

# Glen Anderson Park Regional Stormwater Capture Green Streets

Infrastructure Program

Fiscal Year 2023-2024

South Santa Monica Bay Watershed

Geraldine Trivedi, City of Redondo Beach

Curtis Fang, Geosyntec Consultants



# Project Overview

A Beach Cities Enhanced Watershed Management Program Project to support MS4 compliance, augment water supply, and add community greening.

<b>Primary Objective</b>	Provide water quality benefits through capture and infiltration
<b>Secondary Objectives</b>	Infiltrate runoff into deep ground to contribute to sea water intrusion barrier Enhance community greening and recreational opportunities
<b>Phases Requested for Funding</b>	Design
<b>Total Funding Requested</b>	\$782,000





# Project Location & Background



- **Project Location:**  
Glen Anderson Park, City of Redondo Beach
- **Watershed:**  
South Santa Monica Bay

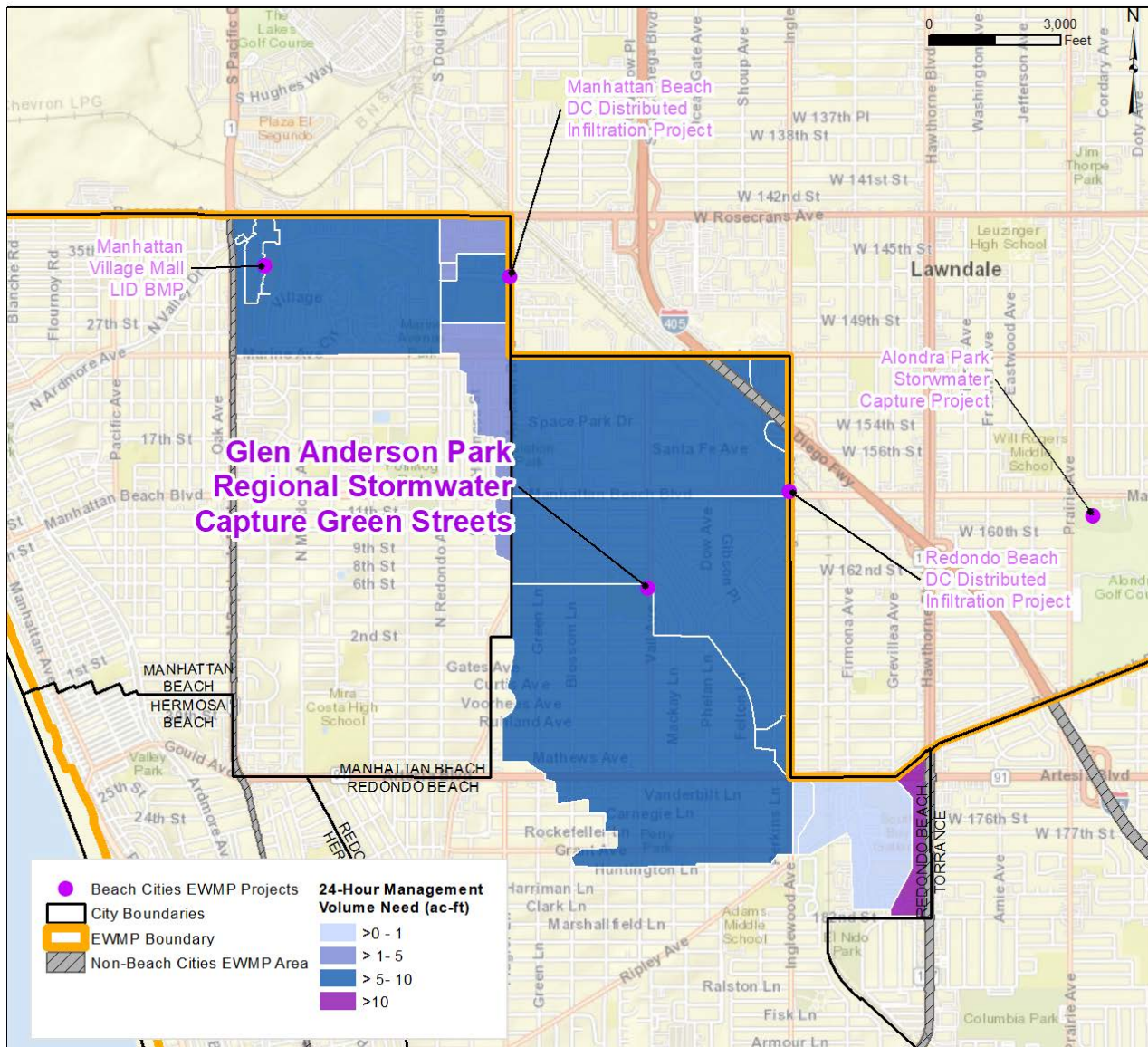




# Project Location & Background



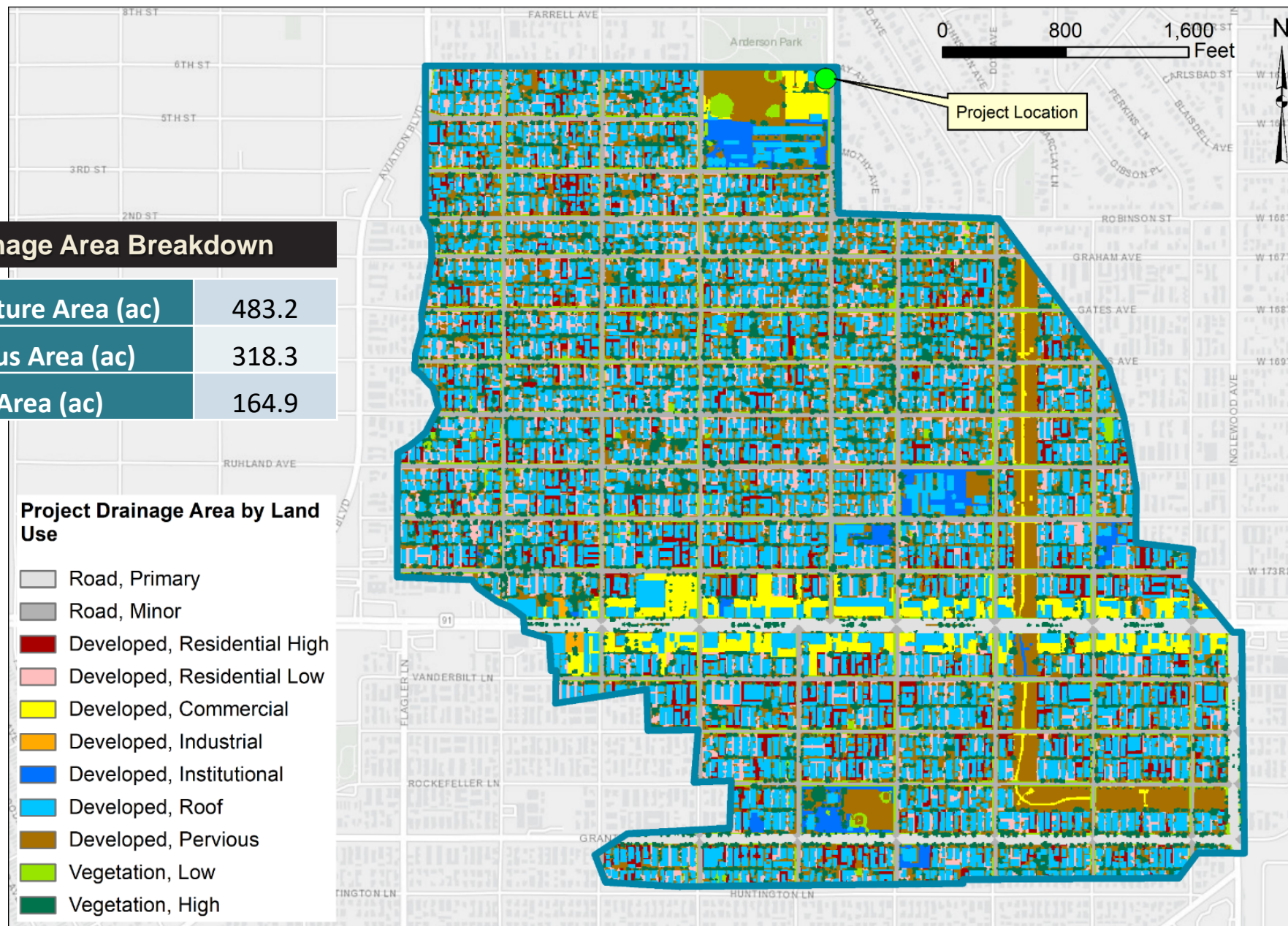
## 2021 Beach Cities EWMP Compliance Strategy at DC-MB and DC-RB



- Divert and capture stormwater upstream of the Dominguez Channel.
- Developed in coordination with the Beach Cities WMG.
- A priority regional project developed for the Beach Cities EWMP. Critical to meet the Total Load Reductions of the Dominguez Channel watershed .



# Project Location & Background





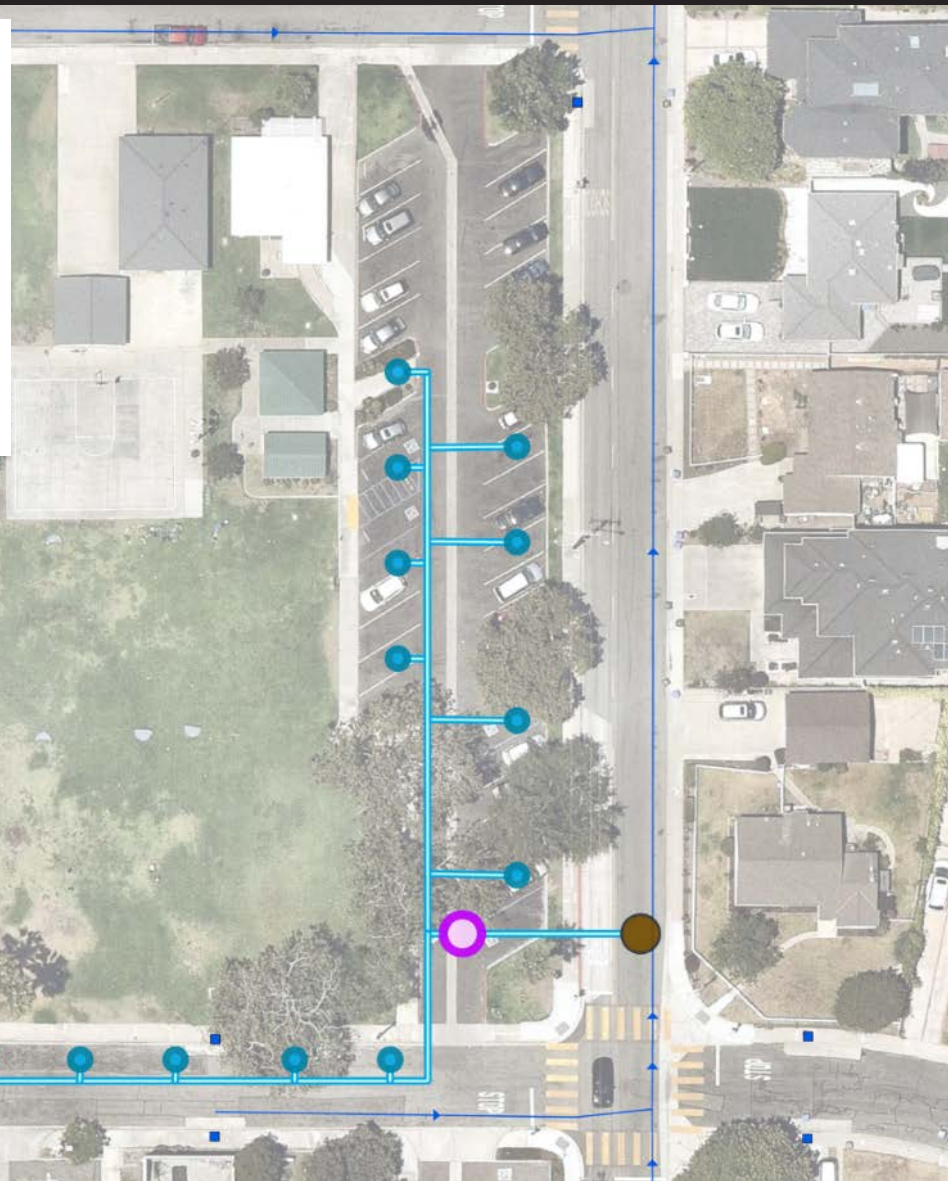
# Project Details



## Site Layout - Subsurface Regional Stormwater Management System

### Legend

- Existing Storm Drains
- Existing Catch Basins
- Diversion Structure
- Infiltration Drywell
- Pretreatment Facility
- Connection Pipes



