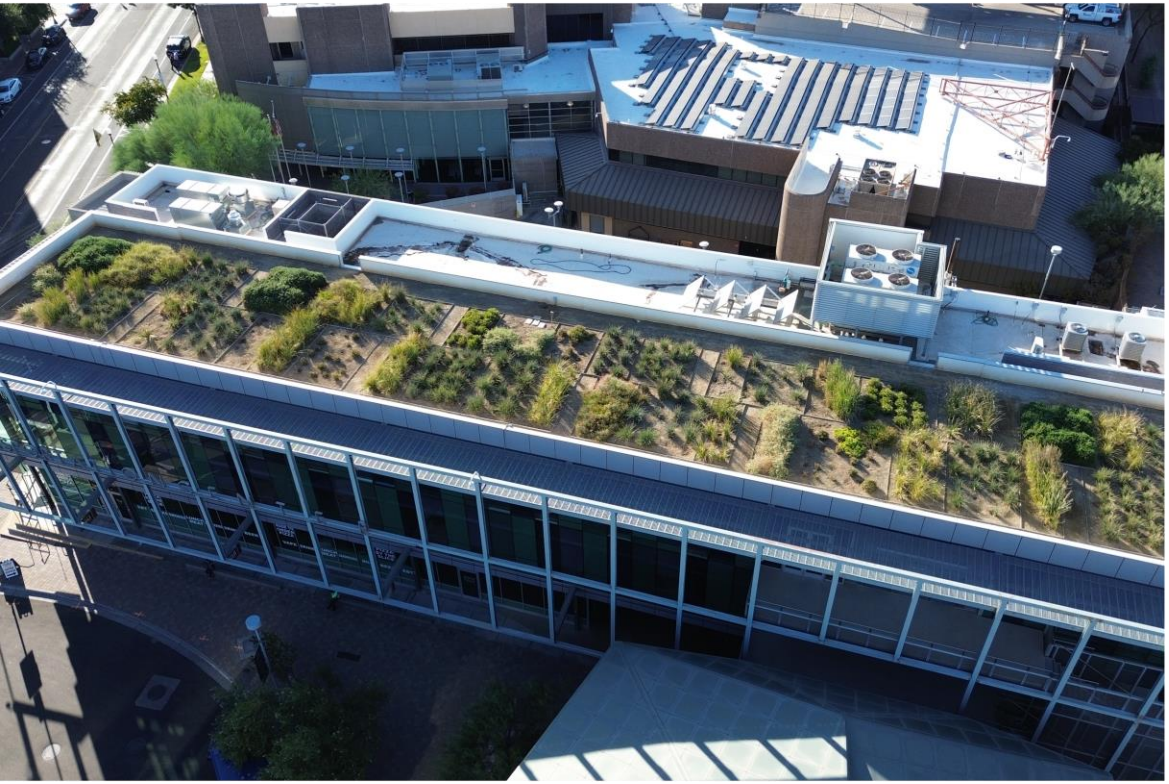
### green roof

- reduce urban heat island,
- create urban habitat,
- reduce roof runoff



VICINITY MAP

# 2 TEMPE TRANSPORTATION CENTER



**green roofs benefit the environment...**

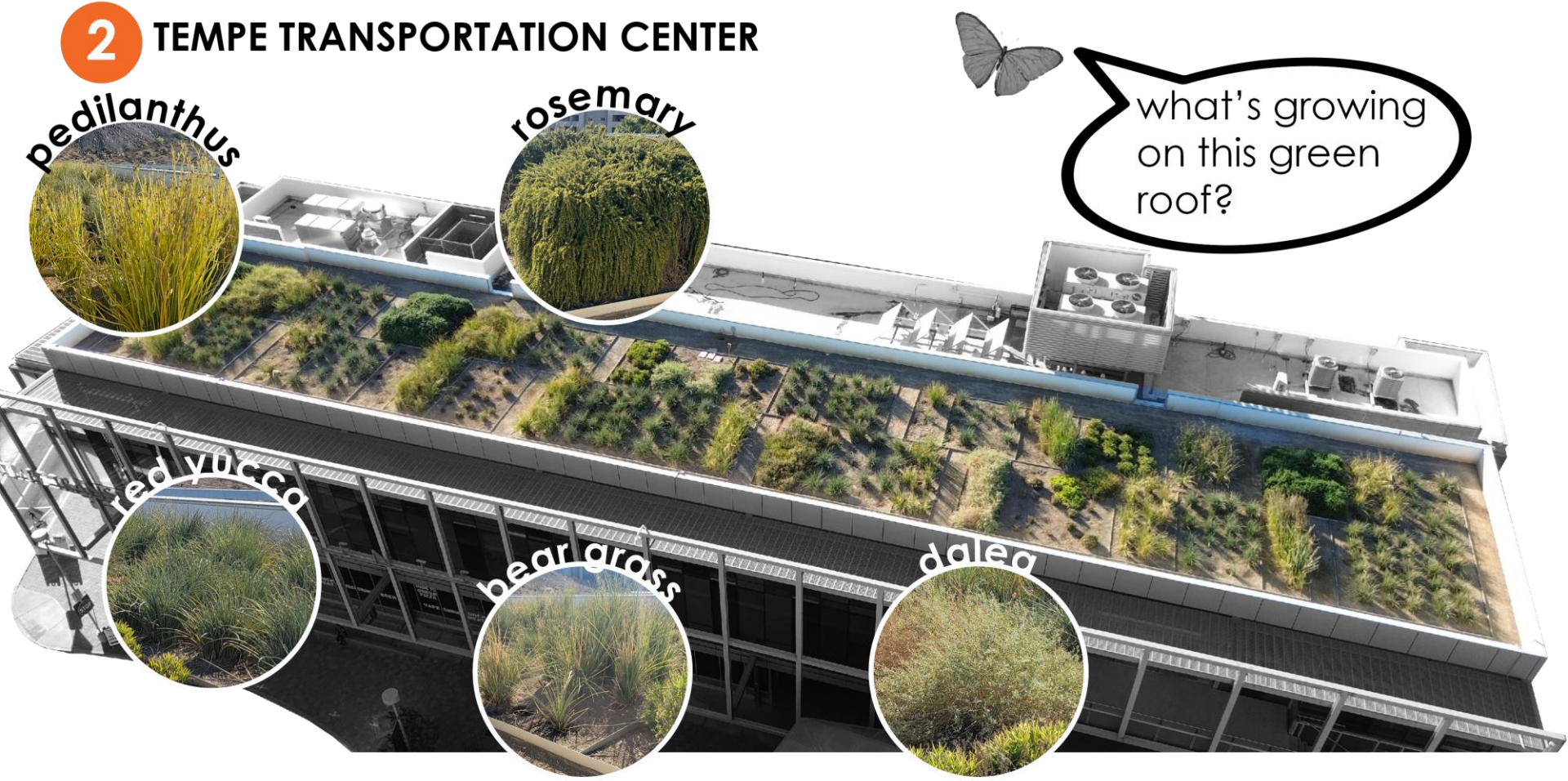
