



Apollo Park

Infrastructure Program

Fiscal Year 2022-2023

Lower Los Angeles River Watershed Area

City of Downey

Presented by Dan Mueller & John Hunter



Project Overview

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

- Objectives:
 - Improve water quality within the Los Angeles River Watershed
 - Reduce local flooding on nearby streets
 - Revitalize park facilities (e.g., grass turf replacement, irrigation system updates, new fencing and walkways, increased shade and vegetation, new baseball field and lighting)
 - Implement nature-based solutions (e.g., biofiltration cells along Quill Drive, permeable pavement in the parking lot, a bird and butterfly garden)
 - Supplement the Central Groundwater Basin and increase available water supply
- Project Status: Design
- Total Funding Requested: \$2,832,639

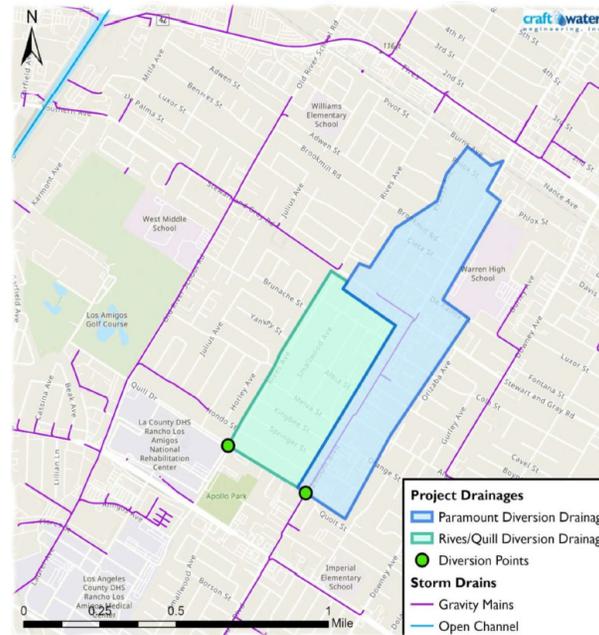




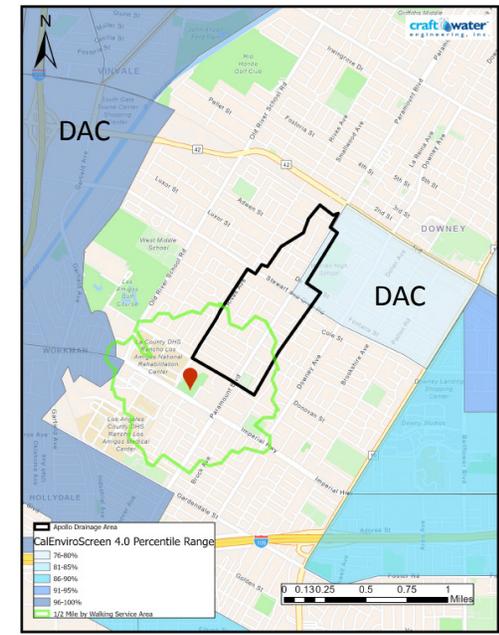
Project Location



The project is located in the City of Downey, within the Lower Los Angeles River Watershed Area



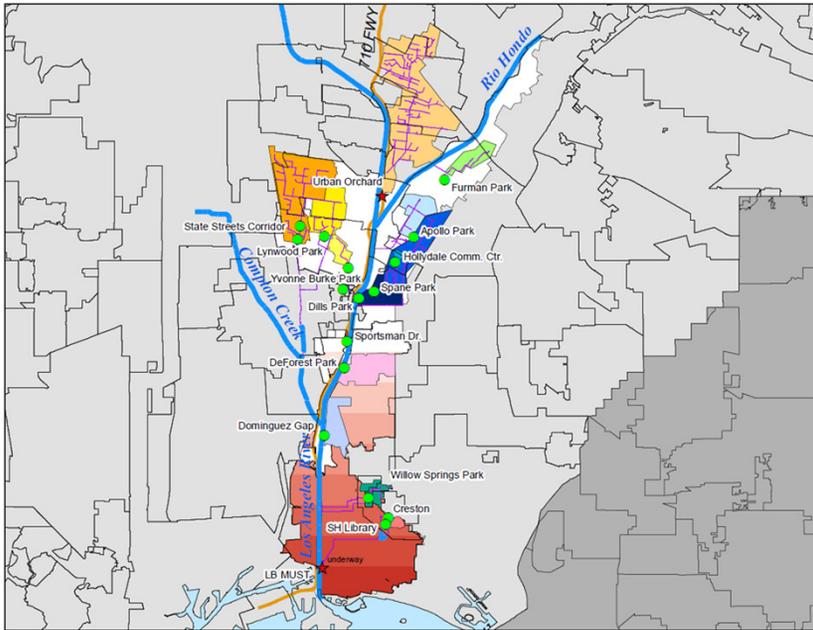
The project has a capture area of approximately 268 acres within the City of Downey



The project is located within half a mile of a DAC; non-residents make up a large part of park usage



Project Background



The project is part of the overall Stormwater Corridor approach being taken by the LLAR Watershed Management Group

- Apollo Park was created in 1953 and is the City's first park
- The site was identified in the LLAR WMP (originally approved in 2015) and was subsequently uploaded to the Opti database for inclusion in the GLAC IRWMP
- The LLAR Watershed Management Group funded geotechnical testing in 2016 and the development of a feasibility study (including 10% design plans) in the first half of 2021
- The project will therefore implement the LLAR WMP and represent progress toward compliance with the MS4 Permit and applicable TMDL milestones
- Local DACs will benefit from improved park facilities, notably including the revitalized baseball field, walkways, and increased vegetation
- The City has developed an outreach plan and the design will comply with all LA County anti-displacement avoidance measures



Project Details

- Current park amenities include a gymnasium, baseball/softball fields, soccer fields, a playground, picnic shelters, sand volleyball courts, exercise equipment, bocce ball court, shuffleboard court, walking trails, and restrooms; the impacted space currently serves as an outdated baseball field
- Geotechnical testing indicated that groundwater is at least 50 feet below the surface and observed infiltration rates of 12-13 inches/hour (design infiltration rates were calculated to be 1.53 inches/hour)
- Subsequently, infiltration practices are recommended to be implemented at the site
- Preliminary hydrological analyses and a utility review have been conducted
- Preliminary optimization analyses were used to develop 10% design plans (see right)





Cost & Schedule

Phase Costs			
Phase	Description	Cost	Completion Date
Design	Final Design (30/60/90/100)	\$ 2,373,039.00	06/2024
Design	Public Outreach during Design	\$ 50,000.00	06/2024
Design	Environmental Planning (CEQA) and Permitting	\$ 177,040.00	06/2024
Design	Agency Management (Design)	\$ 232,560.00	06/2024
Construction	Construction Cost	\$ 17,703,992.00	06/2027
Construction	Construction Administration and Design Support	\$ 1,239,280.00	06/2027
Construction	Agency Management (Construction)	\$ 210,000.00	06/2027
Total Funding:		\$ 21,985,911.00	

Annual Cost Breakdown	
Annual Maintenance Cost:	\$ 79,900.00
Annual Operation Cost:	\$ 50,000.00
Annual Monitoring Cost:	\$ 25,000.00
Project Life Span:	50 years



Funding Request

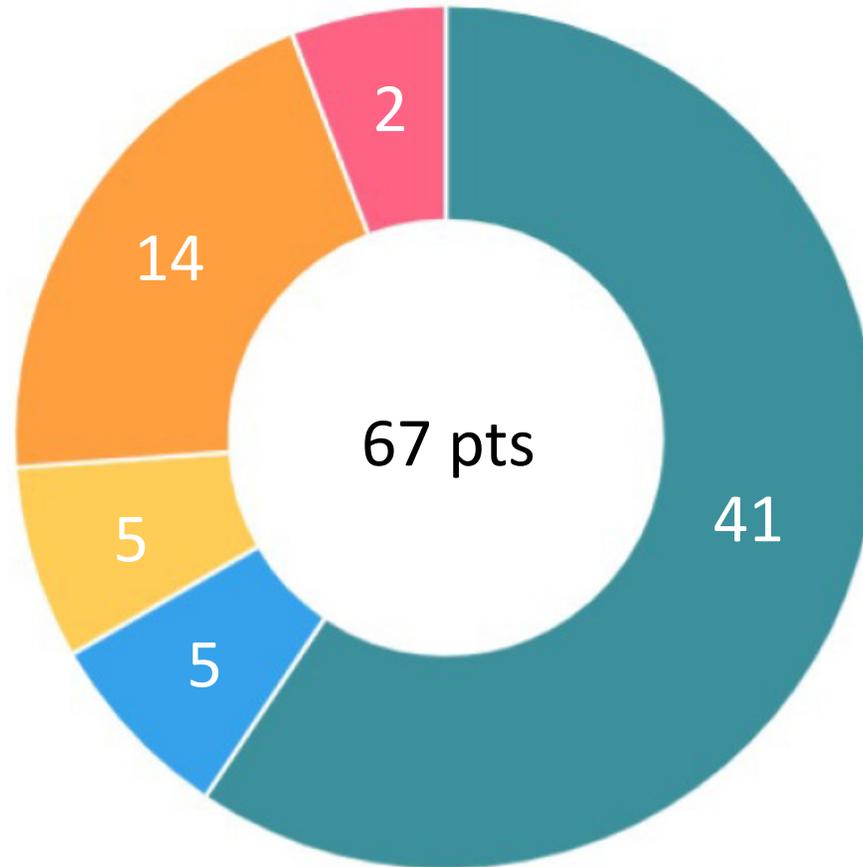
Funding Requested by Year & Phase			
Year	SCW Funding Requested	Phase	Efforts during Phase and Year
Year 1	\$ 1,699,583.00	Design	Environmental Planning (CEQA); Professional Design Services (30/60); Community Outreach during Design; Agency Project Management (Design Phase)
Total Year 1	\$ 1,699,583.00		
Year 2	\$ 1,133,056.00	Design	Complete Environmental Planning (CEQA); Permitting; Professional Design Services (90/100); Year 2 Community Outreach during Design; Agency Project Management (Design Phase)
Total Year 2	\$ 1,133,056.00		
Total Funding:	\$ 2,832,639.00		

Upon completion of final design, future SCWP funding requests will be submitted for project construction, operations and maintenance, and monitoring



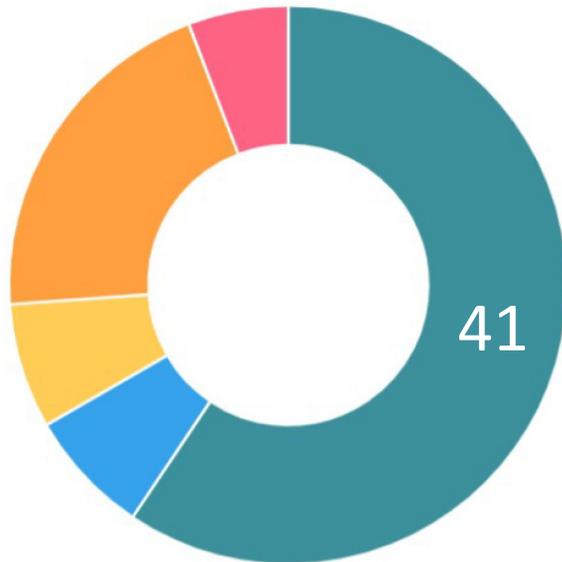
Score (per Scoring Committee)

Water Quality Water Supply Community Investment Nature-Based Solutions Funds & Community





