

# Torrance Airport Stormwater Basin Project

Infrastructure Program

Fiscal Year 2024-2025

South Santa Monica Bay

City of Torrance

Kathleen McGowan & Merrill Taylor

Previously Awarded TRP – No

Previously Awarded Design – Yes



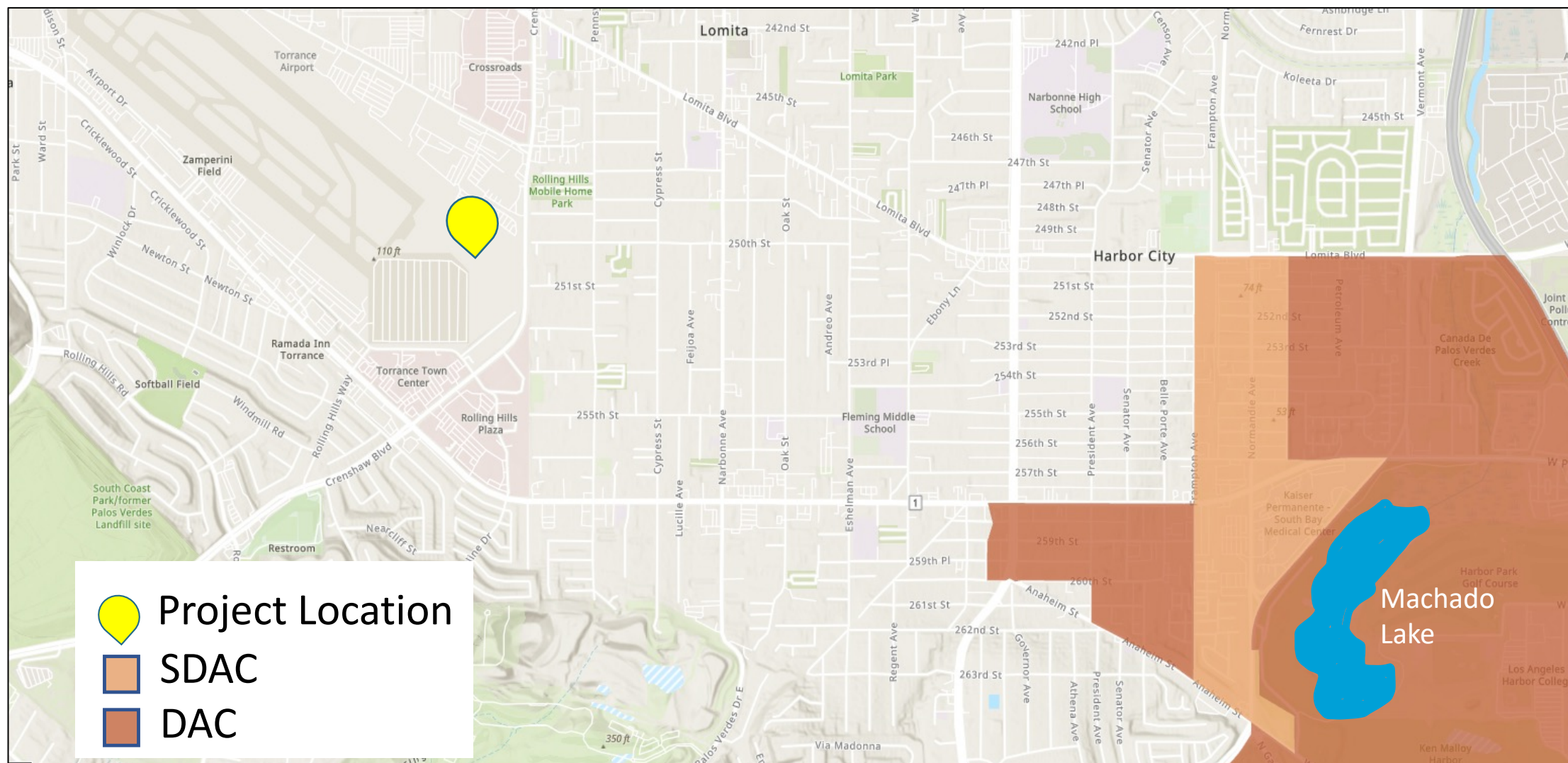


# Project Overview

*Stormwater capture and sewer diversion facility below Torrance Airport to improve water quality in Machado Lake and increase water supply.*

- **Primary Objective:** Water Quality Improvement in Machado Lake
- **Secondary Objectives:** Increase Regional Water Supply, Community Investment, Nature Based Solutions
- **Project Status:** Construction + O&M funding
- **Total Funding Requested:** \$ 19.2M

