Green Street Demonstration Project on Main Street

Infrastructure Program

Fiscal Year 2023-2024

Upper Los Angeles River

City of Alhambra

David Dolphin, Chris Carandang

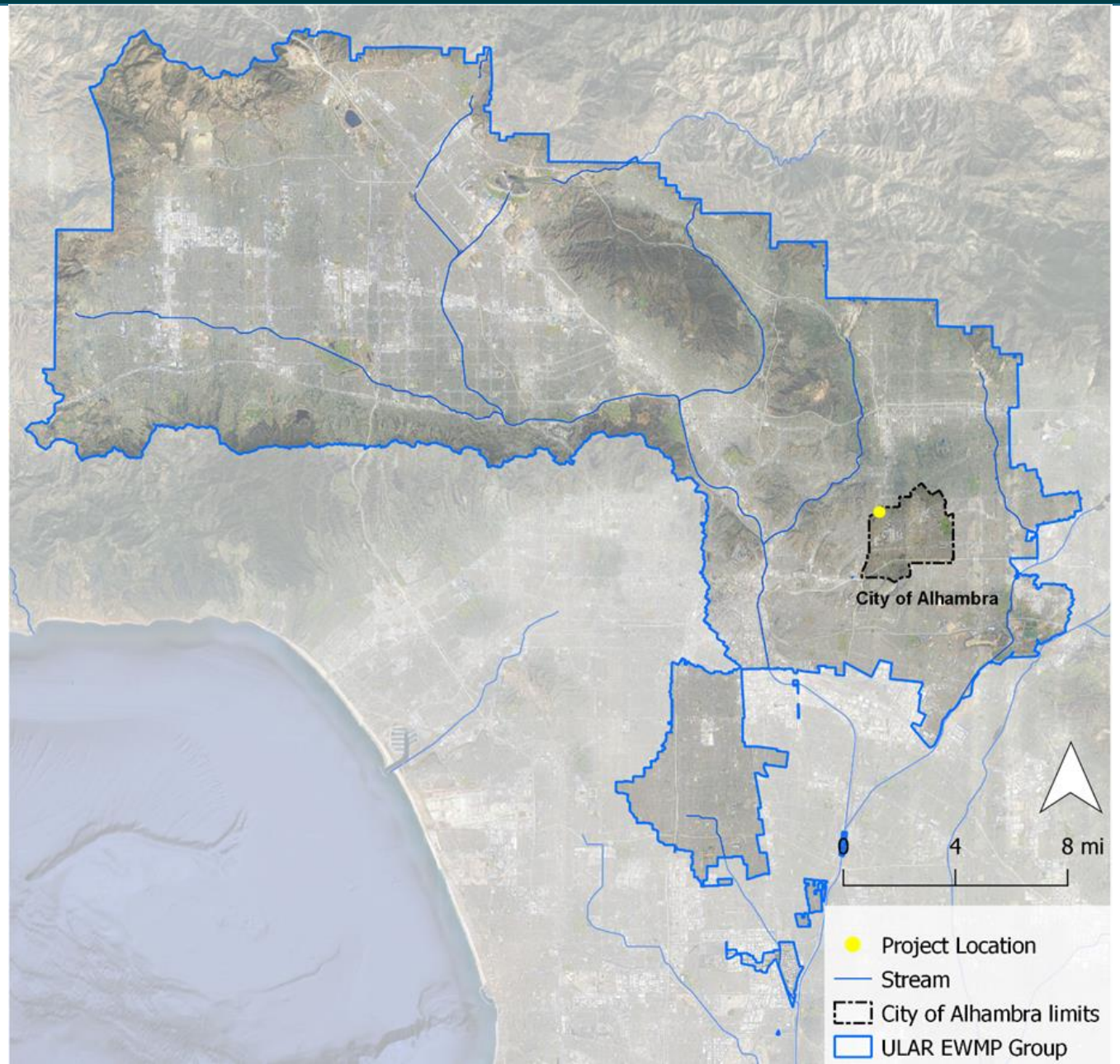
Previously Awarded TRP – Yes

Project Overview

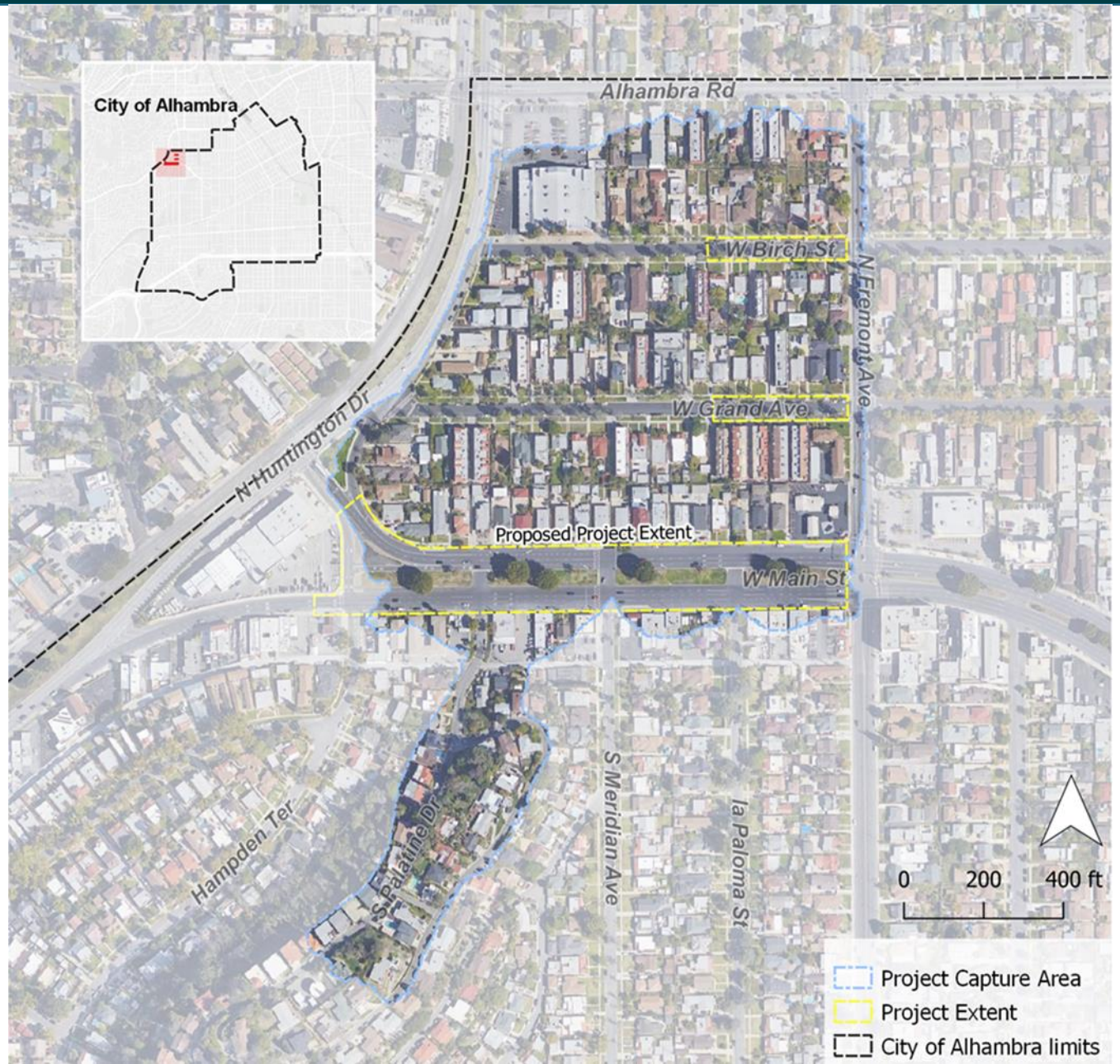
A sustainable stormwater streetscape project on Main Street near Fremont Avenue that will bring multiple benefits to the community.

- Primary Objective: Water Quality
- Secondary Objectives: Increased Greenery, Pedestrian Safety
- Project Status: Requesting Design & Construction
- Total Funding Requested: $3,773,000

Project Location



Project Location



Disadvantaged Community

Find Your Community:

Get Report

Click any park on the **map** for park details.
Or click the pin to turn it on, then click any location for half-mile data.

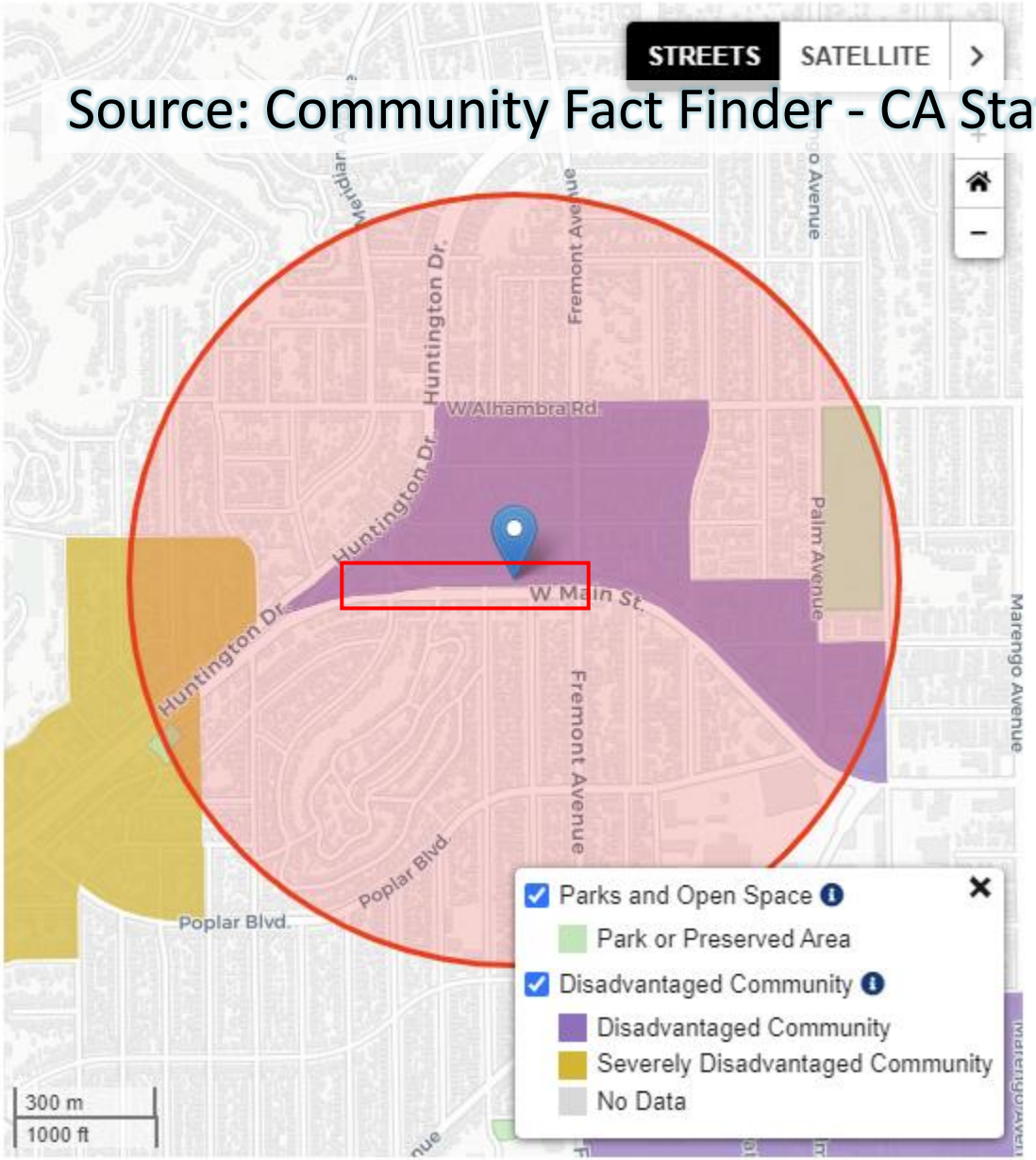
Or enter an address, city, or latitude, longitude, and then click the search button to get a report

900 fremont st alhambra | Search

Results for Alhambra (County: Los Angeles)

Latitude, Longitude	34.09533020,-118.15351725
Total Population	9,624
Youth Population	2,021
Senior Population	1,120
Median Household Income	$73,433
Per Capita Income	$33,191
People in Poverty	1,484
Households Without Access to a Car	275
Parks Total Area	12.13
Parks per 1,000 People	1.26

Source: Community Fact Finder - CA State Parks



Project Background

- Why was the Project Location selected?
  - Wide ROW that can support stormwater infrastructure with no adverse impact to parking, # of lanes, etc.
- How was the Project developed?
  - Identified in response to EWMP to meet City's stormwater regulations
- Which regional water management plan includes the proposed project?
  - 2021 ULAR EWMP
- Description of benefits to municipality/municipalities
  - Water quality improvement
- Description of benefits to Disadvantaged Communities
  - Increased greenery, pedestrian safety enhancements, minimal disruption in residential streets

Partners

- Who are the implementation partners already identified?
  - Active SGV and API Forward Movement for community outreach
- What communities or groups have expressed support for the project?
  - Active SGV and various community members at public outreach events
- Have you received a letter of concurrence from the municipality (if needed)
  - Project entirely within City of Alhambra
- Have you received a letter of concurrence from the Flood Control District (if needed)
  - Does not involve modifications to FCD infrastructure
- Have you yet engaged the appropriate vector control district about the project concept?
  - Reviewed and approved by the SGV Mosquito & Vector Control District