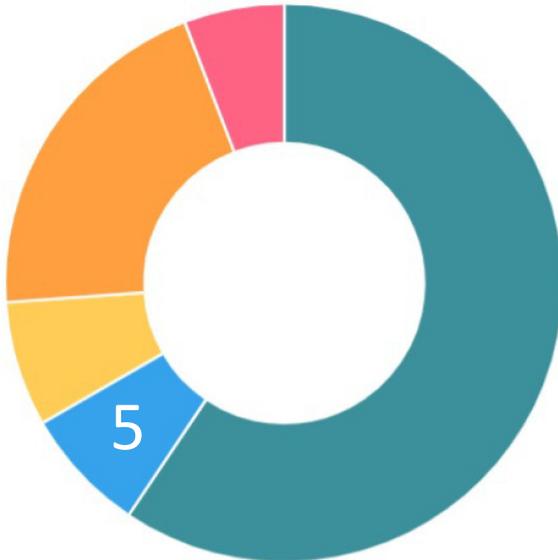
Water Quality Benefits



- Primary mechanisms: runoff/pollutant capture and infiltration
- The park is heavily programmed and built out, and therefore there is not enough space available for a nature-based regional BMP such as a bioretention basin; instead, a subsurface storage gallery is proposed which will allow collected stormwater to infiltrate and mimic natural processes
- The subsurface storage gallery has a capacity of 9 acre-feet and can capture slightly over the entire 85th percentile storm
- The project is located at the bottom of a 268-acre drainage area
 - Stormwater runoff for 60% (162 acres) of the area is conveyed through a storm drain network to the project site
 - The remaining 40% (106 acres) will be captured by a proposed drain line and drop-inlet structure that would additionally offset local flooding issues
- Zinc (the limiting pollutant per the LLAR WMP) as well as other pollutants will be addressed



Water Supply Benefits



- The proposed system is expected to infiltrate as much as 116 acre-feet of stormwater per year, which will be added to the underlying Central Groundwater Basin (which the project overlies)
- The City lies within the Central Basin Municipal Water District's (CBMWD) recycled water service area and has already corresponded with the Water Replenishment District (see right)
- A recycled water line is proposed to be extended to supply the irrigation system in the park



DIRECTORS
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VORA ROBLES DEWITT, DIRECTOR

June 17, 2021

To: **Downey Apollo Park Stormwater Capture Project**
Delfino Consuji, PE, Director of Public Works
City of Downey
11111 Brookshire Avenue
Downey, CA 90241

Regarding: Water Replenishment District Support for Infiltration Projects

The Water Replenishment District (WRD) is aware that many agencies will be applying for Regional Project funds under the Los Angeles County Flood Control District's Safe Clean Water Fund program. One of the provisions of that application process requires applicants to contact the groundwater management agency for concurrence in support of the proposed project.

The purpose of this letter is to advise those agencies within or overlapping the WRD's jurisdiction that the WRD is in general support of regional projects that infiltrate pre-treated captured runoff and provide a benefit to the overall health of the watershed. Prior to issuing individual support on specific projects, WRD will need additional information regarding the technical specifics of each project, which can be accomplished during your agency's development of the project's final engineering and design.

We look forward to working with our many agency partners on projects that promote healthy watersheds for our region.

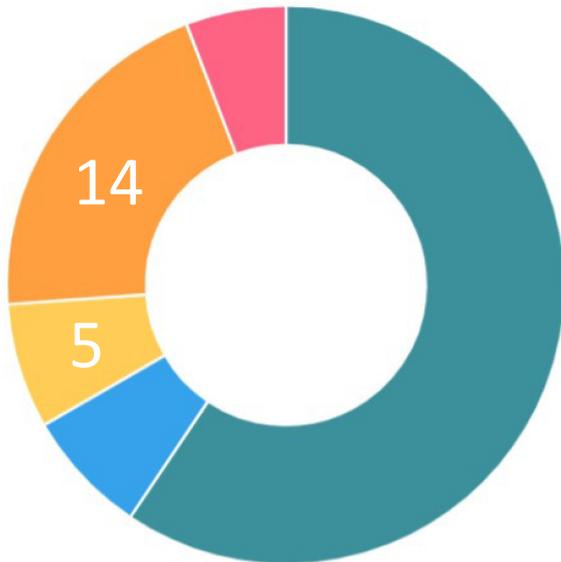
Thank you,

Stephan Tucker
General Manager



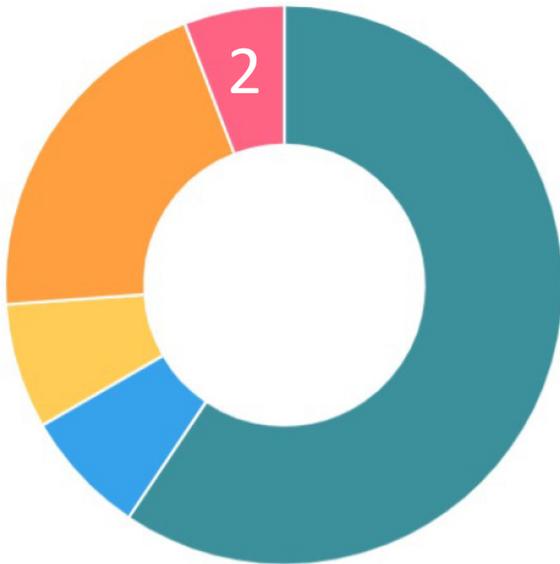
Community Investment Benefits & Nature Based Solutions

- Per the LA County Park Needs Assessment Study (2016), the City of Downey has a high park need – the City currently has 1.1 park acres per 1,000 acres, while the County average is 3.3 park acres per 1,000 acres
- The project will:
 - Improve flood management and reduce local flooding through the system's detention capabilities as well as the installation of new catch basins at Rives/Quill and other intersections
 - Revitalize park facilities (e.g., replace the existing baseball field, create new dugouts/fencing/seating, install field lighting to expand use across day and night)
 - Increase shade through the planting of additional trees
 - Reduce local heat island effect through increased vegetation and the removal of impervious area
 - Implement nature-based solutions such as biofiltration cells (green street) along Quill Drive, permeable pavement in the parking lot, and a bird and butterfly garden





Leveraging Funds & Community Support



- The LLAR Watershed Management Group funded both geotechnical testing and the development of a feasibility study (including 10% design) for the project
- Preliminary outreach to select community groups has been conducted; letters of support have been received from:
 - American Youth Soccer Organization, Region 24
 - Downey Futbol Club/CalSouth
 - Downey Junior Athletic Association
- Notably, up to 31% of the supporting sports programs participants are from DACs outside of Downey
- \$50,000 for additional outreach has been included in the design phase budget
 - Phase 1: baseline evaluation (e.g., stakeholder/issue identification)
 - Phase 2: public connection (e.g., communication channels, outreach activities)
 - Phase 3: final product



Downey Fc



Questions?

Salt Lake Park Infiltration Cistern Project

Funding Program - Infrastructure Program

Fiscal Year 2022-2023

Lower Los Angeles River Watershed

Project Lead:

City of Huntington Park

Project Proponent:

Los Angeles River Upper Reach 2 Watershed

Presenters:

Cesar Roldan, Director of Public Works

Steve Forster, Interim Community Development Director



Project Overview

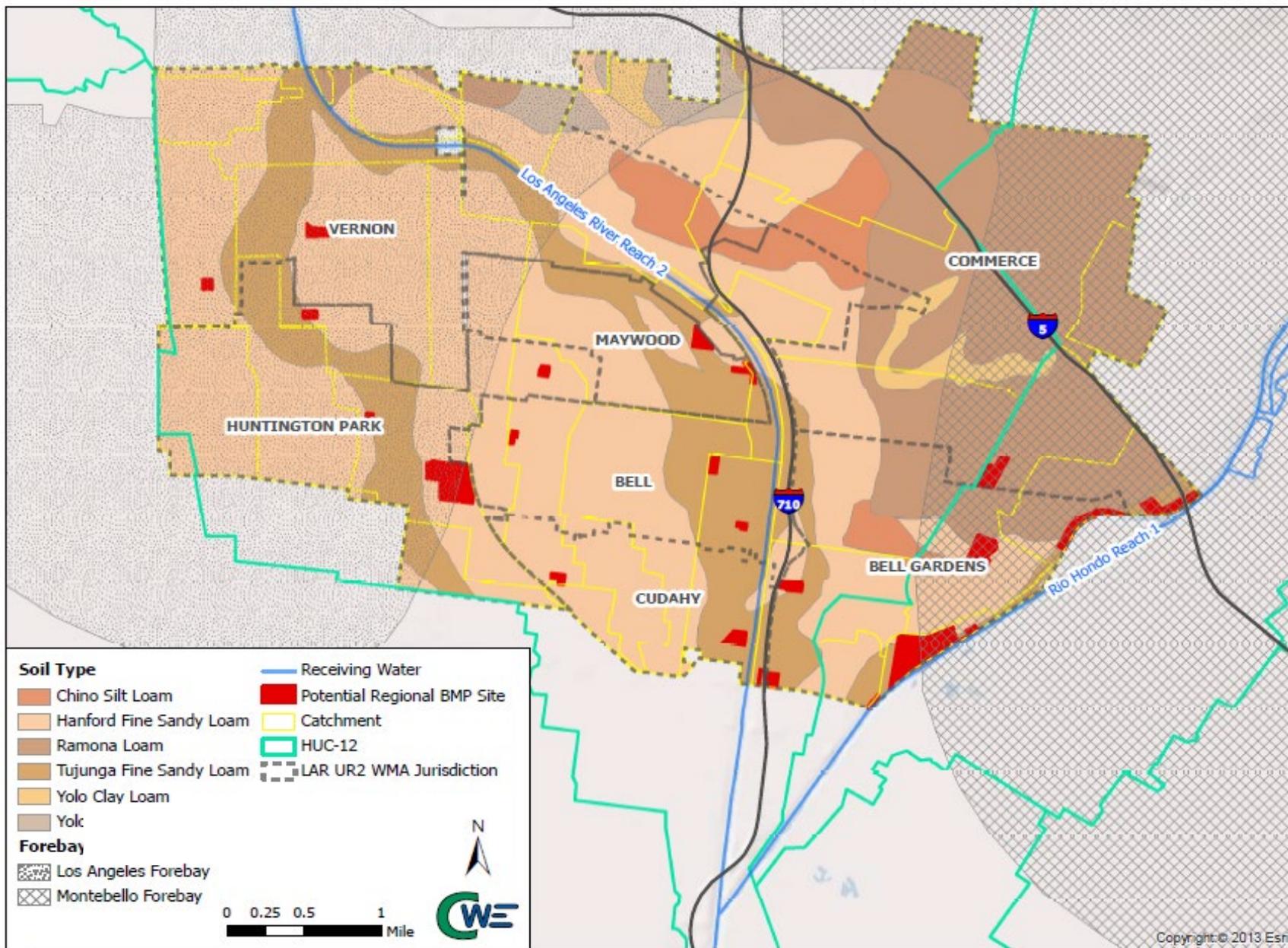
Salt Lake Park Cistern is a regional stormwater capture and infiltration facility that treats a 605-acre drainage area

- **Primary Objective:** Improve water quality in the LA River Upper Reach 2 Watershed
- **Secondary Objectives:** Integrate environmentally friendly, cost-effective, nature-based treatments & public education
- **Project Status:** SCW funding request for **Design & Construction**
- **Total Funding Requested:** \$29,000,000
- **Potential Partial Funding Alternative:** The City will consider partial funding alternatives to advance this project



