

Building Watershed Resiliency: Green Infrastructure Initiatives & Community Partners

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& Reese Baker of
The RainCatcher

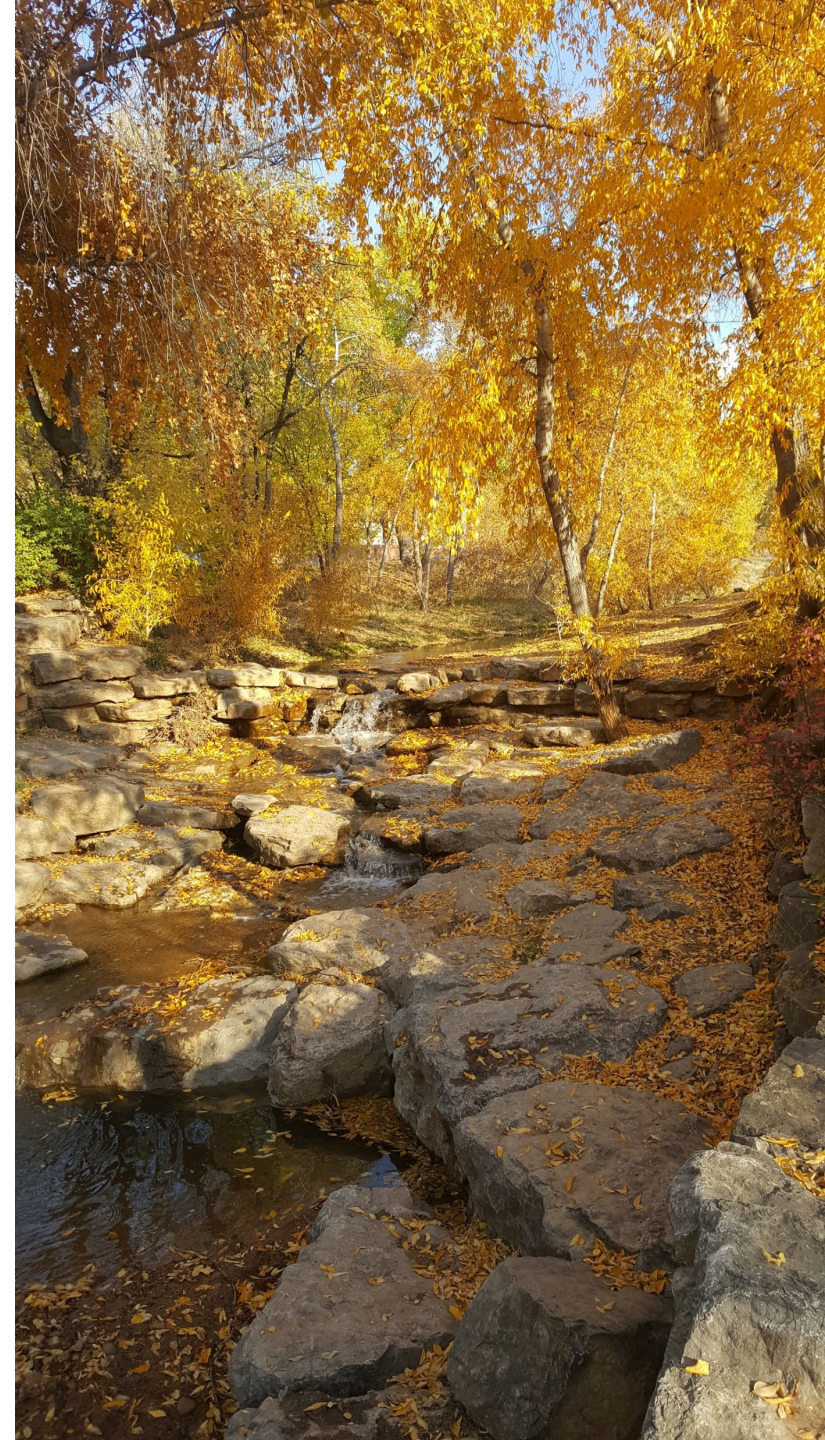
Quality of Life Committee

June 3, 2026



Outline

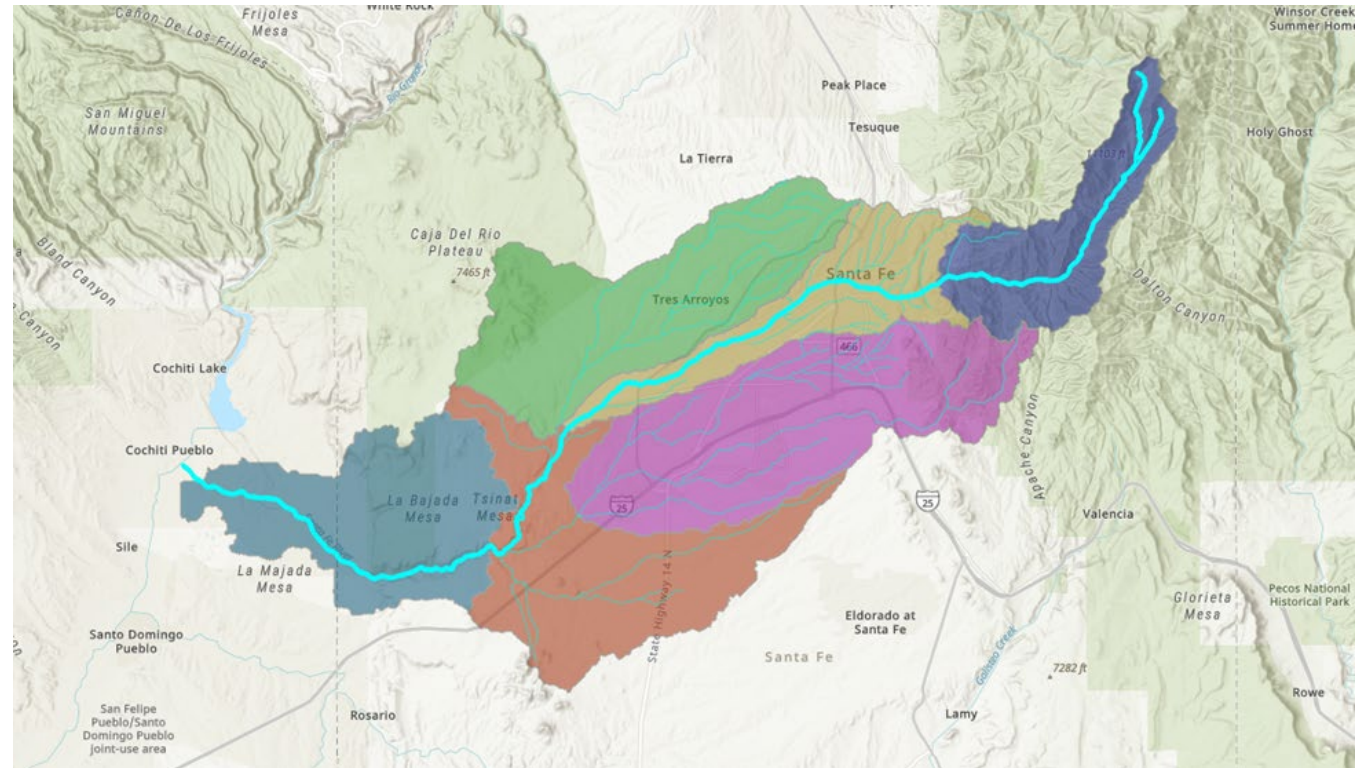
- Stormwater management in Santa Fe
- Reconnecting stormwater to the landscape
- City of Santa Fe initiatives
- The RainCatcher (Reese Baker)
- Questions



Stormwater in Santa Fe

All water in our watershed drains to the Santa Fe River, either above or below ground.

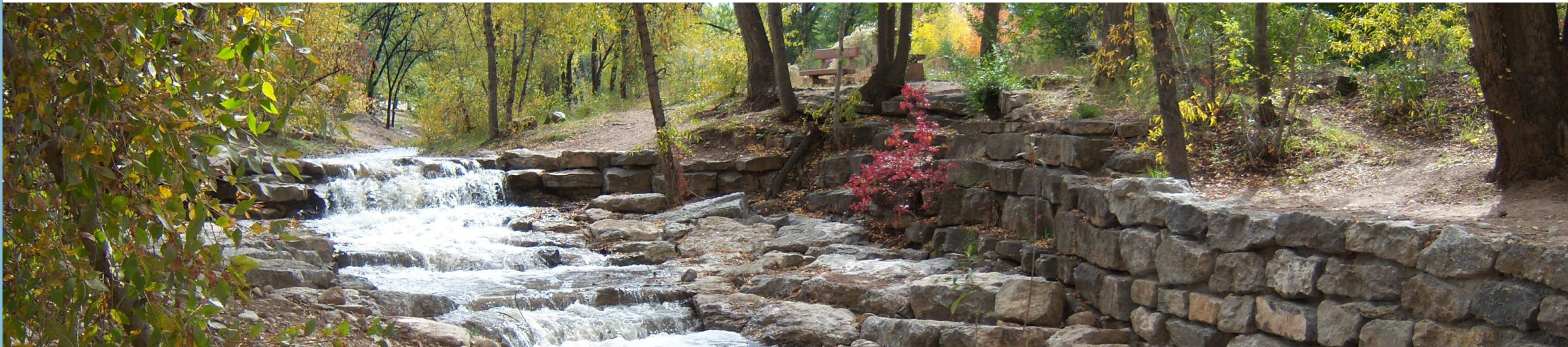
Water is conveyed through arroyos, acequia, and aquifers to the river channel. The Santa Fe River flows above and below ground to the Rio Grande, just south of Cochiti Reservoir.



MS4 Permit

As part of the Clean Water Act, the EPA requires all municipalities over 50,000 people to hold an NPDES permit to discharge stormwater into Waters of the US (WOTUS) with the goal of improving surface water quality.

This permit requires the City to implement a Stormwater Management Plan (SWMP) to **improve stormwater quality**. This permit and plan are overseen by the City's River and Watershed Section.