sequester carbon with plants

reduce roof runoff

increase urban wildlife habitat

**...and lower the annual cost of building utilities**

# 2 TEMPE TRANSPORTATION CENTER



# 3 LEMON ST. & DORSEY LN. POCKET PARK

## GSI features on this project include:

### curb openings

- direct flow of water into bioswale,
- control sedimentation

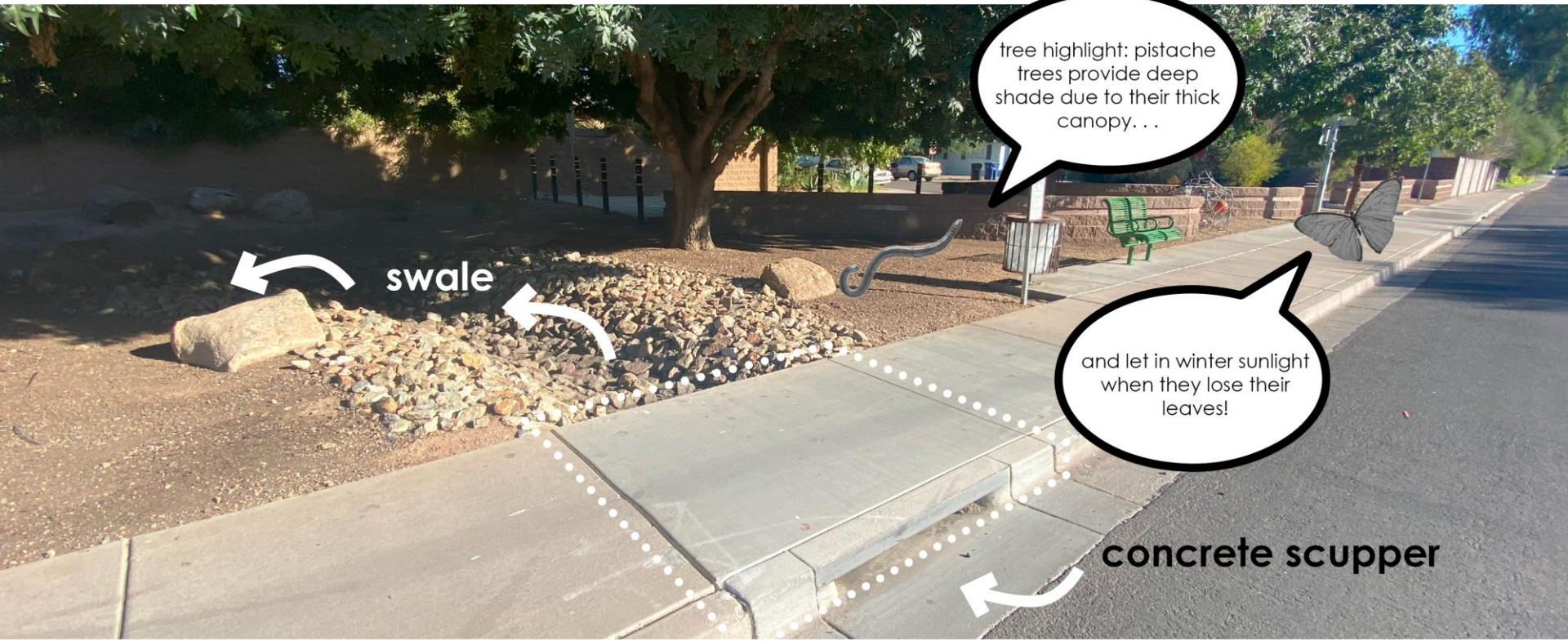
### organic mulch

- reduces urban heat island effect,
- improves soil nutrient content,
- retains water and soil moisture


