

An aerial photograph of a city coastline, likely Los Angeles, showing a dense urban grid and a large body of water. A semi-transparent blue rectangular overlay is positioned in the center-left of the image, containing white text. The text is arranged in a hierarchy, with the largest font at the top and smaller fonts below. The background image shows the city's layout, including streets, buildings, and a prominent coastline with a bay area.

Sorensen Park Multi-Benefit Stormwater Capture Project

Infrastructure Program

Fiscal Year 2024-2025

Lower San Gabriel River Watershed

Los Angeles County

Andrew Kim, P.E.

Previously Awarded TRP – Yes



Project Overview

This project will involve construction of a stormwater storage and infiltration facility at Sorensen Park, in unincorporated South Whittier.

- Primary Objective: Water Quality (Bacteria and Metals TMDLs)
- Secondary Objectives: Implement Nature-Based Solutions and Recreational Improvements
- Project Status: SCW funding is being requested for Design Phase
- Total Funding Requested: \$1,616,592 (IP)

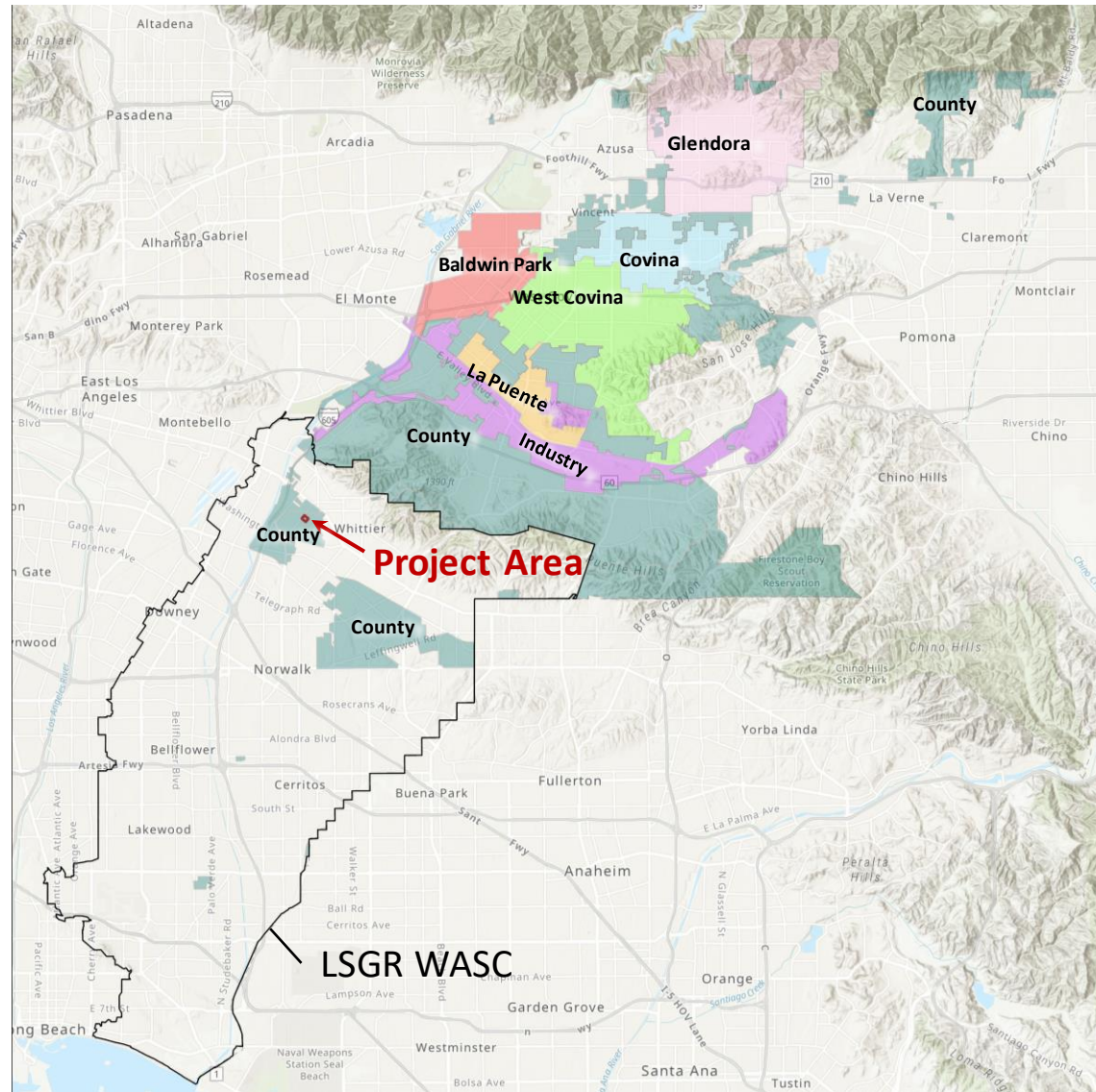




Project Location



SCW Watershed Areas



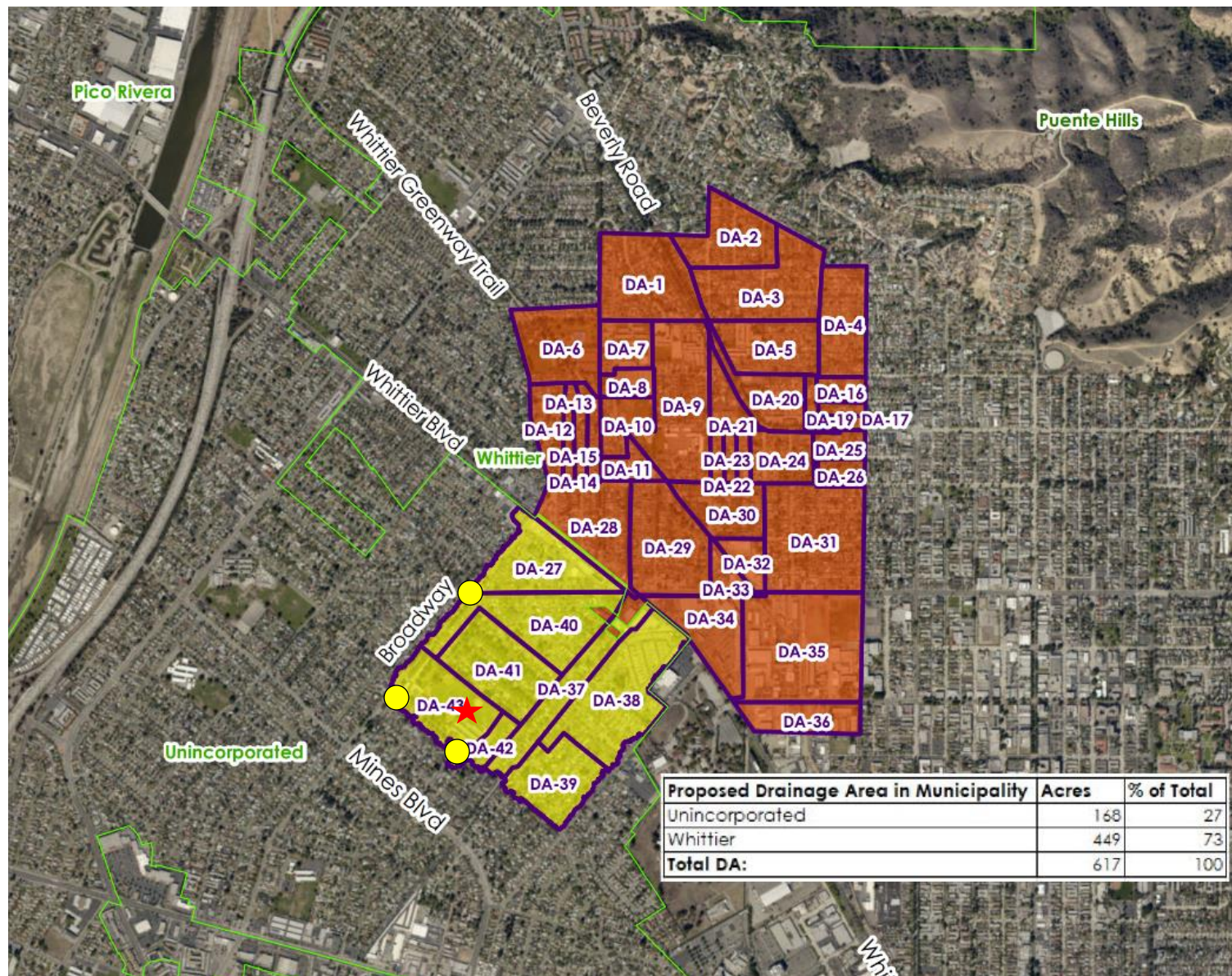
USGR Watershed Management Area³



Project Location

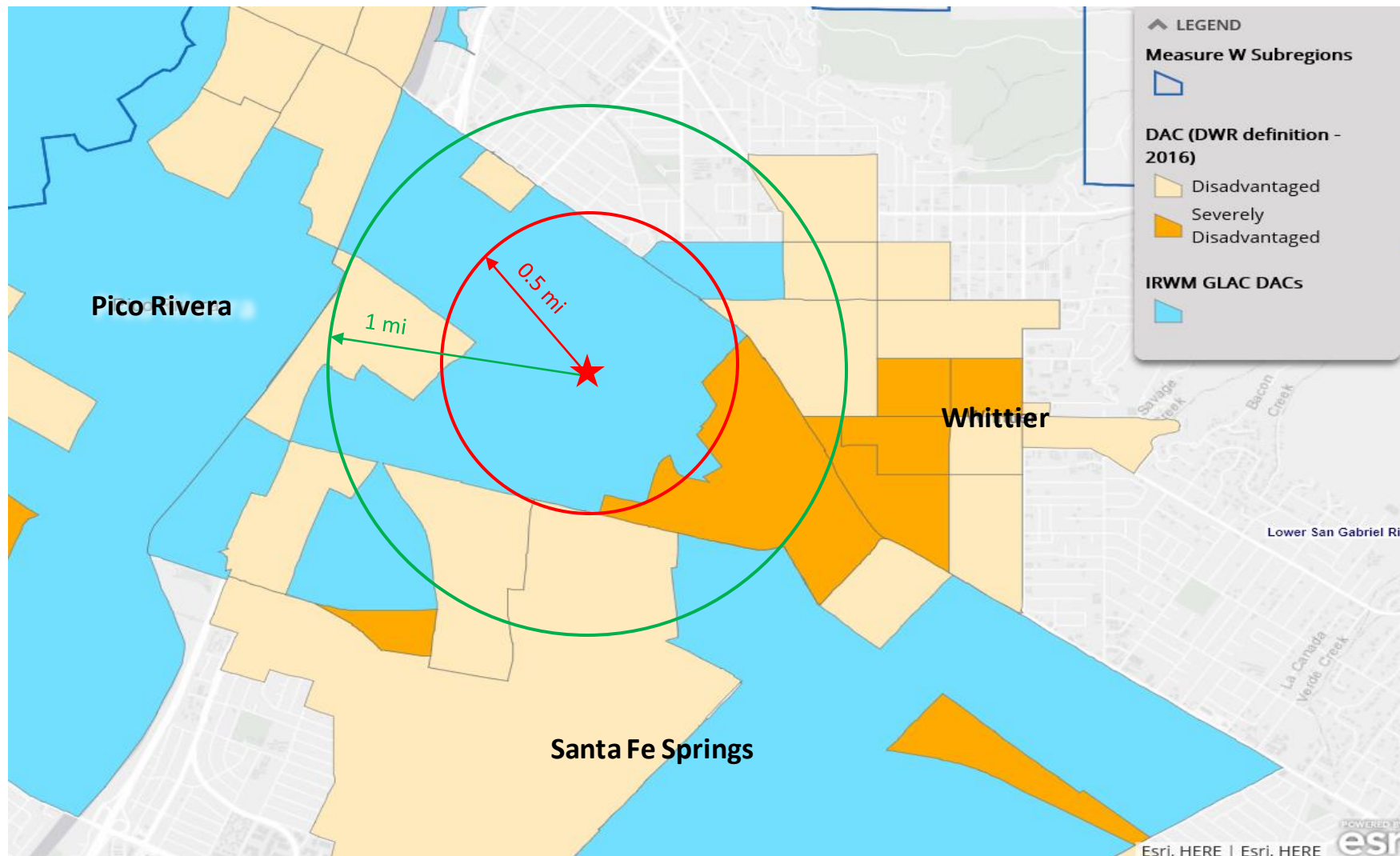
LEGEND

- ★ Sorensen Park
- Diversion Point
- City of Whittier
- Unincorporated County





Project Location



- Integrated Regional Water Management (**IRWM**)
- Greater Los Angeles County (**GLAC**)
- Department of Water Resources (**DWR**)
- Disadvantaged Community (**DAC**)



