Heartwell Park at Palo Verde Channel Stormwater Capture Project

Funding Program - Infrastructure Program

Fiscal Year 2022-2023

Lower San Gabriel River

Project Lead: City of Long Beach

Project Proponent: Los Cerritos Channel Watershed Group

Presenters: Richard Watson (Richard Watson & Associates)

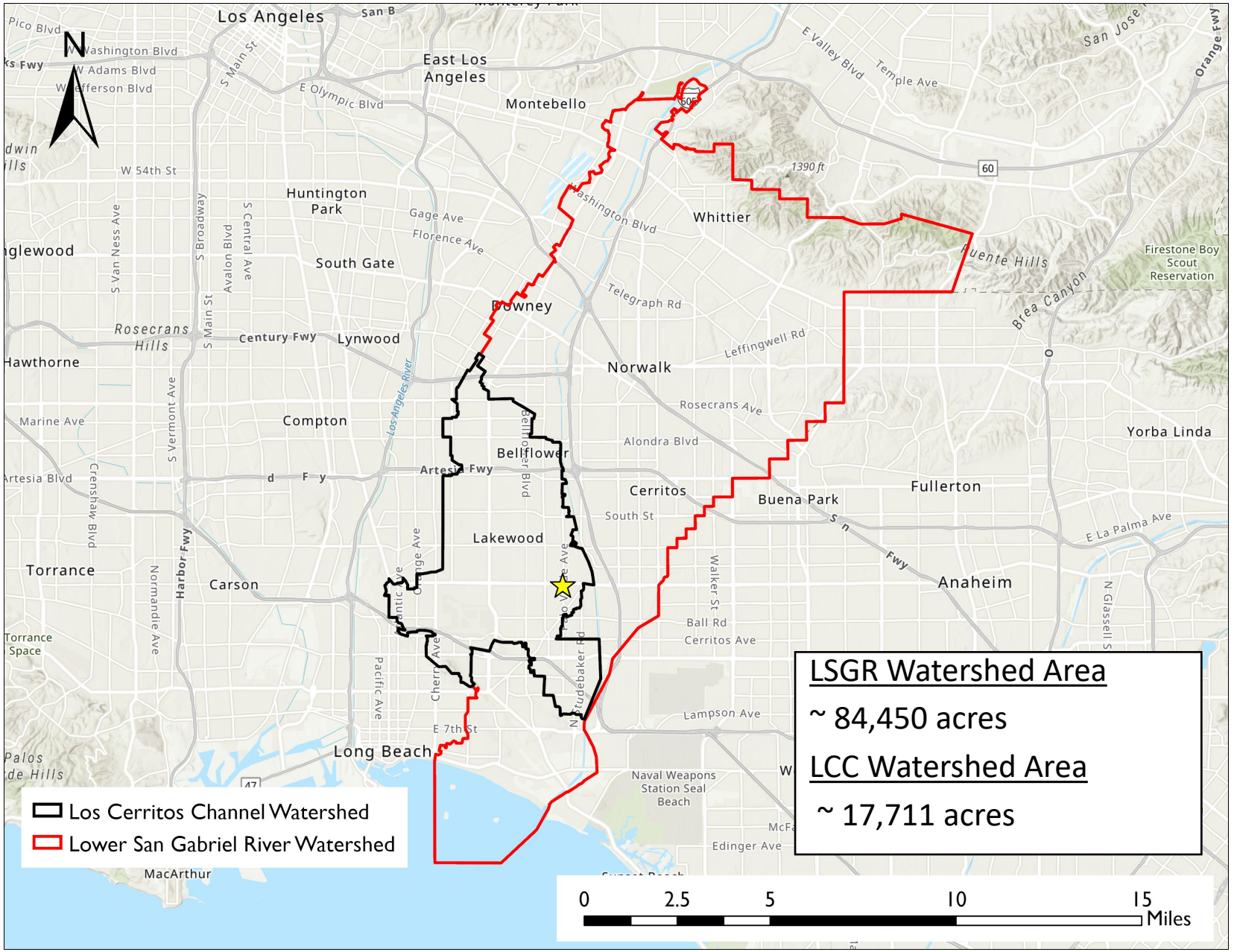
Oliver Galang (Craftwater Engineering)

Project Overview

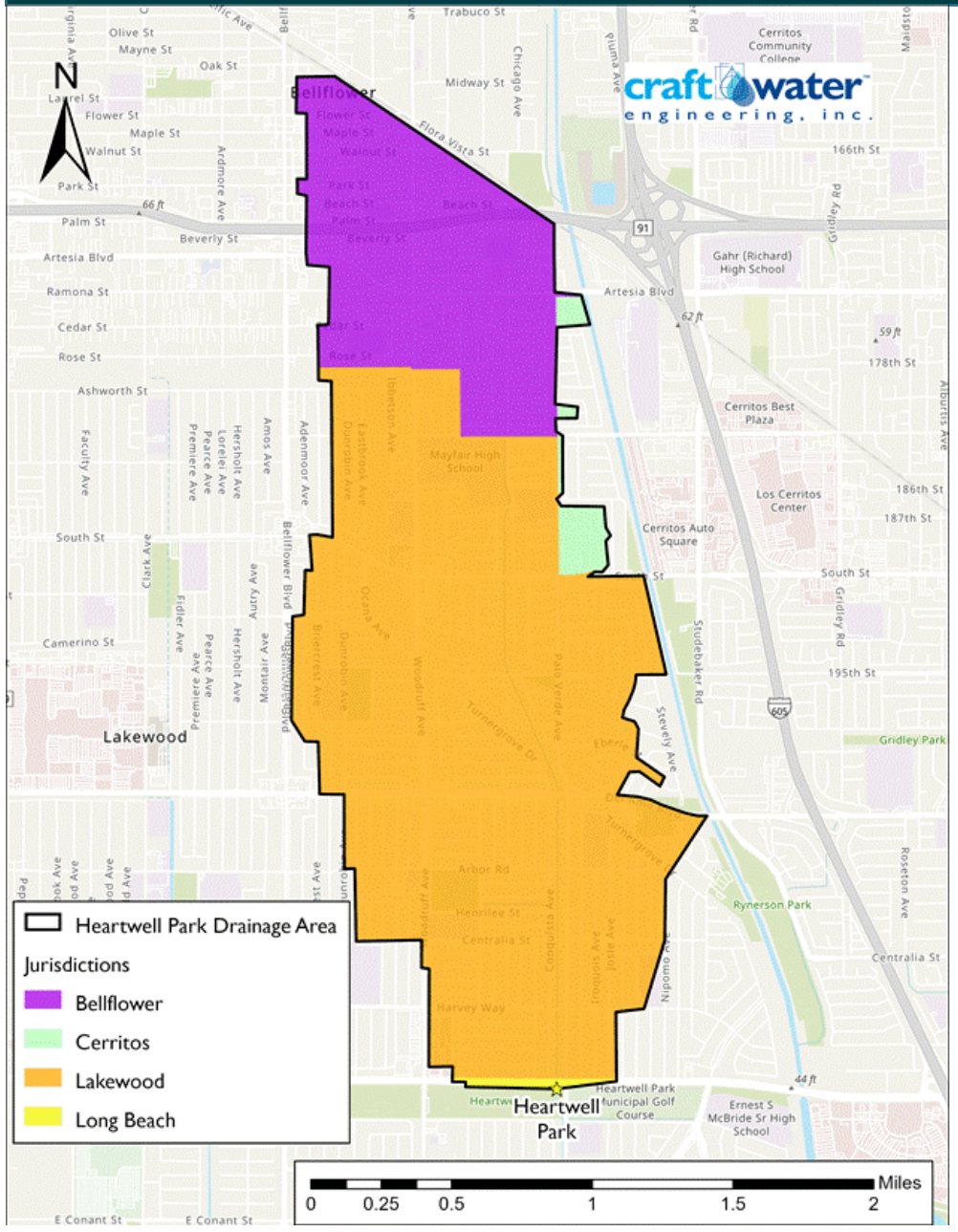
Regional stormwater capture and filtration/sewer diversion facility located at Heartwell Park adjacent to the Palo Verde Channel

- **Primary Objective**: Improve WQ in LCC through nature-based solution
- **Secondary Objectives**: Offset potable use/recycling & public education
- **Project Status:** SCW funding request for **Design & Construction**
- **Total Funding Requested:** $10,695,000

Project Location – Watershed Map

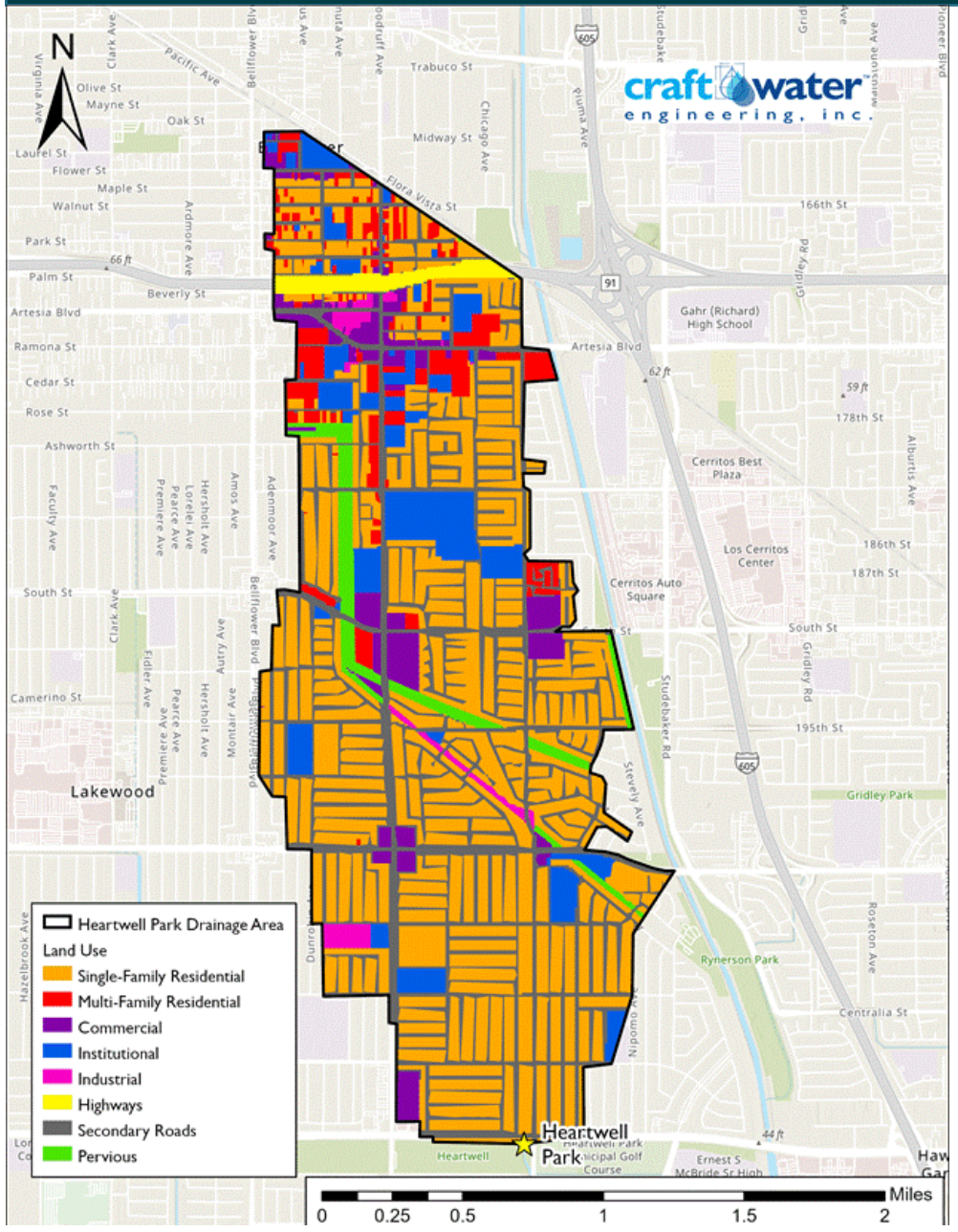


Project Location – Total Capture Area



Jurisdiction	Area (acres)	% Watershed
Lakewood	1,552	73.9%
Bellflower	498	23.8%
Cerritos	38	1.8%
Long Beach	11	0.5%
TOTAL	2,099	100%

