

Watts Civic Center Serenity Greenway

Infrastructure Program

Fiscal Year 2022-2023

Upper Los Angeles River Watershed

City of Los Angeles, District 15

Aksel Palacios, MPA, AICP (15th District Office) & David Pohl, Ph.D., PE (Burns & McDonnell)



Project Overview

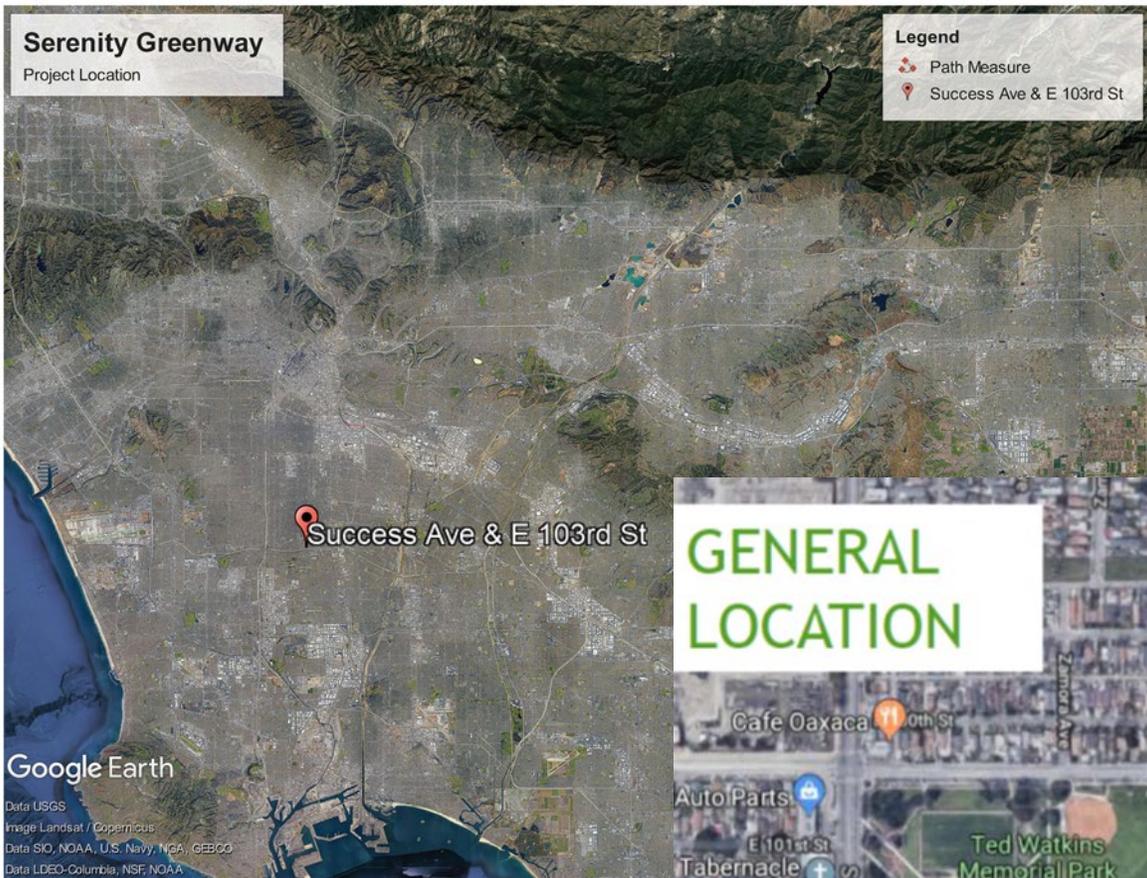
The Serenity Greenway transforms a concrete alley to provide dry weather and stormwater infiltration through a dry well system and a green and safe corridor to the community park

- Primary Objective: Reduce pollutant loading through dry weather & stormwater capture & infiltration using nature-based solutions
- Secondary Objectives: Investment into this disadvantaged community (DAC) by transforming a concrete alley to a green, safe corridor connecting neighborhood schools, Watts Civic Center and Library to Community Park
- Project Status: Planning, Design, & Construction
- Total Funding Requested: \$2,669,000

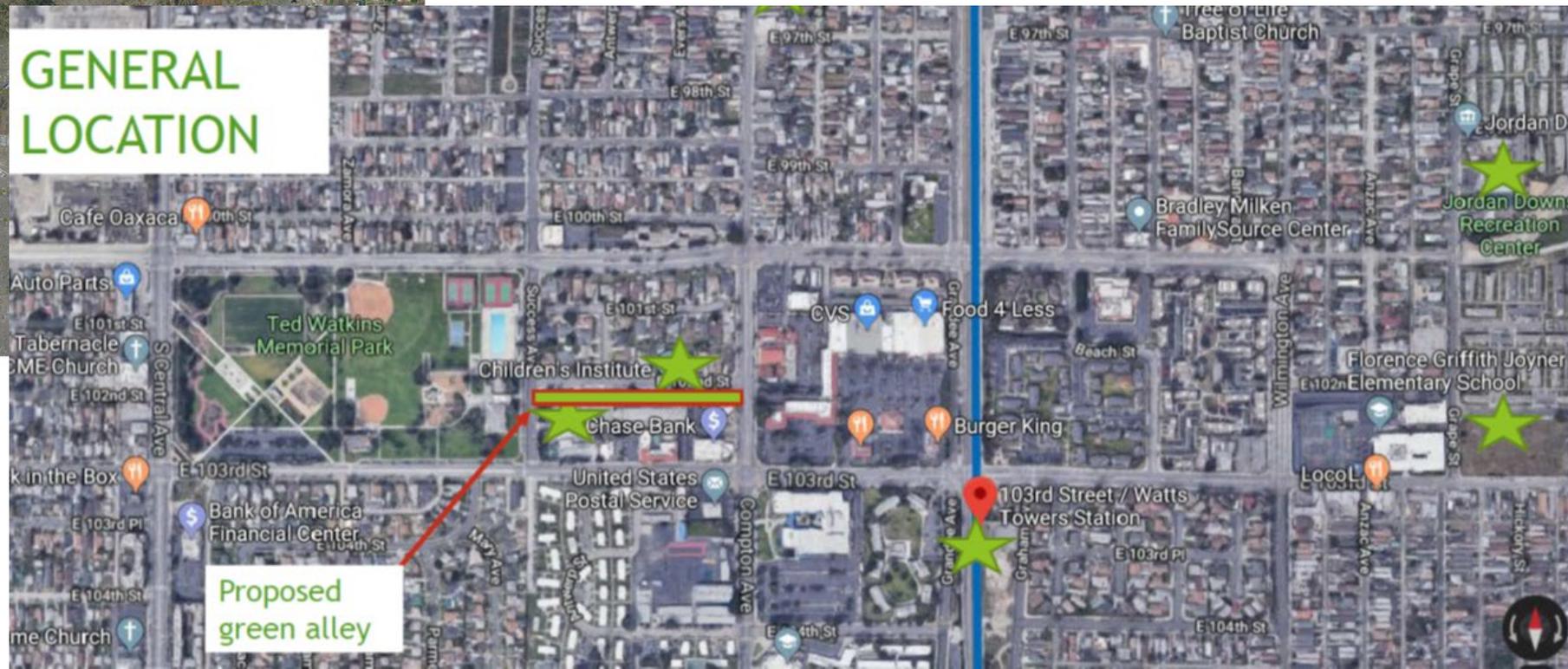




Project Location



- 103rd Street and Success Avenue
- Alley Way Adjacent to Watts Civic Center & Children's Institute
- Upper Los Angeles River Watershed