Project Background

Watershed Management Program Plan

Los Angeles Regional Water Quality Control Board

July 2023

Upper San Gabriel River Watershed Management Program Group

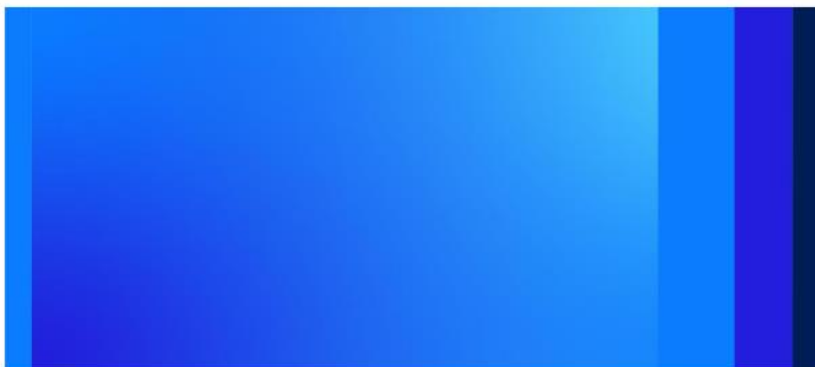
(County of Los Angeles, Los Angeles County Flood Control District, Cities of Baldwin Park, Covina, Glendora, Industry, La Puente, and West Covina)

Prepared by:



Jacobs

- Why was the Project Location selected?
 - Feasibility analysis was conducted by LA County
- How was the Project developed?
 - Geotechnical Investigations in 2018 and 2019
 - Feasibility Study conducted through SCW TRP
- Which regional water management plan includes the proposed project?
 - Upper San Gabriel Watershed Management Program Plan (2023)





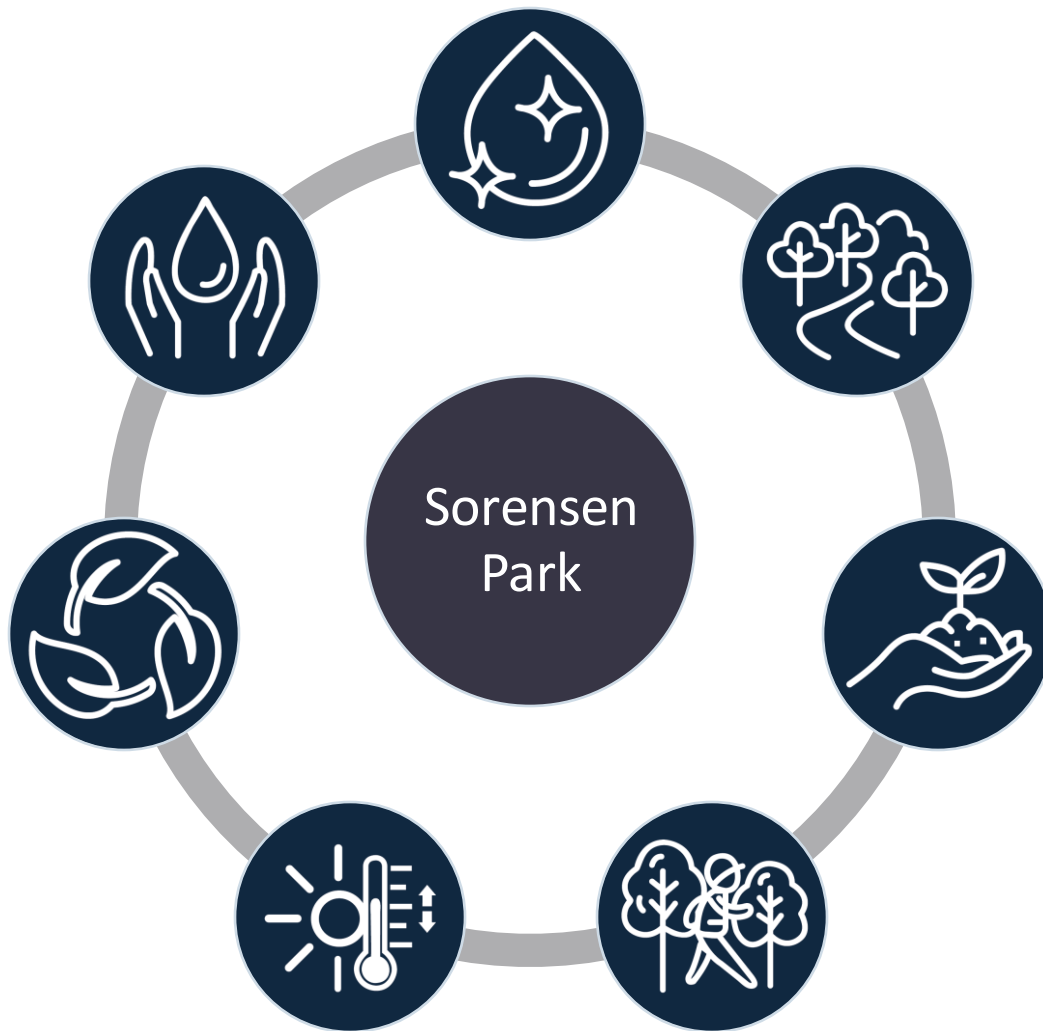
Project Background - Benefits



Increase Water Supply



Enhance Park/Habitat & Recreational Opportunities



Increase Trees & Vegetation, Reduce Heat Island Effect, & Promote Natural Processes



Improve Stormwater Quality






Partners

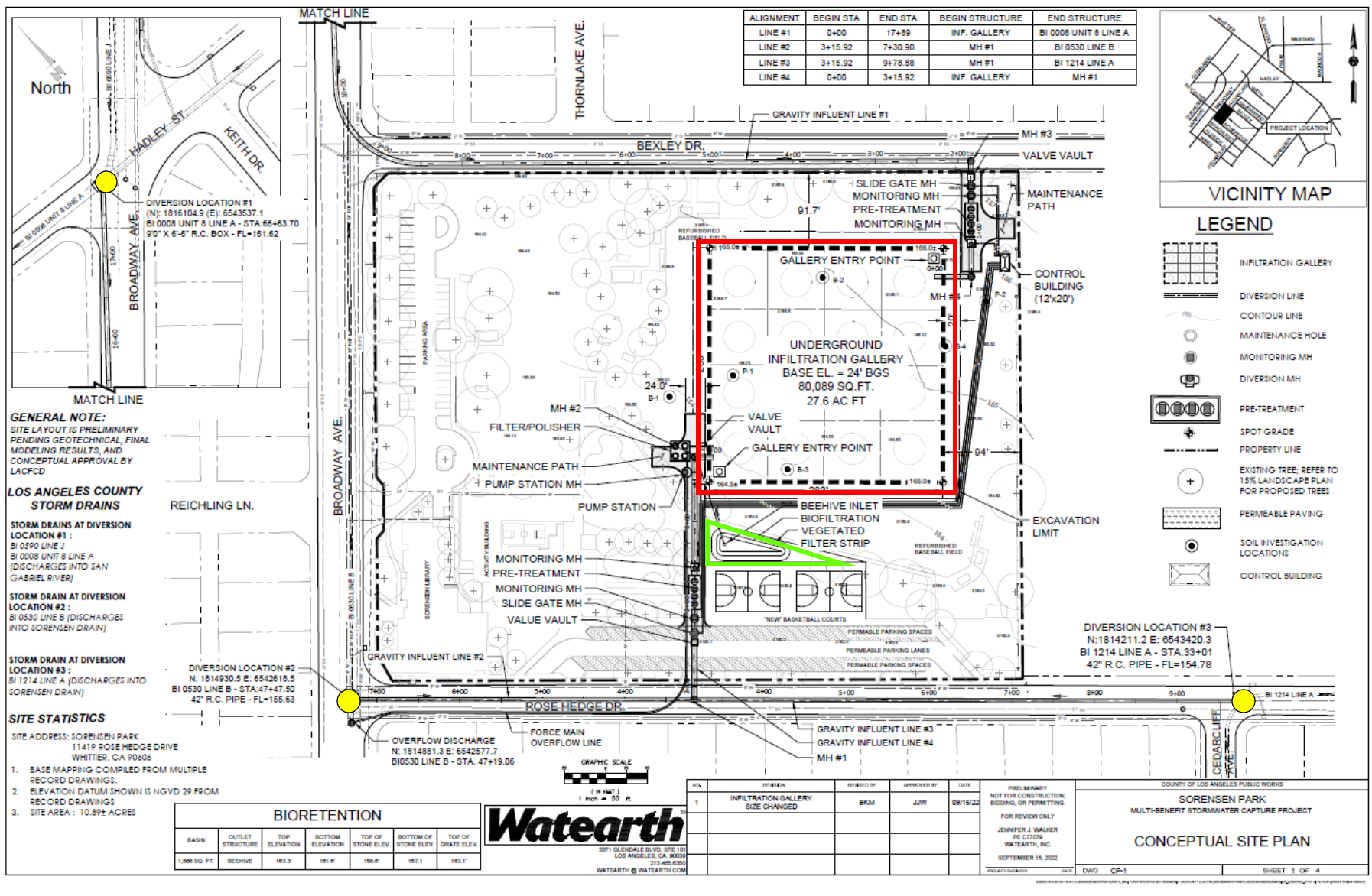
- Will conduct community outreach through Design phase
- Collaborated with the Department of Parks and Recreation to select and develop the project
- Received a letter of support from the City of Whittier
- Received a letter of concurrence from the Flood Control District



Project Details

LEGEND

-  Infiltration Gallery
-  Diversion Point
-  Biofiltration Area





Project Details





Cost & Schedule

Phase	Description	Cost	Completion Date
Planning	Planning phase costs: funded through Safe Clean Water Technical Resources Program	\$300,000	10/2024
Design	100% PS&E, Monitoring Plan, Community Engage ment	\$3,223,183	03/2026
Construction	B&A, Mobilization, Construction, Close Out	\$32,231,833	12/2027
TOTAL		\$35,755,016.00	