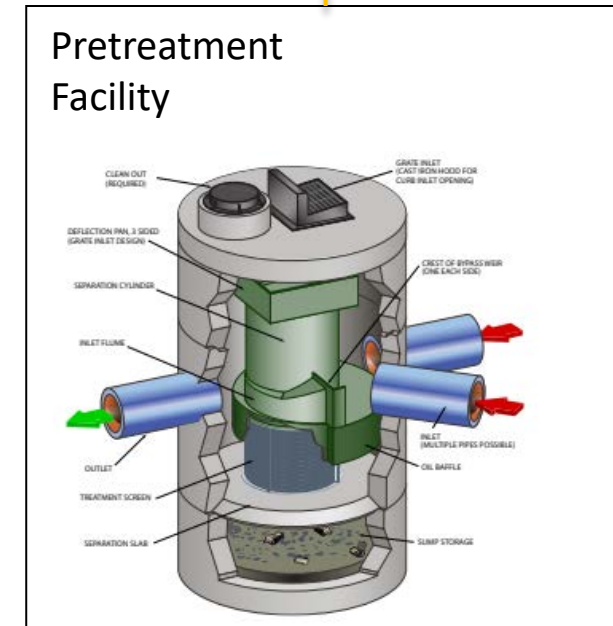
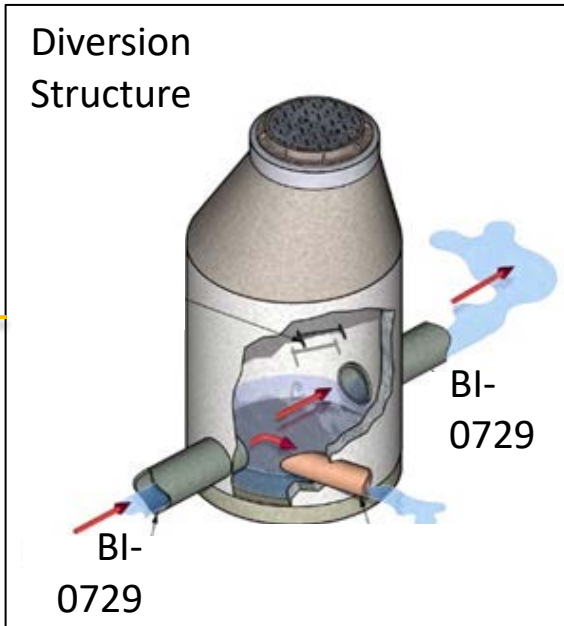
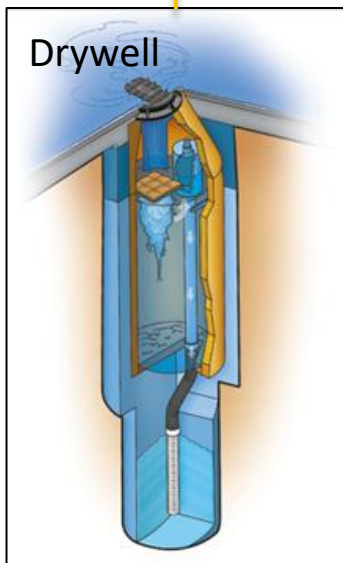
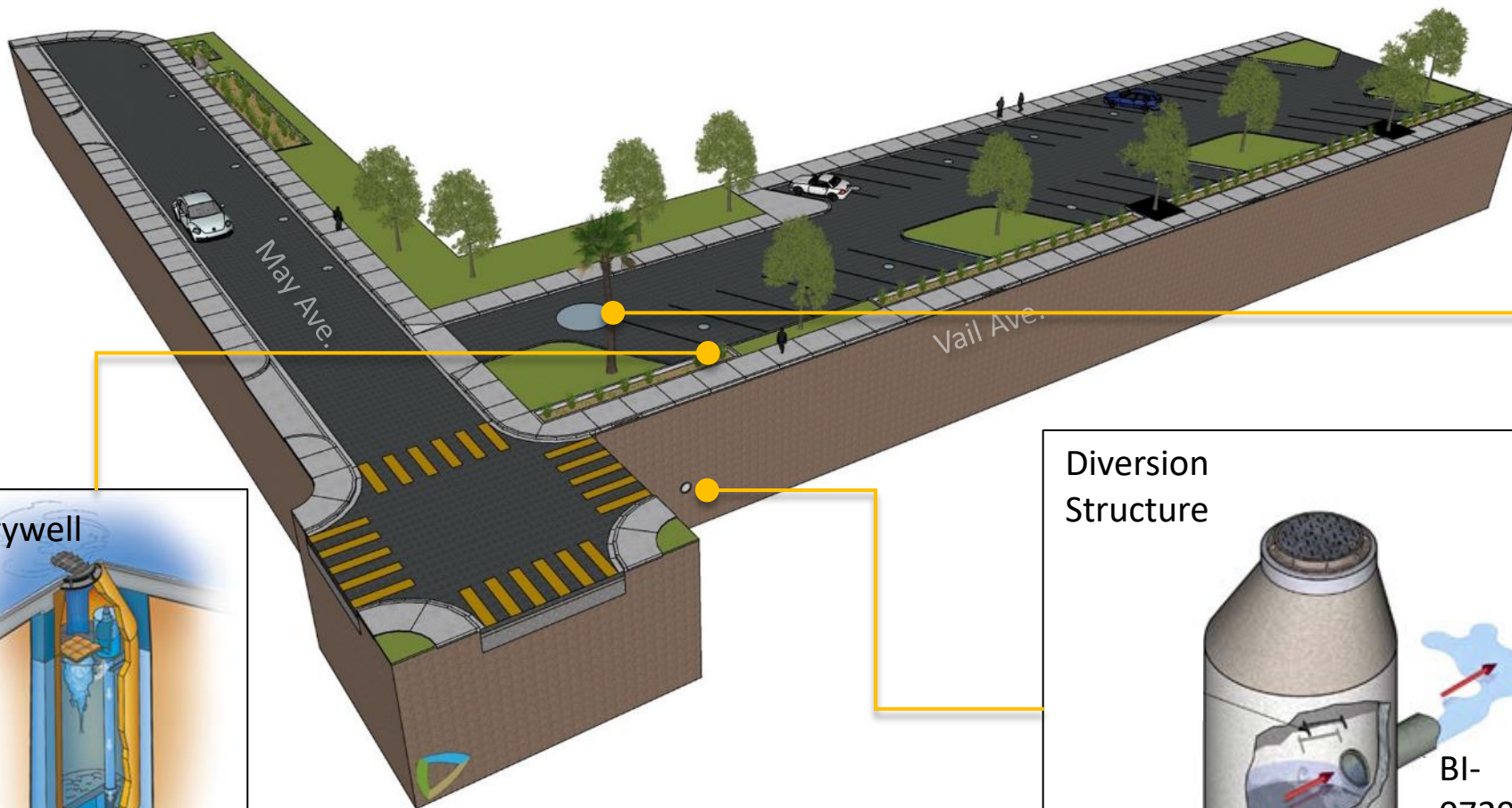
- **Diversion Structure:** new diversion structure from existing 78-inch storm drain (BI 0729) under Vail Ave.
- **Pretreatment Facility:** pretreatment system removes trash, debris, and large sediment.
- **Drywells:** pretreated stormwater is diverted through subgrade piping to 14 drywells for deep infiltration.



# Project Details



## Design Concept – Subsurface Regional Stormwater Management System





# Project Details



## Site Layout - Surface Green Infrastructure Element



- Surface runoff flows through curb inlets into **bioretention planters, tree cells, and pervious surfaces** for shallow infiltration and interception.
- Excess captured runoff from bioretention planters and pervious surfaces is collected in underdrains and conveyed to drywells.

**North Redondo Neighborhood Girl Scouts**

[Home](#) | [Girl Scout Program Information](#) | [Contribute to Girl Scouts](#) | [FAQs](#)

Extensive collaboration with local Girl Scouts troops during throughout project life cycle:

- Providing education on stormwater management
- Earning badges through helping with O&M
- ...

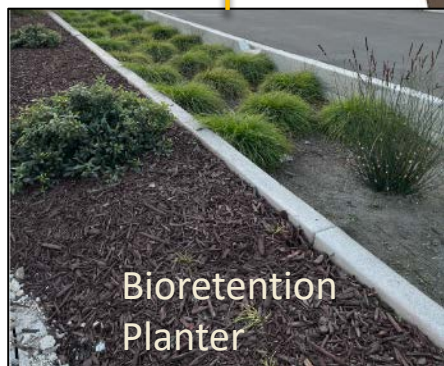
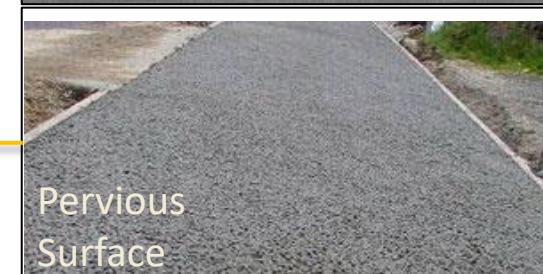
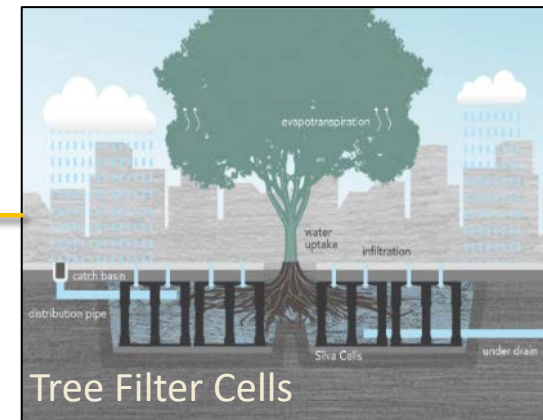
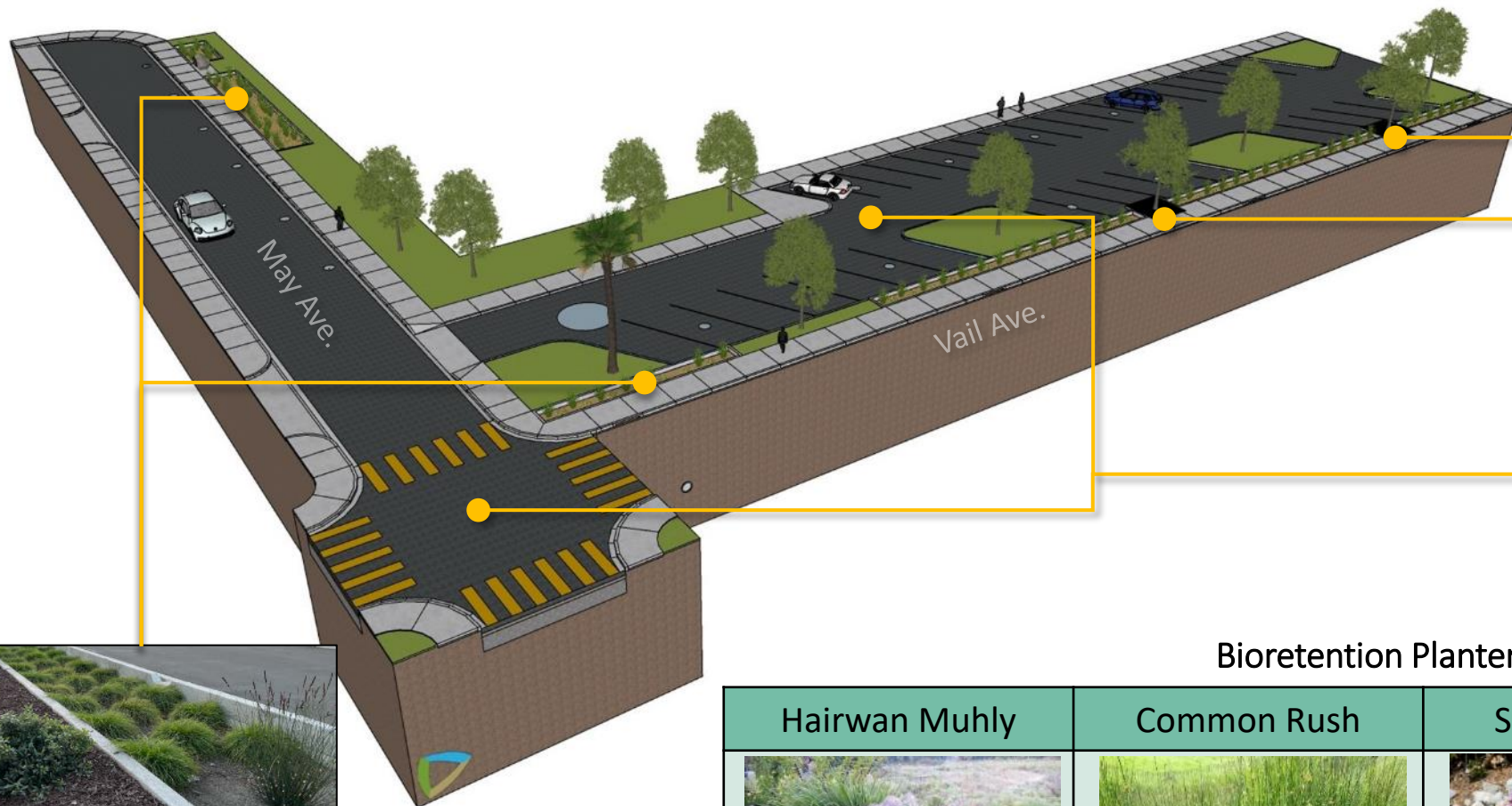