Project Location & Existing Conditions

Project Location





Watts, South Los Angeles

Watts Riots (1965) in response to racial injustices and police brutality

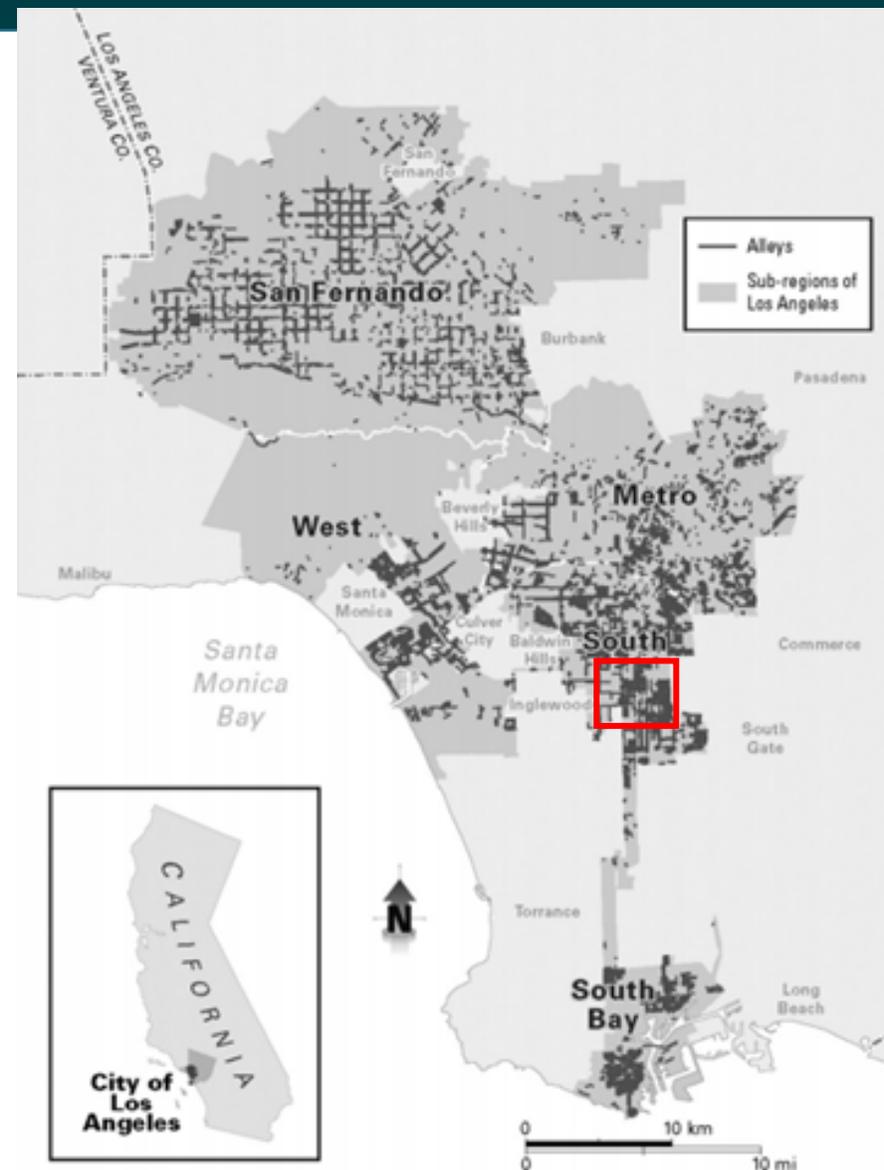
Resulted in demographic and economic changes

Disadvantaged Community (DAC):

Median Household Income
between \$42,737 and \$56,982

Severely Disadvantaged Community:

Median Household Income less than
\$42,737





Watts Civic Center Serenity Greenway – Community Investment

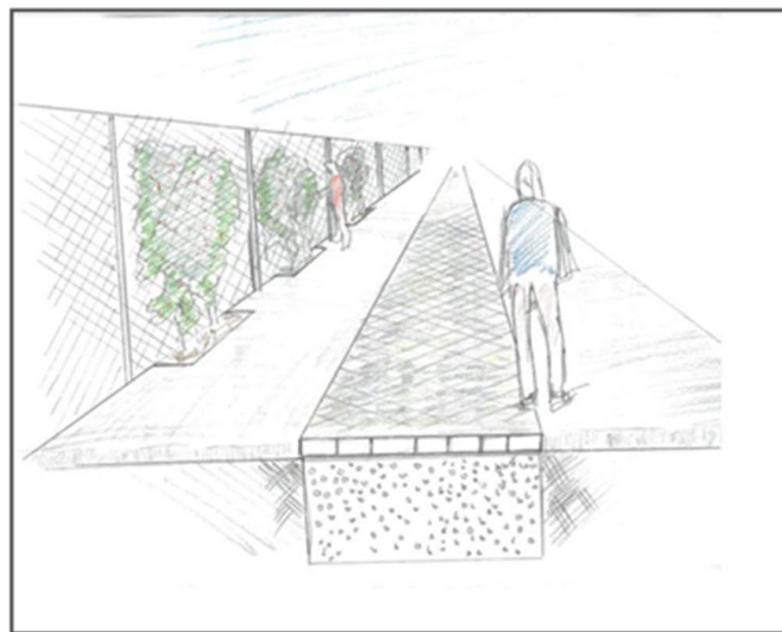
- Project provides an investment in new green space and safe pedestrian path linking community schools, civic center, parks and library.
- Project supported by local community groups including Children’s Institute, Watts Rising, Kaiser Mental Health Institute, East Side Riders Bike Club, City of Los Angeles Council District 15, and Sisters of Watts
- Project collaborators also include Los Angeles Sanitation & Kaiser Permanente
- Opportunities with Measure W funding to attract private funding to add amenities and art installations





Project Background

- Project Location Selected based on Community Input and Need for Safe and Green Corridor
- Young Members Chapter of American Society of Civil Engineers and Society of Hispanic Professional Engineers worked with Watts Rising and Children's Institute to Develop Green Alley Concepts to include nature-based solutions for water quality benefits





Project Background

- Project listed in Integrated Regional Watershed Management (IRWM) Plan
- Project provides pollutant load reduction and potential flood management with potential for additional stormwater diversion and infiltration
- Investment in DAC