- Description of Annual Costs: \$266,552
- Project Lifespan: 50 years
- Lifecycle Cost: \$42,150,638.22



Funding Request

Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$1,616,592	Design	Design
TOTAL	\$1,616,592		

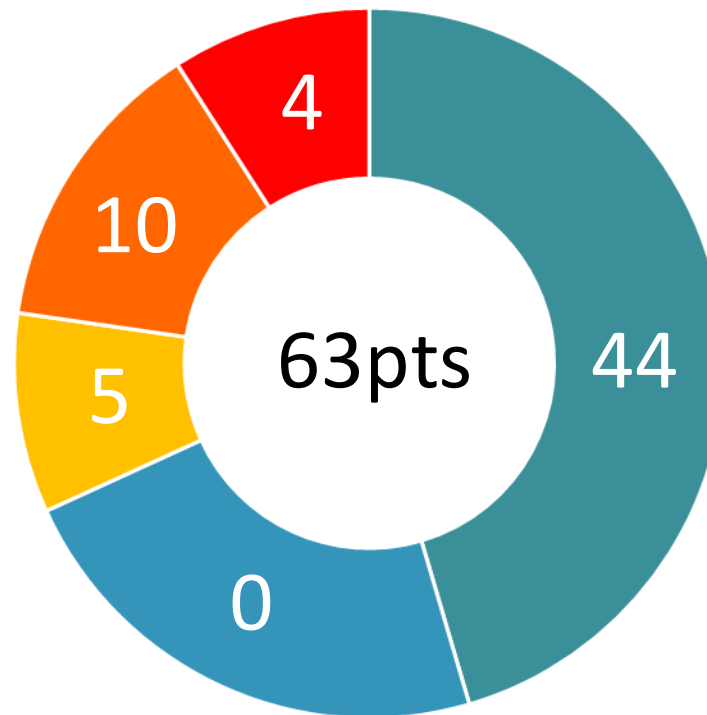
- Leveraged Funding amount and percent: \$1,616,592 (50%)
- SCW funding requests will be requested for construction phase in a future funding year



Score as confirmed by the Scoring Committee

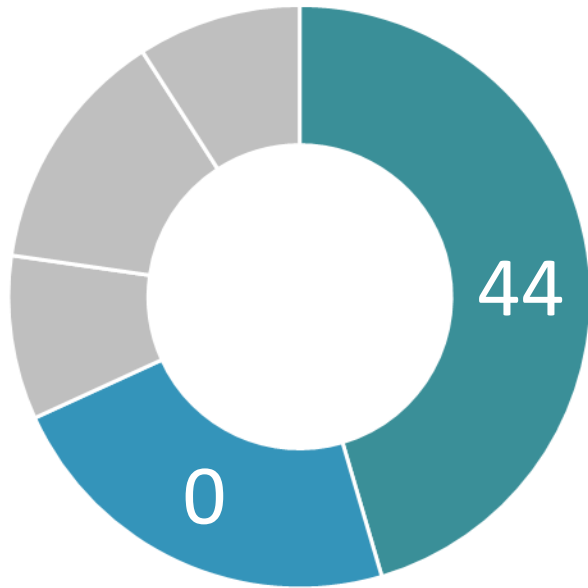
The Scoring Committee confirmed this score on November 27, 2023

- Water Quality
- Water Supply
- Community Investment Benefits
- Nature Based Solutions
- Leveraged Funds and Community Support





Water Quality & Water Supply Benefits

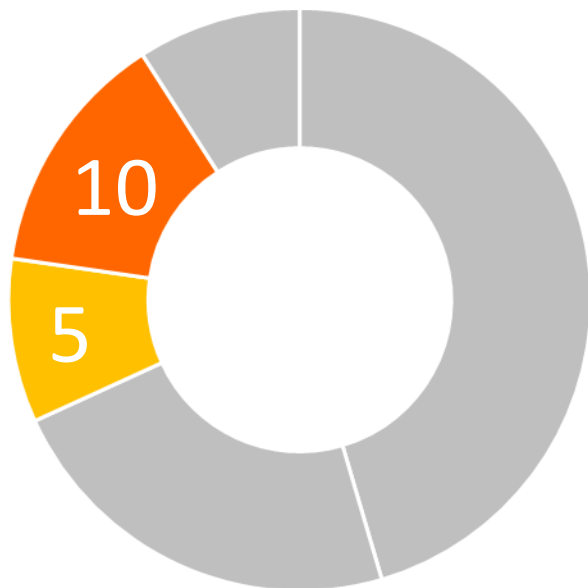


The Scoring Committee confirmed this score on November 27, 2023

- Primary mechanisms that achieve Water Quality and Water Supply Benefits claimed: Infiltration Facility
- Wet weather project
- Tributary Area: 617 Acres
- Capacity: 27.6 ac-ft
- Pollutant Reduction: 82.4% (zinc); 81.9% (lead)
- Water Supply and Water Quality Cost Effectiveness: \$ 10,408.93 per ac-ft



Community Investment Benefits and Nature Based Solutions

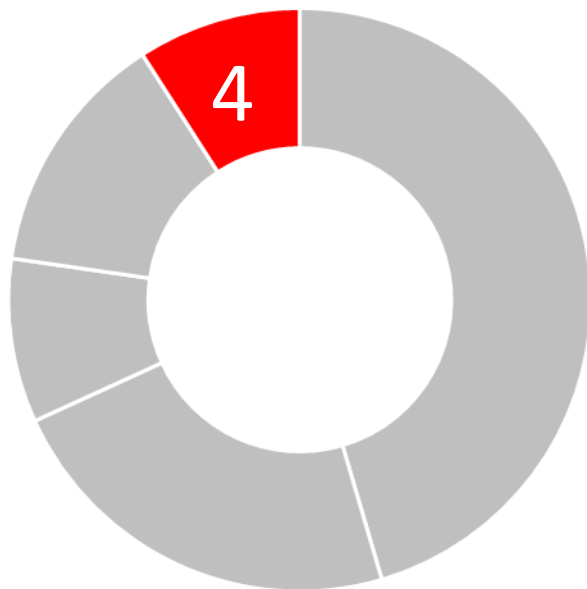


The Scoring Committee confirmed this score on November 27, 2023

- Community Investment Benefits
 - Flood mitigation
 - Recreational/aesthetic improvements to park
 - Reduce heat island effect/shade
- Nature Based Solutions
 - New Trees/Native plants
 - Bioretention planters



Leveraging Funds and Community Support



The Scoring Committee confirmed this score on November 27, 2023

- Leveraging Funds
 - \$1,616,592 leveraged funding amount
 - 50% funding matched for Design
- Community Support
 - One community engagement was conducted in 2022 at the Sorensen Park Harvest Festival.



Questions?

Andrew Kim

Jeremy Liby

Reservoir Park Stormwater Capture Project

Funding Program - Infrastructure Program

Fiscal Year 2024-2025

Lower San Gabriel River Watershed

Project Lead: City of Signal Hill – Thomas Bekele, PE, Public Works Director

Presenter: Richard Watson (Richard Watson & Associates)

Merrill Taylor (Craftwater Engineering)

Previously Awarded TRP? - No



Project Overview

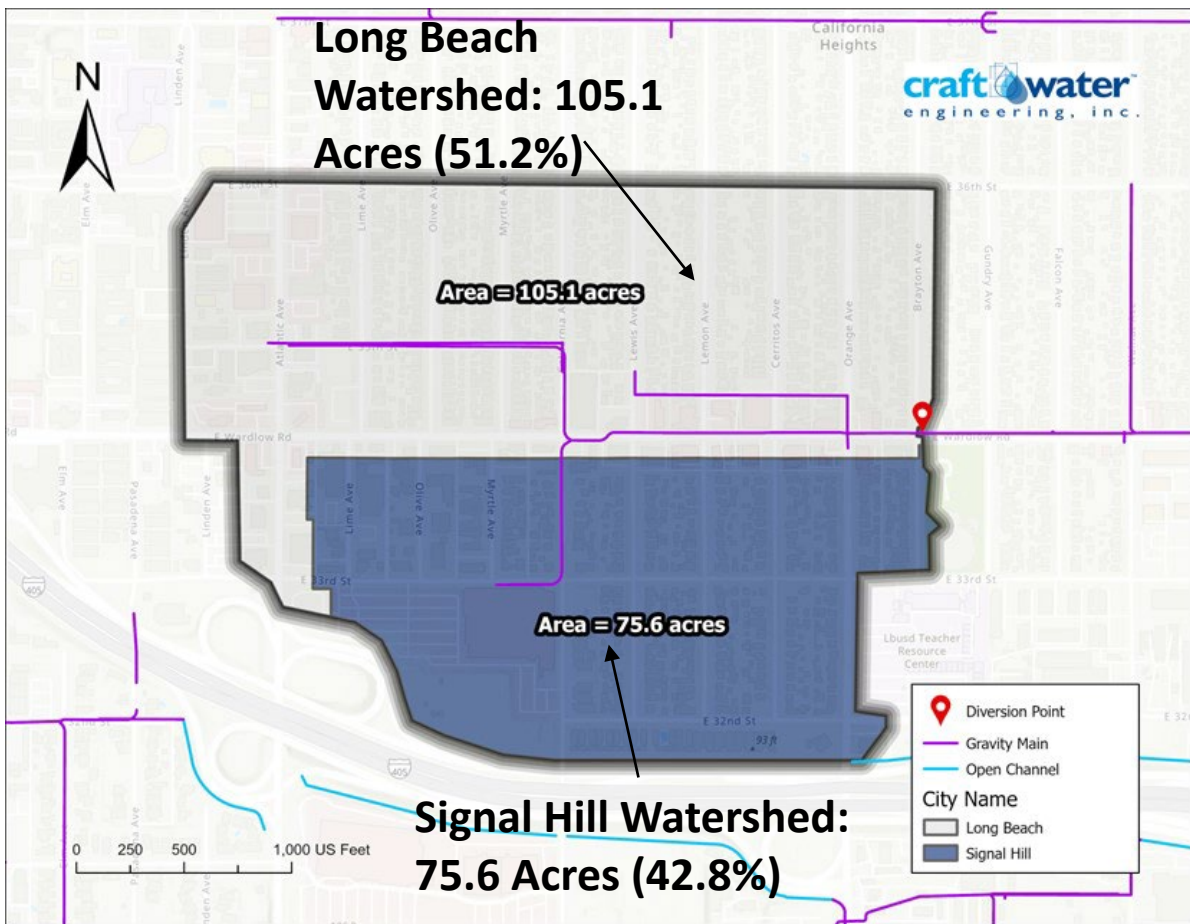
Regional stormwater capture, infiltration/filtration facility, and new park equipment/community garden at Reservoir Park in Signal Hill

- **Primary Objective:** Improve WQ within the LCC watershed through nature-based and filtration stormwater management solutions while maintaining a public play space with community-identified amenities
- **Secondary Objectives:** Rehabilitating a public play space and public education
- **Project Status:** SCW funding request for Design and Construction
- **Total Funding Requested:** \$6,676,878





