

Glendora Avenue Green Streets

Funding Program Infrastructure/Technical Resources Program

Fiscal Year 2022-2023

Upper San Gabriel Watershed

Project Lead: City of Glendora

Presented by: DRP Engineering, Inc.





Project Overview

Capture, diversion, treatment and infiltration including nature-based green streets elements within the public rights-of-way in downtown Glendora

Primary Objectives

- Improve water quality,
- Provide water supply and nature-based solution benefits, and
- Align with improvements for Gold Line Station and LA Metro's "First/Last Mile" Strategic Plan to improve communities

Secondary Objectives

- Provide community investment benefits,
- Increase trees and natural elements to reduce Green House Gasses and Heat Island Effects, and
- To engage with public on local water supply & demand issues

Project Status: Requesting SCWP funding (2022-2023) for Planning and Design

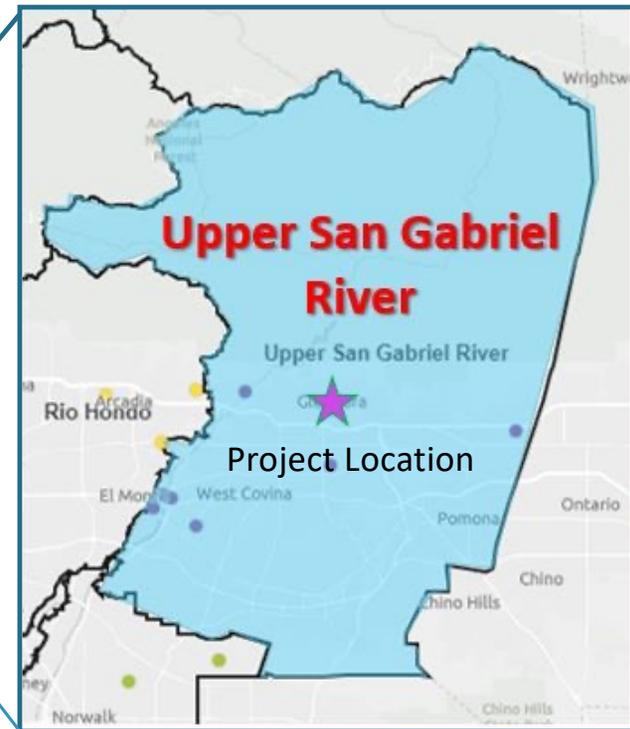
Total Funding Requested: \$555,000



Project Location

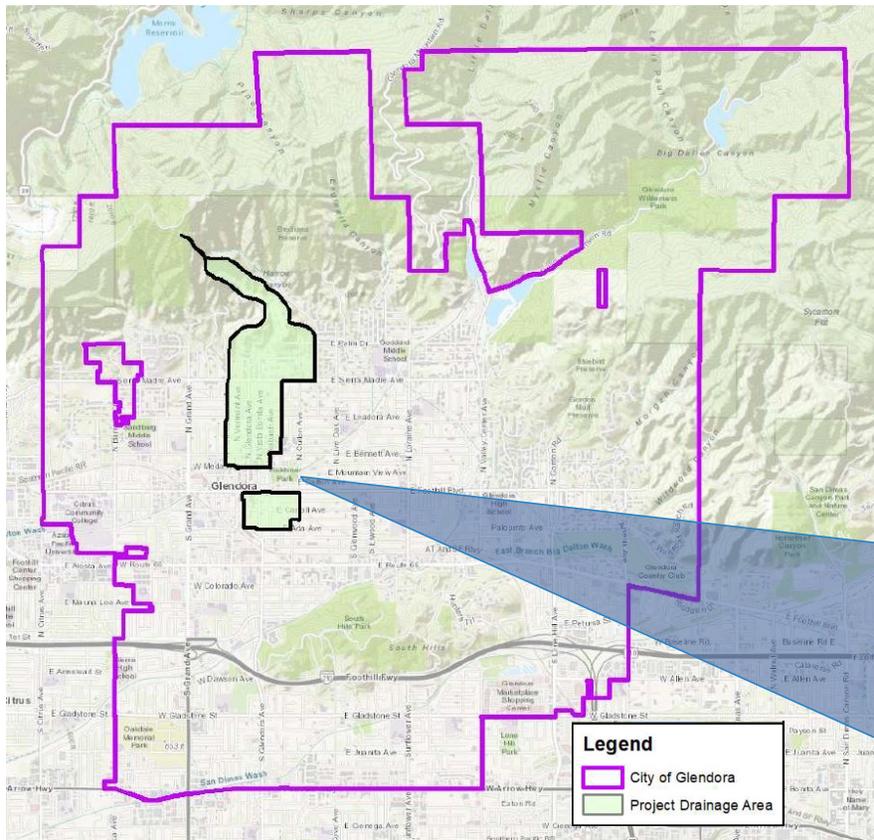


Watershed Area:
Upper San Gabriel River





Project Location



Project Location:

Within and adjacent to the **Downtown Glendora**, bounded by **Meda Avenue** in the North to **Ada Avenue** in the South.





Project Background



Project development:

- Utilize the **natural processes** of the soil matrix to filter & treat
- Mitigate runoff peaks, Reduce impervious surfaces, Plant 30 new trees, Add 3,380 sqft of vegetated biofiltration to reduce carbon emissions & improve pedestrian spaces
- Improve walkability, enhancing nexus with public transportation & local business outdoor dining

Project Location:

- Water quality needs – reduce contaminants to meet MS4
- Water supply needs – capture water for local recharge
- Community Investment needs – improved Quality of Life for local community
- Multi-Benefit - Linked with transportation improvements & local businesses



Project Background

Regional Water Management Plan: Enhanced Watershed Management Program Plan (EWMP)

Benefits:

Water Quality: Reduce Zinc, Lead, trash, bacteria, etc.