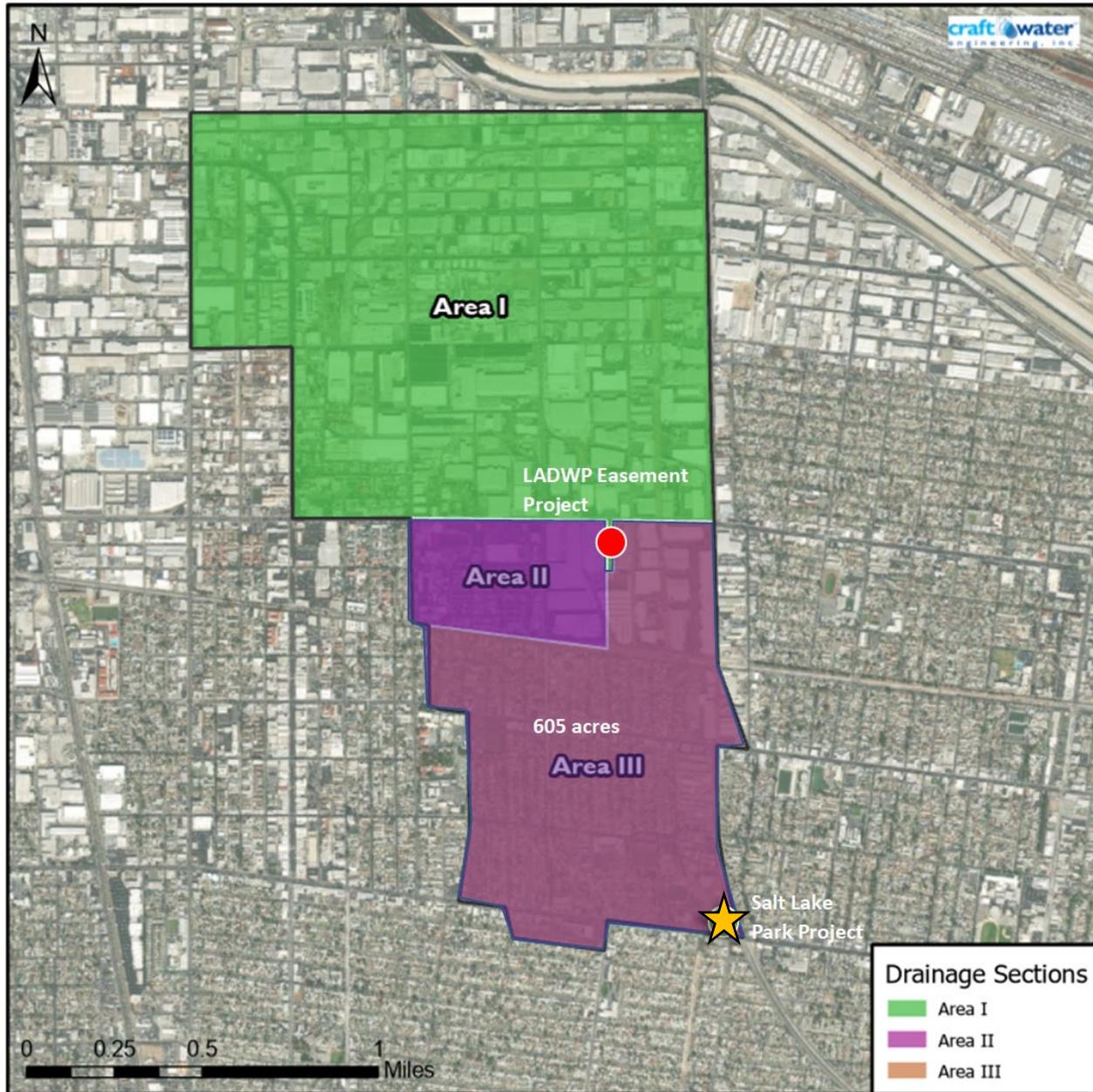


Project Location – Watershed Map





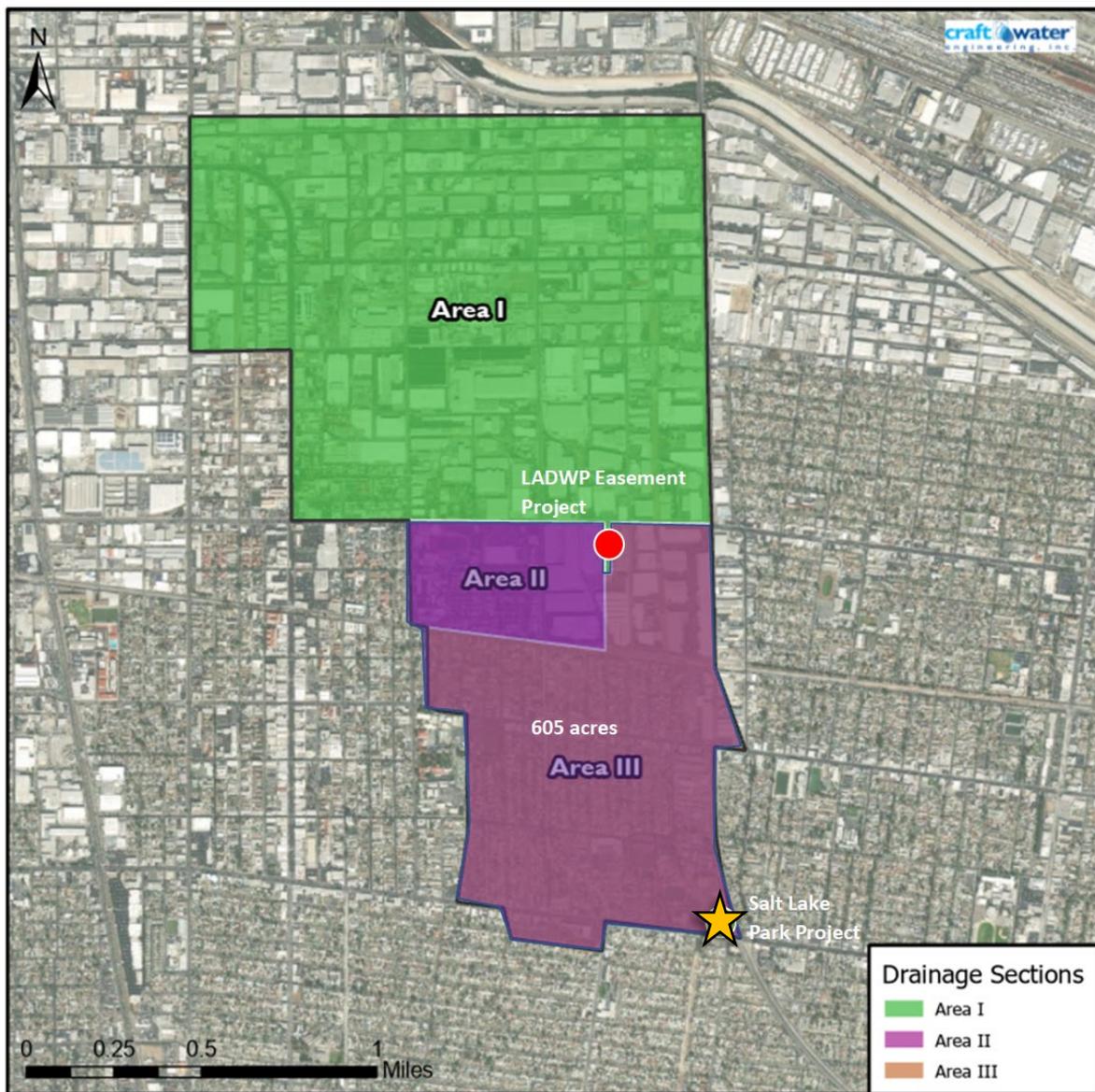
Project Location – Total Capture Area



Jurisdiction	Area (acres)	% Watershed
Vernon	121	20%
Huntington Park	484	80%
TOTAL	605	100%



Project Location – Land Use



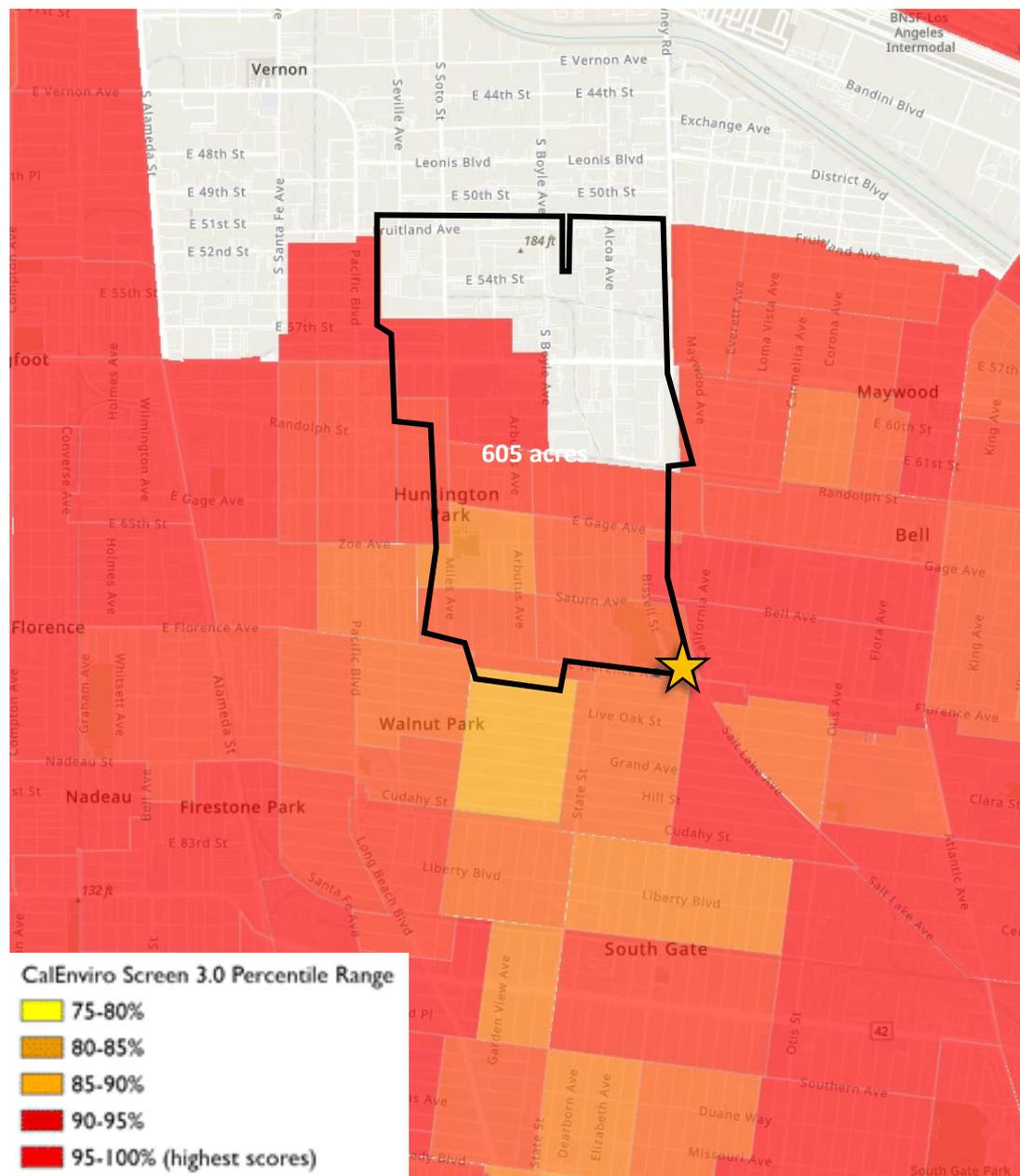
• Drainage Area

- Impervious: 449 acres
- Pervious: 156 acres

Land-use	Area (acres)	% of Impervious
Single Family Residential	44	9.7%
Multi-Family Residential	221	49.3%
Commercial	35	7.7%
Institutional	30	6.6%
Industrial	43	9.6%
Highway & Interstates	0	0%
Secondary Roads & Alleys	77	17.1%
TOTAL IMPERVIOUS	605	100%



