### Safe, Clean Water Program

Fiscal Year 2021-2022

#### WASC Review Sheet



Project Name
·
Project Lead
1 Toject Leau
Total SCW Funding
Requested
<u> </u>
Phases for which SCW
Funding is being requested
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Question	Yes/No	Notes
Does this project assist in achieving compliance with MS4 permit? If Yes, explain how.		
Does the project provide DAC benefits (refer to the ordinance for definition)? If Yes, explain how.		
Does the project provide benefits to the municipality? If Yes, explain how.		
Does the project prioritize nature- based solutions? If Yes, explain how.		
Does this meet the goals of the program stated in the ordinance (refer to Section 18.04)		
Does the project/scientific study have a nexus to stormwater and urban runoff capture and pollution reduction? If yes, explain how.		

### Safe, Clean Water Program

#### Fiscal Year 2021-2022

#### WASC Review Sheet



Question	Yes/No	Notes
What is the plan for community engagement and what efforts have been made to date?		
What is the anticipated CEQA and permitting needs and how is this incorporated in the cost and schedule?		
Why is this the best location for this type of project?		
Were other alternatives considered? Why is this the best solution?		
How was the Project developed? (ie IRWMP/EWMP process, community engagement, etc)		
If awarded partial funding by the WASCs, could the project fulfill their stated scope and benefits? If not funded, would the WASC lose the opportunity to fund this project at future rounds?		
General Notes (and follow up questions regarding any topic in the feasibility study/project submittal)		
Public Comments		



## **Project Overview**

Local and regional stormwater capture and infiltration facility located at Sierra Madre Blvd within and beneath the median open space.

- Phases used from SCW funding: Planning, Design, Construction, O&M
- Total SCW Funding Requested: \$300,000





## **Project Objectives**

## **PRIMARY OBJECTIVES**

- Improve water quality within the Eaton Wash and Rio Hondo
- Recharge local groundwater
- Reduce local runoff through distributed bioretention practices

## **SECONDARY OBJECTIVES**

- Offset potable water demand
- Implement native
   landscaping within roadway
   corridor
- Educate the public on local water supply and demands

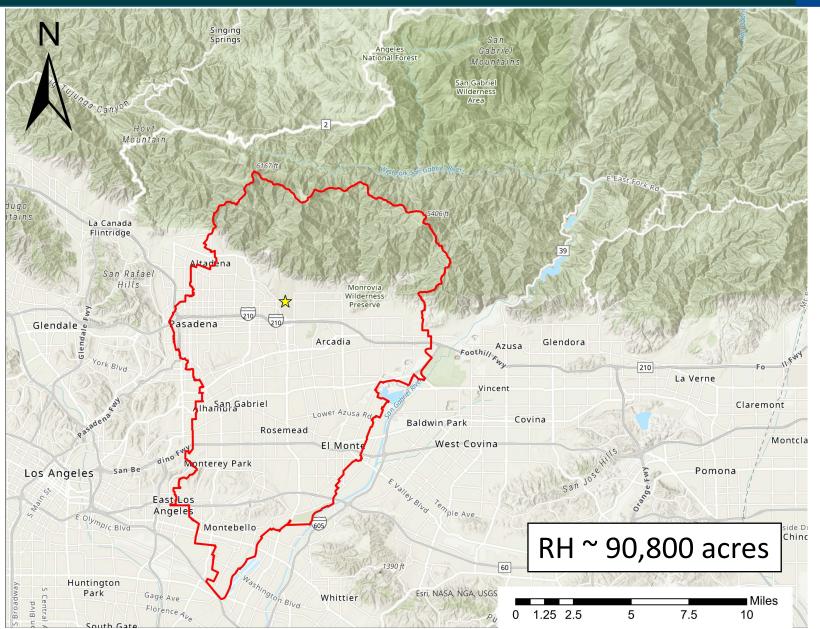






## **Project Location**

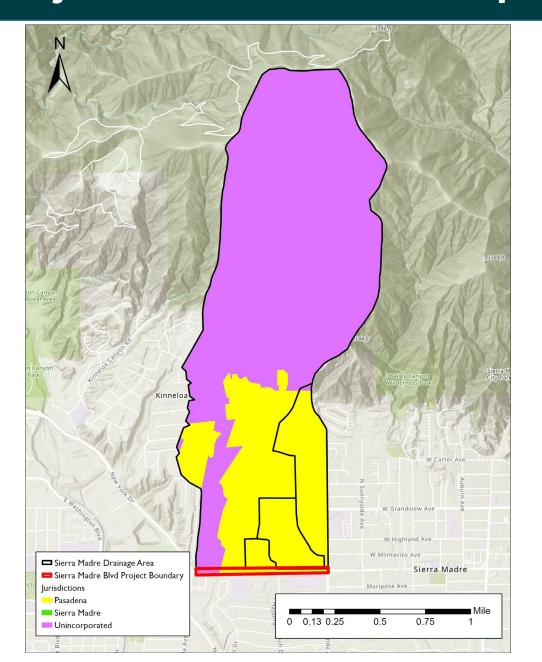






## **Project Location-Total Capture Area**



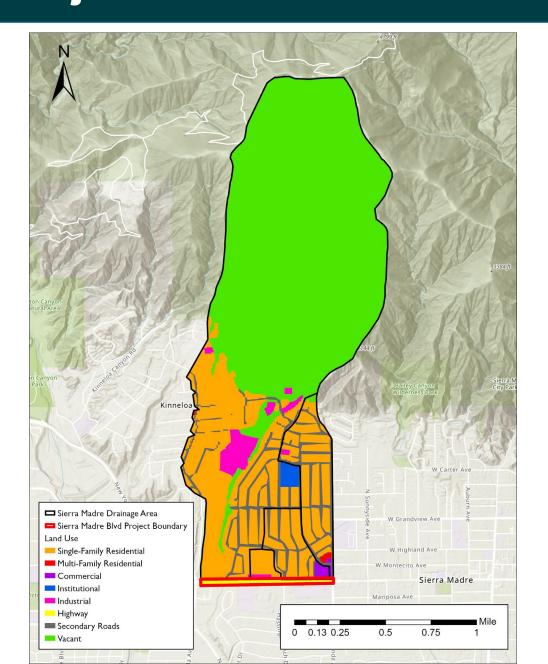


Jurisdiction	Area (acres)	% Watershed
Unincorporated LA County	980.03	70.76%
Pasadena	403.04	29.1%
Sierra Madre	0.28	0.02%
TOTAL	1,385	100%



## **Project Location- Land Use**





#### • Capture area:

• Impervious: 190.9 acres (13.8%)