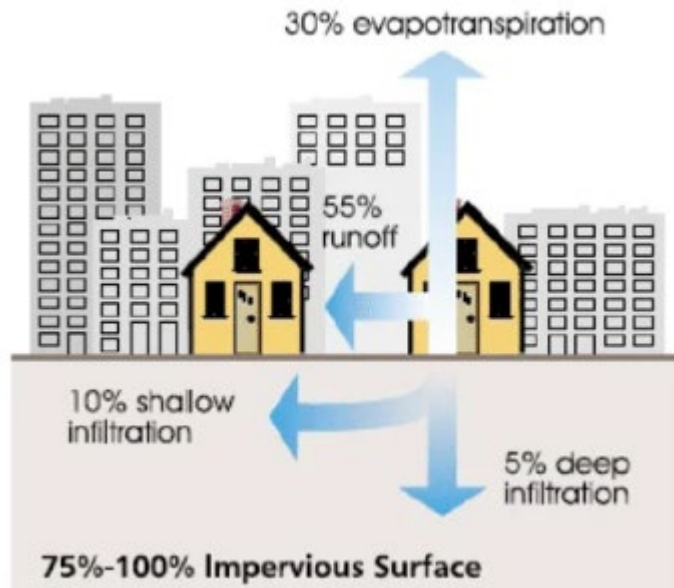
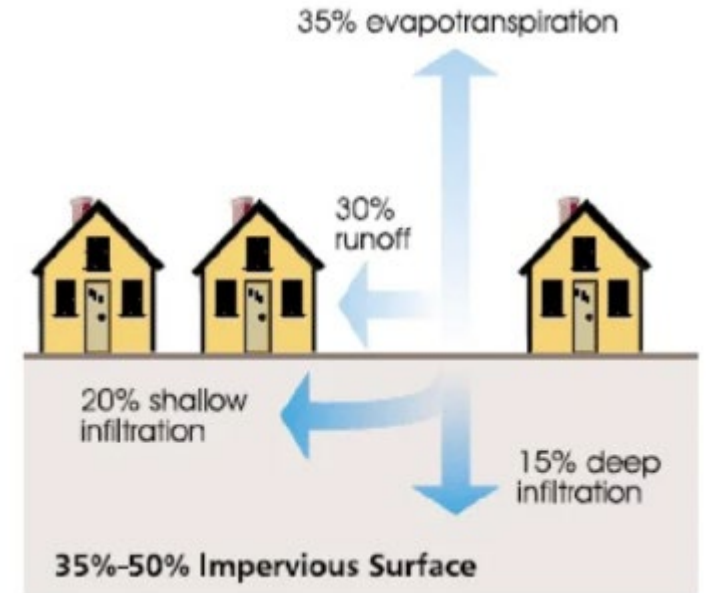
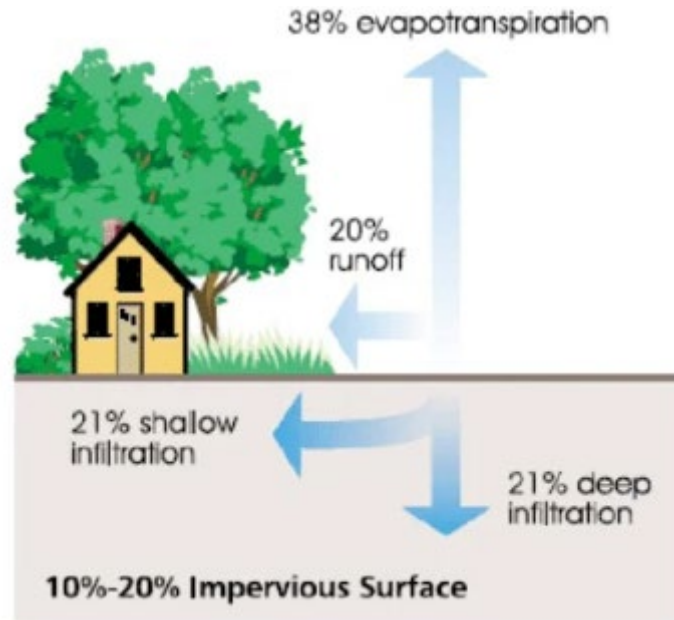
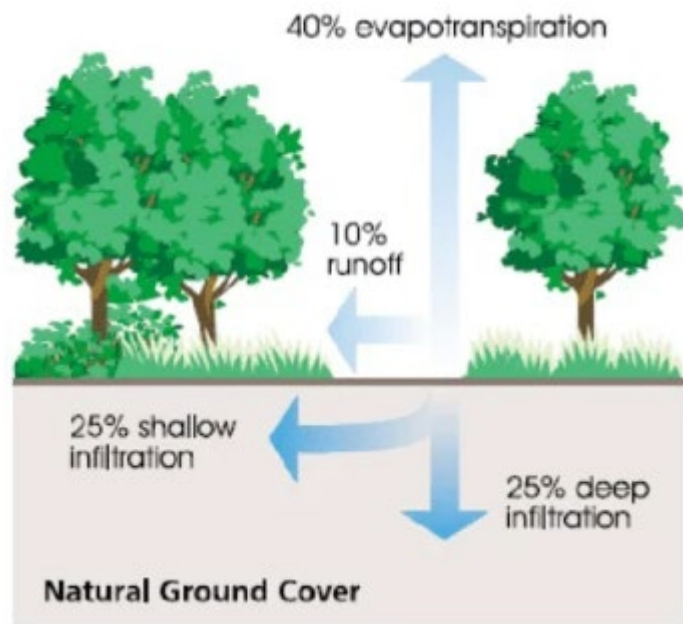
The Pre-Development Landscape

In a pre-development state, the Santa Fe landscape functioned as a natural sponge. Historically, it is estimated that between 0.5 and 1.0 inch of rainfall could be absorbed and held by the soil and vegetation before significant runoff began.

Canopy and Surface Storage: Before water even touched the dirt, tree canopies (like piñon and juniper) and native grasses intercepted rainfall. Small natural depressions in the uneven ground also "trapped" water, allowing it to sit and soak in.