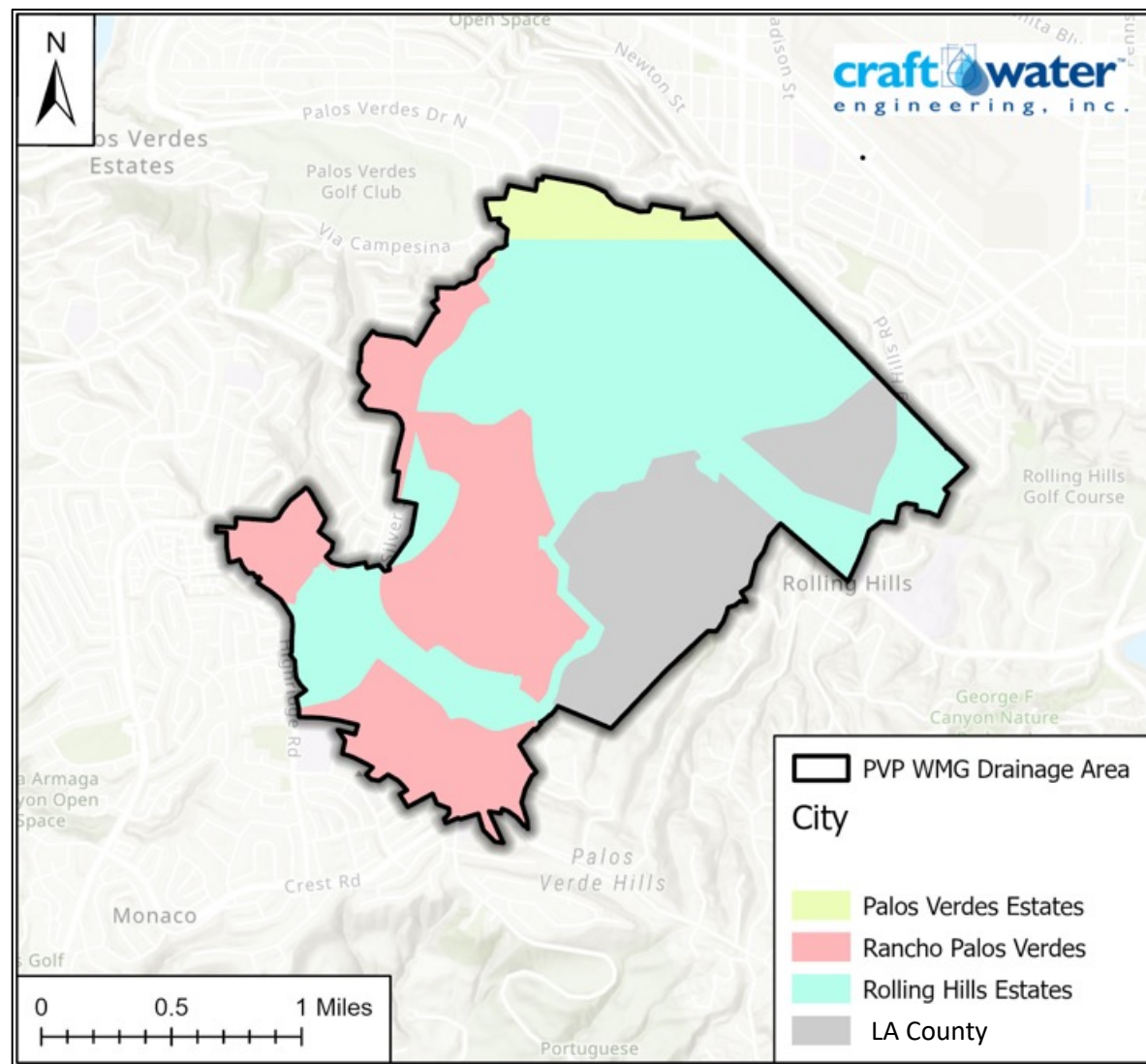
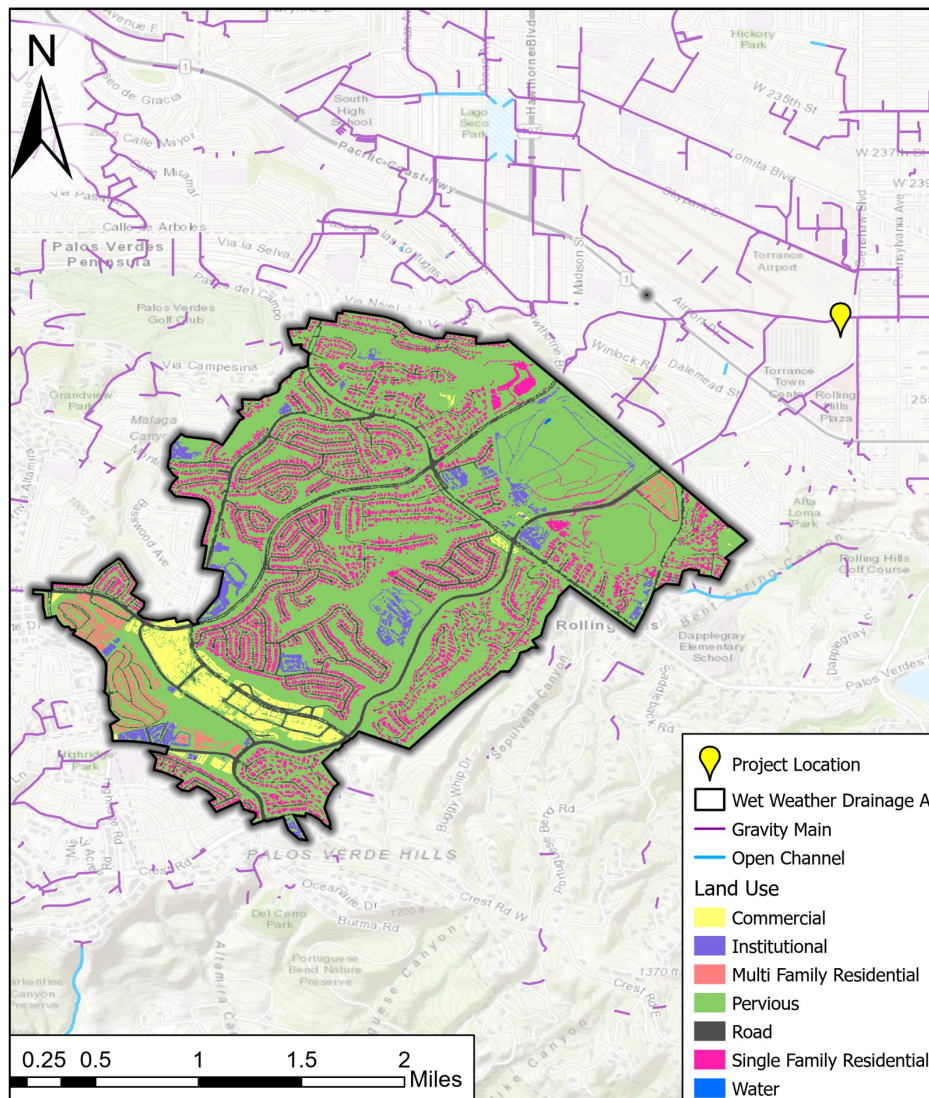








