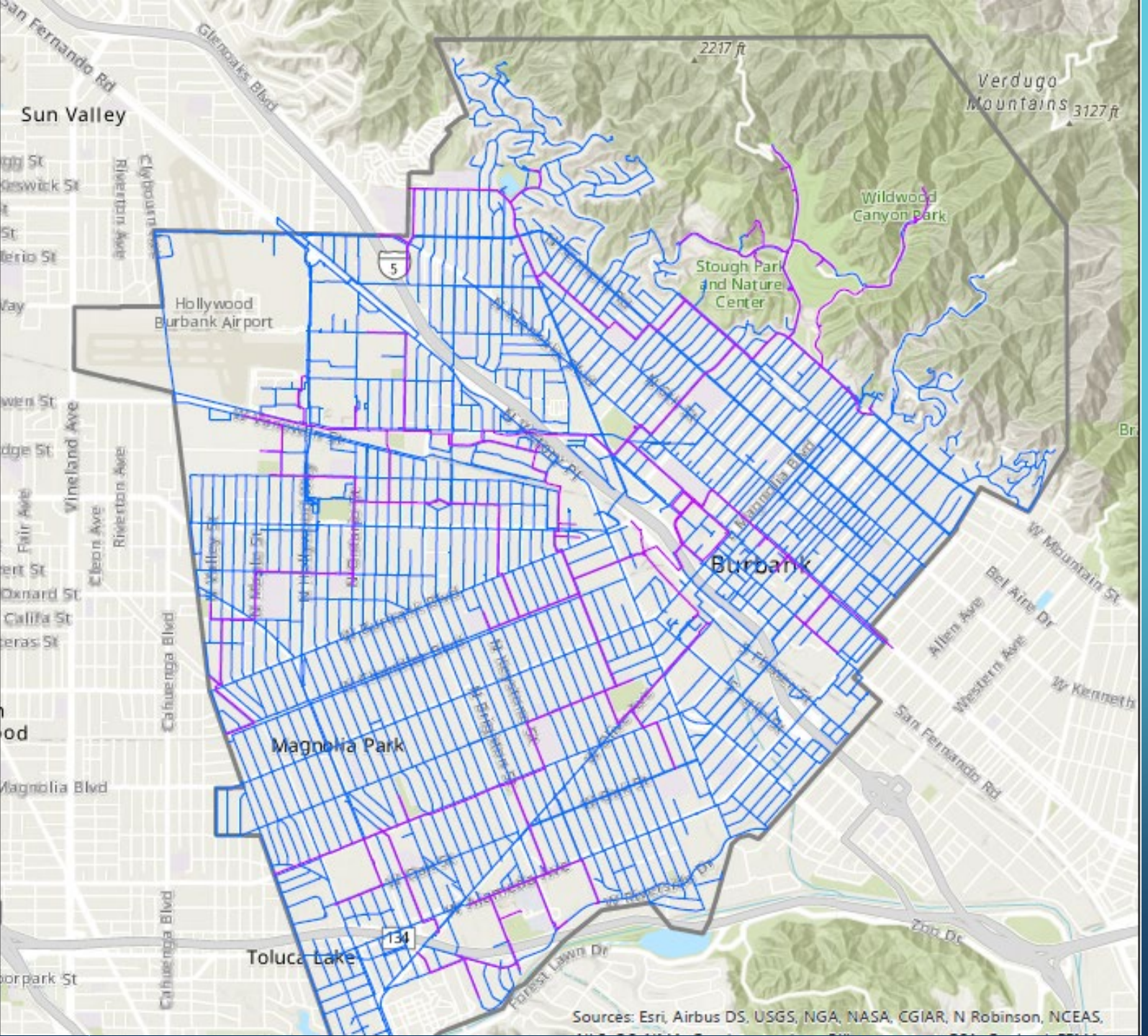
# BURBANK WATER AND POWER ADVANCED METERING INFRASTRUCTURE UPGRADE

JARED LEE, PE

CIVIL ENGINEER

CITY OF BURBANK

WATER AND POWER

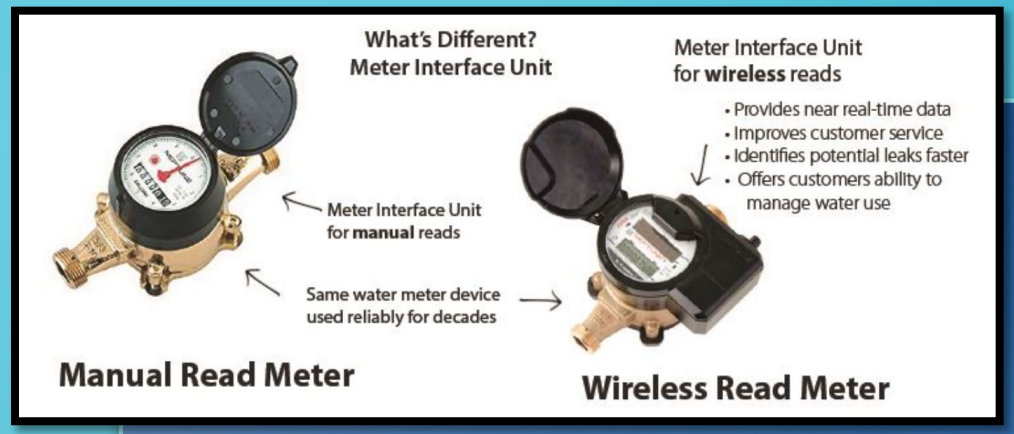


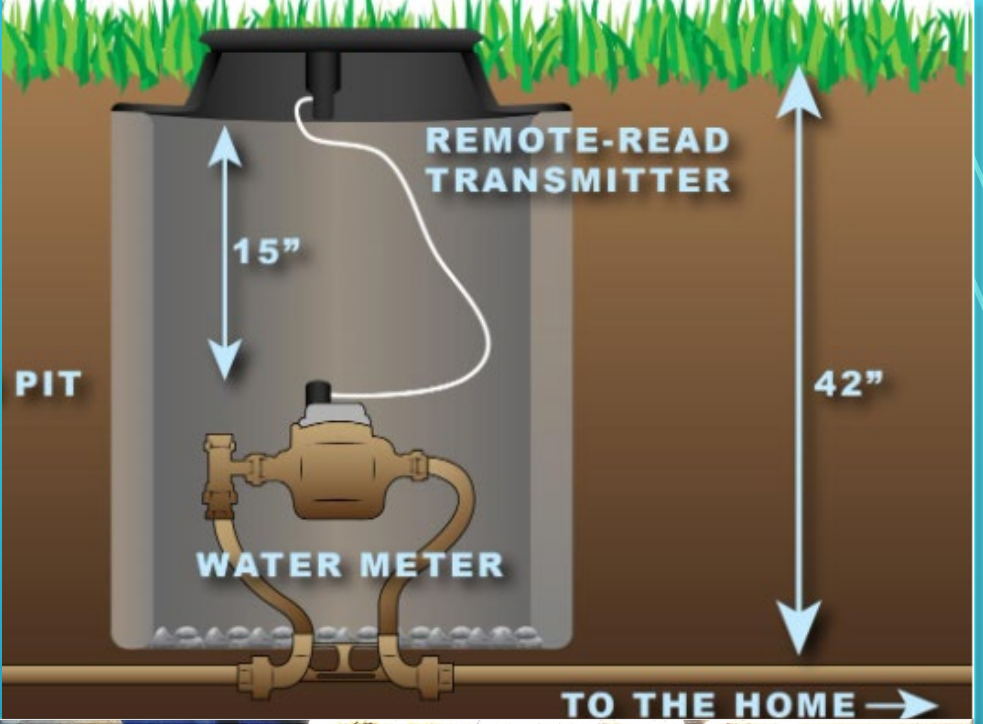

# CITY OF BURBANK

- 17.4 square miles
- Population of 105,000
- 17,000 AFY of potable water demand
- 3,300 AFY of recycled water demand
- No water rights - all our water must be imported/purchased

