

# Saving Blue and Green: Elmer Avenue Neighborhood Retrofit

Nancy L.C. Steele, D.Env.  
Executive Director





**Do we see a resilient or sustainable future for our water supply?**

A Vision for 2025:

## **Sustainable Greater Los Angeles**

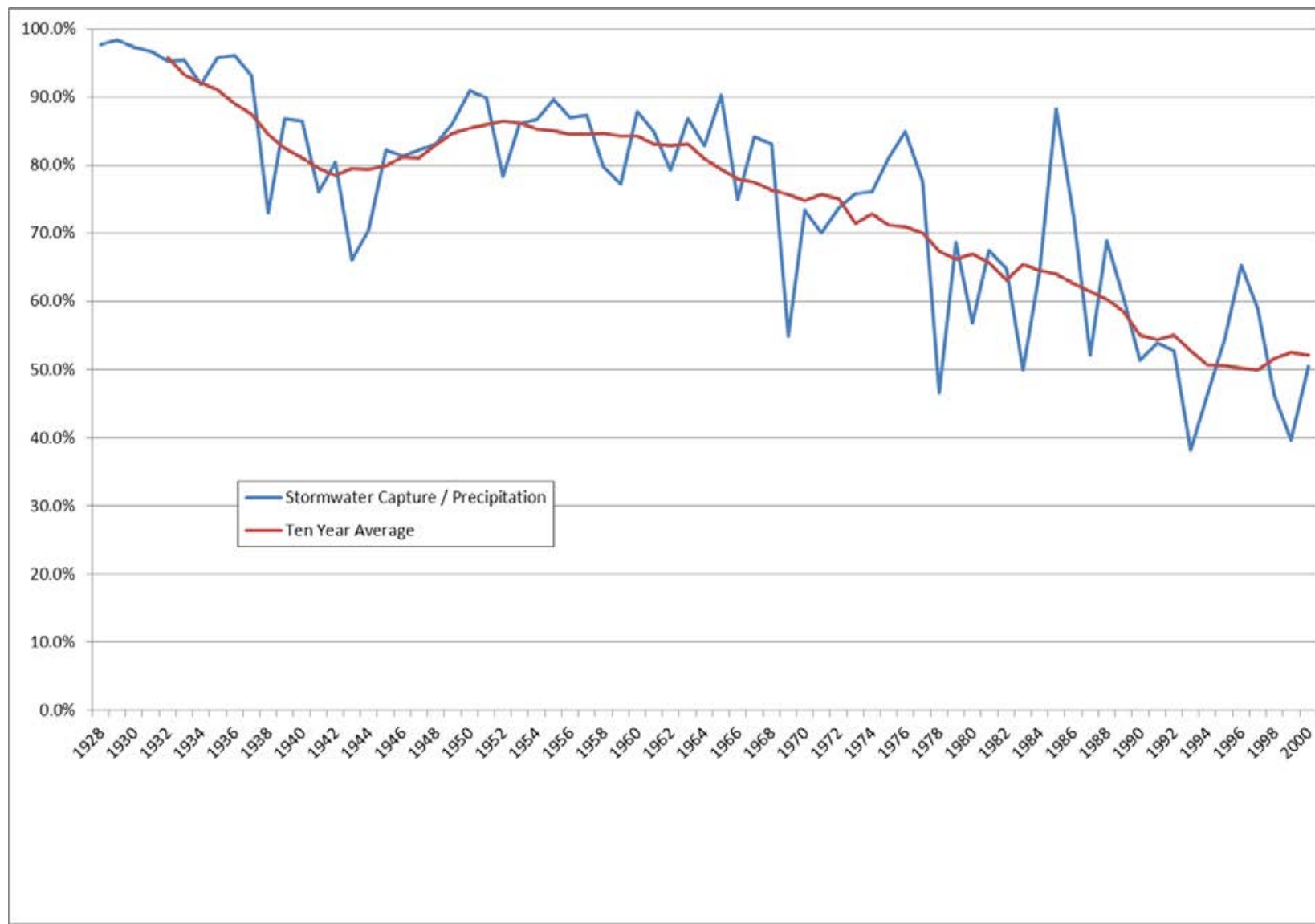
Managing at the watershed scale for economic vitality, social equity, and environmental health

- Clean waters
- Reliable local water supplies
- Restored native habitats
- Ample parks & open spaces
- Integrated flood protection
- Revitalized rivers & communities



**Council for  
Watershed Health**

# Over Time Less Water Infiltrates to Groundwater



And More Water Runs Off to the Ocean



Los Angeles River at Griffith Park 2003

*[http://www.you-are-here.com/location/la\\_river.html](http://www.you-are-here.com/location/la_river.html)*



Los Angeles River near Victory Boulevard, Feb-Mar 1938

[http://en.wikipedia.org/wiki/Los\\_Angeles\\_flood\\_of\\_1938](http://en.wikipedia.org/wiki/Los_Angeles_flood_of_1938)



# STORMWATER:

ASSET NOT LIABILITY

SUZANNE DALLMAN, PH.D. and THOMAS PIECHOTA, PH.D., P.E.