# Project Location







# Project Background

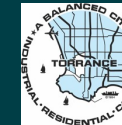


- **Why was Project Location selected?**
  - Confluence of several major storm drains
  - Sizable drainage area (3,334 acres), incl. Peninsula WMG stormwater capture area of 2,281 acres
  - City-owned property, open space, 437-acre municipal airport
- **How was Project developed?**
  - High priority project in Palos Verdes Peninsula WMP
  - Diversion to sanitary sewer due to existing groundwater plume
- **Which regional water management plan includes the proposed project?**
  - Included in PVP WMP, Torrance Machado Lake WMP and 2017 Greater LA IRWMP





# Project Background



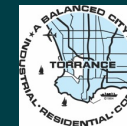
## Benefits to Municipal Partners:

- **Water Quality Improvement**
  - MS4 Permit Compliance for Machado Lake TMDLs & Wilmington Drain impairments for Peninsula WMG
  - Captures/diverts 85<sup>th</sup> percentile, 24-hr stormwater runoff
  - Eliminates (100% diversion) of dry weather flows
- **Regional Water Supply Resilience (new water)**
  - Supplies 131.8 AF/year for recycling/reuse via LACSD & MWD Pure Water Facility
- **Benefits to Torrance Community:**
  - Improves flood management
  - Reduces local heat island effect
  - Increases carbon sequestration





# Project Background



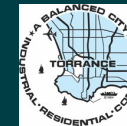
- **Benefits to Disadvantaged Community:**
  - Direct water quality benefits to DAC and SDAC communities
  - Protects \$110M City of LA Prop O investment in lake restoration