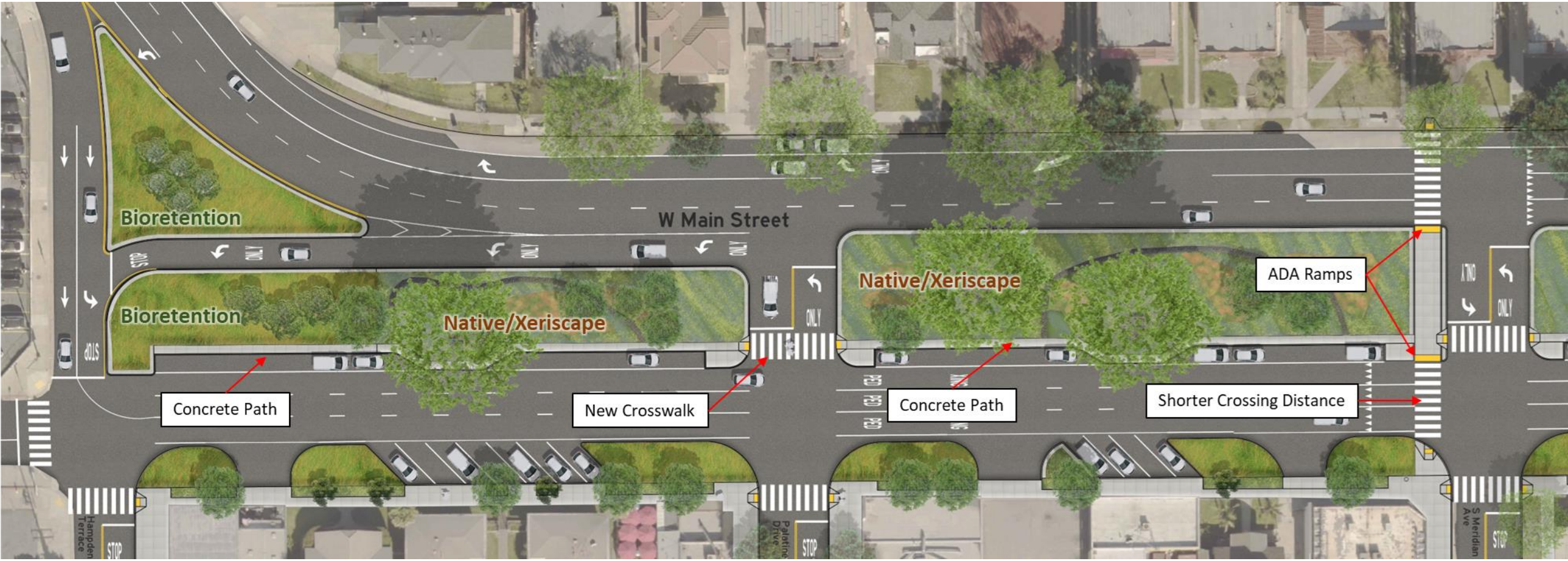
Project Details

Dry Wells

Bioretention

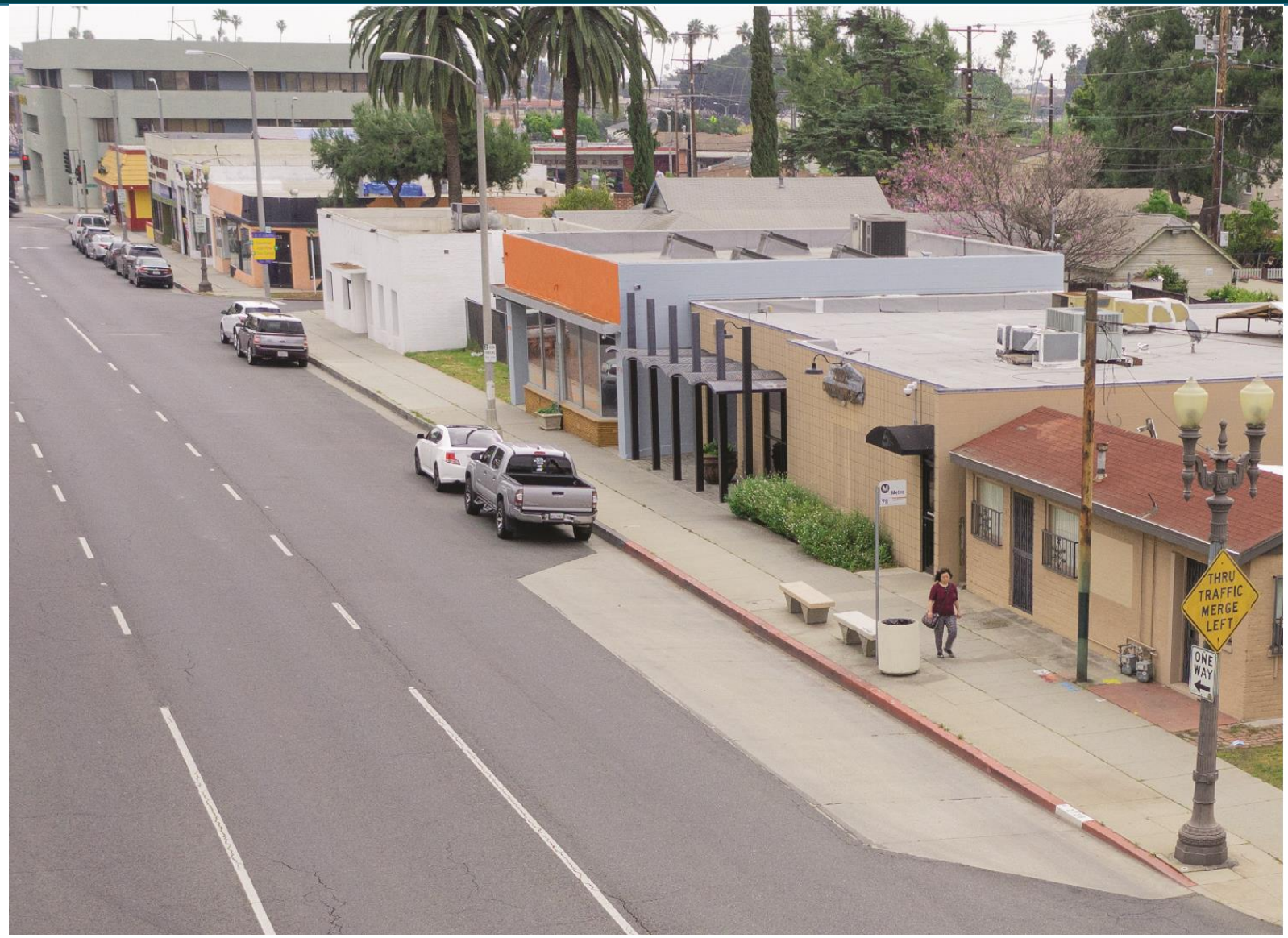
Project Details

Project Details



Project Details

Existing Conditions



Proposed Conditions

Cost & Schedule

Phase	Description	Cost	Completion Date
Design	Design, geotechnical support, surveying, permit document and fees, project administration, and grant reporting	$985,000	June 2026
Construction	Construction costs, construction inspector, construction testing, consultant support for bidding, construction, admin, closeout, and record drawings	$4,047,000	April 2026
TOTAL		**$5,032,000**	

O&M = $21,000/yr 3-year Monitoring Period = $130,000

50-year lifespan

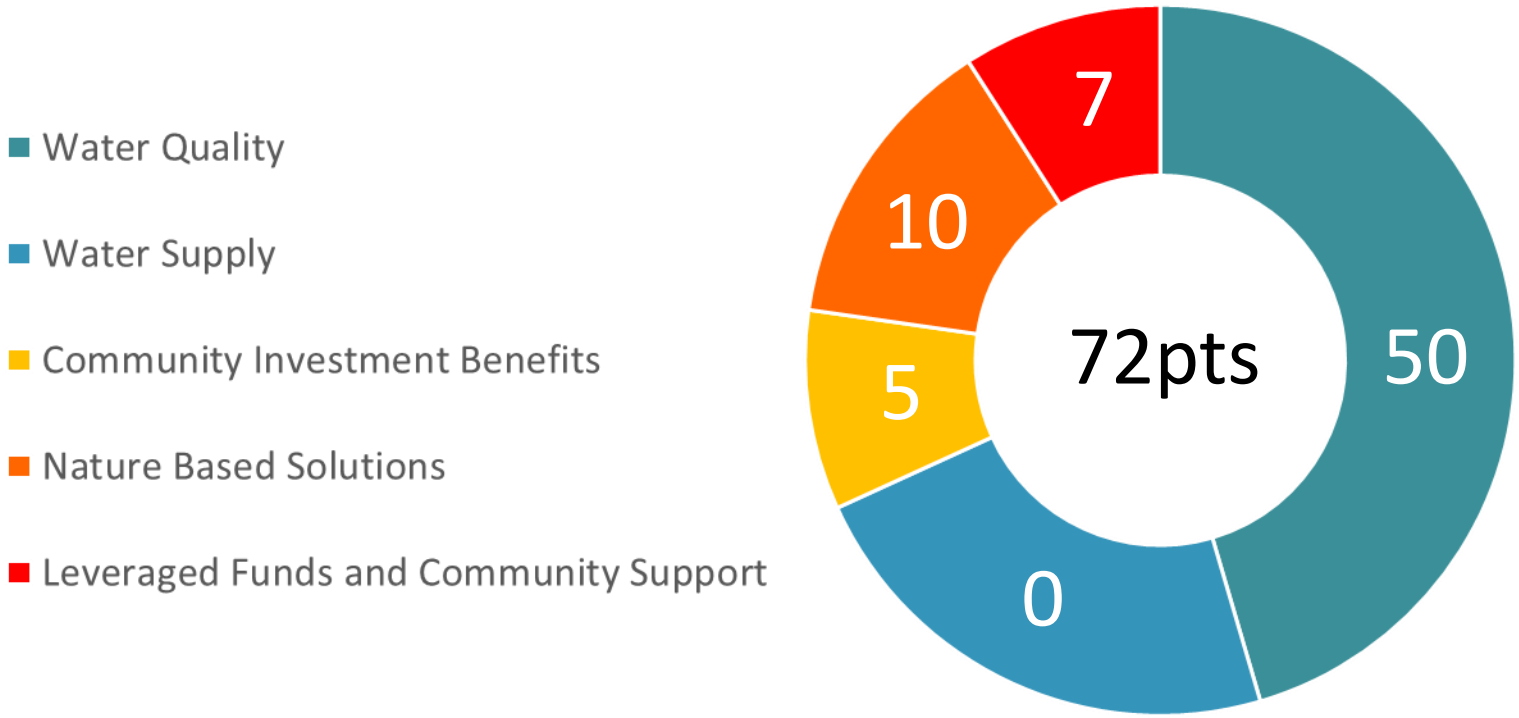
Total 50-year LCC = $6,222,000

Funding Request

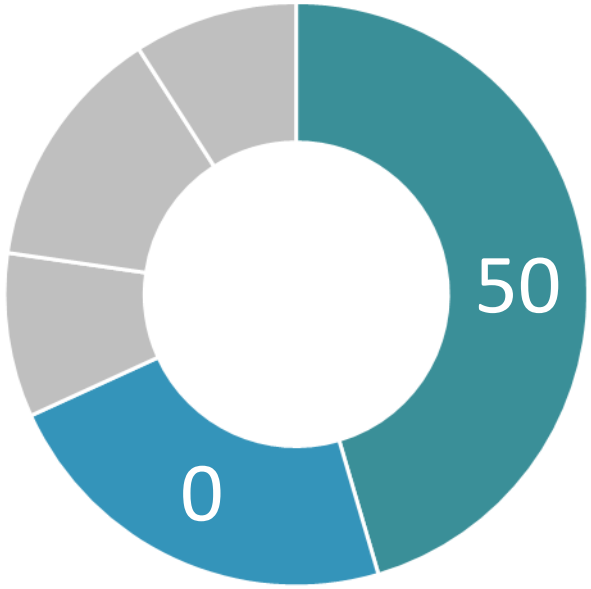
Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	$394,000	Design	Geotechnical studies, project surveying, Design 60%, permitting, SCW reporting, project administration
2	$1,030,000	Design, Construction	Project administration, design 100%, design report, final bid package, final O&M plan, permitting, SWPPP, advertising, bidding, contracting, construct project.
3	$2,349,000	Design, Construction	Construct project, final inspection and acceptance, SCW reporting
TOTAL REQUEST	**$3,773,000**		

Score as confirmed by the Scoring Committee

The Scoring Committee confirmed this score on 10/17/2022



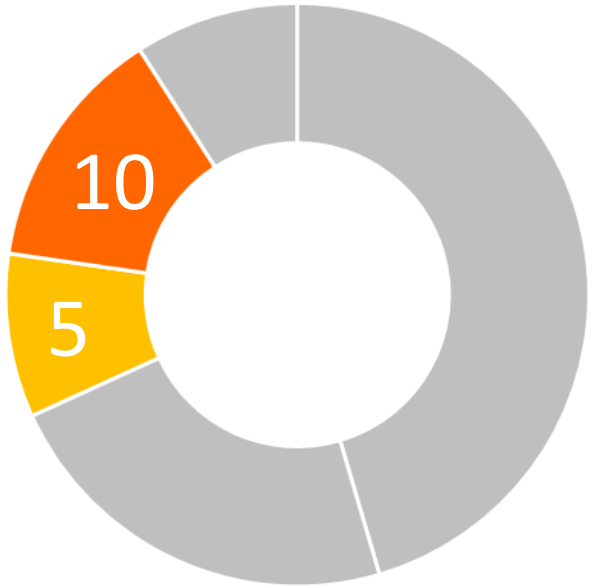
Water Quality & Water Supply Benefits



The Scoring Committee confirmed this score on 10/17/2022

- 17,500 sf of bioretention + 7 dry wells
- Wet Weather
- Drainage Area = 38 acres
- Physical Storage Capacity = 1.4 AF
- 24-Hour Capacity = 5.1 AF
- Pollutant Reduction = 94% zinc, 100% trash
- Annual water supply = 18.7 AF/yr
- Water Supply Use – GW aquifer recharge
- Water Quality Cost Effectiveness
  - 5.1 AF/$5.02 million = 1.01 AF/$-million (20/20 pts)

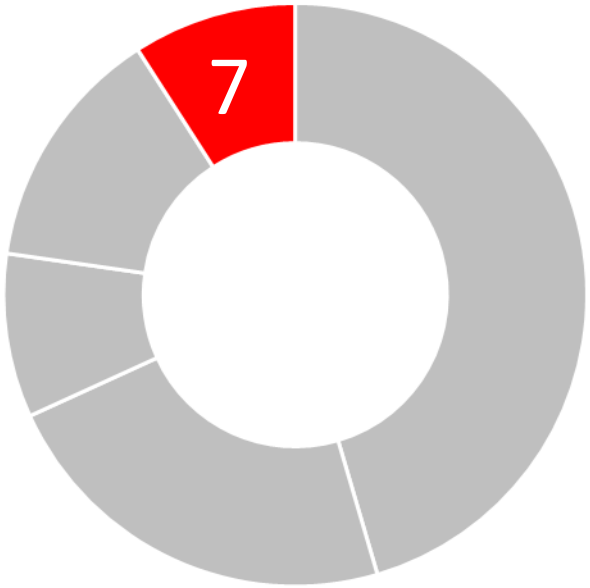
Community Investment Benefits and Nature Based Solutions



The Scoring Committee confirmed this score on 10/17/2022

- Community Investment Benefits
  - Urban greening – native vegetation + 40 new trees
  - Pedestrian safety enhancements
  - Beautify neighborhood & frontage of local businesses
- Nature Based Solutions
  - 17,500 sf of bioretention detains, slow, and filters stormwater through vegetation and soils, mimicking natural hydrology

Leveraging Funds and Community Support



The Scoring Committee confirmed this score on 10/17/2022

- Leveraging Funds
  - The City of Alhambra will match 25% of project costs using Municipal Program allocation
- Community Support
  - Workshop with community group API Forward Movement
  - Letter of support from Active SGV and local small business
  - Multiple outreach events conducted during feasibility study
    - Flyers and info booth at 2 nearby farmer's markets
    - Flyers and info booth at the City's Eco Fair
    - Presentation & public comment at City's Sustainability Commission public meeting


Questions?
David Dolphin
Chris Carandang

McCambridge Park Stormwater Capture Multi-Benefit Project

Infrastructure Program

Fiscal Year 2023-2024

Upper Los Angeles River Watershed Area

City of Burbank

Seiko Oishi (City of Burbank)

Brenda Ponton (Woodard & Curran)