# WATER METERING

- Advanced Metering Infrastructure (AMI) meter reads are obtained automatically
- BWP was among the first utilities to pilot and implement AMI in early 2010
- Although initially successful, BWP's AMI began to degrade at a rate exceeding industry standards
  - More than 25% of 27,000 AMI capable meters are not working
  - Hundreds more fail every month
  - System will fail in the next couple of years
  - Replacements are not available






# PROJECT DESCRIPTION

- BWP needs to replace its water AMI system
  - Wireless Wide Area Network and over 27,000 transmitters
- Retrofit or replace lids for wireless connectivity
- Keep existing meters and registers
- Interface with BWP’s existing Customer Information Systems

# PROJECT BENEFITS

- Reduce water usage by over 512 acre-feet per year
- Save almost 1.7 million kWH annually in electricity
  - Enough to power 256 single family homes per year
- Reduce CO2 emissions by over 380 metric tons from not having to import State Water Project Water
- Access to near real time data that can notify of abnormal water usage
- Reduce water loss/non-revenue water
- Improve water conservation/water accountability
- Comply with upcoming indoor water budget regulations

# CEQA & PERMIT STATUS

CLASS 1 CATEGORICALLY EXEMPT, NO OTHER PERMITS REQUIRED

CITY OF BURBANK
WATER AND POWER

# PROJECT BUDGET

| Budget Category | Grant Request | Cost Share | Other Cost | Totals |
|---|---|---|---|---|
| A. Project Administration | - | - | - | - |
| B. Land Purchase/Easement | - | - | - | N/A |
| C. Planning/Design/Engineering/Environmental Documentation | - | - | - | COMPLETED |
| D. Construction/Implementation | $1,000,000 | $7,000,000 | | $8,000,000 |
| Totals | $1,000,000 | $7,000,000 | | $8,000,000 |
| Minimum Grant Amount Needed | $250,000 | | | |

CITY OF BURBANK WATER AND POWER

# PROJECT SCHEDULE

| Budget Categories | Start Date | End Date |
|---|---|---|
| A. Project Administration | January 2022 | December 2024 |
| B. Land Purchase/Easement | n/a | n/a |
| C. Planning/Design/Engineering/Environmental Documentation | January 2022 | December 2022 |
| D. Construction/Implementation | January 2023 | December 2024 |

CITY OF BURBANK WATER AND POWER

# EXPECTED CHALLENGES/DELAYS

- Supply Chain Disruptions and Lead Times
- Water Meter Lid Retrofits
- Integration with legacy systems and equipment

# PRIORITIES AND CONSIDERATIONS UNDER WATER CODE §79707(B AND E) AND §79742(A AND F)

## Leverage Funds

- Local funding from Approved FY 22/23 Budget

## Employ New or Innovative Ideas

- Near instant Two-way communication between utilities and customers
- Track indoor & outdoor water usage
- Timely notification of leaks and abnormal usage

## Greater Watershed Coverage

- Project affects BWP's entire service area - 17.4 square miles in the Upper LA River Watershed

## Multiple Benefits

- Customers more attuned with water usage
- Saves 512 acre-feet/year of water
- ~1.7 million kWH of energy savings/year
- Greenhouse Gas reduction of over 380 metric tons CO2/year

# QUESTIONS?

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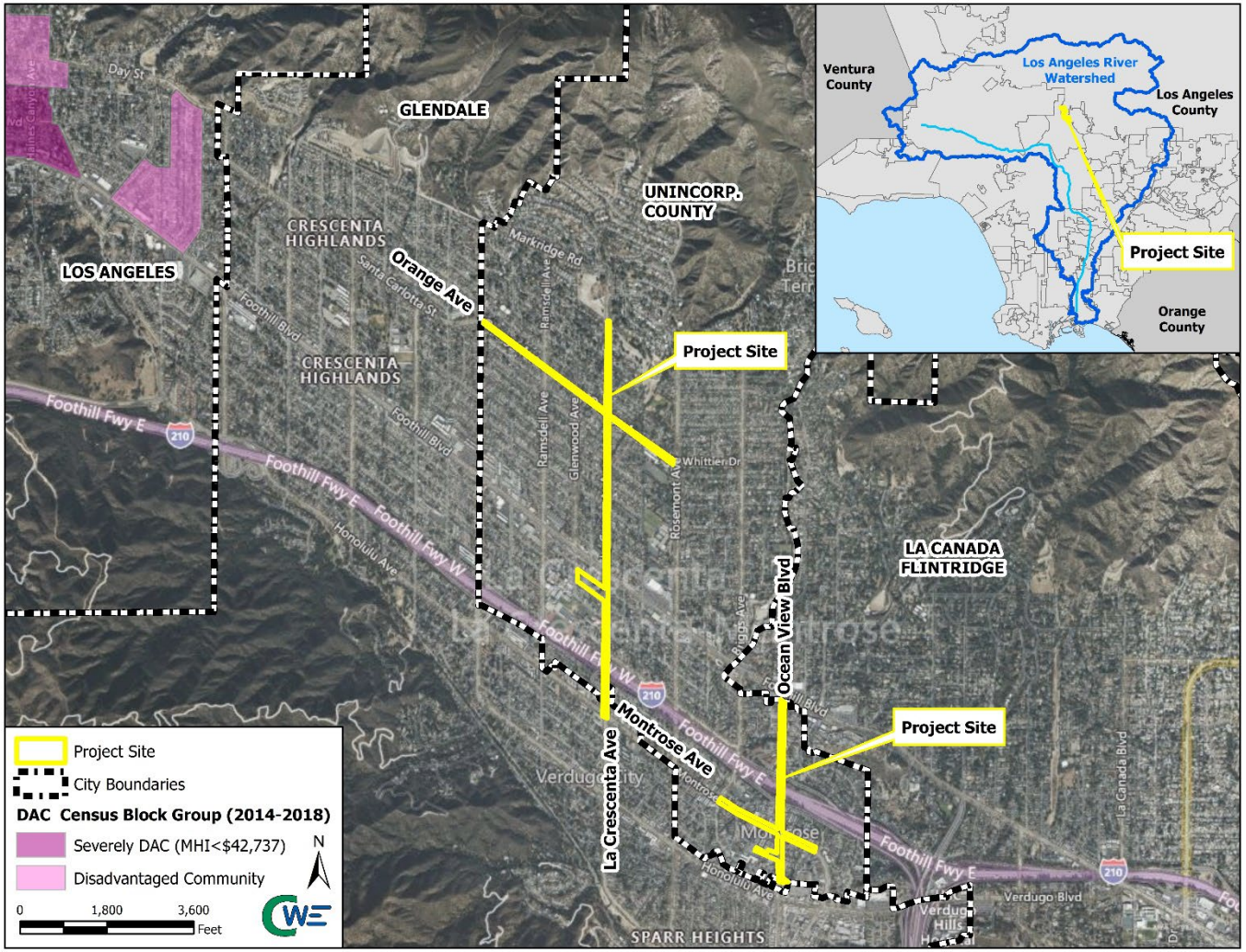
Los Angeles County Public Works