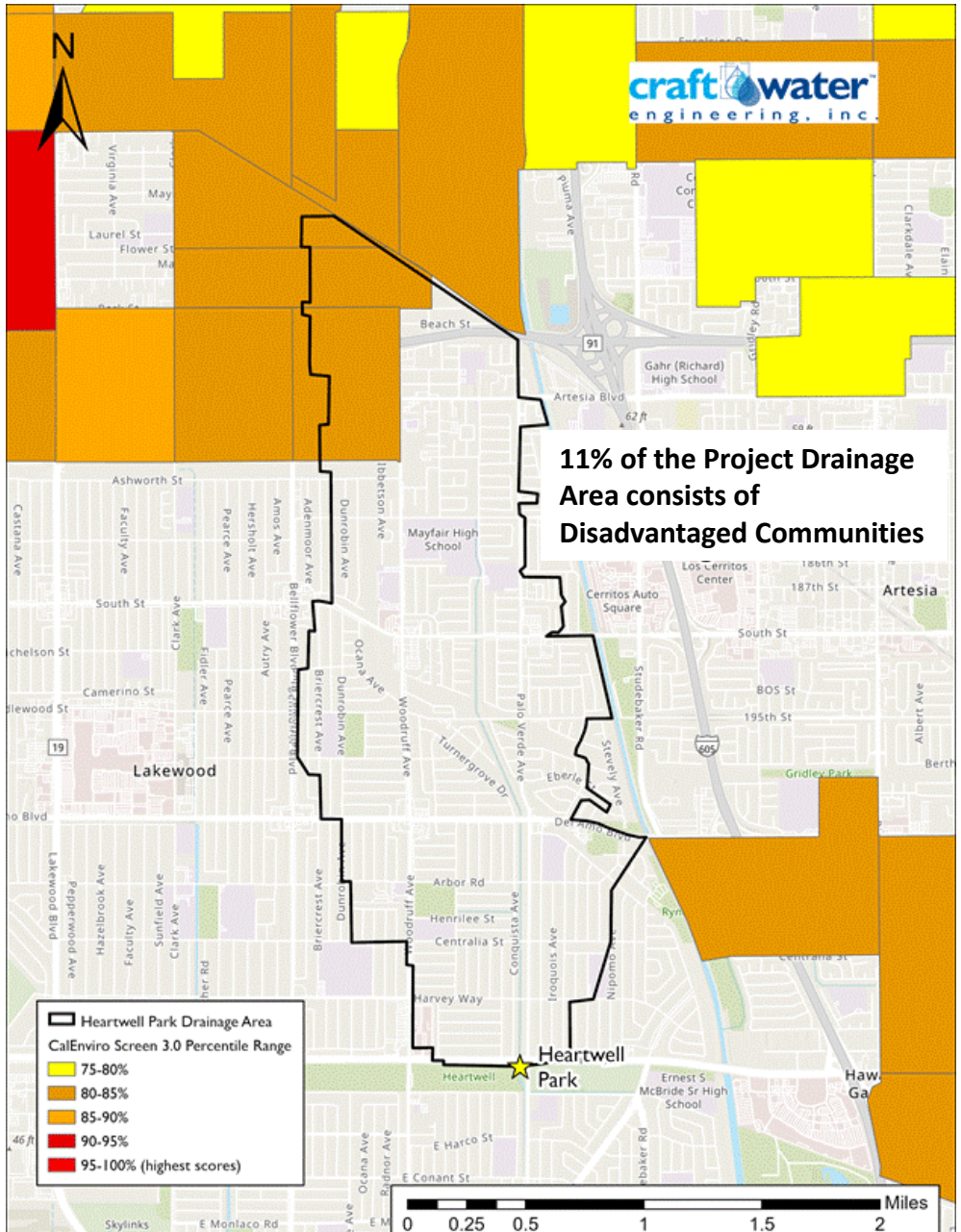
Project Location – Land Use



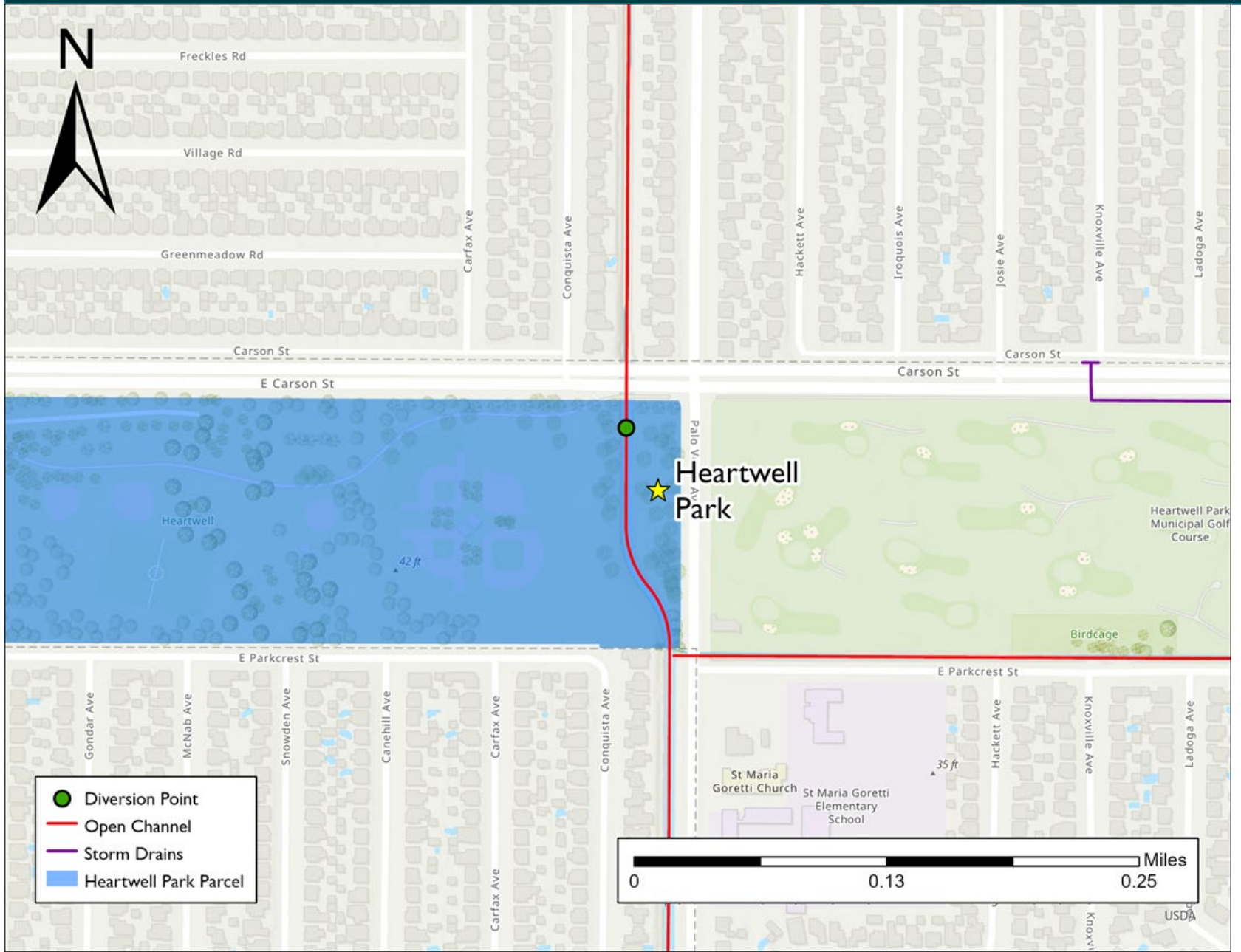
- **Drainage Area**
  - Impervious: 1,269 acres
  - Pervious: 830 acres

Land-use	Area (acres)	% of Impervious
Single Family Residential	632	49.8%
Multi-Family Residential	82	6.5%
Commercial	90	7.1%
Institutional	104	8.2%
Industrial	18	1.4%
Highway & Interstates	22	1.7%
Secondary Roads & Alleys	321	25.3%
TOTAL IMPERVIOUS	1,269	100%

Project Location – Disadvantaged Communities (DAC)



Project Location – Parcel Map



The **Heartwell Park at Palo Verde** site is southwest of the intersection of Palo Verde Ave and Carson St in Long Beach

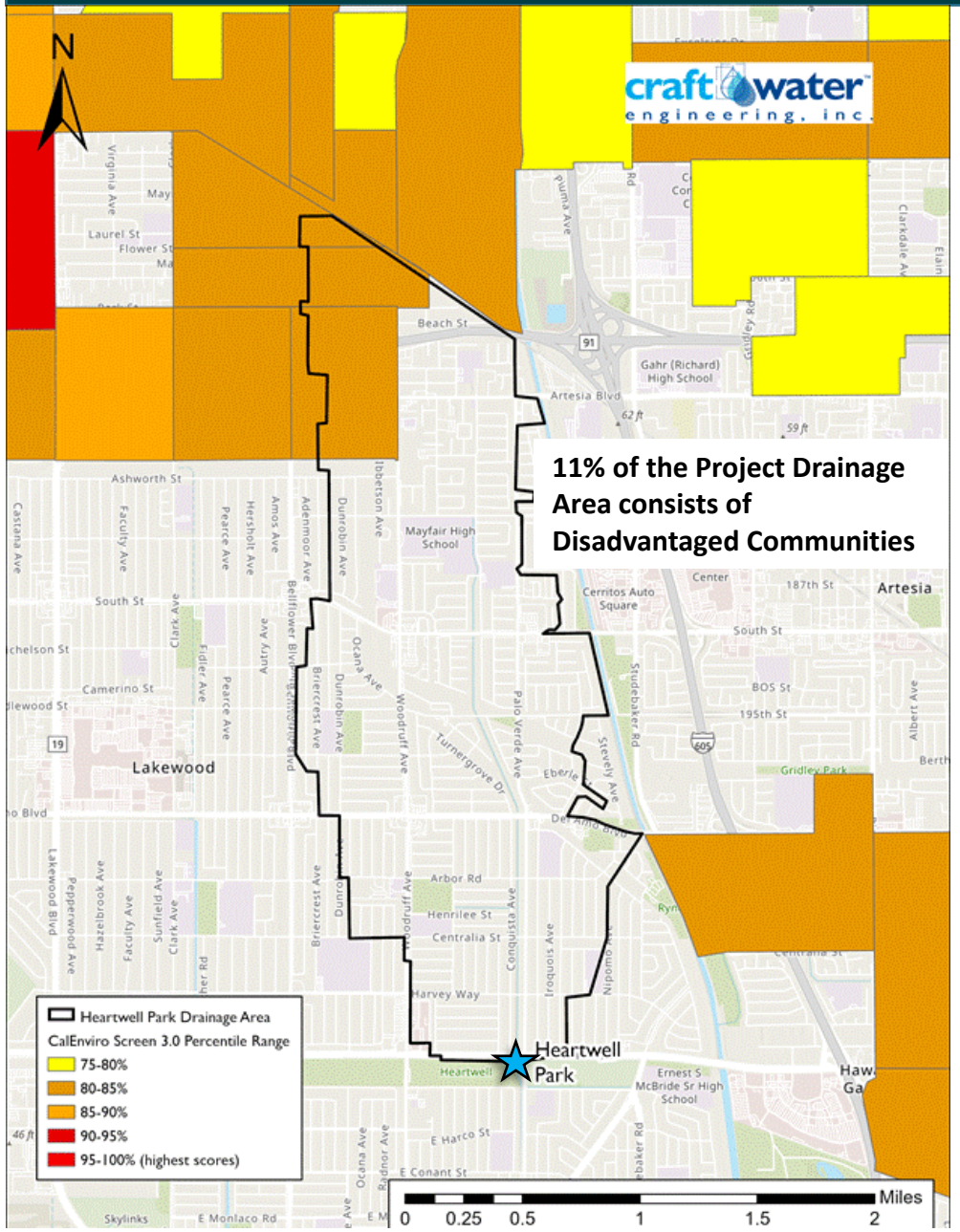
Project Background

- Site was identified in the Los Cerritos Channel (LCC) Watershed Management Program (WMP 2015, *Updated 2021*)
- Project Selected due to
  - Large drainage area (2,099 acres)
  - Proximity to Palo Verde Channel
  - Opportunity to revitalize and enhance public park spaces in Heartwell Park
  - Ability to divert dry-weather flows to the sanitary sewer
  - Pollutant treatment capacity