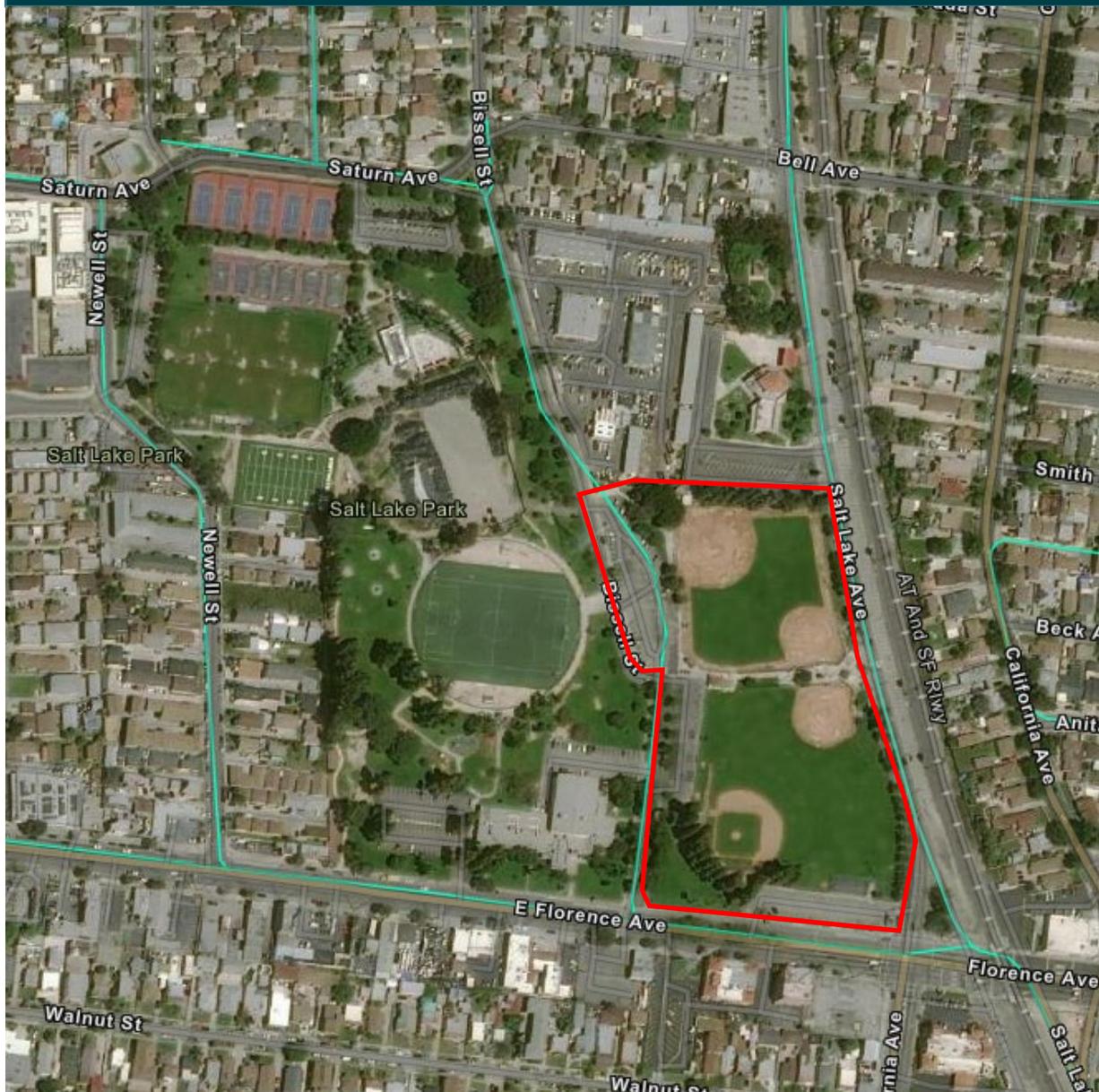
Project Location – Disadvantaged Communities (DAC)



- CalEnviroScreen ranking is at the 95th percentile (highly disadvantaged)
- *Vernon has few residents* and too much industrial /commercial land use areas to be ranked



Project Location – Parcel Map

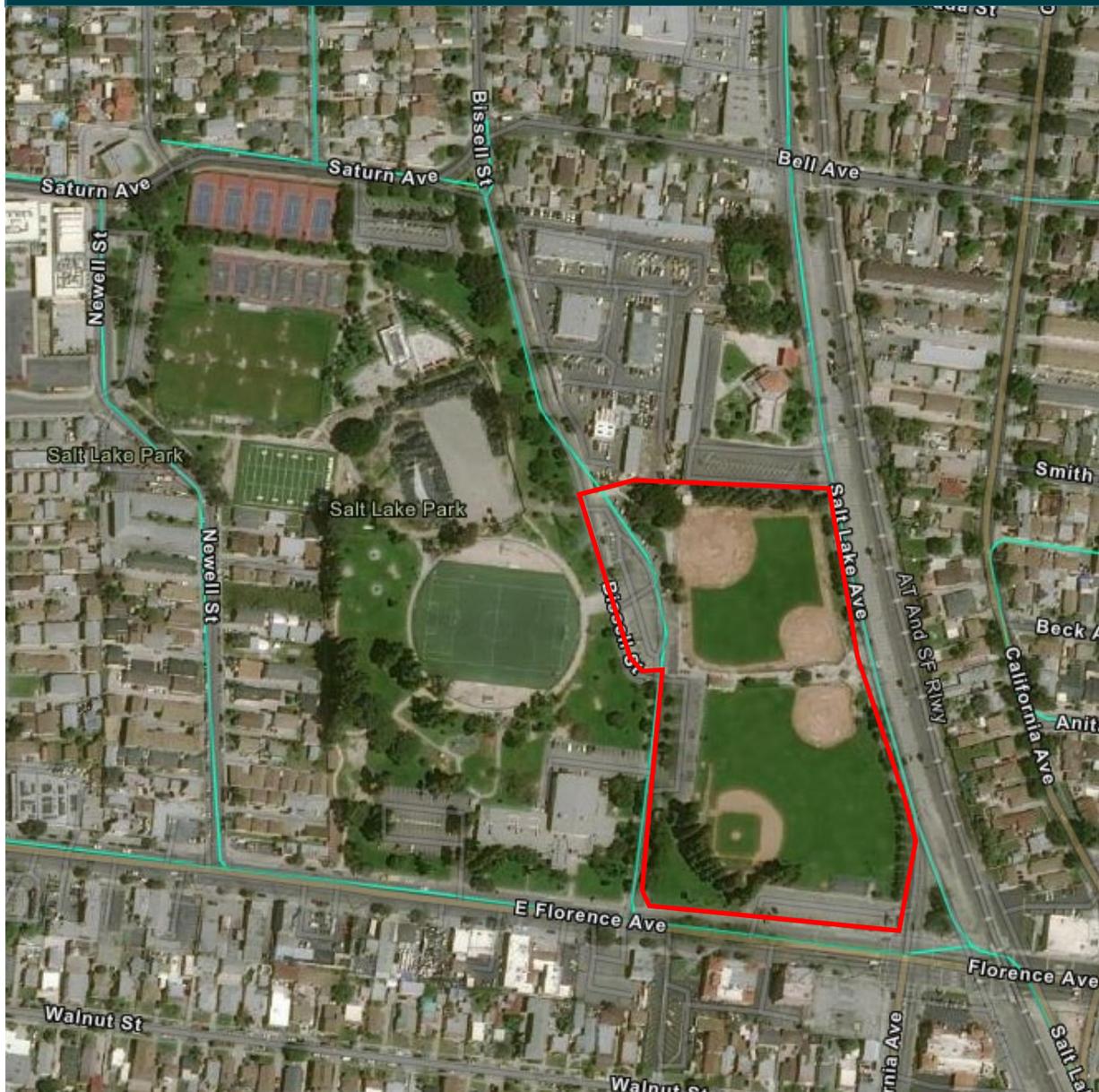


The **Salt Lake Park Cistern Project** site is northwest of the intersection of Florence Ave and Salt Lake Ave in Huntington Park





Project Background

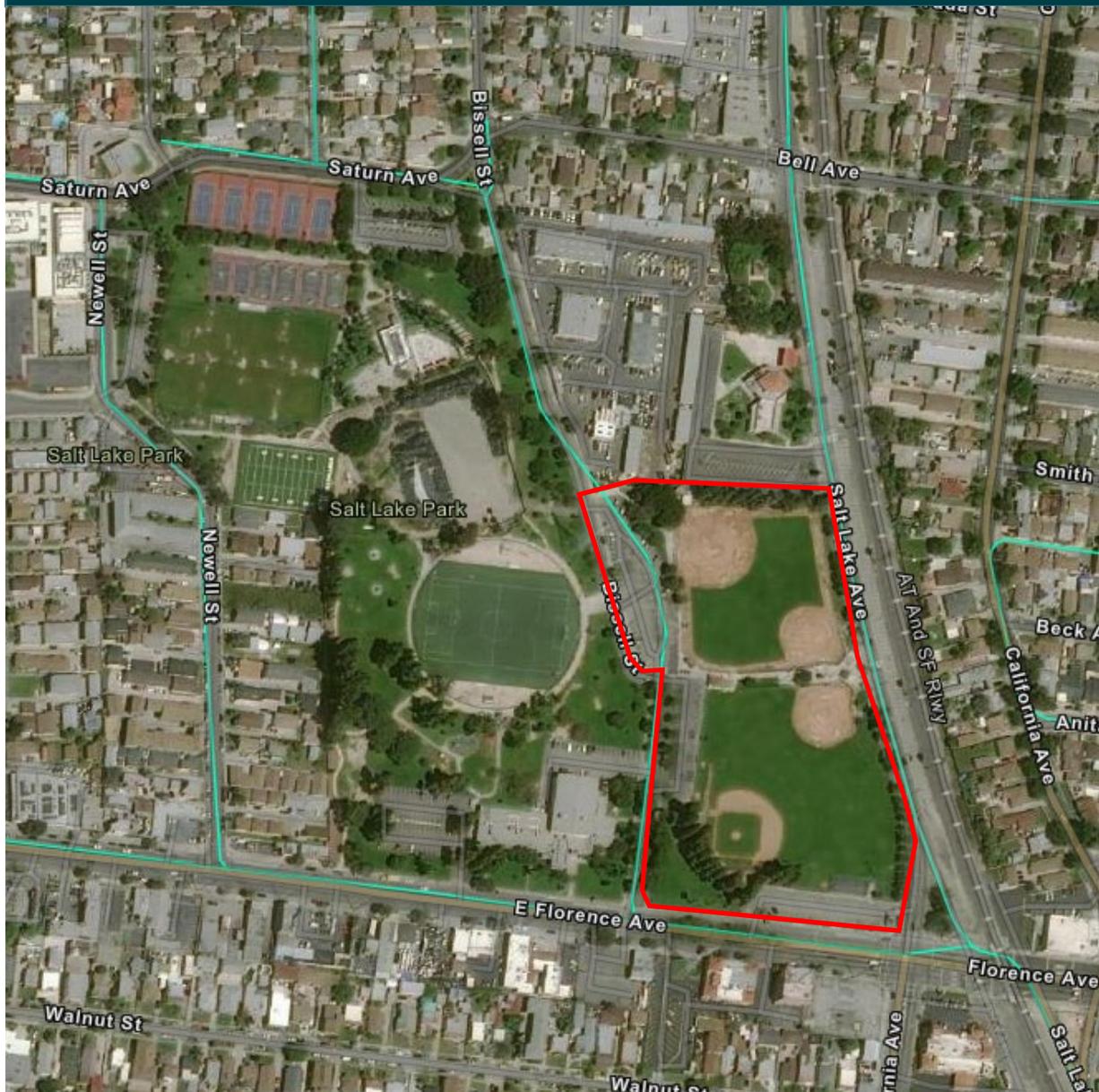


- Site was identified in the LA River Upper Reach 2 (LARUR2) Watershed Management Program (WMP)
- Project Selected due to
 - Large drainage area (605 acres)
 - Opportunity to revitalize and enhance public park spaces in Salt Lake Park
 - Pollutant treatment capacity