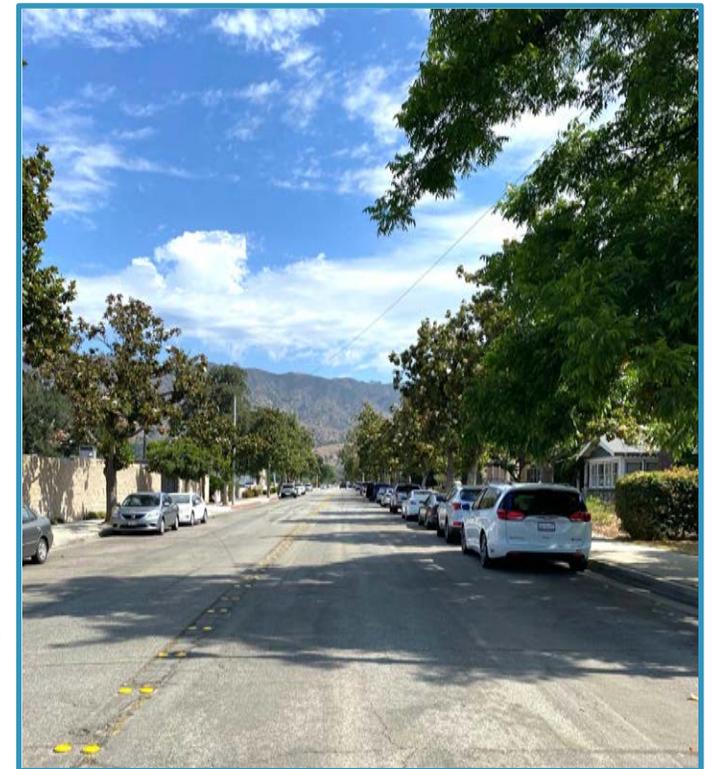
Water Supply:

- Increase groundwater for local use
- Capture and treat dry weather runoff to reduce loss into Little Dalton Wash

Community Investment Benefits:

- Improved Flood Management & Reduce Flood Risk
- Heat Islands Effects & Increased Shade
- Enhanced Recreation Opportunities & Improved Quality of Life
- Multi-Benefit: Metro's First/Last Mile & Local Business support via Outdoor Dining/Beautification

Disadvantaged Community (DAC) Benefits: Indirect





Project Details



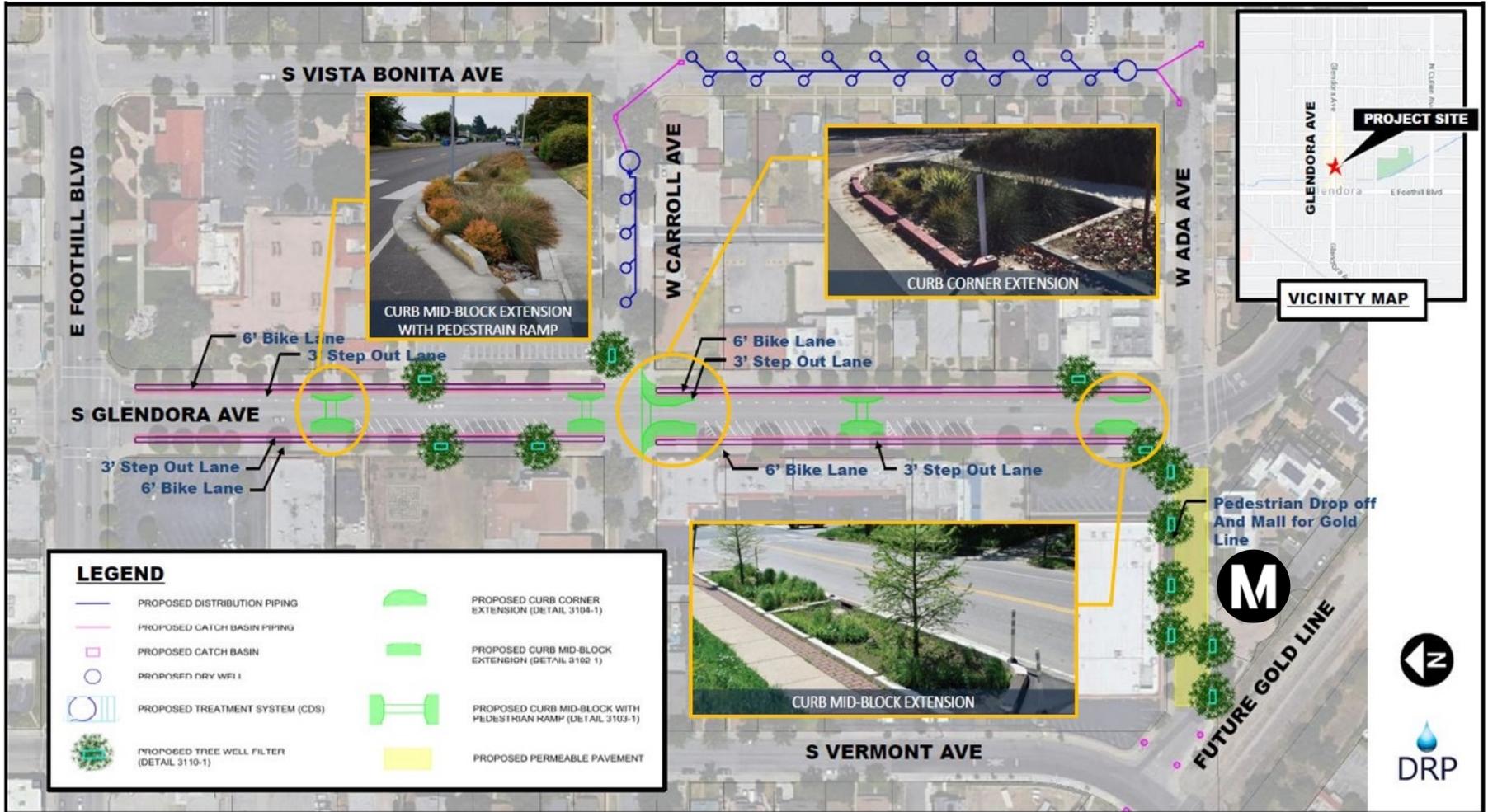


Outdoor Dining – Meda Ave.





Project Details



| LEGEND | | | |
|--------|---|--|--|
| | PROPOSED DISTRIBUTION PIPING | | PROPOSED CURB CORNER EXTENSION (DETAIL 3104-1) |
| | PROPOSED CATCH BASIN PIPING | | PROPOSED CURB MID-BLOCK EXTENSION (DETAIL 3102-1) |
| | PROPOSED CATCH BASIN | | PROPOSED CURB MID-BLOCK WITH PEDESTRAIN RAMP (DETAIL 3103-1) |
| | PROPOSED DRY WELL | | PROPOSED PERMEABLE PAVEMENT |
| | PROPOSED TREATMENT SYSTEM (CDS) | | |
| | PROPOSED TREE WELL FILTER (DETAIL 3110-1) | | |



Glendora Ave. & Carroll





Glendora Ave. & Ada





Infiltration

- Layouts and costs are based on an assumed infiltration rate of 0.56 in/hr (from previous reports)
- Provided in the Feasibility Study is a sensitivity analysis showing the effect on the scoring for increased infiltration rate = lower cost, slightly improve scoring
- Infiltration testing has just been completed, showing a range from **1.37 to 3.57 in/hr** within the project areas.