Project Location – Watershed Map

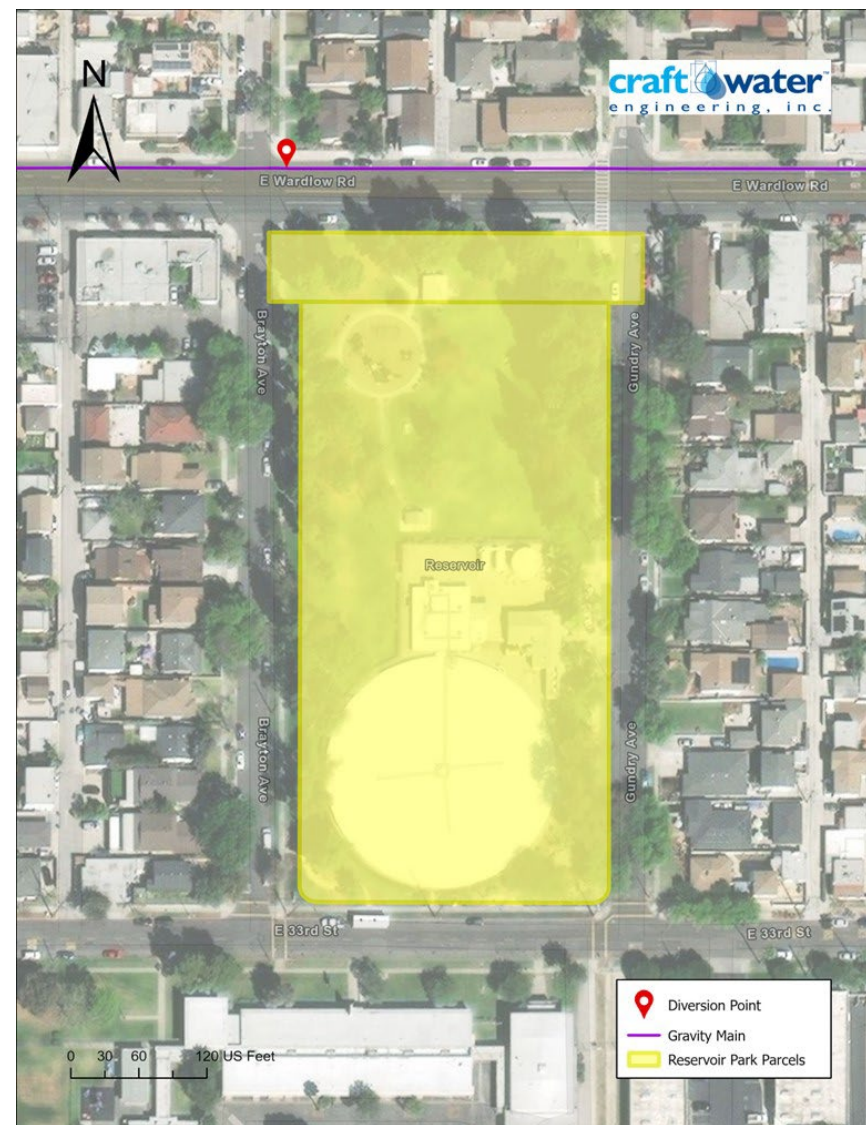
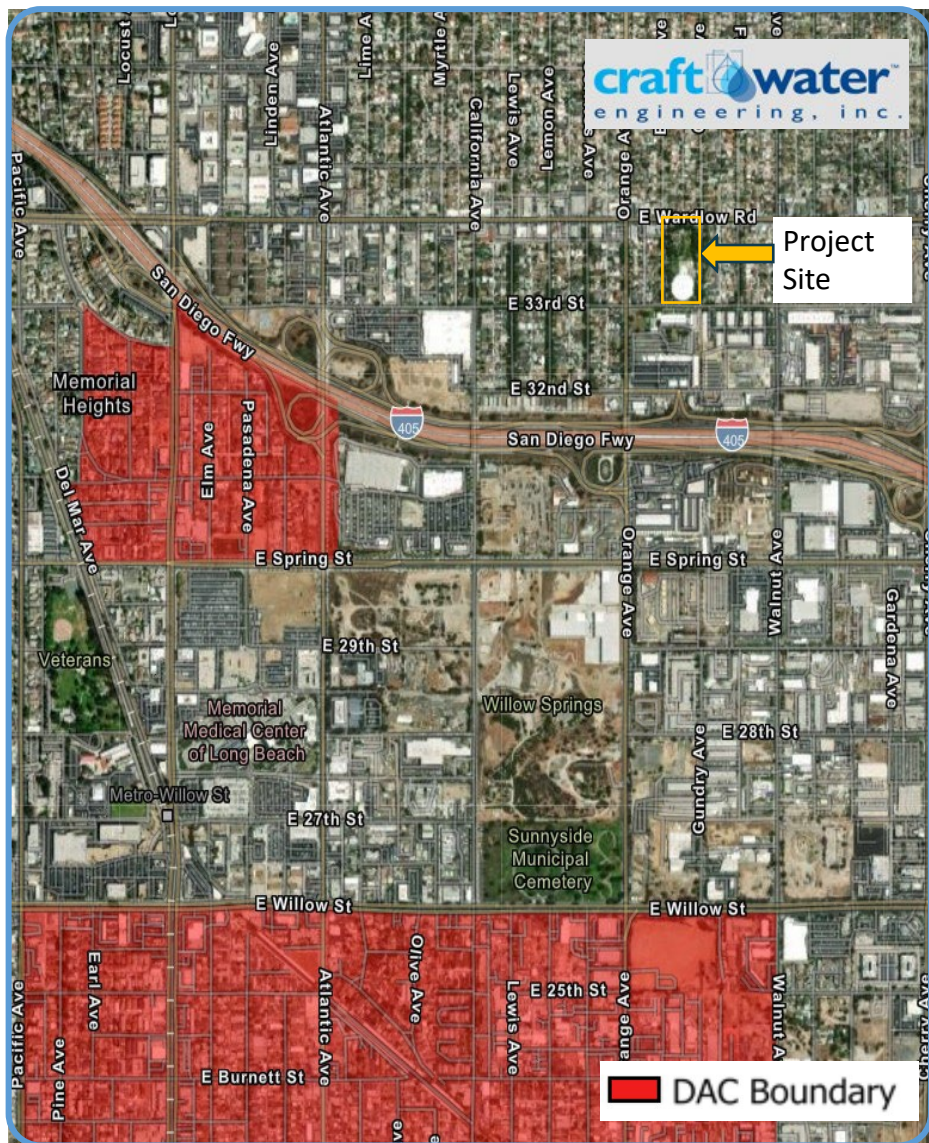


- Capture area jurisdiction:
 - City of Long Beach
 - City of Signal Hill
- Watershed Capture Area:
 - 183.6 acres

Land-use	Impervious Area (acres)	% of Impervious
Single Family Residential	31.24	25.16%
Multi-Family Residential	18.70	15.06%
Commercial	32.41	26.10%
Institutional	0.23	0.19%
Industrial	6.83	5.50%
Highways and Interstates	0.63	0.51%
Secondary Roads & Alleys	34.13	27.49%
TOTAL	124.17	100%



Project Location – Project Area & DAC Communities





Project Background

- Why was the Project Location selected?
 - WQ improvements to LCC, near large storm drain infrastructure (BI 0633 – Line B), and community park improvement
- How was the Project developed?
 - Site diversion and layout alternatives, community input, and incorporation of potential stormwater features and surface restoration considerations
- Which regional water management plan includes the proposed project?
 - LCC WMP
- Description of benefits to municipality/municipalities
 - Improved park facilities, community garden space, increased tree canopy and habitat, permeable pavement, treating wet and dry-weather flows
- Description of benefits to Disadvantaged Communities
 - New and enhanced park facilities



Partners

- Who are the implementation partners already identified?
 - City of Signal Hill, Los Cerritos Channel Watershed Management Group
- What communities or groups have expressed support for the project?
 - Signal Hill Community Foundation, Signal Hill Historical Society, Friends of the Signal Hill Library, and the Signal Hill Police Foundation
- Have you received a letter of concurrence from the municipality (if needed)
 - Yes. Led by the City of Signal Hill
- Have you received a letter of concurrence from the Flood Control District (if needed)
 - Yes
- Have you yet engaged the appropriate vector control district about the project concept?
 - Yes



Project Details- Existing Conditions

Existing Condition



Existing Conditions

- 85th Percentile Peak Flow = 7.55 cfs
- 85th Percentile Surface Runoff = 5.58 ac-ft
- Infiltration Rate: 0.3 in/hr
- Groundwater Basin: Central Basin
- Owner: City of Signal Hill

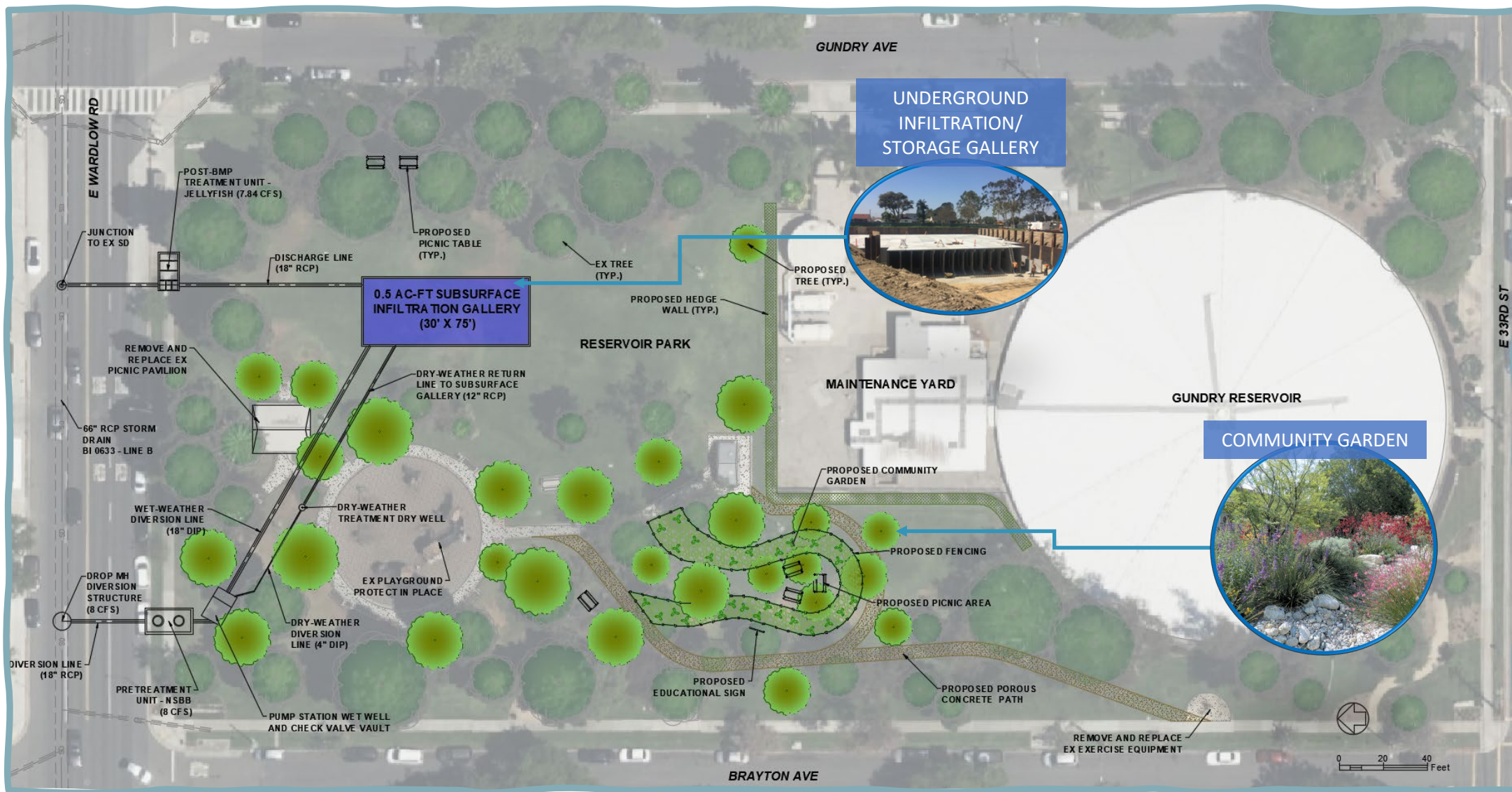
*Feasibility, Stormwater Capture review, and 10% design done