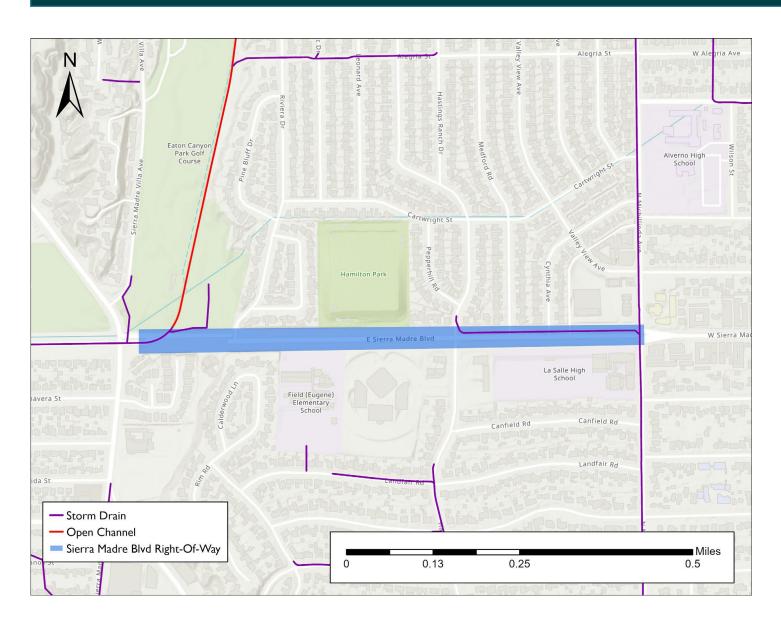
• Pervious: 1,194.1 acres (86.2%)

Land-use	Area (acres)	% of Impervious
Single Family Residential	92.8	31.4%
Multi-Family Residential	0.8	12.6%
Commercial	4.5	12.2%
Institutional	7.1	5.9%
Industrial	29.5	13.7%
Highway & Interstates	11.9	4.6%
Secondary Roads & Alleys	37.8	19.6%
Vacant	6.5	3.4%
TOTAL IMPERVIOUS	190.9	100%



## **Project Location- Parcel Maps**





The Sierra Madre Blvd Green Street site, is owned and operated by the city of Pasadena.



## Project Background





- Site was identified in the ULAR
   EWMP for green street project
- Beneficial site characteristics:
  - Significant drainage area size
  - Location of adjacent storm drain
  - Large development area available on Sierra Madre
- Design offers runoff storage and water quality benefits for EWMP compliance



## **Project Benefits**



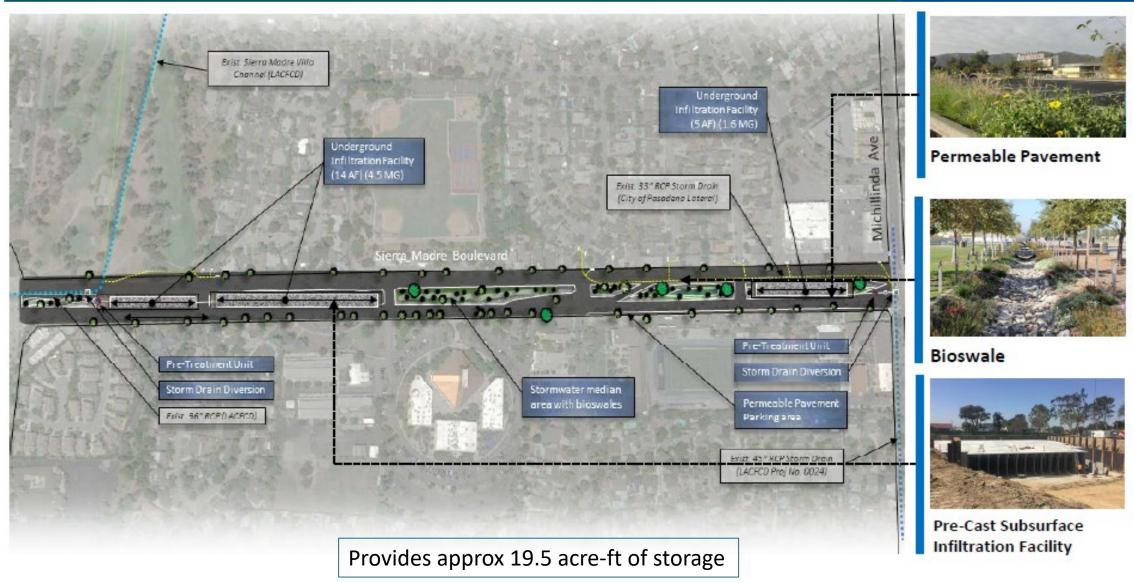


- Water Quality improvement in the Eaton Wash and Rio Hondo by removing trash, metals, and nutrients in stormwater and urban runoff
- Nature-Based treatment bioswales with sustainable native landscaping and storage
- Public Access to Waterways with improved public access to bioswales and development of the pedestrian pathways along the Sierra Madre Boulevard
- Reduce Heat Island Effect with additional trees to shade the roadway and conversion of turf grass to native plantings



## Project Details- Site Plan







## **Project Details-Existing Conditions**





(Facing north-westerly at La Salle)



**Existing Conditions** 

- Hydraulic soil group: A
- Approximate Depth to Groundwater: 300 ft BGS
- Current Use: Public Space (walking trails and lake)
- Owner: County of Los Angeles
- \*Site governed under ULAR EWMP
- \*Geotechnical (Desktop) review done
- \*Alternative footprint sizes and diversion rates examined



# Cost & Schedule



Phase	Description	Cost
Planning/Design	Planning and Design cost	\$1,950,000
Construction	Construction cost	\$19,500,000

#### **Annual Costs**

Maintenance Cost:	\$125,000
Operation Cost:	\$25,000
Monitoring Cost:	\$15,000
Project Life Span:	50

#### **Funding Request**

Year	SCW Funding Requested	Phase	Description
Year 1-(FY 2021-22)	\$300,000	Planning	Feasibility TRP





## **Project Overview**

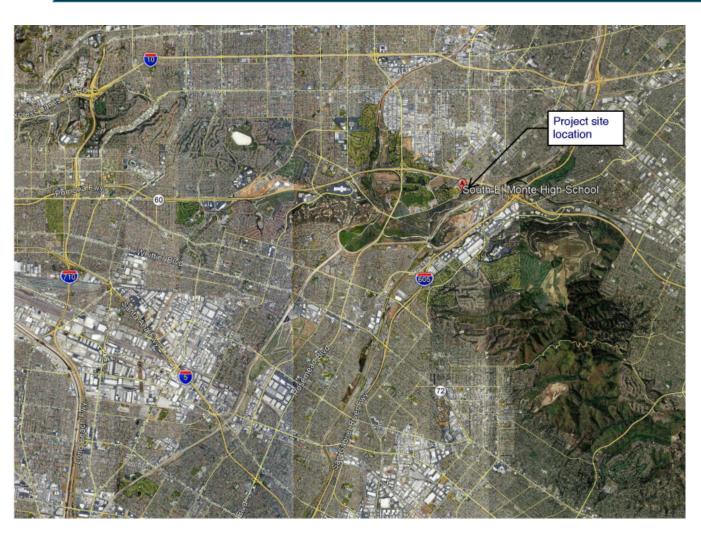
Propose detention and bio-filtration to treat stormwater at high school field and alleviate water discharging off-site at higher flow rates.