Impact to Feasibility Study: Reduced construction cost, reduced impact to community for construction, and opportunity to increase contaminant removal



Cost & Schedule

| Phase | Description | Cost | Completion Date |
|--------------|---|-----------------------|-----------------|
| Planning | Environmental Documentation (CEQA/NEPA) | \$150,000.00 | 12/2022 |
| Design | Preliminary through Final | \$500,000.00 | 02/2023 |
| Planning | Public Outreach | \$40,000.00 | 07/2023 |
| Design | Bidding and Contracting | \$25,000.00 | 09/2023 |
| Design | Program Management | \$70,000.00 | 07/2024 |
| Construction | Construction Management | \$650,000.00 | 09/2024 |
| Construction | Construction | \$7,234,400.00 | 09/2024 |
| TOTAL | | \$8,669,400.00 | |

- Annual Maintenance and Monitoring Costs: \$85,000
- Project Lifespan: 50 years
- Total Lifecycle Cost: \$10,708,881.56
- Annualized Lifecycle Cost: \$446,316.82



Funding Request

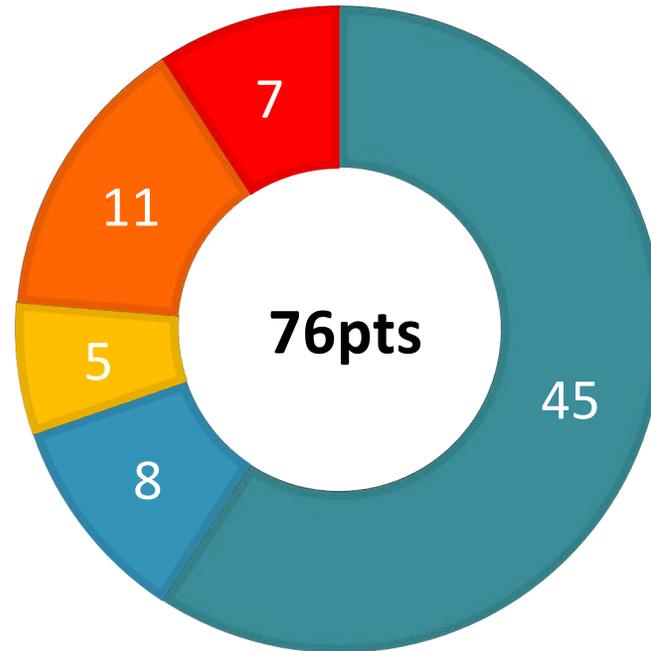
| Year | SCW Funding Requested | Phase | Efforts during Phase and Year |
|---------------------|-----------------------|----------|---|
| Year 1 | \$122,500.00 | Planning | Environmental Documentation (CEQA/NEPA) and Public Outreach |
| Year 1 | \$385,000.00 | Design | Preliminary through Final Design with Overall Program Management |
| Total Year 1 | \$507,500.00 | | |
| Year 2 | \$10,000.00 | Planning | Continued Public Outreach |
| Year 2 | \$22,500.00 | Design | Bidding and Contracting for Construction and Overall Program Management |
| Total Year 2 | \$32,500.00 | | |
| Year 3 | \$15,000.00 | Design | Overall Program Management |
| Total Year 3 | \$15,000.00 | | |
| TOTAL | \$555,000.00 | | |

Cost Share Funding: \$230,000 (29.3%)



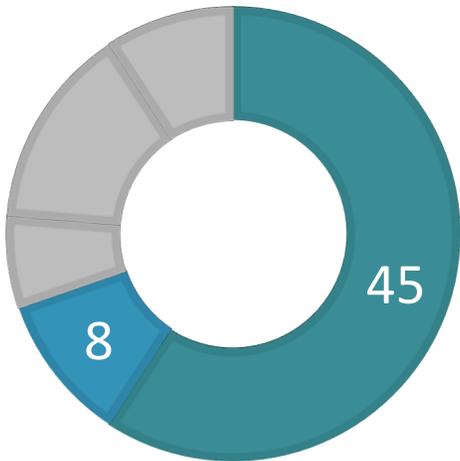
Preliminary Score

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





Water Quality & Water Supply Benefits



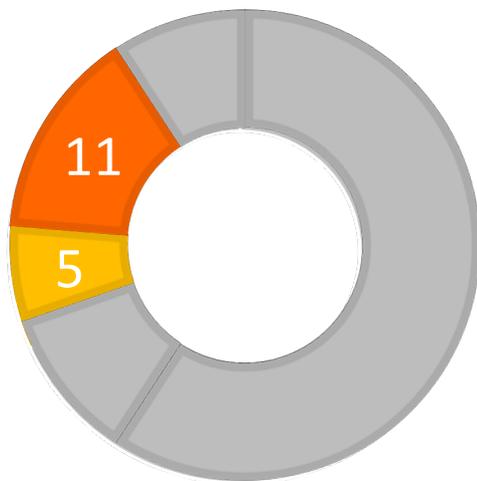
■ Water Quality
(50 max)

■ Water Supply
(25 max)

- Primary mechanisms: Infiltration
- Weather: Wet Weather
- Tributary Area: 395 Acres
- 24-hour Capacity: 8.25 AF
- Pollutant Reduction:
95 lb Zinc/year (82.2%) & 25 lb Copper/year (77.8%)
- Annual Capture Volume for Water Supply : 193 AF
- Water Supply & Water Quality Cost Effectiveness: \$2312/AF



Community Investment Benefits and Nature Based Solutions



■ Community Investment Benefits
(10 max)

■ Nature Based Solutions
(15 max)

- **Community Investment Benefits**

- Improve Flood Management and Reduced Flood Risk
- Enhance Recreational Opportunities
- Reduce Heat Island Effect
- Increase Shade and Vegetation

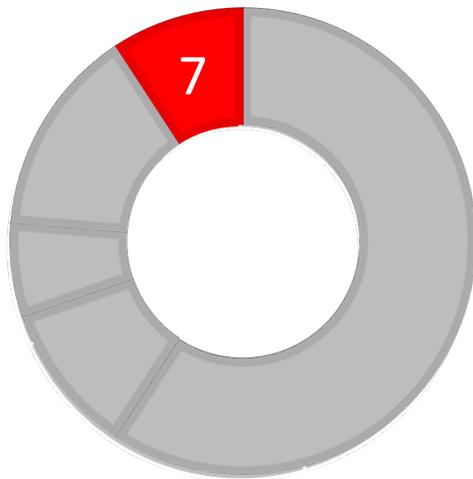
- **Nature Based Solutions**

- Nature-based Processes – Tree well filters, Corner/Curb/Mid-block Bioswales, and Infiltration
- Natural Materials – Soil, Gravel, and Native Californian Plants
- Impermeable Area Removal: 24%