VICINITY MAP

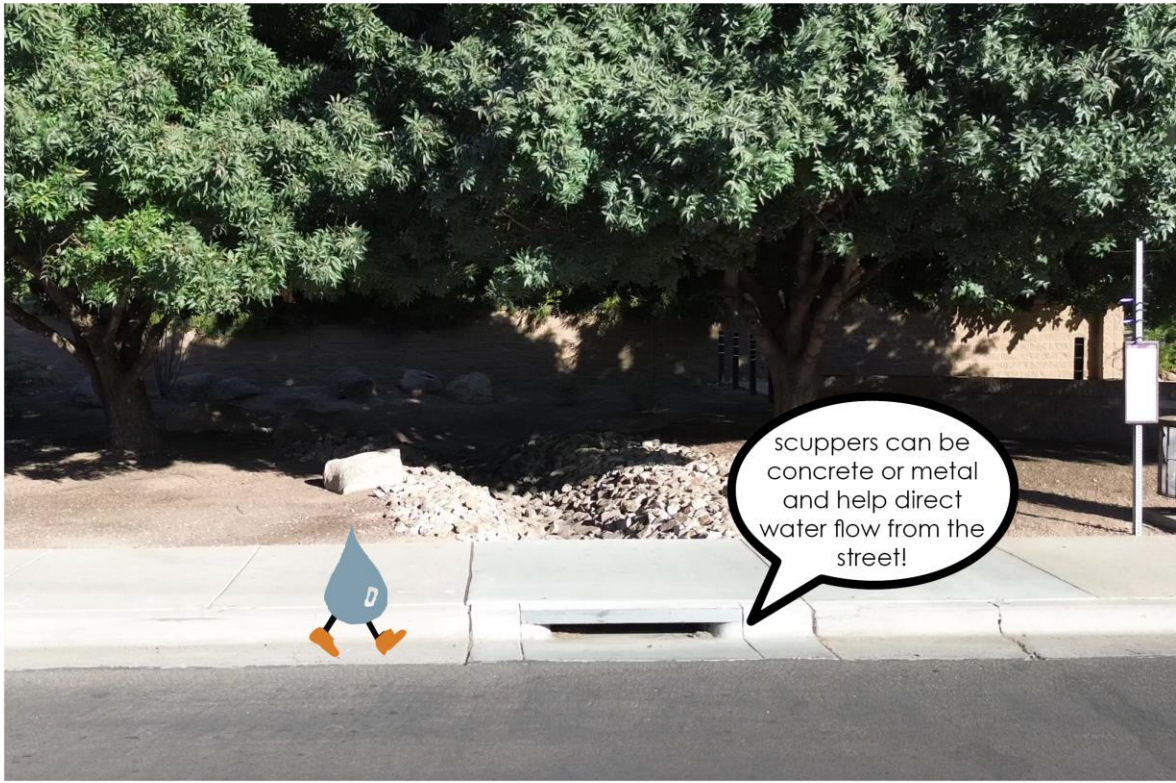
# 3 LEMON ST. & DORSEY LN. POCKET PARK

# 3 LEMON ST. & DORSEY LN. POCKET PARK

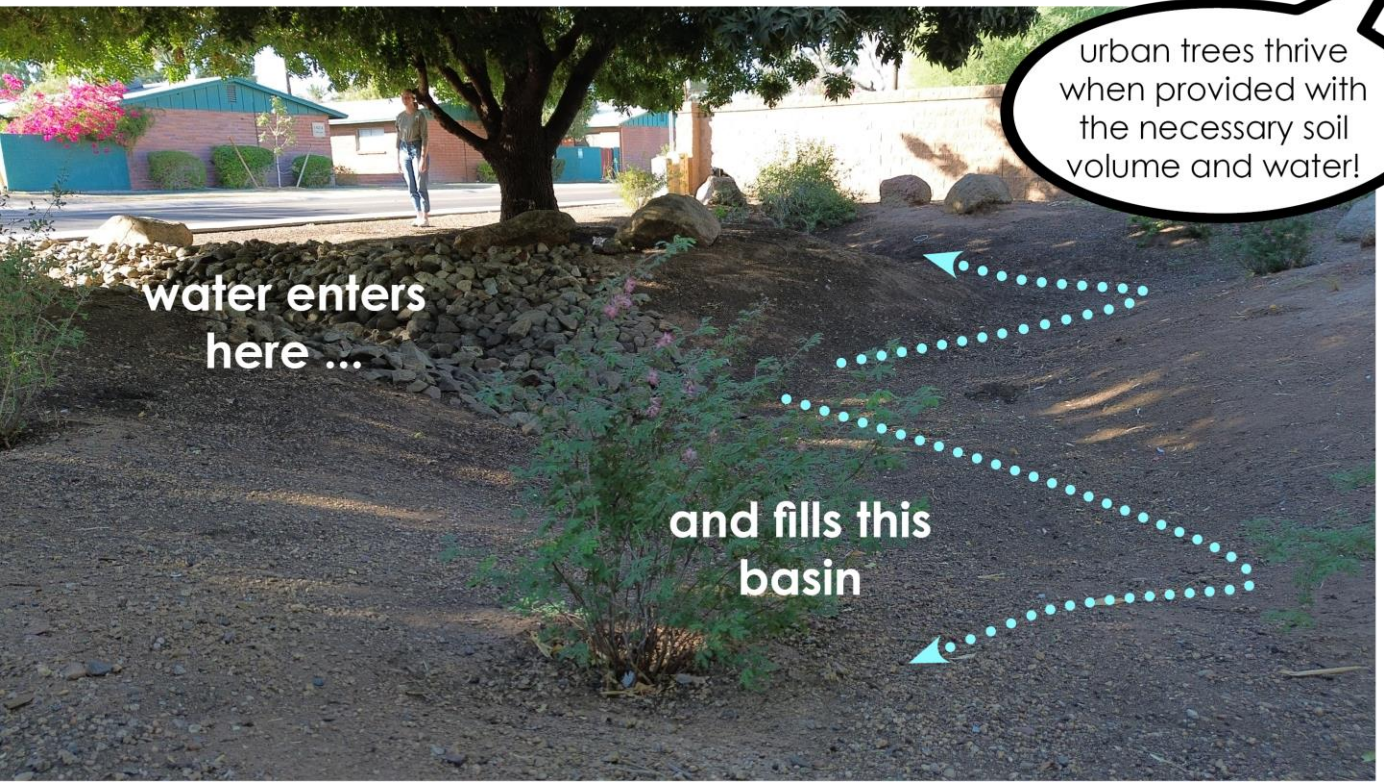


# 3 LEMON ST. & DORSEY LN. POCKET PARK

**scuppers are an alternative curb opening, often used when sidewalks are attached to the road, that directs runoff into a landscape area**



# 3 LEMON ST. & DORSEY LN. POCKET PARK




**this curb opening diverts runoff from entering the storm drain, and allows the water to saturate the landscape and enhance the street trees' canopies**

# 4 12TH ST. & MILL AVE. MEDIAN

## GSI features on this project include:

### curb openings

- direct flow of water into bioswale,
- control sedimentation

### bioswales

- slows water down,
- increase infiltration,
- improves water quality,
- increase habitat

### organic mulch

- reduces urban heat island effect,
- improves soil nutrient content,
- retains water and soil moisture