- Primary Objective Improve storm drain infrastructure with bioretention basin and biofiltration devices
- Secondary Objective Improve volume and flow control with hydromodification best management practices and harvest and reuse systems
- Project Status SCW funding being requested for planning phase to fund the Project Feasibility Study
- Total Funding Requested \$300,000





## Project Location – South El Monte High School



• 1001 Durfee Avenue, South El Monte, CA 91733

• Latitude: 34.036

• Longitude: -118.045



## Project Location— South El Monte High School



#### **Site Boundary**

Project selected as a result of stormwater runoff into watershed

Project developed with civil engineer (LPA) reviewing existing conditions and identifying this site for potential funding

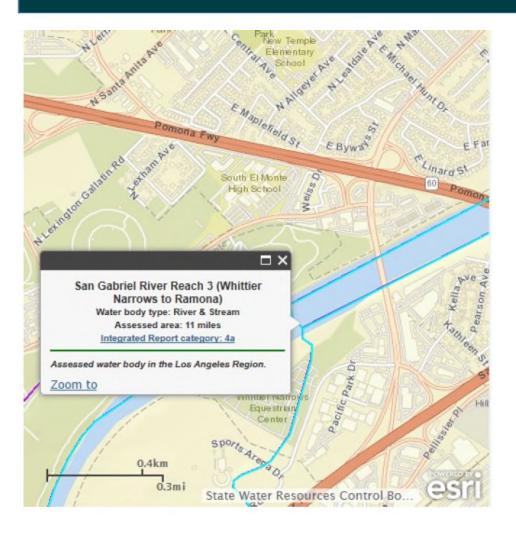


## Rio Hondo Watershed Area – South El Monte High School





### Capture Area – South El Monte High School



- Capture Area: 40 ac
- Impervious Area: 20 ac
- Pervious Area: 20 ac
- Nearest waterbody / channel: San Gabriel River Reach 3 (Whittier Narrows to Ramona)
- Listed on the latest 303(d) listing for: Indicator Bacteria and Toxicity



## Capture Area – South El Monte High School

Letter of support from the City of South El Monte, dated 6/30/2020

#### Soils information:

High groundwater table (infiltration not feasible)

#### As-Built drawing information:

- Major drainage channel along Farmer Avenue
- Site surface drainage through V-gutters in fields
- Major site drainage patterns shown in yellow arrows

#### Runoff conveyance:

- Parking lots: Overland to Durfee Avenue
- Fields: Pumping system at southwest corner (view shown from Durfee Avenue)





## Capture Area – South El Monte High School

Flows from community and USACE enter into School drainage systems, taxing the existing school systems (channel and field V-ditches)

San Gabriel River sensitivity to pollutants from runoff (e.g. vehicular pollutants)

Seasonal surface flooding at playing fields (yellow highlight), requiring pumping (flow arrow directions shown)

Existing pump disabled at outflow onto Durfee Avenue; outlet pipes blocked

Pumping equipment

Original outlets at curb blocked with curb repairs







### Municipality Benefits

Water Quality Solutions at areas with highpollutant runoff:

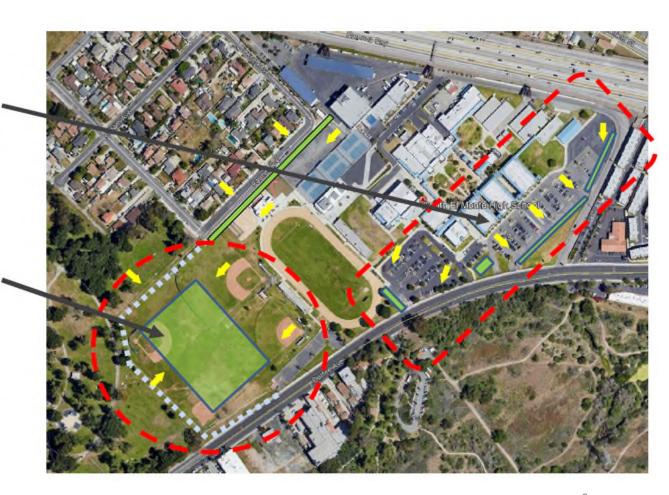
- <u>Bioretention Basins</u> in key areas to capture runoff
- <u>Proprietary Biofiltration devices</u> in areas with reduced available space

Water Storage Solutions for volume and flow control:

- Hydromodification BMP's to reduce higher flows and volumes out to Durfee Avenue
- <u>Harvest and Reuse Systems</u> to offset potable water use

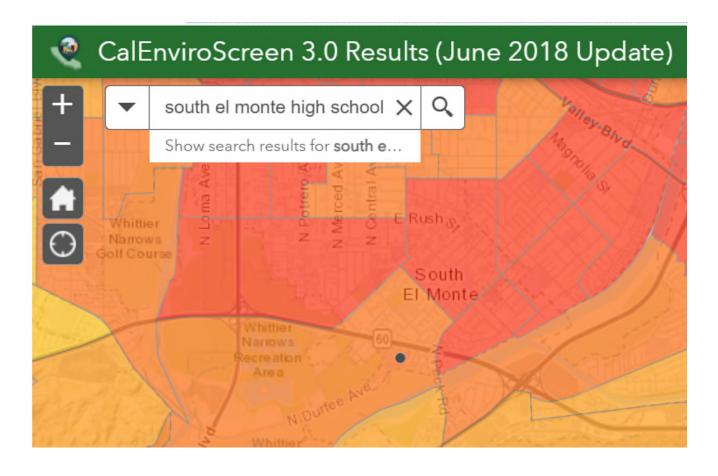
Can be designed to accommodate off-site flows coming from the community

Placement in low-traffic, high-access areas for ease of maintenance and expansion





## Disadvantaged Community (DAC) - CalEnviroScreen 3.0



- CalEnviroScreen 3.0 percentile – 85-90%
- Pollution burden percentile – 99%



## Project Background - Municipal Benefits

## City of South El Monte provided letter of support

"City of South El Monte feels that this is a great opportunity for the school to complete a Feasibility Study to mitigate the stormwater on-site and some of the water that is coming in from the neighboring community. The City and school's stormwater will be mitigated to protect public health and ensure healthier green space for the students who attend. This project would meet the strategic goals to improving stormwater in the Rio Hondo Watershed Region." – Rachel Barbosa, City Manager of South El Monte



## Project Background – Benefits to Disadvantaged Community

Reduce and treat stormwater run-off into Rio Hondo Watershed Region in a community with a high pollution burden (99% percentile) based on CalEnviroScreen 3.0

Benefit EMUHSD students and staff by reducing flooding in sport fields so can be used promptly after storms have passed. Currently, unable to use until flooding pumped into San Gabriel River.