Leveraging Funds and Community Support

- **Leveraging Funds**



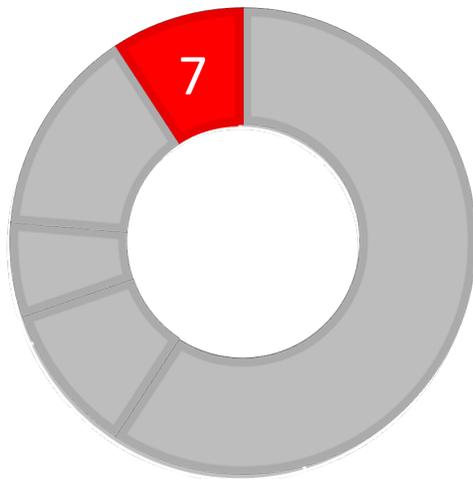
- **Funding Type:** Municipal Funds
- **Description:** Matching funds are included within the City of Glendora’s annual budget for the next 2 years and within additional complimentary funding requests for the “First/Last Mile” improvements for the Gold Line Station.
- **Funding Amount:** \$230,000
- **Funding Status:** Commitment Received
- **Funding matched:** 29.3%

■ Leveraged Funds and Community Support
(10 max)



Leveraging Funds and Community Support

- **Community Support**



- **The Glendora Chamber of Commerce** – Representing local businesses that will benefit from the Project
- **Active SGV** – A place-based community organization dedicated to realizing a more sustainable, equitable, and livable San Gabriel Valley
- **Outreach Strategies** – Community Meetings, Small Group Outreach, Community Events, Project Website, Surveys, Signage, Project Fact Sheets, Flyers, Media and Social Media, NextDoor App, and coordination with other local City projects

■ Leveraged Funds and Community Support
(10 max)



Questions?



Marchant Park Stormwater Capture Project

Infrastructure Program FY 2022-2023

Upper San Gabriel River Watershed Area

Project Lead: East San Gabriel Valley Watershed Management Group

Presenters: Lauren Marshall, City of San Dimas
& Jon Abelson, Stantec



Project Overview

This project proposes an underground infiltration gallery within Marchant Park, along with park improvements.

- Project Objectives:
 - **Capture stormwater to meet the MS4 Permit requirements**
 - Enhance water supply by providing opportunities for groundwater recharge through infiltration.
 - Create new recreational opportunities, enhance vegetation, and restore park spaces.
- This project is in the preliminary design phase; funding for design is being requested
- Total Funding Requested: \$675,000





Water Quality, Water Supply and Community Needs

- Applicable TMDLS
 - San Gabriel River and Impaired Tributaries Metals and Selenium TMDL (Metals TMDL)
 - TMDLs for Indicator Bacteria in San Gabriel River, Estuary and Tributaries (Indicator Bacteria TMDL)
 - Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL
- Main San Gabriel Basin experienced a historic five-year drought that began in 2011 which took groundwater levels consistently below the management range
- A 2016 Study noted picnic shelters and playgrounds were in fair condition at Marchant Park
- The ESGV Special Education Local Plan Area is focused on providing services and programs for students with special needs



Project Solutions

- Contribute toward San Dimas' compliance with the San Gabriel River Bacterial Indicator TMDL for dry weather by 6/14/2026 and wet weather by 2036.
- Help develop a more resilient local water supply through infiltrating stormwater
- Provide an interpretive sensory garden with musical instruments that will benefit the children of the community with special needs.
- Provide new shaded picnic table areas



Project Details

Current Site Conditions

- A geotechnical investigation was performed 07/22/21.
 - Infiltration rate: 0.75 inches per hour
 - Depth to Groundwater: >50 feet
- A desktop feasibility analysis was completed for the site, which included analyzing site ownership, slope, site size, proximity to stormwater infrastructure, and environmental challenges. **This site was deemed ideal due to the following:**
 - The site is located within the Main San Gabriel Basin
 - The site is owned by the City of San Dimas.
 - The site has mild slopes ($\leq 10\%$).
 - The site is in close proximity to existing storm drains.
 - This site does not have plans for future development



Project Details

Conceptual GIS Site Plan
Marchant Park

East San Gabriel Valley Watershed Management Group



Proposed Connection and Project Features

1. Divert flows from PD 0396 (Intersection of N Delancey Ave and E Juanita Ave). Flows will be conveyed via gravity to a hydrodynamic separator for pretreatment and then conveyed via gravity to the infiltration gallery.
2. Install an underground infiltration gallery within Marchant Park.



Project Details



Proposed Project Features

- Sensory village equipped with a play café and musical instruments
- Cornhole games and other game tables
- Picnic tables and shade canopies
- Native plantings and rain gardens
- Education through signage and kiosks
- Pedestrian path that goes through different sections of the southeastern part of the park



Cost & Schedule

| Phase | Description | Cost | Completion Date |
|--------------|---|--------------------|-----------------|
| Design | Assuming approval occurs in June 2022, the development of 30% design drawings will begin in July 2022. It is assumed that 100% design drawings will be finished by December 2023. | \$675,000 | 12/2023 |
| Construction | Assuming design finishes occurs in December 2023, the project will be submitted to SCW for construction funding. Construction is expected to begin in July 2025. | \$3,000,000 | 06/2027 |
| TOTAL | | \$3,675,000 | |

- Total Life-Cycle Cost: \$5,449,932.60 over 30 years
- Annualized Life-Cycle Cost: \$291,697.61



Funding Request

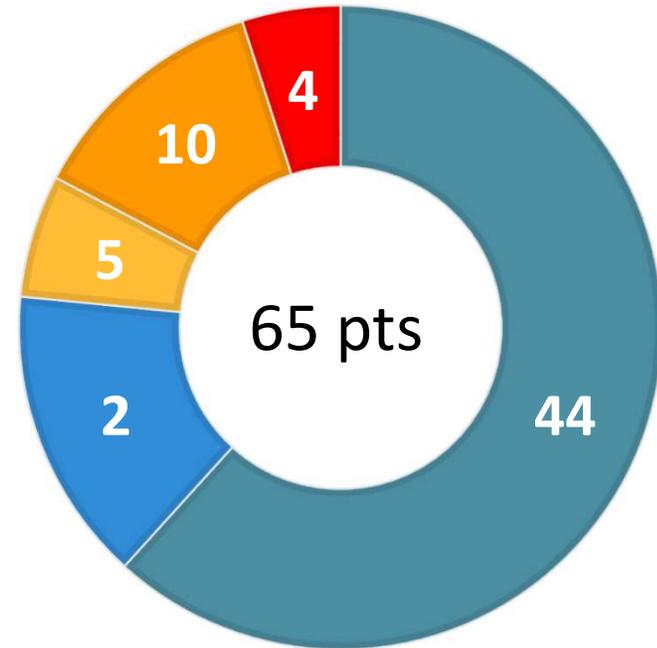
| Year | SCW Funding Requested | Phase | Efforts during Phase and Year |
|--------------|-----------------------|--------|---|
| 1 | \$ 675,000 | Design | Complete 30%-100% design drawing and permitting during 2022-2023. |
| TOTAL | \$ 675,000 | | |

- Future potential SCW funding request for construction phase.