Project Benefits

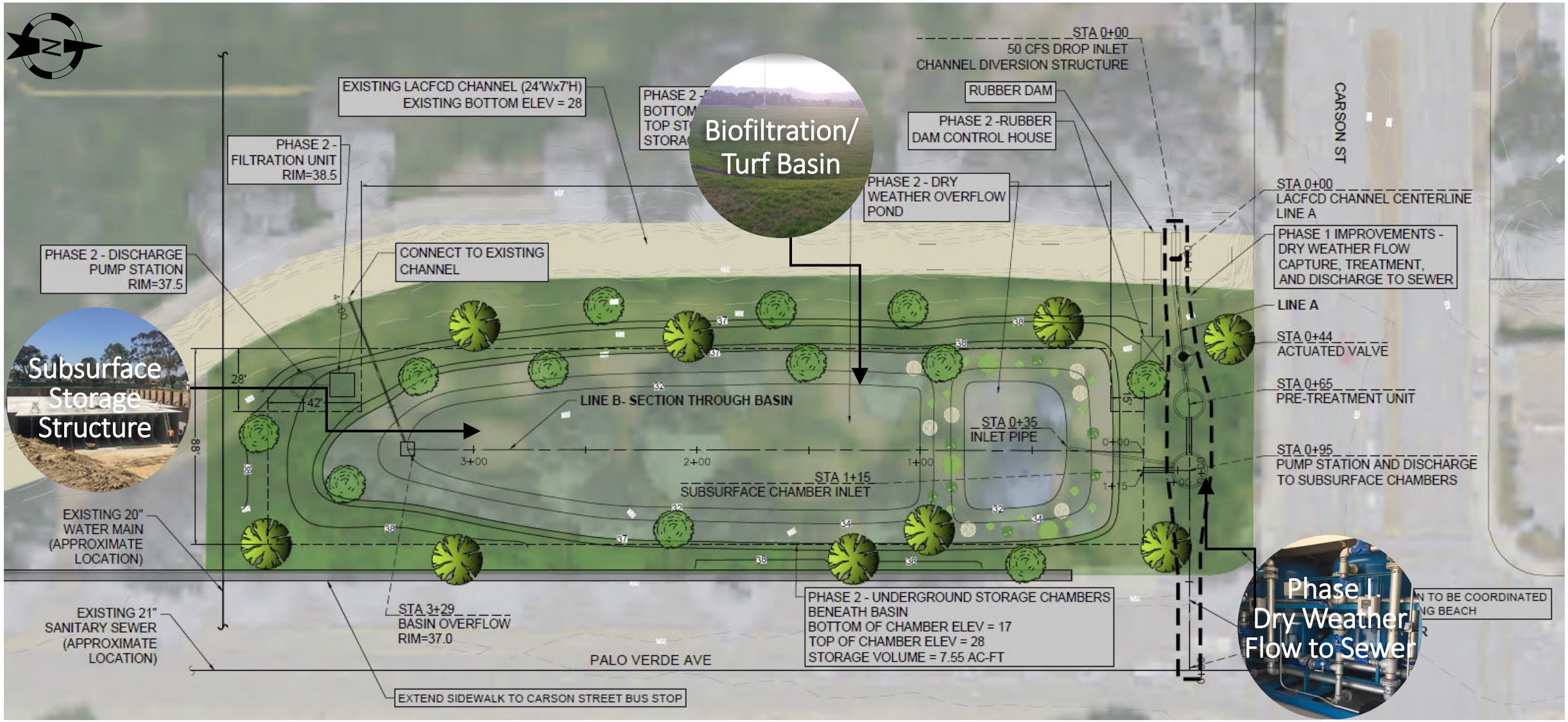
- **Water Quality** Improvement in the Palo Verde Channel and the Los Cerritos Channel by removing trash, metals, bacteria, and nutrients in stormwater and urban runoff
- **Nature-Based** biofiltration basin with sustainable native landscaping
- **Park Recreational Enhancements** with a biofiltration/habitat area and continuous irrigation water supply
- **Public Access to Waterways** with the extension of the sidewalk to provide access to the project site from Carson Street with the development of the pedestrian pathways along the Palo Verde Channel

Project Benefits – DAC



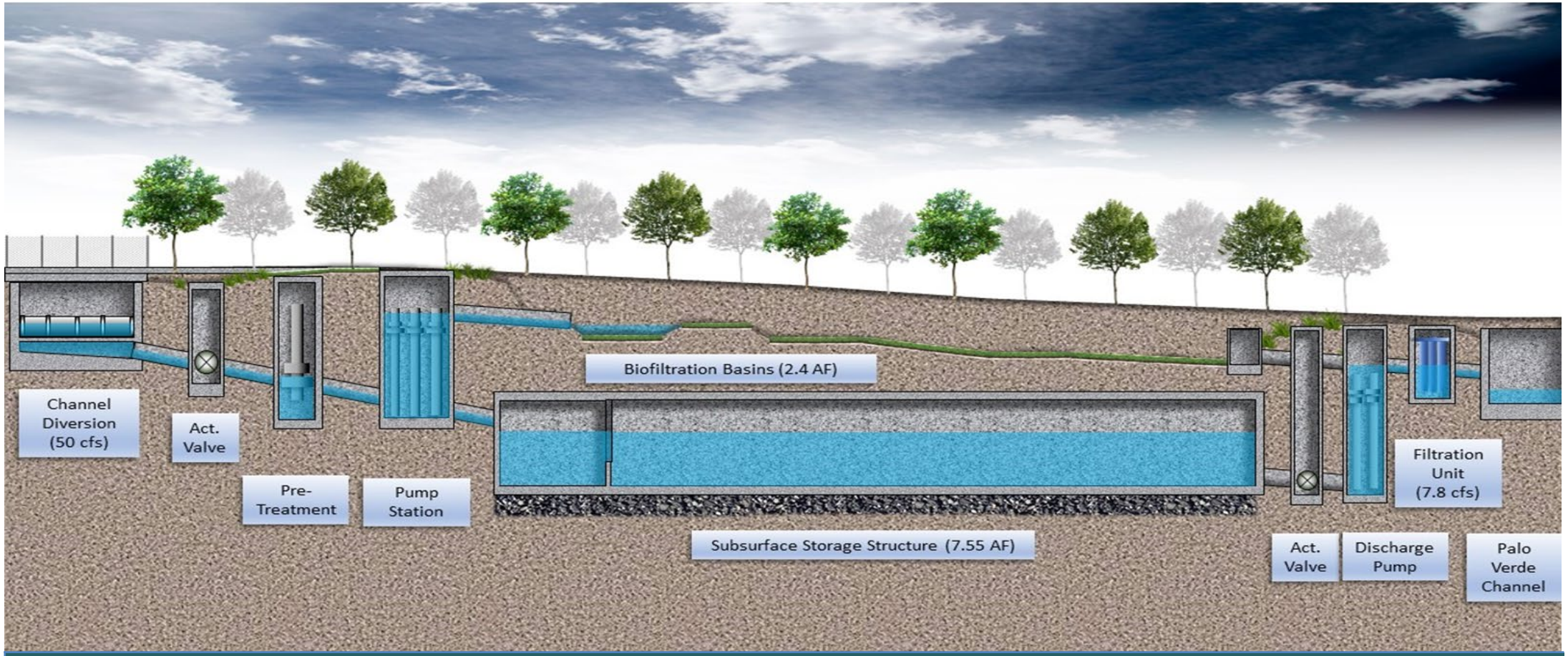
- **Benefits to DAC**:
  - Improved park facilities for the use by all residents of Long Beach and adjacent cities
  - Enhanced public access to open space and rest areas through extension of sidewalk to provide access to Carson Street

Project Details - Site Plans



Project Details – Site Plans

craft water engineering, inc.



Diversion Rate	Storage Capacity	Filtration Unit	24-Hour Capacity	Primary Pollutant Reduction (Zinc)	Secondary Pollutant Reduction (Copper)
50 cfs	9.88 ac-ft (3.2 MG)	7.88 cfs	25.5 ac-ft	51.8% (133 lbs)	55.6% (15 lbs)

Project Details – Existing Conditions

Existing Conditions

- Infiltration Rate: 0.1 in/hr
- Groundwater Depth: 29 ft BGS
- Current Use: Park Space
- Owner: City of Long Beach

*Feasibility and stormwater capture studies done

*Alternative footprint sizes, treatment methods and diversion rates examined

Cost & Schedule

Phase	Description	Cost	Completion Date
Design	Final Design (30/60/90/100)	$852,000	06/2023
Design	Public Outreach during Design	$50,000	06/2023
Design	Environmental Planning (CEQA) and Permitting	$170,000	06/2023
Design	Agency Management (Design)	$93,000	06/2023
Construction	Construction Cost Phase 1	$1,188,000	09/2024
Construction	Construction Survey (Phase 1 & 2)	$40,000	09/2025
Construction	Construction Cost Phase 2	$7,331,000	09/2026
Construction	Construction Administration	$852,000	09/2026
Construction	Agency Management (Construction)	$120,000	09/2026
TOTAL		$10,695,000	

Annual Costs

Maintenance Cost:	$124,000
Operation Cost:	$50,000
Monitoring Cost:	$25,000
Project Life Span:	50

Life-Cycle Costs

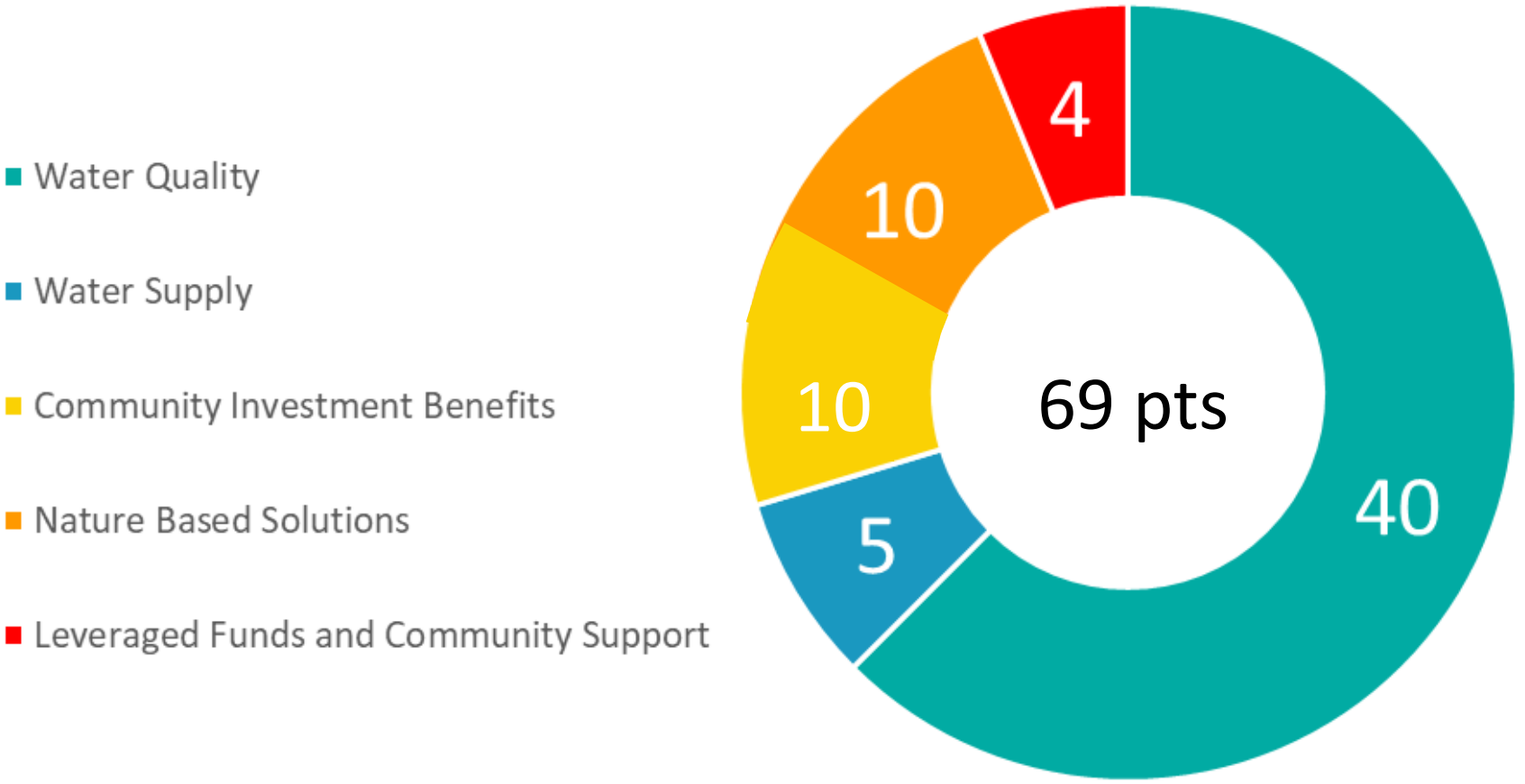
Life-Cycle Cost for Project:	$15,553,011.24
Annualized Cost for Project:	$648,206.87