# La Crescenta Green Improvement Project

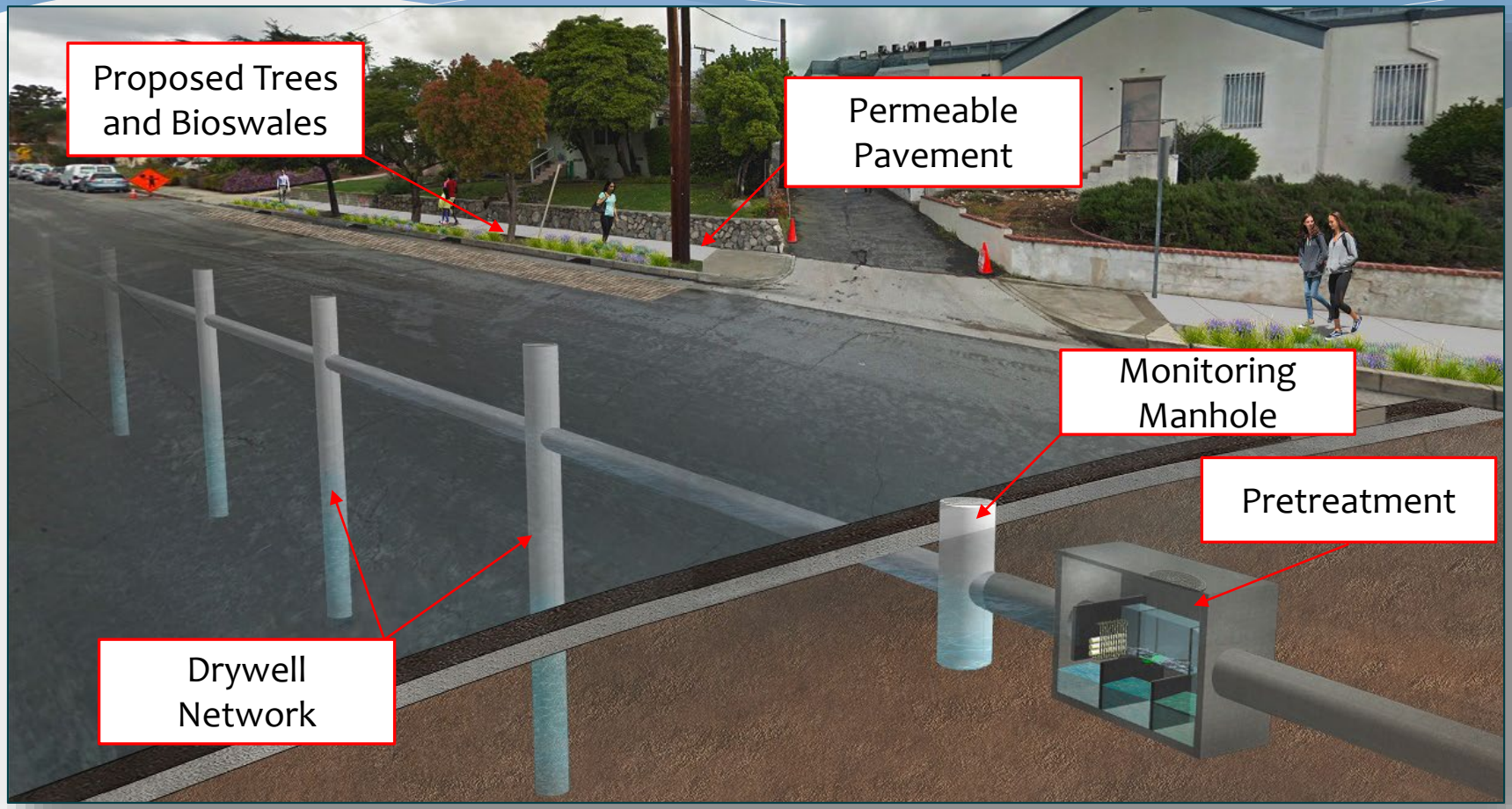
Rafael Piamonte

Associate Civil Engineer

# Project Location

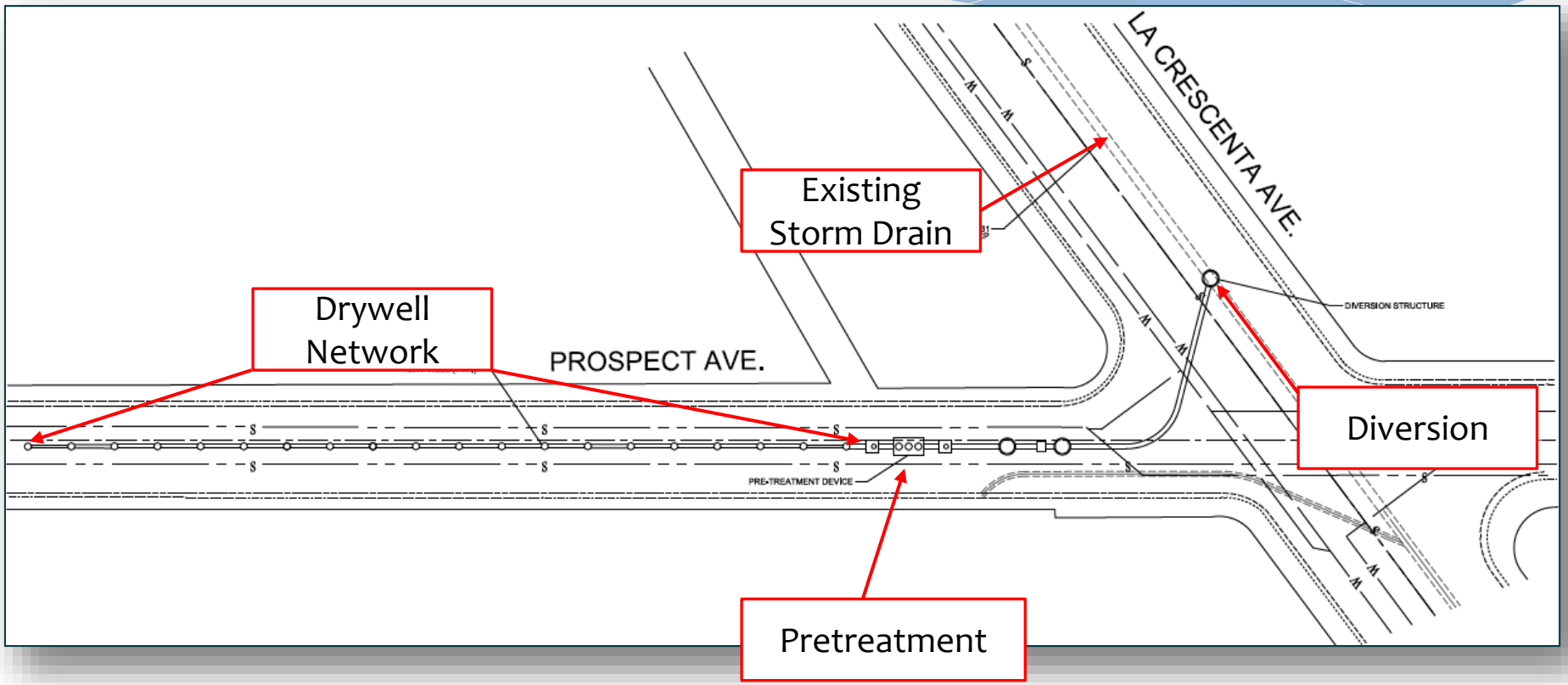


# Project Description

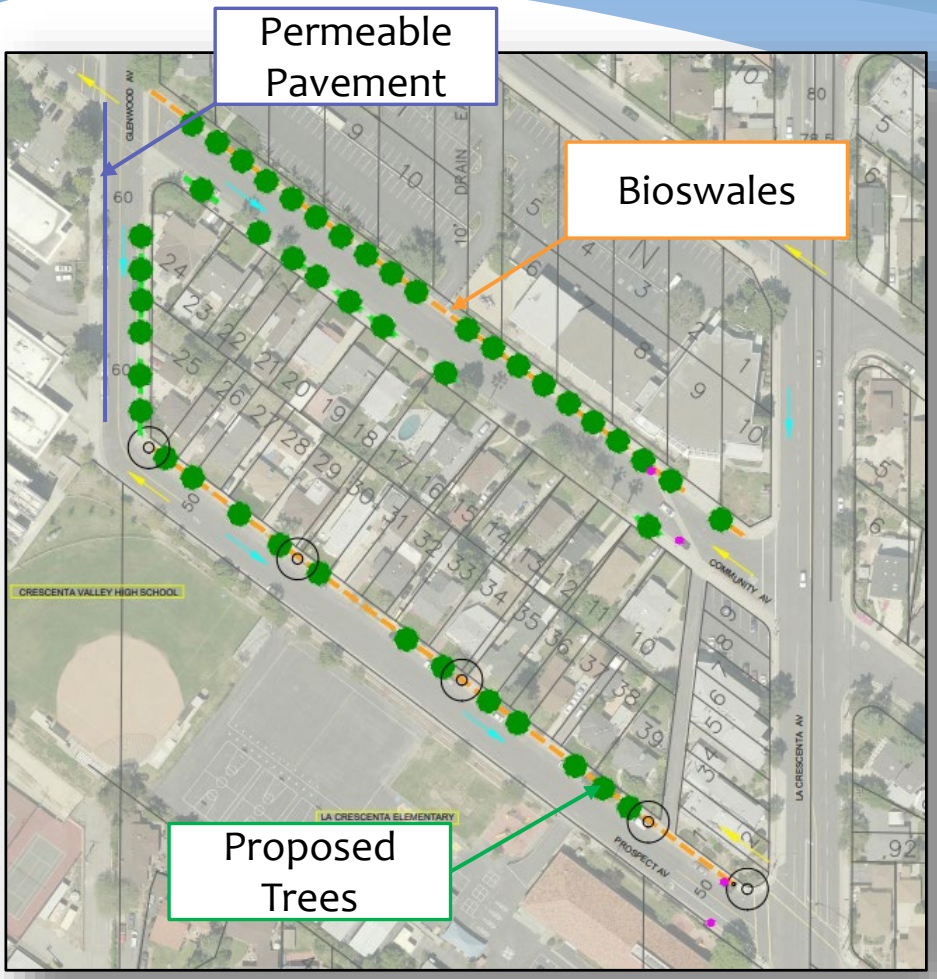


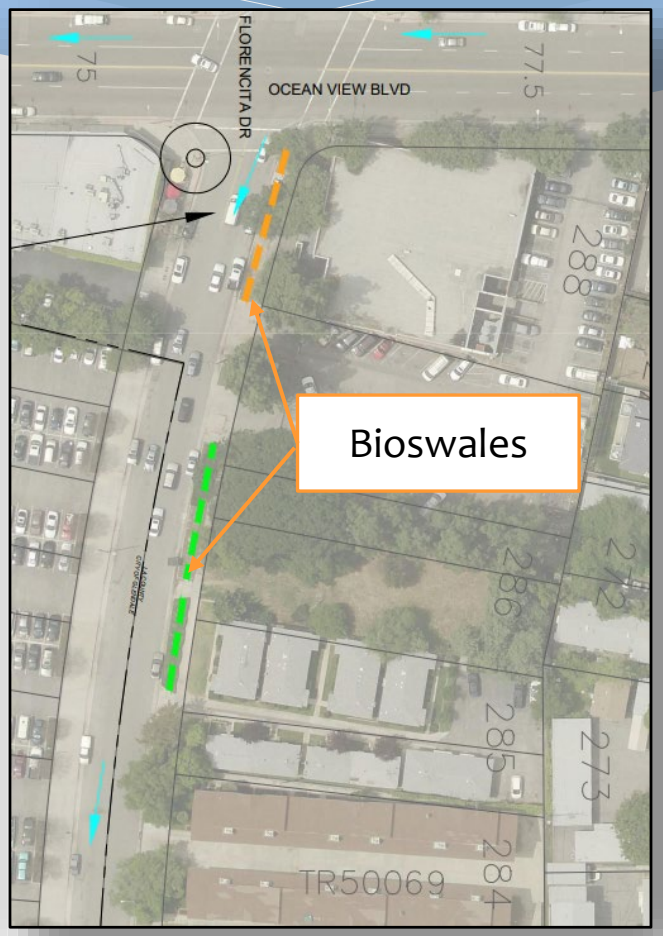

* Estimated Project Completion Date: February 2026

# Project Description



# Project Description



# Project Description

* Stormwater quality improvements
  * 30 drywells
  * 15,000 square feet of bioswales
  * 19,000 square feet of permeable pavement
  * 7.57 ac-ft per storm event
    * 85$^{th}$ percentile capture, 150+ acre drainage area
* Traffic safety improvements
  * 4.1 miles of roadway rehabilitation
  * Sidewalk and driveway repair and reconstruction
  * Install Class II and III bikeways
  * Construct ADA Compliant curb ramps/bulb-outs
  * Stripe continental crosswalks
* 47 new street trees

# Project Benefits

## Water Quality Benefits

**Background condition**

- Project area drains to Arroyo Seco Reach 2
- Arroyo Seco Reach 2 is subject to a bacteria TMDL
- Los Angeles River is subject to metals, nutrients, and bacteria TMDLs

**Benefits**

- Remove more than 60% of total metals
- Remove 64% of bacteria and nutrients

**Methods used to quantify benefits**

- Hourly 10-year WMMS simulation integrated in the SCWP Module
- Post-construction water quality monitoring

# Project Benefits

## Water Supply Benefits

**Background condition**

- Southern California has relied on imported water
- California has undergone lengthy droughts, which further impact local and regional water supply availability and needs

**Benefits**

- Increase water supply to Verdugo Groundwater Basin
- Provide 40 acre-ft of recharge each year

**Methods used to quantify benefits**

- Calculation of estimated dry and wet weather runoff volume captured (hourly 20-year WMMS simulation integrated in the SCWP Module)
- Install flow meter to quantify recharge volume

# Project Benefits

## Flood Control Benefits

**Background condition**

- Project is in an area with high population density and imperviousness

**Benefits**

- Provide new drainage infrastructure
- Divert urban runoff and increase downstream storm drain capacity

**Methods used to quantify benefits**

- Calculation of increased storm drain capacity