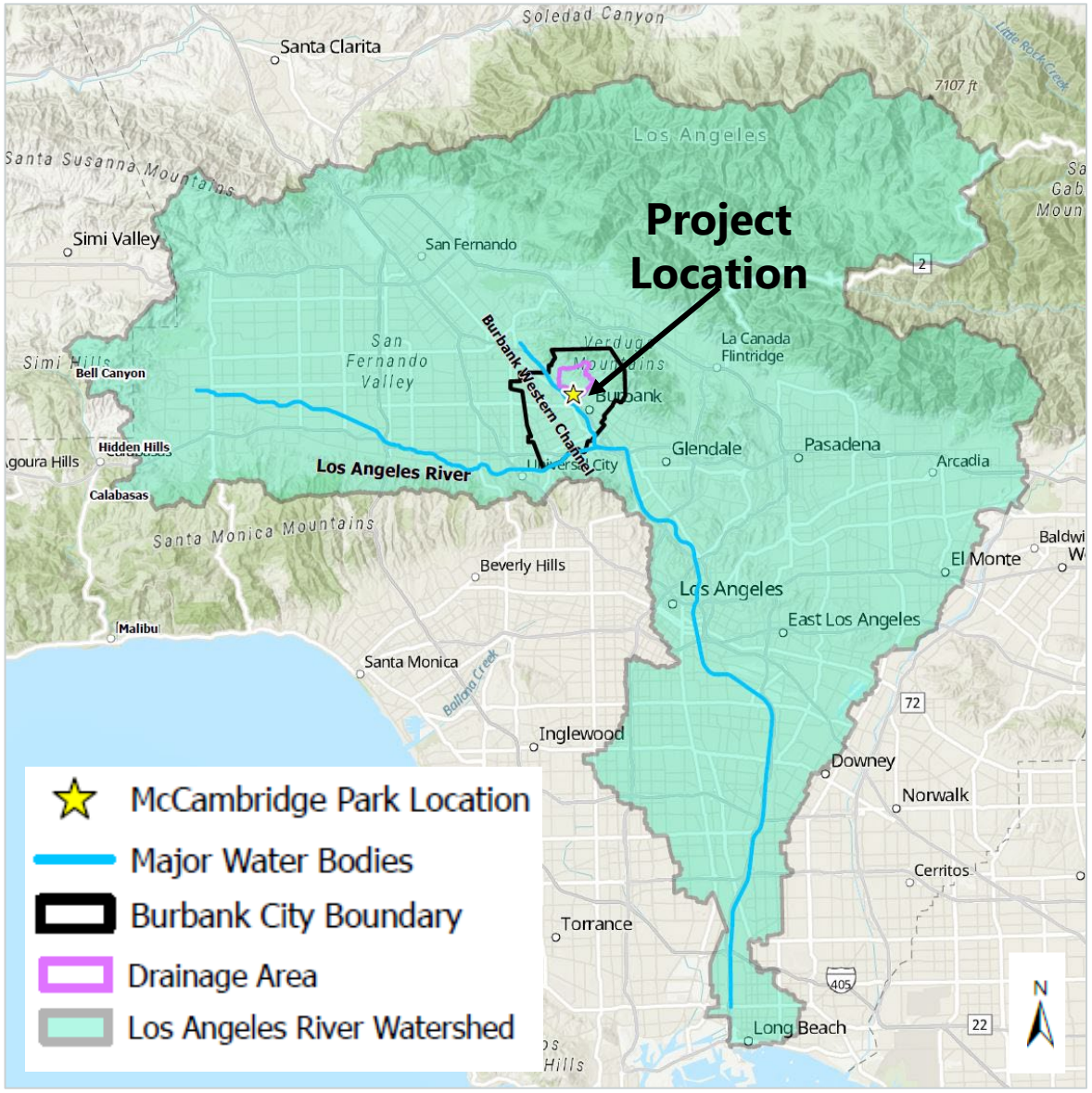
Previously Awarded TRP – Yes

Project Overview

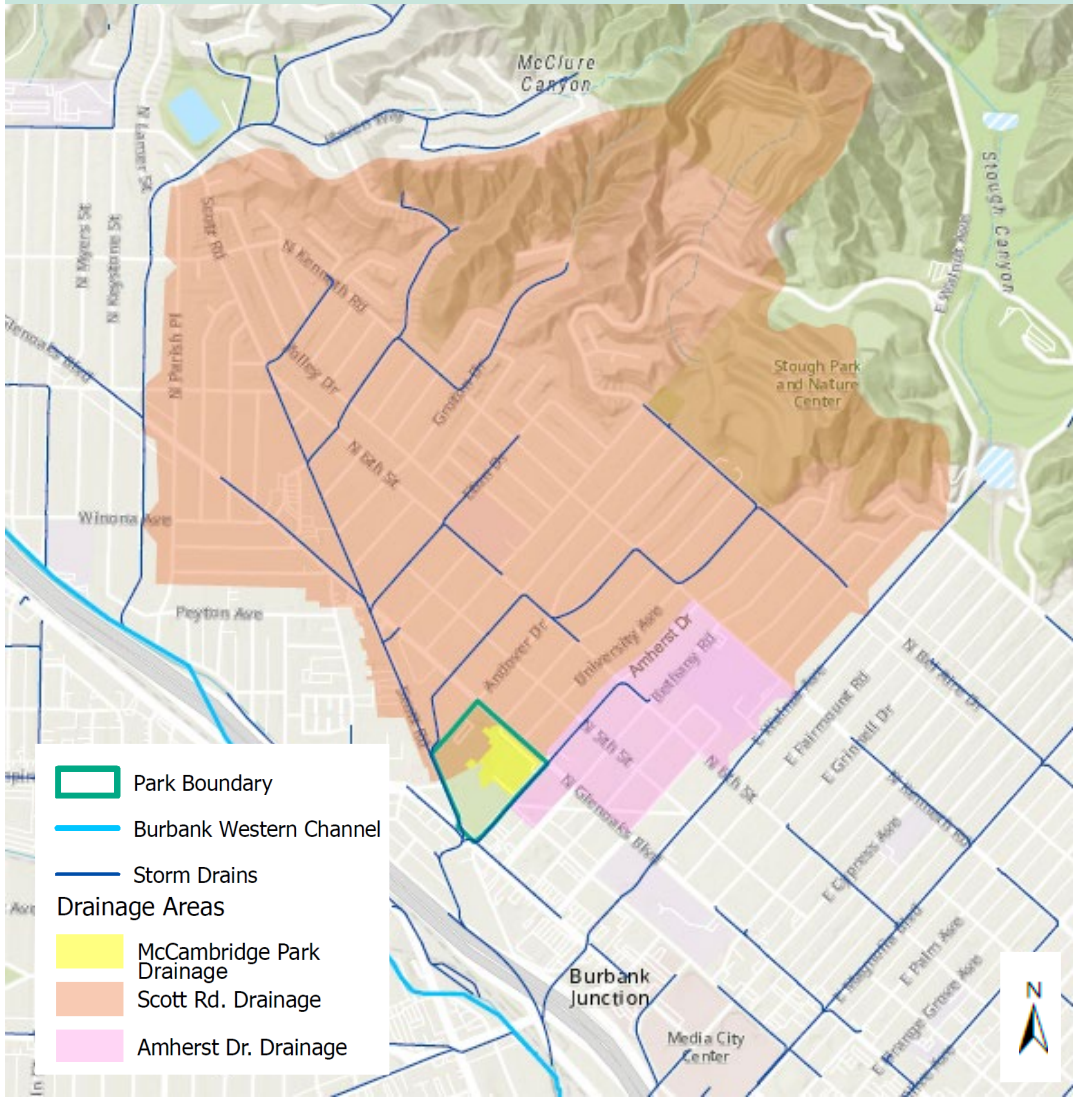
The project captures and infiltrates stormwater at McCambridge Park, improving water quality, groundwater recharge, and park amenities.

- **Primary Objective**: Improve water quality in the Burbank Western Channel and LA River
- **Secondary Objectives**: Increase local water supply through recharge to the San Fernando Valley Groundwater Basin, enhance and add park amenities, and provide public outreach and education opportunities
- **Project Status**: SCW funding requested for Design Phase
- **Total Funding Requested**: $2,930,000

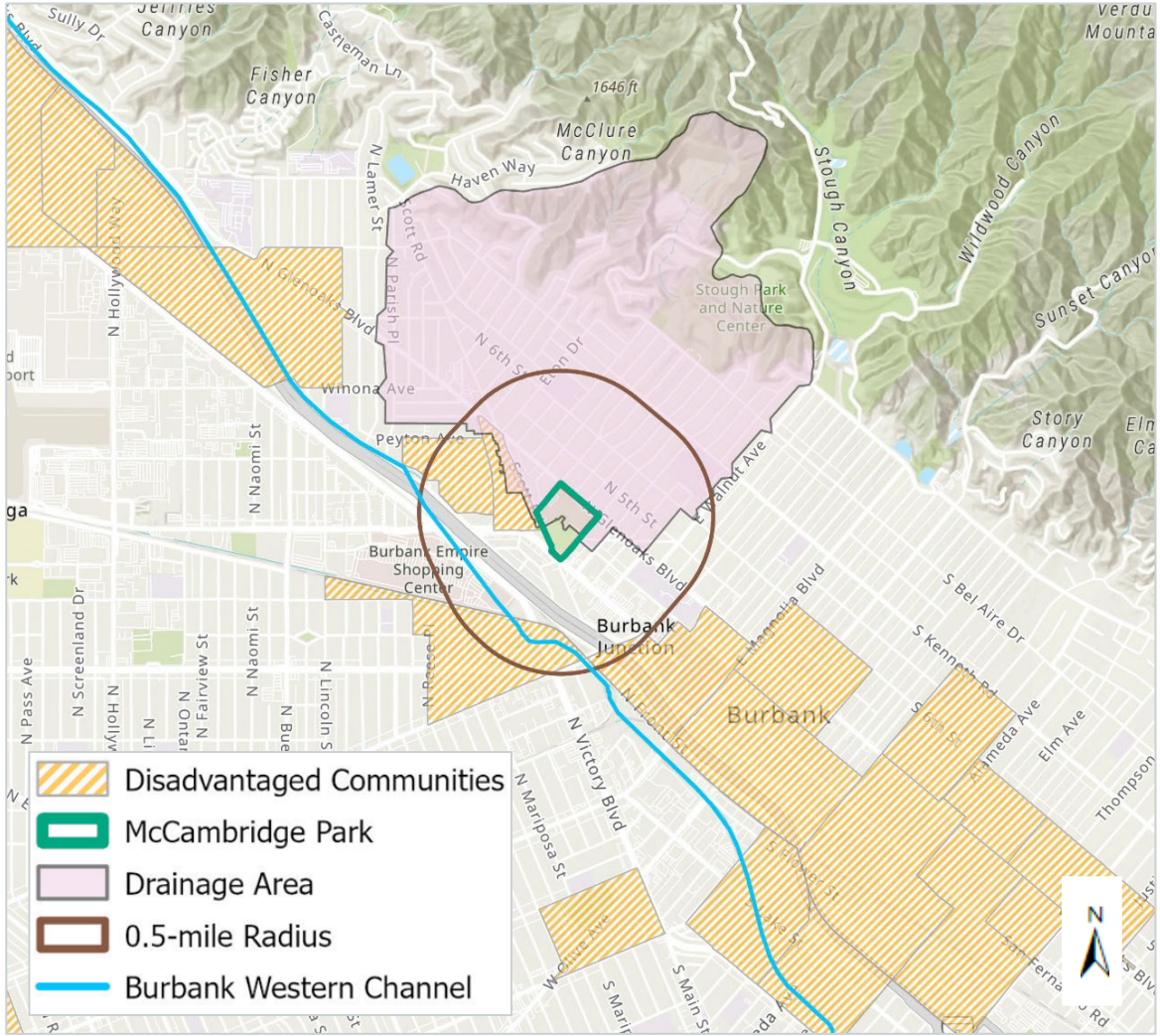
Project Location

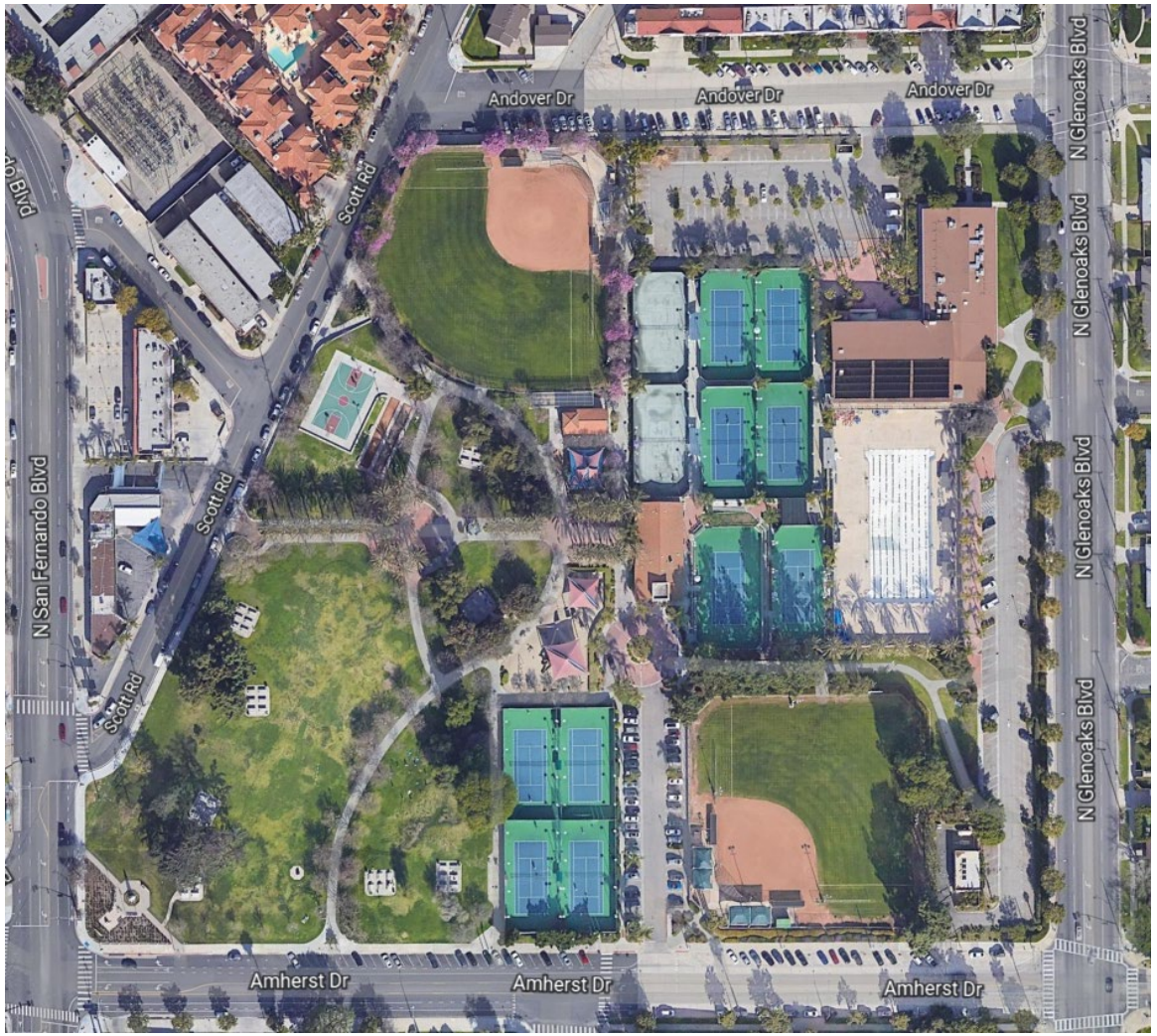


978-Acre Drainage Area



Project Location





Project Background

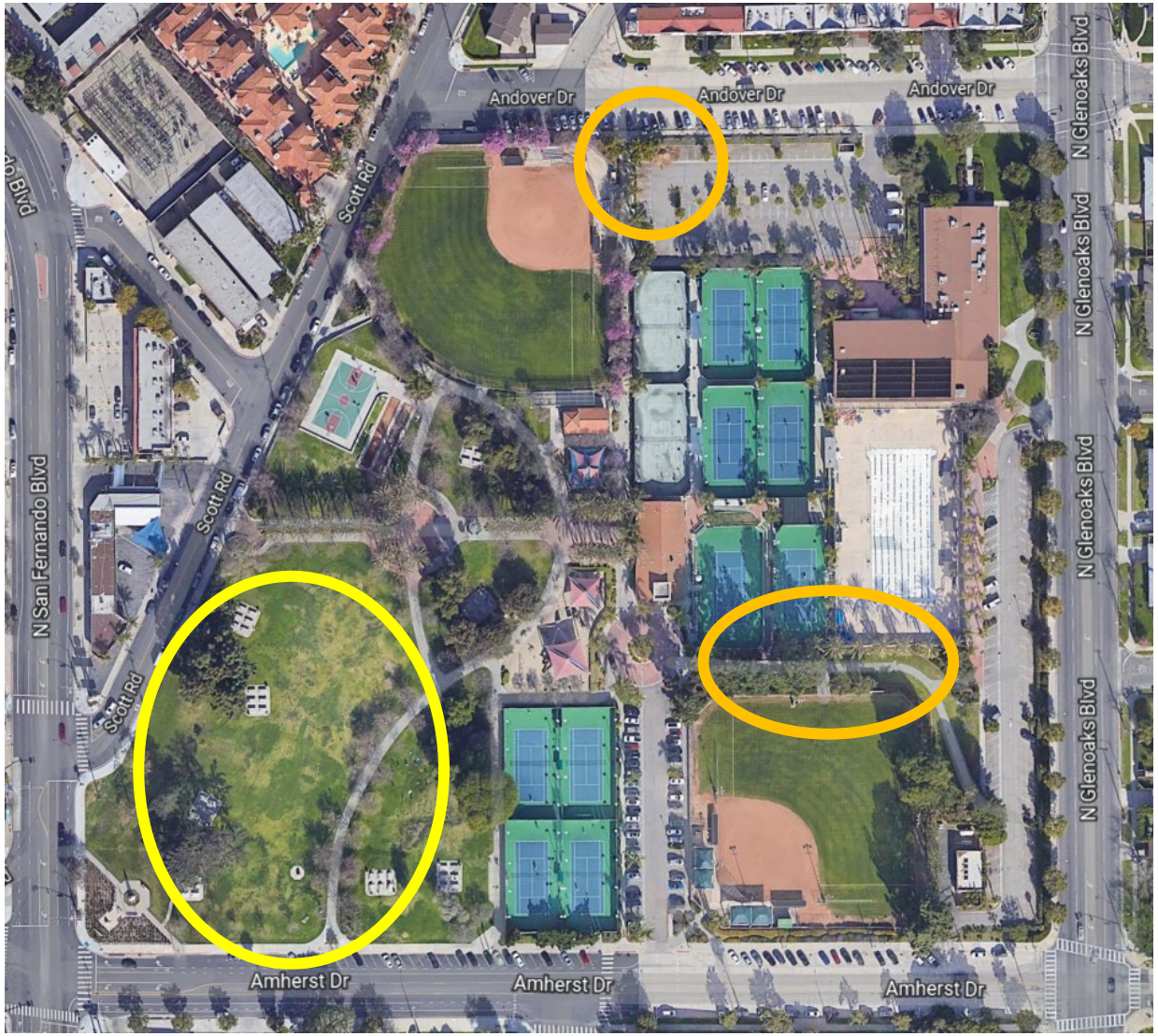
- McCambridge Park site was selected because of proximity to LACFCD storm drains, upstream of Burbank Western Channel
- Site has open space area that could benefit from improvements
- Burbank collaborated with LA Department of Water and Power (LADWP) on project as a recharge opportunity
- Project included in ULAR Watershed Management Program
- Benefits to municipality/municipalities:
  - Captures 85th, 24-hour storm
  - Recharges San Fernando Valley Groundwater Basin
  - Enhances park space: new shade, new walking paths, ADA access, etc.
- Park improvements will benefit local disadvantaged communities