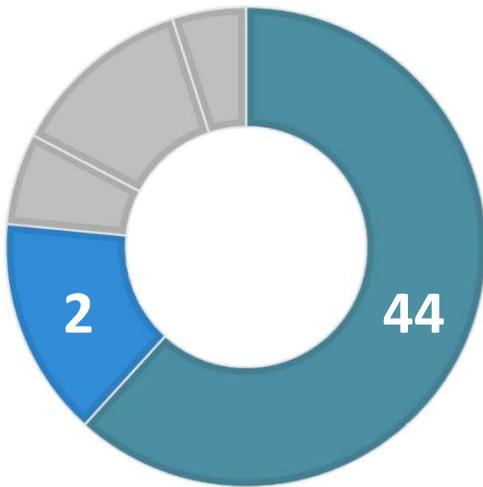
Preliminary Score

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





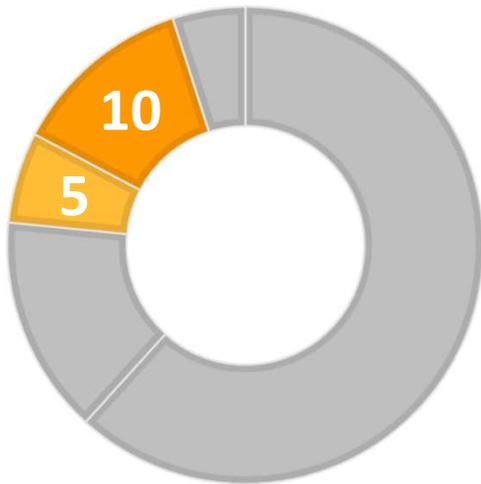
Water Quality & Water Supply Benefits



- The project will be sized to capture and infiltrate runoff associated with the 24-hour, 85th-percentile storm.
- Project Scoring: Wet weather
- Tributary Area: **77.38** ac
- 24-hr Capacity: **2.76** ac-ft
- 10-year Primary Pollutant Reduction, Total Copper, is **85.2%**; 10-year Secondary Pollutant Reduction, Total Zinc, is **89.9%**
- Annual Water Supply Volume: **34** ac-ft
- Water Supply aquifer in **Main San Gabriel Basin**
- Water Supply Cost Effectiveness: **\$8656** per ac-ft
- Water Quality Cost Effectiveness: **0.8-1.0** ac-ft / \$-Million



Community Investment Benefits and Nature Based Solutions



Community Investment Benefits

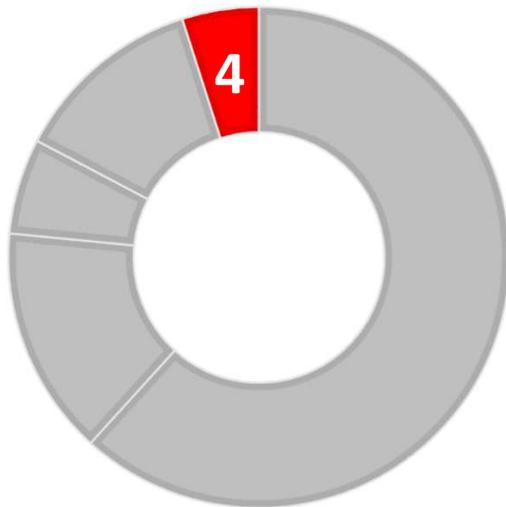
- Addition of native plants to enhance park space and flowering native trees for providing shade to the park
- Installation of a new cornhole games, game tables, and an interpretive sensory garden with musical instruments

Nature Based Solutions

- Installation of a below-ground infiltration system to infiltrate stormwater, which therefore decreases the impact of pollutants that would typically discharge into the receiving water, while maintaining the surface as usable space.
- Addition of native vegetation, including trees and shrubs.



Leveraging Funds and Community Support



Leveraging Funds

- This project is in the preliminary design phase and therefore other funding sources have not yet been explored or secured.

Community Support

- This project is supported by Bonita Unified School District, San Dimas Little League, San Dimas City Council, and San Dimas Chamber of Commerce
- If funded, this project will include outreach to the impacted community that lives near the park, or uses the park informally or formally, to seek input on construction scheduling and other potential impacts during implementation.



Questions?