Funding Request

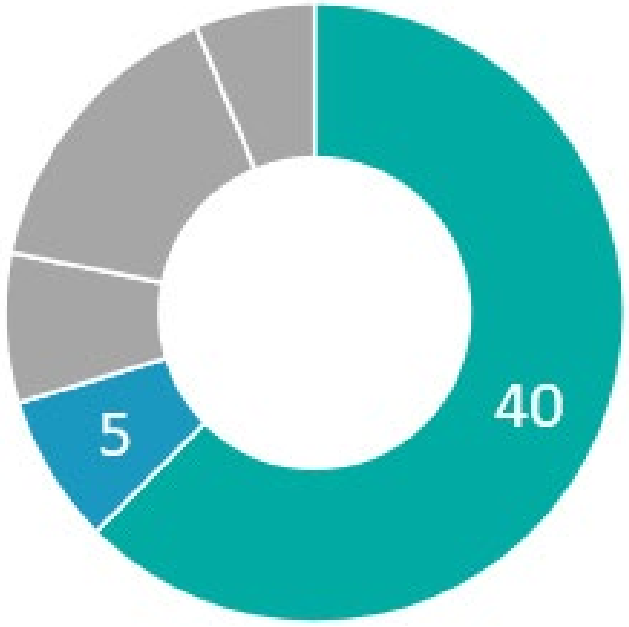
Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	$1,165,000	Design	Professional design services (30/60/90/100) Environmental planning (CEQA), Permitting, Community outreach, agency project management (design phase)
2	$1,532,000	Construction	Construction **Phase 1**, Agency project management, construction administration, staking, survey
3	$4,009,000	Construction	Construction Phase 2, Agency project management, construction administration, staking, survey
4	$3,989,000	Construction	Construction Phase 2, Agency project management, construction administration
TOTAL	**$10,695,000**		

- Cost Share = The LCC Watershed Group funded the Feasibility Study for this project. Future funding opportunities to be explored.
  - $199,000 for O&M/Monitoring – Year 5 and beyond

Preliminary Score

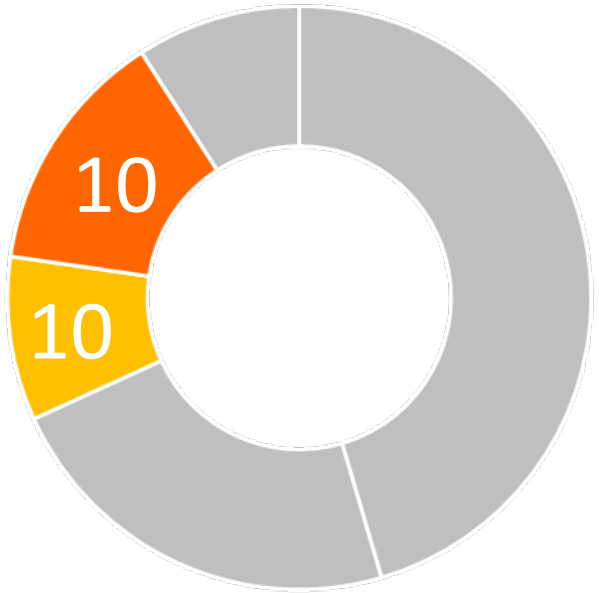


Water Quality & Water Supply Benefits



- **Primary Mechanisms**
  - Runoff/pollutant capture
  - Filtration
  - Connection to the park and/or golf course irrigation system
  - Connection to sanitary sewer
- **Wet** weather project type
- Tributary Area: **2,099 acres**
- 24 Hour Capacity: **25.5 ac-ft**
- Pollutant Load Reduction
  - Primary Pollutant (Zinc) – **51.8% (133 lbs-annual avg**)
  - Secondary Pollutant (Copper) – **55.6% (15 lbs-annual avg)**
- Average Annual Capture for Water Supply: **102 ac-ft**
- Water Supply Use
  - **Onsite Irrigation Use** Potential in Heartwell Golf Course
  - **Water Recycling** through Sewer Diversion
- Water Supply Cost Effectiveness : **$6,355/ac-ft**

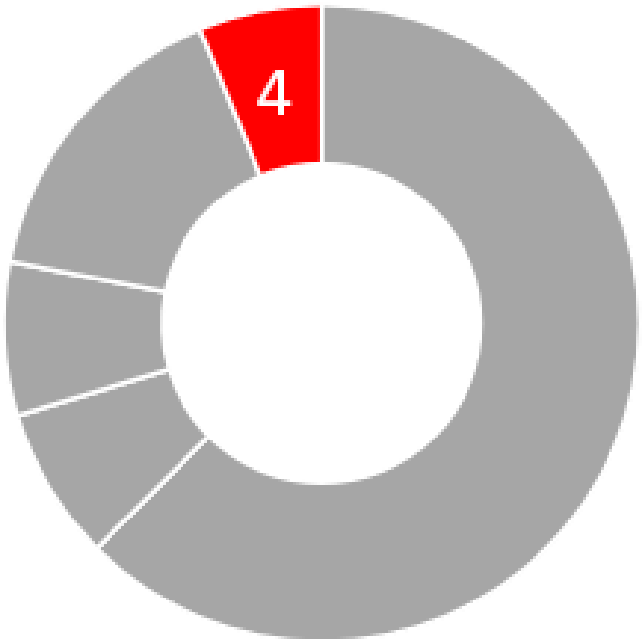
Community Investment Benefits and Nature Based Solutions



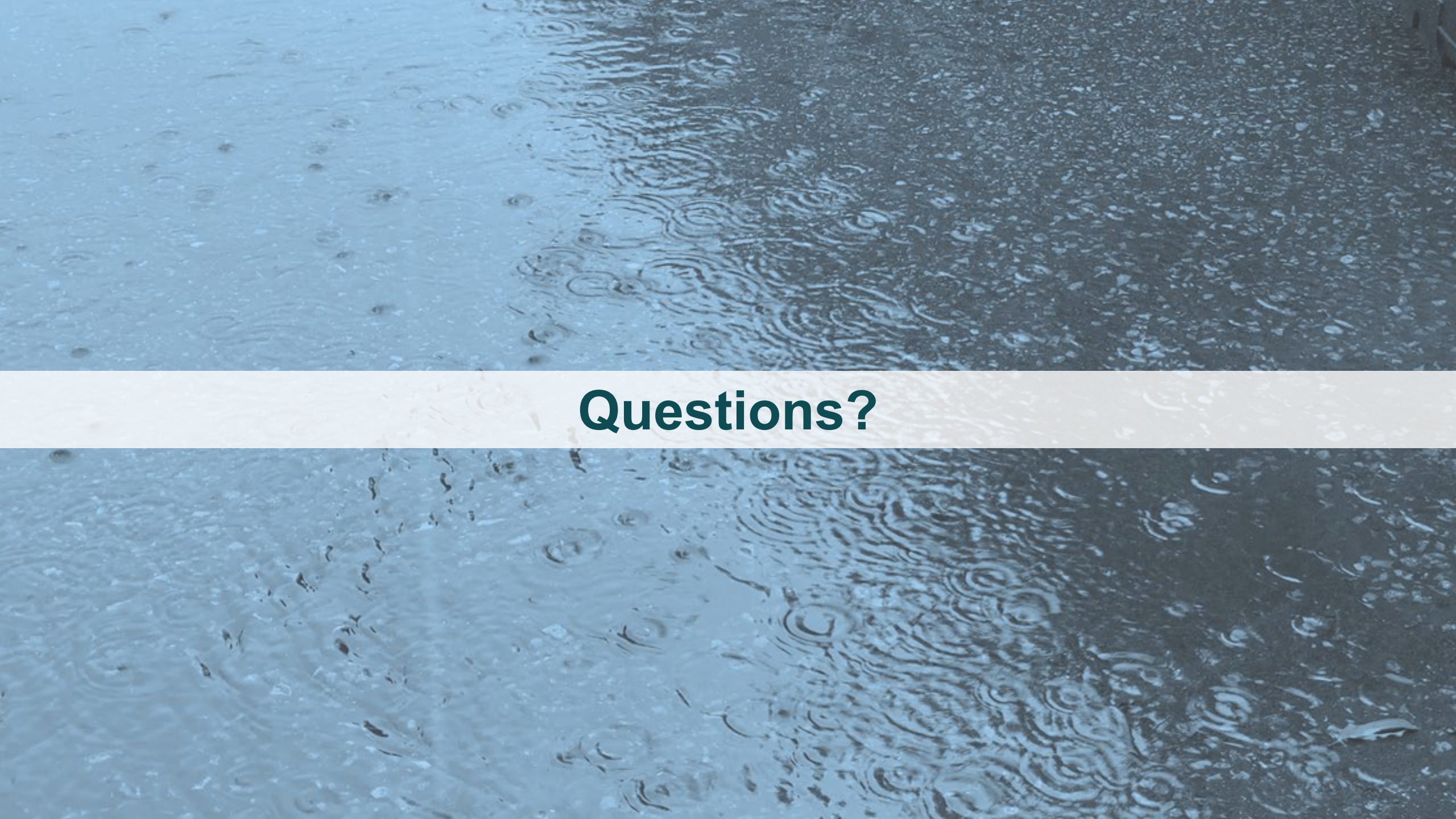
- Community Investment Benefits
  - Improves flood management, flood conveyance, or flood risk mitigation
  - Creates parks, habitat or wetland
  - Improves public access to waterways
  - Creates or enhances new recreational opportunities

- Nature Based Solutions
  - Project implements natural processes and utilizes natural materials
    - Installation of a surface biofiltration/turf basin, permeable walkways, and bioretention planters
    - Post-construction landscaping includes native trees, shrubs, and grasses

Leveraging Funds and Community Support



- Leveraging Funds
  - Feasibility Study Cost funded by the LCC Watershed Group.
- Community Support
  - City of Long Beach will conduct an active Public Outreach effort
  - Strong local, community-based support from
    - Conservation Corps of Long Beach
    - Los Cerritos Wetlands Authority



Questions?

York Field

Infrastructure Program

Fiscal Year 2022-2023

Lower San Gabriel River Watershed Area

City of Whittier

Presented by Vicki Smith & John Hunter

Project Overview

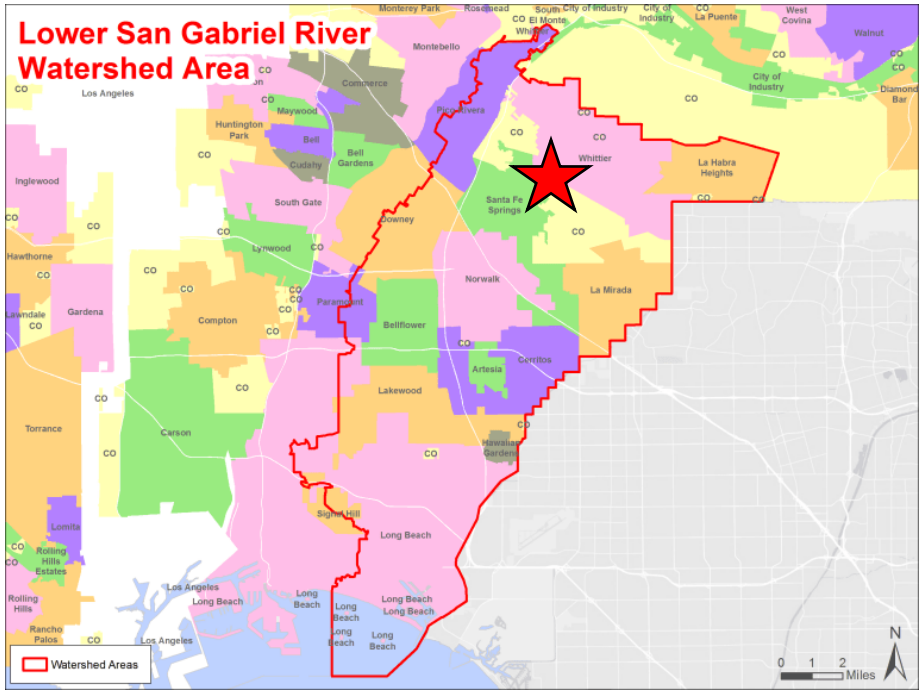
Regional and onsite stormwater capture and filtration diversion facility located at York Field beneath the open space of the existing park

- Objectives:
  - Improve water quality within the Lower San Gabriel River and Coyote Creek Watersheds
  - Potentially provide groundwater recharge and augment the downstream sewer diversion being designed at Adventure Park by LA County
  - Restore/rehabilitate desired park facilities
  - Implement nature-based stormwater management solutions
  - Reduce on-site flooding within the parking lot and field areas