Project Benefits

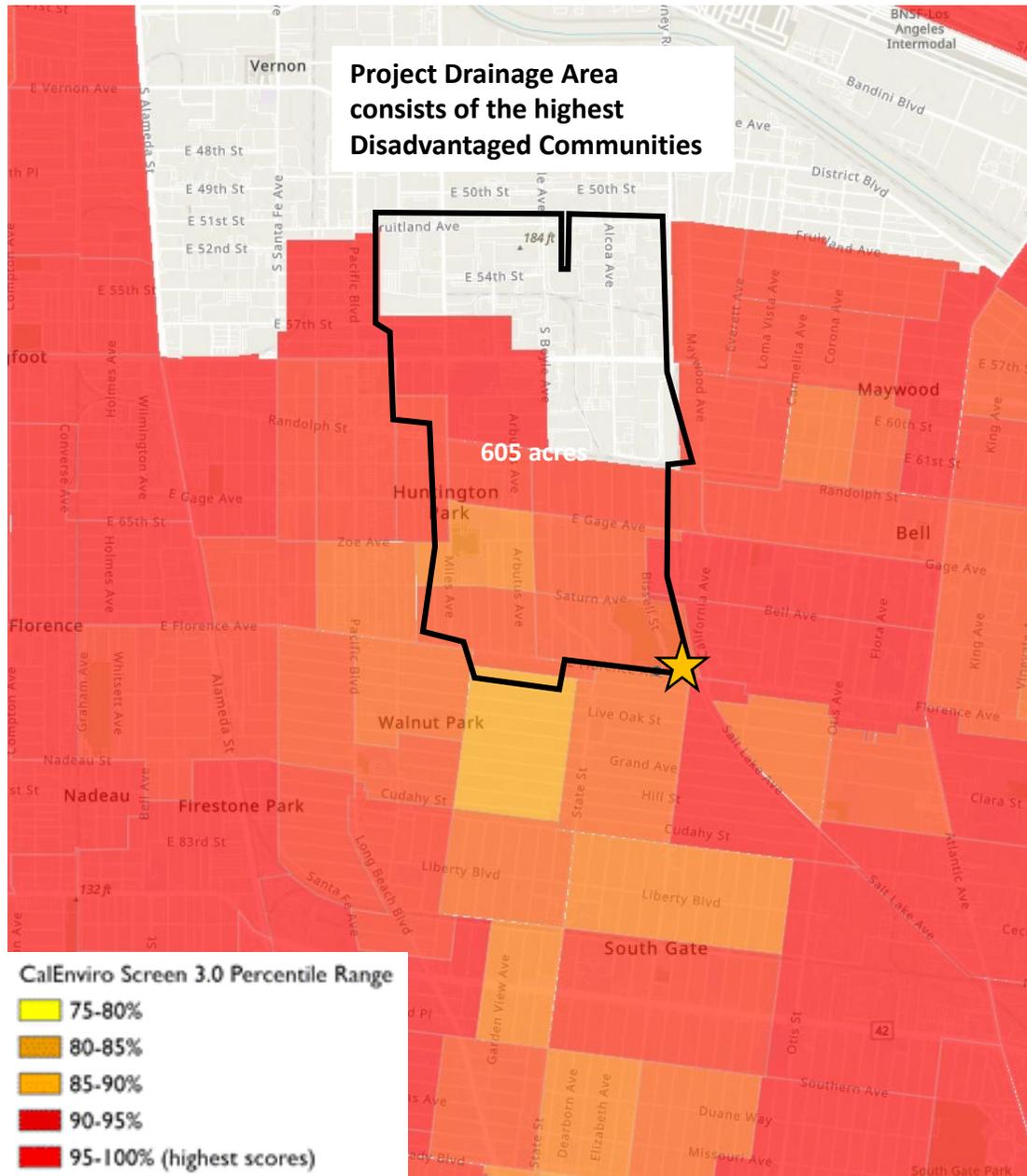


- **Water Quality** Improvement for the Los Angeles River, Upper Reach 2 by removing trash, metals, bacteria, and nutrients in stormwater and urban runoff
- **Nature-Based** rain garden habitat areas, vegetated infiltration trench BMPs, and sustainable native landscaping
- **Park Recreational Enhancements** with 2 enhanced baseball fields, parking lot renovation, and public education opportunities





Project Benefits – DAC



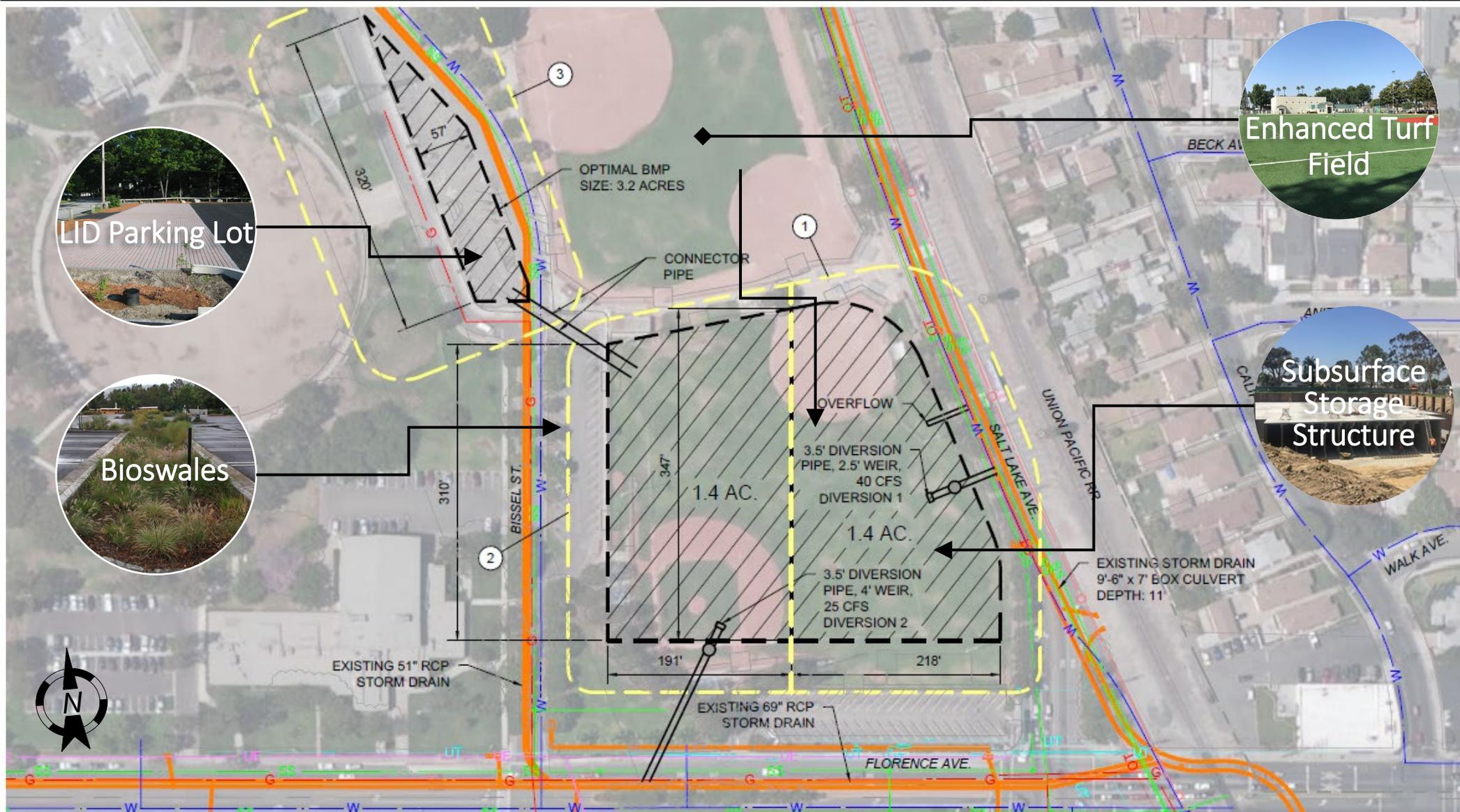
• Benefits to DAC:

- Improved park facilities for the use by all residents of Huntington Park
- Enhanced parking lot with low impact development, bioswales, and native landscaping
- Improved flood mitigation



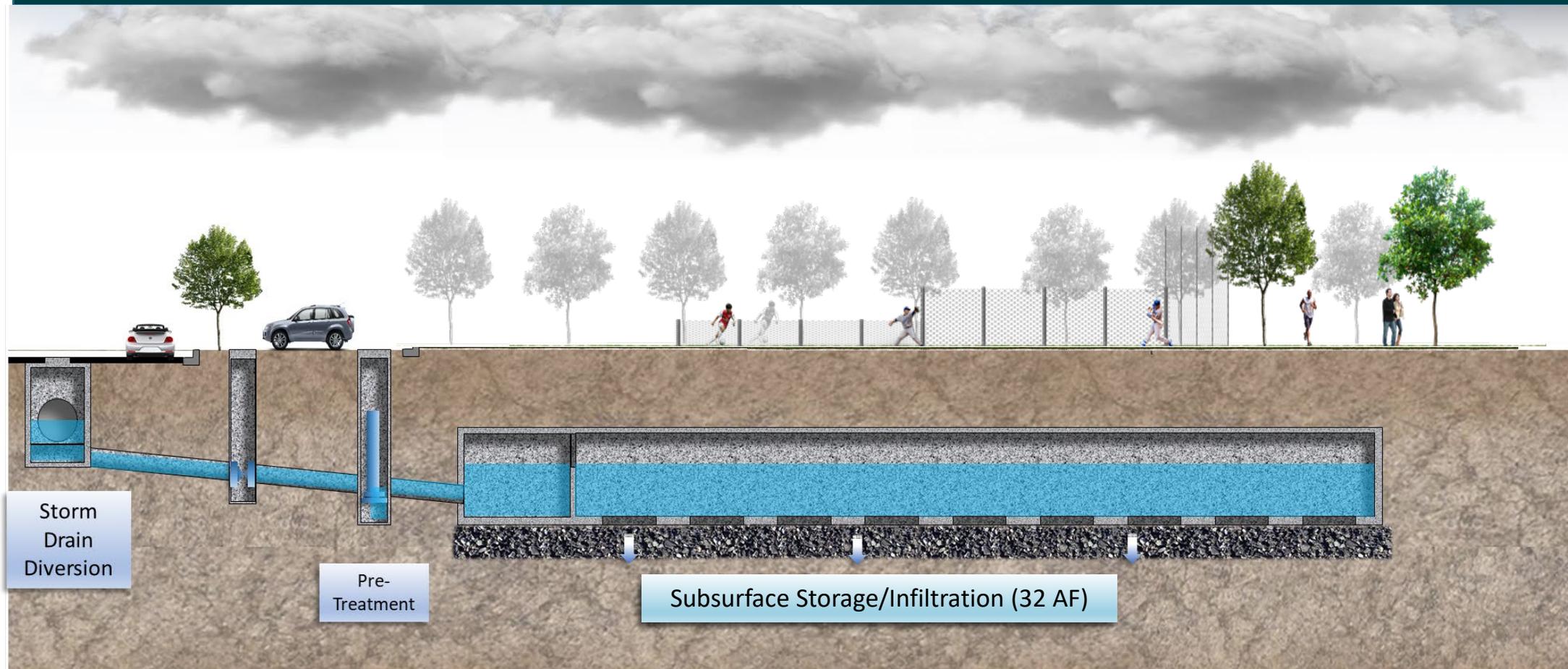


Project Details - Site Plans





Project Details – Site Plans



Diversion Rate	Storage Capacity	24-Hour Capacity	Primary Pollutant Reduction (Zinc)	Secondary Pollutant Reduction (Copper)
70 cfs	32 ac-ft (10.4 MG)	34.1 ac-ft	83% (217 lbs)	82.5% (51 lbs)



Project Details – Existing Conditions



Existing Conditions

- *Design* Infiltration Rate: 0.3 in/hr
- Groundwater Depth: 38 ft BGS
- Current Use: Park Space
- Owner: City of Huntington Park

*Feasibility and stormwater capture studies done

*Alternative footprint sizes, treatment methods and diversion rates examined



Cost & Schedule

Phase	Description	Cost	Completion Date
Planning	Site Investigations, Phase I/II Environ Studies, Design (30/65), CEQA Documents	\$5,000,000	08/2023
Design	Design (90% and 100%)	\$1,500,000	04/2025
Construction	Construction, Construction Management, Inspection Services, and Agency Management	\$22,500,000	06/2031
TOTAL		\$29,000,000	

Annual Costs

Maintenance Cost:	\$56,700
Operation Cost:	\$0
Monitoring Cost:	\$10,000
Project Life Span:	50

Life-Cycle Costs

Life-Cycle Cost for Project:	\$32,839,024
Annualized Cost for Project:	\$1,368,640