Pelota Park Stormwater Capture Project

Infrastructure Program FY 2022-2023

Upper San Gabriel River Watershed Area

Project Lead: East San Gabriel Valley Watershed Management Group

Presenters: Lisa O'Brien, City of La Verne
& Jon Abelson, Stantec



Project Overview

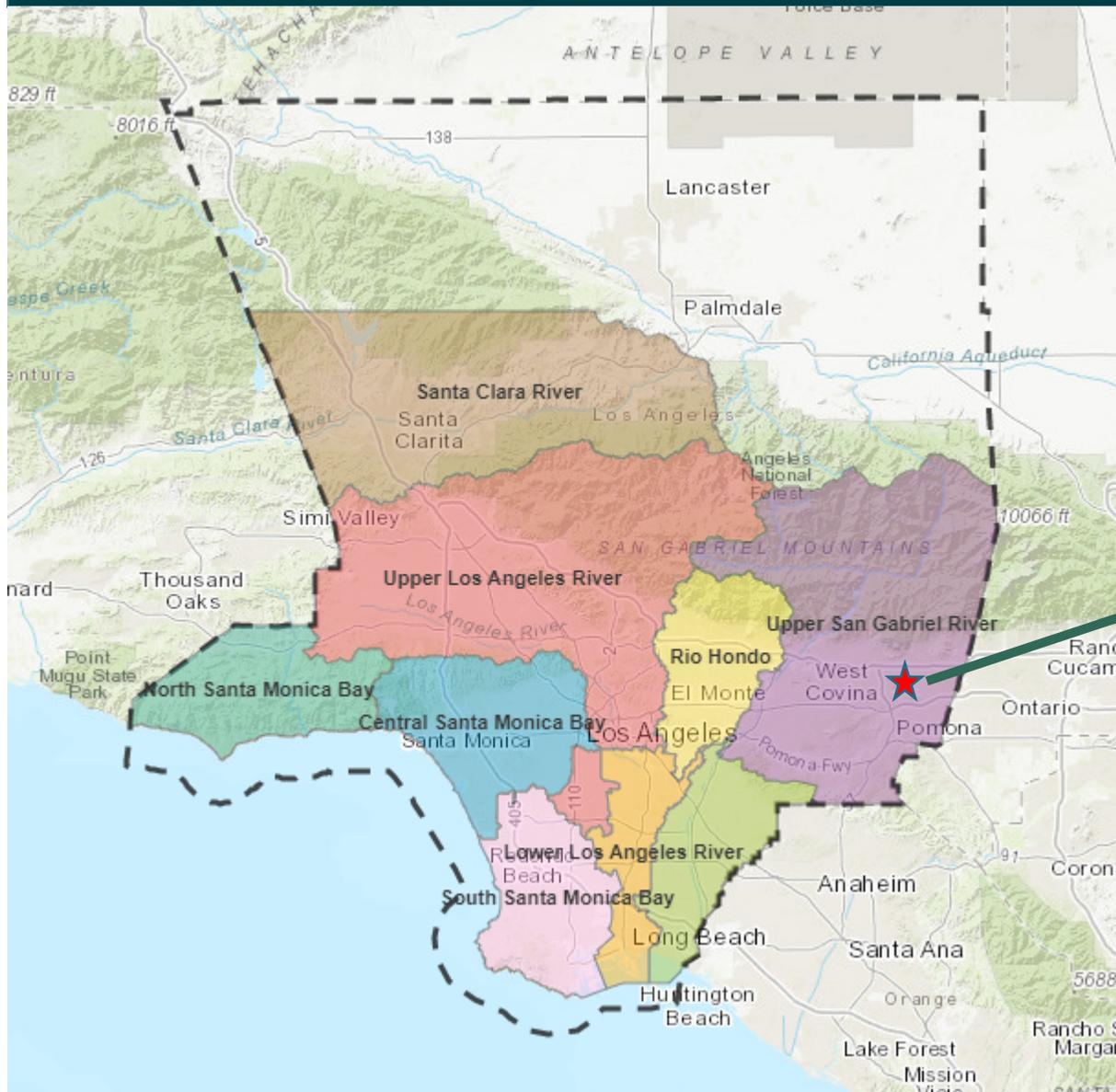
This project proposes an underground infiltration gallery within Pelota Park, along with park improvements.

- Project Objectives:
 - **Capture stormwater to meet the MS4 Permit requirements**
 - Enhance water supply by providing opportunities for groundwater recharge through infiltration.
 - Create new recreational opportunities, enhance vegetation, and restore park spaces.
- This project is in the preliminary design phase; funding for design is being requested
- Total Funding Requested: \$1,325,000

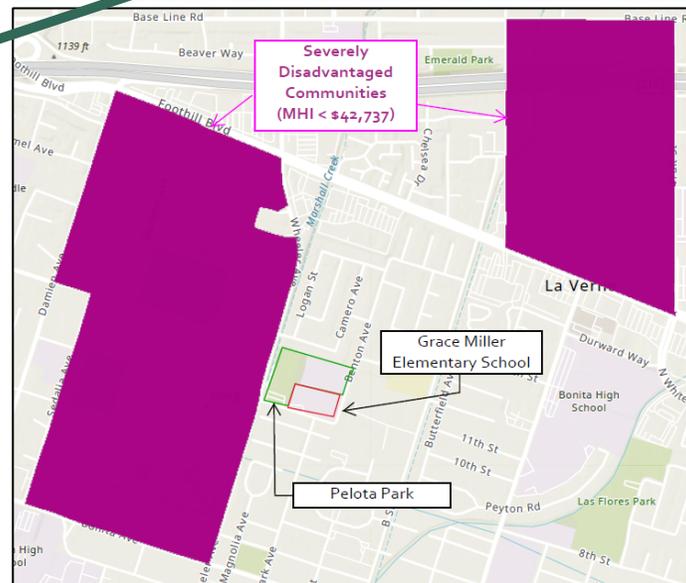




Project Location



Project Site: Pelota Park





Water Quality, Water Supply and Community Needs

- Applicable TMDLS
 - San Gabriel River and Impaired Tributaries Metals and Selenium TMDL (Metals TMDL)
 - Los Angeles Area Lakes TMDLs (Lakes TMDLs)
 - TMDLs for Indicator Bacteria in San Gabriel River, Estuary and Tributaries (Indicator Bacteria TMDL)
 - Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL
- The site overlays two groundwater basins.
 - Main San Gabriel Basin experienced a historic five-year drought that began in 2011 which took groundwater levels consistently below the management range
 - Six Basins reported precipitation in CY 2020 that was approximately 7 inches lower than the average precipitation since adjudication (CY 1999 to 2020).
- Flooding has occurred on the Little League fields.





Project Solutions

- Progress towards La Verne's TMDL compliance
 - Indicator Bacteria TMDL dry weather compliance: 6/14/2026
 - Indicator Bacteria TMDL wet weather compliance: 6/14/2036
- Help develop a more resilient local water supply through infiltrating stormwater and dry weather flows
- Alleviate flooding issues through regrading the park
- Provide park improvements to be enjoyed by the community and students.





Project Details

Current Site Conditions

- A geotechnical investigation was performed 07/23/21.
 - Infiltration rate: 2.56 in/hr
 - Depth to Groundwater: >50 ft
- A feasibility analysis was completed for the site, which included analyzing site ownership, slope, site size, and proximity to stormwater infrastructure.