Project Details

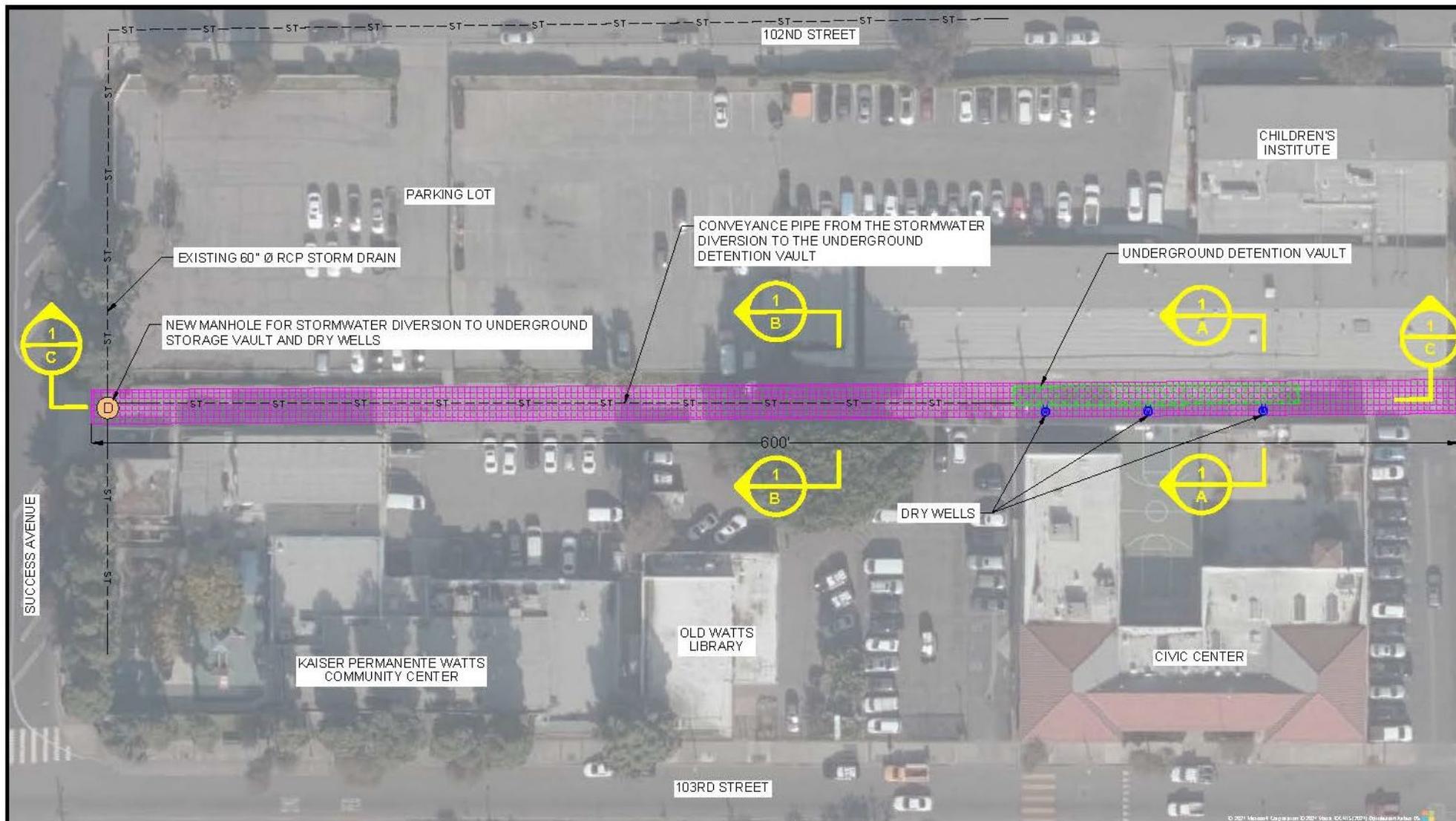
Project Components

- Removes concrete alley and replaces with porous pavers
- Portion of porous pavers to be vegetated adjacent to new green space at Watts Civic Center
- Porous Pavers, Vegetated Planters and Green Walls capture and filter stormwater through filter media
- Underdrain discharges to underground storage vault and then to a series of three dry wells for 100% removal of pollutants
- Project Scored for Dry Weather capture from an existing storm drain from 73-acre drainage area and conveyed to the underground storage/detention vault and dry well system for 100% removal of pollutants
- Stormwater from alley way treated 100%
- Additional Geotechnical Investigation planned to further assess stormwater capture diverted from storm drain system to vault and dry wells





Project Details



<p>LEGEND</p> <p> LIMITS OF POROUS PAVER</p> <p> DRY WELLS</p>	<p> STORM WATER DIVERSION</p> <p> STORM DRAIN</p> <p> LOCATION OF UNDERGROUND DETENTION VAULT</p>	<p> N</p> <p>0 20' 40' 80'</p> <p>SCALE IN FEET</p>	<p> BURNS & MCDONNELL</p> <p>date 10/29/21</p> <p>designed POHL, DH</p>	<p>SERENITY PATHWAY</p> <p>FIGURE 1 SERENITY GREENWAY - SITE PLAN AND PROJECT COMPONENTS</p>	<p>project _____</p> <p>contract _____</p> <p>SK - 01</p>
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Cost & Schedule

Phase	Description	Cost	Completion Date
Planning	CEQA and Permitting, Geotechnical Investigation	\$255,000	5/2023
Design	Design and Bid Package	\$250,000	1/2024
Construction	Implementation of Porous Pavers, Underground Storage Vault, and Dry Wells, Stormwater Diversion	\$2,164,000	1/2026
TOTAL		\$2,669,000	

- \$50,000 annual maintenance costs, \$45,000 annual operation costs, \$35,000 annual monitoring costs
- Project life span of 25 years and total life-cycle cost of \$4,840,960



Funding Request

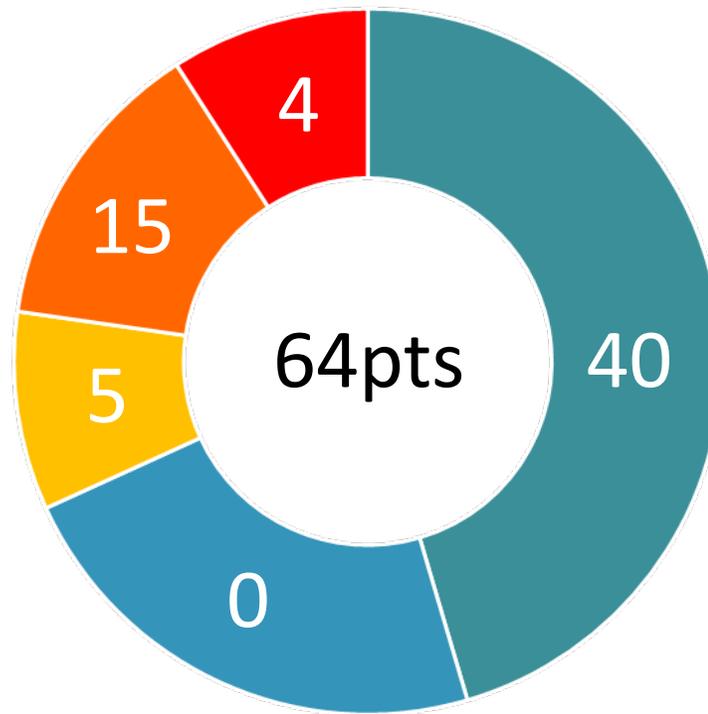
Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$255,000 \$80,000	Planning Design	Development of CEQA document and permits, geotechnical investigation, and other design surveys and investigations Start of design and bid package
2	\$170,000	Design	Completion of design and bid packages
3	\$1,514,800	Construction	Start of construction (site prep, utility relocation, beginning of installation) and implementation of planters, porous pavers, and underground storage vault and dry wells)
4	\$649,200	Construction	Completion of construction (site prep, utility relocation, beginning of installation) and implementation of planters, porous pavers, and underground storage vault and dry wells)
TOTAL	\$2,669,000		

- Kaiser Permanente to offer \$175,000 (6.2%) of cost share funding



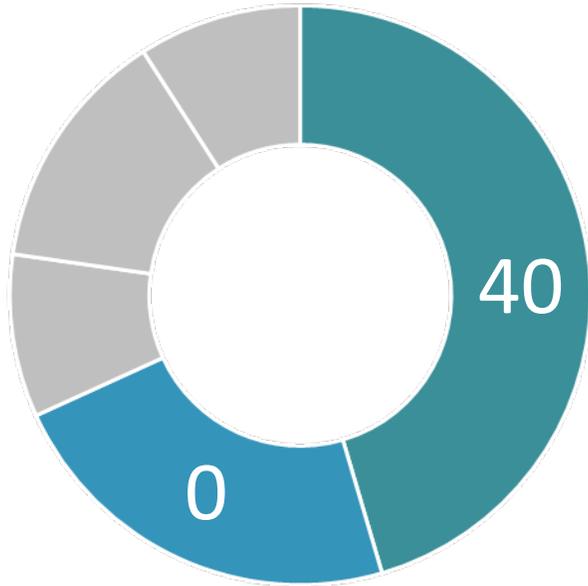
Preliminary Score

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





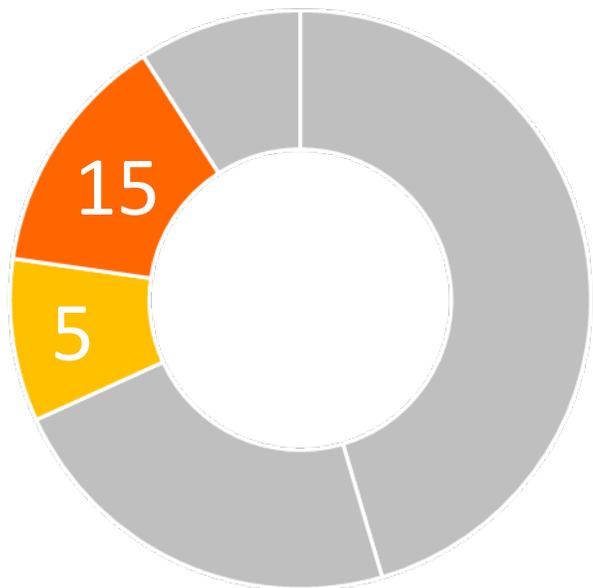
Water Quality & Water Supply Benefits



- Captures dry weather flows from 73 acres of urban drainage area and infiltrates through dry wells achieving 100% removal of pollutants.
- Project scored for Dry Weather but captures and fully treats stormwater from alley and has the potential to treat additional stormwater flows.
- Additional geotechnical investigations planned to increase water quality benefit through capture and infiltration through dry wells of additional stormwater