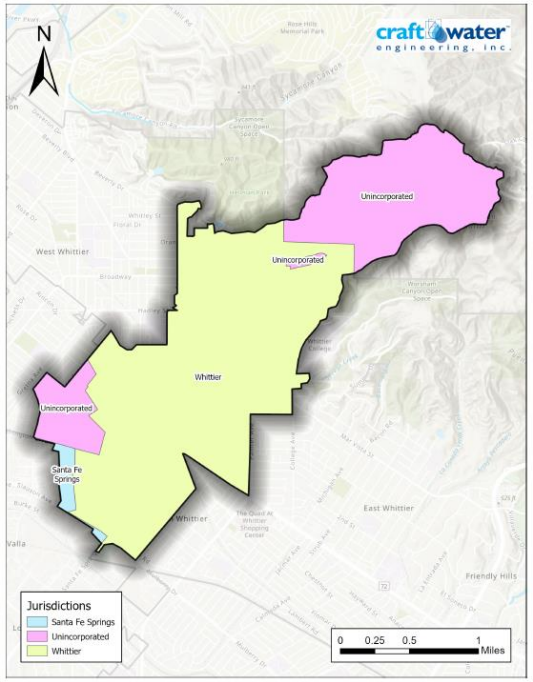
- Project Status: Design

- Total Funding Requested: $1,873,720

Project Location



The project is located in the City of Whittier, within the Lower San Gabriel River Watershed Area



The project has a capture area of over 2,400 acres, encompassing portions of Whittier, Santa Fe Springs, and Unincorporated LA County

Per the DWR DAC Mapping Tool, the project is located immediately north of a DAC tract

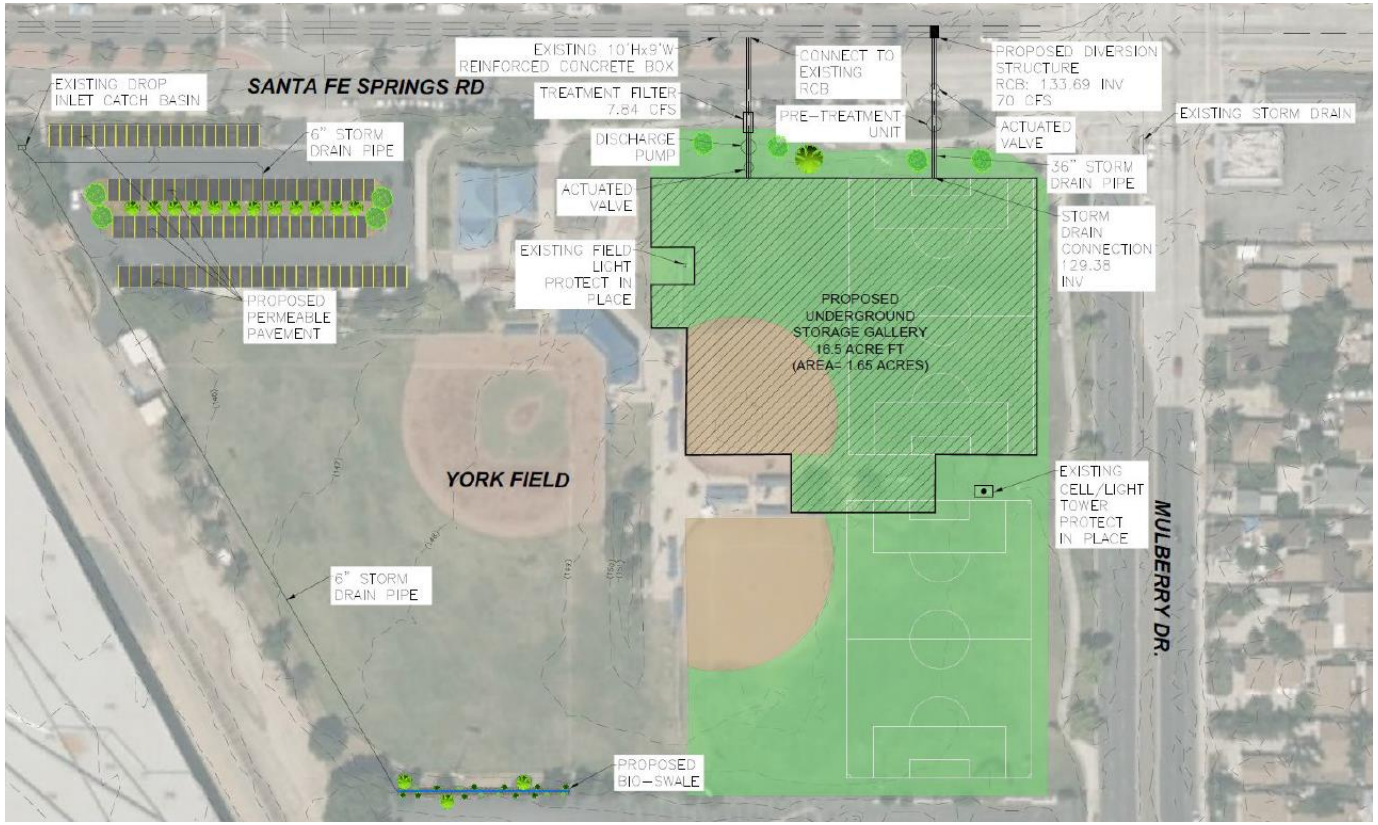
Project Background

Pony World Series (United States, Dominican Republic, Mexico, Korea, and Panama)

- York Field operates as a public park and is estimated to receive more than 125,000 visitors annually as the home to Whittier's adult softball program, Whittier Girls Softball, and Pony Baseball; it also serves as a venue for the annual Pony World Series, attracting people from across the United States as well as foreign countries
- The LSGR Watershed Management Group funded geotechnical testing and the development of a feasibility study (including 10% design plans) in the first half of 2021
- The site was identified as an optimal site for a regional project in the recently updated 2021 LSGR WMP; the project will therefore implement the LSGR WMP and represent progress toward compliance with the MS4 Permit and applicable TMDL milestones
- Local DACs will benefit from improved park facilities, notably including reconfigured/revitalized sports fields, irrigation system updates, an ephemeral stream, and additional shading and vegetation
- The City has conducted preliminary community outreach and the design will comply with all LA County anti-displacement avoidance measures

Project Details

- Current amenities include baseball/softball fields, a playground, a picnic shelter, and restrooms
- Geotechnical testing indicated that groundwater was encountered at 46 feet below the surface; design infiltration rates were calculated to be 0.4 to 1.55 inches/hour
- Subsequently, filtration practices are recommended to be implemented at the site to augment performance
- 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
Planning	Feasibility Study	$ 94,774.00	07/2021
Design	Final Design (30/60/90/100)	$ 2,036,089.00	06/2023
Design	Public Outreach during Design	$ 50,000.00	06/2023
Design	Environmental Planning (CEQA) and Permitting	$ 203,609.00	06/2023
Design	Agency Management (Design)	$ 209,022.00	06/2023
Construction	Construction Cost	$ 20,360,887.00	08/2025
Construction	Construction Administration and Design Support	$ 2,036,089.00	08/2025
Construction	Construction Survey	$ 20,000.00	08/2025
Construction	Agency Management (Construction)	$ 300,000.00	08/2025
Total Funding:		$ 25,310,470.00	

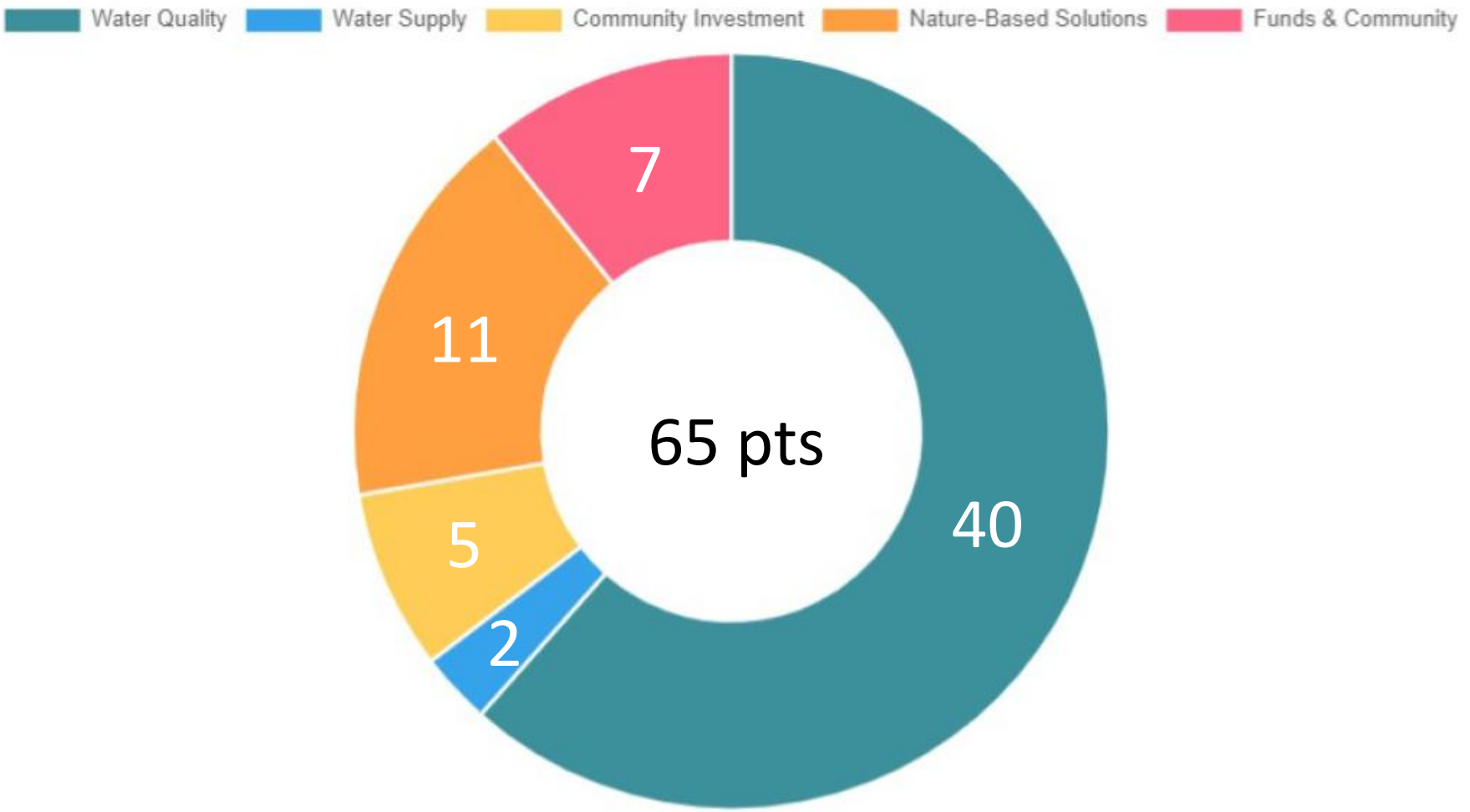
Annual Cost Breakdown	
Annual Maintenance Cost:	$ 84,000.00
Annual Operation Cost:	$ 50,000.00
Annual Monitoring Cost:	$ 25,000.00
Project Life Span:	50 years

Funding Request

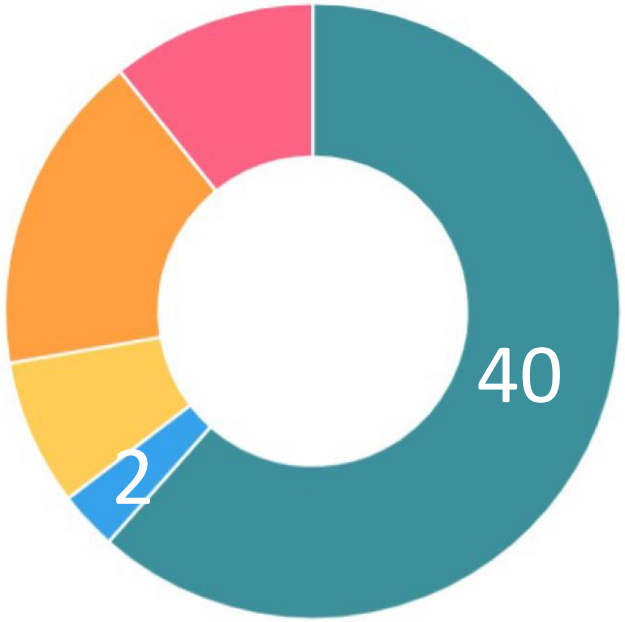
Funding Requested by Year & Phase			
Year	SCW Funding Requested	Phase	Efforts during Phase and Year
Year 1	$ 1,873,720.00	Design	Environmental Planning (CEQA) and Permitting, Professional Design Services (30/60/90/100), Community Outreach during Design, Agency Project Management (Design Phase)
Total Year 1	$ 1,873,720.00		
Total Funding:	$ 1,873,720.00		