# Project Details



## Design Concept – Surface Green Infrastructure Element



### Bioretention Planter Palette

Hairwan Muhly	Common Rush	Seaside Daisy	Silver Carpet



# Cost & Schedule



Phase	Description	Cost	Completion Date
Planning	Planning includes site investigations, and CEQA and other environmental impact studies and permitting	\$156,400	07/2024
Design	Design includes, pre-project monitoring, site investigations, detail project design, surveying, utility locating and geotechnical investigation	\$625,600	07/2026
Construction & Monitoring	Construction cost includes the cost of labor, equipment, material, plus overhead and contingencies. In addition, it includes the present value of 2-years post-construction monitoring	\$5,212,700*	07/2028
<b>TOTAL</b>		<b>\$5,994,700*</b>	

Annual Cost Item	Description	Cost (\$/Year)
Annual Inspection and Maintenance	Material, labor, equipment and waste disposal associated with inspecting and repairing drywells, diversion chamber and parkway bioretention units	\$50,000*
<b>TOTAL 30-YEAR LIFECYCLE COST</b>		<b>\$7,444,700*</b>

\*Estimated based on conceptual design. To be revised during design phase. Not part of the current funding request



# Funding Request



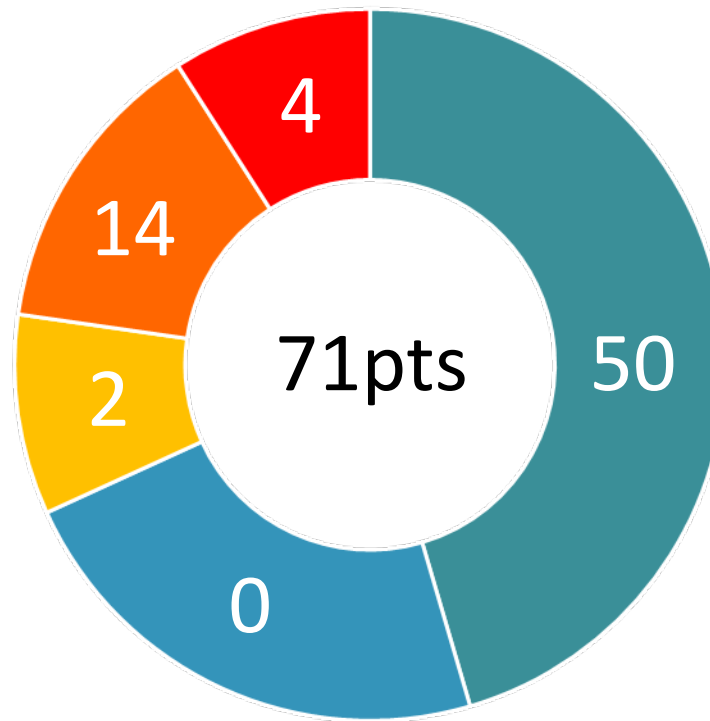
Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$156,400	Planning	Project planning will be completed during Year 1
2	\$234,600	Design	Project design and permitting will begin in Year 1
3	\$391,000	Design	Project design and permitting will be completed during Year 2
<b>TOTAL</b>	<b>\$742,000</b>		



# SCWP Final Score

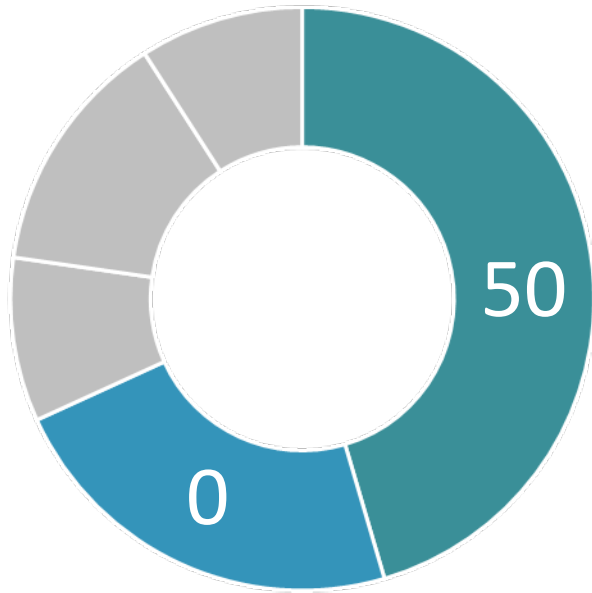


- Water Quality
- Water Supply
- Community Investment Benefits
- Nature Based Solutions
- Leveraged Funds and Community Support





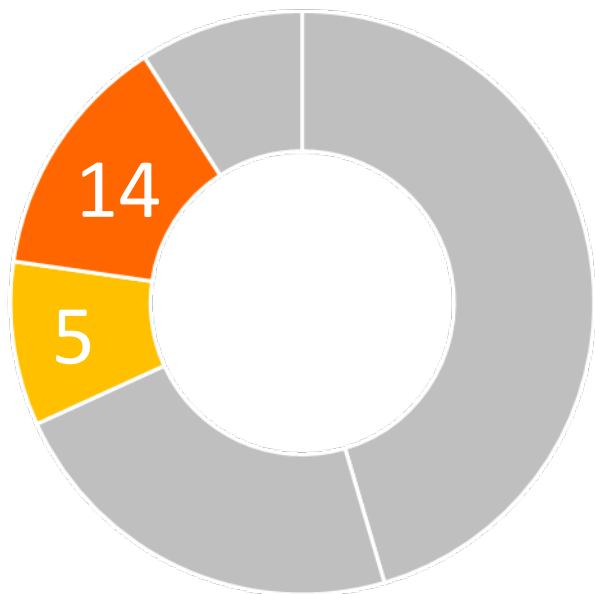
# Water Quality & Water Supply Benefits



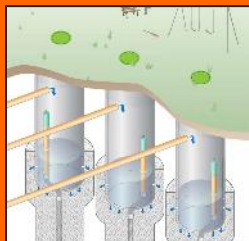
<b>Water Quality</b>	22 ac-ft 24-hour management capacity
	81% Zinc Removal
	82% Bacterial Removal
	Updated Beach Cities EWMP Project
<b>Water Supply</b>	n/a



# Community Investment Benefits and Nature Based Solutions



**Nature-based Solutions**



✓ Mimic natural process



✓ Imper. surface removal



✓ Native vegetation

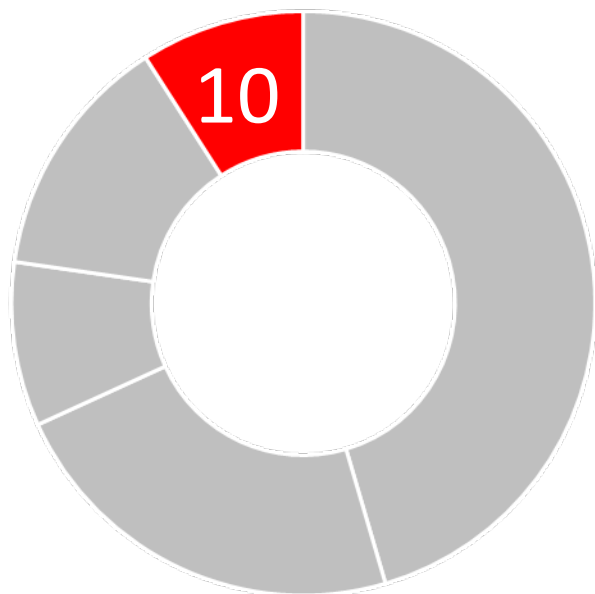
**Community Investment**



- ✓ Flood Management
- ✓ Park Enhancement
- ✓ Heat Island Effect Reduction
  - ❖ 2 new trees
  - ❖ 2100 sq-ft bioretention area
  - ❖ 0.45-ac impervious surfaces removed



# Leveraging Funds and Community Support



**Funds and Community Support**

**Community Support**

The logos for Redondo Beach Unified School District and Girl Scouts Greater Los Angeles are displayed within a light pink rectangular area.

- Letter of support from the Redondo Beach Unified School District
- Presented the project to the Redondo Beach Unified School District Board and Girl Scouts of Greater Los Angeles and received positive feedback.



# Questions?

**Geraldine Trivedi, City of Redondo Beach**

**[Geraldine.Trivedi@redondo.org](mailto:Geraldine.Trivedi@redondo.org)**



# Wilmington – Anaheim Green Infrastructure Corridor Project

Funding Program (Infrastructure Program/Technical Resources Program)

Fiscal Year 2023-2024

South Santa Monica Bay Watershed Area

Project Lead: City of Los Angeles, Department of Public Works, LA Sanitation and Environment.