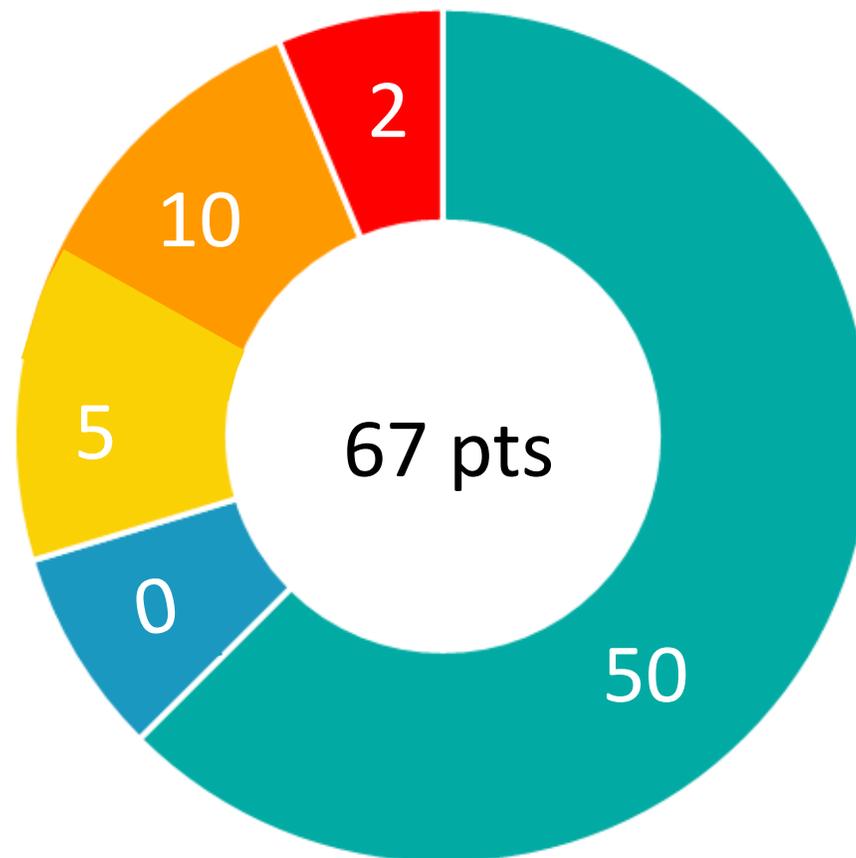
Funding Request

Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$2,500,000	Planning	Phase I and II Environmental Geotechnical Investigations 30% Design and CEQA Environmental planning Community outreach
2	\$2,500,000	Planning	65% Design and CEQA Environmental planning
3	\$1,500,000	Design	90% and 100% Design Permitting
4	\$1,000,000	Construction	Construction Mobilization
5	\$5,000,000	Construction	Construction Demolition, soil removal and excavation
TOTAL 5 Years	\$12,500,000		
Funding Years (Year 6 +)	\$16,500,000		



Scoring Committee Score

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





- **Primary Mechanisms**

- Runoff/pollutant capture
- Infiltration

- **Wet** weather project type

- Tributary Area: **605 acres**

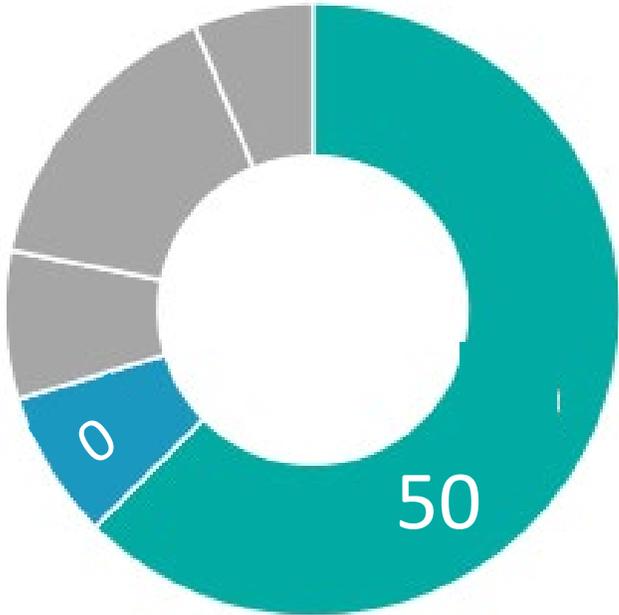
- 24 Hour Capacity: **34.1 ac-ft**

- Pollutant Load Reduction

- Primary Pollutant (Zinc) – **83% (217 lbs-annual avg)**
- Secondary Pollutant (Copper) – **82.5% (51 lbs-annual avg)**

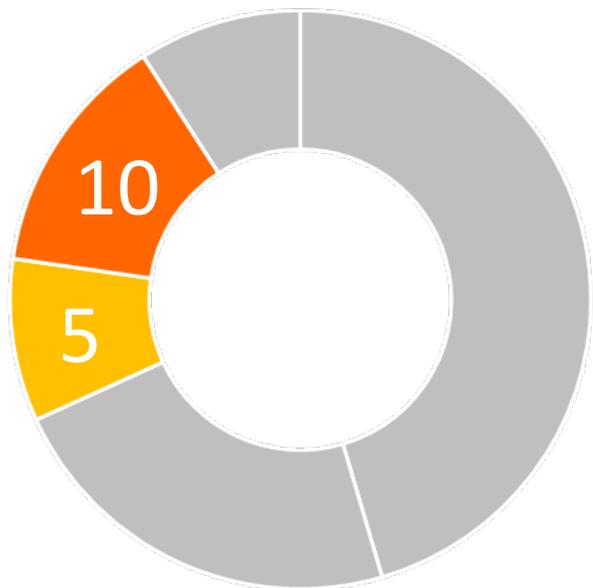
- Average Annual Capture for Water Supply: **271 ac-ft**

- Water Supply Cost Effectiveness : **\$6,241/ac-ft**





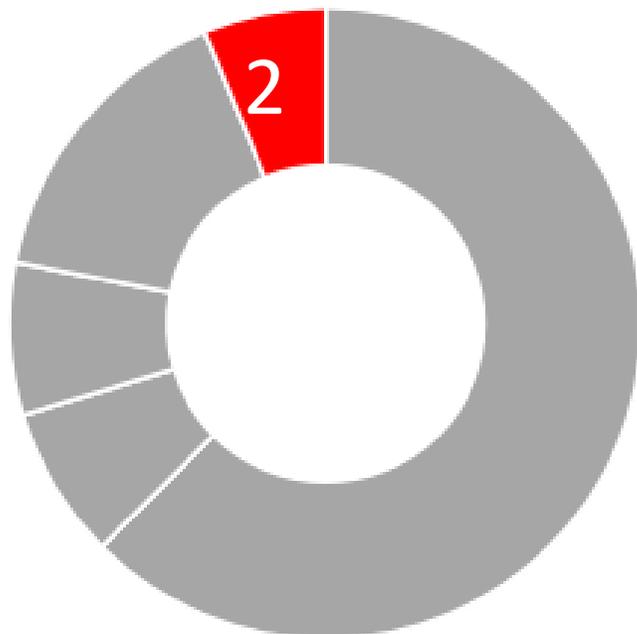
Community Investment Benefits and Nature Based Solutions



- Community Investment Benefits
 - Improves flood management, flood conveyance, or flood risk mitigation
 - Creates parks, habitat or wetland
 - Creates or enhances new recreational opportunities
- Nature Based Solutions
 - Project implements natural processes and utilizes natural materials
 - Installation of a surface biofiltration, permeable pavement, and bioretention planters
 - Post-construction landscaping includes native trees, shrubs, and grasses



- Leveraging Funds



- Community Support

- City of Huntington Park will conduct an active Public Outreach effort
- Strong local, community-based support from
 - Tree People
 - City of Commerce
 - Cities of Bell Gardens and Vernon



Questions?



Willow Springs Park Wetland Restoration and Expansion Project

Technical Resources Program

Fiscal Year 2022-2023

Lower Los Angeles River

City of Long Beach

Nancy Villaseñor, Larry Rich, & Nate Schreiner



Project Overview

Revitalization of a 48-acre open space with the addition of a 4.1 ac-ft wetland, 7,980' of trails, 232 trees, native plants, and educational signage.

- Primary Objective:
 - To utilize a nature-based solution to capture and treat stormwater.
- Secondary Objectives:
 - To provide community benefits through additional park space, habitat and wetland restoration, access to quality recreational opportunities, public access to waterways, and enhanced biodiversity.
- Project Status: The project finished the Feasibility Study and is ready to enter the Design Phase.
- Total Funding Requested: \$1.2M for Design.