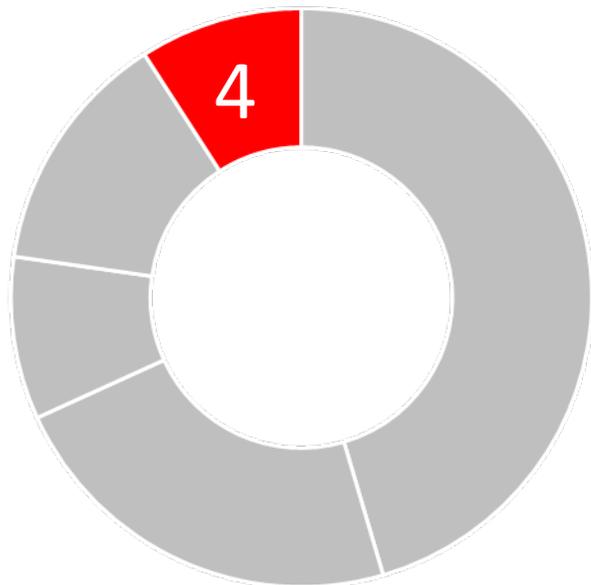
Community Investment Benefits and Nature Based Solutions



- Community Investment Benefits
 - Transforms a Concrete Alley to a Safe and Green Pedestrian Linkage between local schools, the Watts Community Civic Center, Alma Reaves Woods Library and the Ted Watkins Memorial Park
- Nature Based Solutions
 - Restores natural processes by converting impervious concrete alley to porous pavers, vegetated pavers, vegetated planters, green walls, underground storage and dry well system allowing urban runoff to be filtered and infiltrate to groundwater
 - Planters, vegetated pavers, green walls and trees add shade and green space to current concrete alley



Leveraging Funds and Community Support



- Leveraging Funds

- Project collaborators include Kaiser Permanente that will provide funding support to provide new lighting to the alley way and develop new green space that includes shade trees and recreational opportunities behind the Civil Center for \$175,000. The commitment has been received.
- 6.2% funding matched

- Community Support

- Community support currently includes Children's Institute, Watts Rising, Kaiser Mental Health Institute, East Side Riders Bike Club, City of Los Angeles Council District 15, and Sisters of Watts
- Prior meetings with Children's Institute, Watts Rising, and Kaiser Mental Health Institute have occurred, and an Outreach Plan includes continued collaboration with the project collaborators and will include opportunities for funding and implementation of art installations (i.e., murals, sculptures).



Questions?



North Hollywood Park Stormwater Capture Project

Infrastructure Program

Fiscal Year 2022-2023

Upper Los Angeles River

SEITec

Shahriar Eftekharzadeh, PhD, PE



Project Overview

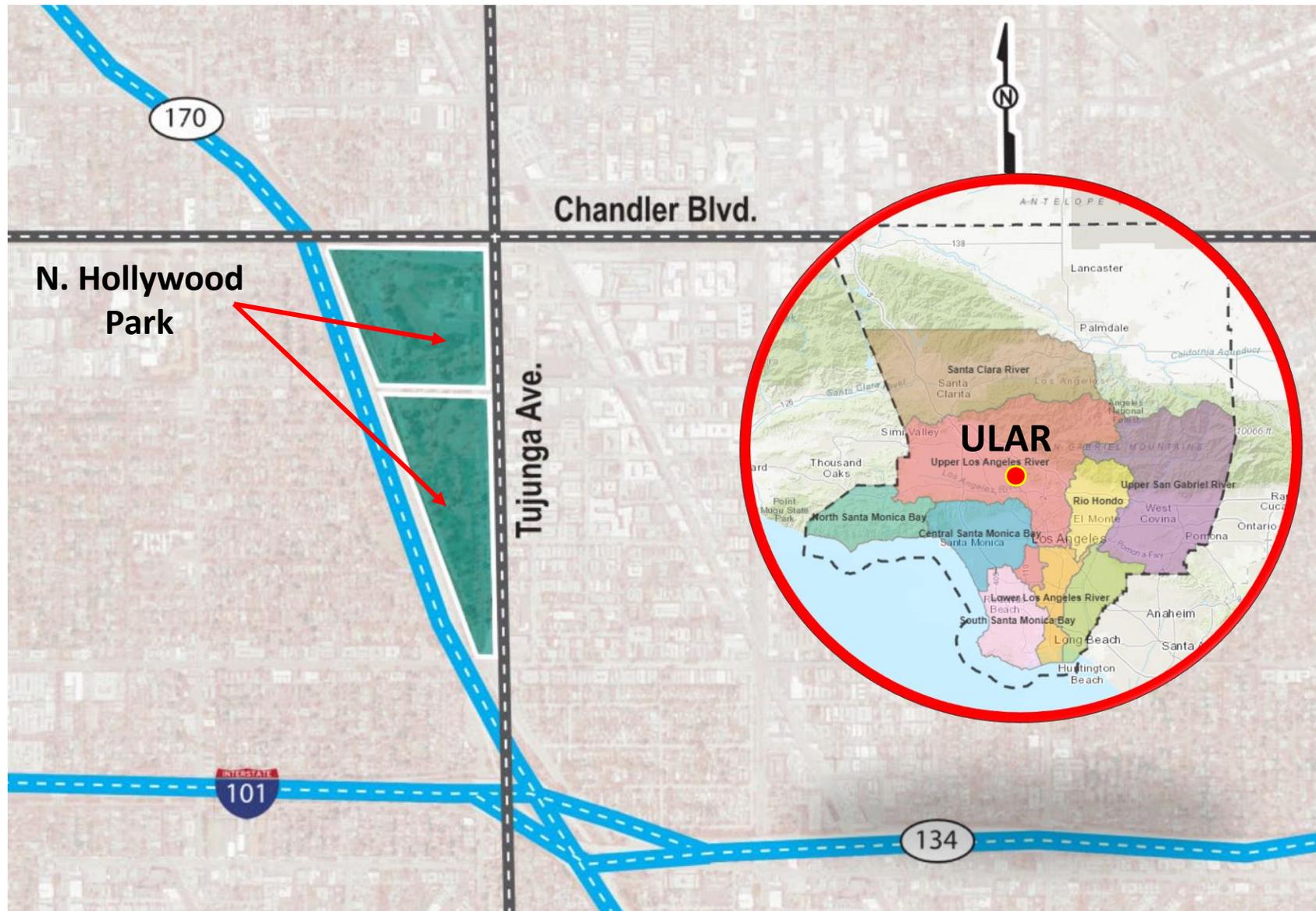
Captures 100% of 85th P. storm from 2,045 acres net DA and provides 1,378 ac-ft of water supply benefits with min. excavation and public impact.