# Cost & Schedule

Phase	Description	Cost	Completion Date
Planning	Project Feasibility Study	\$300,000	4/4/2022
Design	Design Cost	\$400,000	End of agreement performance period
Construction	Construction Cost	\$9,000,000	End of agreement performance period
TOTAL		\$9,700,000	End of agreement performance period



## Cost & Schedule – Project Lifespan and Lifecycle Cost

Description	Cost
Annual Maintenance Cost	\$60,000
Annual Operating Cost	\$500,000
Annual Monitoring Cost	\$10,000
Project Lifespan – 50 years	N/A



## Funding Request

Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	Technical Resources Program	Planning	Prepare Feasibility Study for Project Concept
2	Infrastructure Program	Design/Construction	Design and construct project





Infrastructure Program
Los Angeles County Public Works
Joseph Venzon, P.E.

## **Project Overview**

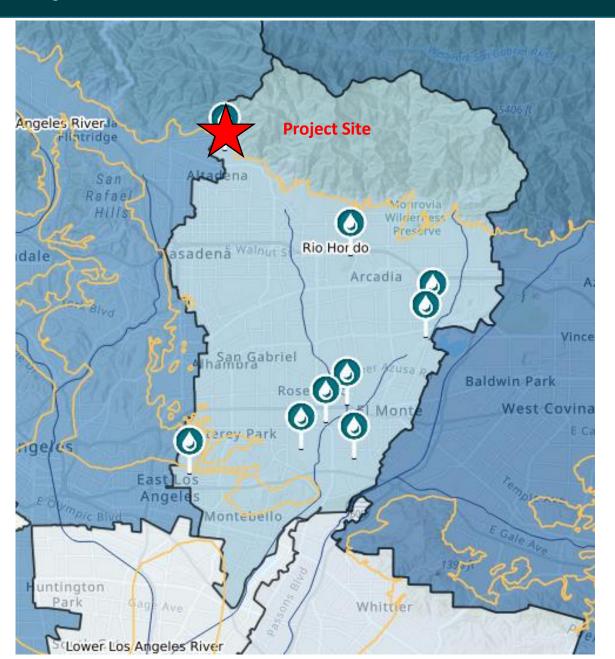
The Project will capture, treat, and infiltrate urban and stormwater runoff as part of a multi-benefit project to improve water quality and enhance the community.

- Intended to provide community enhancement and improve water quality
- In planning phase requesting funds for planning and design
- \$800K requested from SCW Regional Funds





## **Project Location**

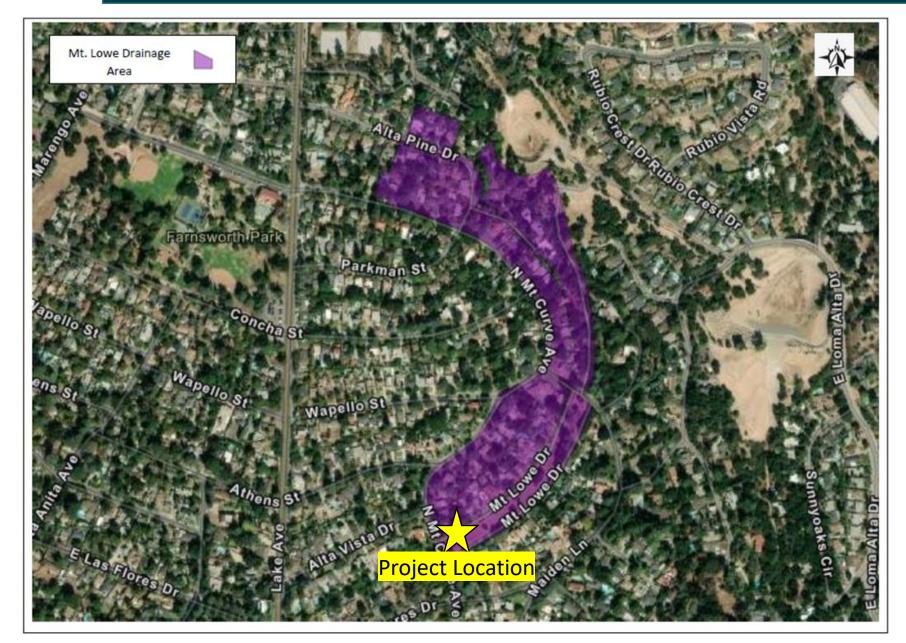


Rio Hondo WASC

 Unincorporated Los Angeles County: Altadena



## **Project Location**

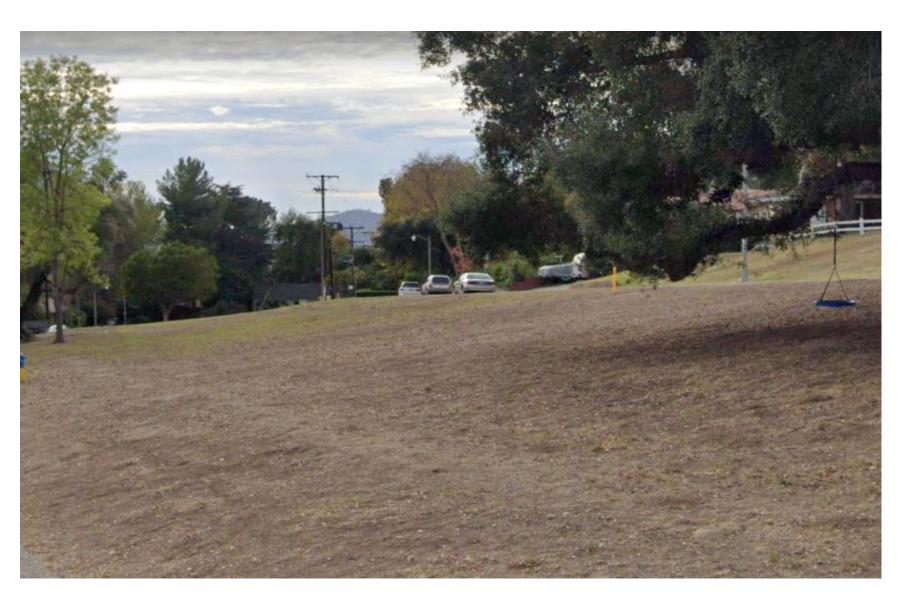


• 24 acre capture area

 1 acre-ft design capacity (85% storm)