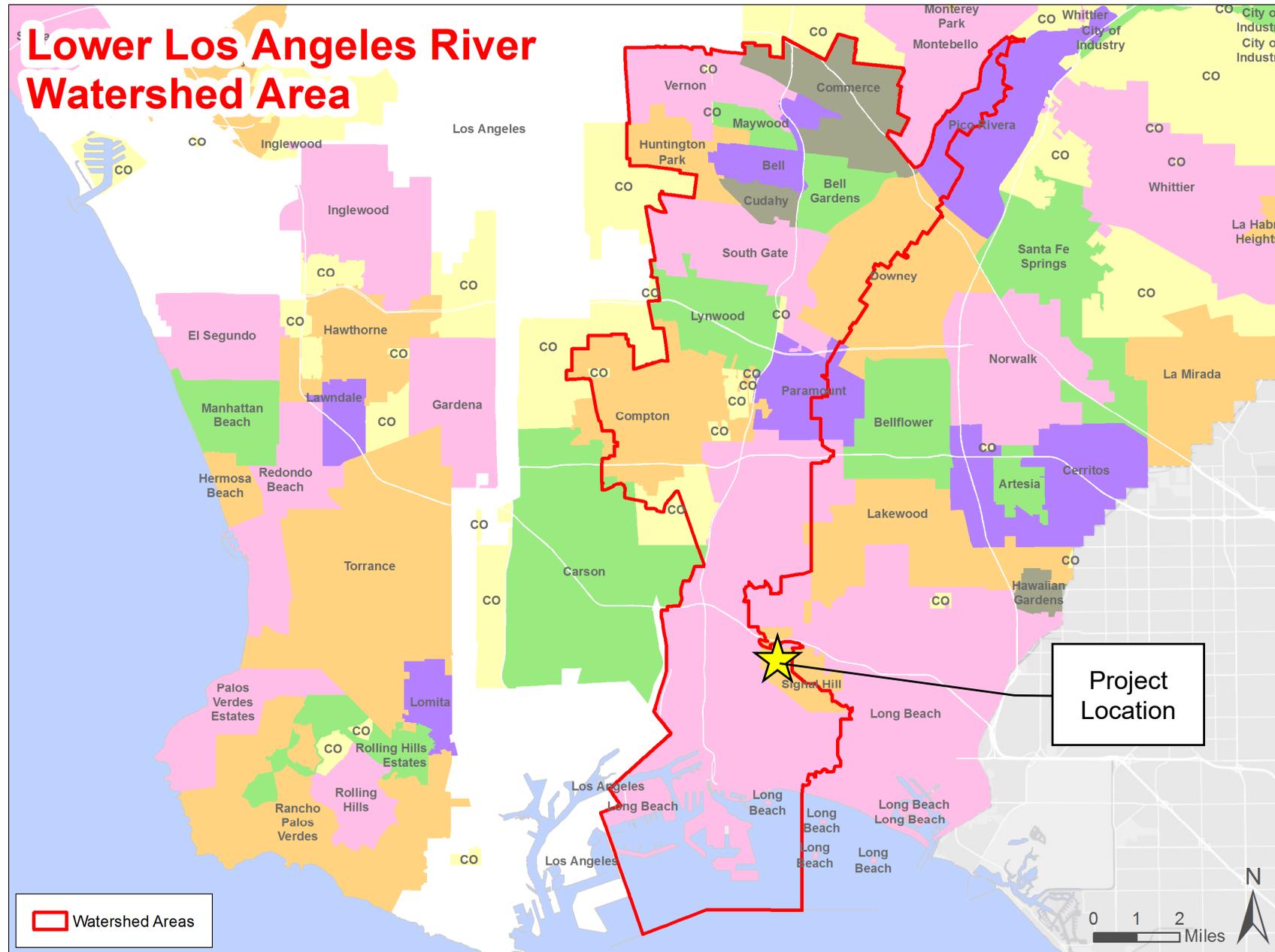


Project Location



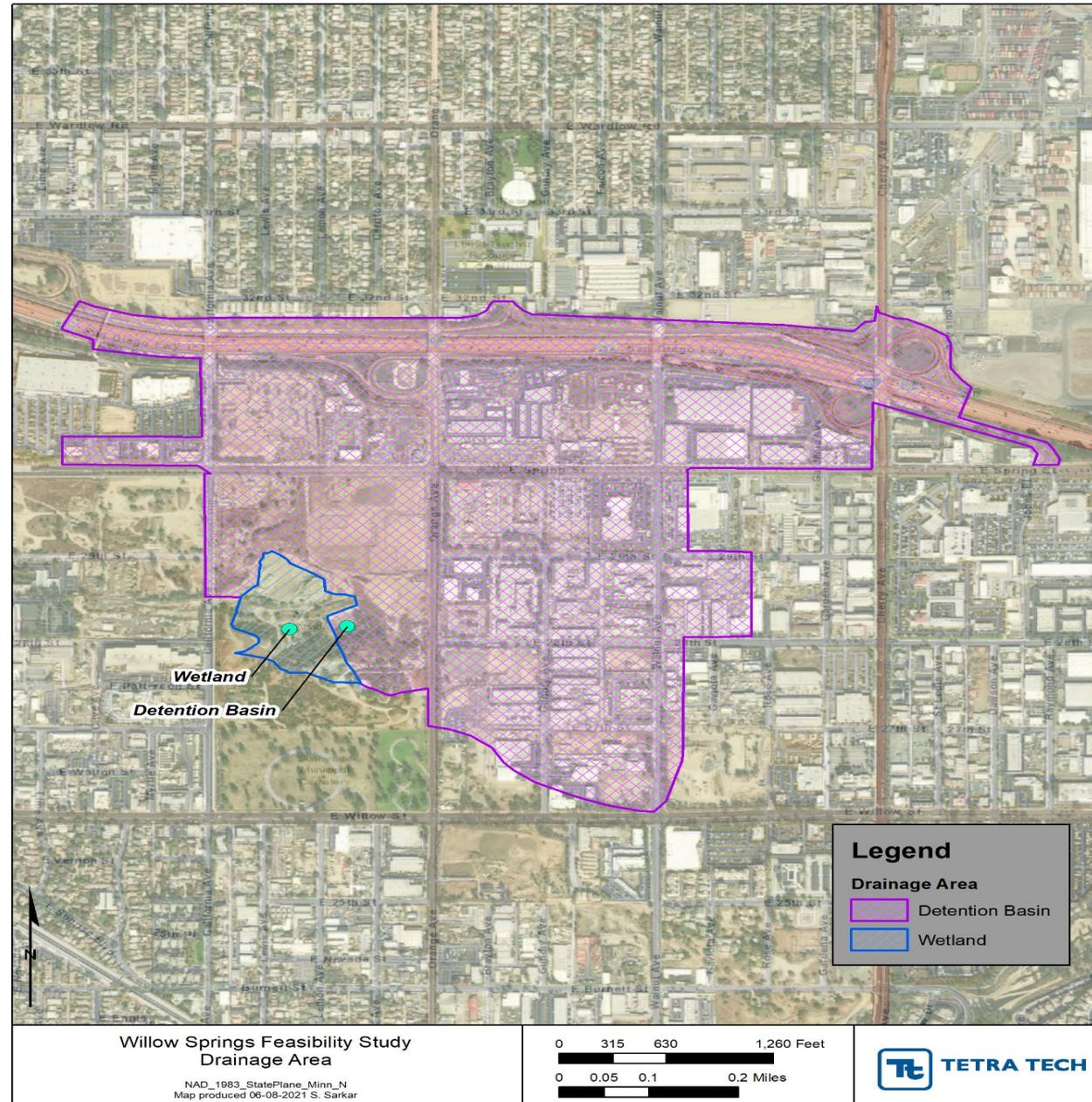


Project Location - Watershed Area



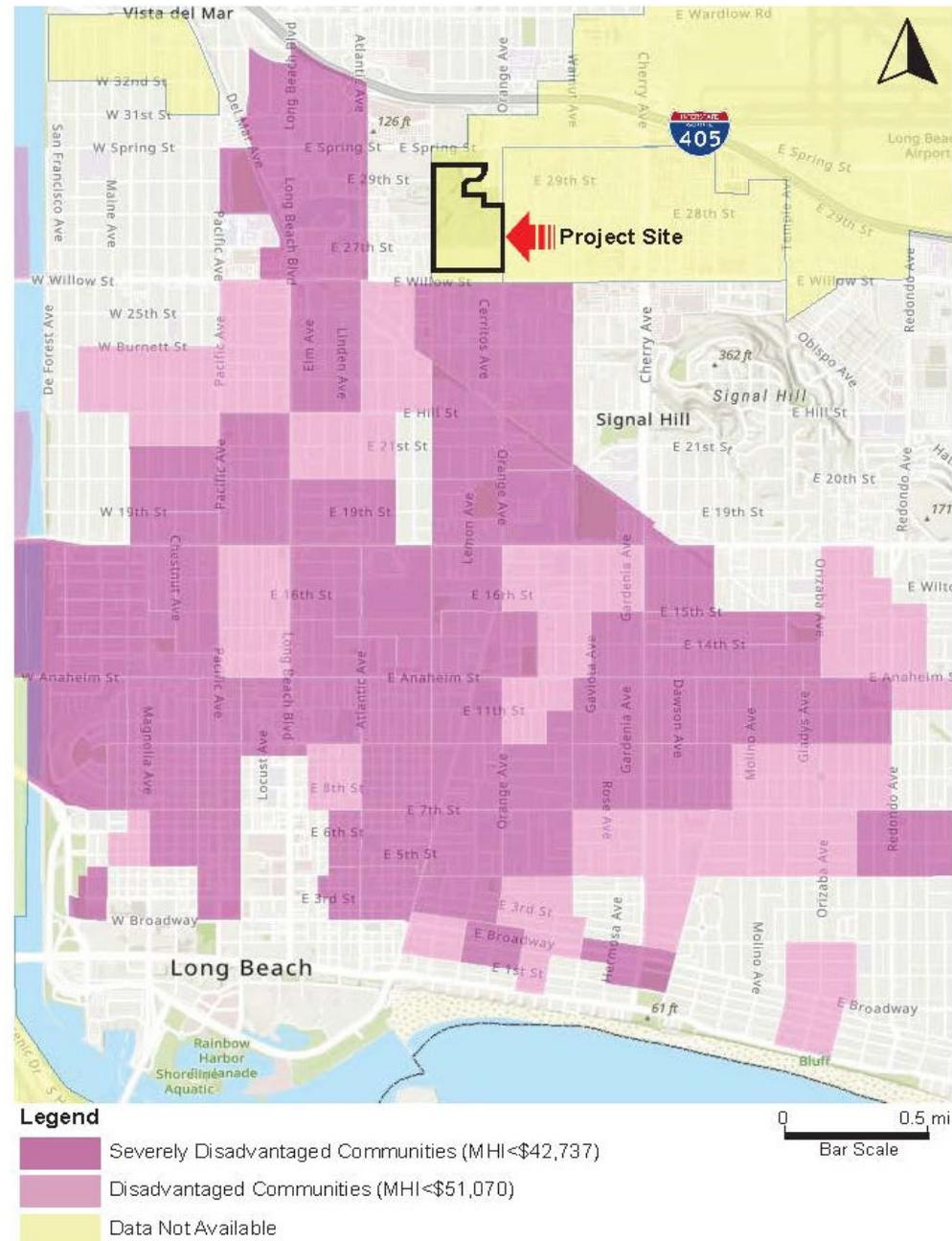


Project Location - Capture Area





Project Location - Disadvantaged Communities





Project Background

Willow Springs Park is a 48-acre open space located in the City of Long Beach. The project site was selected due to its proximity to existing wetlands and an on-site detention basin. Run-off from the detention basin will be diverted to the engineered wetland where it can be distributed in several ways:

1. Stored and diverted to adjacent existing wetlands for infiltration,
2. Stored, filtered, and routed to a nearby existing 54" RCP storm drain,
3. Stored and re-used for on-site for drip irrigation.

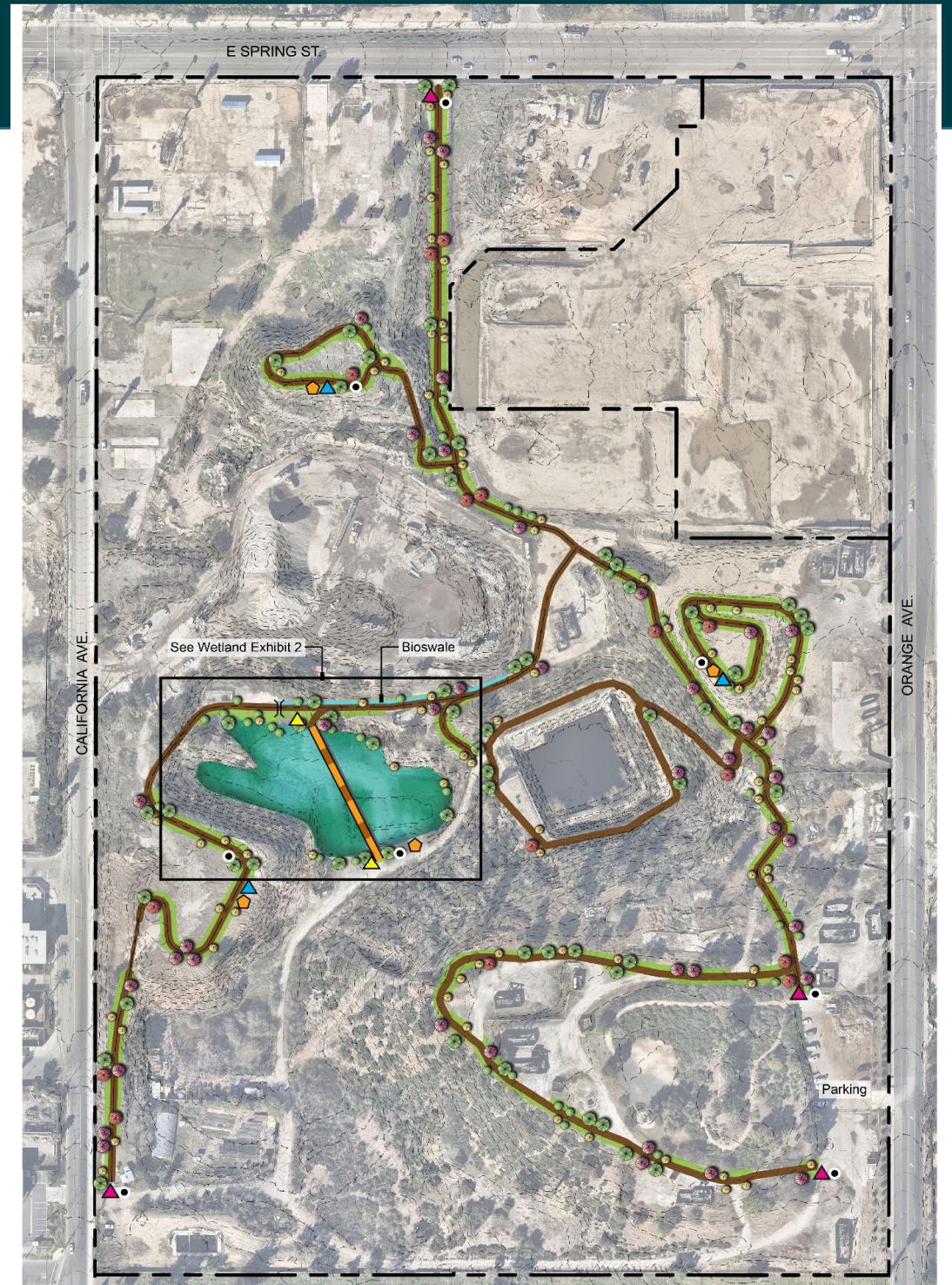
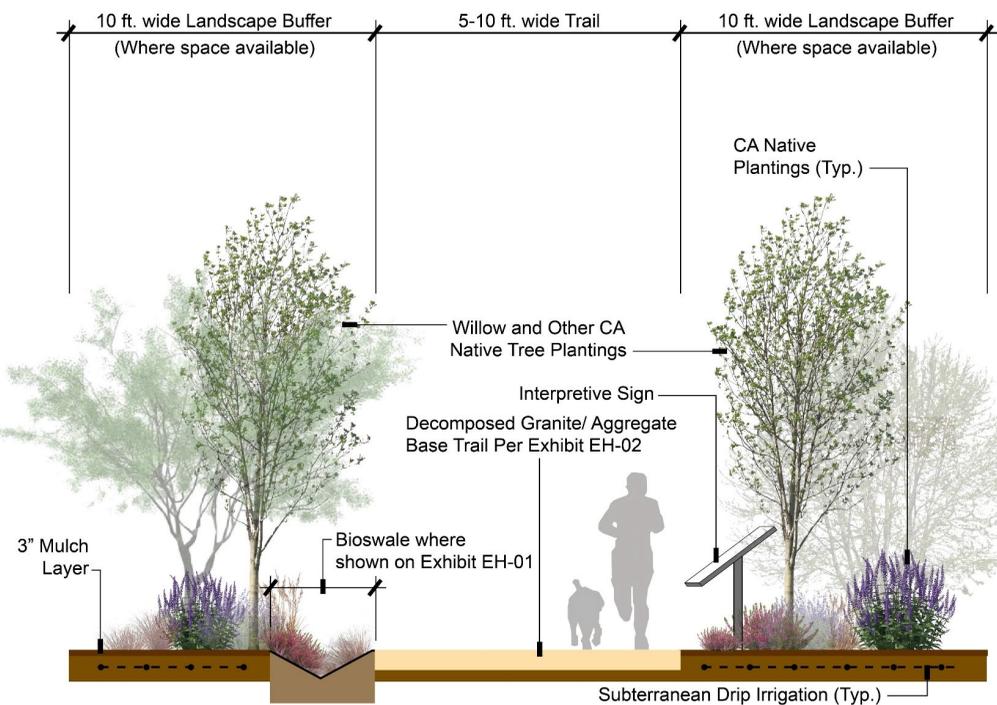
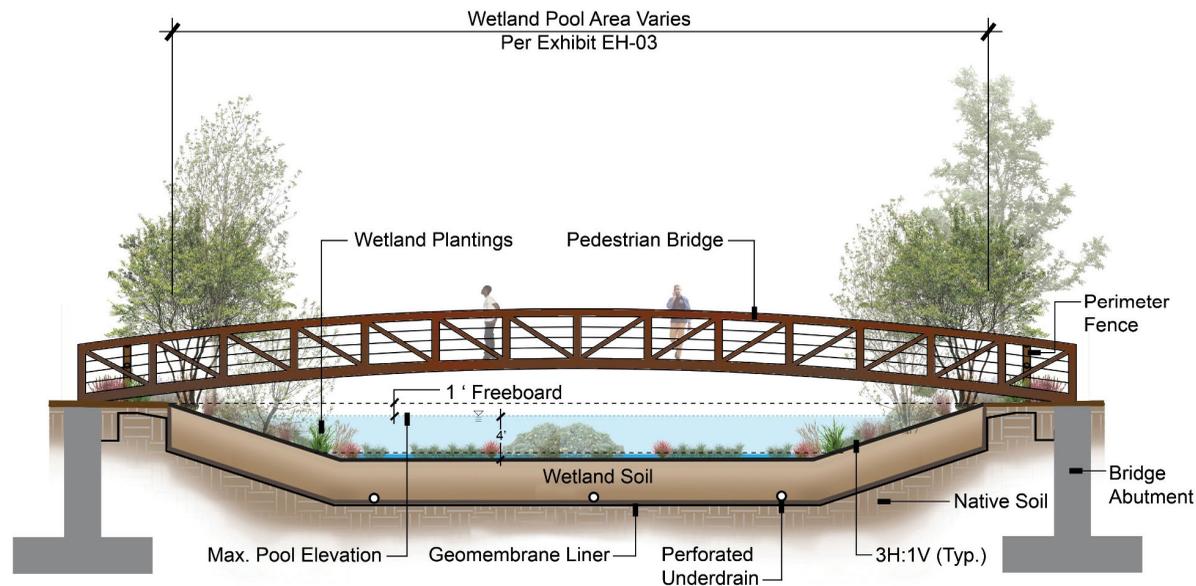
The project was developed based on community feedback for desired uses of the site and to augment other recently constructed wetlands, trails, and native landscaping at the site.