- Primary Objective: **Water Quality Benefits/MS4 Compliance**
- Secondary Objectives: **Water Supply Benefits/Aquifer Recharge**
- Project Status: **Funding Requested for Design and Construction**
- Total Funding Requested: **\$68,229,081.00**





Project Location





Project Location – Land Parcels



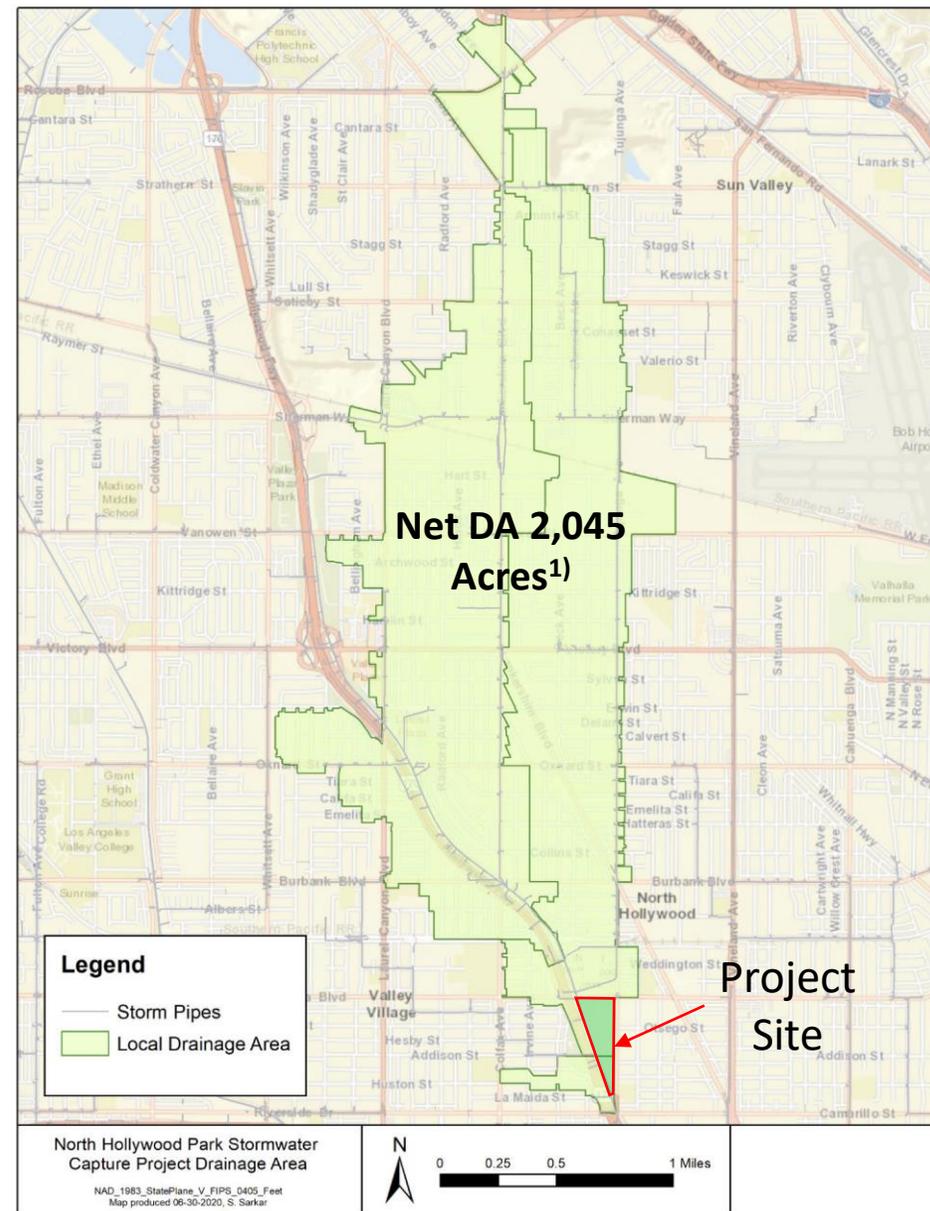


Project Drainage Area

Project Drainage Area Land Classification¹⁾

Land Use Classification	Area (acres)	Impervious Area (acres)
Single-Family Residential (High-Density)	664.2	270.8
Single-Family Residential (Low-Density)	55.6	5.5
Multi-Family Residential	365.2	263.4
Commercial	226.4	207.2
Institutional	47.7	38.8
Industrial	212.7	185.8
Transportation	75.6	68.7
Secondary Roads	370.1	241.6
Vacant (Moderate Slope, HSG D)	4.7	0.0
Vacant (Steep Slope, HSG D)	0.3	0.0
Agriculture (Moderate Slope, HSG D)	22.9	0.0
Total	2045.2	1281.8 (62.7%)

1) Excludes u/s projects: Valley Village Park, Alexandria Park, Valley Plaza Park South, Valley Plaza Park North, Whitsett Fields Park, and Strathern Park





Project Location - DAC

DAC Mapping Tool Designed to assist with responsibilities related to IRWM, SGMA, and the CA Water Plan

Find address or place

(1 of 3)

Census Tract Boundaries

TRACTCE10	125320
GEOID10	06037125320
Population	5,379
Households	2,822
Median Household Income	34,681

[Zoom to](#)

(1 of 3)

Census Tract Boundaries

TRACTCE10	125320
GEOID10	06037125320
Population	5,379
Households	2,822
Median Household Income	34,681

[Zoom to](#)

Layer List

Layers

- California Counties
- Disadvantaged Communities - Census Places (ACS: 2014 - 2018)
- Disadvantaged Communities - Census Tracts (ACS: 2014 - 2018)
- Disadvantaged Communities - Block Groups (ACS: 2014 - 2018)
- Proposition 1 Funding Areas
- Hydrologic Regions
- IRWM Regions (updated: June, 2019)

0.5mi

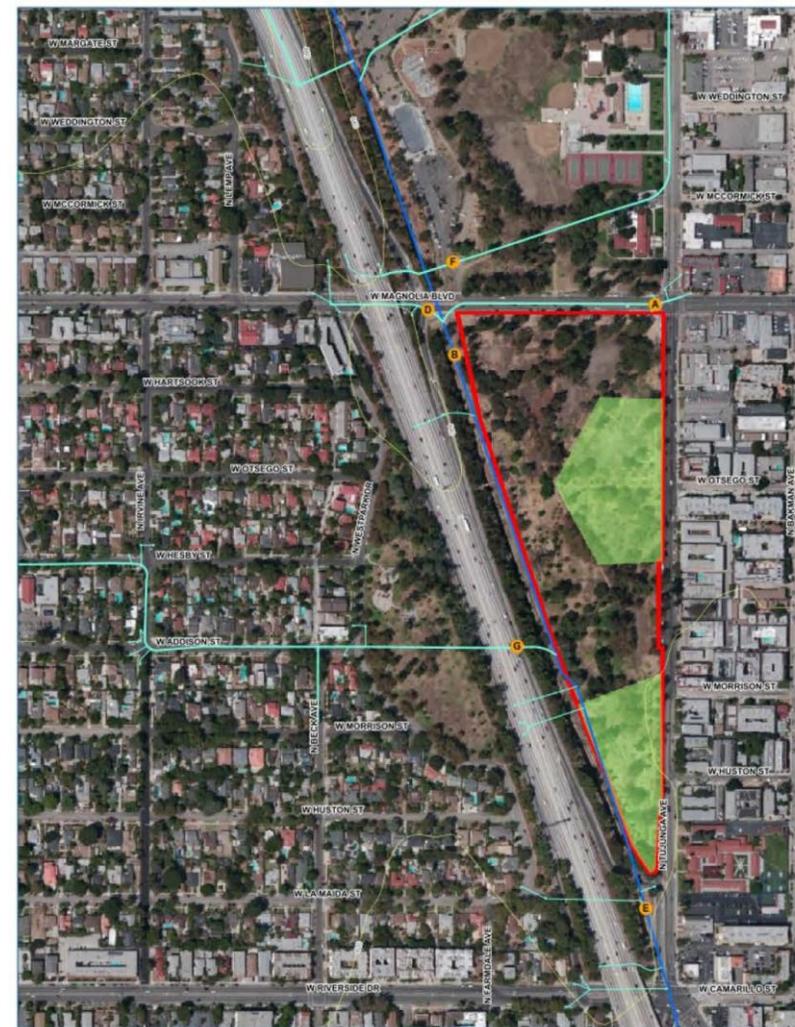
-118.306 34.199 Degrees

Esri, NASA, NGA, USGS, FEMA | U.S. Census Bureau | U.S. Bureau of Reclamation, California Dept of Water Resources