Presenter: Seth Carr



# Project Overview

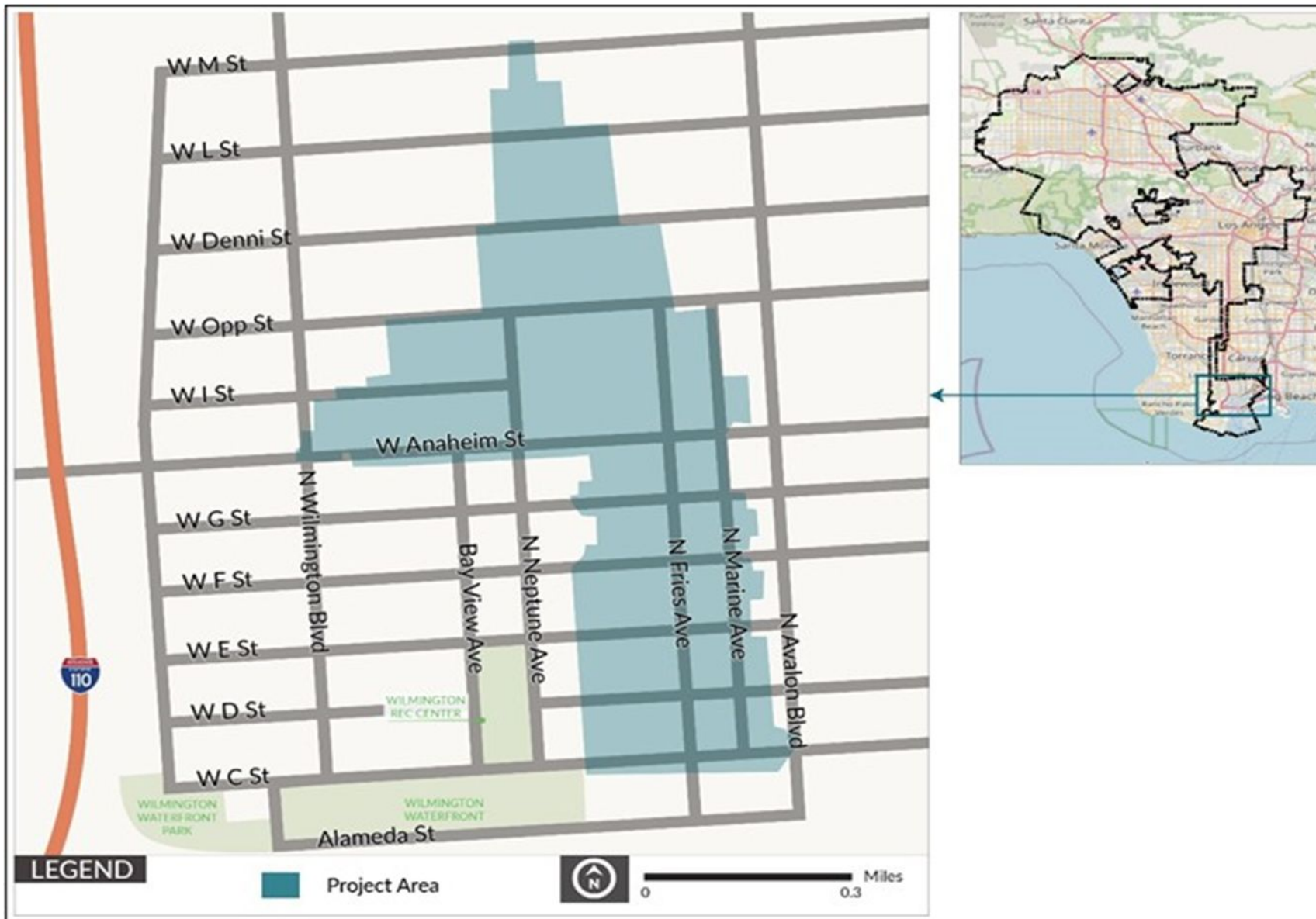
The Wilmington Anaheim Green Infrastructure Corridor Project (Project) is led by City of Los Angeles Sanitation and Environment (LASAN) to implement a regional multi-benefit stormwater project in the Dominguez Channel Watershed. The Project will improve water quality, incorporate nature based solutions and add community benefits to the Wilmington Neighborhood in the City of Los Angeles.

- **Primary Objective:** Improve Water Quality by pollutant loading reduction.
- **Secondary Objectives:** Community enhancement through green street elements.
- **This Project is requesting SCW funding for the following phases:** Planning, Design, Construction, and O&M
- **Total Funding Requested:** \$10,274,500



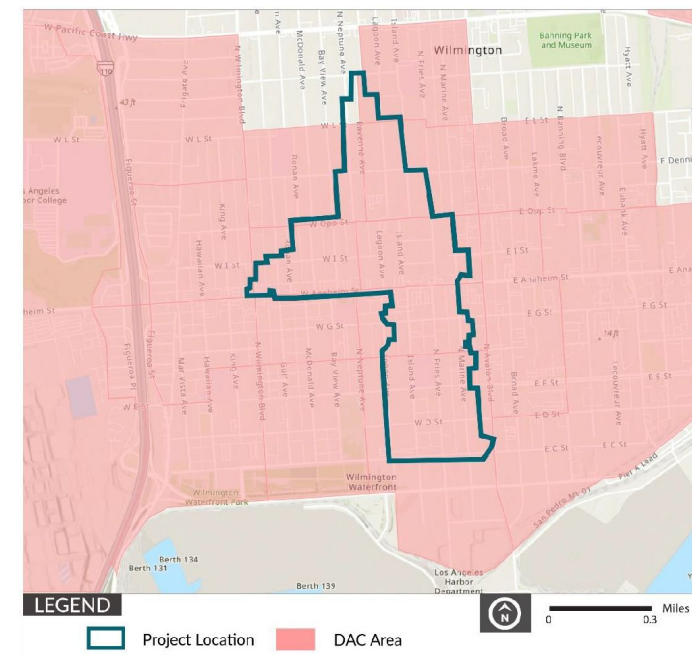


# Project Location



- City of Los Angeles, Wilmington-Harbor Area
- Disadvantaged Community
- Council District 15

**Jurisdiction Breakdown:**  
City of Los Angeles 100%





# Project Background

## The Project was selected based on environmental challenges:

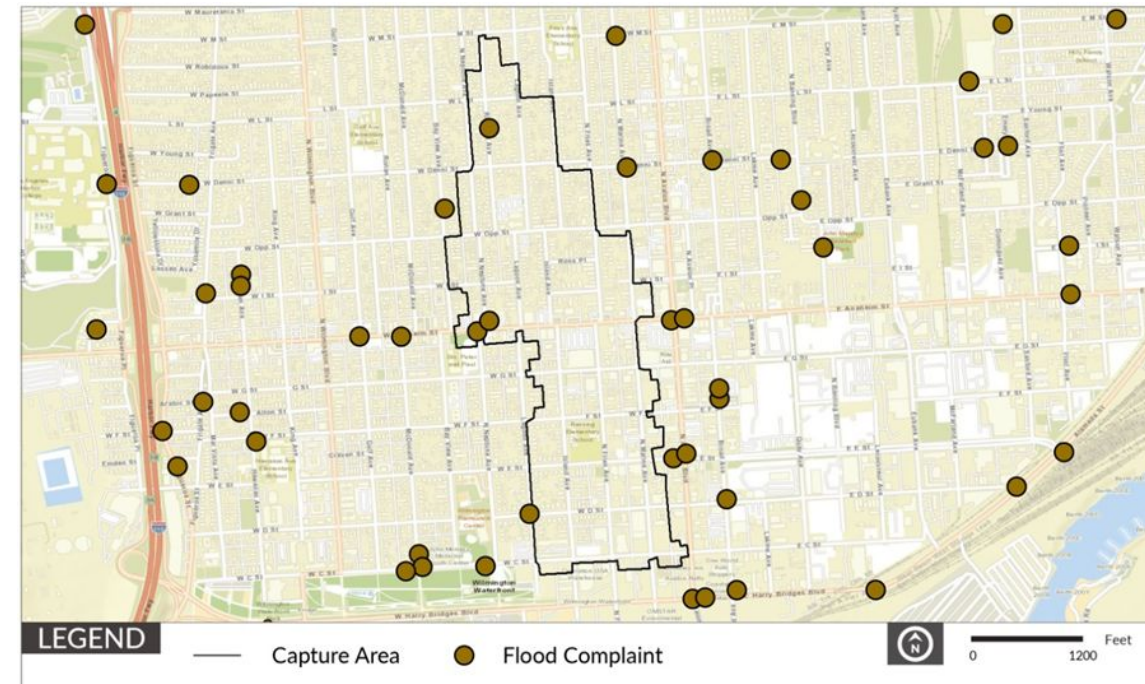
- Poor water and air quality
- Lack of green spaces
- Flooding issues
- Deteriorating public infrastructure
- Poor pedestrian safety

## The Project implements:

- The vision of *The Wilmington Urban Greening Plan (WGP)*
- LASAN feasibility report

## The Project addresses community's needs:

- increase local water supply
- minimize surface runoff
- promote water conservation
- protect groundwater from contamination





# Partners

## Implementation partners

- Bureau of Engineering

## Project supporters

- Best Start Wilmington
- Providence Little Company of Mary Medical Centers
- Strength Based Community Change
- Wilmington Chamber of Commerce
- Wilmington Teen Center
- Congresswoman Nanette Diaz Barragán
- Local community members

## Vector minimization plan

- Target potential vector issues from wet and dry systems.



July 5, 2022

Safe, Clean Water Program  
County of Los Angeles  
900 S. Fremont Avenue  
Alhambra, CA 91803

Attention: Scoring Committee  
South Santa Monica Bay Watershed Area Steering Committee

Dear Committee Members,

On behalf of South Bay Center for Counseling, I am writing to express our support for the City of Los Angeles Sanitation and Environment's (LA Sanitation) proposed Wilmington-Anaheim Green Infrastructure Corridor Project for funding consideration by the Safe, Clean Water Program's Regional Infrastructure Program.

The Wilmington-Anaheim Green Infrastructure Corridor Project presents a significant opportunity to addressing several issues that have burdened the severely disadvantaged community of Wilmington, which faces both socioeconomic and environmental challenges. The Project will alleviate surface water and flooding potential in the Central Wilmington Business District, add green spaces and infrastructure improvements, enhance water quality, and provide local greening benefits for the residents in the community.

2601 Airport Drive, Suite 220  
Torrance, CA 90505  
t: 310.257.2556  
f: 310.257.3599  
www.providence.org

Community Health  
May 24<sup>th</sup>, 2022

Laurie Waters  
Associate Deputy Director  
California Department of Transportation (Caltrans)  
California Transportation Commission  
1120 N Street, MS 52  
Sacramento, CA 95814

Dear Ms. Waters,

On behalf of Providence Little Company of Mary, I am writing to express our enthusiastic support for the "Wilmington Safe Streets Project" in Los Angeles. The infrastructure improvements are a crucial element of safety and accessibility along and across four neighborhood streets for pedestrians, bicyclists, and transit users. This project will provide much-needed pedestrian and bicycle enhancements in an area that serves a diverse community and an important neighborhood corridor.

The Wilmington Safe Streets Project will benefit residents who are disproportionately affected by environmental justice issues stemming from surrounding industrial land uses (2 of the largest US ports, 4 major oil refineries, 4 asphalt refineries, and a large oil field) as well as 3 freeways and the Alameda Corridor (intercontinental freight rail corridor). The Anaheim Street portion of the Project is listed in LA's High-Injury Network (HIN), with 7 pedestrian fatalities occurring within the last 8 years. According to the Healthy Place Index (HPI), the project area has a higher percentage of workers (16 years or older) who commute to work by transit, walking, or cycling than 62-87.2% of other California census tracts.