- Visual observation of reduced downstream flooding

# Project Benefits

## Open Space Benefits

**Background condition**

- Project area is highly impervious and lacking native vegetation

**Benefits**

- Plant 47 new trees
- Construct 15,000 sq-ft of bioswales with native drought tolerant landscaping
- Construct approximately 19,000 sq-ft of permeable paving
- Promote walking and biking and provide safe routes to La Crescenta Elementary School

**Methods used to quantify benefits**

- Measure the area of open space created

# Project Benefits

**GLAC IRWM Plan Missions**

| | |
|---|---|
| Improve Water Supplies | Enhance Water Supply Reliability |
| Improve Surface Water Quality | Preserve Flood Protection |
| Conserve Habitat | Expand Recreational Access |

# Project Benefits

**Statewide Priorities**

Utilize Natural Infrastructure

- Install bioswales and permeable pavement
- Native and/or drought tolerant landscaping

Encourage Regional Approaches Among Water Users Sharing Watersheds

- Los Angeles County partners with City of Glendale to implement the proposed project

Drought Preparedness

- Provide groundwater recharge to Verdugo Groundwater Basin

Climate Resilience

- Plant 47 trees to sequester carbon
- Promote walking and biking to reduce green house gas (GHG) emission

Strengthen Partnership with Stakeholders

- Continuous coordination with Crescenta Valley Town Council and TreePeople
- A community outreach meeting was held May 2021

# CEQA & Permit Status

| CEQA/Permit Document (List all per EIF) | Start Date | End Date |
|---|---|---|
| Addendum to Program Environmental Impact Report | Ongoing | 12/31/2023 |

* No applicable environmental/design-related permits

# Project Budget

| Budget Category | Grant Request | Cost Share | Other Cost | Totals |
|---|---|---|---|---|
| A. Project Administration | N/A | N/A | $250,000 | $250,000 |
| B. Land Purchase/ Easement | N/A | N/A | N/A | N/A |
| C. Planning/Design Engineering/ Environmental Documentation | N/A | N/A | $1,250,000 | $1,250,000 |
| D. Construction/ Implementation | $2,000,000 | $2,000,000 | $3,700,000 | $7,700,000 |
| **Totals** | **$2,000,000** | **$2,000,000** | **$5,200,000** | **$9,200,000** |

Funding to be secured through County General Funds and SCWP Municipal Funds to supplement as needed.