Partners

- Burbank Public Works is implementing the project in collaboration with Burbank Parks and Recreation
- Community and stakeholder support from:
  - Burbank Tennis Center
  - Burbank Veterans Committee
  - Senior Citizen Board
  - Park, Recreation and Community Services Board
  - Local residents
  - Burbank Eco Council
  - TreePeople
  - LADWP
  - ULARA Watermaster
- Conceptual approval letter from LA County Flood Control District

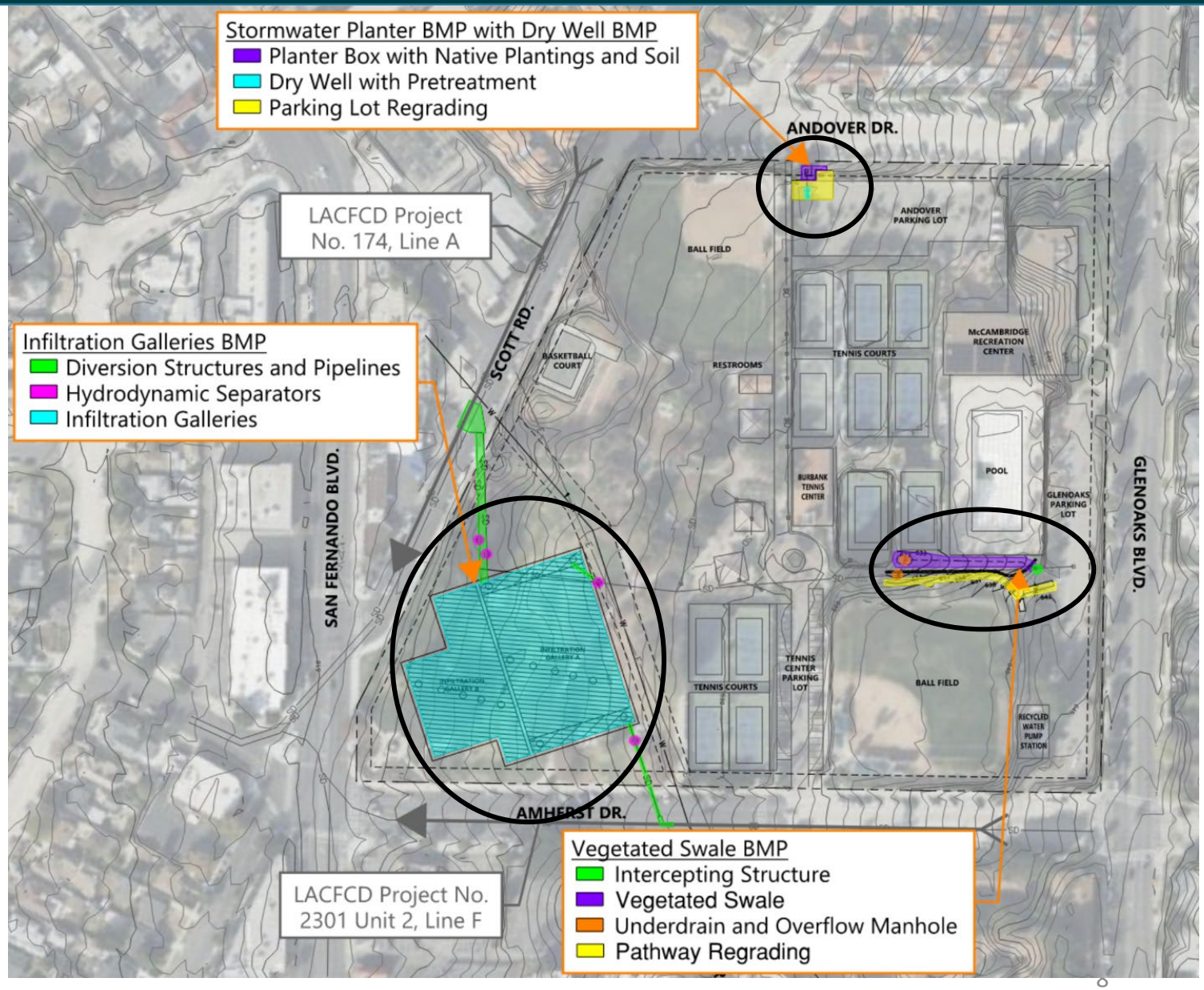
Project Details – Existing Conditions

- Burbank-owned park site with large open space area
- Feasibility Study included:
  - Geotechnical investigations/infiltration testing
  - Utility review
  - Hydrologic and hydraulic modeling
  - Preliminary community outreach and plan
- Alternatives evaluated but not selected:
  - Diversion to sewer for recycling
  - Onsite reuse



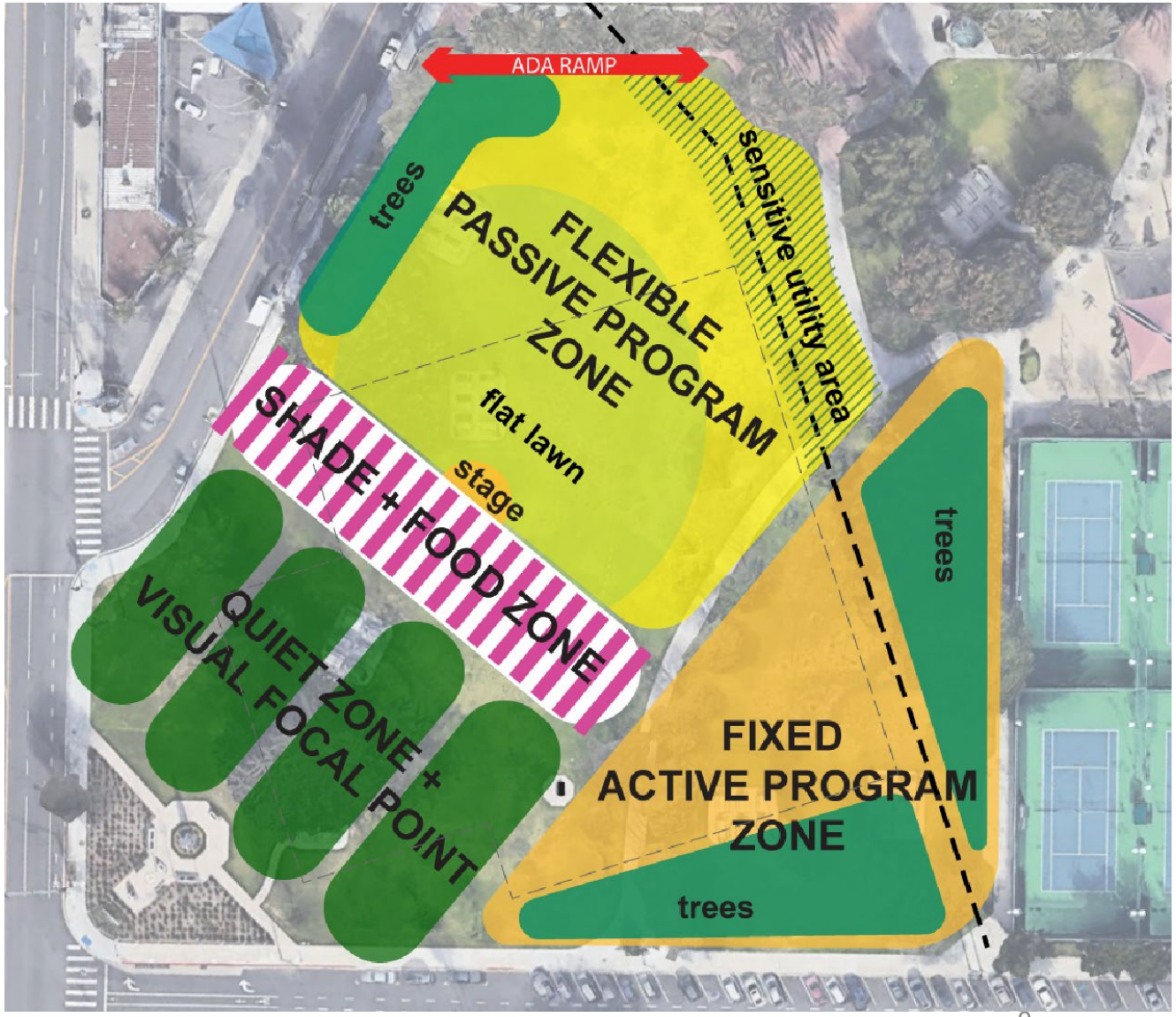
Project Details – Stormwater Capture Components

- Concept includes:
  - 3 diversions
  - Infiltration galleries
  - 4 hydrodynamic separators
  - Vegetated swale
  - Stormwater planter and dry well
- 24-hour BMP capacity: 18.3 acre-feet
- Drawdown rate: 3.16 in/hr



Project Details – Surface Improvements

- Surface Improvements:
  - Picnic area with shade
  - Active recreation area with exercise equipment and nature trail/exercise path
  - Flat lawn space for activities
  - ADA access pathways and ramp
  - Shade trees and native/climate-appropriate vegetation
  - Green infrastructure educational signage



Cost & Schedule

Phase	Description	Cost	Completion Date
Planning	Feasibility Study	$300,000	07/2022
Design	Pre-Construction Monitoring, Outreach During Design, Design (30/60/90/100), CEQA, Permitting, Project Administration	$3,908,000	12/2025
Construction	Construction Management, Engineering Services During Construction, Outreach during Construction, Project Implementation, Project Administration	$42,536,000	09/2028
TOTAL		**$46,744,000**	

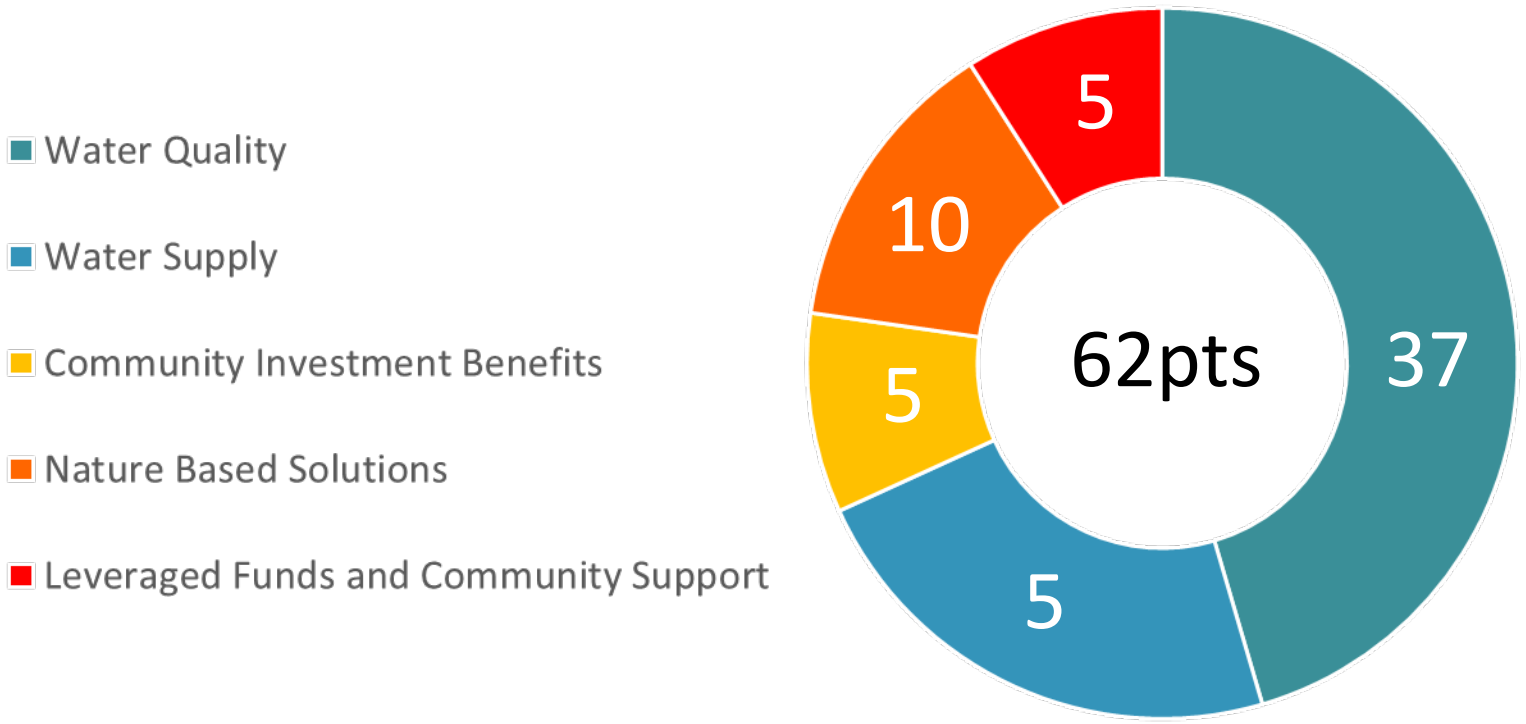
- Annual Costs
  - Maintenance Cost: $410,000
  - Operation Cost: $8,000
  - Monitoring Cost: $12,000
- Life-Cycle Cost: $57,061,377 over 50-year lifespan
- Annualized Cost: $2,378,162

Funding Request

Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	$650,000	Design	Pre-Construction Monitoring, Outreach During Design, Preliminary (30%) Design, Project Administration
2	$896,000	Design	Pre-Construction Monitoring, Outreach During Design, CEQA Documentation, 60% Design, Permitting, Project Administration
3	$1,384,000	Design	Pre-Construction Monitoring, Outreach During Design, 90% Design, 100% Design, Permitting, Project Administration
TOTAL	**$2,930,000**		

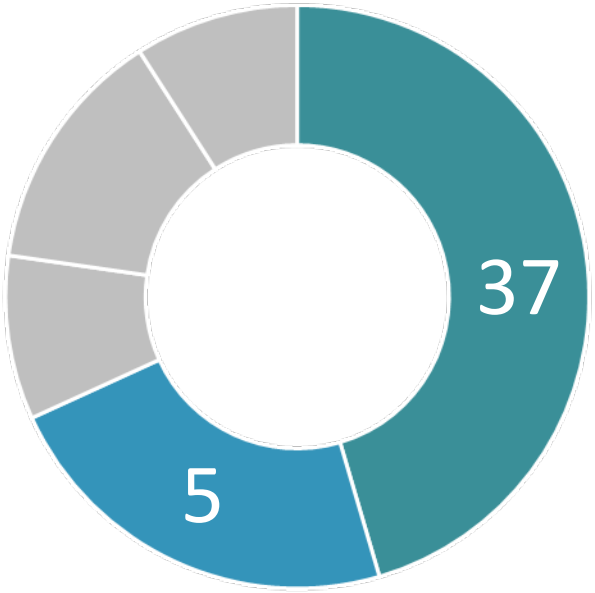
- 25% cost share from City of Burbank ($978,000)
  - The City is flexible on timing to support SIP budgeting
- Future Safe, Clean Water Program funding request anticipated for Construction Phase

Score as confirmed by the Scoring Committee



The Scoring Committee confirmed this score on 10/17/2022

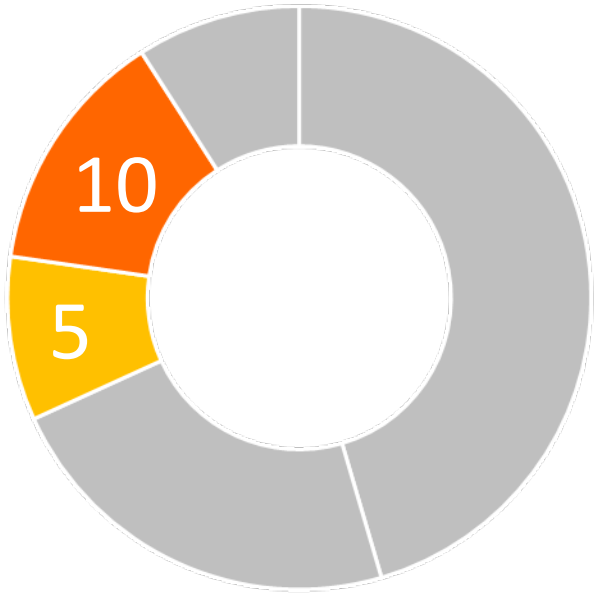
Water Quality & Water Supply Benefits



The Scoring Committee confirmed this score on 10/17/2022

- Water Quality
  - Primary mechanism: Infiltration
  - Wet Weather
  - Tributary Area: 978 acres
  - 24-hr Capacity: 18.3 acre-feet
  - Long-term Pollutant Reduction
    - Primary Pollutant (Zinc): 91.5%
    - Secondary Pollutant (Bacteria): 81.3%
  - Water Quality Cost Effectiveness: 18.3 AF/$42.5M: 0.43
- Water Supply
  - Infiltration to San Fernando Valley Groundwater Basin: ~146 AFY
  - Water Supply Cost Effectiveness: $16K/AF