Project Background

- Why was the Project Location selected?
 - Project is a signature project in the ULAR EWMP.
 - The Project is also included in the ULAR IRWMP.
 - LADWP submitted application for same project at same location using pump stations with conventional infiltration galleries





Project Background

- How was the Project developed?
 - Project concept is basically same as in ULAR EWMP (detention/infiltration)
 - Project uses innovative BMP based on conventional storage tunnel (typically used for CSOs) fitted with internal drywells (for stormwater capture)
 - Enables 100% gravity solution
 - Minimizes open excavation and park closure
 - Minimizes O&M and carbon footprint



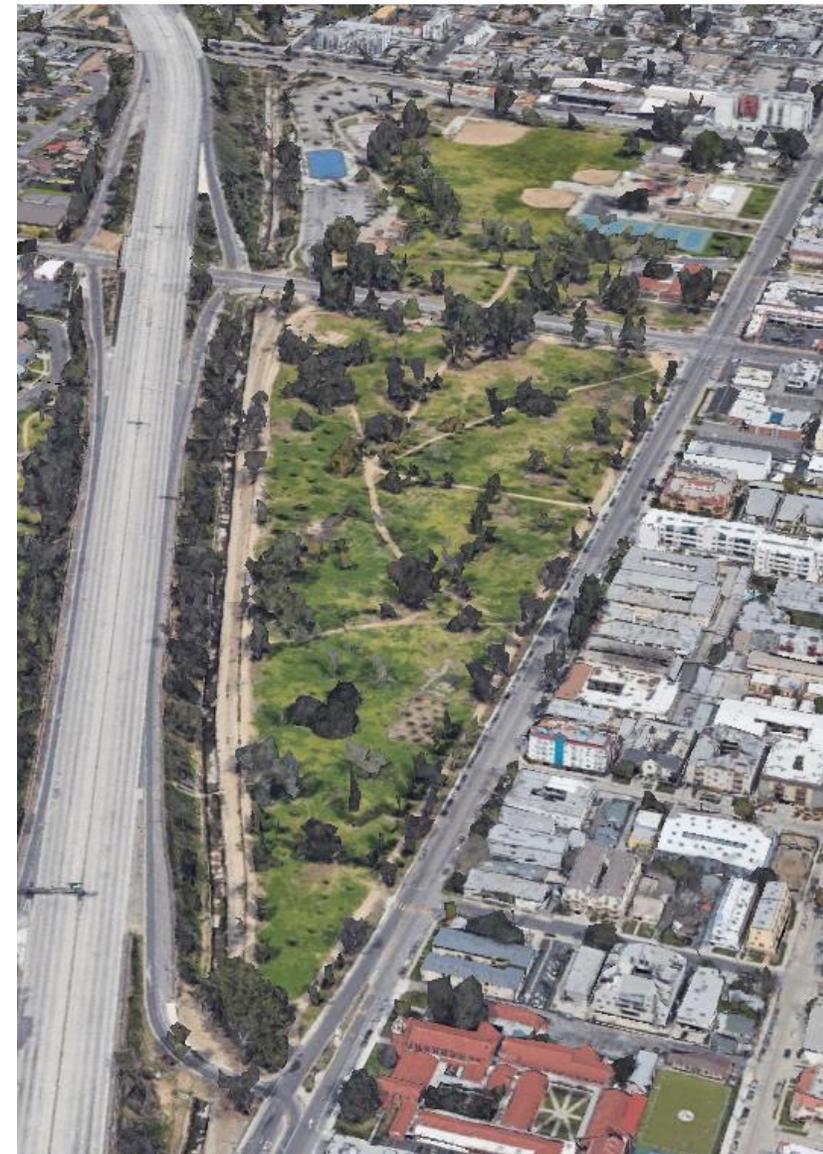
**Akron wraps up massive \$1.1 billion
Combined sewer overflow tunnel project**

September 5, 2018



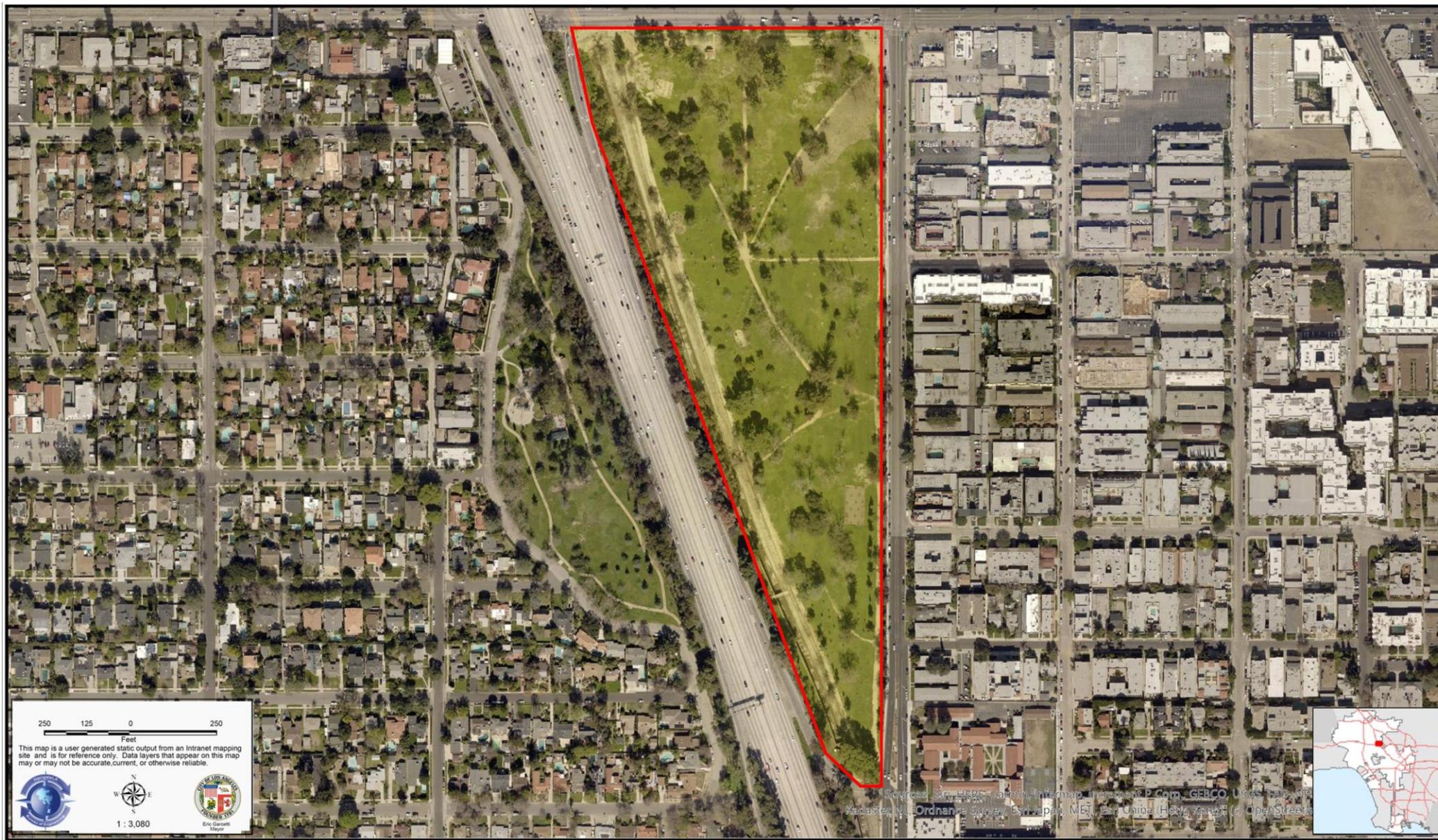
Project Background

- Benefits to municipality/municipalities
 - Capture 100% of 85th P. runoff from 2,045 acres net drainage area – MS4 Compliance
 - Provides 1,378 ac-ft /y – Aquifer Recharge
- Disadvantaged Community (DAC) Benefits
 - Revitalizes community park and sport facilities
 - Provides new lighting and hydration stations
 - Creates new recreational opportunities
 - Plants new trees and natural grass
 - Reduces heat island effect and increases shade