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

Preliminary Score

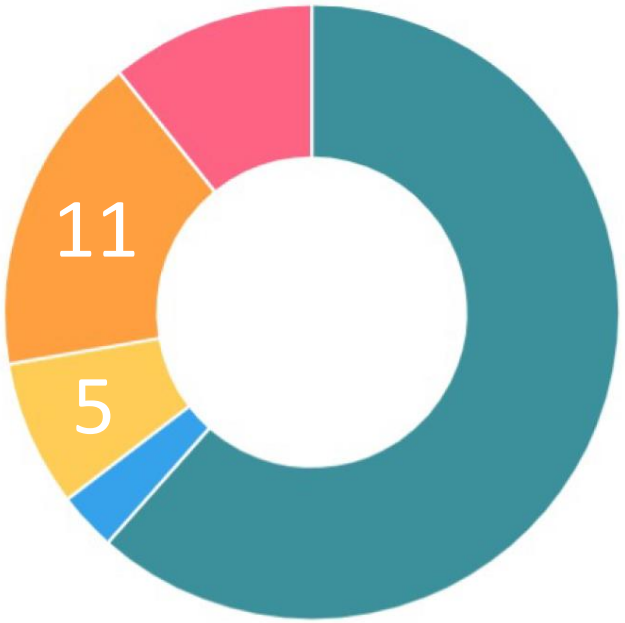


Water Quality & Water Supply Benefits



- Primary mechanisms: runoff/pollutant capture, infiltration, and filtration
- The feasibility study for York Field was strategically developed to ensure that the project is complementary to the downstream Adventure Park project, which was funded in Round 1 of the Safe Clean Water Program
- The proposed underground storage gallery has a capacity of 16.5 acre-feet
- A portion of the 85th percentile storm (the 67th percentile storm) is being captured by the unit; the entire event cannot be managed due to storage and throughput limitations, but this may possibly be overcome with the addition of real-time controls and/or if other stormwater capture practices are added within the drainage area
- Zinc (the limiting pollutant per the LSGR WMP) as well as other pollutants will be addressed
- The project overlies the Central Groundwater Basin and there is potential for local water supply augmentation; the City has corresponded with the Water Replenishment District
- The project will provide additional water supply to discharge to the sanitary sewer connection at Adventure Park

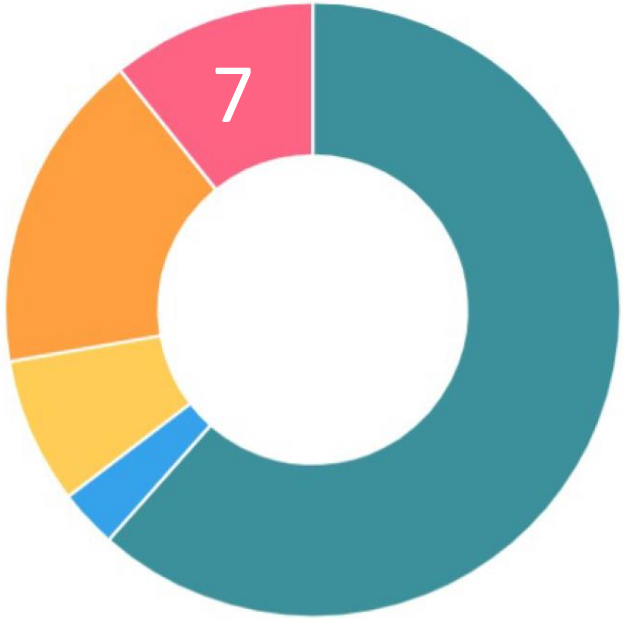
Community Investment Benefits & Nature-Based Solutions



- Community Investment Benefits
  - Flood management: permeable pavement and bioswales installed within the parking lot will mitigate the flooding currently experienced on the site; flooding that occurs within the outfield of Field 3 will be addressed during the installation of the subsurface structure
  - Enhanced park space: installation of the underground structure will provide the opportunity to revitalize the park surface; improvements include an enhanced ballfield, new fencing, a revitalized pedestrian plaza, on-site bioswales, permeable parking stalls, and additional vegetation
  - New recreational opportunities: the project proposes new soccer fields not presently available at the site and an ephemeral bioswale for wildlife observation
  - Increased shade and reduced local heat island effect: the project includes the planting of additional trees/vegetation; the initial estimated proposed canopy is an additional 7,000 square feet (for a total of 18,000 square feet) and 20 new trees (for a total of 56 trees)

- There are two key natural processes being implemented: infiltration through native soils and vegetation and utilization of native landscaping to create local habitat

Leveraging Funds & Community Support



- Leveraging Funds
  - The City of Whittier will commit 25% of Year 1 design costs ($625,000) using its Municipal Program allocation
  - The LSGR Watershed Management Group funded both geotechnical testing and the development of a feasibility study (including 10% design) for the project

- Community Support & Outreach
  - Preliminary outreach to select community groups has been conducted; letters of support have been received from: Whittier Union High School District, Whittier Conservancy, Whittier Area Chamber of Commerce, Whittier Pony Baseball, Murphy Ranch Little League, Whittier Girls Softball League, and the Watershed Conservation Authority
  - On 8/13/21, OhanaVets (Watershed Coordinator for the LSGR WASC) attended the Concert in the Park at York Field and conducted outreach with an interactive stormwater pollution/treatment trailer
  - $50,000 for additional outreach has been included in the design phase budget


Questions?

Bellflower Simms Park Stormwater Capture Project

Funding Program - Infrastructure Program

Fiscal Year 2022-2023

Lower San Gabriel Watershed

Project Lead: City of Bellflower

Project Proponent: Los Cerritos Channel Watershed Group

Presenters: Richard Watson (Richard Watson & Associates)

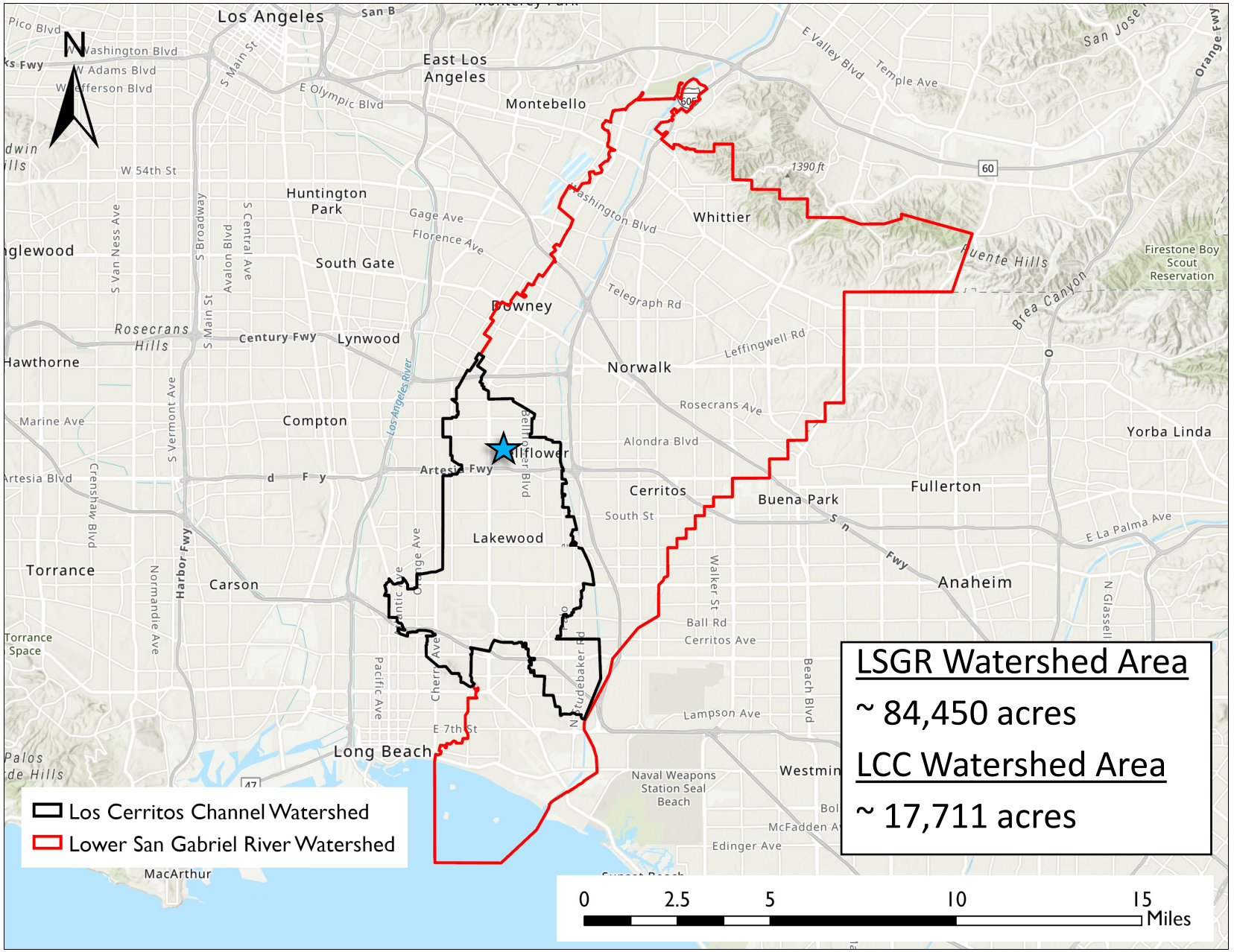
Oliver Galang (Craftwater Engineering)

Project Overview

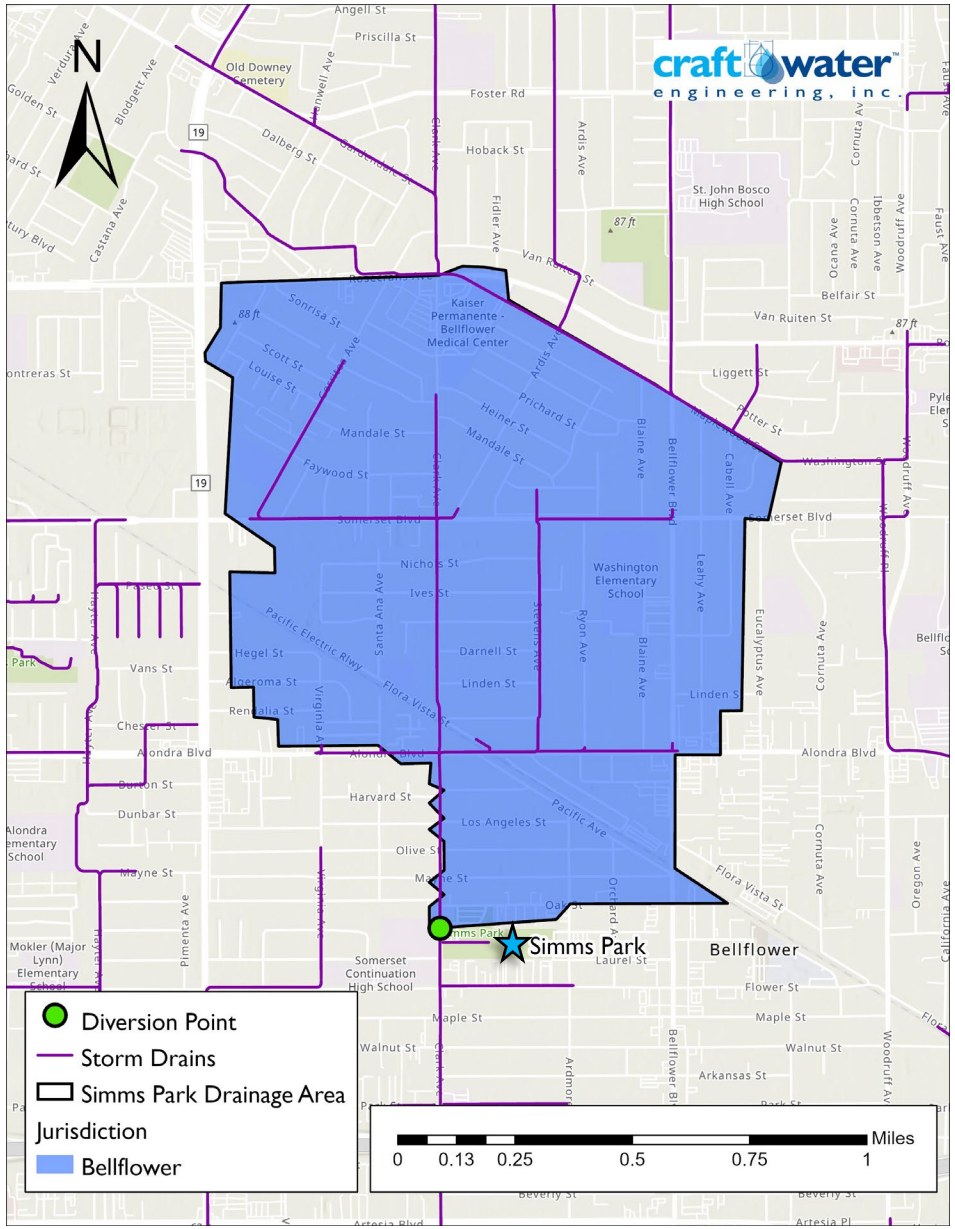
Regional stormwater capture and filtration facility located beneath the sports fields of John S. Simms Park in Bellflower, CA