*Alternative footprint sizes and diversion rates examined



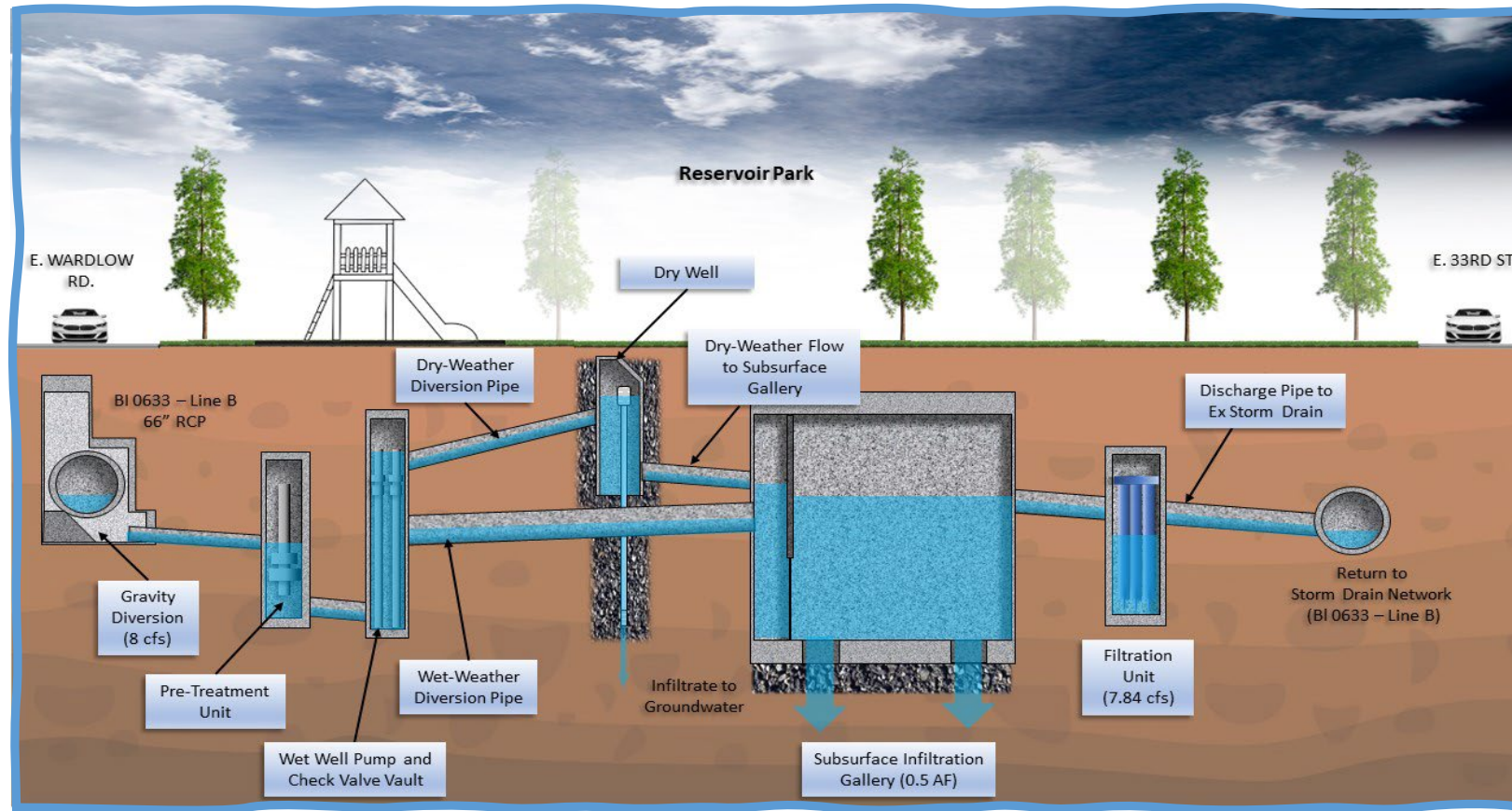


Project Details- Site Plan





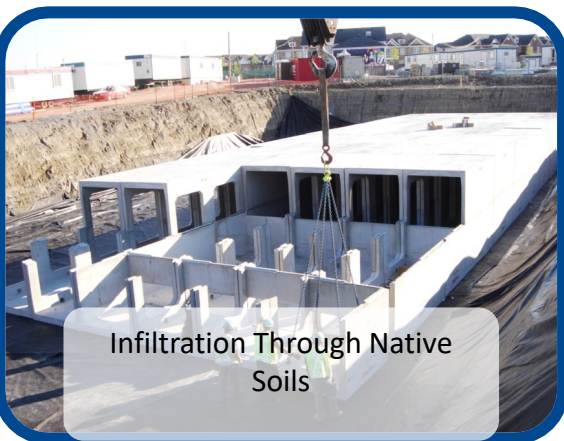
Project Details – Schematic Diagram



Diversions Rate	Storage Capacity	24-Hour Capacity	Primary Pollutant Reduction (Zinc)	Secondary Pollutant Reduction (Copper)
8 cfs	0.5 ac-ft (0.16 MG)	8.15 ac-ft	80.03%	81.21%



Project Benefits



- **Water Quality** improvement in the LSGR by treating stormwater and urban runoff
- **Nature-Based** creation of filtering bioretention and native vegetation
- **Park Recreational Enhancements**
New permeable concrete walking path and a community garden space
- **Reduced Heat Island** native vegetation and 28 new shade trees throughout the park





Cost & Schedule

Phase	Description	Cost	Completion Date
Planning	Feasibility Study	\$92,244	07/2023
Design	Environmental Planning (CEQA) and Permitting, Public Outreach during design, Final Design (30/60/90/100), Project Management	\$951,842	02/2026
Construction	Construction capital costs, survey, administration and design support, construction management	\$5,725,036	03/2028

Annualized Costs

Maintenance Cost:	\$218,000
Operation Cost:	\$50,000
Monitoring Cost:	\$50,000
Project Life Span:	50

Life-Cycle Costs

Life-Cycle Cost for Project:	\$14,399,182.43
Annualized Cost for Project:	\$600,118.45



Funding Request

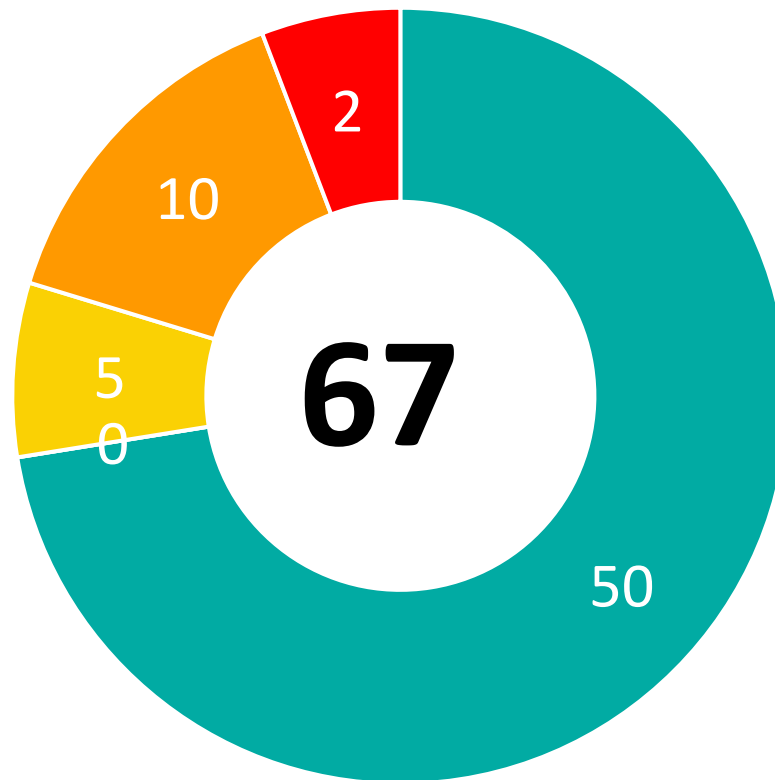
Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$951,384	Design	Professional design services (30/60/90/100), environmental planning (CEQA) and permitting, community outreach during design, and agency project management (design phase)
2	\$1,918,345	Construction	Construction Contract, Year 1 Budget Agency Project Management, Year 1 Construction Administration, Year 1 Construction Survey and Staking
3	\$1,903,345	Construction	Construction Contract, Year 2 Budget Agency Project Management, Year 2 Construction Administration, Year 2
4	\$1,903,345	Construction	Construction Contract, Year 3 Budget Agency Project Management, Year 3 Construction Administration, Year 3
TOTAL	\$6,676,878		

- **Leveraged Funds = \$0**
- Future funding requests
 - Operation & Maintenance



Preliminary Score (Confirmed by the Scoring Committee)

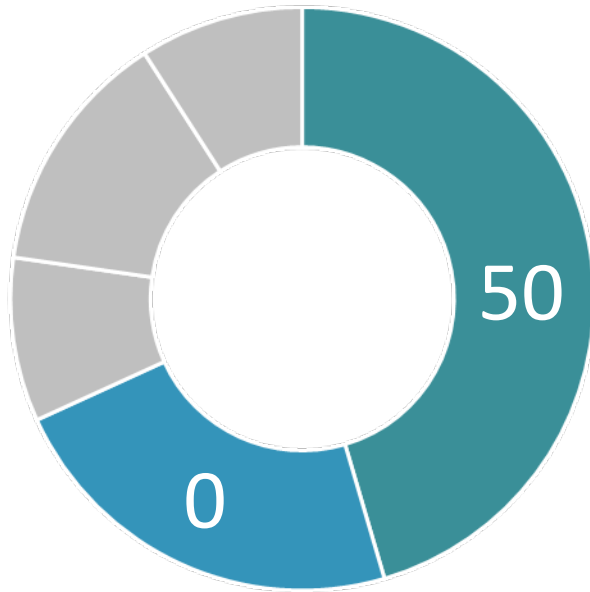
- Water Quality
- Water Supply
- Community Investment Benefits
- Nature Based Solutions
- Leveraged Funds and Community Support



The Scoring Committee confirmed this score on 12/7/23.