This site was deemed ideal due to the following:

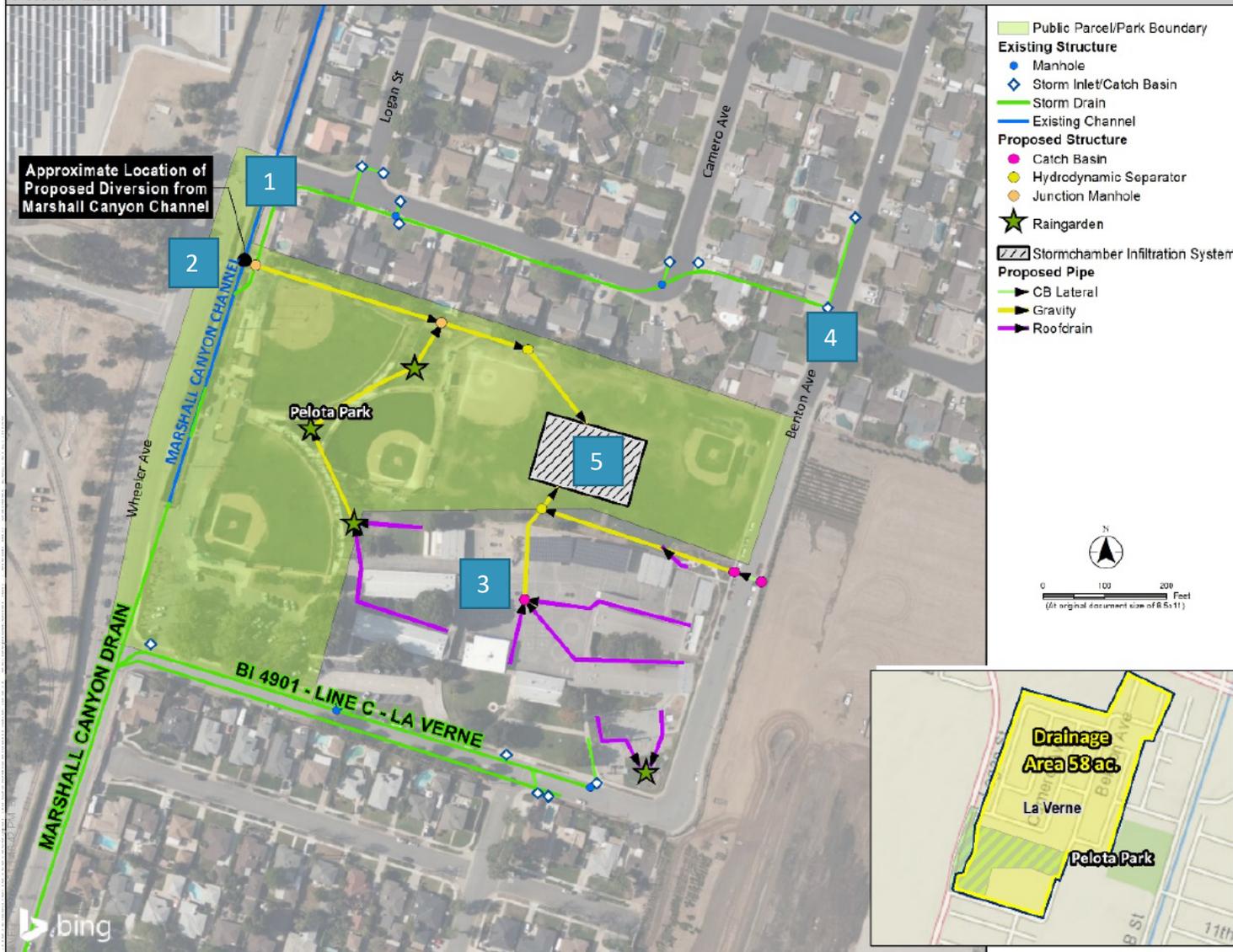
- The site is located within the Main San Gabriel Basin and Six Basins (Live Oak Basin); this project will result in new stormwater recharge.
- City of La Verne and Bonita Unified School District own the site.
- The site has mild slopes ($\leq 10\%$).
- The site is in close proximity to existing storm drains.



Project Details

Conceptual GIS Site Plan
Pelota Park

East San Gabriel Valley Watershed Management Group



Proposed Connection and Project Features

1. Divert flows from the Paseo Avenue storm drain prior to discharge to Marshall Canyon Channel. Flows will be conveyed via gravity to a hydrodynamic separator for pretreatment and then conveyed via gravity to the infiltration gallery.
2. Divert dry weather flows from Marshall Canyon Channel. Flows will be conveyed via gravity to a hydrodynamic separator for pretreatment and then conveyed via gravity to the infiltration gallery. During detailed design, a treatment system will be evaluated that could treat a portion of the dry weather flows to provide irrigation for the little league fields.
3. Capture and infiltrate runoff from buildings and blacktop at Grace Miller Elementary School. Flows will be conveyed to rain gardens or the infiltration gallery.
4. Install new catch basins on Benton Avenue. Flows will be conveyed via gravity to a hydrodynamic separator for pretreatment and then conveyed via gravity to the infiltration gallery.
5. Install an underground infiltration gallery within Pelota Park.



Project Details



Proposed Project Features

- New baseball fields and batting cages
- Informational signage along path
- Perimeter pathway
- Permeable pavement in parking lot
- Rain gardens and native plants, along with educational signage
- Downspout disconnection for Grace Miller Elementary School building runoff





Cost & Schedule

| Phase | Description | Cost | Completion Date |
|--------------|---|---------------------|-----------------|
| Design | Assuming approval occurs in June 2022, the development of 30% design drawings will begin in July 2022. It is assumed that 100% design drawings will be finished by December 2023. | \$1,325,000 | 12/2023 |
| Construction | Assuming design finishes occurs in December 2023, the project will be submitted to SCW for construction funding. Construction is expected to begin in July 2025. | \$10,000,000 | 06/2027 |
| TOTAL | | \$11,325,000 | |

- Total Life-Cycle Cost: \$18,331,312.89 over 30 years
- Annualized Life-Cycle Cost: \$981,149.78



Funding Request

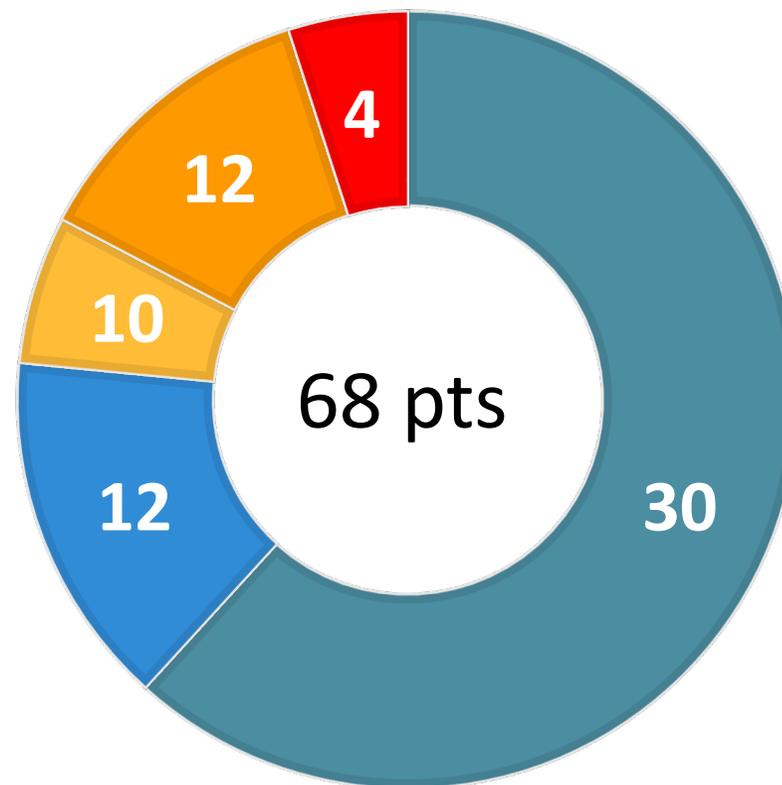
| Year | SCW Funding Requested | Phase | Efforts during Phase and Year |
|--------------|-----------------------|--------|---|
| 1 | \$ 1,325,000 | Design | Complete 30%-100% design drawing and permitting during 2022-2023. |
| TOTAL | \$ 1,325,000 | | |