- **Primary Objective:** Improve WQ within the LCC & Reduce potable demand
- **Secondary Objectives**: Restore/rehab park facilities & Public education
- **Project Status**: SCW funding request for Construction
- **Total Funding Requested**: $15,666,700

Project Location – Watershed Map



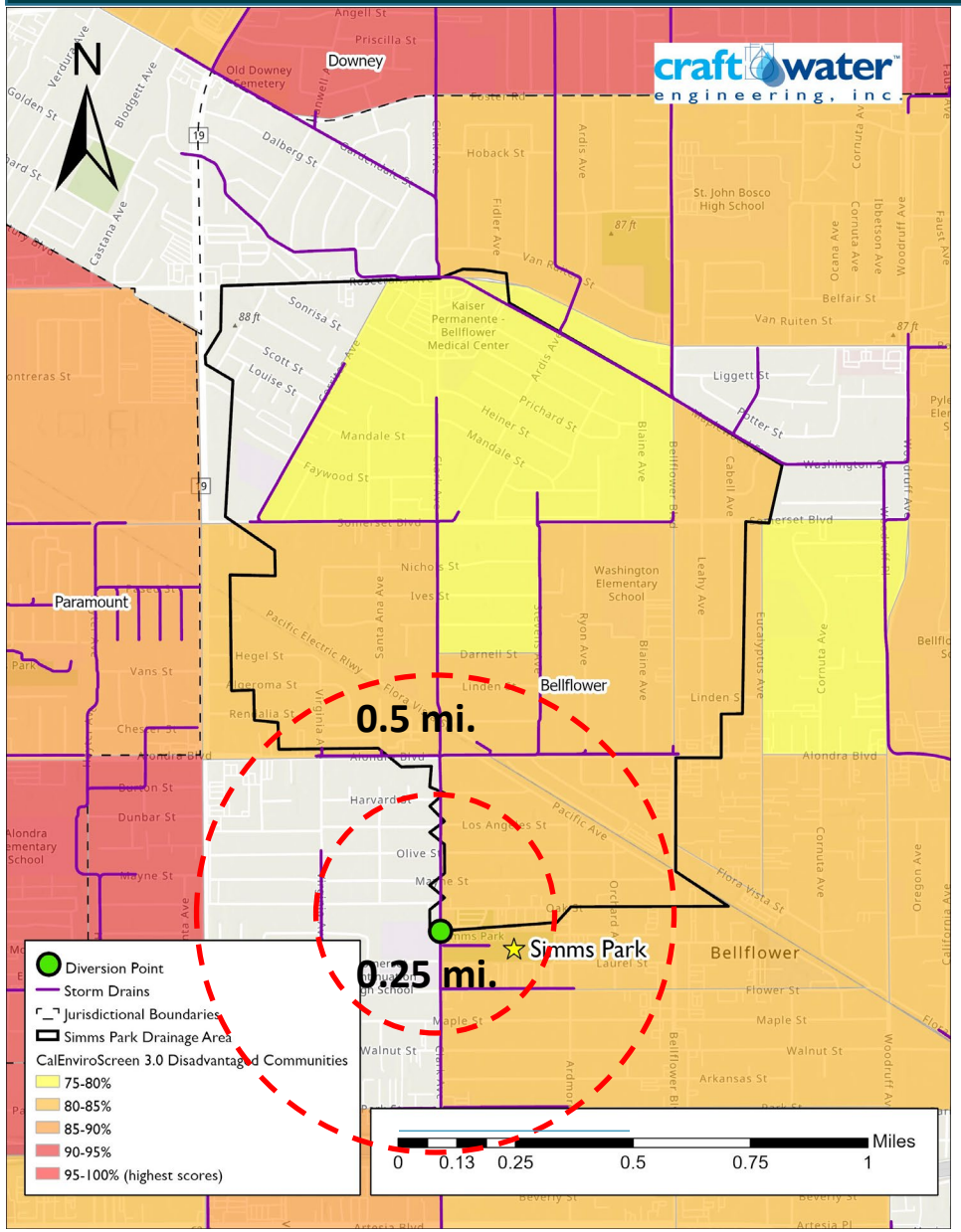
Project Location – Total Capture Area



- Capture area jurisdiction:
  - City of Bellflower
- Watershed Capture Area:
  - 758 acres

Land-use	Area (acres)	% of Impervious
Single Family Residential	174	34.36%
Multi-Family Residential	107	21.25%
Commercial	51	10.06%
Institutional	35	7.02%
Industrial	26	5.18%
Highway & Interstates	4	0.79%
Secondary Roads & Alleys	108	21.34%
TOTAL	505	100%

Project Location – Disadvantaged Communities (DAC)



- **Benefits to DAC:**
  - **Improved** park facilities
    - Turf replacement
    - New trees/vegetation
  - **Improved** water quality runoff from **690 acres (91%)** from the DAC areas by reducing floatables, sediments, metals, bacteria and trash loads

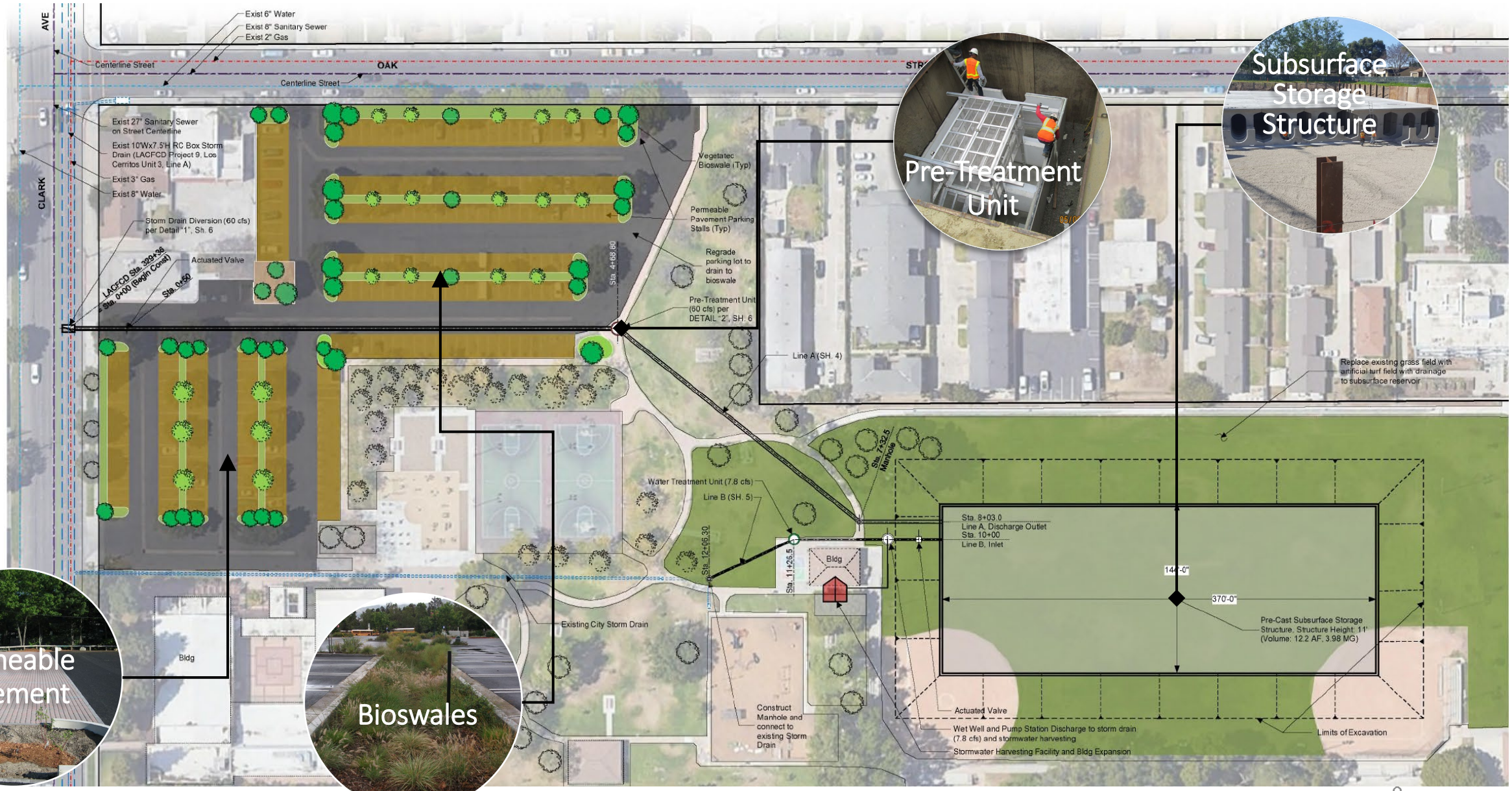
Project Background

- Site was identified in the Los Cerritos Channel (LCC) Watershed Management Program (WMP 2015, *Updated 2021*)
- **Project Selected due to:**
  - Significant drainage area size (758 acres)
  - Location to adjacent storm drain channel
  - Large open area for construction of a subsurface storage reservoir
  - Ability to operate in concert with the ***Mayfair Park SW*** Capture Project

Project Benefits

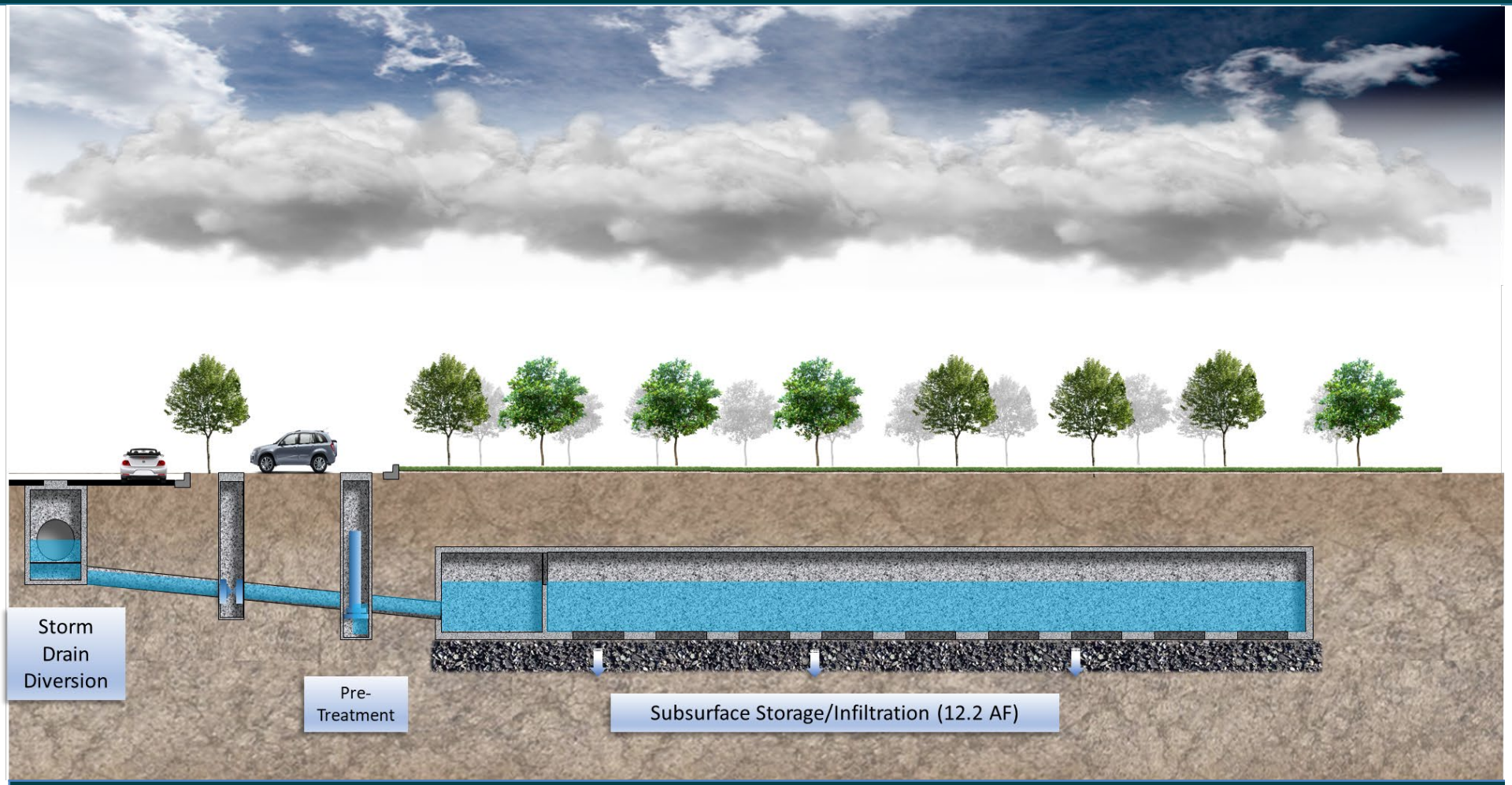
- **Water Quality** improvement in the Los Cerritos Channel by treating stormwater and urban runoff
- **Nature-Based** parking lot enhancements and bioretention with sustainable native landscaping and permeable pavement
- **Park Recreational Enhancements** with a restoration of recreational turf field and habitat area
- **Reduced Heat Island** with the incorporation of permeable pavements and # of new trees throughout the parking lot.