Water Quality & Water Supply Benefits

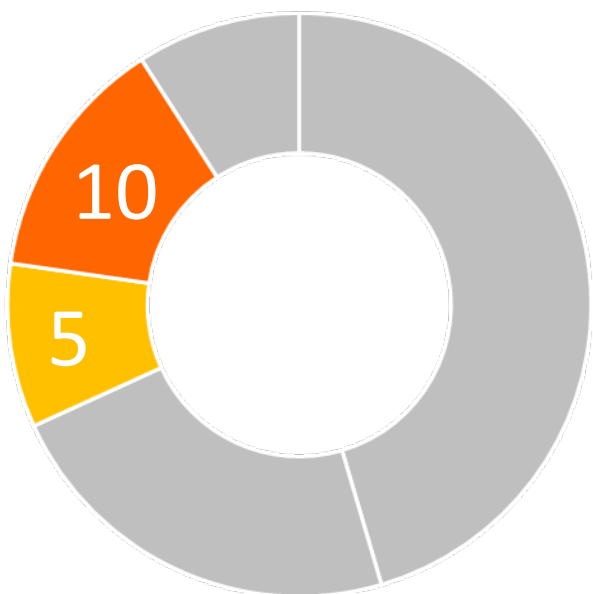


The Scoring Committee confirmed this score on 12/7/23.

- **Primary Mechanisms**
 - Runoff/pollutant capture
 - Infiltration
 - Filtration
- **Wet weather project**
- **Tributary Area: 183.7 acres**
- **24 Hours Capacity: 8.15 ac-ft**
- **Pollutant Load Reduction**
 - Primary Pollutant (Zinc) – **80.03%**
 - Secondary Pollutant (Lead) – **81.21%**
- **Average Annual Capture for Water supply: 0 ac-ft**
- **Water Supply Use :**
 - **N/A**
- **Water Supply Cost Effectiveness: N/A**



Community Investment Benefits and Nature Based Solutions

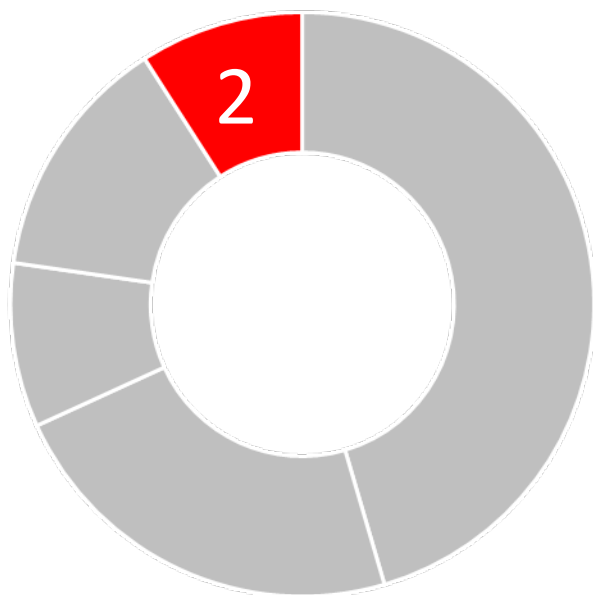


The Scoring Committee confirmed this score on 12/7/23.

- Community Investment Benefits
 - Enhanced park space
 - Enhance recreational opportunities
 - Reduced heat island effect and increased shade
 - Increase the number of trees and vegetation
- Nature Based Solutions
 - Project utilizes infiltration to put runoff into soils
 - Project adds a permeable pavement pathway
 - Post-construction plans include a community garden, 28 additional native trees, various native shrubs, native compacted soil, and grasses



Leveraging Funds and Community Support



The Scoring Committee confirmed this score on 12/7/23.

- Leveraging Funds
 - N/A
- Community Support
 - The City of Signal Hill is leading the community outreach effort
 - Resident surveys
 - Online survey sent out by the City to its residents seeking project input
 - Participated in community events
 - Concert in the Park
 - Strong, local, community-based Support
 - Signal Hill Historical Society
 - Signal Hill Community Foundation
 - Friends of the Signal Hill Library
 - Signal Hill Police Foundation
 - Jewel Box Childrens Theater

Questions?

Merrill Taylor, PE

Craftwater Engineering, Inc

Richard Watson

Richard Watson & Associates

Thomas Bekele, PE

City of Signal Hill



Heartwell Park at Clark Stormwater Capture Project

Funding Program - Infrastructure Program

Fiscal Year 2024-2025

Lower San Gabriel River Watershed

Project Lead: City of Long Beach

Presenter: Richard Watson (Richard Watson & Associates)

Merrill Taylor (Craftwater Engineering)

Previously Awarded TRP? - No



Project Overview

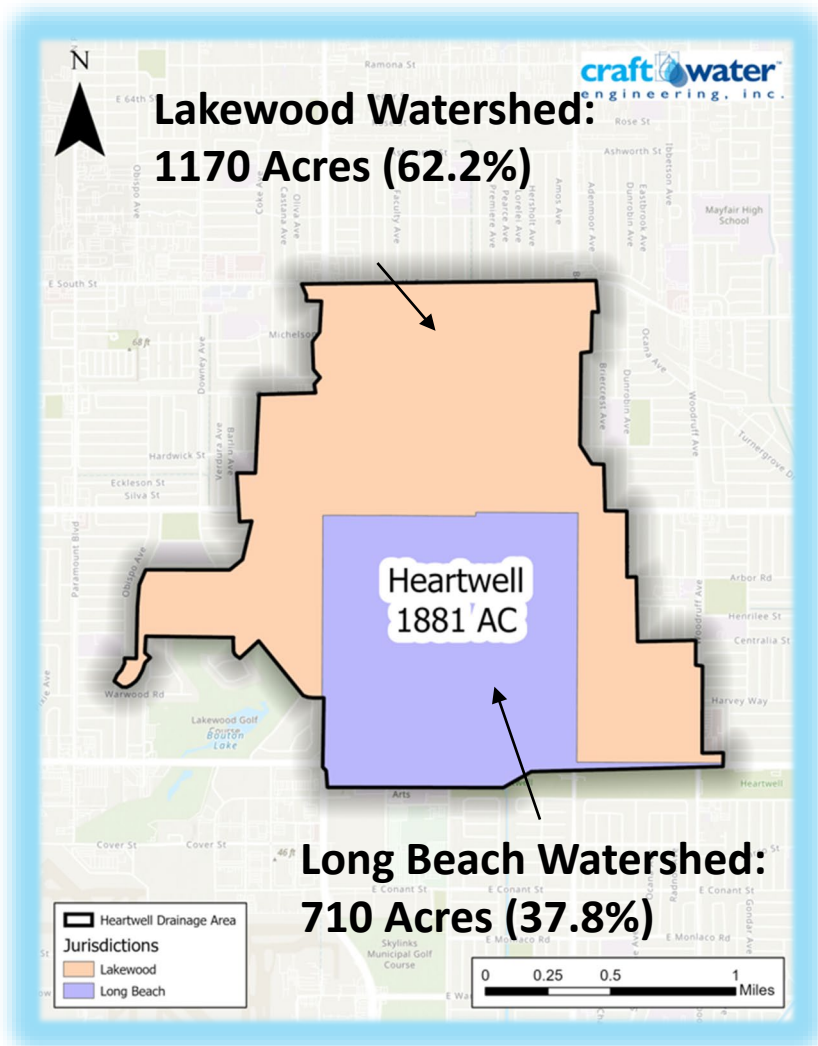
Regional stormwater capture and filtration facility at Heartwell Park and existing lake improvements. (For Design)

- **Primary Objective:** Improve WQ within the LCC watershed through nature-based and filtration stormwater management solutions while maintaining a public play space with community-identified amenities
- **Secondary Objectives:** offset potable water supply and public education
- **Project Status:** SCW funding request for Construction
- **Total Funding Requested:** \$2,864,472





Project Location – Watershed Map

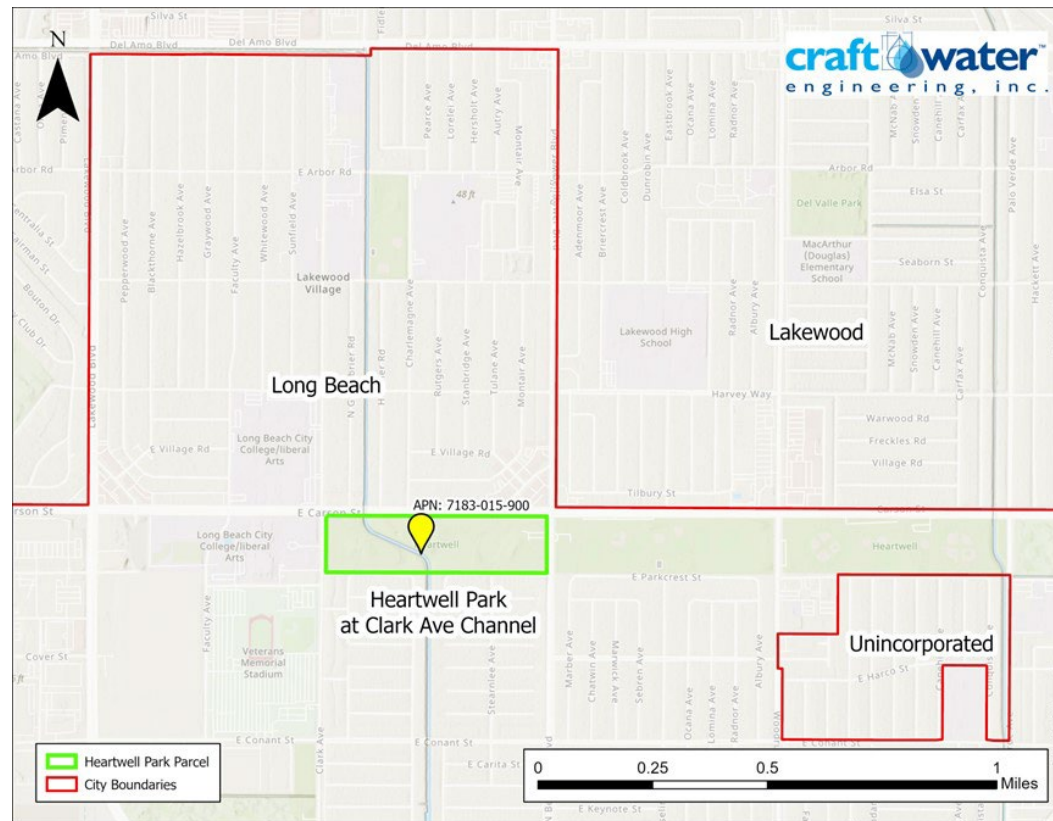
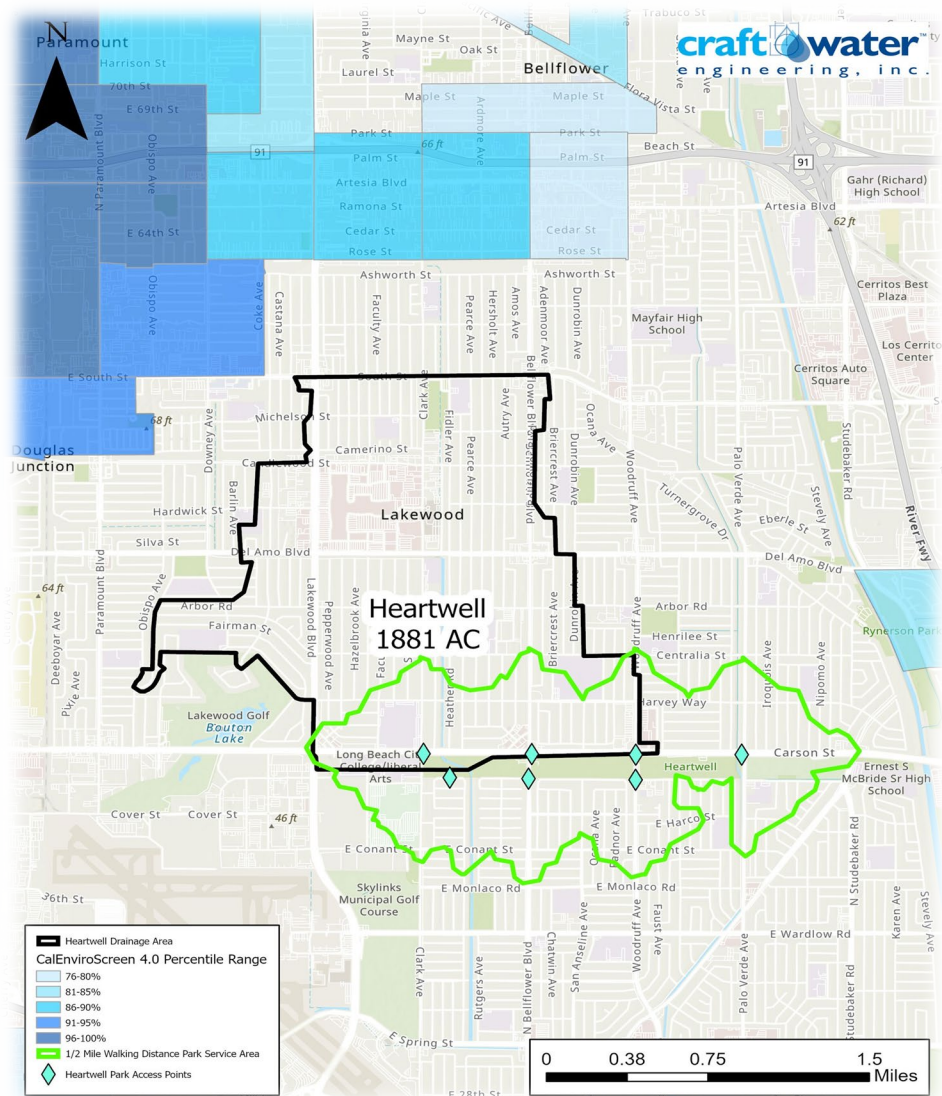