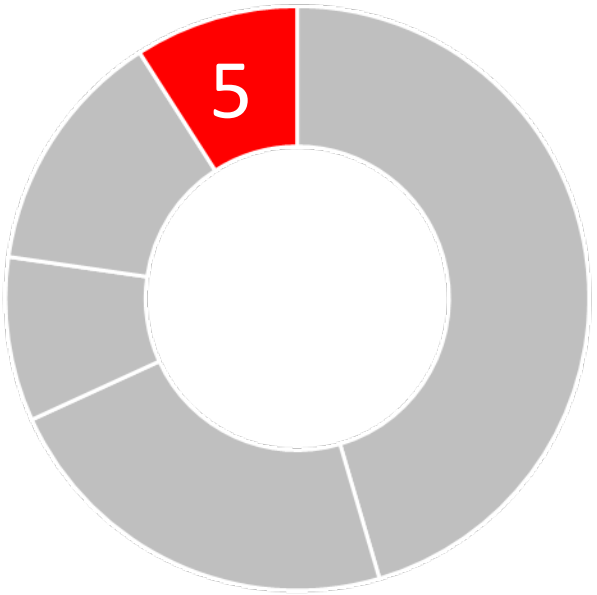
Community Investment Benefits and Nature Based Solutions



The Scoring Committee confirmed this score on 10/17/2022

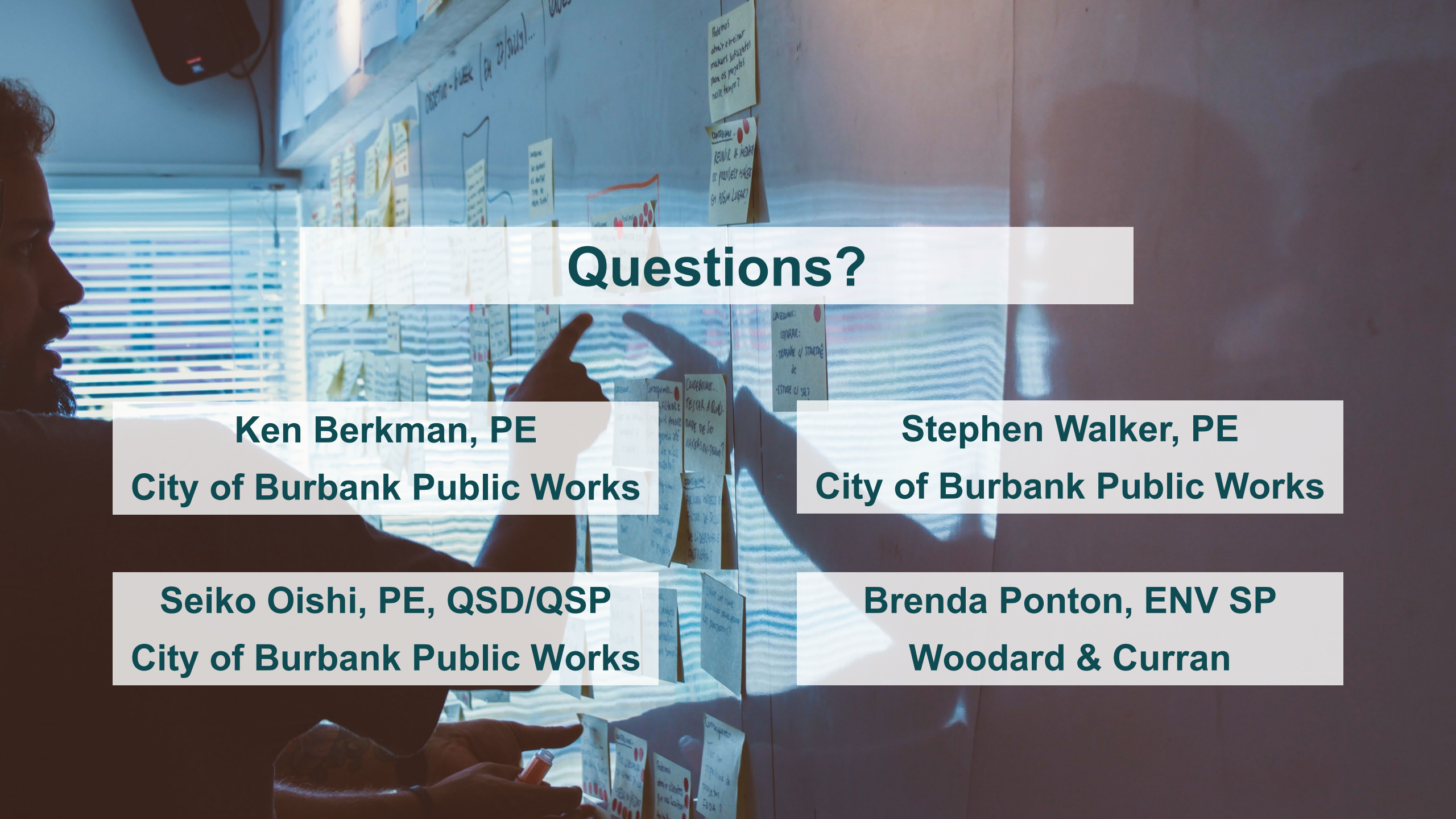
- Community Investment Benefits
  - Improves flood management
  - Enhances park with native vegetation
  - Enhances and creates new recreational opportunities
  - Reduces heat island effect and increases shade
  - Increases trees and native vegetation
- Nature-Based Solutions
  - Infiltration and detention that protects/enhances habitat and usable open space
  - Utilizes natural materials including soils and native vegetation

Leveraging Funds and Community Support



The Scoring Committee confirmed this score on 10/17/2022

- Leveraging Funds
  - $978,000 from City's SCW Municipal Funds
  - 25% funding matched
- Community Support
  - Letters from community members and CBOs
  - Community engagement workshop (June 15, 2022)
  - One-on-one calls with community members (June 2022)
  - Electronic survey (June 2022)
  - Outreach/engagement plan includes:
    - Three community workshops during design
    - Additional community events
    - Surveys, flyers, posters
    - Website, social media, newsletters



Questions?

Ken Berkman, PE
City of Burbank Public Works

Stephen Walker, PE
City of Burbank Public Works

Seiko Oishi, PE, QSD/QSP
City of Burbank Public Works

Brenda Ponton, ENV SP
Woodard & Curran

California Avenue and Adjacent Streets Stormwater Capture Project

Infrastructure Program

Fiscal Year 2023-2024

Upper Los Angeles River Watershed Area

City of Glendale

Presented by Sarkis Oganesyan, P.E.

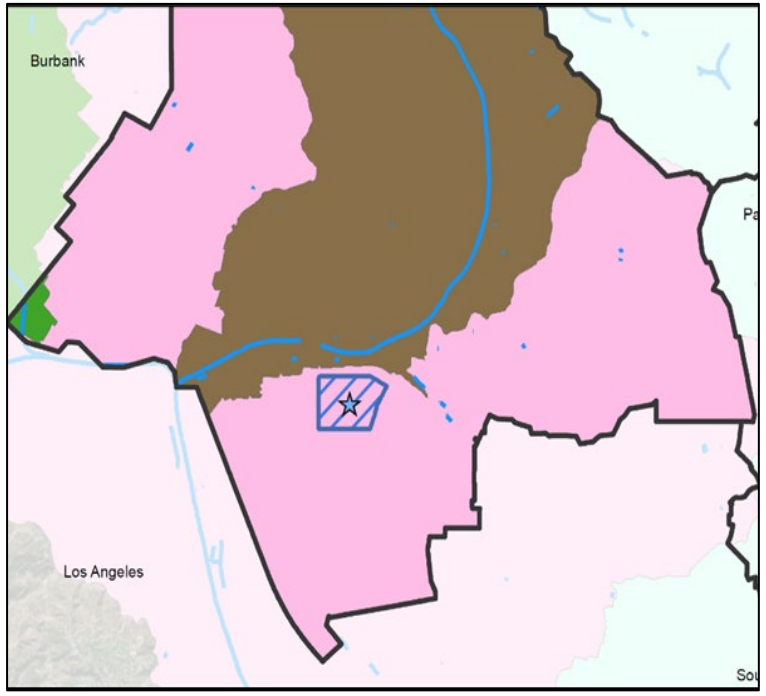
Previously Awarded TRP? – No

Project Overview

This project will provide 24 drywells, 24 bioretention swales, permeable concrete, and 48 trees providing multiple benefits to the community.

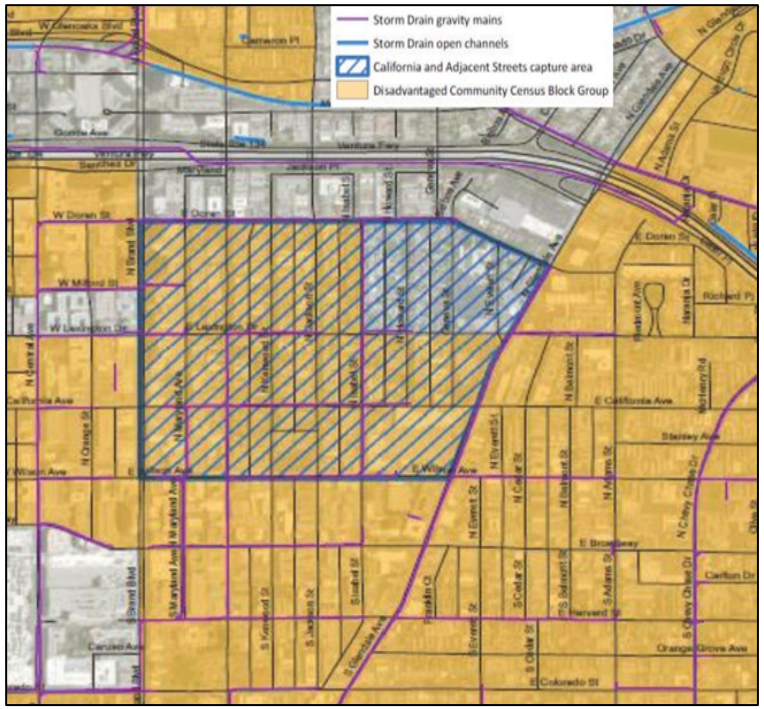
- **Primary Objectives:**
  - Improve water quality within the Los Angeles River
  - Increase water supply benefit through groundwater recharge
  - Install nature-based stormwater management solutions and provide the community with nature-based benefits
  - Reduce flooding and manage stormwater flows
- **Secondary Objectives:**
  - Educate the public on stormwater quality, pollution, and water supply
- **Phase for which SCW Funding is Being Requested:** Design, Construction, and O&M
- **Total Funding Requested:** $2,970,899 (75% of total project cost)

Project Location



The project is located in the City of Glendale and is part of the Upper Los Angeles River Watershed

The project has a drainage area of 165 acres



The project is in and surrounded by a disadvantaged community (DAC)

Project Background

Why was the Project Location selected?

- The project location was selected due to its ability to achieve multiple benefits including reducing flooding, adding green infrastructure improvements, improving water quality, and providing benefits to the community. A portion of the proposed project is on a pathway to R.D. White Elementary which will be utilized by the community and promotes opportunities to educate school children about stormwater capture.

How was the Project developed?

- The project location was developed based on the community need for more native vegetation and flood mitigation. The subsurface nature of the drywell design allows for continued use of the sidewalk and public areas. The bioretention swales provide 48 native trees and vegetation to the area which reduce the impervious area, reduce the local heat island effect, and increase shade and natural cover. The addition of natural elements in a pedestrian path of travel enhances the environment for the community.

Which regional water management plan includes the proposed project?

- The Upper Los Angeles River Enhanced Watershed Management Program (ULAR EWMP) identified this project (Subwatershed No. 648529, Table 6.E-6 of Appendix 6) as an optimal location for structural BMPs designed to address water quality objectives within the watershed.

Description of benefits to municipality

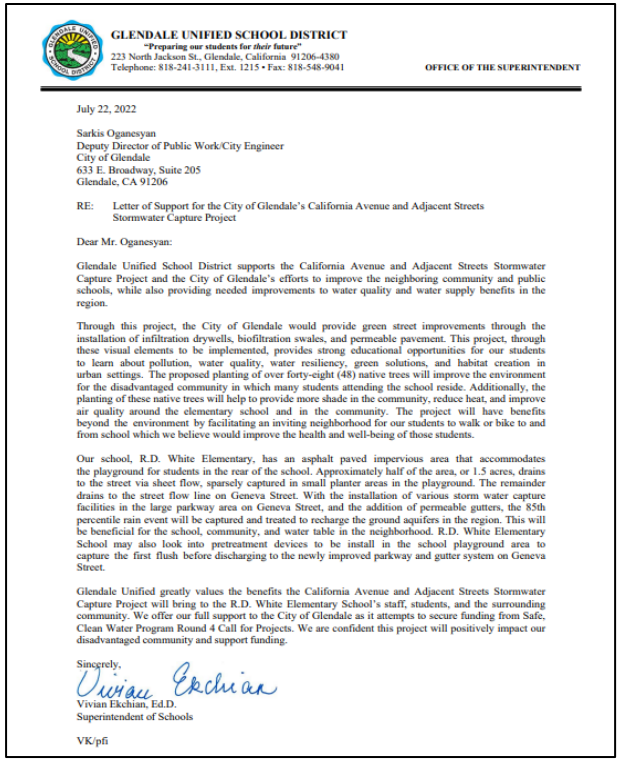
- The project will provide several benefits to the city which includes water quality compliance, flood mitigation, and implementation of green infrastructure and nature-based solutions. The project will address zinc as the primary pollutant and Nitrogen as the secondary pollutant. Implementation of the project will achieve progress toward compliance with the MS4 Permit and applicable TMDL milestones.

Description of benefits to Disadvantaged Communities

- The majority of the project is located in and surrounded by a Disadvantaged Community (DAC). The increase of green area and planting of native trees in the community will provide shade and a reduction in the heat island effect, reduce CO2, and improve air quality. Additionally, the project's improved greening and aesthetics will provide the local community the opportunity to connect with the natural environment through passive recreation such as running or walking. The project will also provide flood mitigation benefits.

Partners

- Support for the project was received from the Glendale Unified School District, Glendale Environmental Coalition, and Walk Bike Glendale



GLENDALE UNIFIED SCHOOL DISTRICT
"Preparing our students for *their* future"
223 North Jackson St., Glendale, California 91206-4380
Telephone: 818-241-3111, Ext. 1215 • Fax: 818-548-9041
OFFICE OF THE SUPERINTENDENT

July 22, 2022

Sarkis Oganesyan
Deputy Director of Public Work/City Engineer
City of Glendale
633 E. Broadway, Suite 205
Glendale, CA 91206

RE: Letter of Support for the City of Glendale's California Avenue and Adjacent Streets Stormwater Capture Project

Dear Mr. Oganesyan:

Glendale Unified School District supports the California Avenue and Adjacent Streets Stormwater Capture Project and the City of Glendale's efforts to improve the neighboring community and public schools, while also providing needed improvements to water quality and water supply benefits in the region.

Through this project, the City of Glendale would provide green street improvements through the installation of infiltration drywells, biofiltration swales, and permeable pavement. This project, through these visual elements to be implemented, provides strong educational opportunities for our students to learn about pollution, water quality, water resiliency, green solutions, and habitat creation in urban settings. The proposed planting of over forty-eight (48) native trees will improve the environment for the disadvantaged community in which many students attending the school reside. Additionally, the planting of these native trees will help to provide more shade in the community, reduce heat, and improve air quality around the elementary school and in the community. The project will have benefits beyond the environment by facilitating an inviting neighborhood for our students to walk or bike to and from school which we believe would improve the health and well-being of those students.