# WAS and Elmer Avenue Project Partners



City of Los Angeles Department of Water & Power  
 City of Los Angeles Watershed Protection Division  
 City of Santa Monica Environmental Programs  
 County of Los Angeles Department of Public Works  
 Council for Watershed Health



California Department of Water Resources  
 Metropolitan Water District of Southern California  
 Regional Water Quality Control Board, LA Region  
 TreePeople



University of California, Riverside  
 Bureau of Reclamation, Department of the Interior  
 Water Replenishment District of Southern California  
 State grants: Prop 13 SWRCB, CalFed, Prop 50 DWR



**MWD**  
 METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA



Los Angeles

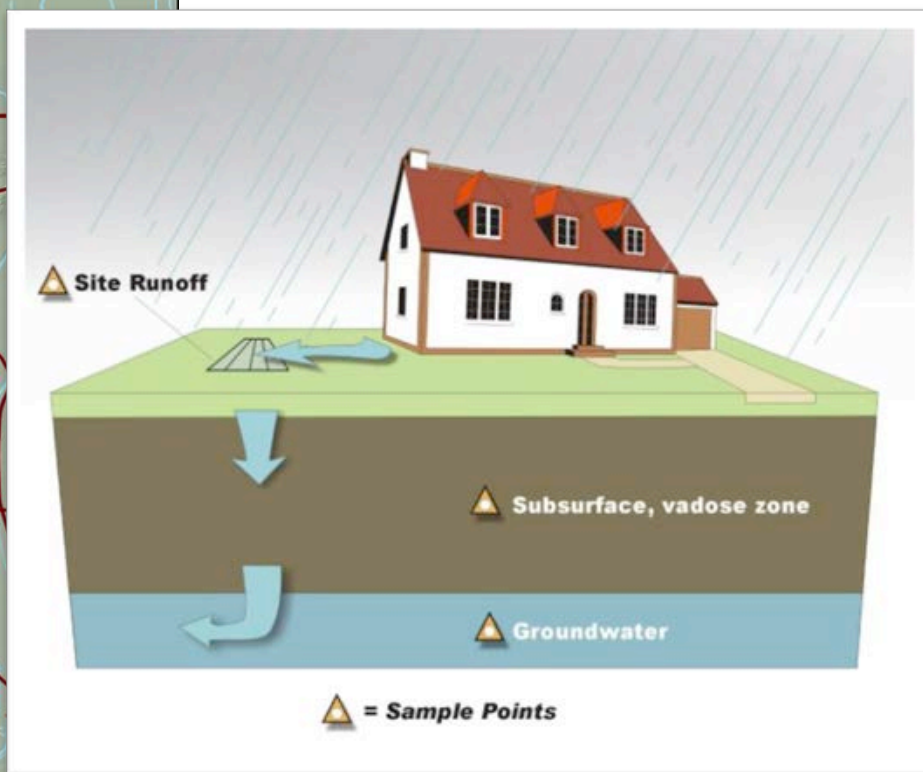


Department of Water and Power





# Follow the raindrop



# Elementary School Site

Broadous Elementary, Pacoima



# Commercial Site

IMAX Corp, Santa Monica



Parking lot runoff into landscape strip

Roof drain into drywell



# Residential Site

Hall House, South Los Angeles



Swale in front lawn

Drywell collects runoff conveyed from driveway drain



# Industrial Site

Metals Recycler, Downtown Los Angeles



Concrete detention/sedimentation basin;  
Pretreatment to reduce sediment, oil, & grease  
Before infiltration

# Industrial Site

Recycled Material Sorting Facility, Sun Valley



Detention basin for settling; sub-surface infiltration field captures roof and yard runoff