Soil Composition: Santa Fe's native soils, often composed of gravelly loams and sands, have high infiltration rates compared to the compacted soils or pavement found in developed areas today.

Vegetation Roots: Healthy root systems created channels in the soil, allowing water to travel deeper into the ground rather than sliding across the surface.



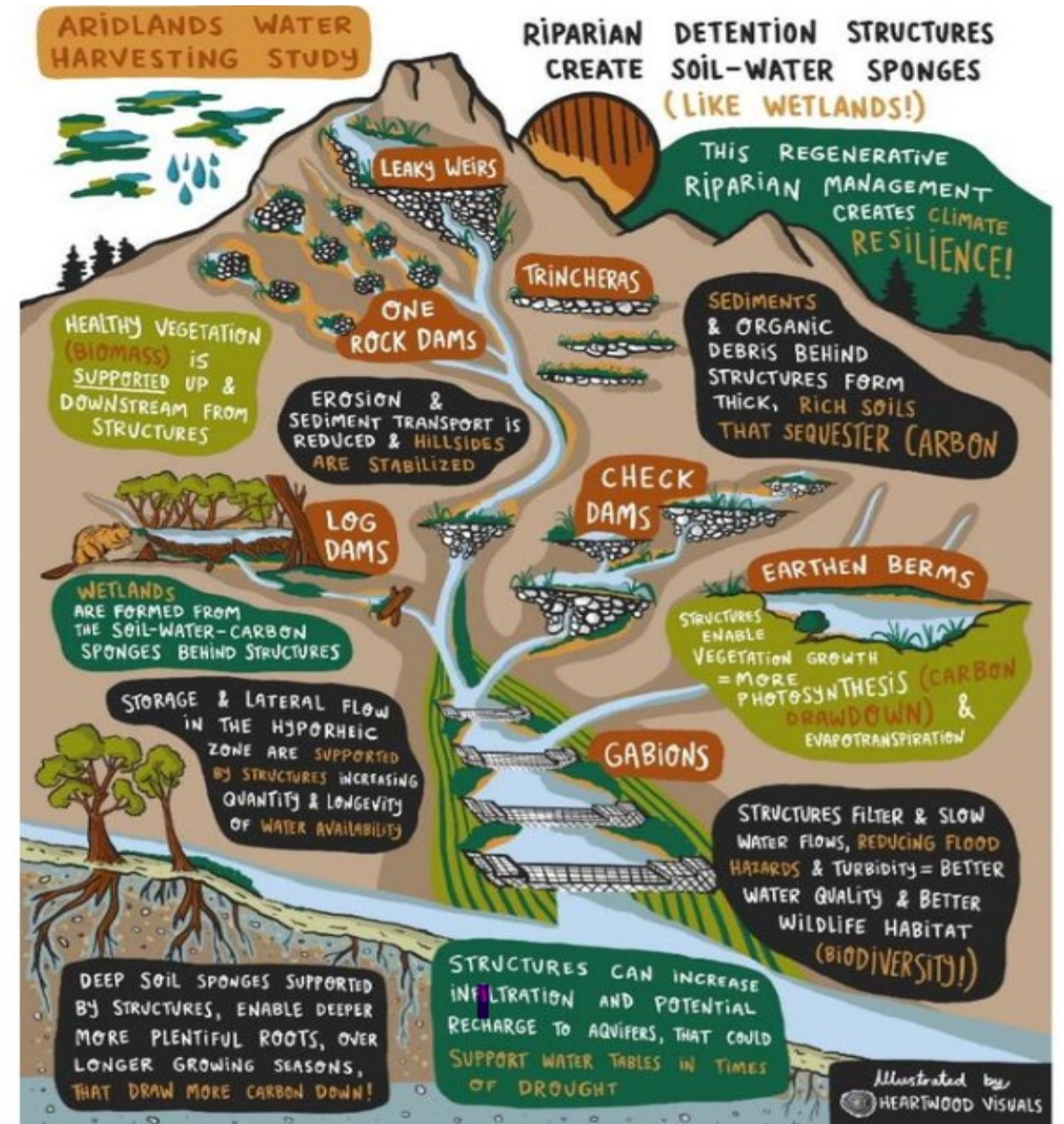
As impervious surfaces expand, the **land loses its ability to absorb water**. This shift converts beneficial rainfall into high-volume runoff that drives **erosion, accelerates infrastructure failures, and degrades local water quality**.

Nature-Based Solutions

Nature-based Solutions (NbS) uses **natural materials** such as soil, vegetation, and rocks, **mimicking natural processes** to manage water and stabilize landscapes.

NbS are:

- Adaptable and Self-Healing
- Provide Multi-Beneficial Outcomes
- Cost-Effective
- Resilient



From Laura Norman's USGS Arid Land Water Harvesting :

Using Nature-Based Solutions to Help Manage This:

- Polluted runoff
 - **Sediment** from erosion upstream
 - Toxins such as **oils and heavy metals** from roadway
- **Large volumes** of fast-moving stormwater
- **Costly and robust** infrastructure required





And This...

NbS help capture peak pulses upstream of the Santa Fe River to reduce flood risk

Green Stormwater Infrastructure

Green Stormwater Infrastructure (GSI) is a management strategy that uses soil, plants, and **natural design** to capture and filter rainwater.

By **slowing, spreading, and soaking** up runoff where it falls, GSI reduces the load on traditional drainage pipes and **treats stormwater as a local resource** rather than a waste product.