Our school, R.D. White Elementary, has an asphalt paved impervious area that accommodates the playground for students in the rear of the school. Approximately half of the area, or 1.5 acres, drains to the street via sheet flow, sparsely captured in small planter areas in the playground. The remainder drains to the street flow line on Geneva Street. With the installation of various storm water capture facilities in the large parkway area on Geneva Street, and the addition of permeable gutters, the 85th percentile rain event will be captured and treated to recharge the ground aquifers in the region. This will be beneficial for the school, community, and water table in the neighborhood. R.D. White Elementary School may also look into pretreatment devices to be install in the school playground area to capture the first flush before discharging to the newly improved parkway and gutter system on Geneva Street.

Glendale Unified greatly values the benefits the California Avenue and Adjacent Streets Stormwater Capture Project will bring to the R.D. White Elementary School's staff, students, and the surrounding community. We offer our full support to the City of Glendale as it attempts to secure funding from Safe, Clean Water Program Round 4 Call for Projects. We are confident this project will positively impact our disadvantaged community and support funding.

Sincerely,
Vivian Ekchian
Vivian Ekchian, Ed.D.
Superintendent of Schools

VK/pfi

Glendale Environmental Coalition

July 27, 2022

Sarkis Oganesyan
Deputy Director of Public Works/City Engineer
City of Glendale
633 E. Broadway, Suite 205
Glendale, CA 91206

RE: Letter of Support for the City of Glendale's California Avenue and Adjacent Streets Stormwater Capture Project

To Whom it May Concern,

The Glendale Environmental Coalition strongly supports the City of Glendale's California Avenue and Adjacent Streets Stormwater Capture Project (Project) and application for Measure W funding. The Project will improve water quality, increase water supply, expand green space and tree shade, and enhance the local environment within and surrounded by Disadvantaged Communities (DAC).

It is our understanding that the Project will involve the capture of over 10.1 ac-ft of stormwater and dry weather flows through the installation of infiltration drywells, biofiltration swales, and permeable pavement. The Project will install above-ground green scape, including the planting of forty-eight (48) native trees, to provide more shade, reduce the urban heat island effect, improve air quality, and improve the environment for biking or walking. The Project's capture and infiltration of stormwater will alleviate area flooding during rain events, strengthen resilience goals through groundwater recharge, and help restore water quality and beneficial uses in the Los Angeles River.

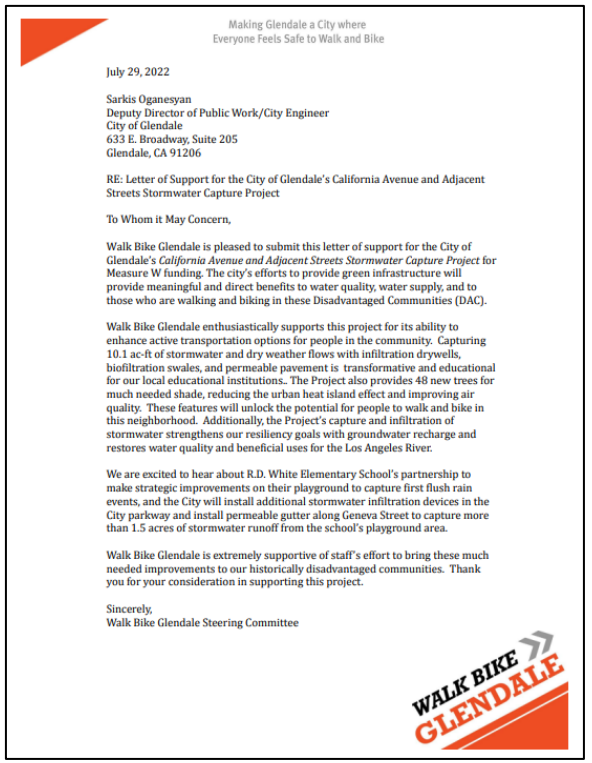
Additionally, R.D. White Elementary School will partner with the City of Glendale to make playground improvements to capture first flush rain events, and the City will install stormwater infiltration devices and permeable gutter to capture more than 1.5 acres of stormwater runoff from the playground area. This joint work will further benefit the school, community, and water table.

The Glendale Environmental Coalition is pleased to support this Project as it enhances the local neighborhood, within and surrounded by DACs. The Project aligns with our goal of creating a sustainable and healthy environment for all.

Sincerely,

Monica Campagna, Elise Kalfayan
Steering Committee members
Glendale Environmental Coalition

contact@gec.eco



Making Glendale a City where
Everyone Feels Safe to Walk and Bike

July 29, 2022

Sarkis Oganesyan
Deputy Director of Public Work/City Engineer
City of Glendale
633 E. Broadway, Suite 205
Glendale, CA 91206

RE: Letter of Support for the City of Glendale's California Avenue and Adjacent Streets Stormwater Capture Project

To Whom it May Concern,

Walk Bike Glendale is pleased to submit this letter of support for the City of Glendale's *California Avenue and Adjacent Streets Stormwater Capture Project* for Measure W funding. The city's efforts to provide green infrastructure will provide meaningful and direct benefits to water quality, water supply, and to those who are walking and biking in these Disadvantaged Communities (DAC).

Walk Bike Glendale enthusiastically supports this project for its ability to enhance active transportation options for people in the community. Capturing 10.1 ac-ft of stormwater and dry weather flows with infiltration drywells, biofiltration swales, and permeable pavement is transformative and educational for our local educational institutions.. The Project also provides 48 new trees for much needed shade, reducing the urban heat island effect and improving air quality. These features will unlock the potential for people to walk and bike in this neighborhood. Additionally, the Project's capture and infiltration of stormwater strengthens our resiliency goals with groundwater recharge and restores water quality and beneficial uses for the Los Angeles River.

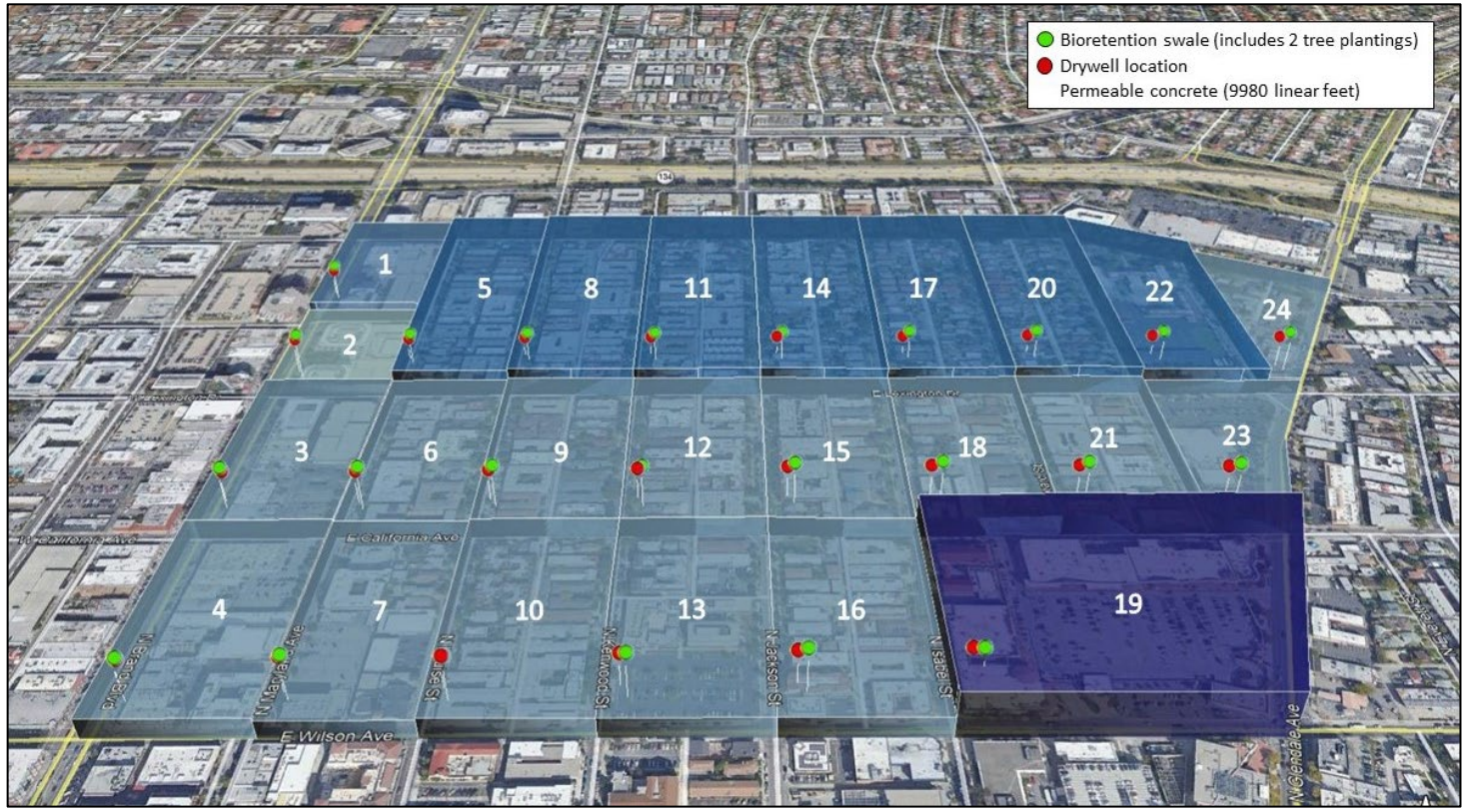
We are excited to hear about R.D. White Elementary School's partnership to make strategic improvements on their playground to capture first flush rain events, and the City will install additional stormwater infiltration devices in the City parkway and install permeable gutter along Geneva Street to capture more than 1.5 acres of stormwater runoff from the school's playground area.

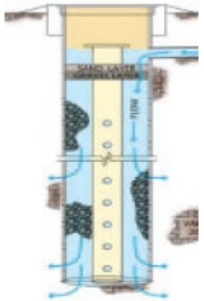
Walk Bike Glendale is extremely supportive of staff's effort to bring these much needed improvements to our historically disadvantaged communities. Thank you for your consideration in supporting this project.

Sincerely,
Walk Bike Glendale Steering Committee

WALK BIKE GLENDALE

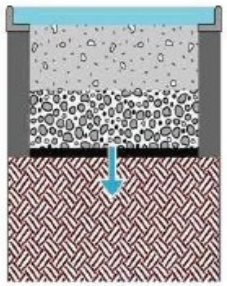
Project Details





Drywell

Bioretention Swale with Native Trees



Permeable Concrete

The project consists of distributed stormwater systems that will treat flow from the 85th percentile, 24-hour event, capturing 10.1 ac-ft of stormwater runoff.

Surface water quality features include twenty-four (24) bioretention swales, forty-eight (48) native trees, 9,980 linear feet of permeable concrete, and twenty-four (24) drywells.

Cost & Schedule

Phase	Description	Cost	Completion Date
Planning	Environmental Documents	$1,000.00	09/2023
Design	Design Phase (30/60/90/100)	$288,810.00	06/2024
Construction	Construction Costs	$3,671,407.00	04/2025
Total Project Cost:		**$3,961,217.00**	

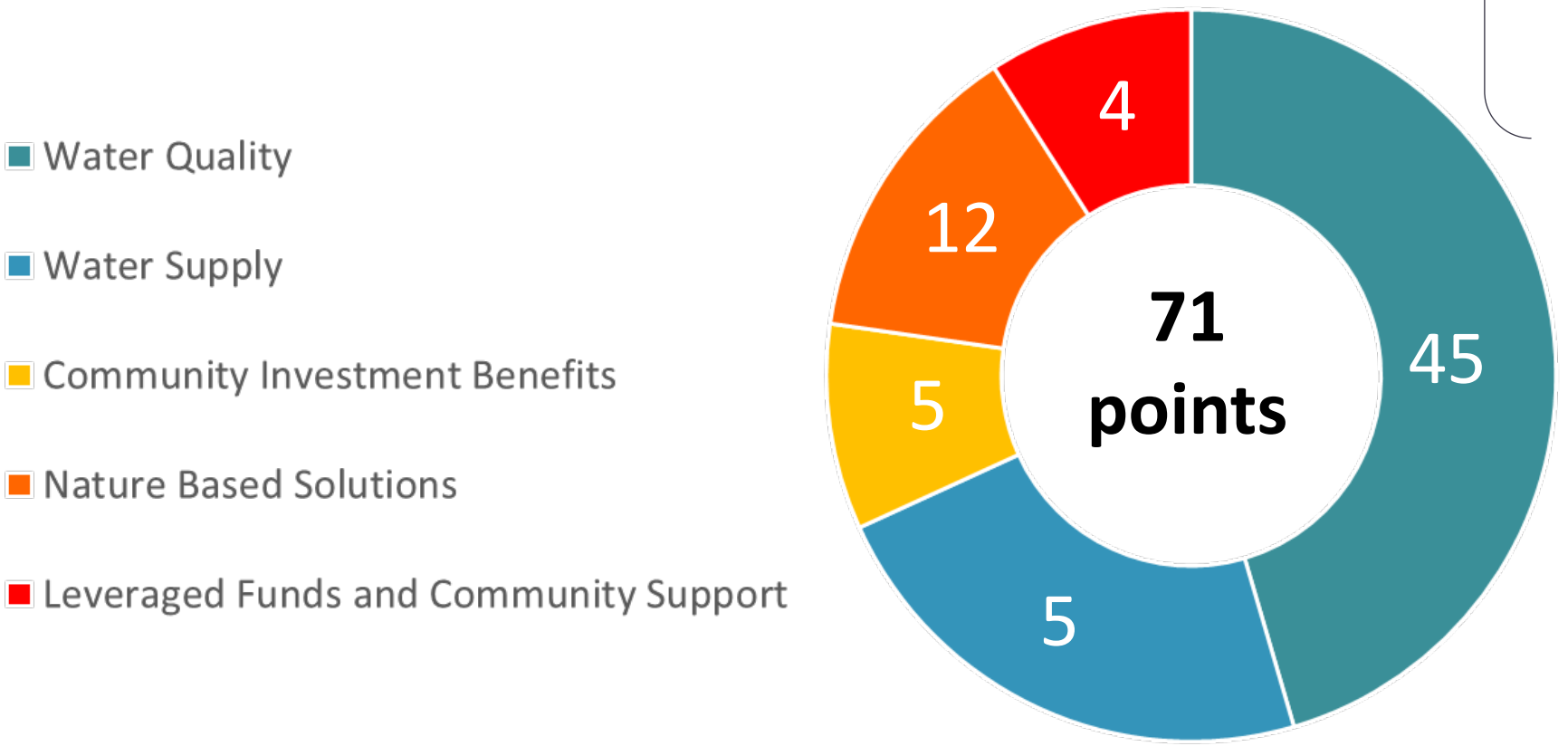
Annual Cost Breakdown	
Annual Maintenance Cost:	$50,000.00
Annual Operation Cost:	$4,000.00
Annual Monitoring Cost:	$1,000.00
Project Life Span:	50 years
Module-Generated Life-Cycle Cost for Project	**$5,280,881.54**
Module-Generated Annualized Cost for Project	**$220,092.66**

Funding Request

Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	$289,810	Design	Environmental Planning and Permitting, Professional Design Services (30/60/90/100), Community Outreach During Design
2	$2,516,383	Construction	Agency Project Management and Construction
3	$53,902	O&M	Operation and Maintenance of devices
3	$1,000	Monitoring	Project Effectiveness Monitoring
4	$53,902	O&M	Operation and Maintenance of devices
4	$1,000	Monitoring	Project Effectiveness Monitoring
5	$53,902	O&M	Operation and Maintenance of devices
5	$1,000	Monitoring	Project Effectiveness Monitoring
	$2,970,899		

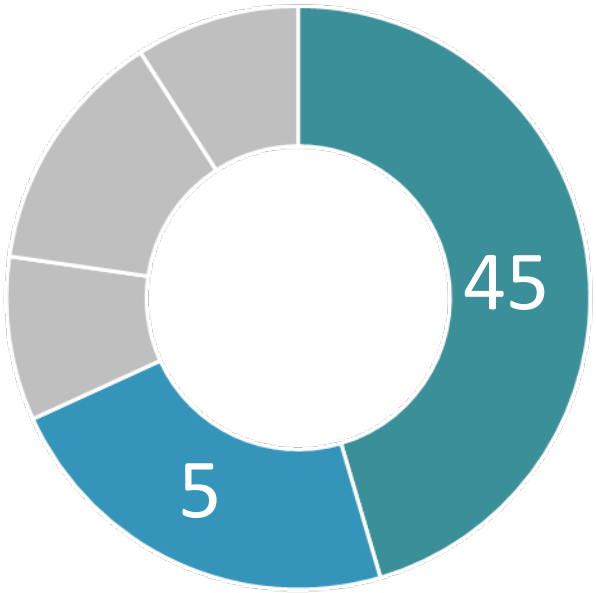
- **Leveraged Funding of 25% ($990,318) provided by the City of Glendale**