# Project Schedule

| Budget Categories | Start Date | End Date |
|---|---|---|
| A. Project Administration | Ongoing | 2/28/2026 |
| B. Land Purchase/Easement | N/A | N/A |
| C. Planning/Design/Engineering/Environmental Documentation | Ongoing | 10/31/2024 |
| D. Construction/Implementation | 2/1/2025 | 2/28/2026 |

# Expected Challenges/Delays

* Potential challenges and/or delays:
  * O&M challenges related to training County staff/team
    * Conversations are happening early on in preparation
  * Finding funding
    * County is applying for funding and will use available resources to make up difference
  * Traffic-related construction impacts
    * Working with the community early on to spread the word

# Questions

Contact Person:

Rafael Piamonte
rpiamonte@dpw.lacounty.gov

# Whitsett Fields Park North Stormwater Capture Project

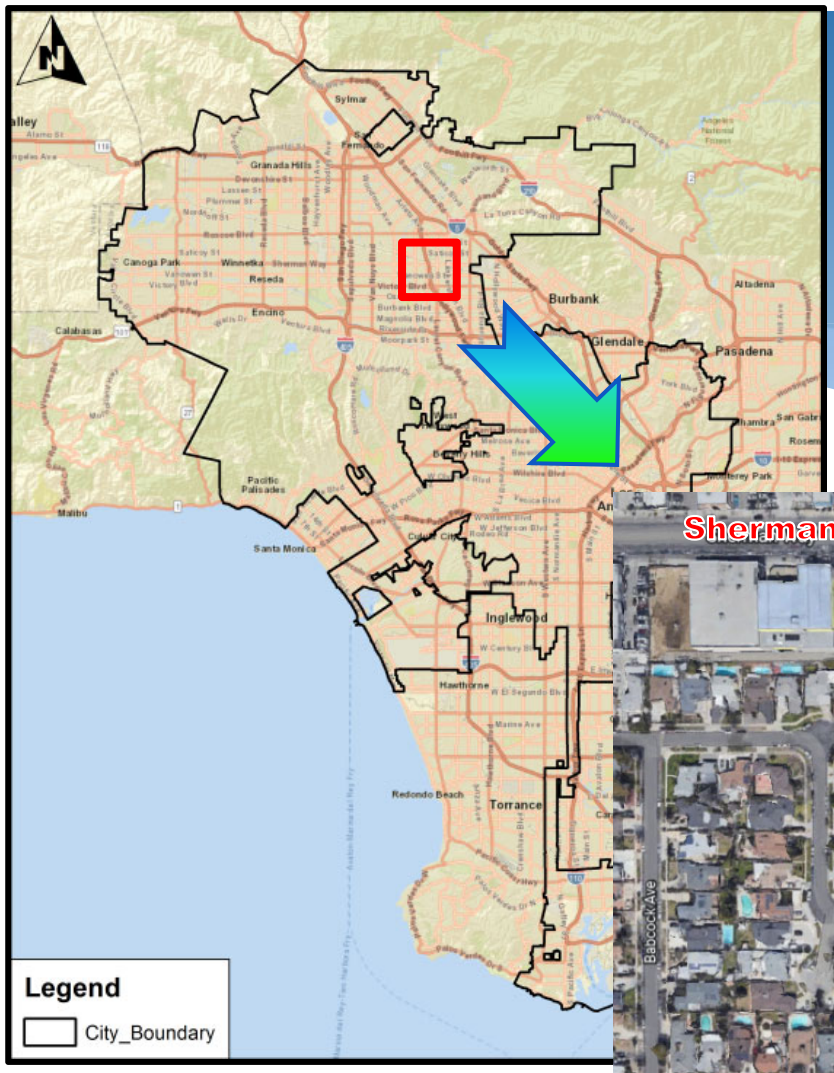
IRWM ULAR Steering Committee

August 23, 2022


Noel Le

Civil Engineering Associate

# Project Location





Communities:

- North Hollywood
- South Valley
- Valley Glen

# Project Description

The Project is a multi-benefit project that will divert stormwater and urban runoff from a 78" storm drain into an underground infiltration gallery to infiltrate and replenish the San Fernando Groundwater Basin.

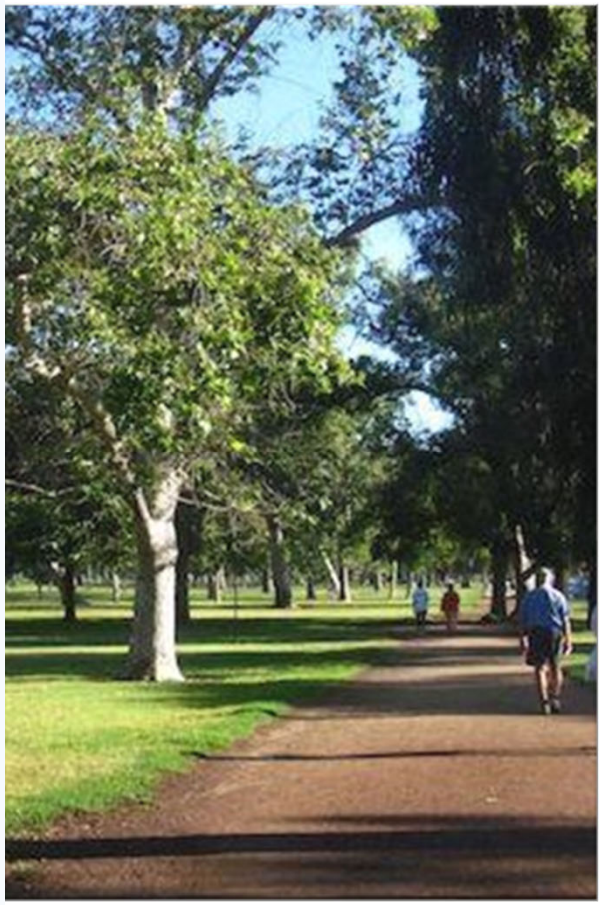
Drainage Area: 303 acres

Approx. Yield: 185 AFY

* 740 single-family households annually

Partners:

* LA Dept. of Public Works
* LA Dept. of Recreation and Parks (RAP)