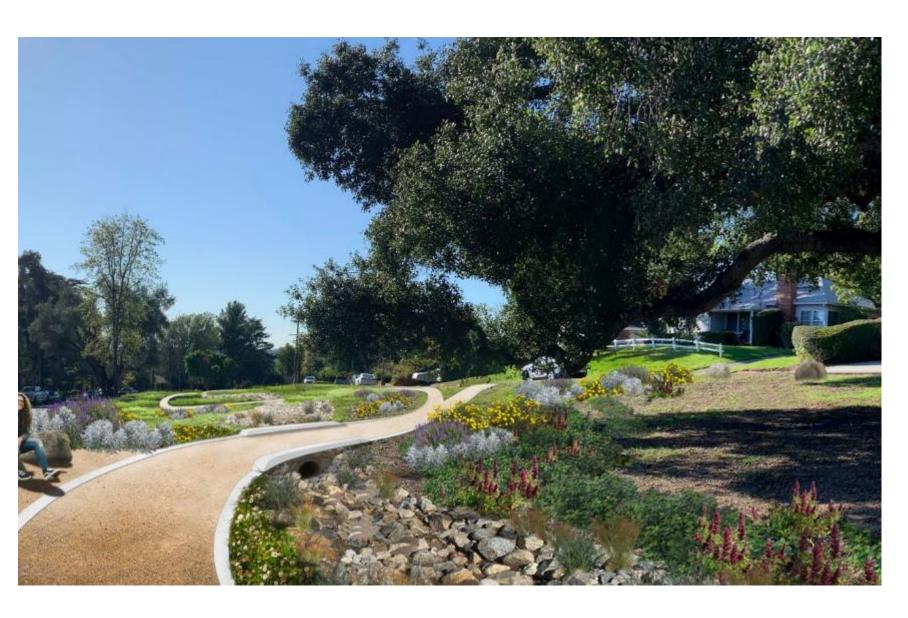


# Project Background



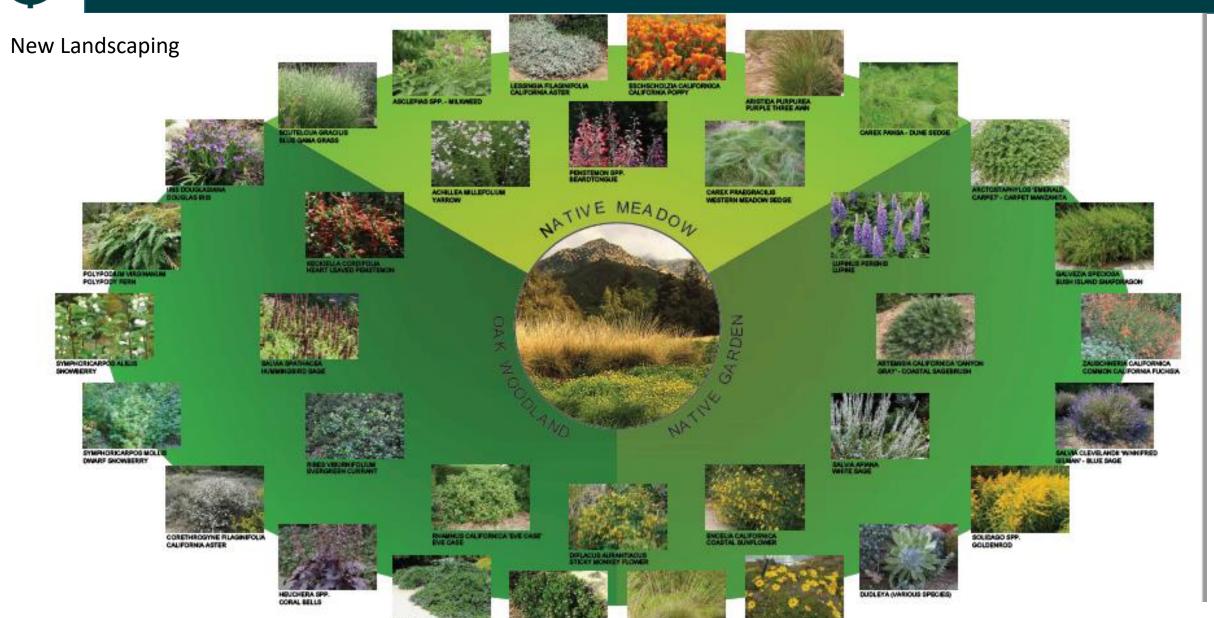
 Community requested enhancements to existing public rightof-way





 Years of coordination between LA County Public Works and local community





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MUHLEMBERGIA RIGIENS DEER GRASS



#### MOUNT LOWE MEDIAN - SITE FEATURE CONCEPT IMAGERY

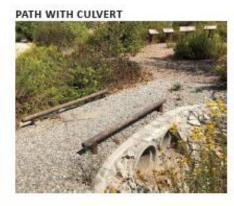






















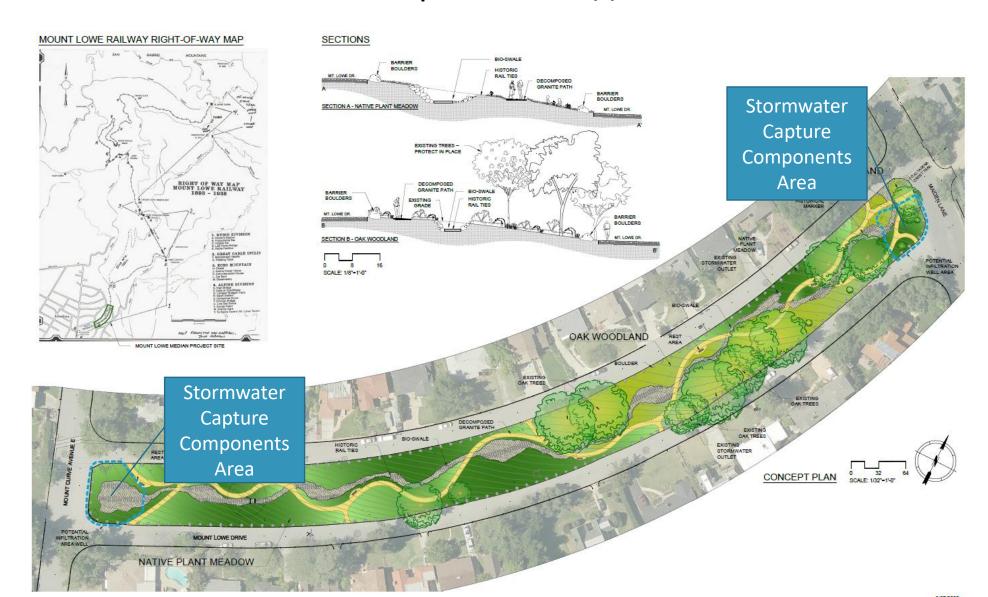






### Project Details

#### Stormwater components - Upper LA River EWMP





### **Project Details**



#### Analyses:

- Geotechnical Study
- Hydrology Analysis
- Field Investigations

#### **Stormwater System:**

- Catch Basins
- Pretreatment Units
- Infiltration Drywells



### Cost & Schedule

Phase	Description	Cost	Completion Date
Planning and Design	Development of Project plans, specifications, and estimates.	\$800,000	Late 2021 / Early 2022
Construction	Construction of stormwater project components.	\$1,587,000	Late 2023
TOTAL		\$2,387,000	

Operation and Maintenance costs estimated at \$50K/yr.