GSI **attenuates flooding, improves water quality, cools urban heat islands, and provides habitat.**

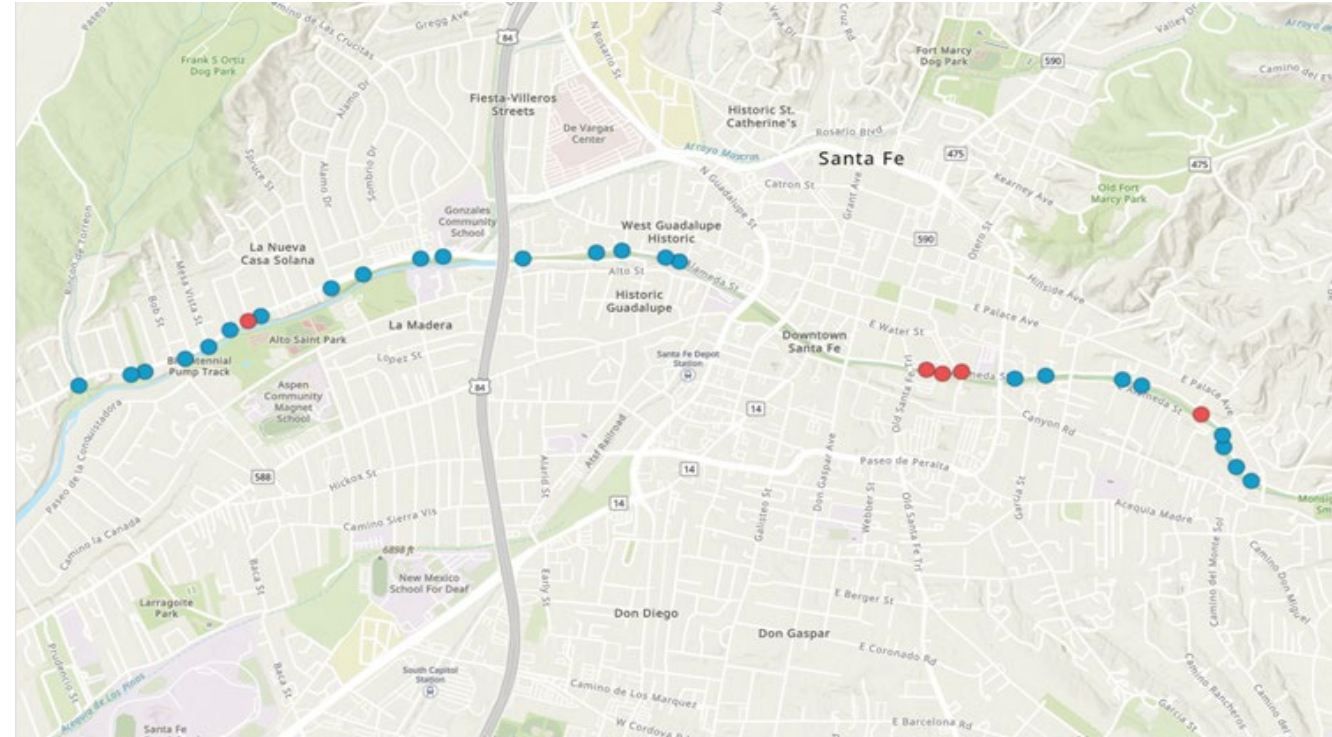


Collaboration the Rain Catcher, SFWA and City of Santa Fe (funded by River Stewards Grant and Santa Fe River Fund)

Alameda Rain Garden Program

The River Fund

"Money deposited in the voluntary river conservation fund shall be dedicated to projects **that improve the flow of water in the Santa Fe River in ways that enhance the ecosystems of the Santa Fe River** and its riparian corridor."



Sicomoro Rain Garden at Alto Park

This bio-basin infiltrates up to **100,000 gallons** of runoff in a normal year.



Collaboration between SUH, the Rain Catcher, SFWA and City of Santa Fe (funded through Santa Fe River Fund)

Runoff to Roots Program

The Runoff to Roots program supports neighborhoods and individuals that wish to install rain gardens in public spaces such as city parks, open spaces, and right of ways.

These rain gardens not only collect and infiltrate stormwater runoff from impervious areas but also beautify neighborhoods and provide pollinator habitat.



Valley Drive Collaboration

- **Public/private** partnership
- Neighbors expressed interest
- **City designed and constructed retrofit** rain gardens
- Neighbors committed to **maintenance through volunteer agreement**
- **Improves drainage** on Valley Drive
- Increases **habitat**
- Provides **water quality** improvements