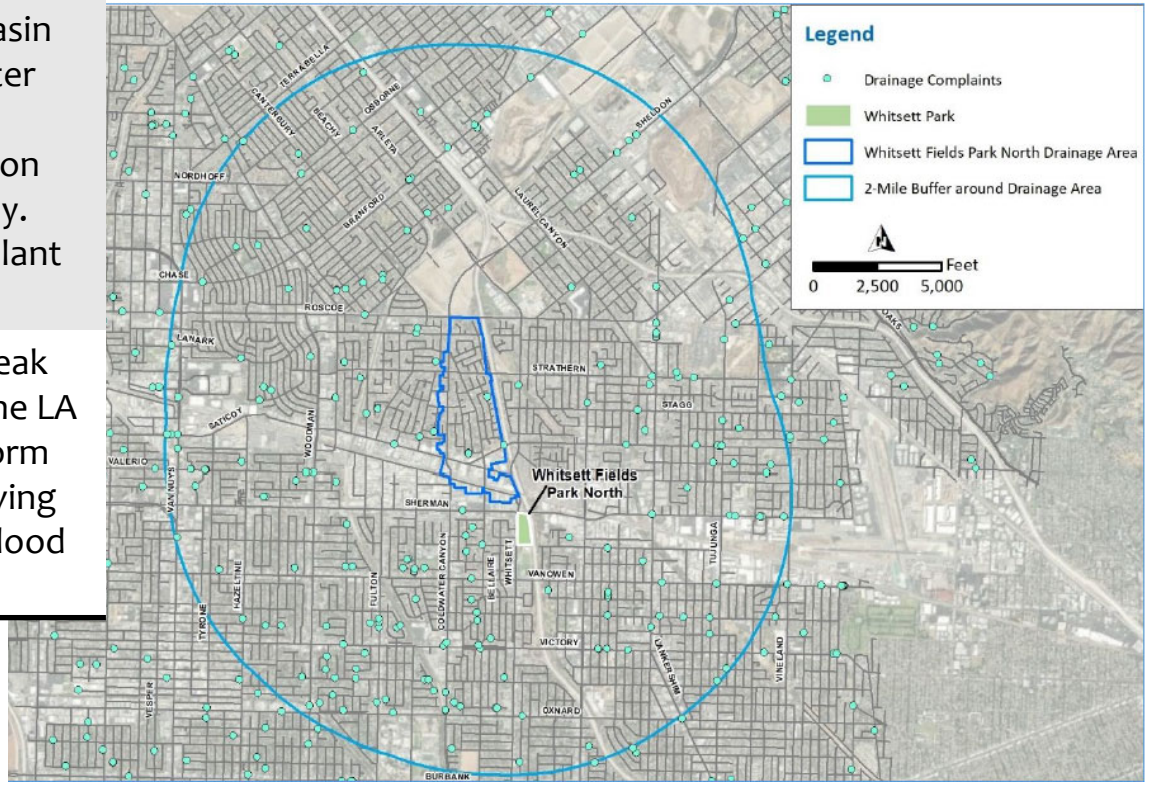


# Project Benefits

| GLAC Critical Needs | Response |
|---|---|
| Increase Water Supply | Project is estimated to infiltrate 185 AFY into the San Fernando Groundwater Basin (Basin). |
| Improve Surface Water Quality | Project will assist the City in meeting the Clean Water Act, Total Maximum Daily Loads (TMDLs) and comply with the Municipal Separate Storm Sewer System Permit (MS4) by removing pollutants such as trash, bacteria, metals, sediments, and nutrients. |

# Project Benefits

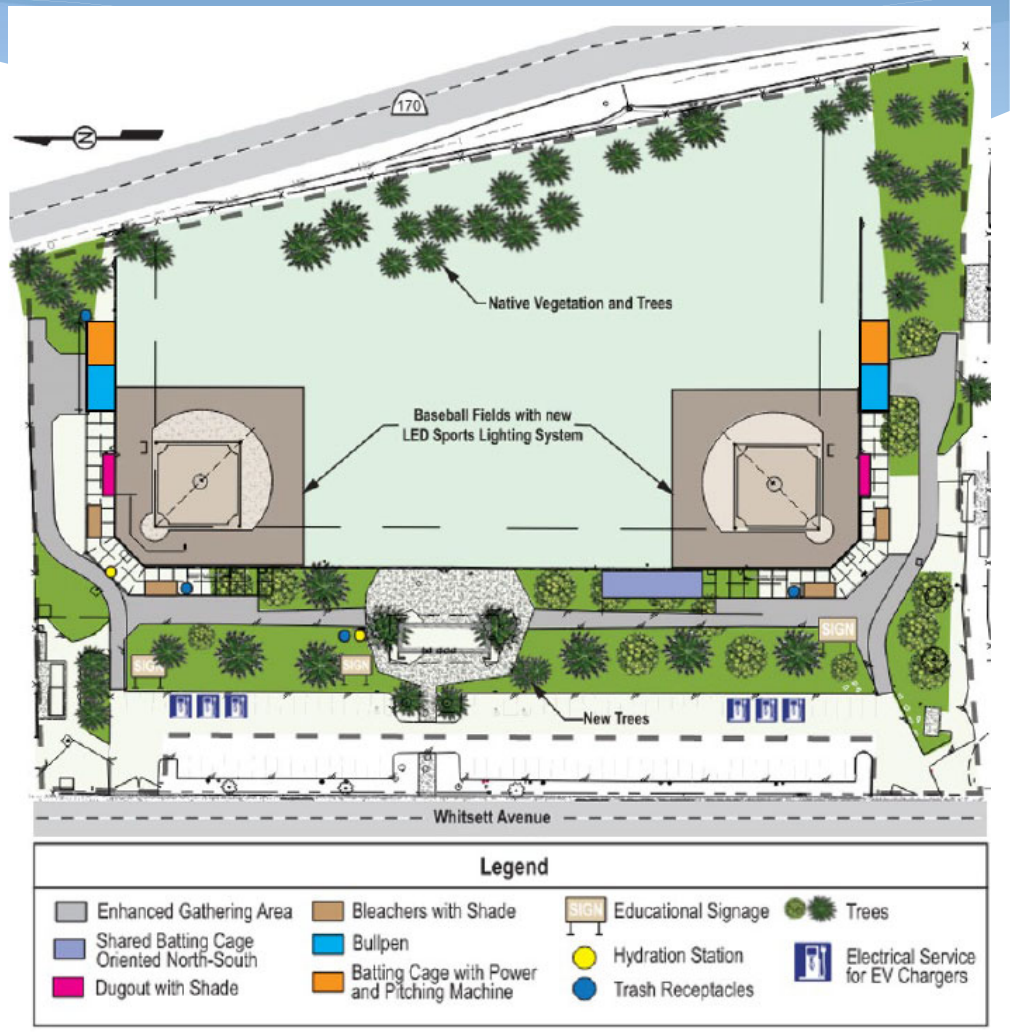
| GLAC Critical Needs | Response |
|---|---|
| Address Climate Change | Infiltration into the Basin will increase local water supply, reducing the region's dependence on imported water supply. The Project will also plant 16 trees. |
| Reduce Flood Risk | Project will provide peak flow attenuation to the LA River and increase storm drain capacity, improving the efficiency of the flood control system. |



# Project Benefits

| GLAC Critical Needs | Response |
|---|---|
| Enhance Open Space/Habitat/ Recreation | Project will enhance existing baseball fields with new shaded bleachers, dugouts, batting cages, sports lighting, and hydration stations. |

*These benefits would provide direct benefits to the DAC, especially the enhanced park amenities, additional trees, and improved flood control system.*



# Project Benefits

- Statewide Priorities
  - Utilize natural infrastructure
    - Enables natural percolation to mimic predeveloped conditions
  - Drought Preparedness
    - Addresses long-term drought preparedness by contributing to sustainable water supply and reliability during water shortages
  - Climate Resilience
    - Reuses water more efficiently
    - Reduces greenhouse gas emissions
      - Will plant 16 new trees to provide carbon sequestration
  - Strengthens Partnerships with Stakeholders

# CEQA & Permit Status

| CEQA/Permit Document (List all per EIF) | Start Date | End Date |
|---|---|---|
| Initial Study/Mitigated Negative Declaration | Sep 2019 | Sep 2021 |
| Construction Stormwater General Permit | Dec 2024 | Feb 2025 |
| Encroachment Permit | Jan 2025 | Mar 2025 |
| Flood Control Permit | Aug 2021 | Mar 2025 |

# Project Budget

| Budget Category | Grant Request | Cost Share | Other Cost | Totals |
|---|---|---|---|---|
| A. Project Administration | $0 | $0 | $0 | $0 |
| B. Land Purchase/ Easement | $0 | $0 | $0 | $0 |
| C. Planning/Design Engineering/ Environmental Documentation | N/A | N/A | $1,168,300 | $1,168,300 |
| D. Construction/ Implementation | $3,430,000 | $14,564,293 | $0 | $17,994,293 |
| Totals | $3,430,000 | $14,564,293 | $1,168,300 | $19,162,593 |

# Project Schedule

| Budget Categories | Start Date | End Date |
|---|---|---|
| A. Project Administration | January 2018 | August 2027 |
| B. Land Purchase/Easement | N/A | N/A |
| C. Planning/Design/Engineering/Environmental Documentation | January 2018 | September 2022 |
| D. Construction/Implementation | March 2025 | February 2027 |