### Funding Request

Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$800,000	Planning & Design	Development of Project plans, specifications, and estimate.
2			
3			
4			
5			
TOTAL	\$800,000		

Leveraged Funding amount: \$1,587,000 (66%)

#### Other funds covered by County

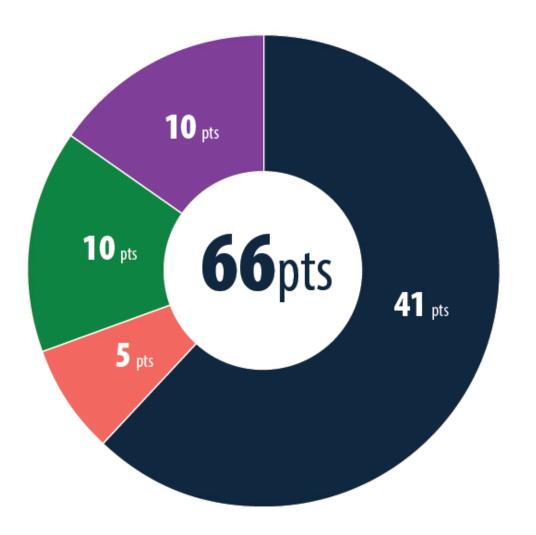
- Concept Development and Investigations: \$350,000
- Cost for Design and Construction of Above-ground Features: \$750,000



### **Preliminary Score**

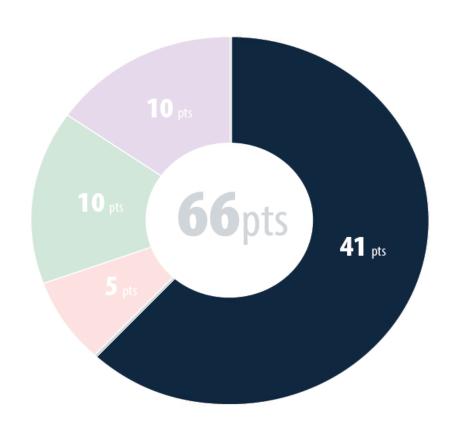
## Safe, Clean Water Program Score

- Water Quality
- Community Investment
- Nature-Based Solutions
- Funds and Community





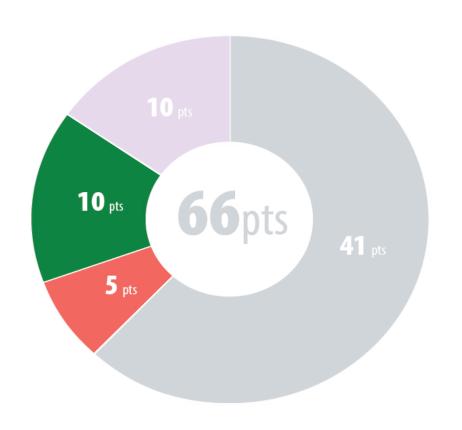
### Water Quality



- System will capture dry and wet weather runoff for infiltration and groundwater recharge of Raymond Basin
- 24 acre Tributary Area
- 1 acre-ft capacity (85<sup>th</sup> percentile design storm)
- Pollutant Reduction trash, metals, bacteria



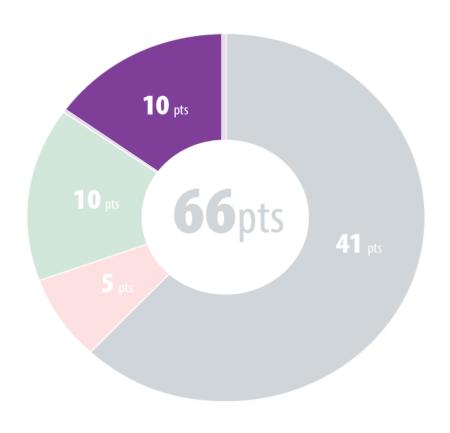
### Community Investment Benefits and Nature Based Solutions



- Community Investment Benefits
  - New landscaping (grass, low-lying plants)
  - Walking Paths
  - Decorative Boulders
  - Rest Areas
  - Signage
- Nature Based Solutions
  - Drought tolerant planting
  - Bioswales



### Leveraging Funds and Community Support



#### Leveraging Funds

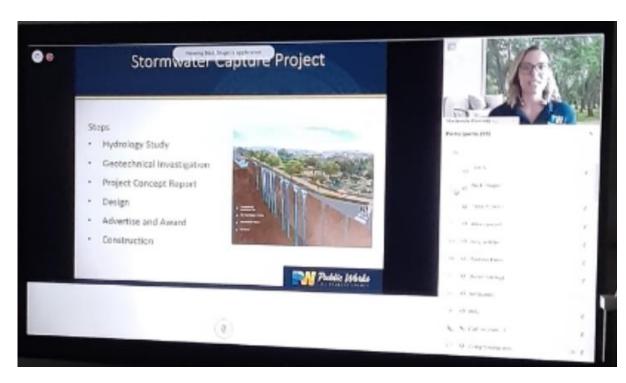
- \$1,587,000 in leveraging funds from LA County SCW Municipal Funds
- 66% funding matched

#### Community Support

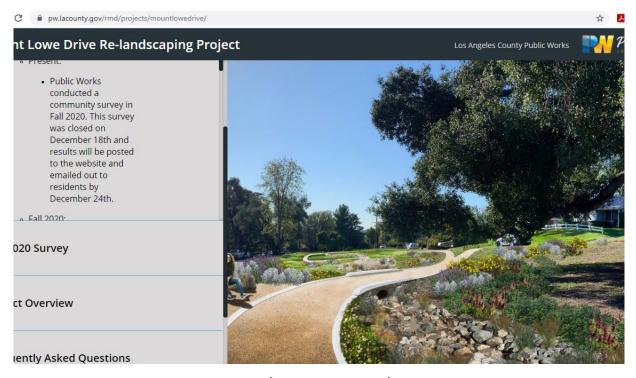
- 6 years of community outreach (Surveys, community meetings, workshops, etc.)
- Support from Altadena Town Council



### Leveraging Funds and Community Support



**Virtual Community Information Sessions** 



**Hosted Project Website** 

https://pw.lacounty.gov/rmd/projects/mountlowedrive/





# (Phase I – Southern Residential Corridor)

Funding Program (IP) City of South El Monte

Jason Casanova, Council for Watershed Health | Jason Fussel, Tetra Tech



### **Project Overview**

0.65-mile Greenway designed to clean and capture stormwater, reduce GHG/urban heat island effects, and provide active transit connections.