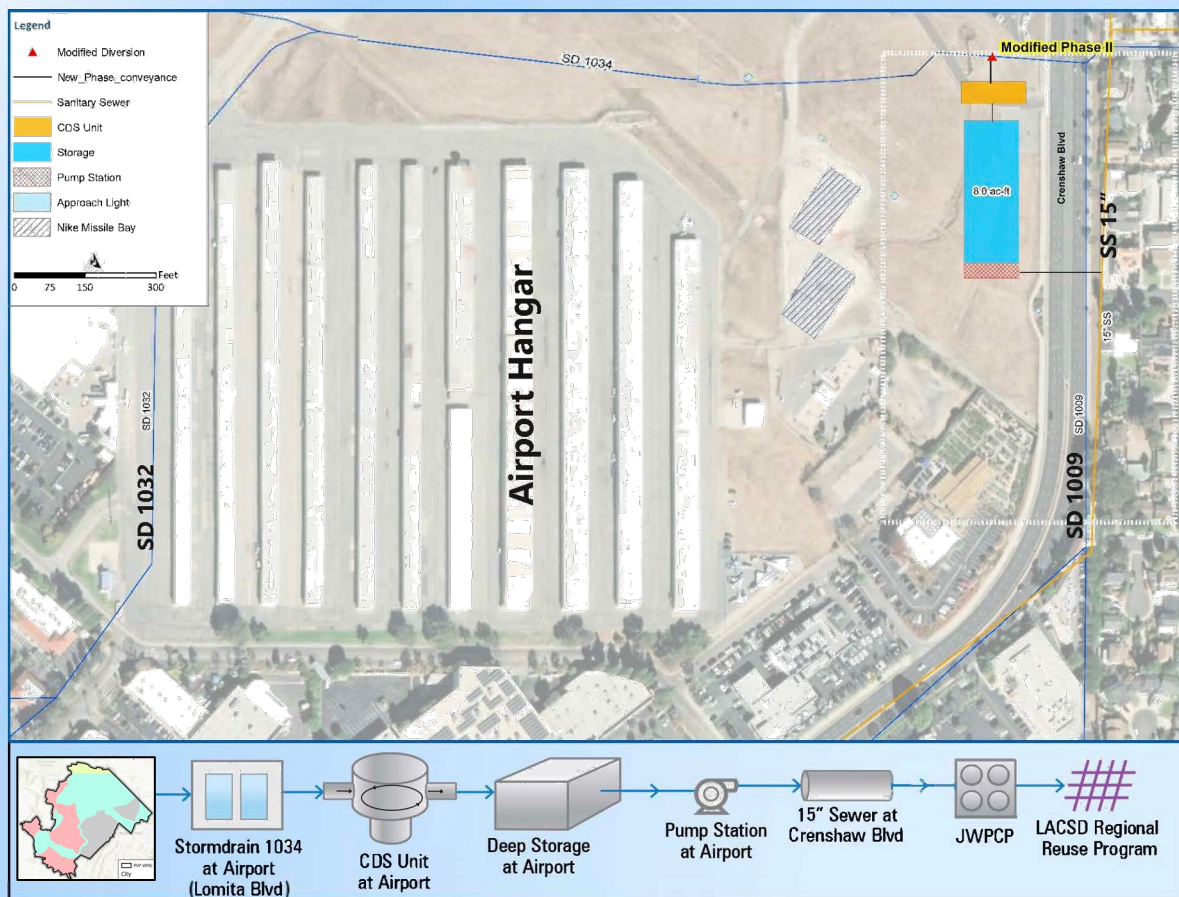
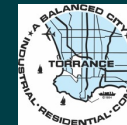
# Partners



- Who are the implementation partners already identified?
  - Cities of Torrance (lead), Rolling Hills Estates, Rancho Palos Verdes & Palos Verdes Estates, County of Los Angeles – partners
- What communities or groups have expressed support for the project?
  - Honorable Maxine Waters
  - Metropolitan Water District of Southern California
  - Sanitation Districts of Los Angeles County
  - Rollingwood Homeowner's Association
- Have you received a letter of concurrence from the municipality?
  - Yes, City of Torrance (Project developer/lead) letter
- Have you received a letter of concurrence from the Flood Control District?
  - Yes, Flood Control District Conceptual Approval for diversion structure - LACFCD Permit No. FCDP2019000624
- Have you yet engaged the appropriate vector control district about the project concept?
  - Design documents will be reviewed by the Greater LA County Vector Control District.



# Project Details



## Site Plan

- NE corner adjacent to storm drain and sewer
- Gravity diversion from storm drain
- Pre-treatment to underground storage
- Pump to sanitary sewer for treatment/recycling

## Completed studies/analysis

- Geotechnical investigation
- Hydrology study via calibrated WMMS 2.0
- Sewer capacity study by LACSD
- Utility data review
- Preliminary design report w/cost opinion

## Alternatives considered

- Storage configurations – 3 alternatives
- Diversion to sewer vs treat-and-release