Project Details- Site Plan



Project Details- Landscape Plan

Project Details – Schematic Diagram



Diversion Rate	Storage Capacity	24-Hour Capacity	Primary Pollutant Reduction (Zinc)	Secondary Pollutant Reduction (Copper)
60 cfs	12.2 ac-ft (4.0 MG)	27.75 ac-ft	80.2% (188.1 lbs)	78.5% (51.4 lbs)

Project Details- Existing Conditions

Existing Conditions

- Infiltration Rate: 6.37 in/hr
- Approximate Depth to Groundwater: 35 ft BGS
- Current Use: Public Space (Park)
- Owner: City of Bellflower

*Feasibility, Stormwater Capture, Geotechnical/infiltration (5/19/20) review done

*Alternative footprint sizes and diversion rates examined

Cost & Schedule

Phase	Description	Cost	Completion Date
Design	Final Design (30/60/90/100)	$1,782,184	09/2022
Design	Community Outreach during Design	$50,000	09/2022
Design	Environmental Planning (CEQA) and Permitting	$148,515	09/2022
Design	Agency Management (Design)	$161,288	09/2022
Construction	Construction Cost	$14,851,529	09/2024
Construction	Construction Administration and Design Support	$1,485,153	09/2024
Construction	Construction Survey	$20,000	09/2024
Construction	Agency Management (Construction)	$210,000	09/2024

Annualized Costs

Maintenance Cost:	$100,000
Operation Cost:	$25,000
Monitoring Cost:	$15,000
Project Life Span:	50

Life-Cycle Costs

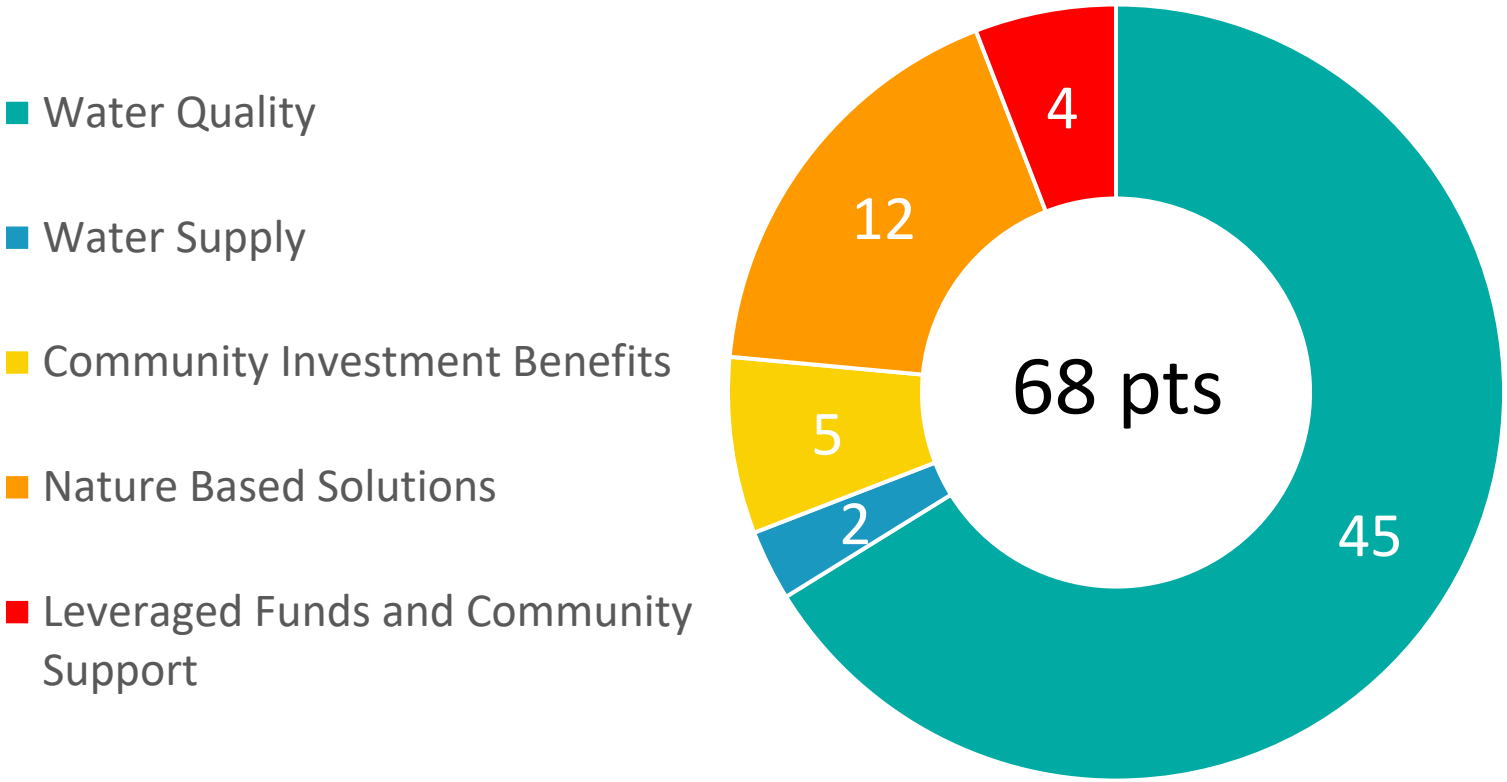
Life-Cycle Cost for Project:	$22,067,815
Annualized Cost for Project:	$919,726

Funding Request

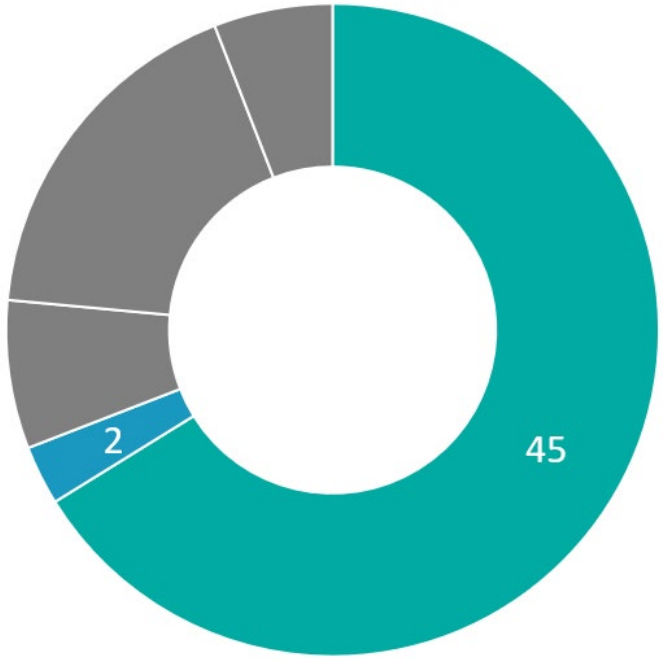
Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	$5,222,235	Construction	Advertise, Bid & Award Construction Contract, Mobilization & Construction Year 1
2	$5,222,235	Construction	Construction Year 2
3	$5,222,235	Construction	Construction Year 3, Including final field approval
TOTAL	**$15,666,700**		

- Cost Share = $900,000 (5%) – City of Bellflower Municipal Funds
  - Adopted within City budget and approved by City Council
- Future funding requests
  - $140,000 for O&M/Monitoring – Year 4 and beyond

Preliminary Score

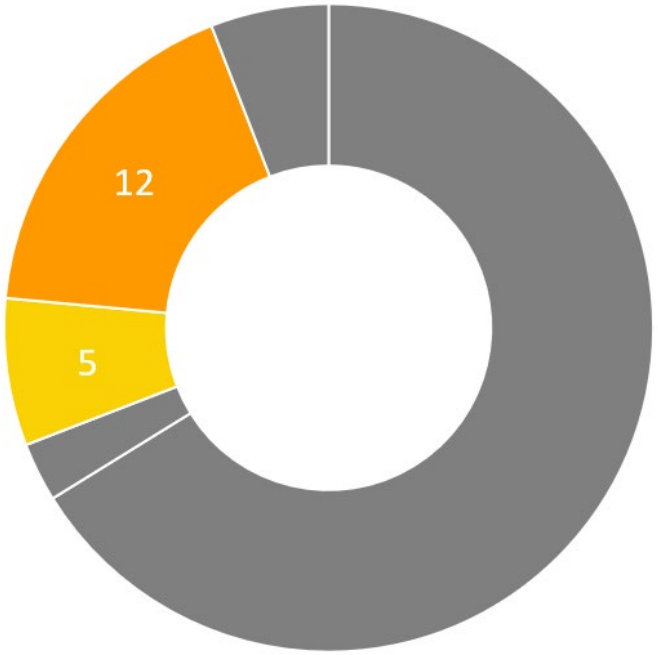


Water Quality & Water Supply Benefits



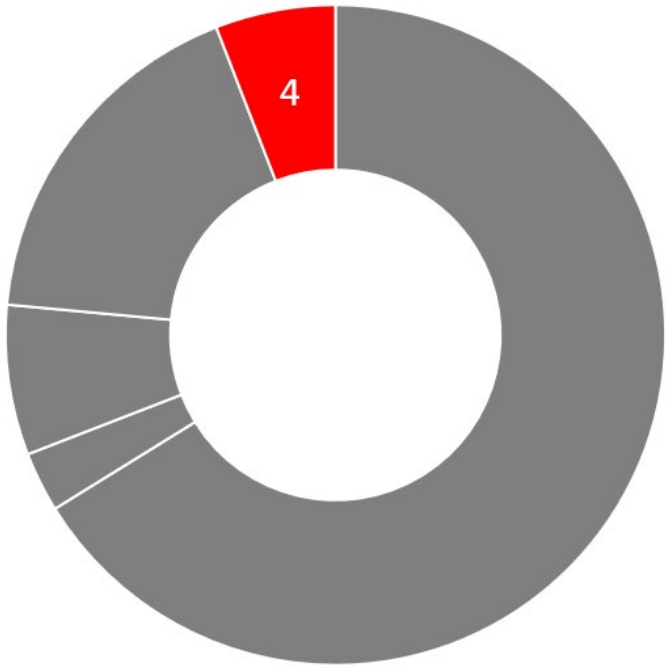
- **Primary Mechanisms**
  - Runoff/pollutant capture
  - Filtration
  - Infiltration (if possible)
  - Stormwater use and release after treatment
- **Wet** weather project
- Tributary Area: **758 acres**
- 24 Hours Capacity:**27.75 ac-ft**
- Pollutant Load Reduction
  - Primary Pollutant (Zinc) – **80.2% (188.33 lbs-annual avg)**
  - Secondary Pollutant (Copper) – **78.5% (51.39 lbs-annual avg)**
- Average Annual Capture for Water supply: **47 ac-ft**
- Water Supply Use :
  - **Onsite Irrigation use** for Simms and Mayfield Park.
  - **Irrigation savings** from turf removal
- Water Supply Cost Effectiveness: **$19,569/ ac-ft**

Community Investment Benefits and Nature Based Solutions



- Community Investment Benefits
  - Improve flood management, flood conveyance, or flood risk management
  - Enhancement and restoration of parks
  - Enhanced recreational opportunities
  - Increase the number of trees and vegetation at the site location
- Nature Based Solutions
  - Project refurbishes parking lot and parking stalls will be replaced with permeable pavement materials
  - Introduce bioswales between rows of parking stall
    - Post impervious reduction: **1.04 acres**
  - Post construction plans include additional native trees, shrubs, decomposed granite, native compacted soil, and grasses

Leveraging Funds and Community Support



- Leveraging Funds
  - **Planning**: LCC Watershed Management Group provided funding for Feasibility Study and preliminary geotechnical testing
  - **Design Phase:** City of Bellflower will evaluate some of the Municipal Share of the Safe Clean Water Program to provide their cost share of the Design costs
  - **Construction Phase:** City of Bellflower is actively pursuing a **$5.6M** grant from **Prop 68** to help with construction of the park.

- Community Support
  - City of Bellflower to continue to lead an active community outreach effort
  - Prior Outreach Conducted – (City of Bellflower)
    - Simms Park Farmers Market
    - Bellflower Summer Streetfest Event
  - Strong, local, community-Based Support
    - Greater Bellflower Little League
    - Los Cerritos Wetlands Authority
    - City of Lakewood

Questions?