- PRIMARY OBJECTIVE: reduce pollutant loads and volumes to Legg Lake
- SECONDARY OBJECTIVES: create habitat; provide community health and climate resiliency benefits (UHI reduction; safe active transit)
- STATUS: 100% Design and CEQA completed; ready for Construction
- TOTAL FUNDING REQUEST: \$3.2 million





### Project Location

Merced Ave Greenway
(Proposed Construction Funding Request)
(City of South El Monte)

- Planned Greenway Extension

Active Transit Connections -(In Development/Funded)

Local Active Transit Connections - (Existing)

Regional Active Transit Connectors
(River bike paths/open space linkages)

Severely Disadvantaged
Community\*

Disadvantaged Community\*

Airport

Golf Course

Park

#### COMMUNITY CONNECTIONS

Schools (K-12)

River Access

Valley Blvd **EL MONTE** Guess St Earle Ave Valley Marshall St Mall Telstar Ave Mildred St Exline St Garvey Ave Walnut Cree Garvey Ave Valley Blvd Potrero Ave Fern St Elliott Ave Rosemead Blvd Whittier Narrows Golf Course Alhambra Wash Rush St WHITTIER NARROWS RECREATION AREA California Workman Mill Rd North San Gabriel Bud Lake Center Lake Legg Lake Wildwood Dr Durfee Ave Pico Rivera Sports Sipho · coln Ave Arena



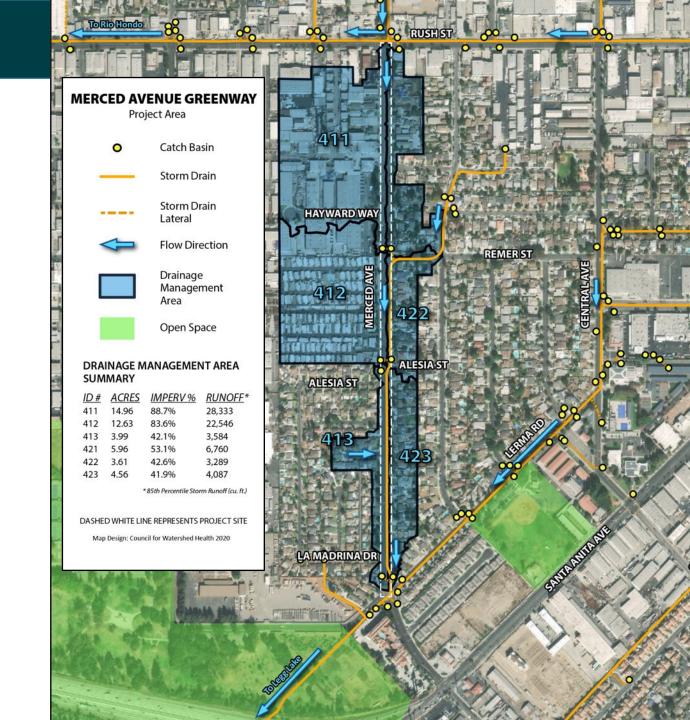
#### **Project Location**

### LOCATED IN THE RIO HONDO WATERSHED AREA

**CAPTURE AREA:** 45.71 acres

#### **LAND USES:**

Industrial - 46% Multi Family Residential - 36% Single Family Residential - 18%





The City initially called out the street in a 2010 Corridor Revitalization Plan aimed at calming traffic and improving public safety. In 2017, our nonprofit partners submitted a design grant on behalf of the City that included stormwater and climate resiliency components. The Project is included in the Upper San Gabriel River IRWM effort and meets ULAR EWMP design storm guidelines.

- Municipality Benefits: Green streets, such as this Project, are identified as a strategy to help the City move toward meeting our MS4 permit requirements and compliance targets.
- **DAC Benefits:** Meets the demand for a safe, pedestrian-friendly active transportation corridor and creates much needed shade, reducing ambient surface temperatures to combat UHI.



### Project Details – Current Site Conditions



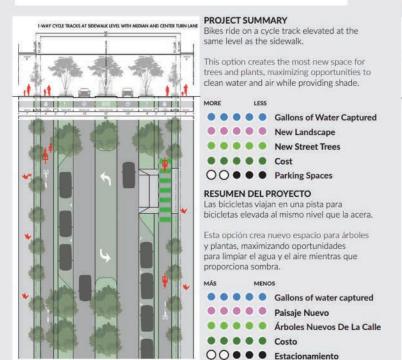




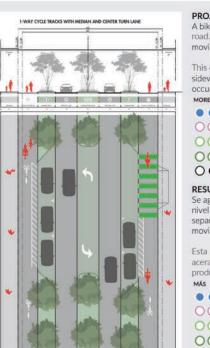


#### Project Details – Alternatives Considered









#### PROJECT SUMMARY

A bike lane is added at the same level as the road. Parked cars separate those riding from moving cars.

This option minimizes cost by keeping the sidewalk where it is today, and water capture occurs primarily in the center median



Se agrega un carril para bicicletas al mismo nivel que la carretera. Carros estacionados separan a los ciclistas de los carros en movimiento.

Esta opción minimiza costo manteniendo la acera donde está hoy, y captura de agua se produce principalmente en la franja divisoria.





NARROW TRAVEL LANES, ADD BIKE LANE





PROJECT SUMMARY

A narrow bike lane is added between the

#### RESUMEN DEL PROYECTO

Se agrega un carril para bicicletas estrecho entre los carriles de estacionamiento y de viaje.

Captura de agua se produce principalmente a través de pavimentación permeable, pocas oportunidades para el nuevo paisaje.



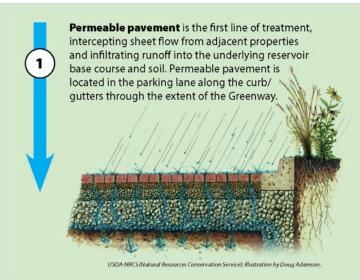


### Project Details – Final Design





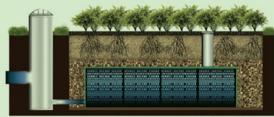
#### Project Details – Schematic/Site Plan



Once the permeable pavement is saturated, excessive water flow will be diverted into a second line of treatment through the gutter and into planting areas (6" sump) and larger bioretention areas from a series of curb cuts. Depth to groundwater goes from 45 ft on the north end of the street down to 6 ft on the south end; therefore, there are a combination of both offline and online bioretention areas depending on the location.



High infiltration media biofiltration areas are placed on eight select street corner bulbs-outs to capture and treat larger flows before the water enters the storm drain system and discharges to Legg Lake at Whittier Narrows. The FocalPoint System media is highly porous and allows for infiltration rates at 100 in/hr.