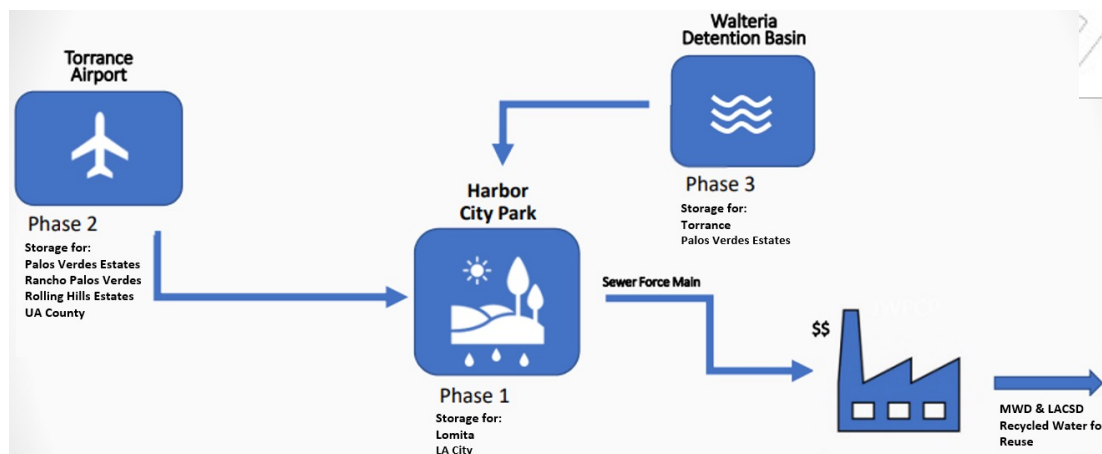
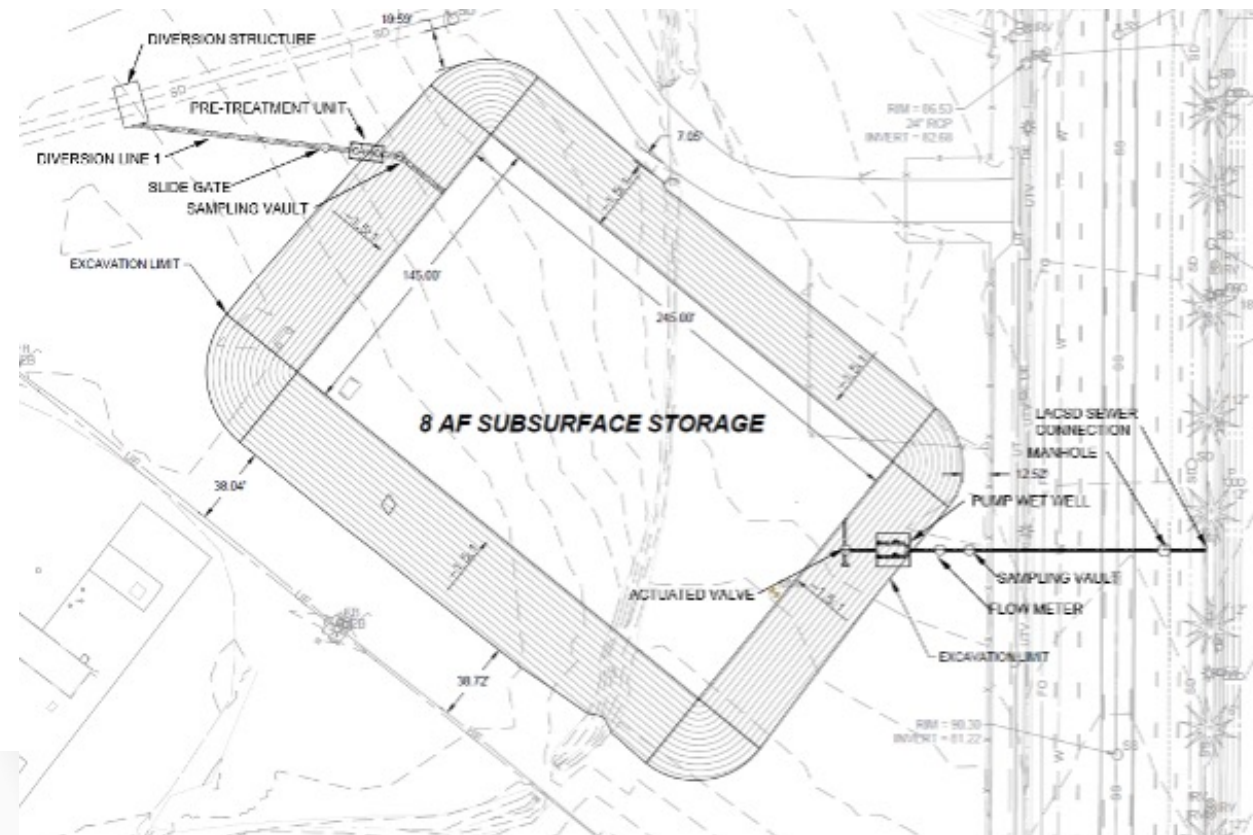




# Project Details



- **Storage Volume:** 8 acre-feet to capture 85<sup>th</sup> percentile, 24-hr storm runoff event
- **Sewer capacity study:** max discharge rate of 2.5 CFS during off-peak hours provides 72-hour draw-down
- **Future considerations:** stubbed out storm drain discharge line w/footprint for pumps allows future connectivity to planned Harbor City Park Project







# Project Details – Nature Based Solutions



Existing  
Drainage Ditch



Native vegetation and ~180 shade trees near Airport Entrance and perimeter of Airport.