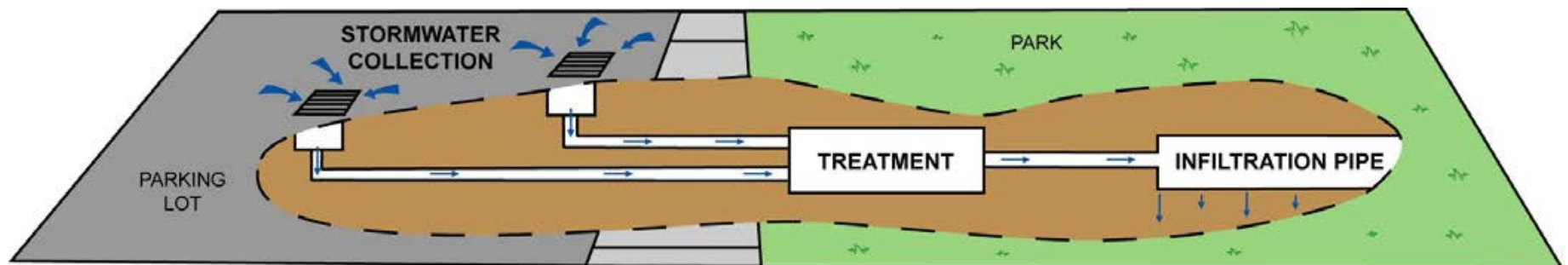


# Park Site

Veterans Park, Long Beach



Sheet flow to catch basin; piped to buried sedimentation vault



# Conclusions: Six Years of Data

## ***Stormwater Infiltration Is Safe For Groundwater\****

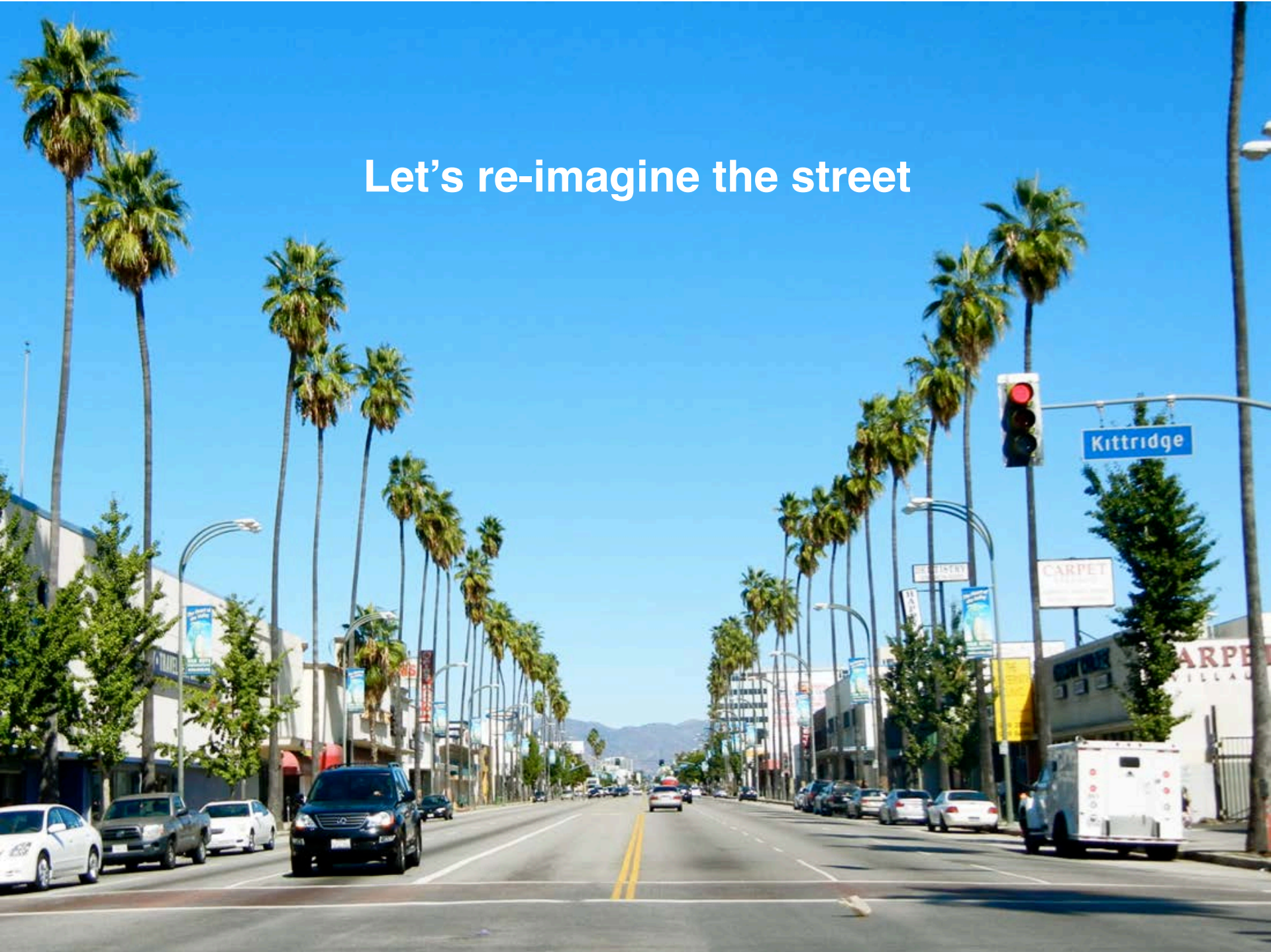
- Concentrations in groundwater did not correspond to stormwater concentrations
- Groundwater quality is stable or improved for most constituents at sites with shallow groundwater
  - Bacteria: removed by soil
  - VOCs: no impacts detected in groundwater
  - Inorganic groundwater constituents show no or trends in concentrations