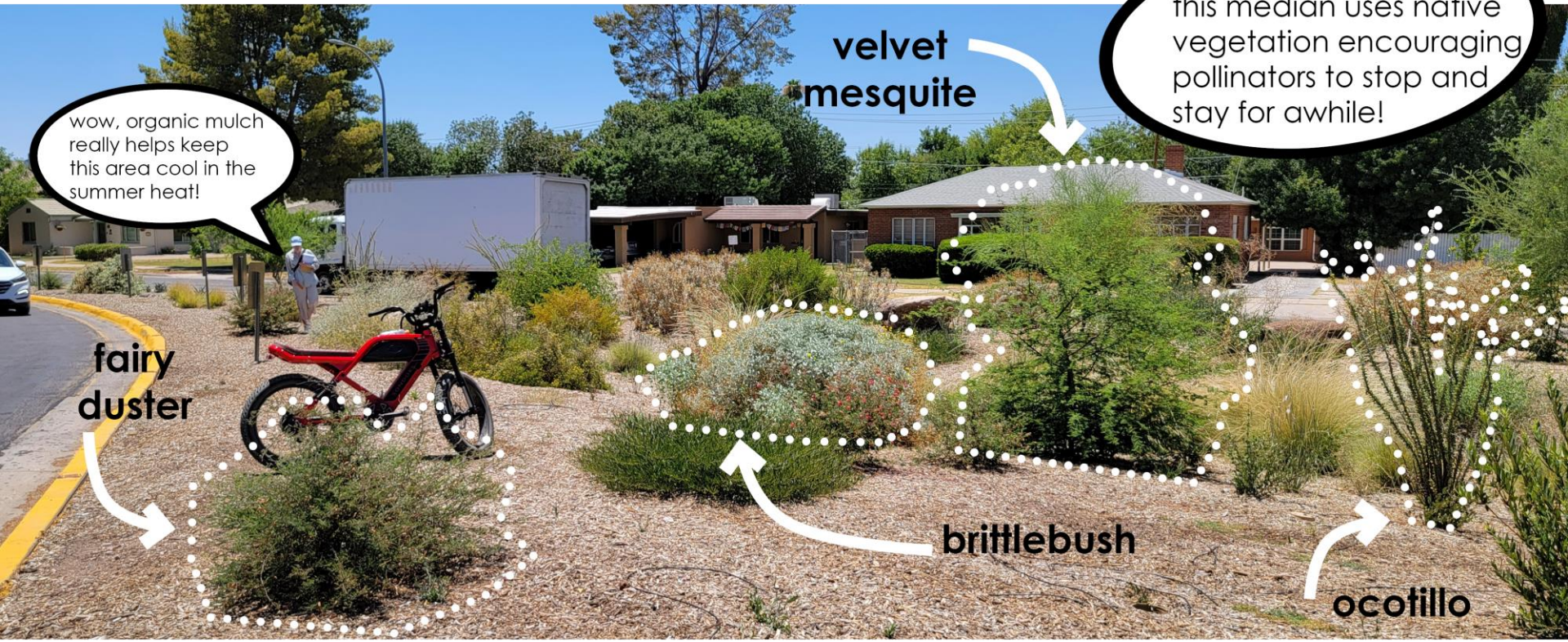

VICINITY MAP

# 4 12TH ST. & MILL AVE. MEDIAN


## what are common types of nonpoint source pollution?

- auto oil, grease, & toxic chemicals
- fertilizers, insecticides, herbicides,
- bacteria & nutrients from pet waste

# 4 12TH ST. & MILL AVE. MEDIAN



# 5 S. COLLEGE AVENUE

## GSI features on this project include:

### curb openings

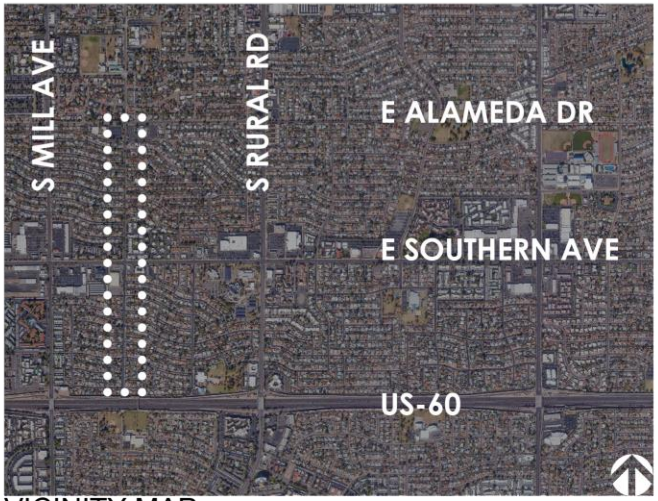
- direct flow of water into bioswale,
- control sedimentation

### bioswales

- slows water down,
- increase infiltration,
- improves water quality,
- increase habitat

### curb modifications

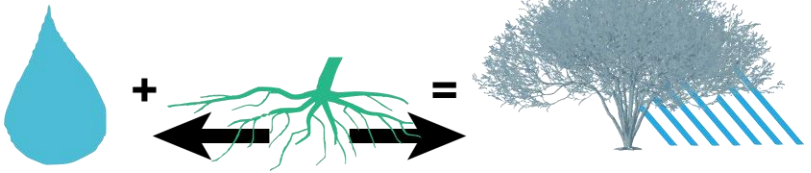
- traffic calming,
- reduce urban heat island,
- reduce pollutants,
- reduce runoff




VICINITY MAP

# 5 S. COLLEGE AVENUE


bioswales carry water captured through curb cuts the to trees





extending the planting area into the road increases the soil volume available to trees