June 29, 2022

Safe, Clean Water Program  
South Santa Monica Bay Watershed Area Steering Committee Members  
County of Los Angeles  
900 S. Fremont Ave  
Alhambra, CA 91803

RE: Wilmington-Anaheim Green Infrastructure Corridor Project

Dear Committee Members,

I write in support of the City of Los Angeles Sanitation and Environment's (LA Sanitation) proposal for the Safe, Clean Water Program's Regional Infrastructure Program to fund the Wilmington-Anaheim Green Infrastructure Corridor Project

Wilmington is a low-income, predominantly Latino community in the Los Angeles Harbor area which is disproportionately impacted by environmental injustices and lack of safe pedestrian infrastructure. The Wilmington-Anaheim Green Infrastructure Corridor Project will improve stormwater capture capabilities to mitigate the impacts of flooding and remove pollutants resulting from the heavy industrial land uses in Wilmington. Presently, this polluted stormwater



7/7 de 2022

Programa de Agua Limpia y Segura (Safe, Clean Water Program)  
Condado de Los Angeles  
900 S. Fremont Avenue  
Alhambra, CA 91803

At: Comité de Calificación  
Comité Directivo del Área Sur de la Cuenca de la Bahía de Santa Mónica (South Santa Monica Bay Watershed Area Steering Committee)

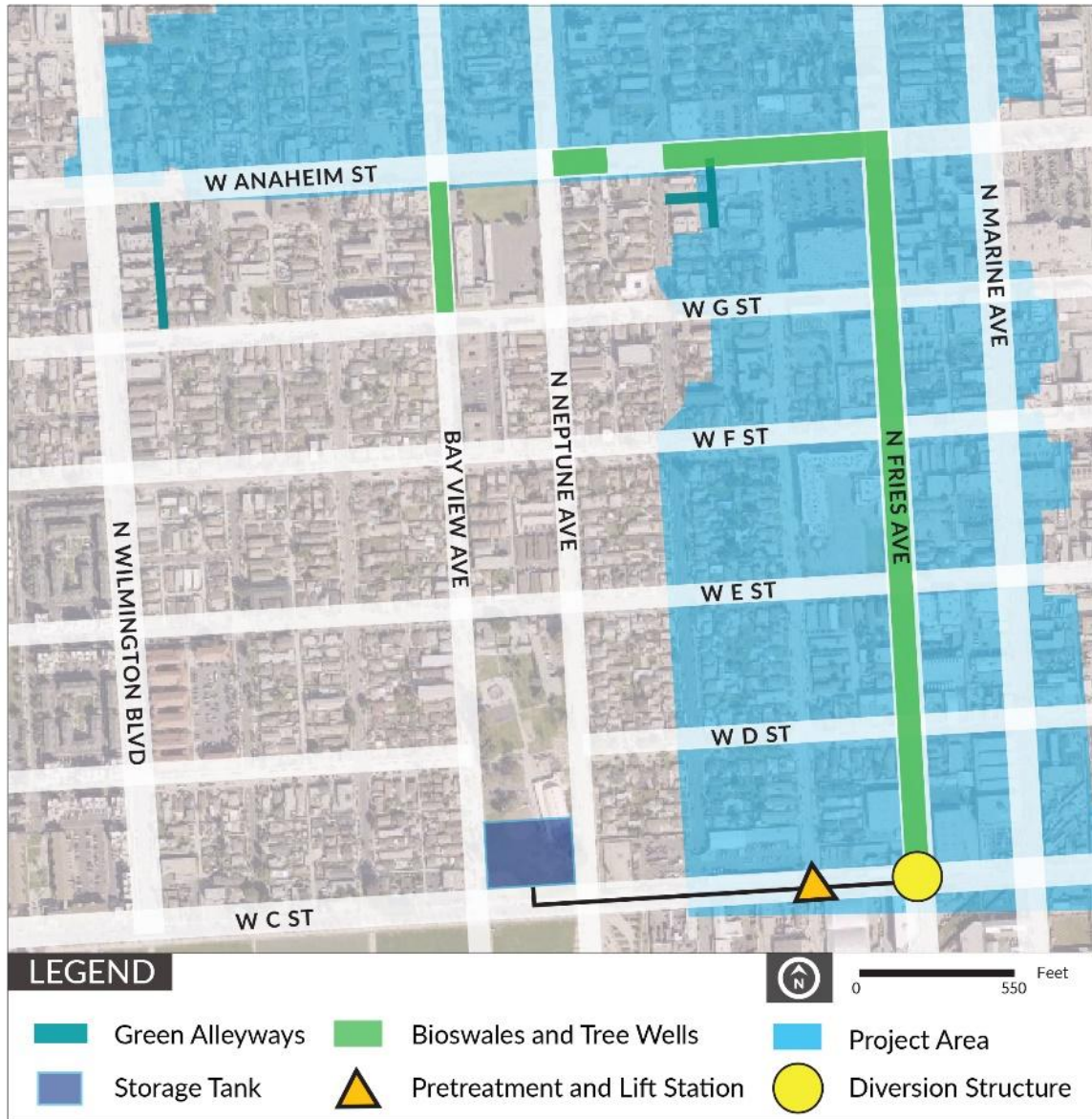
Estimados Miembros del Comité:

En nombre de Dina S. Sevilla, les escribo para expresar nuestro apoyo al Proyecto de Corredor de Infraestructura Verde de Wilmington-Anaheim propuesto por LA Sanitation and Environment (LA Sanitation) para la consideración de financiamiento mediante el Programa de Infraestructura Regional del Programa de Agua Limpia y Segura.

El Proyecto de Corredor de Infraestructura Verde de Wilmington-Anaheim presenta una gran oportunidad para abordar varios problemas que han afectado a la comunidad tan desfavorecida de Wilmington, que enfrenta desafíos tanto socioeconómicos como ambientales. El Proyecto permitirá mitigar el potencial de agua superficial e inundaciones en el Distrito Comercial Central de Wilmington, agregar espacios verdes y mejoras de infraestructura, mejorar la calidad del agua y ofrecer beneficios ecológicos locales a los residentes de la comunidad.



# Project Details - Stormwater Diversion

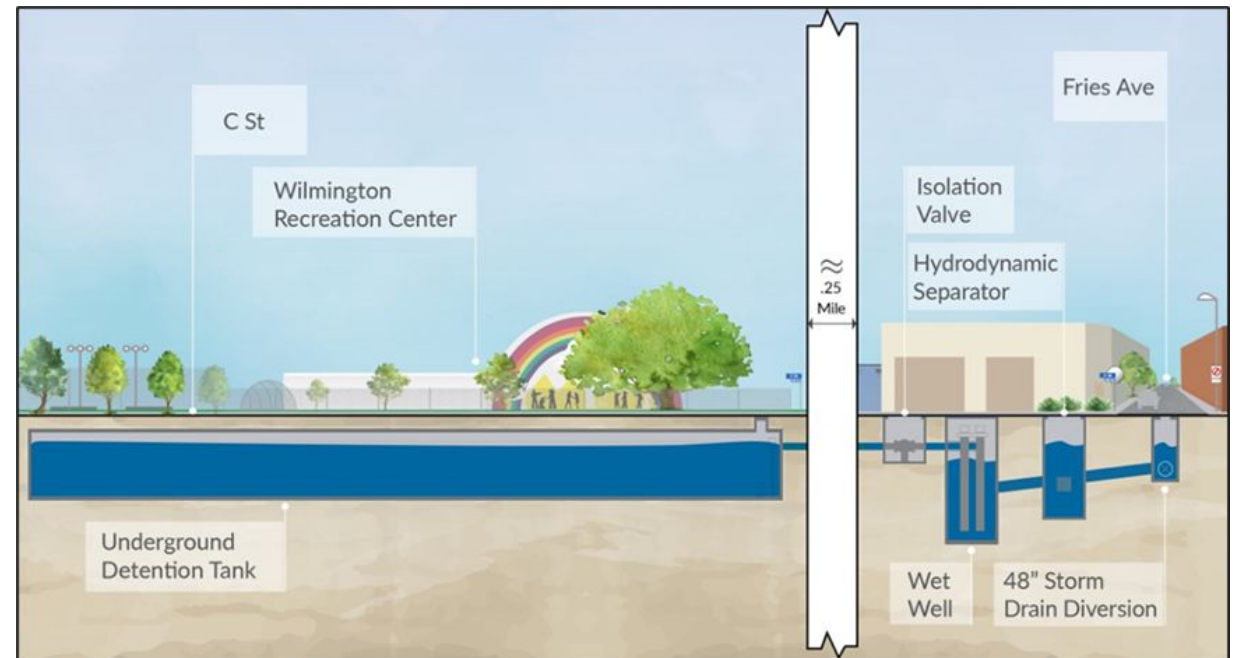


**Capture Area Size:**173 Acres

**Annual Water Supply:**160 Acre-Feet (51 MG)

## Project Elements

- Storm drain diversion
- Pretreatment unit
- Underground storage Tank
- A wet well and pump station





# Project Details: Green Street Elements

## Project Elements

- Two green alleys with permeable pavers
- 50 new street trees
- 1,000 linear feet of parkway bioswale
- Educational signage about the Safe Clean Water Program

Before and After Green Alley

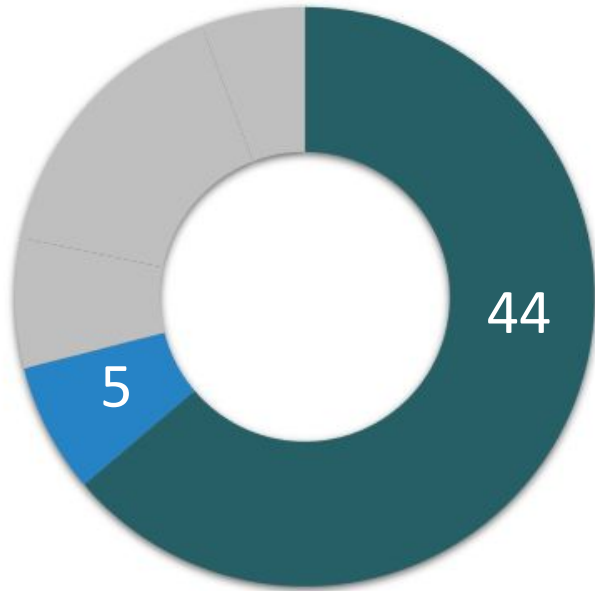


Typical Representation of Parkway Bioswale and Street Trees





# Water Quality & Water Supply Benefits



## ■ Water Quality

- Trash removal and heavy metals reduction (pollutant load reduction of 86% for Zinc and 100% for trash)
- Reduction Wet and Dry weather discharges of water with metals, bacteria, and trash to the Los Angeles/Long Beach Harbor
- Cost effectiveness = 0.8 AF per \$Million

## ■ Water Supply

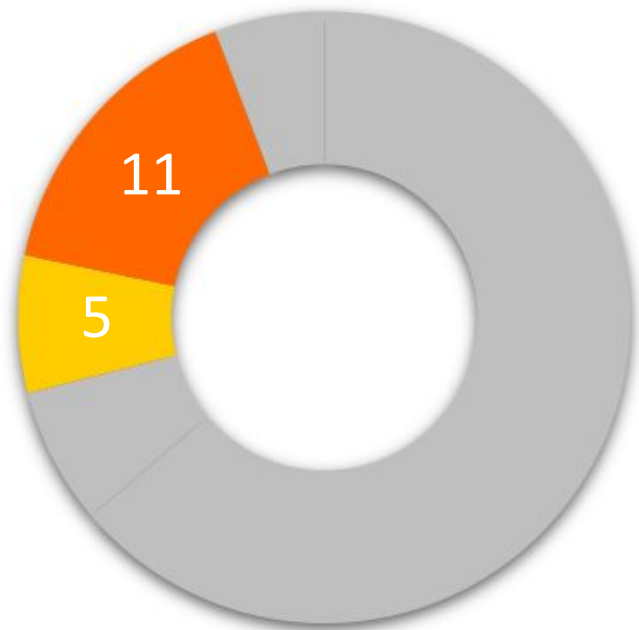
- Water Recycling (Terminal Island WRP)
- Cost effectiveness is \$5,974 per AF

The Scoring Committee has confirmed this score.