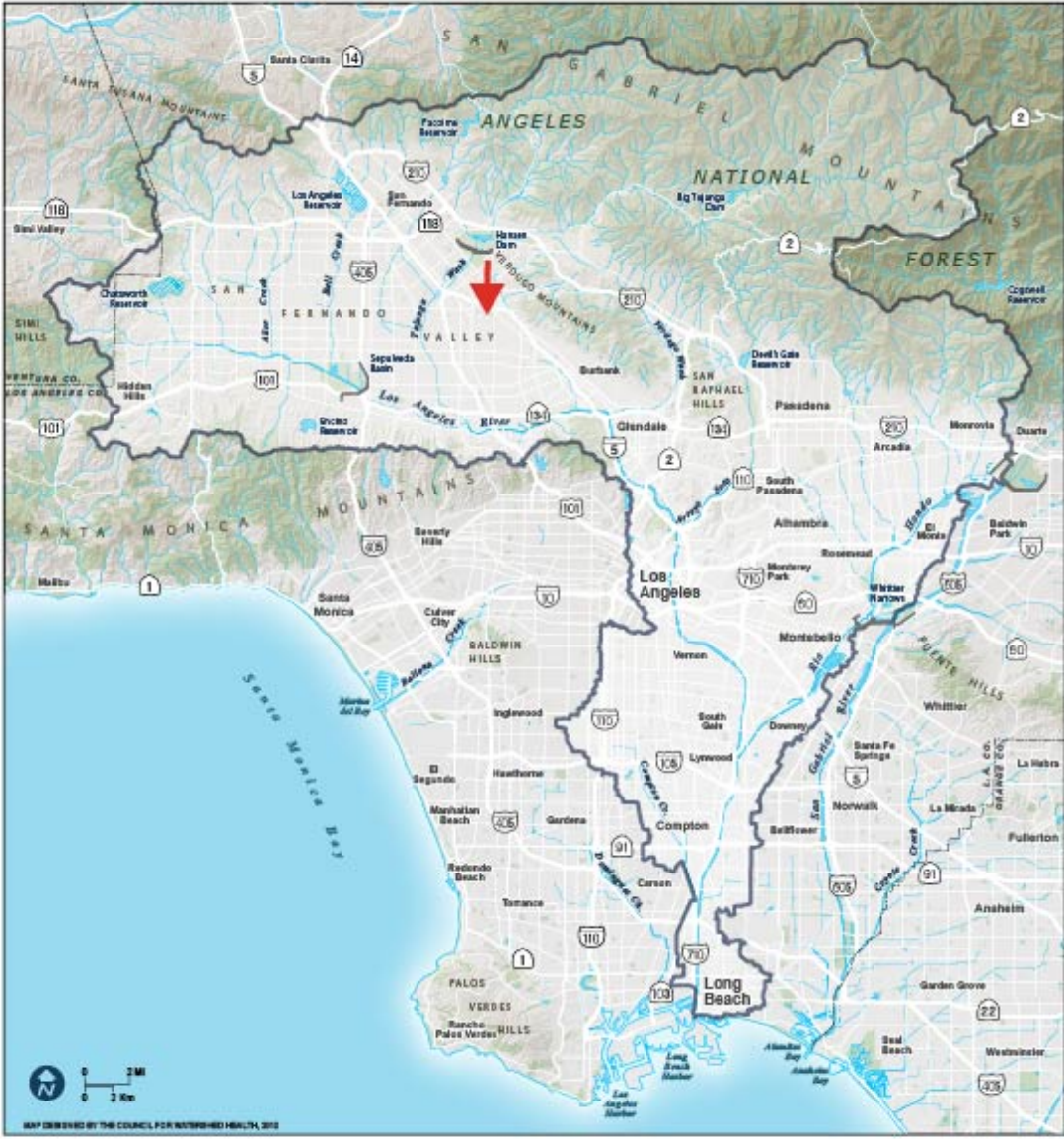
Let's re-imagine the street





**Elmer Avenue Runoff**

# Sun Valley, City of Los Angeles, California



# Elmer Avenue Neighborhood Retrofit Project



40 acres drain to Elmer Avenue



20 acres drain to Elmer Paseo

# Elmer Avenue Neighborhood Retrofit



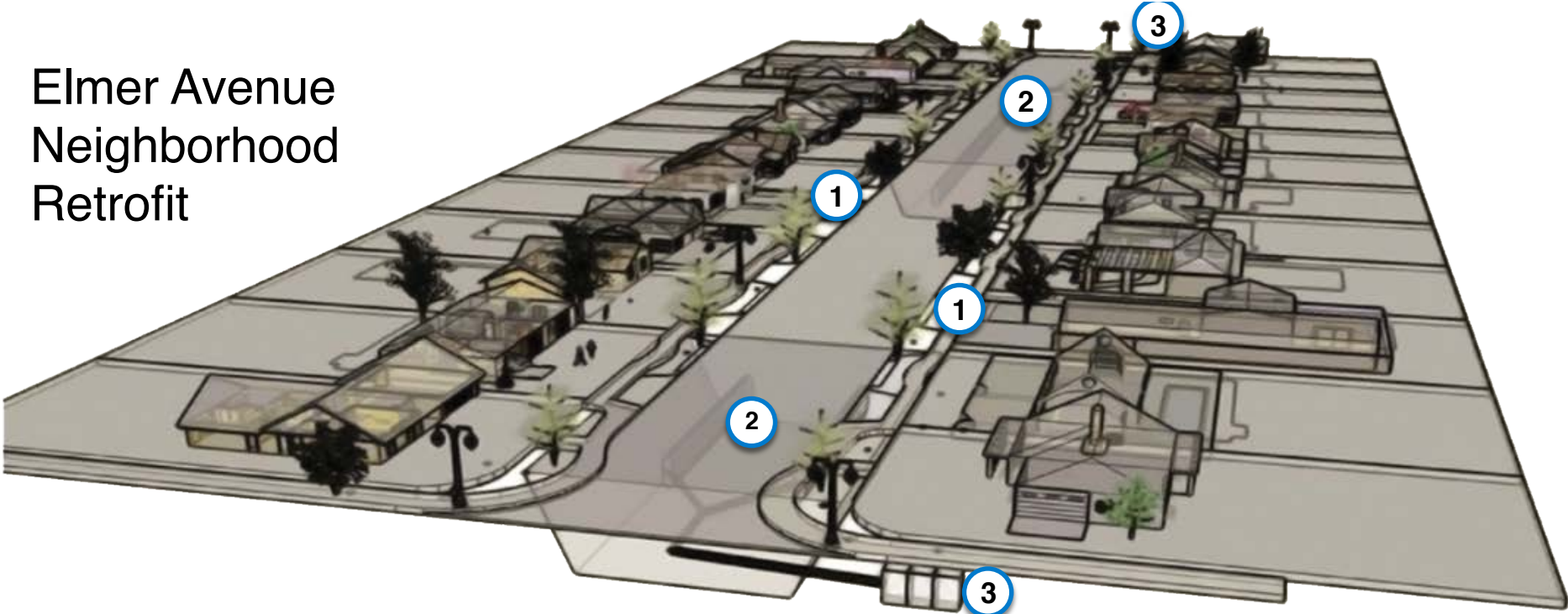
# Reimagine the Street as a Recharge Facility