Score as confirmed by the Scoring Committee



The Scoring Committee confirmed this score on 12/01/2022

Water Quality & Water Supply Benefits



The Scoring Committee confirmed this score on 12/01/2022

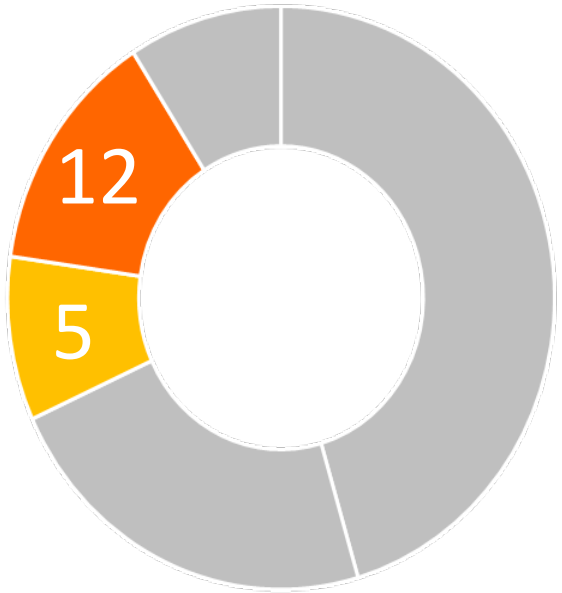
Water Quality

- Wet and dry weather flows will be captured by twenty-four (24) dry wells, twenty-four (24) bioretention swales and 9,980 linear feet of permeable concrete
- The network of distributed stormwater systems will treat flow from the 85th percentile, 24-hour event, capturing 10.1 ac-ft of runoff from 165 acres
- The project will address Zinc as the primary pollutant and Nitrogen as the secondary pollutant

Water Supply

- The project overlies the San Fernando Basin and will contribute water supply through groundwater recharge on an annual average basis
- A letter of support for the project was received from the Upper Los Angeles River Area Watermaster (ULARA)

Community Investment Benefits and Nature Based Solutions



The Scoring Committee confirmed this score on 12/01/2022

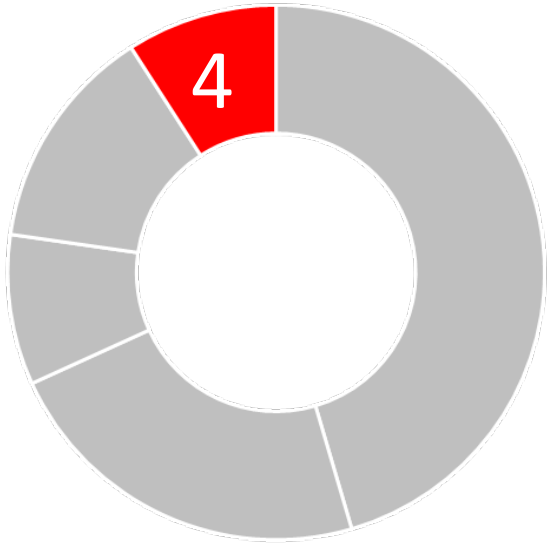
Community Investment Benefits:

- Provide the project area (which experiences flooding during rain events) with flood mitigation through infiltrating stormwater
- Provide improved greening and aesthetics for passive recreation such as running or walking through the neighborhood allowing the local community to connect with the natural environment
- Educate R.D. White Elementary students on urban pollution, water quality, water resiliency and green solutions
- Introduce the community to various types of native vegetation (including Peppermint Willow, Desert Willow and California Sycamore and the habitat it creates for wildlife)

Nature Based Solutions:

- Reduce heat island effect and increase shade through the installation of California native trees and vegetation
- Replace 22,300 square feet of impervious area with pervious surface

Leveraging Funds and Community Support



The Scoring Committee confirmed this score on 12/01/2022

Leveraging Funds:

- The City will provide 25% funding match ($990,318)

Community Support:

- Project letters of support were received from Glendale Unified School District, Glendale Environmental Coalition, and Walk Bike Glendale
- An outreach and engagement plan was developed to educate and involve the community on all aspects of the project
- The City will host community outreach workshops beginning with the design phase and continuing throughout the project's construction

Questions?

Sarkis Oganesyan, P.E.

Brookside Park Stormwater Capture Project

Funding Program - Infrastructure Program

Fiscal Year 2023-2024

Upper Los Angeles River Watershed

Project Lead: City of Pasadena

Presenter: Merrill Taylor (Craftwater Engineering)

Previously Awarded TRP? - No

CITY OF PASADENA

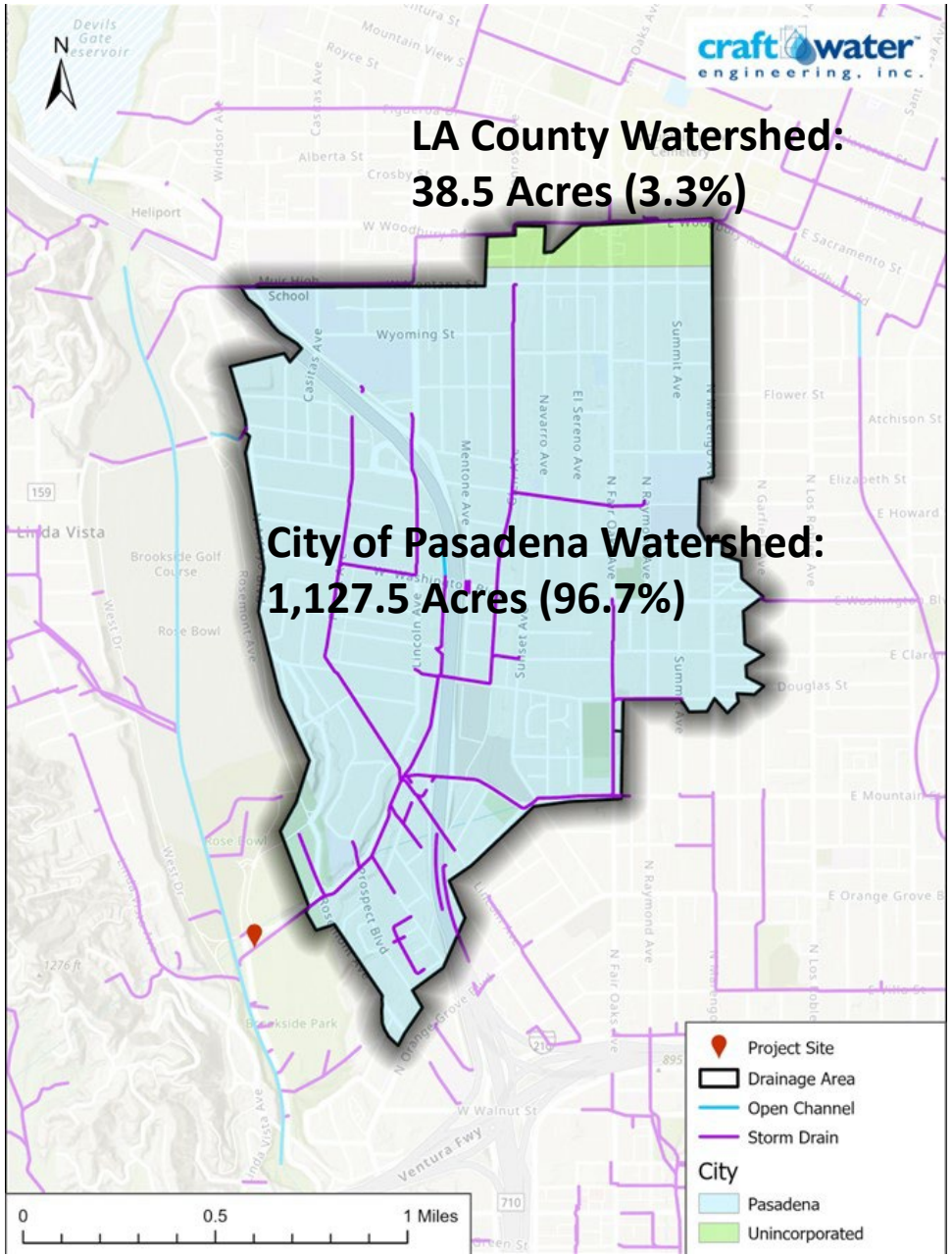
craftwater engineering, inc.

Project Overview

Regional and onsite stormwater capture and infiltration diversion facility located beneath open space at Brookside Park

- **Primary Objective:** Improve WQ within ULAR
- **Secondary Objectives**: Create onsite LID & public education
- **Project Status**: SCW funding request for Design
- **Total Funding Requested**: $2,198,612

Project Location – Total Capture Area



- Capture area jurisdiction:
  - City of Pasadena
  - LA County
- Watershed Capture Area:
  - 1,166 acres

Land-use	Area (acres)	% of Impervious
Single Family Residential	234.2	42.9%
Commercial	26.7	4.9%
Institutional	111.9	20.5%
Industrial	26.7	4.9%
Highways and Interstates	73.2	13.4%
Secondary Roads & Alleys	73.2	13.4%
TOTAL	546	100%

Project Background

- Why was the Project Location selected?
  - Pasadena Storm Water Master Plan, close to Arroyo Seco
- How was the Project developed?
  - Open space near pipe infrastructure, diversion and footprint alternatives, nature-based solution of infiltration
- Which regional water management plan includes the proposed project?
  - IRWMP
- Description of benefits to municipality/municipalities
  - On-site LID, event space facilities, treat 85th percentile storm
- Description of benefits to Disadvantaged Communities
  - Not applicable

Partners

- Who are the implementation partners already identified?
  - City of Pasadena
- What communities or groups have expressed support for the project?
  - Pasadena Water & Power, Other on-going conversations
- Have you received a letter of concurrence from the municipality (if needed)
  - Yes. Led by the City of Pasadena
- Have you received a letter of concurrence from the Flood Control District (if needed)
  - City of Pasadena storm drain, therefore, LACFCD concurrence is **not required**
- Have you yet engaged the appropriate vector control district about the project concept?
  - Yes

Project Details- Existing Conditions

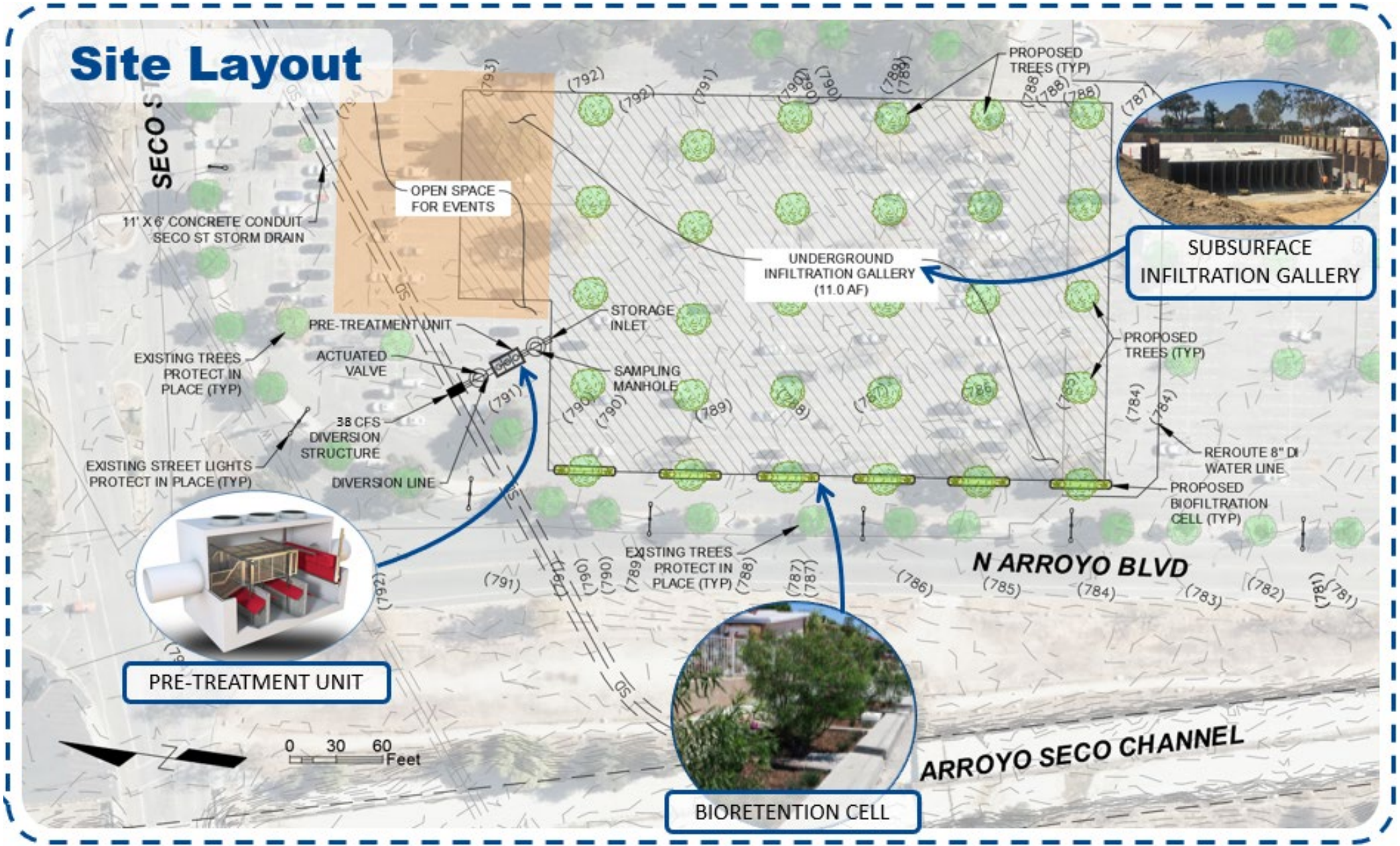
Existing Conditions

- 85th Percentile Peak Flow = 37.6 cfs
- 85th Percentile Volume = 22.5 ac-ft
- Infiltration Rate: 4 in/hr
- Approximate Depth to Groundwater: > 50 ft
- Current Use: Parking lot
- Owner: City of Pasadena

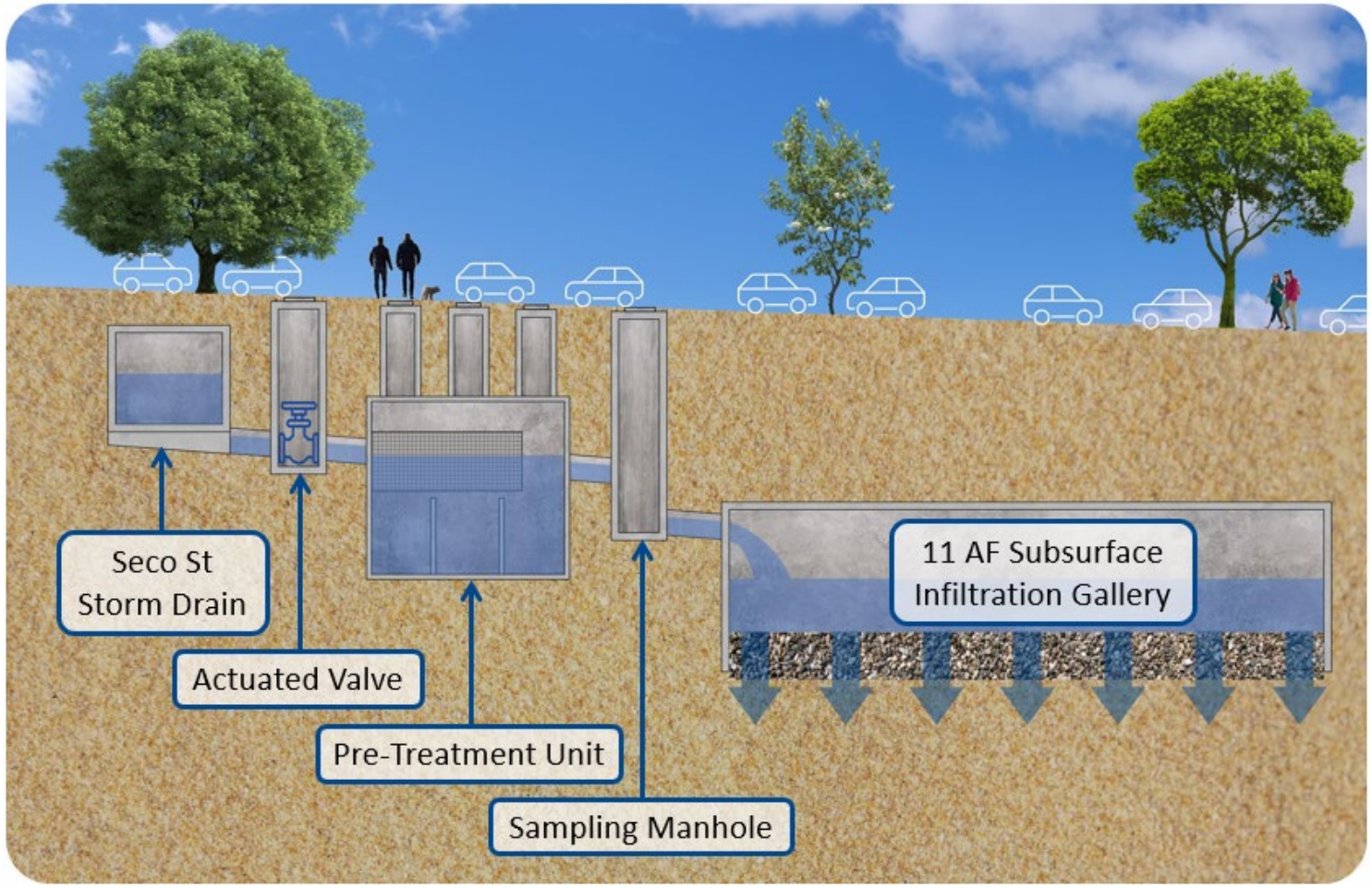
*Feasibility, Geotechnical Investigation, Stormwater Capture review done