Willow Springs Park is in the Greater Los Angeles (GLAC) IRWMP region.

The park is located adjacent to multiple disadvantaged communities. This large nature-based open space will bring an aesthetic and recreational opportunities for these communities, as well as provide educational opportunities on sustainability and local ecology.



Project Plan with Key Features





Cost & Schedule

Phase	Description	Cost	Completion Date
Design	Design and Outreach Cost	\$1.20M	2023
Construction	Construction Cost	\$8.64M	2024
TOTAL		\$9.84M	

- The Annual Operation and Maintenance Cost for the project is approximately \$84,000. This includes maintenance of the pumps, valves, slide gate, solar panels, irrigation, trails and wetland. An additional annual monitoring cost is expected for the first three years once the facility is in operation.
- This Project is expected to have a life span of 50 years. The life-cycle cost is approximated at \$14.1M with an annualized cost of \$282k.



Funding Request

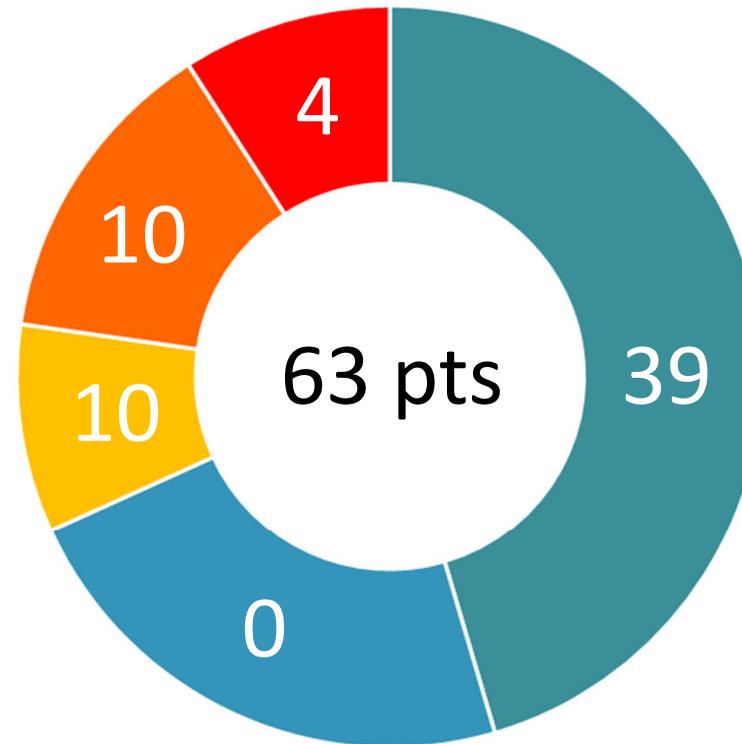
Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$1.20M	Design	Includes project design services, surveying, geotechnical investigations, potholing, CEQA, community outreach, permitting, and environmental studies.
TOTAL	\$1.20M		

Future SCW funding requests will be submitted for the Construction Phase, as well as for Operations and Maintenance.



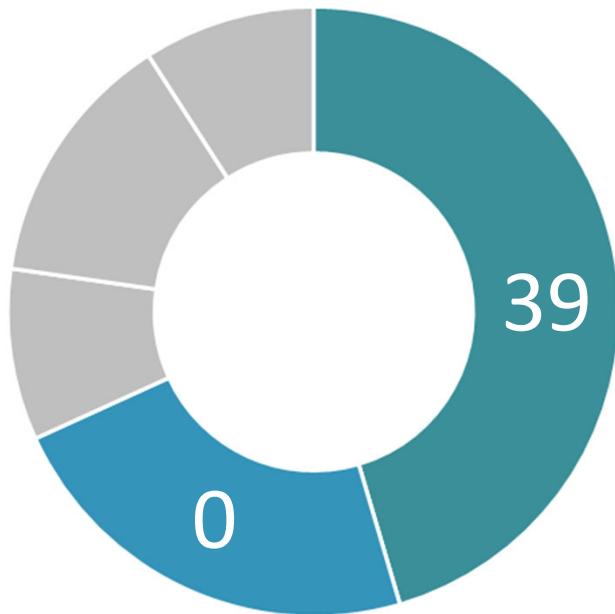
Preliminary Score

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





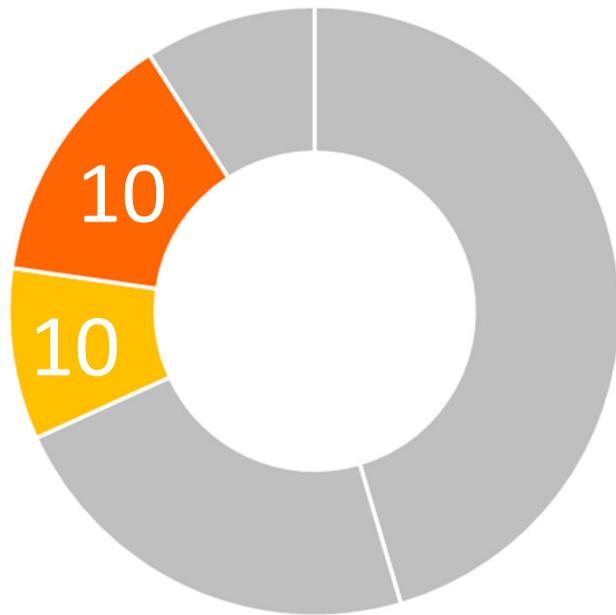
Water Quality & Water Supply Benefits



- The project will capture 83% of the 85th-percentile storm runoff. The captured runoff will be detained in a nature-based treatment wetland. Biofiltration through the wetland will reduce pollutants in the 82 ac-ft of captured stormwater per year.
- Wet Weather Diversion.
- 256.3 acres Capture Area.
- 7.1 ac-ft 24-hour Storm Capacity.
- Primary Pollutant Load Reduction of 67.3% (Zinc) and Secondary Pollutant Load Reduction of 81.7% (Total Nitrogen).
- 4.5 ac-ft of Annual Water Supply captured and used for onsite Irrigation.
- Water Quality Cost Effectiveness: 0.82 (ac-ft/\$ million).



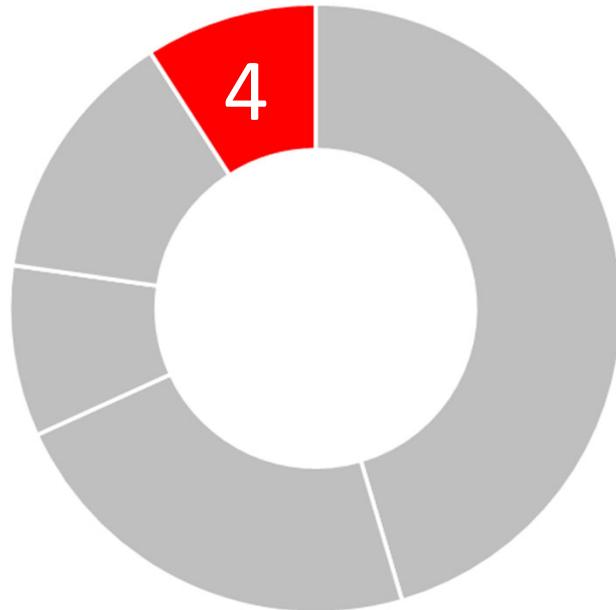
Community Investment Benefits and Nature Based Solutions



- **Community Investment Benefits**
 - The project will include a park space with 1.5 miles of new trails.
 - 2.7 acres of habitat with native vegetation and 232 new trees providing canopy and shade.
 - A new wetland and pedestrian bridge over the wetland providing opportunities for the community to engage with this body of water.
- **Nature Based Solutions**
 - Reliance on soils and vegetation for treatment of runoff.
 - Creating and restoring riparian habitat through the expansion and restoration of wetlands.
 - Soil enhancement through mulching and planting of native trees and vegetation.



Leveraging Funds and Community Support



- Leveraging Funds
 - The City of Long Beach is pursuing grant funding through Measure A, Proposition 68, Proposition 84, Long Beach Conservation Corps, and Measure US.
- Community Support
 - The project has established community support through the overall planning of the Willow Springs Park Master Plan.
 - Additional support comes from the Conservation Corps of Long Beach, Pedal Movement, Long Beach Local Inc., and Signal Hill Petroleum.
 - Master Planning for Willow Springs Park began in 2012. RJM Design Group, Inc. conducted two community master plan work shops to collect data and information on the community's desires for the project.
 - Moving forward, a Community Engagement Plan was created to ensure the surrounding community is included in determination of spending priorities and reported to about the application of Measure A fund. The plan includes the targeted stakeholders and community groups, schedule of planned engagement milestones, scope of planned engagement activities, language access verification, and supporting documentation.



Questions?