# Elmer Avenue Neighborhood Retrofit



**1. PARKWAY BIO-SWALES**



**2. INFILTRATION GALLERIES**



**3. CATCH BASINS**



Before (2007)



After (2011)



Elmer Avenue Neighborhood Retrofit



2005



2010



# Elmer Paseo Stormwater Improvements: Project Partners



Santa Monica Mountains Conservancy



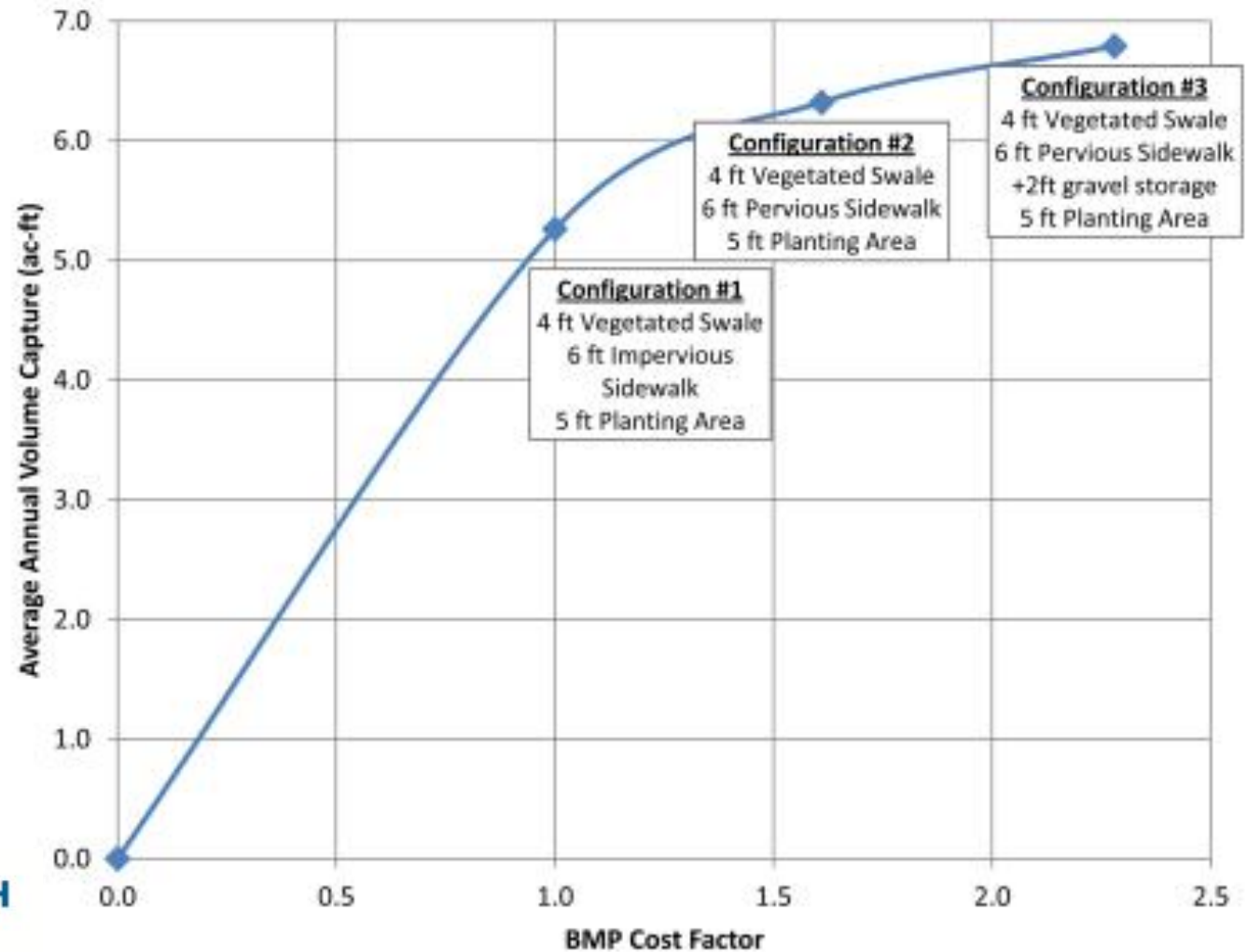
Residents of Elmer Avenue, Keswick St. Lull St.