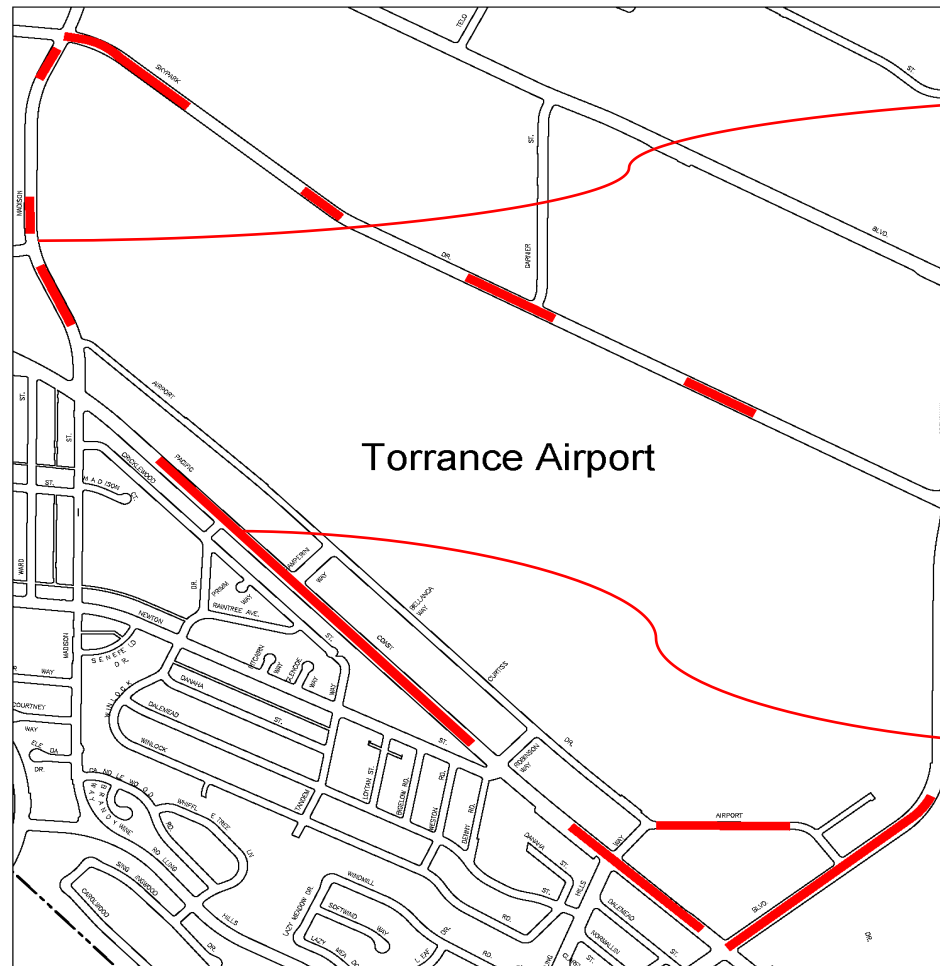
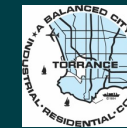
Existing drainage ditch converted to biofiltration swale with native grasses and sedges.







# Project Details – Shade Tree Locations



Torrance Airport

CITY OF TORRANCE

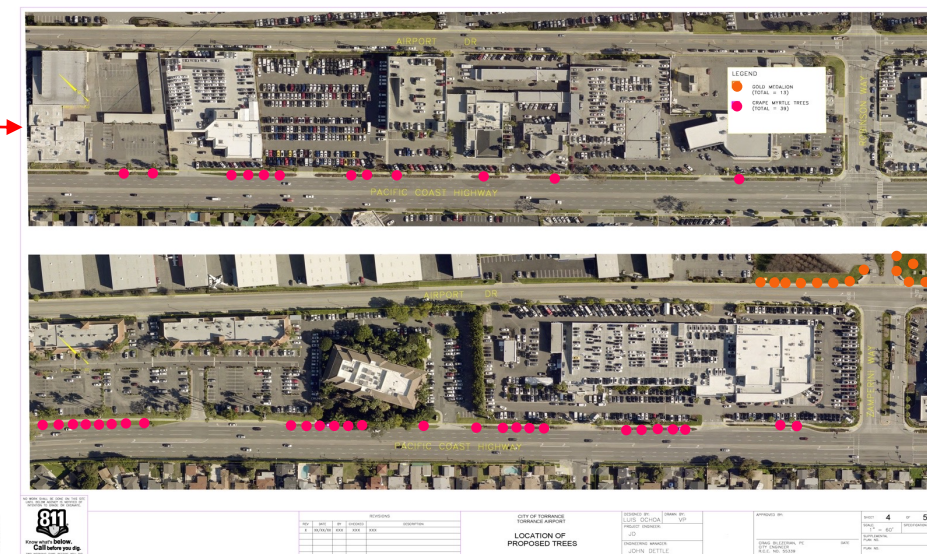
TORRANCE AIRPORT STORM WATER BASIN PROJECT, I-174  
TREE LOCATIONS

Crenshaw Blvd. - Skypark Dr. Pacific Coast Hwy - Airport Dr



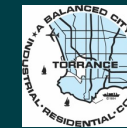
NOT TO SCALE

X:\ENG\GIS\Sidewalk Repair for Disabled Accessibility, I-135 (FY 2022-2023)\7. Location Map\CDBQ(FY22-23).dwg





# Cost & Schedule



Phase	Description	Cost	Completion Date
Design*	Final design, outreach & engagement, environmental documents.	\$ 906,000	12/2023
Construction	Contracting & Mobilization, Construction, Operational Testing & As-Built Drawings.	\$ 18,422,402	6/2027
<b>TOTAL</b>		<b>\$ 19,328,402</b>	