Mary Esther Gonzales Senior Center

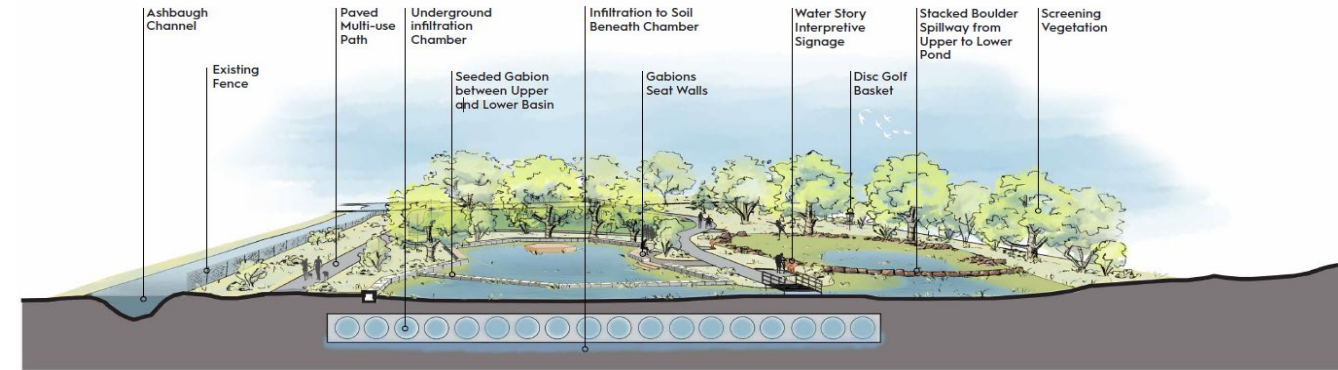
- **Public/private** collaboration
 - Public request for rain garden
 - City/volunteer built
 - MEG seniors decorated birdhouses (to be installed)
- **Solves drainage** problem
- **Beautifies** entrance to MEG
- Provides **pollinator habitat**
- Maintenance provided by **volunteers**



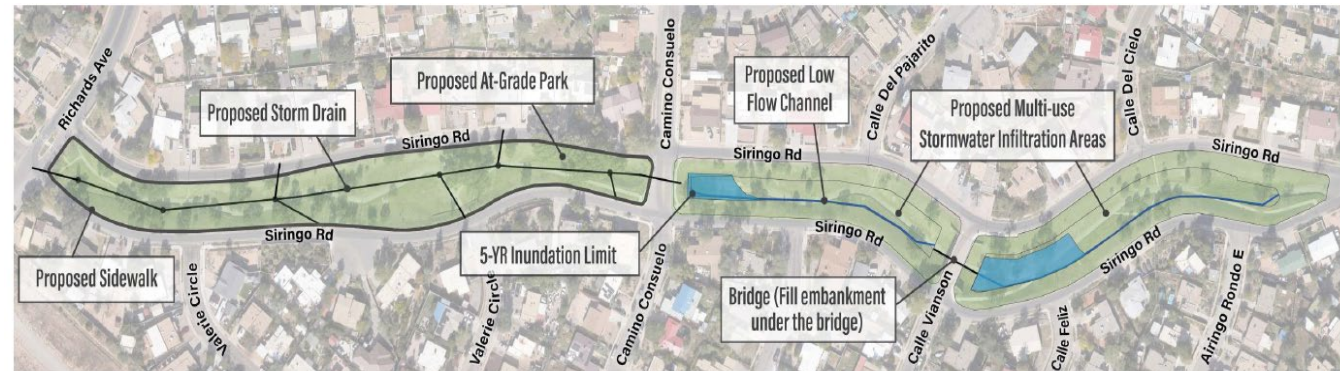
Large-Scale Stormwater Infiltration Projects in Parks

Project Goals:

- Reduce flooding by **capturing, detaining, and infiltrating** stormwater:
 - Improved water quality
 - Decrease pollutant loads at points of discharge
 - Additional support for locally adapted plants and wildlife
- Create **multi-beneficial space** by providing dual-purpose areas
- Provide **opportunities for gathering, place-making and nature play**