# Expected Challenges/Delays

| | Challenges | Solutions/Mitigation Efforts |
|---|---|---|
| 1. | Construction around scheduled league games | Will coordinate with RAP |
| 2. | Potential increased construction cost due to inflation | Escalation and contingency are included in the cost estimate |
| 3. | Potential delays for permit approvals | Will work with the design and environmental team to determine the best time to apply |
| 4. | Potential long lead time for procurement | Will reference similar projects that will be built before this project and work with vendors for a more accurate timeframe |

# Questions

Noel Le

Watershed Management Group

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Art Castro

Watershed Management Group

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The Nature Conservancy & CA State Parks

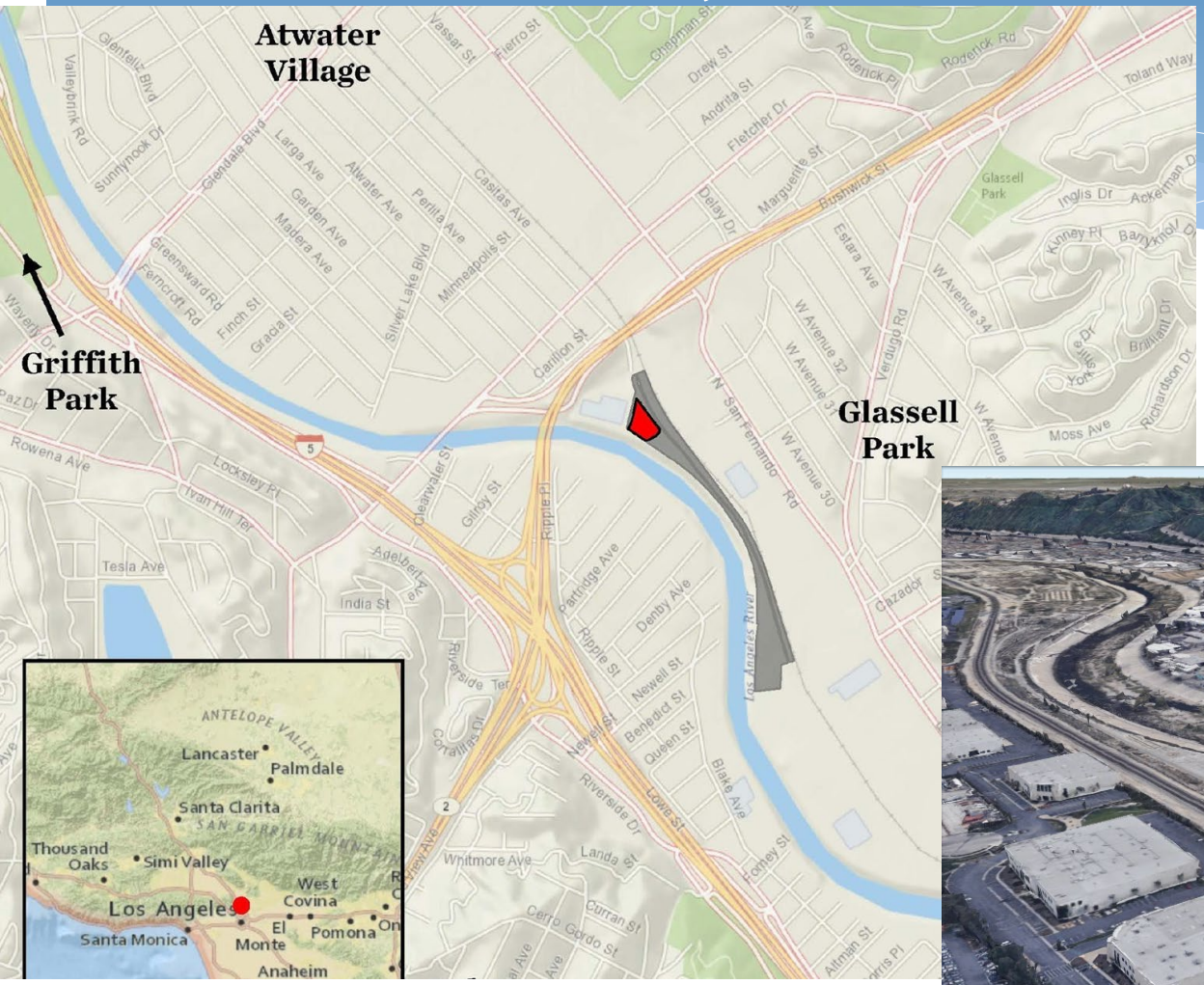
# Bowtie Demonstration Project

Kelsey Jessup

Urban Conservation Program Director

The Nature Conservancy

# Project Location




# Project Description

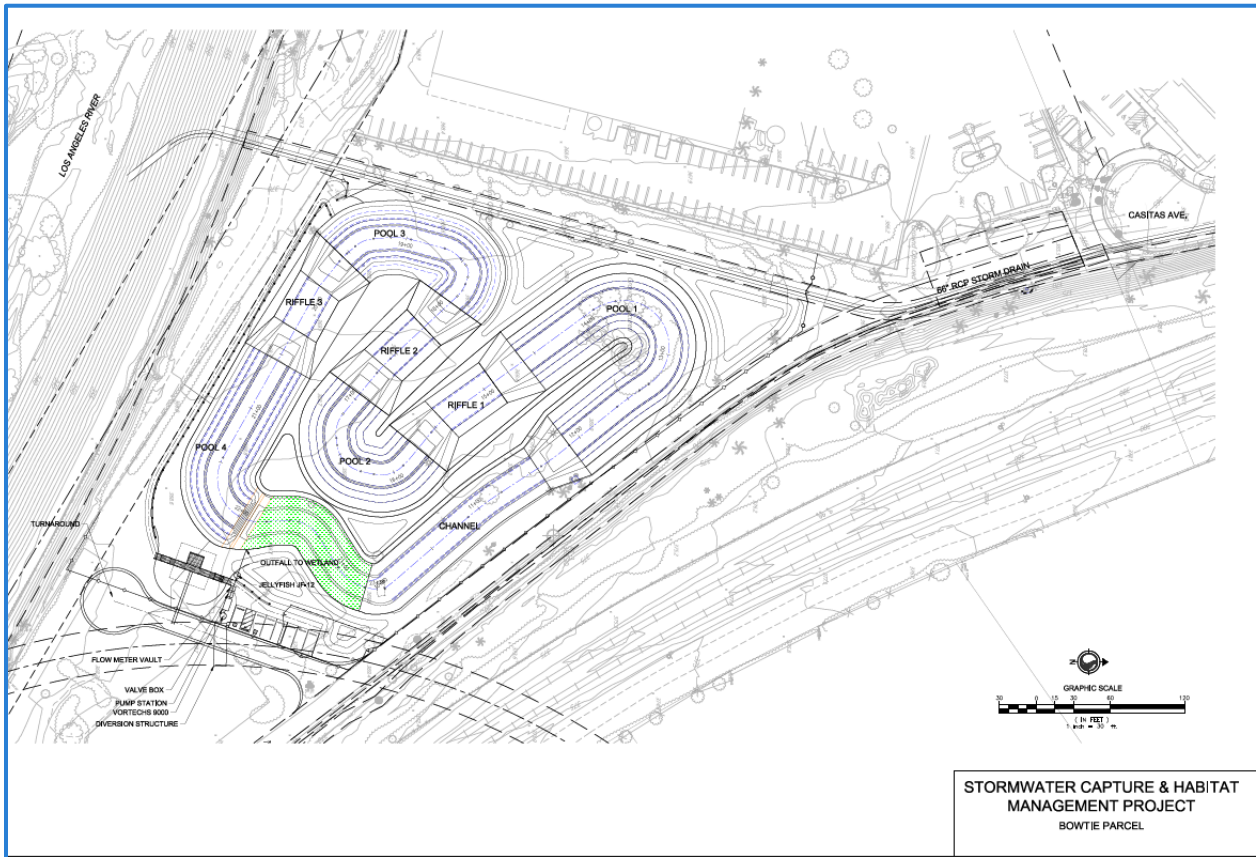
- The Bowtie Demonstration Project is a multi-benefit stormwater management and habitat enhancement project
- Partnership between TNC and CA State Parks
- Located on the CA State Parks' owned Bowtie Parcel in Northeast Los Angeles
- Project will be ~2.5 acres on the northern-most area of the site
- State Parks has completed conceptual designs for the full 18-acre site to become a publicly accessible open space
- The Bowtie Demonstration Project will be a catalyst for future phases at the Bowtie Parcel and will address the most severe water quality issues as identified through the water quality priority analysis done in advance of selecting the site