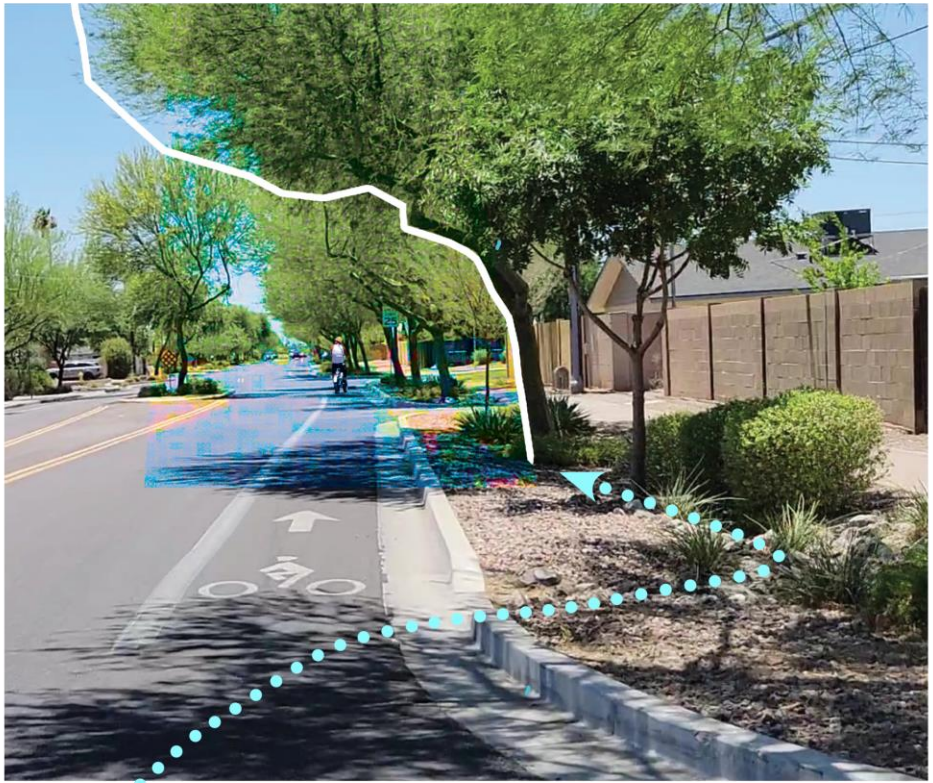
# 5 S. COLLEGE AVENUE

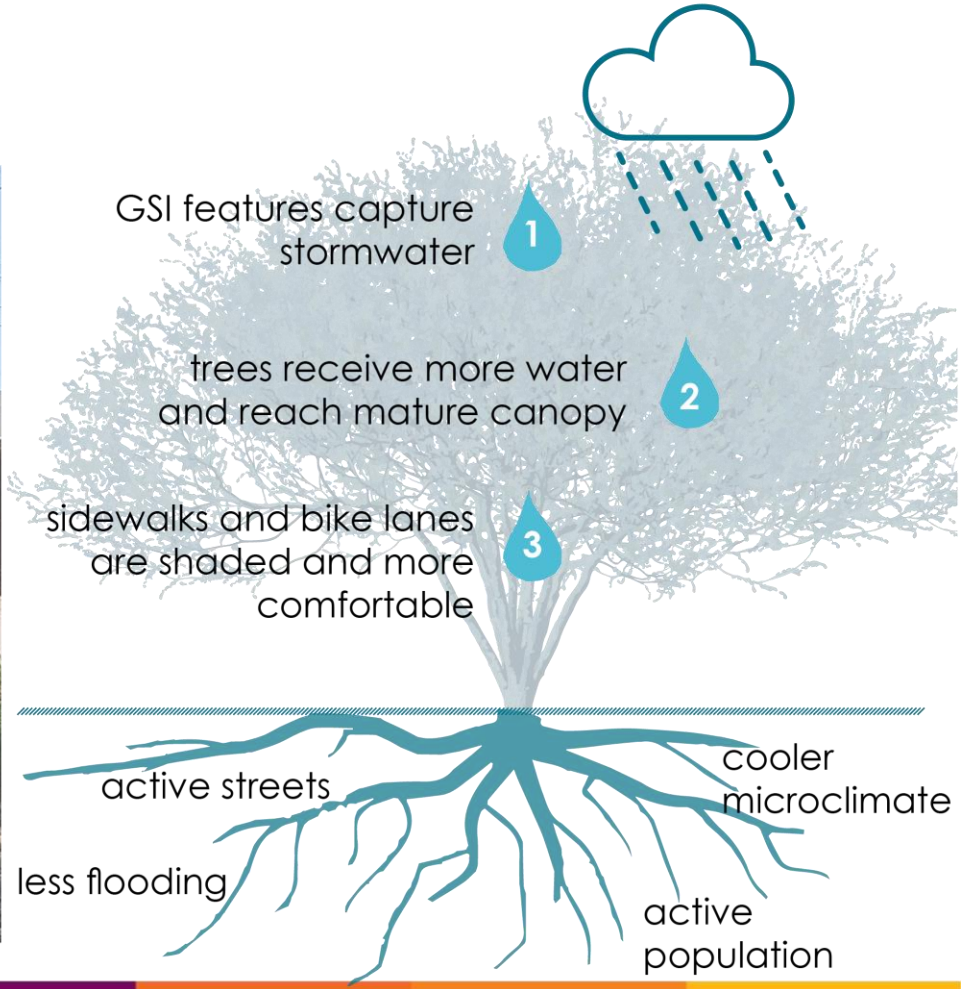
# 5 S. COLLEGE AVENUE

# 5 S. COLLEGE AVENUE

**a combination of GSI and traffic-calming design approaches help support street trees' health and shade potential, making the street comfortable even in the summer heat**

# 5 S. COLLEGE AVENUE





# Pilot Projects → Long-term Planning

- *The Rain to Roots Master Plan (MP) will involve…*
  - **Developing data-driven strategies** for pilot project selection.
  - **Creating conceptual designs** for five pilot projects to test new codes/design standards & promote public awareness.
  - **Formalizing project selection process** as part of the Rain to Roots MP.

***Ambassadors will…***

- Attend site visits, discuss GSI strategies, & review conceptual designs for the five selected pilot projects.
- Co-develop a strategy for community members to suggest future GSI project sites.

# Selecting Future Pilot Projects

| Site Selection Methodology | | |
|---|---|---|
| **Identify Priority Areas** | **Inventory Possible Sites** | **Align with City Projects** |