Ashbaugh Park Stormwater Infiltration

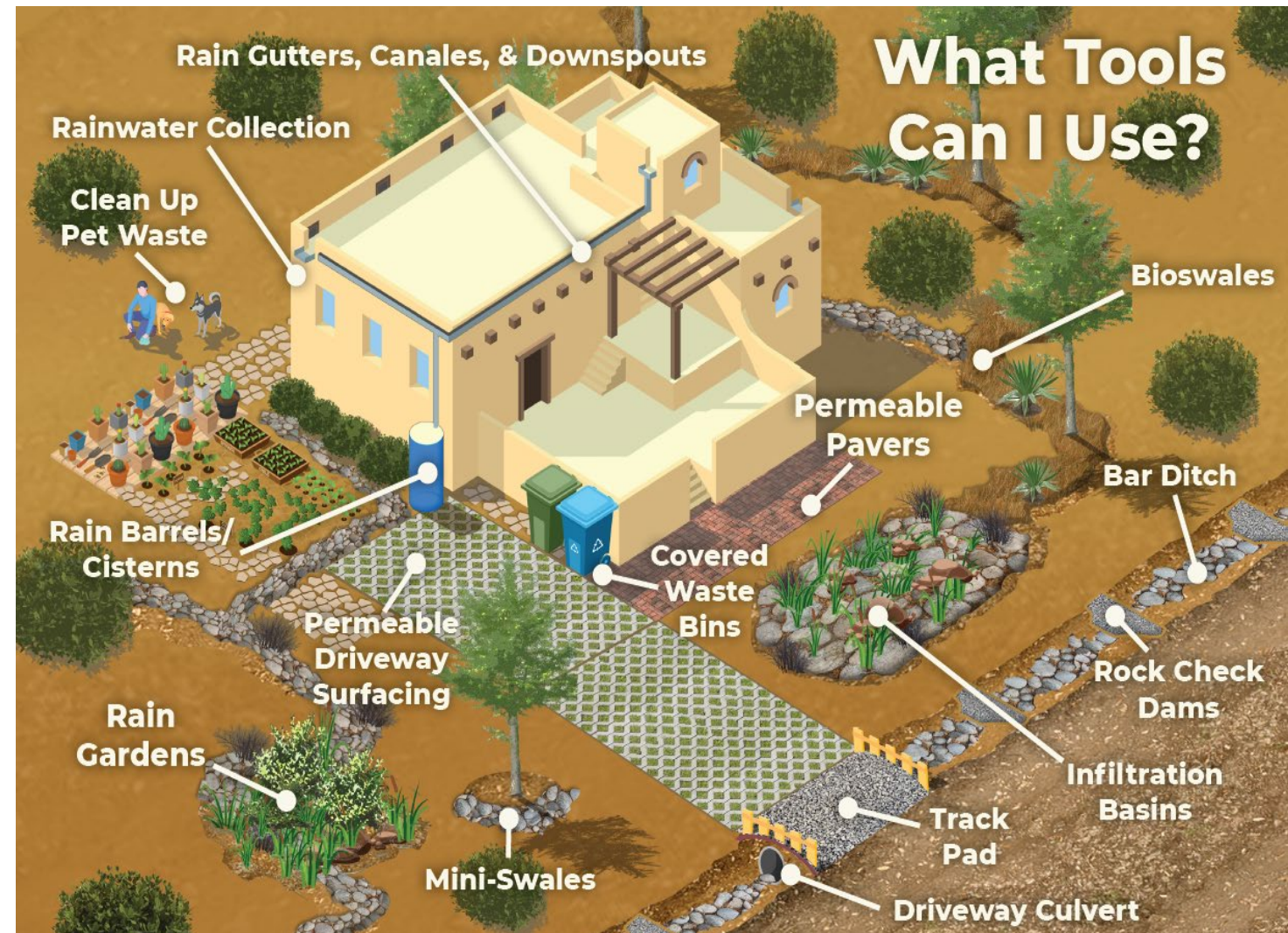


Marc Brandt Park Infiltration Basins

Residential Campaigns

Educating homeowners to **prevent flooding** and **excess pollutant loads** by infiltrating water where it falls on your property.

This example brochure shows low-effort ways homeowners can implement onsite stormwater management.



GSI Provides Habitat in Urban Environments

Biodiversity is the key to a healthy river corridor. Biodiversity increases resiliency:

- **Provides redundancy** in the system by supporting multiple species that play similar roles
- Improved **adaptive capacity** and resistance to climate change, pests or disease
- **Optimizes resources** as different species utilized nutrients and space in varied ways, creating a system that is harder to disrupt



HABITAT TREE
ÁRBOL HABITANTE

 Female

This dead tree is converted into a bird home for Northern Flicker birds (*Colaptes auratus*). Look for the Western Bluebird (*Sialia mexicana*) home down by the playground.

 Male

Este árbol muerto se convierte en casa para los pájaros llamado el Carpintero de Pechera. Busca la casa del pajar el Azulillo del Oeste al lado del parque infantil.

An urban forestry project by:

Research Project Hopes to Naturally Eradicate Siberian Elms

12 Mar, 2024

A pilot project to establish a protocol for Siberian Elm eradication using -fungal inoculants was concentrated on five discreet areas throughout the City: The Arroyo de los Pinos behind Camino Lado, the Arroyo de las Cruces near Frenchy's Field Park, the Sierra Del Norte Trail Head/Dog Park, SWAN Park, and the Santa Fe River Trail near the Gonzales Pedestrian Crossing.



The project, led by Reese Baker of The Rain Catcher, LLC, is part of a research project piloted with the help of the [City's Parks and Open Space Division's River and Watershed Section](#).



Building a Culture of Stewardship: we want to empower constituents to be stewards of our river and watershed.

An educational series sponsored by the City of Santa Fe & the Santa Fe River Commission

RIVER TALKS

The City of Santa Fe and the Santa Fe River Commission are proud to announce this year's topics covering all things River and Watershed. Talks begin in September and run through the first week of October!

September 7th, 5:30PM-7:00PM

Santa Fe Water Conservation Division Presents: Bees, Trees and Water and the Importance of Context Sensitive Environmental Stewardship

- Location: Santa Fe River at Camino Escondido (south bank near the Bee Motel sculpture.) Bring a camp chair or blanket as seating will not be provided.
- Presenters: Christine Chavez, City of Santa Fe Water Conservation Manager & Kaitlin Haase, Xereces Society Southwest Pollinator Conservation Specialist

September 13th, 5:30PM-7:00PM

Meeting EPA MS4 Goals Using Bio-Retention Basins and Green Stormwater Infrastructure



October 1st, 3:00PM-4:30PM

Acequia Culture: A Historical Review of Santa Fe's Acequia Madre

- Location: 500 Market Station, Suite 200, Roundhouse Room (entrance next to REI in the Rail yard)
- Presenter: Phil Bove, Acequia Madre Historian