# Elmer Paseo



# Design & Engineering: Optimized Configuration Options



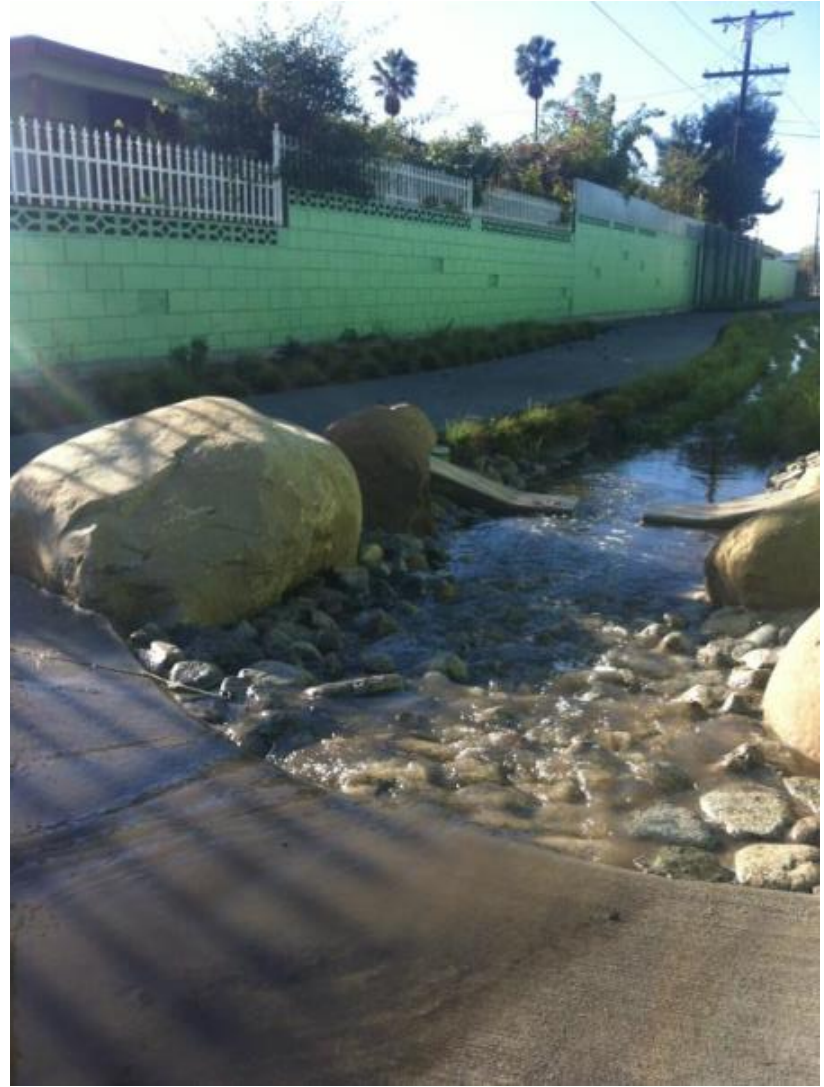
# Elmer Paseo

Week of December 10



Almost ready...testing the  
“strollability”









“It is impossible to develop effective environmental policy unless it is based on sound scientific information.”

Millennium Ecosystem Assessment  
Kofi Annan, 2000  
UN Secretary General





Photo: Council for Watershed Health

Water Quality



Water Quantity (infiltration)