| • Heat Exposure<br>• Social Vulnerability<br>• Flood Susceptibility<br>• Existing Tree Canopy<br>• Water Quality Needs<br>• Walk, Bike, & Transit Scores | • Equity<br>• Visibility<br>• GSI Potential<br>  • Stormwater Capture<br>  • Tree Canopy Expansion<br>  • Space / Utility Constraints | • Multi-use Path & Streetscape Upgrades<br>• Stormwater Retrofit Projects<br>• Park Upgrades<br>• Landscape Refresh |

# Next Steps

- **Create** a GIS map that identifies priority areas using heat, flooding, urban forestry, and equity data.
- **Develop** a prioritization tool to compare potential projects.
- **Select** five pilot projects.
- **Coordinate** a spring site visit to selected pilot project locations.

# Upcoming Ambassador Program Meetings

**Meetings on the First Wednesday of the Month, 5:30-6:30 PM**

**January: No Meeting – Winter Break**

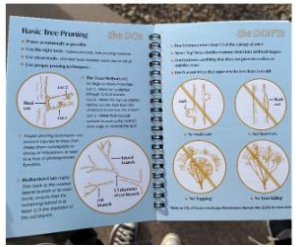
**February 7th: Stormwater & Water Conservation**

**March 6th: Codes & Standards Review, Pilot Project Update**

**April 3rd: Pilot Project Site Visit *(tentative)***








# Questions?

Contact Maddie Mercer,
Sustainability & Resilience Office

…

Email: Madeline_Mercer@tempe.gov

Phone: 480-355-8864