# Community Investment Benefits and Nature Based Solutions



## ■ Community Investment Benefits

- Increase local water supply
- Provide flooding control
- Community involvement through input on design elements
- Make neighborhoods more livable and walkable
- Reduce pollutant load in the watershed

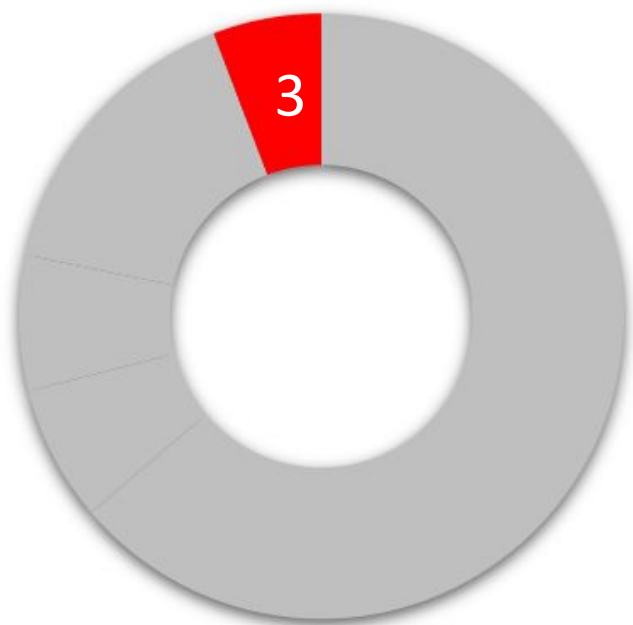
## ■ Nature Based Solutions

- Street trees
- Bioswales

The Scoring Committee has confirmed this score.



# Leveraging Funds and Community Support



## ■ Leveraging Funds

- LASAN has allocated \$2,012,000
- 16.3% funding matched

## ■ Community Support

- Community participation in Project outreach meetings
- Support from Community Based Organizations
- Submittal of letters of support

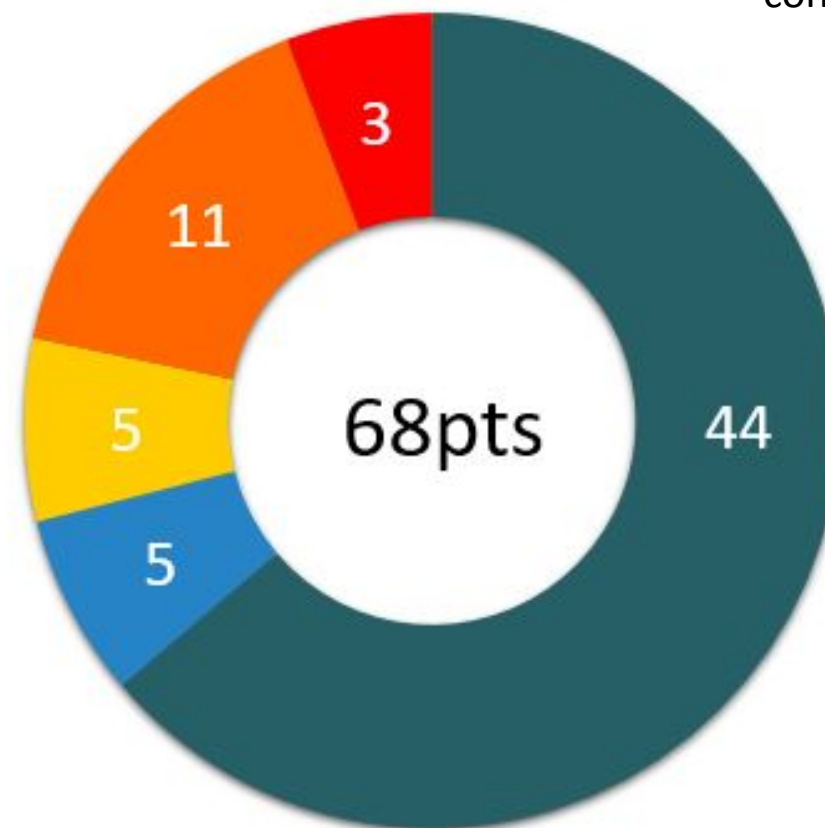
The Scoring  
Committee has  
confirmed this score.



# Final Score

The Scoring Committee has confirmed this score.

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





# Cost & Schedule

Phase	Description	Cost	Completion Date
Planning	Planning, Design Review, Conceptual reports, feasibility studies, City Construction Management, and Public Outreach	\$2,012,045	12/2023
Design	Engineering Design, CEQA, Permitting, and Consultant Services During Construction	\$2,140,722	12/2024
Construction	Construction	\$7,481,160	06/2026
Monitoring/1st yr O&M	Monitoring/ 1st year O&M	\$652,573	01/2028
<b>TOTAL</b>		<b>\$12,286,500</b>	

***\*Project Life Span of 50 years with an Annual O&M Costs of \$463,100***

<b>Life-Cycle Cost for Project</b>	<b>\$22,933,900</b>
<b>Annualized Cost for Project</b>	<b>\$955,800</b>



# Funding Request

Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$513,200	Planning and Design	Pre-design, Design, and Outreach - 2023-2024
2	\$1,362,400	Design	Design, CEQA, Permitting, Bid & Award, Outreach - 2024-2025
3	\$2,014,900	Construction	Construction and CM – 2025 - 2026
4	\$5,755,400	Construction	Construction and CM – 2026 - 2027
5	\$628,600	Monitoring and O&M	First year O&M - 2027 - 2028
<b>TOTAL</b>	<b>\$10,274,500</b>		

A man with a beard is shown in profile, pointing with both hands at a wall covered in numerous sticky notes and diagrams. The scene is dimly lit, with light coming from a window with blinds in the background. The sticky notes contain handwritten text and some diagrams, including one with red dots and arrows. The overall atmosphere is one of active problem-solving or brainstorming.

**Questions?**

**Seth Carr**





# Beach Cities Green Streets Project

Funding Program (IP/TRP)

John Dettle, P.E.

(714) 343-0968

[jdettle@torranceca.gov](mailto:jdettle@torranceca.gov)



# Project Overview

The Beach Cities Green Streets Project (Project) is to be constructed in the Cities of Torrance, Manhattan Beach, Hermosa Beach and Redondo Beach and include pervious pavement, dry wells and 200 more trees to intercept and infiltrate storm water.

- Primary objective is to comply with SMBBB TMDL and SMB Debris TMDL for the Herondo Drain watershed.
- The Project is currently under final design.
- Total Funding Requested = \$ 5,366,953







# Project Location



- Project sites are located within public Right of Ways in the Cities of Torrance, Redondo Beach, Hermosa Beach and Manhattan Beach.
- Project sites located within the Santa Monica Bay Watershed, in High Priority watersheds not addressed by Regional BMPs.



# Project Location

- Together, the Green Streets Project will capture and infiltrate storm water runoff from a combined 200-acre area.
- Torrance (Herondo Drain): Located along Kingsdale, Mansel, Grevillea and Burin Avenues; and 190<sup>th</sup> and 191st St.s, covering a drainage area of 72.6 acres.
- Hermosa Beach (Herondo Drain): Located in medium to high density residential and commercial development area and covers a drainage area of 45.9 acres. The area is bounded by Herondo Street and the City's southern border to the south and the Santa Monica Bay to the west. Green Street improvements proposed along Hermosa Ave., between 4<sup>th</sup> St. and Herondo St. and throughout watershed.
- Manhattan Beach (Herondo Drain): Located in 8.4 acres of high-density residential area. Located along the northern side of Artesia Boulevard between S. Herrin Street and S. Redondo Avenue.
- Manhattan Beach (28th Street Drain): Located in single-family residential and commercial development area and covers a drainage area of 22.4 acres. Improvements will be installed along 19th Street between Sepulveda Blvd. and Pine Ave.
- Redondo Beach (Herondo Drain): Located in high density residential and commercial areas along Belmont, Pullman Lanes, Ford, Goodman and Steinhart Aves, and Anita Street, the Project will address approximately 50.5 acres.



## Project Background

- The project locations (Project) were recommended in the Beach Cities Enhanced Watershed Management Plan.
- The Project will help the Cities of Torrance, Redondo Beach, Hermosa Beach and Manhattan Beach comply with SMBBB TMDL and SMB Debris TMDL.
- The Project has been partially funded by a State Coastal Conservancy grant and the Beach Cities.
- The Project is currently in Final Design.
- Project does not benefit any Disadvantaged Community.



# Project Details

- Beach Cities have hosted 21 Community Outreach Meetings in the Beach Cities with Preliminary and Final Design meetings completed.
- The Green Streets Project is currently in Final Design and BMPs selected per the requirements and limitations of each project site and where vetted by the Communities.
- The BMPs proposed include pervious pavement, dry wells, planters and 200 more trees to intercept, filter and infiltrate storm water.



# Cost & Schedule

Phase	Description	Cost	Completion Date
Pre-Design	Preliminary Design and Community Outreach	\$500,826	03/2022
Design	Final Design and Permitting	\$500,827	06/2023
Construction	Construction	\$6,315,300	06/2024
Construction Management	CM, Materials Testing and Inspection	\$600,000	06/2024
Monitoring	Water Quality Monitoring	\$100,000	06/2025
<b>TOTAL</b>		<b>\$8,016,953</b>	

- Annual O&M Costs estimated at \$40,000
- Project Lifespan designed for 30 years



# Funding Request

Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1		Final Design and Permitting	Design and Permitting
2	\$5,366,953	Construction	Bidding, Award and Construction
3		Monitoring	Water Quality Monitoring
4			
5			
<b>TOTAL</b>	<b>\$5,396,213</b>		

- \$2,650,000 funding provided by State Grant and Beach Cities



# Machado Lake Rehabilitation Operation and Maintenance

Infrastructure Program Presentation

Fiscal Year 2023-2024

South Santa Monica Bay Watershed

City of LA Sanitation and Environment

Presenter, Project Lead: Gordon Haines, Environmental Supervisor

Previously Awarded TRP: No



# Project Overview – Machado Lake O&M



Operation and maintenance of 40-acres of lake and 4 acres of treatment wetlands at a vital regional multi-purpose City of Los Angeles facility.