# Project Description

## PROJECT GOALS

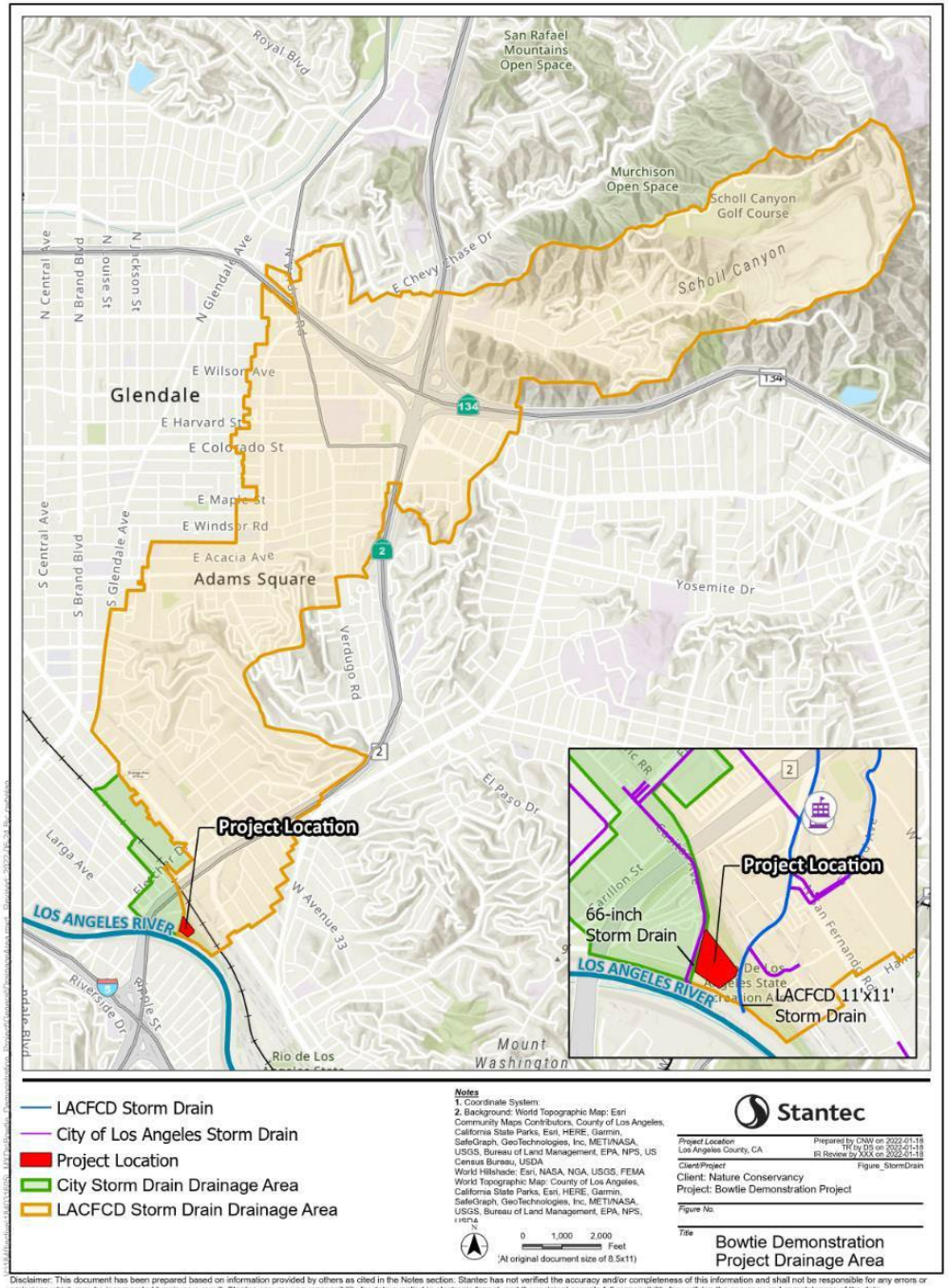
- Improve water quality
- Enhance habitat
- Increase public access
- Provide educational opportunities
- Clean up historic contamination

**Estimated Completion Date: December 2024**



# Project Benefits

* Contributes to regional water self reliance by reusing stormwater onsite
* Addresses risk from climate change by providing multiple community benefits, including reducing urban heat and mitigating flood risk
* **Improves water quality by treating 100% dry weather flows**
* **Enhances habitat and increases biodiversity**
* Creates approximately 2 acres of publicly accessible open space and passive recreational opportunities through trails, boardwalks and educational elements and programming

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Drainage area of 2,775 acres

Estimated annual treatment of 7.5 million gallons of dry weather flow

Approximately 18-acre feet of water treatment capacity

# Statewide Priorities

* Utilize natural infrastructure
* Drought preparedness through water reuse onsite
* Climate resilience
* Strengthen partnerships with local, federal, and Tribal governments, water agencies and irrigation districts, and other stakeholders.

# CEQA & Permit Status

| CEQA/Permit Document (List all per EIF) | Start Date | End Date |
|---|---|---|
| CEQA | May 2022 | January 2023 |
| LADWP Right of Entry | June 2022 | December 2022 |
| Construction Stormwater Permit | TBD | |
| City of Los Angeles Building Permits | | December 2022 |
| LA County Flood Control Permit | June 2022 | December 2022 |

# Project Budget

| Budget Category | Grant Request | Cost Share | Other Cost | Totals |
|---|---|---|---|---|
| A. Project Administration | $275,000 | $75,000 | $O | $350,000 |
| B. Land Purchase/ Easement | $0 | $0 | $0 | $0 |
| C. Planning/Design Engineering/ Environmental Documentation | $0 | $0 | $686,697 | $686,697 |
| D. Construction/ Implementation | $4,869,071 | $0 | $2,160,180 | $7,029,251 |
| Totals | $5,144,071 | $75,000 | $2,846,877 | $8,065,948 |
| Minimum Grant Amount Needed: | $4,869,071 | | | |

# Project Schedule

| Budget Categories | Start Date | End Date |
|---|---|---|
| A. Project Administration | July 2018 | December 2024 |
| B. Land Purchase/Easement | N/A | N/A |
| C. Planning/Design/Engineering/Environmental Documentation | February 2018 | February 2023 |
| D. Construction/Implementation | June 2023 | December 2024 |

# Expected Challenges/Delays

* While CEQA and permitting is not yet complete, we have started the process and are confident we will stay on track to meet our project deadlines.
* The Project is exempt from local cost share due to its location in a DAC. We have secured funding for all of design and a portion of implementation, but the funding is mostly through state sources and thus not eligible as match.
* We are applying for SCWP funds. The Upper LA Region has limited funding available so we are aiming mostly for maintenance funds for the first five years after project completion.
* TNC continues to seek additional funds from other sources, including private foundations and the CA Wildlife Conservation Board. This project is a priority for TNC and CA State Parks.
* We expect to complete the project by December 2024.

# Questions


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* Urban Conservation Project Director, The Nature Conservancy
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