- Future potential SCW funding request for construction phase.



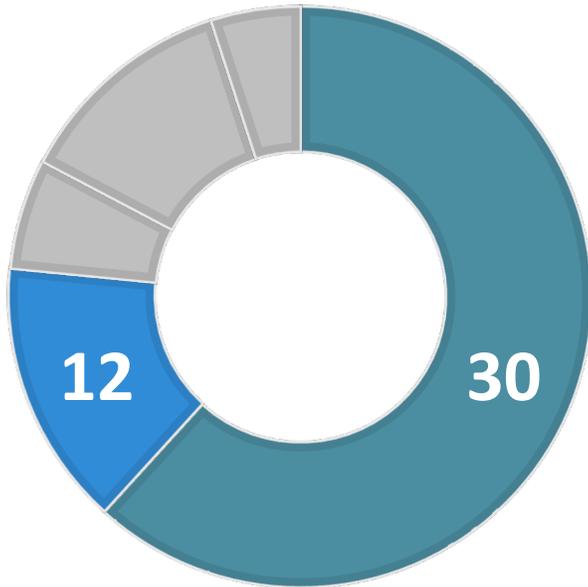
Preliminary Score

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





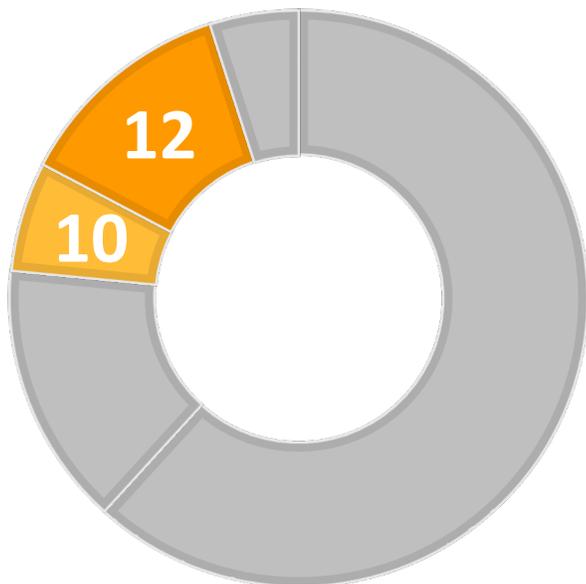
Water Quality & Water Supply Benefits



- The project will be sized to capture and infiltrate runoff associated with the 24-hour, 85th-percentile storm.
- Project Scoring: Wet weather
- Tributary Area: **58.21** ac
- 24-hr Capacity: **2.67** ac-ft
- 10-year Primary Pollutant Reduction, Total Copper, is **94.6%**; 10-year Secondary Pollutant Reduction, Total Zinc, is **96.6%**
- Annual Water Supply Volume: **347** ac-ft
- Water Supply aquifer in **Main San Gabriel Basin and Six Basins (Live Oak Basin)**
- Water Supply Cost Effectiveness: **\$2830** per ac-ft
- Water Quality Cost Effectiveness: **<0.4** ac-ft / \$-Million



Community Investment Benefits and Nature Based Solutions



Community Investment Benefits

- Localized flood mitigation within Pelota Park
- New baseball fields and batting cages
- Addition of native plants
- Addition of rain garden at Grace Miller Elementary School
- Runoff diversion from Grace Miller Elementary School buildings
- Educational signage for sustainability features

Nature Based Solutions

- Installation of a below-ground infiltration system to infiltrate stormwater, which therefore decreases the impact of pollutants that would typically discharge into the receiving water, while maintaining the surface as usable space.
- Increasing native vegetation in areas that were previously gravel or turf.



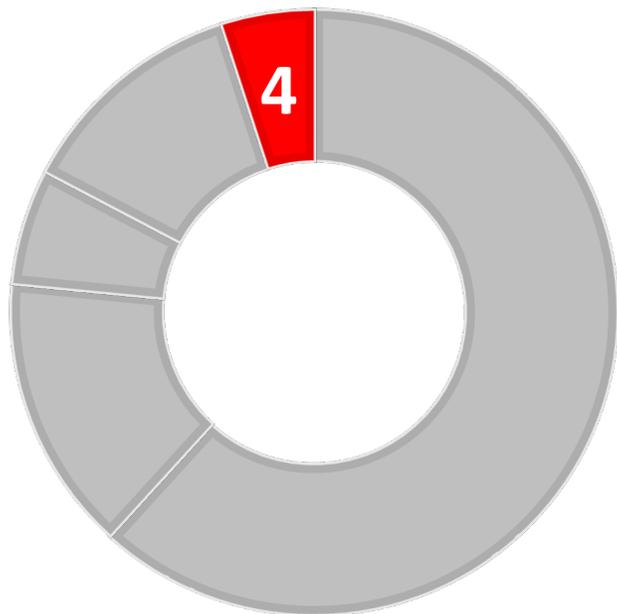
Leveraging Funds and Community Support

Leveraging Funds

- This project is in the preliminary design phase and therefore other funding sources have not yet been secured.
- Met with the Three Valleys Municipal Water District to discuss potentially using water conservation funding from the Metropolitan Water District to design and install drought tolerant native vegetation and rain gardens.
- LA County Parks grant has been analyzed, but due to several factors, is not considered a viable option.

Community Support

- Met with the Bonita Unified School District to discuss the project and project features to be implemented.
- Held site visit with the Parks Department to discuss park improvements based on feedback from the community.
- Met with La Verne Little League to discuss community benefits and ball field improvements.
- All organizations are supportive of the project.





Questions?