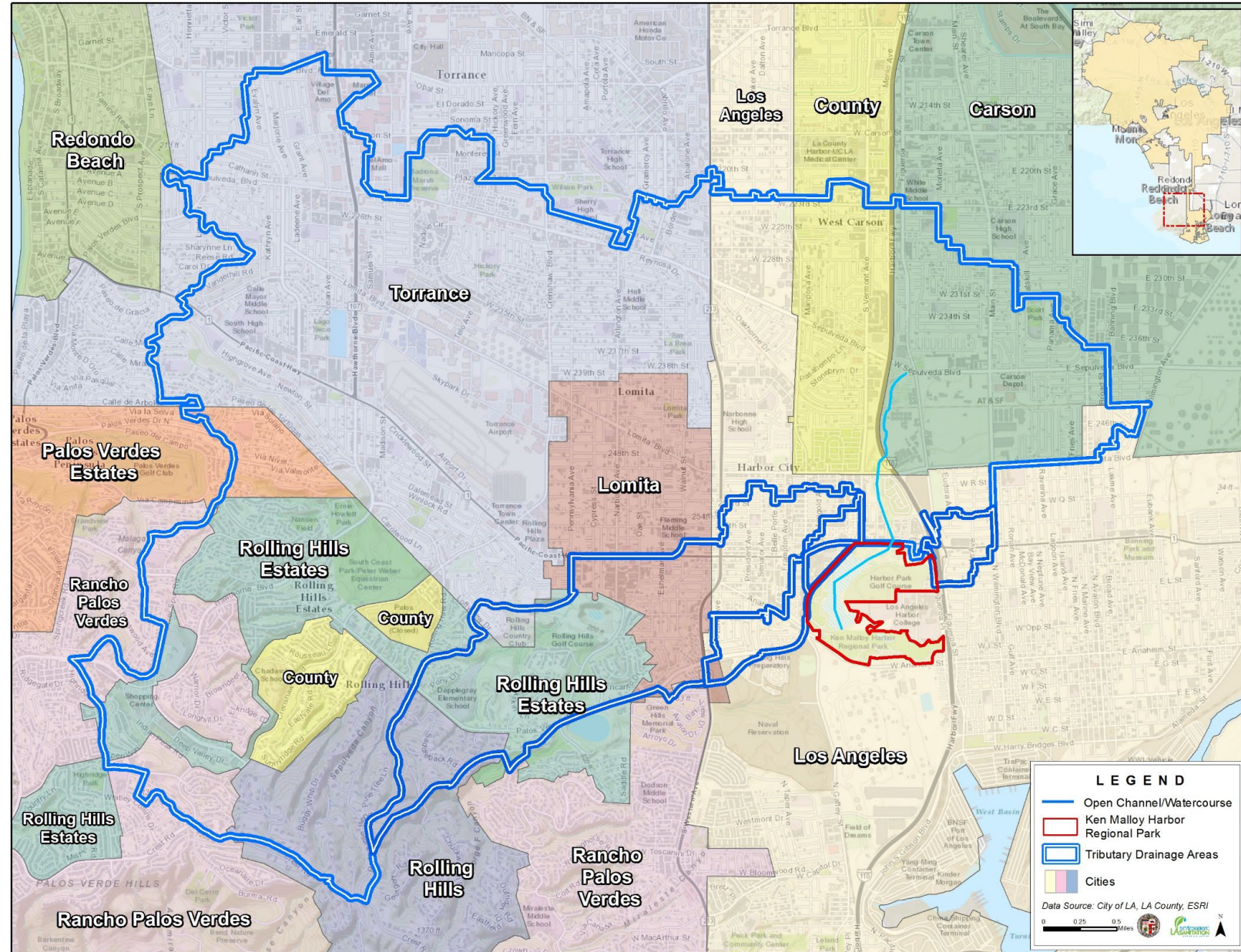
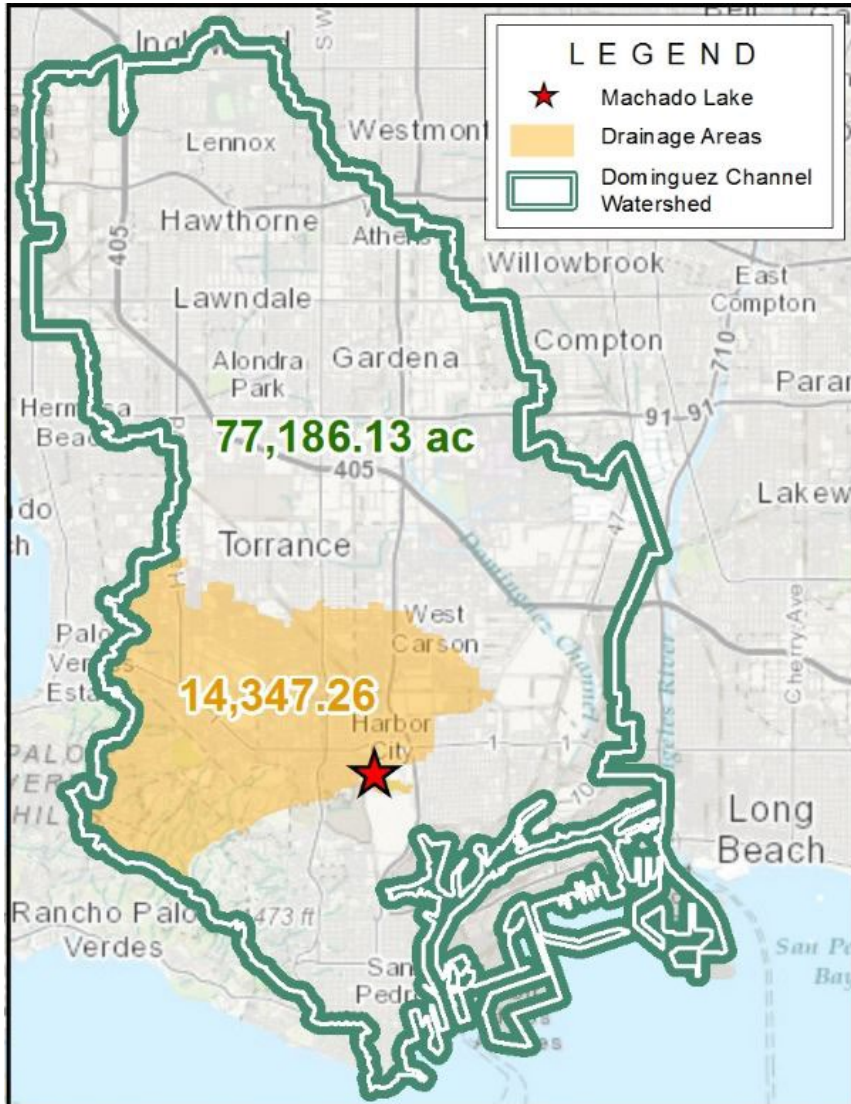
- Primary Objective: Sustain improvements of City of LA Clean Water Bond (Prop O) project: Regionally improved open space and recreational amenities, flood protection, improved water quality and reduced water supply demand
- Secondary Objectives: Community benefits; ensure recreation and habitat beneficial uses, public health protection
- Project Status: O&M
- Total Funding Requested: \$3,200,000







# Project Location – Machado Lake O&M





# CalEnviroScreen – Machado Lake O&M



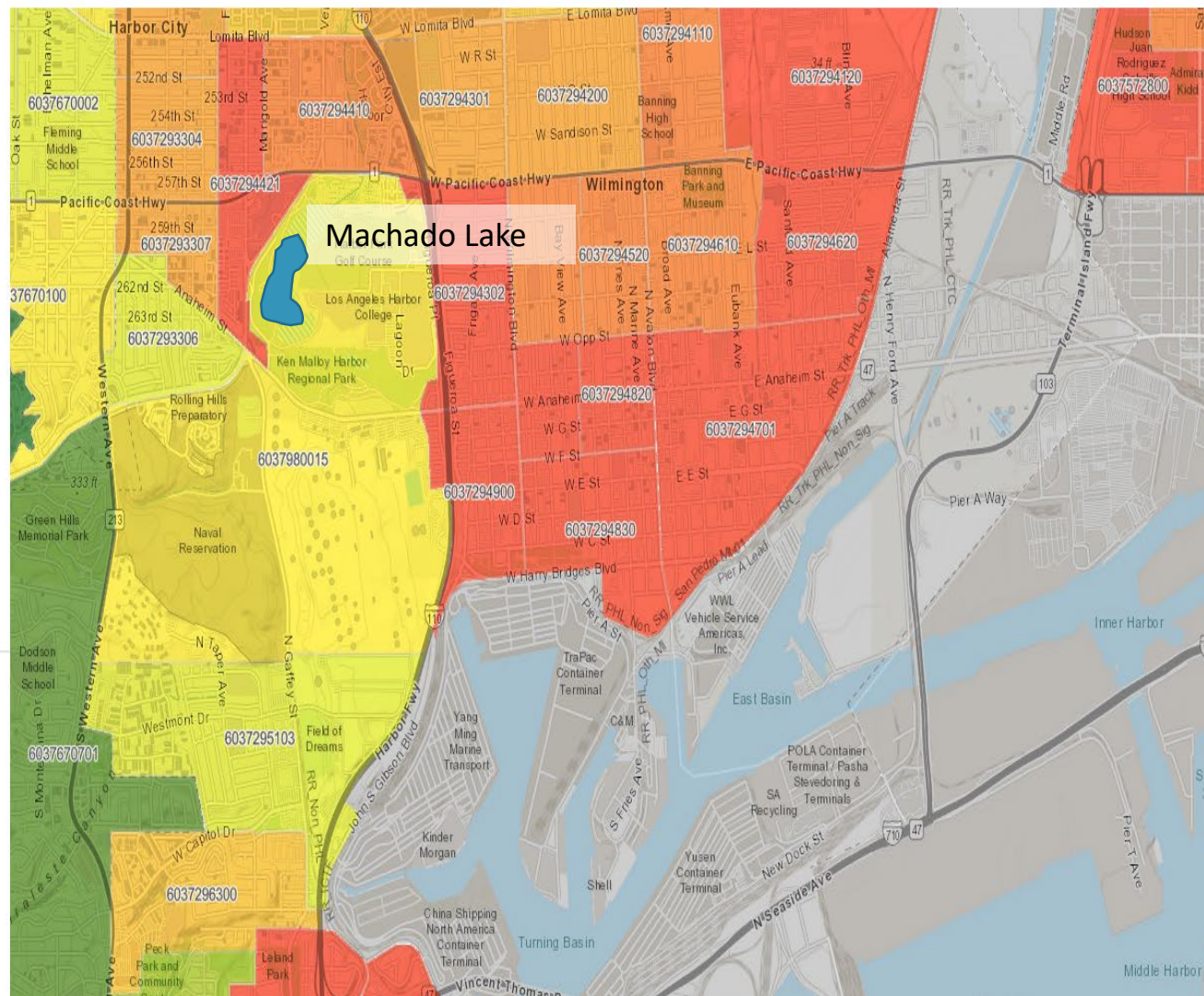
## Machado Lake area DACs

### Legend

#### CalEnviroScreen 4.0 Results

- > 90 - 100 (Highest Scores)
- > 80 - 90
- > 70 - 80
- > 60 - 70
- > 50 - 60
- > 40 - 50
- > 30 - 40
- > 20 - 30
- > 10 - 20
- 0 - 10 (Lowest Scores)

#### CalEnviroScreen 4.0 High Pollution, Low Population



- Harbor City and Wilmington communities 2 miles from Ports of LA/LB
- Over 100,000 people live within 2 mile radius of lake
- 20,000 of those are disproportionately burdened by multiple sources of pollution (90-95th percentile per CalEnviroScreen4.0).



# Project Background – Machado Lake O&M



- \$99 million Machado Lake Rehabilitation Project was constructed under the City of LA's Prop O program and completed in 2018. Located within Ken Malloy Harbor Regional Park in City of Los Angeles, Council District 15.
- Machado Lake Watershed was identified as one of the impaired watersheds in the EWMP for the Dominguez Channel Watershed Management Area Group (2016).
- The Machado Lake Ecosystem Rehabilitation Project was developed from impairments identified in the 2013 GLAC IRWMP, a Regional Water Management opportunity.
- Funding for the Machado Lake O&M project is necessary to sustain the capital improvements and environmental benefits.