- Capture area jurisdiction:
 - City of Lakewood
 - City of Long Beach
- Watershed Capture Area:
 - 1,881 acres

Land-use	Impervious Area (acres)	% of Impervious
Single Family Residential	450.37	41.62%
Multi-Family Residential	47.90	4.43%
Commercial	192.06	17.75%
Institutional	113.29	10.47%
Industrial	0.40	0.04%
Highways & Interstates	0.00	0.00
Secondary Roads & Alleys	277.98	25.69%
TOTAL	1,082	100%



Project Location – Project Area & DAC Communities





Project Background

- Why was the Project Location selected?
 - WQ improvements to LCC, near large flood control channel infrastructure, and community park improvement
- How was the Project developed?
 - Site diversion and layout alternatives, community input, and incorporation of potential stormwater features and surface restoration considerations
- Which regional water management plan includes the proposed project?
 - LCC WMP
- Description of benefits to municipality/municipalities
 - Enhanced park space, natural stream, increased tree canopy and habitat, permeable walkways, treating wet- and dry-weather flows
- Description of benefits to Disadvantaged Communities
 - Enhanced park space



Partners

- Who are the implementation partners already identified?
 - City of Long Beach, Los Cerritos Channel Watershed Management Group
- What communities or groups have expressed support for the project?
 - Los Cerritos Wetlands Authority and the Conservation Corps of Long Beach
- Have you received a letter of concurrence from the municipality (if needed)
 - Yes. Led by the City of Long Beach
- Have you received a letter of concurrence from the Flood Control District (if needed)
 - Yes
- Have you yet engaged the appropriate vector control district about the project concept?
 - Yes



Project Details- Existing Conditions

Existing Condition



Existing Conditions

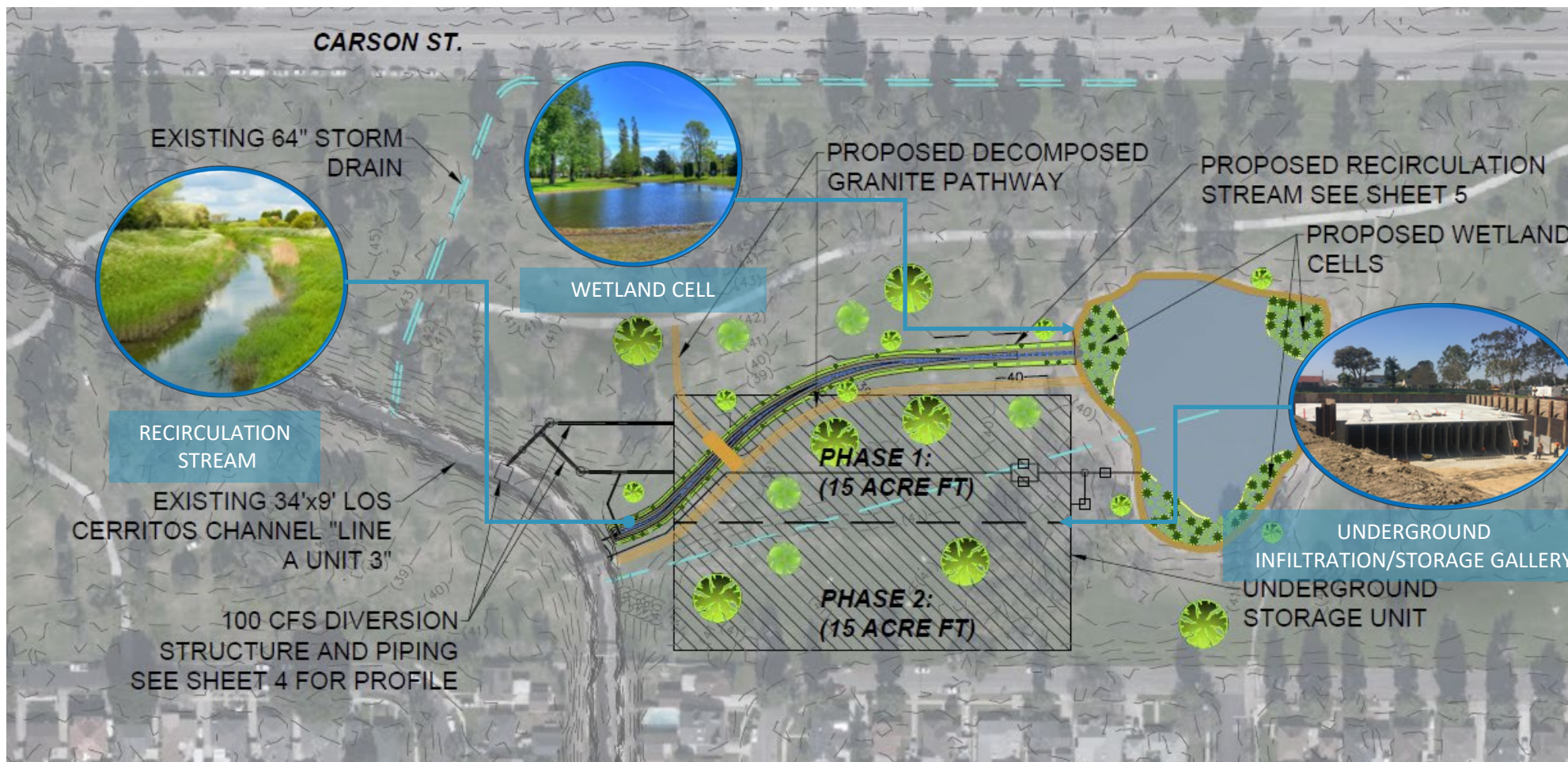
- 85th Percentile Peak Flow = 87 cfs
- 85th Percentile Surface Runoff = 49.32 ac-ft
- Infiltration Rate: 0.14 in/hr
- Approximate Depth to Groundwater: 35 ft
- Owner: City of Long Beach

*Feasibility, Geotechnical Investigation, Stormwater Capture review, and 10% design done

*Alternative footprint sizes and diversion rates examined

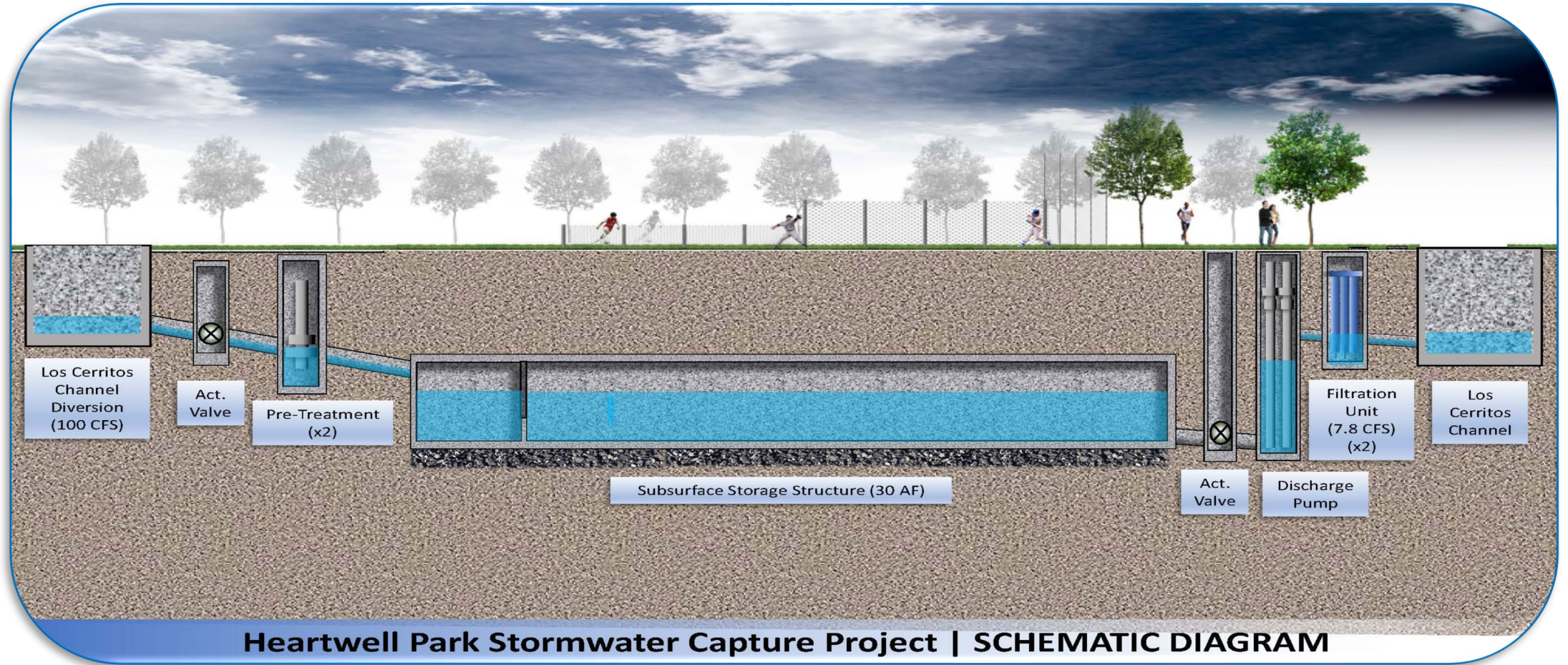


Project Details- Site Plan





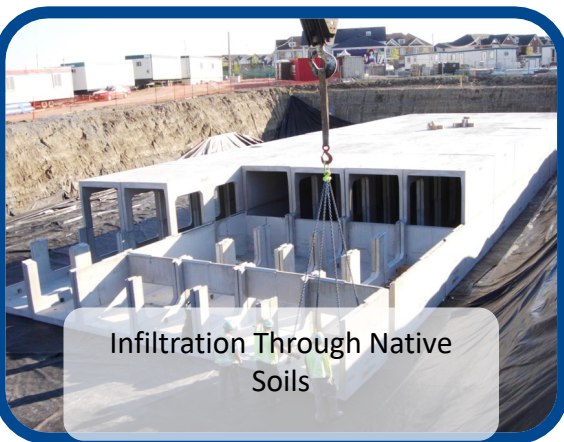
Project Details – Schematic Diagram



Diversión Rate	Storage Capacity	24-Hour Capacity	Primary Pollutant Reduction (Zinc)	Secondary Pollutant Reduction (Copper)
100 cfs	30.0 ac-ft (9.78 MG)	61.08 ac-ft	92.5%	90.5%