*Alternative footprint sizes and diversion rates examined

Project Details- Site Plan



Project Details – Schematic Diagram



Diversion Rate	Storage Capacity	24-Hour Capacity	Primary Pollutant Reduction (Zinc)	Secondary Pollutant Reduction (Lead)
38 cfs	11.0 ac-ft (3.58 MG)	29.0 ac-ft	82.0% (127.7 lbs)	80.7% (23.5 lbs)

Project Benefits


Infiltration Through Native Soils


Biofiltration Cells


New Parking Lot Trees

- **Water Quality** improvement in the Arroyo Seco/ULAR by treating stormwater and urban runoff
- **Nature-Based** creation of infiltrative practices to recharge the local groundwater basin
- **Flood Management** storing 11.0 acre-feet of stormwater during storm events
- **Reduced Heat Island** native vegetation and 12 new shade trees throughout the park

Cost & Schedule

Phase	Description	Cost	Completion Date
Planning	Feasibility Study	$100,000	02/2023
Design	Final Design (30/60/90/100)	$1,813,787	12/2023
Design	Public Outreach during Design	$50,000	12/2023
Design	Environmental Planning (CEQA) and Permitting	$181,379	12/2023
Design	Agency Management (Design)	$153,447	12/2023
Construction	Construction Survey	$20,000	12/2024
Construction	Agency Management (Construction)	$300,000	12/2026
Construction	Construction Cost	$18,137,869	12/2026
Construction	Construction Bid/Award, Admin., Design Support	$1,813,787	12/2026

Annualized Costs

Maintenance Cost:	$190,000
Operation Cost:	$50,000
Monitoring Cost:	$25,000
Project Life Span:	50

Life-Cycle Costs

Life-Cycle Cost for Project:	$28,928,653
Annualized Cost for Project:	$1,205,667

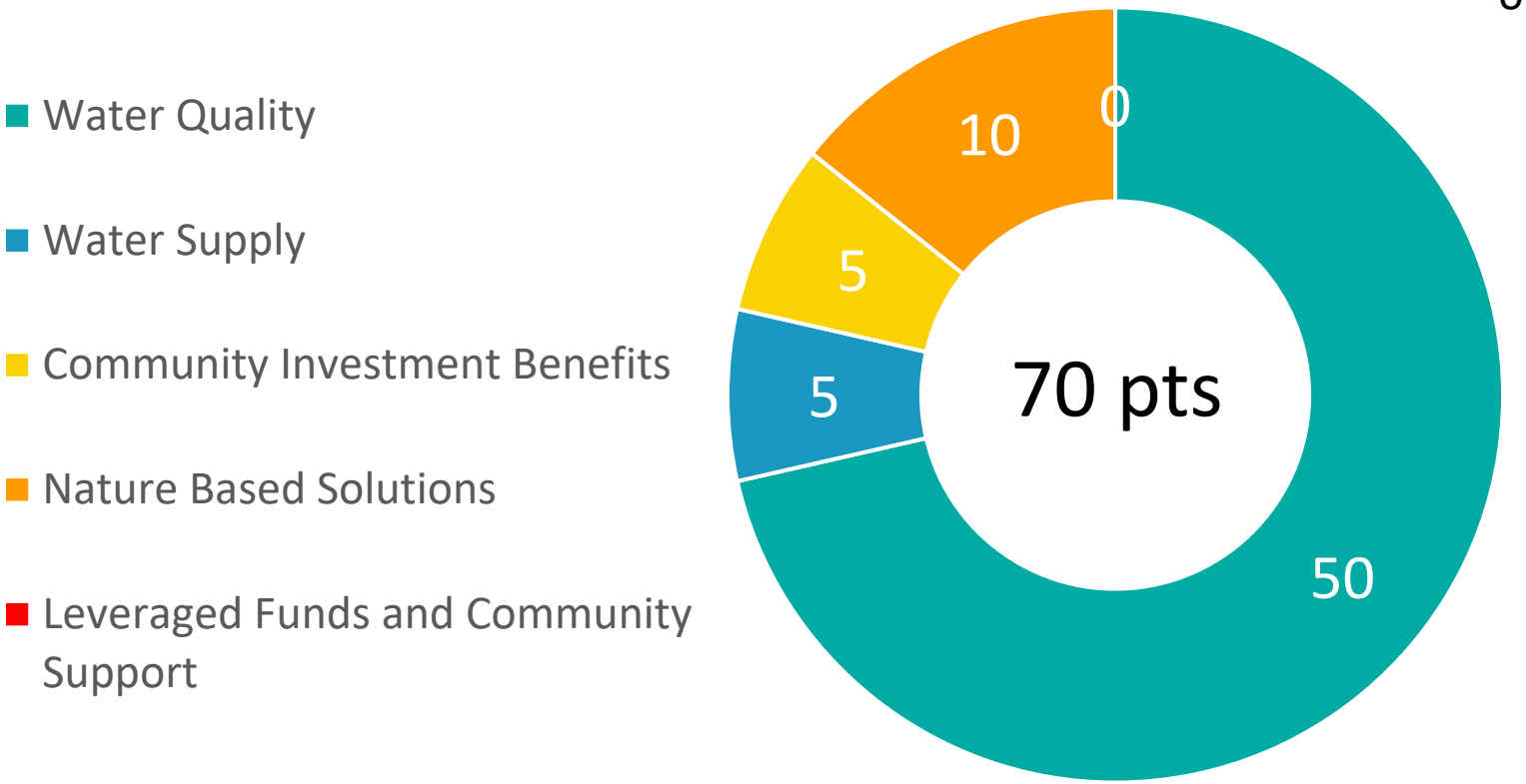
Funding Request

Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	$2,198,612	Design	Environmental Planning (CEQA) and Permitting, Community Outreach, Agency Project Management, and Professional Design Services (30/60/90/100)
TOTAL	**$2,198,612**		

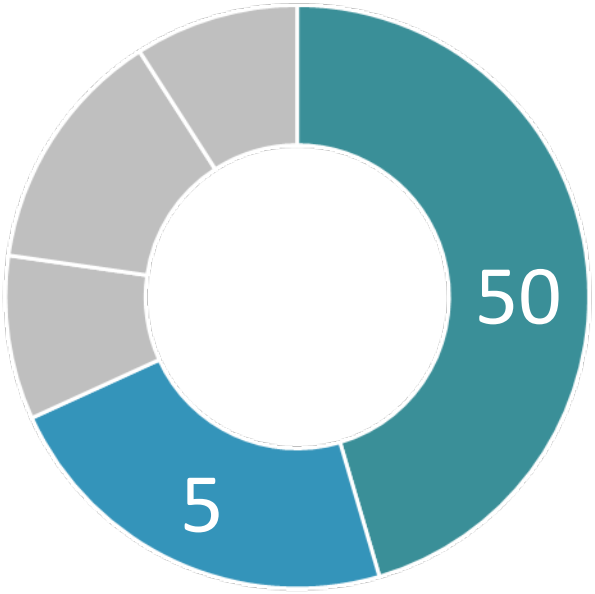
- Cost Share = $0
- Future funding requests
  - $20,271,656 for Construction – Year 2 and beyond

Score as confirmed by the Scoring Committee

The Scoring Committee confirmed this score on 6 Oct 2022.



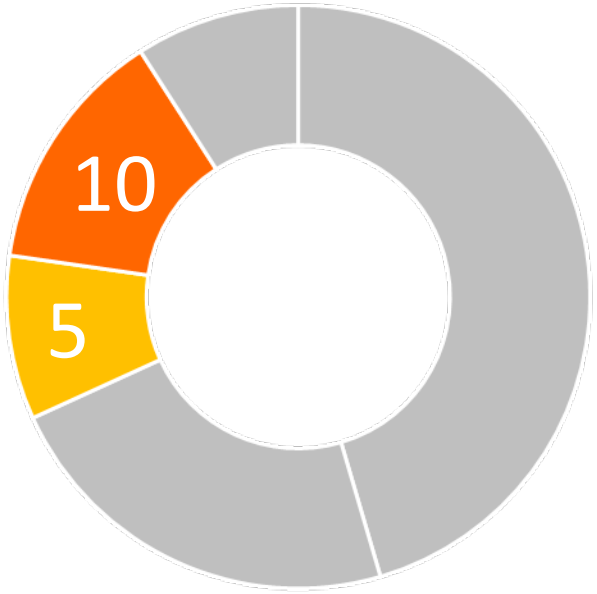
Water Quality & Water Supply Benefits



The Scoring Committee confirmed this score on 6 Oct 2022

- **Primary Mechanisms**
  - Runoff/pollutant capture
  - Infiltration
- **Wet** weather project
- Tributary Area: **1,166 acres**
- 24 Hours Capacity: **29.0 ac-ft**
- Pollutant Load Reduction
  - Primary Pollutant (Zinc) – **82.0% (127.7 lbs-annual avg)**
  - Secondary Pollutant (Lead) – **80.7% (23.5 lbs-annual avg)**
- Average Annual Capture for Water supply: **177.6 ac-ft**
- Water Supply Use :
  - **Infiltration to the Raymond Groundwater Basin**
- Water Supply Cost Effectiveness: **$6,787 per ac-ft**

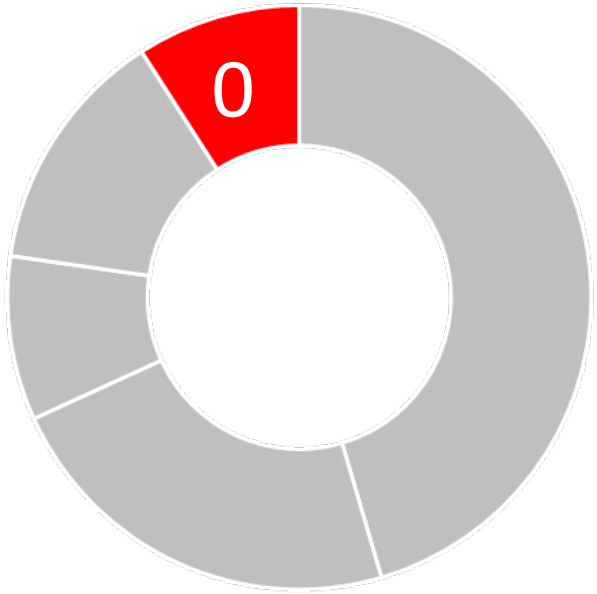
Community Investment Benefits and Nature Based Solutions



The Scoring Committee confirmed this score on 6 Oct 2022

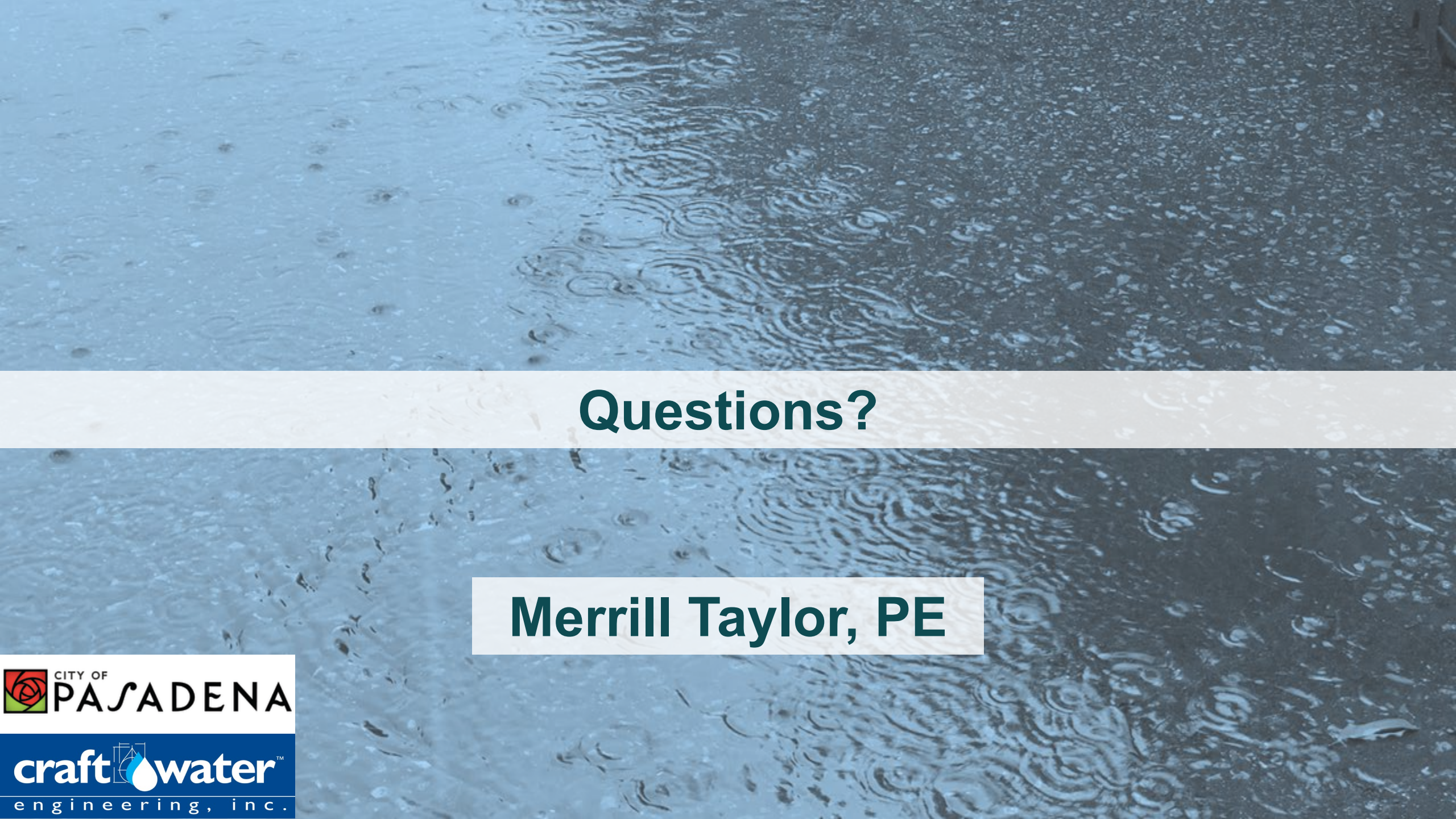
- Community Investment Benefits
  - Improve flood management
  - Reduced heat island effect and increased shade
  - Increase the number of trees and vegetation
- Nature Based Solutions
  - Project creates an infiltration basin to recharge the local groundwater aquifer to mimic natural processes
  - Post construction plans include 12 additional native trees, shrubs, native compacted soil, and grasses

Leveraging Funds and Community Support



The Scoring Committee confirmed this score on 6 Oct 2022

- Leveraging Funds
  - N/A
- Community Support
  - City of Pasadena to continue to lead an active community outreach effort
  - Strong, local, community-Based Support
    - To be gathered during the design phase



Questions?

Merrill Taylor, PE

CITY OF PASADENA

craftwater™ engineering, inc.