\* Previous design phase award from SCW Regional Program

Annual Maintenance: \$ 156,000

Annual Operation: \$ 50,000

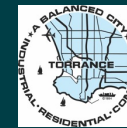
Annual Monitoring: \$ 50,000

Total annual O&M: \$ 256,000





# Funding Request



Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$ 9,211,201.00	Construction	Construction Contract, Year 1
2	\$ 9,211,201.00	Construction	Construction Contract, Year 2
3	\$ 256,000.00	O&M	O&M Cost for System, Year 1
4	\$ 256,000.00	O&M	O&M Cost for System, Year 2
5	\$ 256,000.00	O&M	O&M Cost for System, Year 3
<b>TOTAL</b>	<b>\$19,190,402</b>		

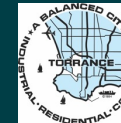
Module Generated Life-Cycle Cost: \$ 25,841,513

Module Generated Annualized Life-Cycle Cost: \$ 1,077,003

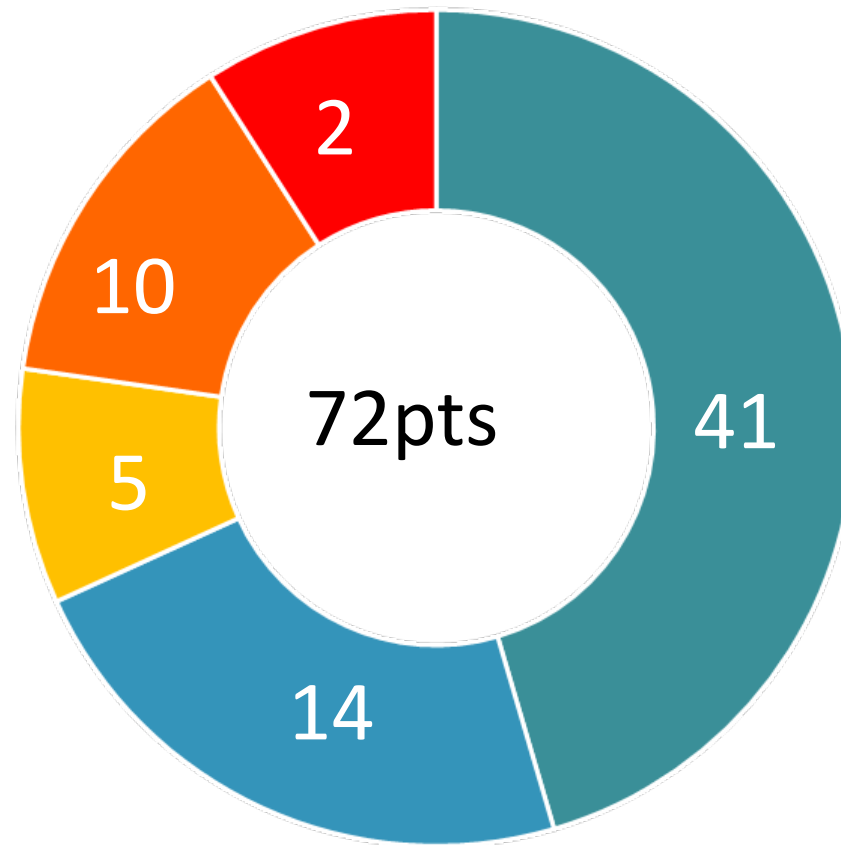
(Life-cycle costs include O&M)