Project Benefits



- **Water Quality** improvement in the LCC by treating stormwater and urban runoff
- **Nature-Based** creation of filtering bioretention and native vegetation
- **Public Waterway Access** improvement in the community by the creation of a recirculation stream
- **Park Recreational Enhancements** permeable walkways and visually appealing native habitat space
- **Reduced Heat Island** native vegetation and 8 new shade trees throughout the park



Cost & Schedule

Phase	Description	Cost	Completion Date
Planning	Feasibility Study	\$112,203	07/2023
Design	Environmental Planning (CEQA) and Permitting, Public Outreach during design, Final Design (30/60/90/100), Project Management	\$2,864,472	12/2025
Construction	Construction capital costs, survey, administration and design support, construction management (PROJECTED)	\$47,656,776	09/2028

Annualized Costs

Maintenance Cost:	\$218,000
Operation Cost:	\$50,000
Monitoring Cost:	\$25,000
Project Life Span:	50

Life-Cycle Costs

Life-Cycle Cost for Project:	\$57,663,663.91
Annualized Cost for Project:	\$2,403,263.42



Funding Request

Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$2,864,472	Design	Professional Design Services (30/60/90/100), environmental planning (CEQA) and permitting, community outreach during design, and agency project management (design phase)
TOTAL	\$2,864,472		

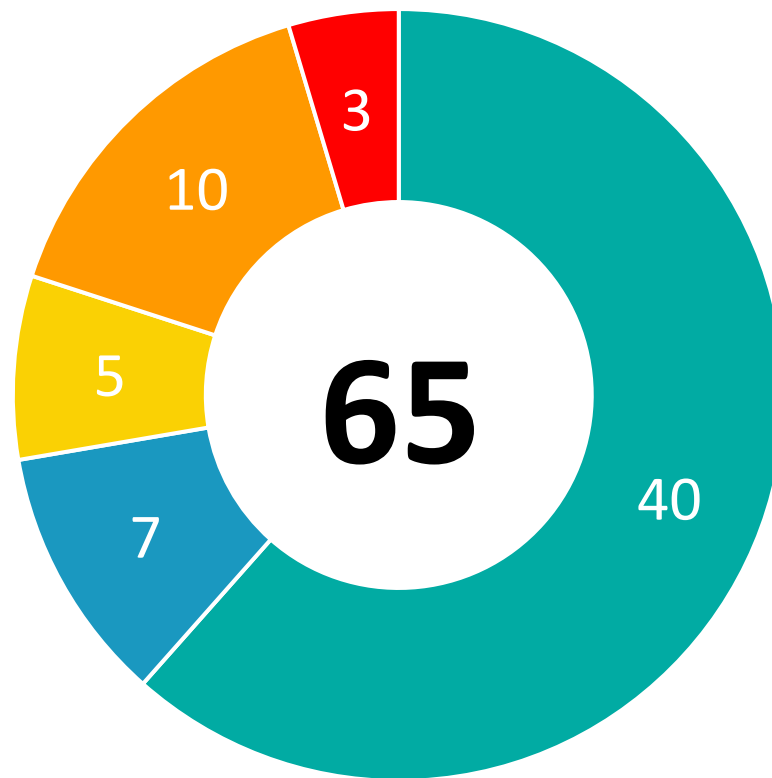
- **Leveraged Funds = \$0**
- Future funding requests – Years 2-5 below

Year	SCW Funding Requested	Phase	Efforts during Phase and Year
2 (anticipated)	\$11,990,360	Construction	Construction contract, year 2 budget (Ph 1), Agency Project Management (Year 2), Construction Administration (Year 2), Construction surveying and staking (Ph 1)
3 (anticipated)	\$11,970,360	Construction	Construction contract, year 3 budget (Ph 1), Agency Project Management (Year 3), Construction Administration (Year 3)
4 (anticipated)	\$11,858,028	Construction	Construction contract, year 4 budget (Ph 2), Agency Project Management (Year 4), Construction Administration (Year 4), Construction surveying and staking (Ph 2)
5 (anticipated)	\$11,838,028	Construction	Construction contract, year 5 budget (Ph 2), Agency Project Management (Year 5), Construction Administration (Year 5)
TOTAL	\$47,656,776		



Preliminary Score (Confirmed by the Scoring Committee)

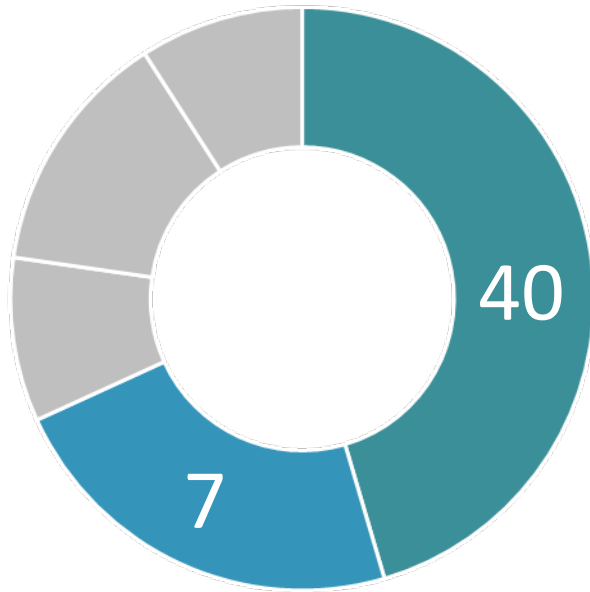
- Water Quality
- Water Supply
- Community Investment Benefits
- Nature Based Solutions
- Leveraged Funds and Community Support



The Scoring Committee confirmed this score on 11/27/23.



Water Quality & Water Supply Benefits

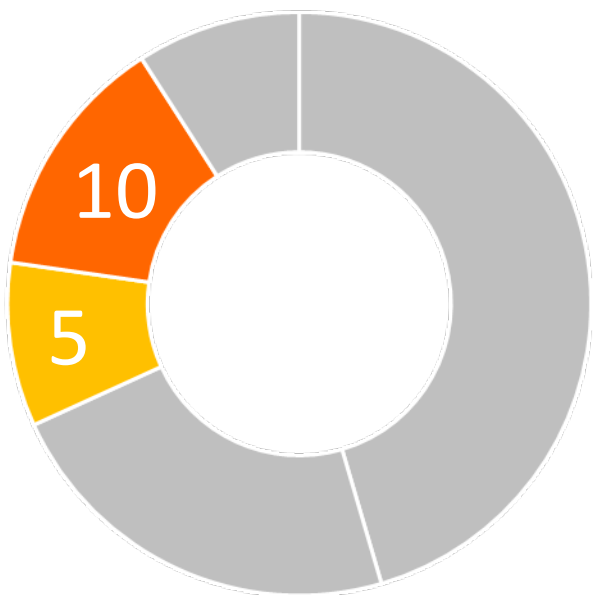


The Scoring Committee confirmed this score on 11/27/23.

- **Primary Mechanisms**
 - Runoff/pollutant capture
 - Infiltration
 - Filtration
- **Dry weather project**
- **Tributary Area: 1881 acres**
- **24 Hours Capacity: 61.08 ac-ft**
- **Pollutant Load Reduction**
 - Primary Pollutant (Zinc) – **92.5%**
 - Secondary Pollutant (Copper) – **90.5%**
- **Average Annual Capture for Water supply: 38 ac-ft**
- **Water Supply Use :**
 - **N/A**
- **Water Supply Cost Effectiveness: \$63,244**



Community Investment Benefits and Nature Based Solutions

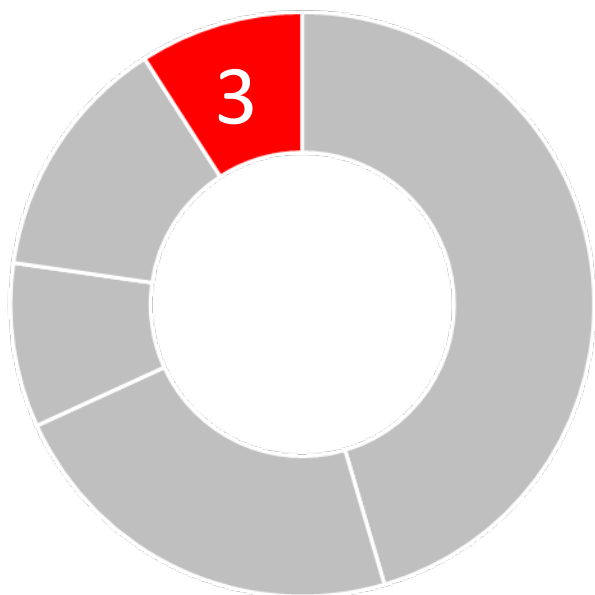


The Scoring Committee confirmed this score on 11/27/23.

- **Community Investment Benefits**
 - Enhanced park space
 - Improve public access to waterways
 - Enhance recreational opportunities
 - Reduced heat island effect and increased shade
 - Increase the number of trees and vegetation
- **Nature Based Solutions**
 - Project utilizes infiltration to put runoff into soils
 - Project adds in permeable walkways
 - Post-construction plans include a recirculation stream, 8 additional native trees, various native shrubs, native compacted soil, and grasses



Leveraging Funds and Community Support



The Scoring Committee confirmed this score on 11/27/23.

- Leveraging Funds
 - N/A
- Community Support
 - The City of Long Beach has led a “going-to-the-people” style outreach program
 - Public Meeting
 - The City has reached out to select community groups to inform them of the project and solicit their buy-in for the project
 - Further Outreach Planned
 - Public Workshops
 - Stakeholder Roundtables

Questions?

Richard Watson

Richard Watson & Associates

Merrill Taylor

Craftwater Engineering, Inc