#### **TREATMENT TRAIN**



Permeable Pavement



**Planting** 



Areas



Bioretention Areas



**High Infiltration Media Biofiltration Area** 



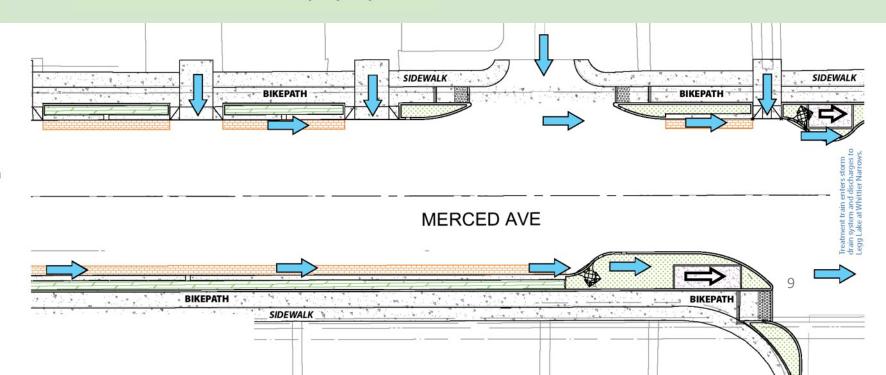
Concrete **Pavement** 



**Above Ground Runoff Flow** Direction



**Below Ground Runoff Flow** Direction





### Cost & Schedule

Phase	Description	Cost	Completion Date
Planning	Community engagement and project concepts development with CBOs	\$ 50,000	07/2017
Design	Pre-Design Monitoring, Existing Conditions and Constraints Analysis, Preliminary Design Report, Community Engagement, 60% and 100% Design Bid Package	\$ 899,939	07/2020
Construction	Water Capture BMP Capital Costs (Bioretention Areas, Biofiltration – High Infiltration Media with underdrain, Permeable Pavers with Infiltration Chambers, Infiltration Chambers)	\$ 3,197,240	03/2024
TOTAL		\$ 4,147,179	

- Annual O&M Costs: \$76,752 (pruning, plant care, BMP cleanouts)
- Project Lifespan & Lifecycle Cost: \$5,429,504



### Funding Request

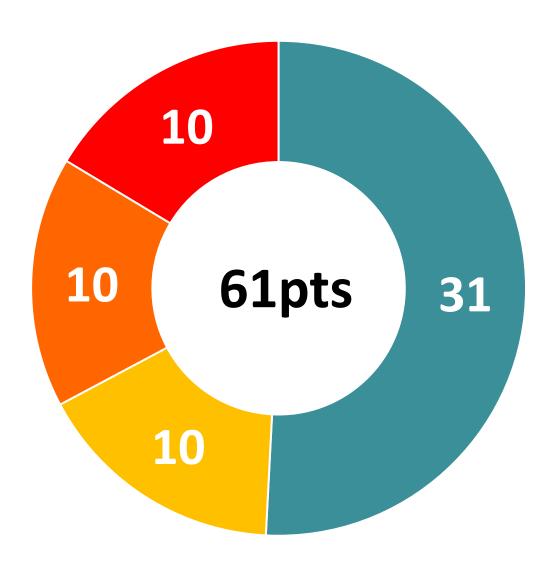
Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$3,197,240.00	Construction	Water Capture BMP Installation (Bioretention Areas, Biofiltration – High Infiltration Media with underdrain, Permeable Pavers with Infiltration Chambers, Infiltration Chambers
2	\$37,454.00	Monitoring	Post-Construction Monitoring focused on water quality and plant health
TOTAL	\$3,234,694.00		

• Leveraged Funding: \$4,110,769 (Planning, Design, Construction for bikelanes, sidewalks, vegetation, trees, irrigation)



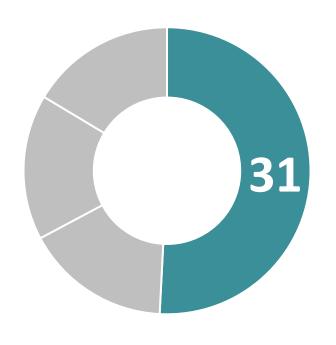
### Preliminary Score

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





### Water Quality & Water Supply Benefits



#### Water Quality Benefits (31pts)

#### **Mechanisms for Water Quality:**

Treatment Chain approach re-establishing natural drainage and treatment processes:

4,187 ft<sup>2</sup> - Bioretention Areas (conventional) 2,643 ft<sup>2</sup> - Bioretention Areas (with underdrain)
1,907 ft<sup>2</sup> - High Infiltration Media Biofiltration Areas
10,420 ft<sup>2</sup> - Permeable Pavers (with infiltration chambers)
11,078 ft<sup>2</sup> - Planting Areas (sump 6" stormwater)

132 new street trees

#### **Drainage Management Area:**

45.71 acres generate 68,600 ft<sup>3</sup> of runoff in an 85<sup>th</sup> percentile, 24-hr storm event

#### **Project Capacity:**

Can manage 100% of 85<sup>th</sup> percentile, 24hr storm event. Will treat 18.05 AFY of wet weather flow; infiltration potential 10.27 AFY

#### **Pollutant Reduction:**

Zinc: 58%; Nitrogen: 59%; Copper: 57%; Lead: 56%; Phosphorous: 59%; *E. Coli*: 59%

#### Water Supply Use:

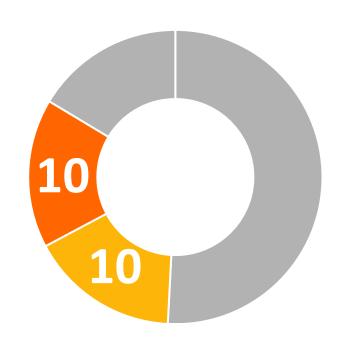
Irrigation - recycled water line provided by San Gabriel Valley Water Company

#### Water Supply and Water Quality Cost Effectiveness:

\$31,652 per ac/ft



### Community Investment Benefits and Nature Based Solutions



#### **Community Investment Benefits (10pts)**

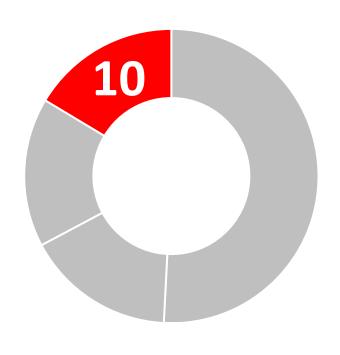
- Reduced localized flooding.
- Enhanced community livability and environmental equity.
- Support towards regulatory compliance.
- Habitat connections and enhanced habitat.
- Safer, pedestrian-friendly connection to Whittier Narrows Recreation Area and Rio Hondo; ADA compliance.
- Shade and decreased ambient temperatures/UHI effect.

#### **Nature-Based Solutions (10pts)**

- Natural stormwater treatment features (bioretention, biofiltration, and planters).
- Re-establishment of subsurface soil and biology/biochemical processes mimicking pre-urban conditions.
- Over 2900 new native shrubs and 132 trees.



### Leveraging Funds and Community Support



#### **Leveraging Funds**

- Water Foundation funded planning phase for CWH and Active SGV (\$50K).
- Coastal Conservancy, Disney Foundation, and Water Foundation funded 100% design (\$900K).
- CNRA Prop 68 Green Infrastructure Grant construction of bike lanes, sidewalks, vegetation (\$3M AWARDED).
- RMC Prop 68 Grant construction PM, demo, greening elements, tree planting (Completed scoring process and met threshold for acceptance; awaiting staff feedback and board approval \$3M TBA).

#### **Community Support**

- Ongoing bilingual/multicultural public engagement since 2015 throughout the design phase led by ActiveSGV and Climate Resolve.
- Multi-pronged approach during the design including door-to-door surveys, youth focus groups, 11 community events, 3 community workshops, 2 street audits, bike tours, and a street demo.