October 5th, 5:30PM-7:00PM

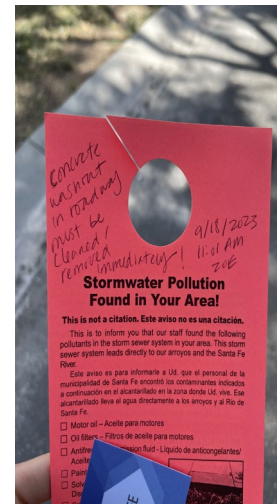


Stormwater in the Santa Fe River Watershed



Stormwater in the Santa Fe River Watershed

The Santa Fe River Commission and the City of Santa Fe

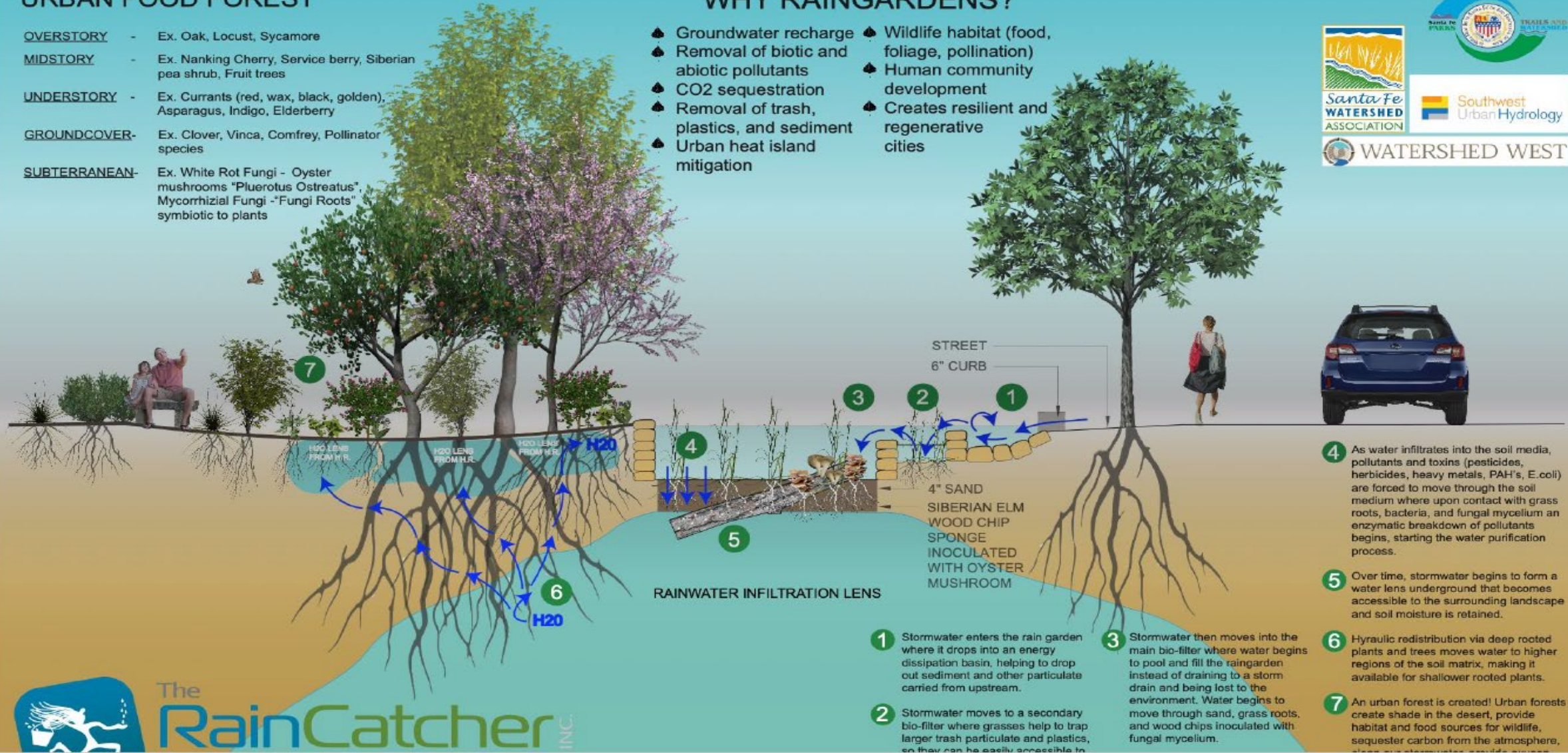


URBAN FOOD FOREST

- OVERSTORY** - Ex. Oak, Locust, Sycamore
- MIDSTORY** - Ex. Nanking Cherry, Service berry, Siberian pea shrub, Fruit trees
- UNDERSTORY** - Ex. Currants (red, wax, black, golden), Asparagus, Indigo, Elderberry
- GROUND COVER**- Ex. Clover, Vinca, Comfrey, Pollinator species
- SUBTERRANEAN**- Ex. White Rot Fungi - Oyster mushrooms "Pleurotus Ostreatus", Mycorrhizial Fungi - "Fungi Roots" symbiotic to plants

WHY RAINGARDENS?

- ▲ Groundwater recharge
- ▲ Removal of biotic and abiotic pollutants
- ▲ CO2 sequestration
- ▲ Removal of trash, plastics, and sediment
- ▲ Urban heat island mitigation
- ▲ Wildlife habitat (food, foliage, pollination)
- ▲ Human community development
- ▲ Creates resilient and regenerative cities



Interpretive signage at Brother's Lane Rain Garden on E Alameda

Siringo Basin Study: a public/private effort

Before:



After:



A two-year study to determine how effectively these types of rain gardens enhance soil moisture to support urban vegetation through passive irrigation at various depths, reducing the need for supplemental water use.

Aspen Dr Rain Garden

Before:



Demonstration rain gardens at The Rain Catcher headquarters on Aspen Drive

After:



Aspen Dr Vegetation Strip

Before:



After:



Demonstration rain gardens along Aspen Drive

Questions?

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Rain Garden at Cathedral Pl and E Alameda (designed and constructed by Seeds of Wisdom)