Optimization & Stewardship



Community Engagement



Other Benefits

# Performance Monitoring

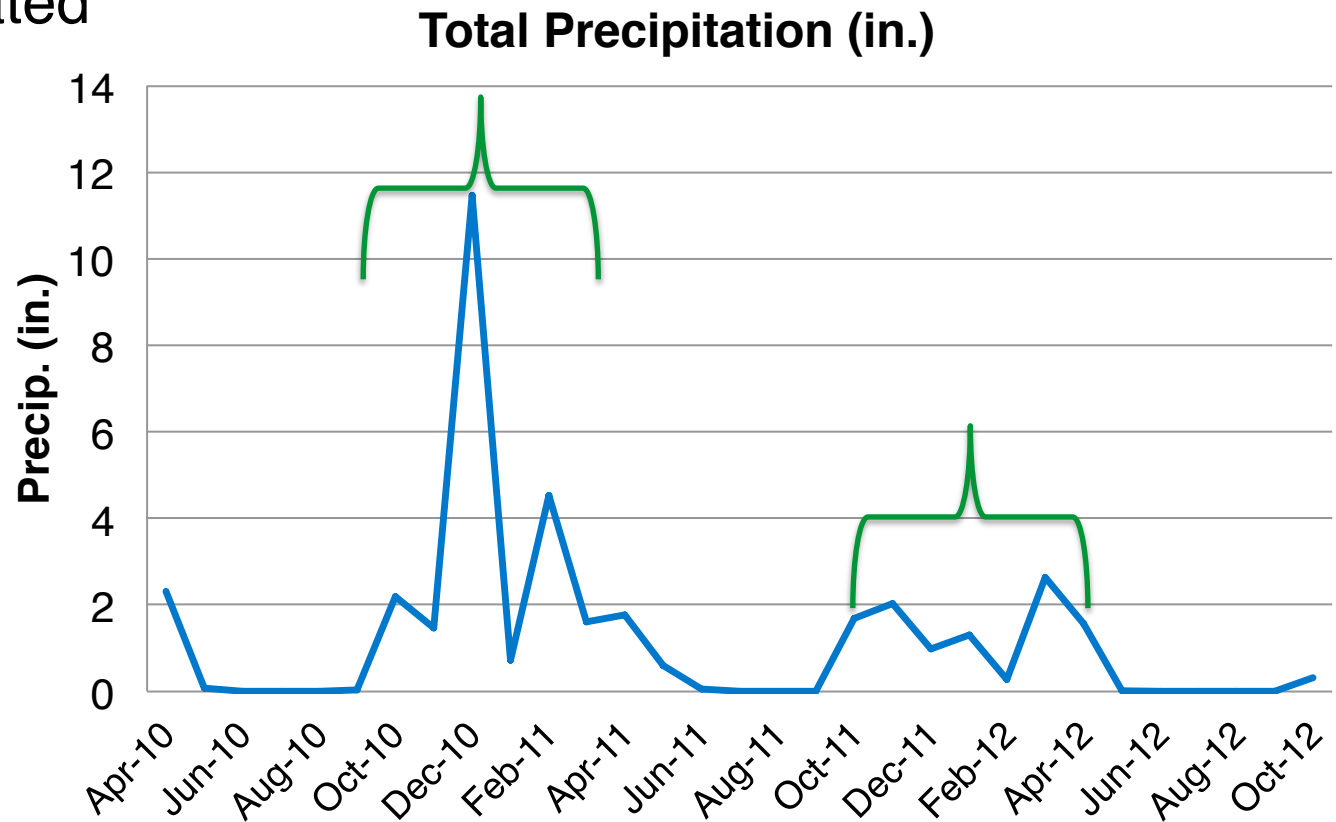
## Elmer Paseo Monitoring



# Elmer Avenue: Quantifying Infiltration

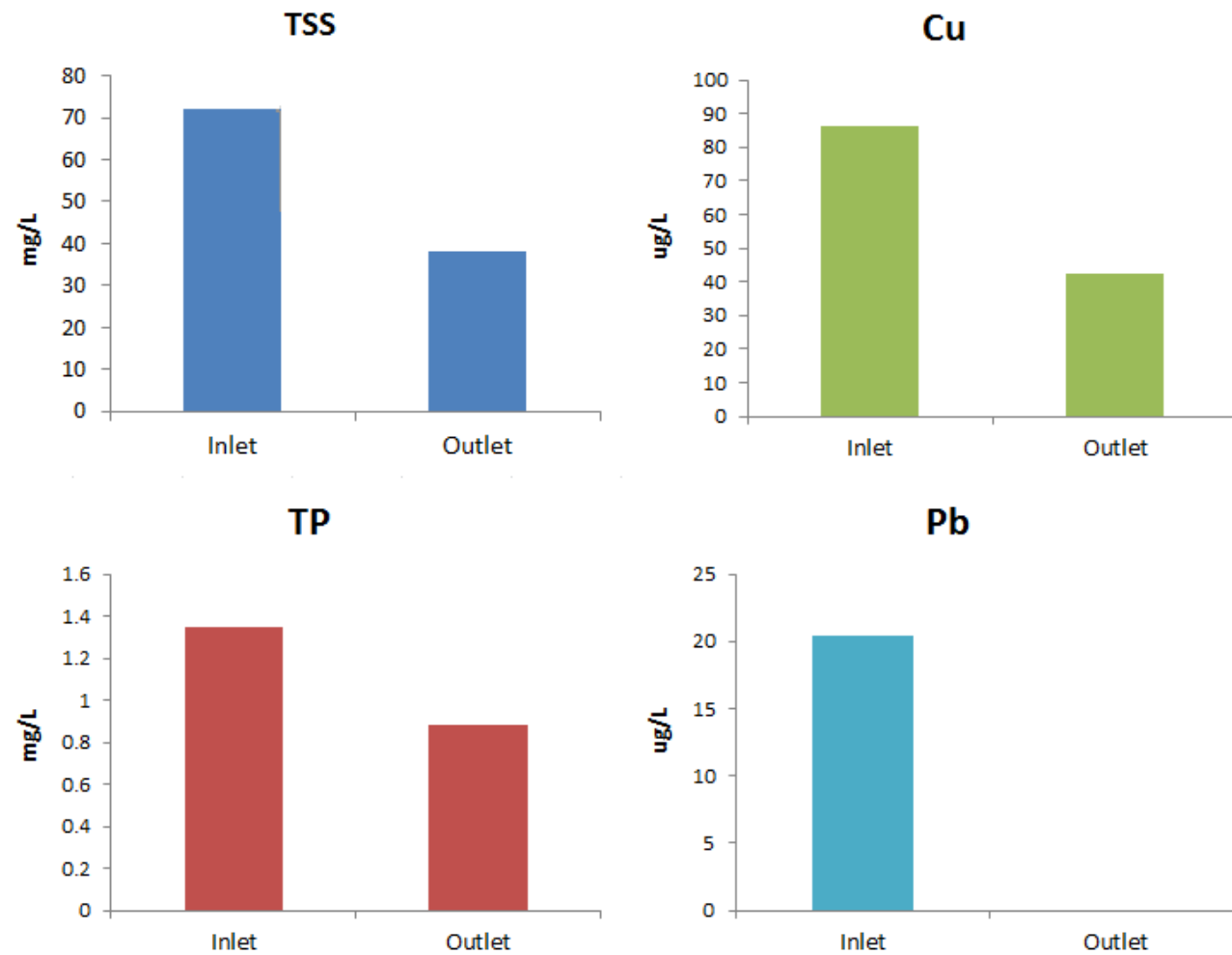
April 2010 – August 2012

Partial Data - 19 acre-feet  
(6,191,177 gallons) of  
water infiltrated



# Elmer Paseo: Water Quality Monitoring

December storm: 12/19/2013



# Optimization & Stewardship

## Documentation

- Litter
- Sediment
- Mulch
- Plants
  - Desirable
  - Undesirable
- People



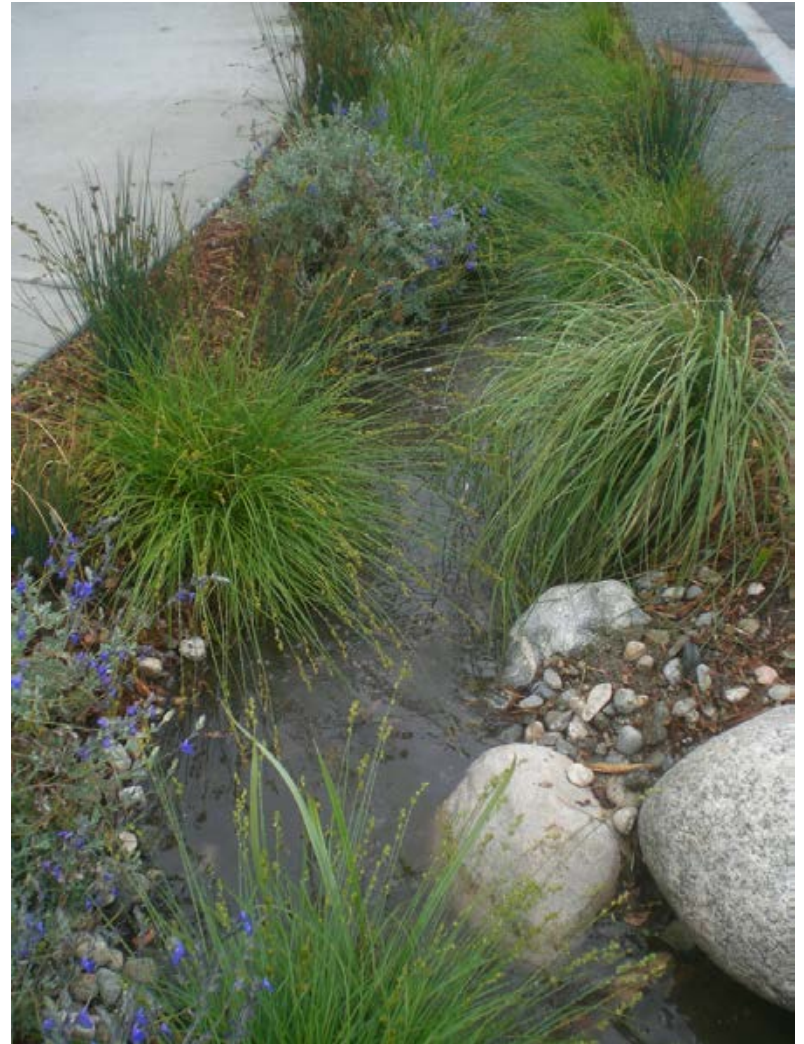


# Community Engagement

# Urban Green Infrastructure

Uses vegetation, soils and natural processes to manage water and create healthier urban environments.

- Catch water for recharge
- Clean water that flows through
- More green space for respite & recreation
- Water conservation
- Economic development (beautification)
- Jobs (construction & operation)
- Energy savings
- Carbon benefits
- Habitat value





# Urban Green Infrastructure

Uses vegetation, soils and natural processes to manage water and create healthier urban environments.





# Thank you!



**Council for  
Watershed Health**

**Nancy L.C. Steele, D.Env.**  
[nancy@watershedhealth.org](mailto:nancy@watershedhealth.org) 213-229-9945