# Score confirmed by the Scoring Committee



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

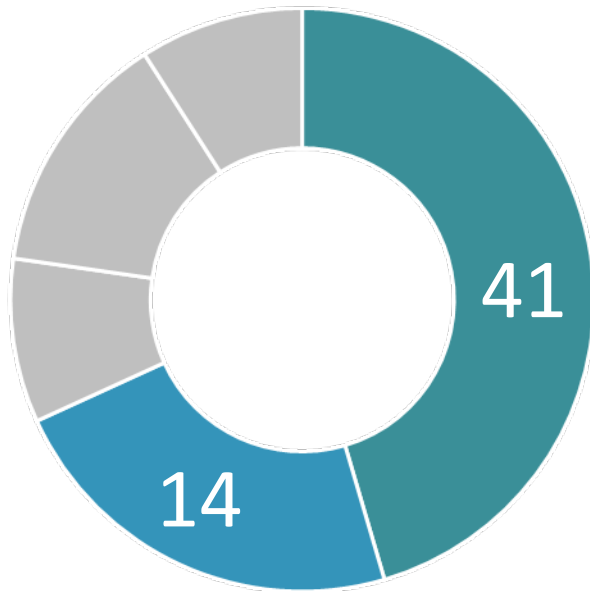


The Scoring Committee confirmed this score on 10/23/23





# Water Quality & Water Supply Benefits



The Scoring Committee confirmed this score on 10/23/23

## Water Quality (41 pts)

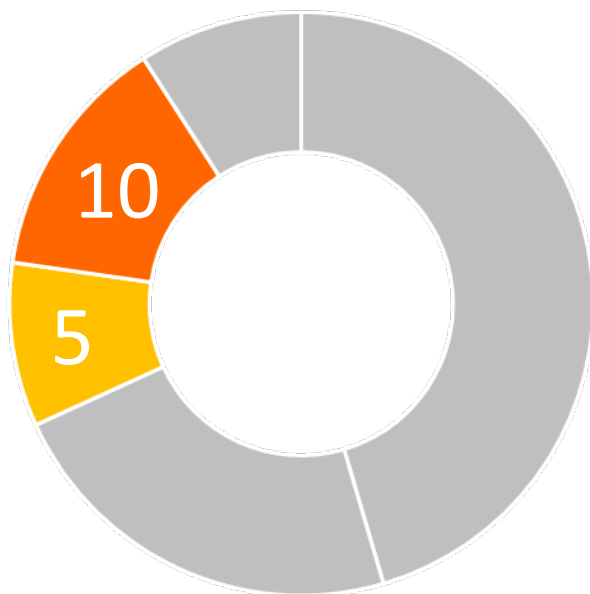
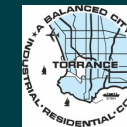
- Captures/diverts 85<sup>th</sup> percentile, 24-hr stormwater runoff
  - Total Nitrogen - 96% (544 lbs. removed per avg. year)
  - Total Phosphorus Reduction - 92.6% (150 lbs. removed per avg year)
  - > 88% removal of DDT
- Eliminates (100% diversion) of dry weather flows
- Water Quality Benefits:
  - Cost Effectiveness: 11 pts.
  - Water Quality Benefit: 30 pts.

## Water Supply (14 pts)

- Annual Water Supply (new water): 131.8 AFY for recycling/reuse via LACSD/MWD Pure Water Facility
- Water Supply Benefits:
  - Cost Effectiveness: 7 pts
  - Water Supply Benefit: 7 pts



# Community Investment Benefits and Nature Based Solutions



The Scoring Committee  
confirmed this score  
on 10/23/23

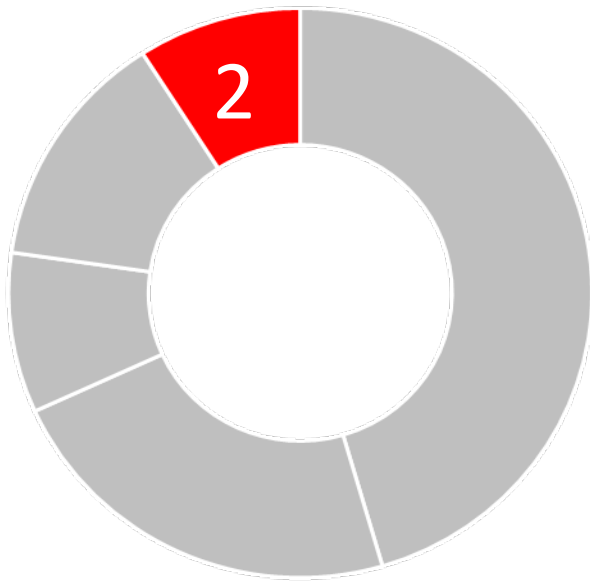
- **Community Investment Benefits (5 pts)**
  - Improves flood management, conveyance & risk management via offline diversion
  - Reduces local heat island effect & increases shade
  - Increases number of trees & vegetation with 180 new street trees and native vegetation
- **Nature Based Solutions (10 pts)**
  - Implements natural processes to slow, detain, absorb water via bioswale and street trees
  - Utilizes natural materials including soils, soil amendments, trees and native vegetation



# Leveraging Funds and Community Support



- **Leveraging Funds (15 %, 0 pts.)**
  - \$908,000 Federal STAG-Clean Water SRF grant (submitted by the Honorable Maxine Waters)
  - **New:** \$2M directed to project via settlement btwn. Caltrans and LA Waterkeeper and NRDC – announced at Scoring Committee by the Chair
- **Community Support (2 pts.)**
  - Seven (7) letters of support
  - Outreach and engagement implemented to date:
    - meetings w/Torrance Airport Commission,
    - pilots' association,
    - airport businesses,
    - Rollingwood HOA, and
    - First community outreach event



The Scoring Committee confirmed this score on 10/23/23



A person with a beard is shown in profile, looking towards a wall covered in numerous sticky notes and diagrams. The sticky notes contain handwritten text in Spanish, such as '¿Dónde vamos a poner el proyecto?', '¿Qué vamos a hacer?', and '¿Cuándo vamos a hacer?'. The person is holding a pen and appears to be pointing at one of the notes. The background is a blurred office setting with a window and blinds.

# Questions?

**Vanessa Hevener**  
City of Rancho Palos Verdes

**Kathleen McGowan**  
McGowan Consulting

**Merrill Taylor**  
Craftwater Engineering