# Project Background – Machado Lake O&M



- Benefits to the local area and receiving waters include:
  - Water quality improvements, healthy environment
  - Improved flood protection and water supply benefits
  - Open space, recreational park facilities, wetlands, riparian and aquatic habitat for wildlife
- DAC – 1 in 5 residents in local area disproportionately burdened
- Neighborhoods in Harbor City and Wilmington have some of the highest pollution burdens in the state



# Project partners and outreach



## 2022 Round 4 efforts:

- Gov't, NGO and corporate support:
  - Harbor City Neighborhood Council
  - Kaiser Permanente South Bay
  - Palos Verdes South Bay Audubon and LA Audubon Society
  - GAP (gangfree.org)
  - California Native Plant Society (South Coast Chapter)
  - Council District 15
- 23 Letters of support from local community members
- Attended 4 online and in-person community meetings
- 6 rounds of eblasts and social media posts
- 120 responses to online survey

2023: Continuing outreach efforts: Meetings, eblasts, social media



# Project Overview – Machado Lake O&M





# Project Photos – Machado Lake O&M



BEST OF  
SOUTH  
BAY



# Project Photos – KMHRP and Machado Lake



Community comments on the Park and Lake O&M\*:

*“It is a valuable asset to the area and should be maintained.”*

*“I enjoy the park on a regular basis. photograph birds and other wildlife”*

*“Ken Malloy Harbor Regional Park is a very important place for birds. There aren't many places like it left here in the South Bay...Please do what you can to make sure that all of the improvements are maintained!”*

\*from 2022 online Machado Lake Survey for O&M





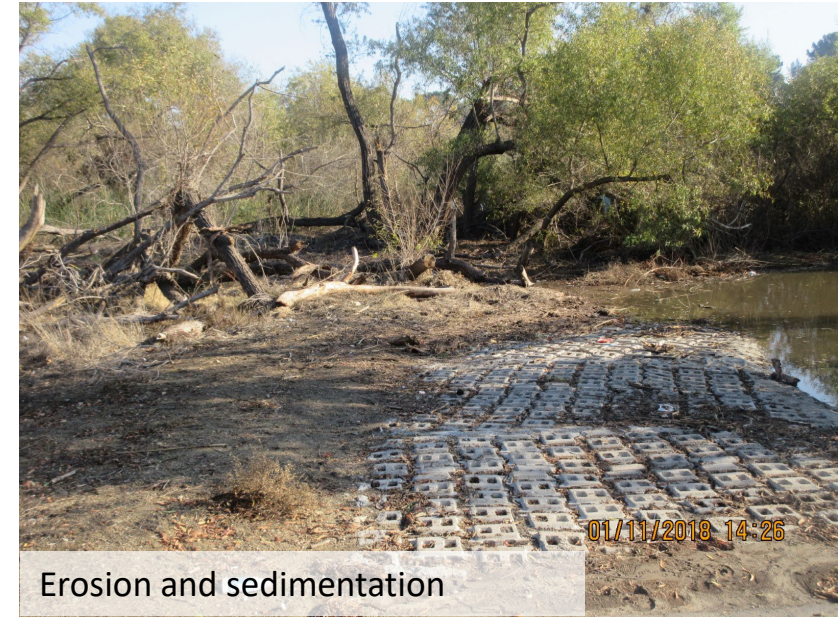
# Project Photos – Machado Lake O&M



Trash, debris and overgrown vegetation



Algae (chlorophyll), and cyanobacteria blooms



Erosion and sedimentation



Invasive species



# Project Photos – Machado Lake O&M



Structural BMPs – HDSs, outfalls, riprap



Mechanical and instrument controls: Pump stations, oxygenation, recirculation, monitoring



# Cost & Schedule – Machado Lake O&M



Phase	Description	Cost	Completion Date
Planning	Concept report, planning reports and activities	\$ 1,058,851	06/2009
Design*	Pre-design Reports, Construction drawings, Specifications, Environmental review, Permits	\$ 7,425,000	05/2012
Design*	Right of Way, Bid and Award	\$ 2,450,731	01/2014
Construction *	Construction, Construction Management, Inspection, and Project Management	\$ 77,898,728	02/2018
Construction *	HRMMP, Post-construction and related activities	\$ 2,406,183	04/2022
Total Capital Costs* funded:		\$ 91,239,493	
Life-Cycle Cost for Project	(Module-generated)	\$ 101,550,285	--
Annualized Cost for Project	(Module-generated)	\$ 6,078,170	--
<b>O&amp;M</b>	<b>Operation and Maintenance (avg/year)</b>	<b>\$640,000</b>	<b>June 2028</b>
<b>TOTAL 5-year request</b>	<b>Operation and Maintenance</b>	<b>\$3,200,000</b>	<b>June 2028</b>

\* Capital costs of project funded in whole or part by City of LA Clean Water Bond (Prop O)



# Funding Request – Machado Lake O&M



Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$ 282,706	O&M	Weed, algae removal and disposal, water quality treatment, survey and monitoring, sediment removal and disposal
2	\$ 794,880	O&M	Weed, algae removal and disposal, water quality treatment, vegetation control, survey and monitoring
3	\$ 728,280	O&M	Weed, algae removal and disposal, water quality treatment, survey and monitoring, sediment removal and disposal
4	\$ 794,880	O&M	Weed, algae removal and disposal, water quality treatment, vegetation control, survey and monitoring
5	\$ 598,625	O&M	Weed, algae removal and disposal, water quality treatment, survey and monitoring
<b>TOTAL</b>	<b>\$3,200,000</b>	<b>O&amp;M</b>	

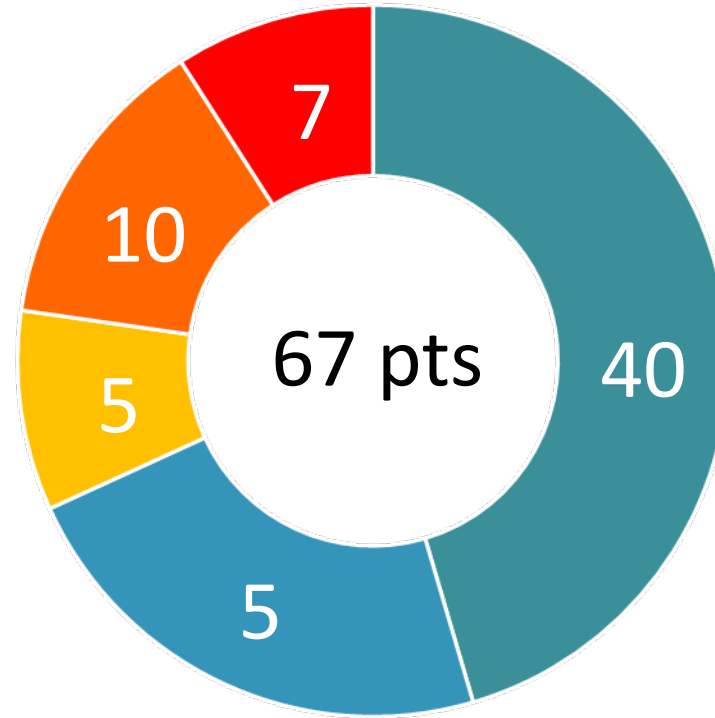
- **\$2,554,816** Leveraged funding
- **44%** of funding request
  - City of LA municipal sources, includes costs incurred after 11/7/2018 and expected funding through FY 27-28.



# Preliminary Score – Machado Lake O&M



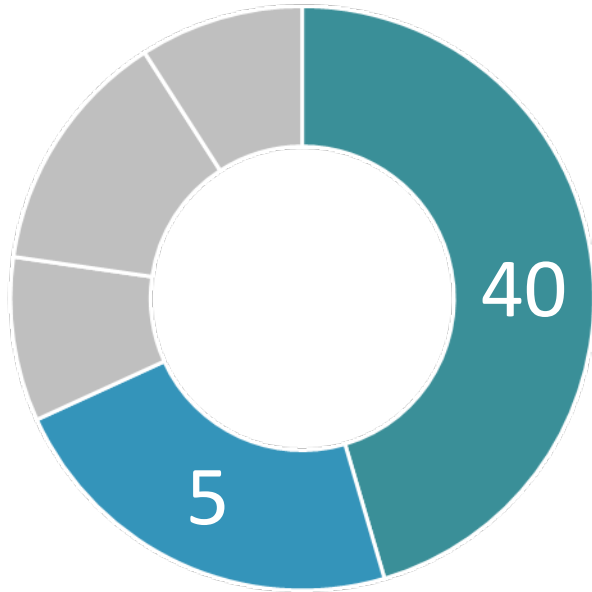
- Water Quality
- Water Supply
- Community Investment Benefits
- Nature Based Solutions
- Leveraged Funds and Community Support



The Scoring Committee confirmed this score on November 9, 2022

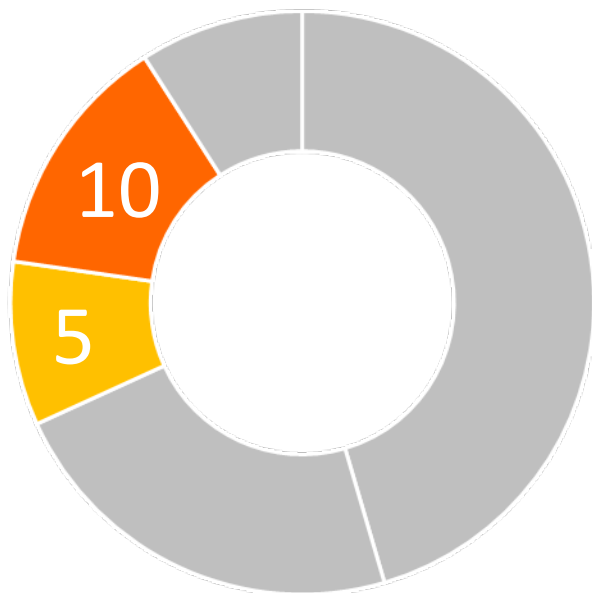


# Water Quality & Water Supply Benefits



The Scoring Committee confirmed this score on November 9, 2022

- Water Quality BMPs: 40 acre Lake improvements, Storm drain pre-treatment devices; Sediment basin, 4 acre treatment wetlands; Recirculation and oxygenation systems
- Wet and Dry weather runoff into the lake
- Tributary Area = 14,156 acres (22 sq miles)
- Capacity = 154 AF (24 hr storm)
- Pollutant Reduction: Total P (73%), Trash (98%)
- Water Supply Use : Augmentation of lake level and sustaining wetland plants
  - Annual Capture Volume: 235 AF
  - 125 AF use and loss (plant uptake, ETo, evaporation, outflow)
  - 110 AF available
- Water Supply Cost Effectiveness: \$ 25,843 per AF



The Scoring Committee confirmed this score on November 9, 2022

## ■ Community Investment Benefits

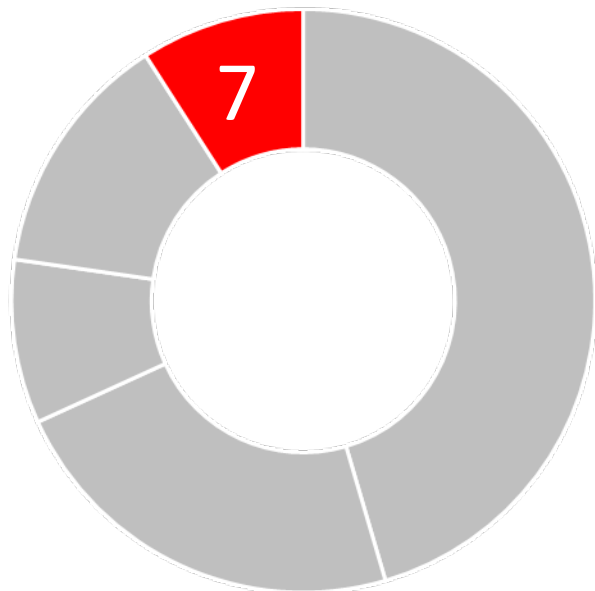
- Maintain and enhance 44 acres of lake, wetlands habitat
- Maintain improved access to Lake perimeter, wetlands
- Project will maintain and/or enhance recreation and educational opportunities to provide regional access
- Lake and wetlands reduces heat island effects
- Maintain and manage plantings and vegetation
- *Project will maintain the Flood management benefits of existing facility, reducing local flood risk*

## ■ Nature Based Solutions

- Treatment wetland plantings and habitat, lake-edge plantings, in-lake improvements (lining) reduced invasive plants, natural processes for improved water quality



# Leveraging Funds and Community Support



The Scoring Committee confirmed this score on November 9, 2022

- Leveraging Funds
  - \$2,555,000 cost share utilizing City of LA Municipal funds 11/7/2018 through FY 27-28 (received).
  - 44% funding match
- Community Support
  - 23 Letters of Support from citizens
  - 8 Letters of support from local representatives, NGOs, stakeholders and businesses
  - Utilization of local small businesses for maintenance contracted services
  - Ongoing outreach to community on O&M activities through events, surveys, presentations, social media





**Thank you.  
Questions?**

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[Bestofthesouthbay.com](http://Bestofthesouthbay.com)