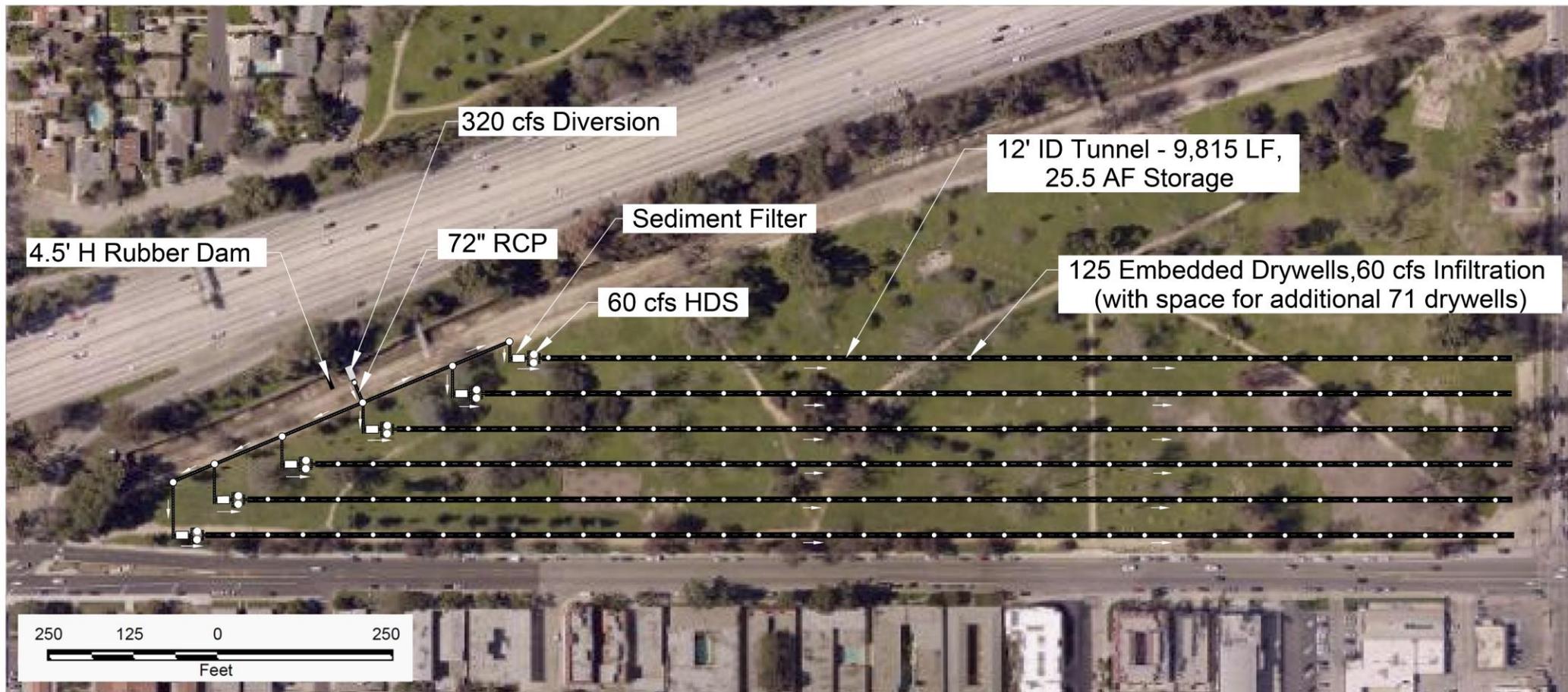


Project Details – Project Site





Project Details – Project Summary

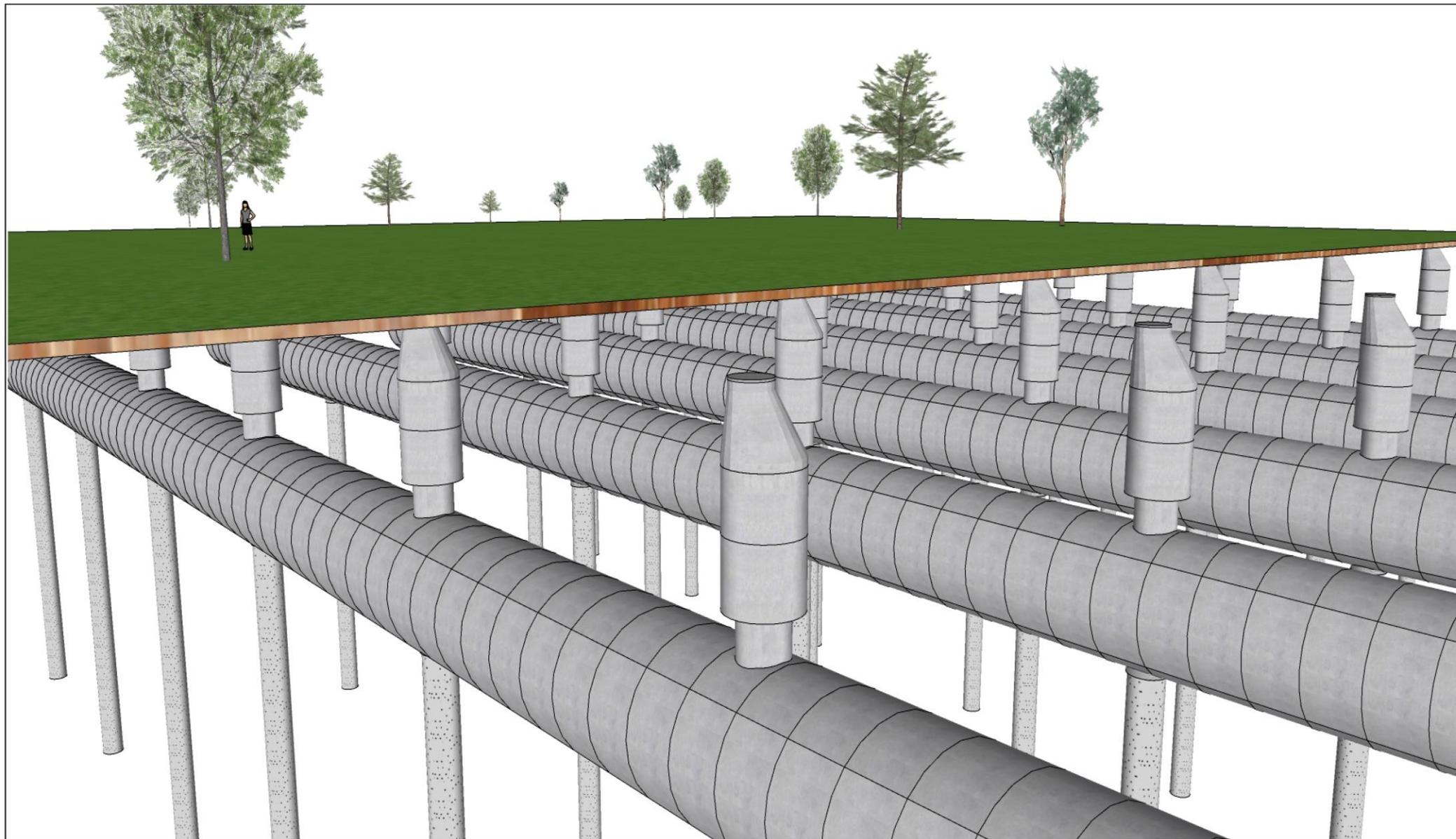


Single Storm Event Capacity:
Annual Stormwater Capture:

305 cfs Peak Flow, 114 AF (100% of the 85th P. 24-hr Storm)
1,378 AF/YR (10-YR Modeling Average)

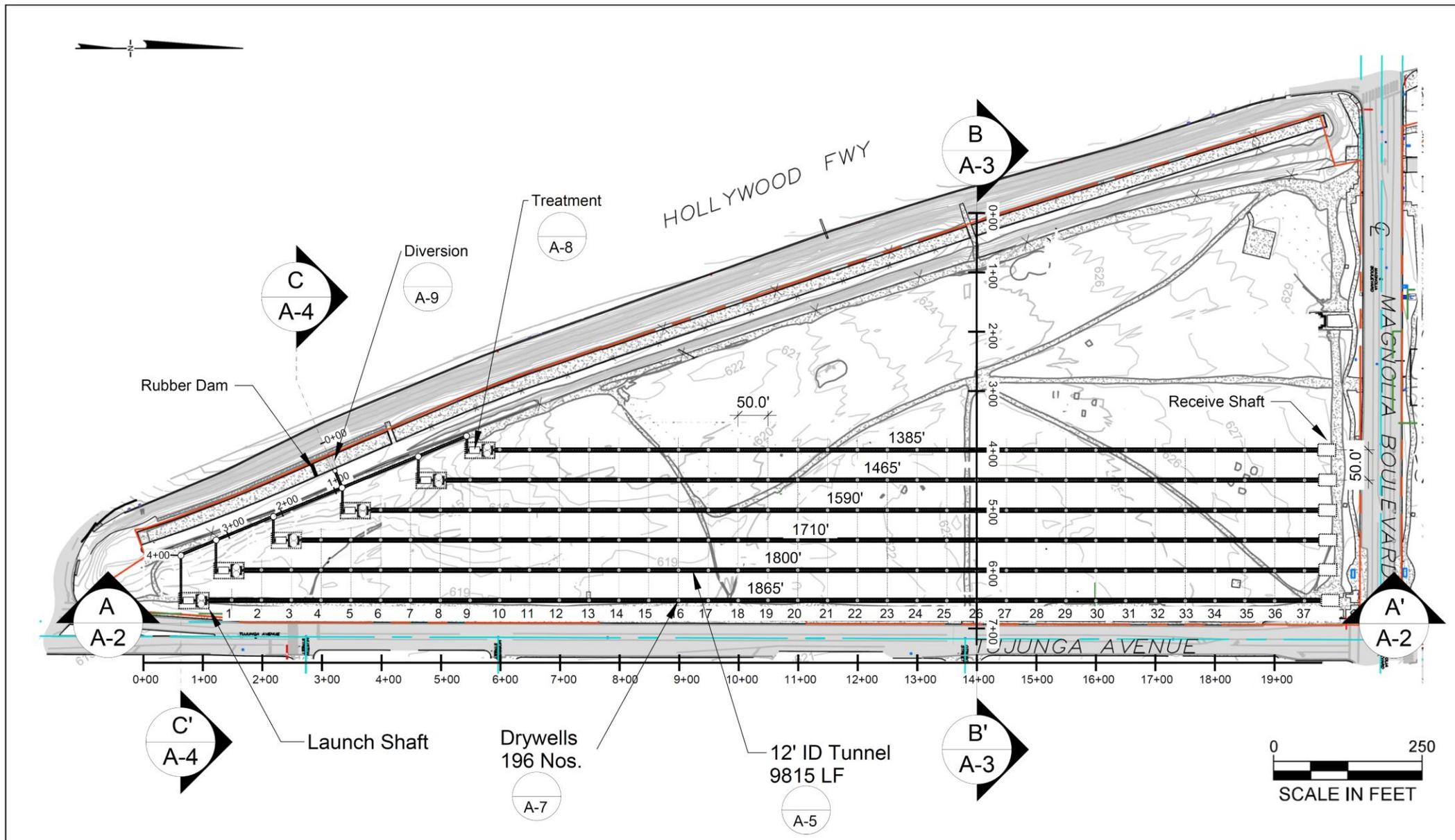


Project Details - Perspective



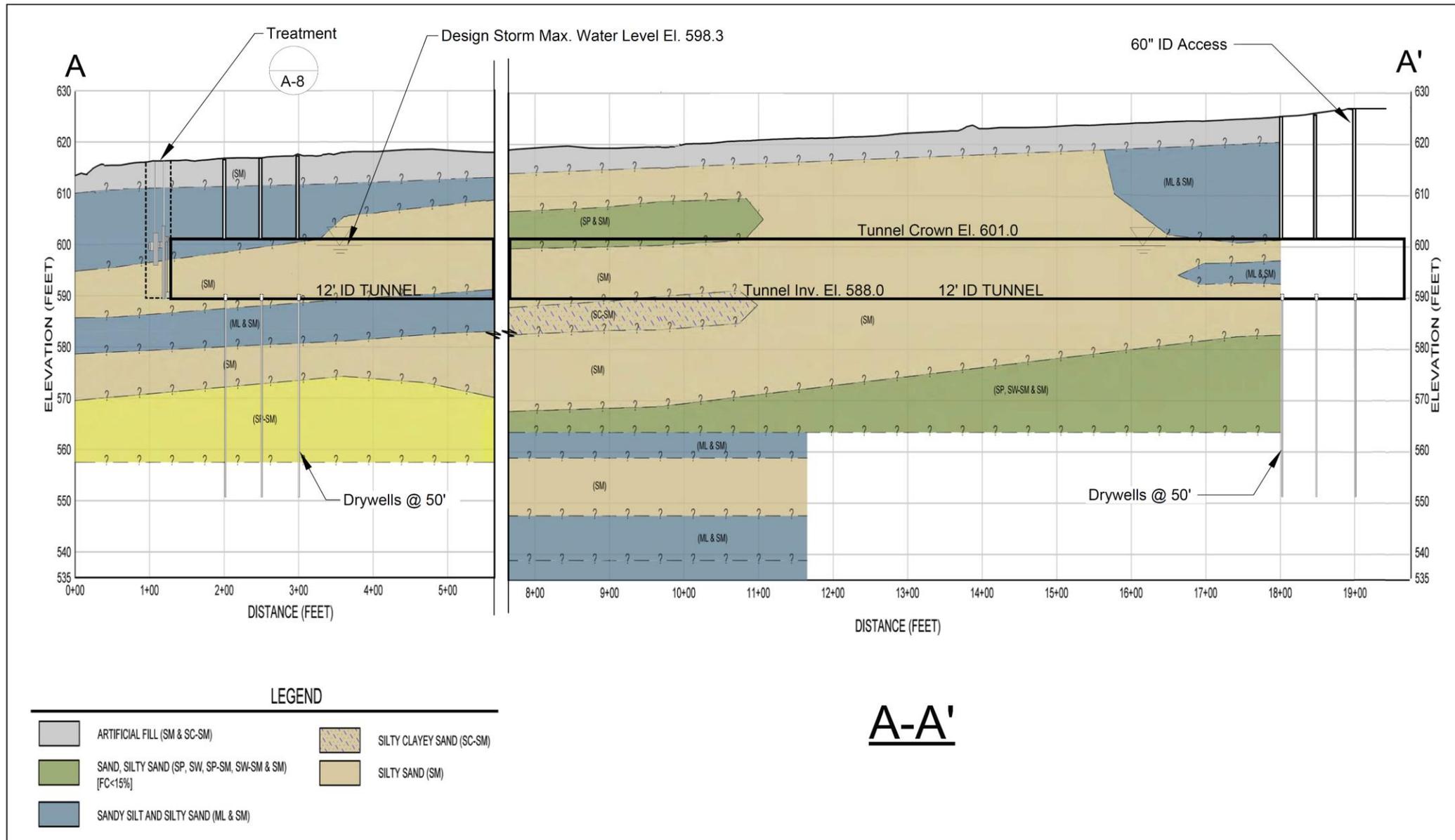


Project Details – Project Plan



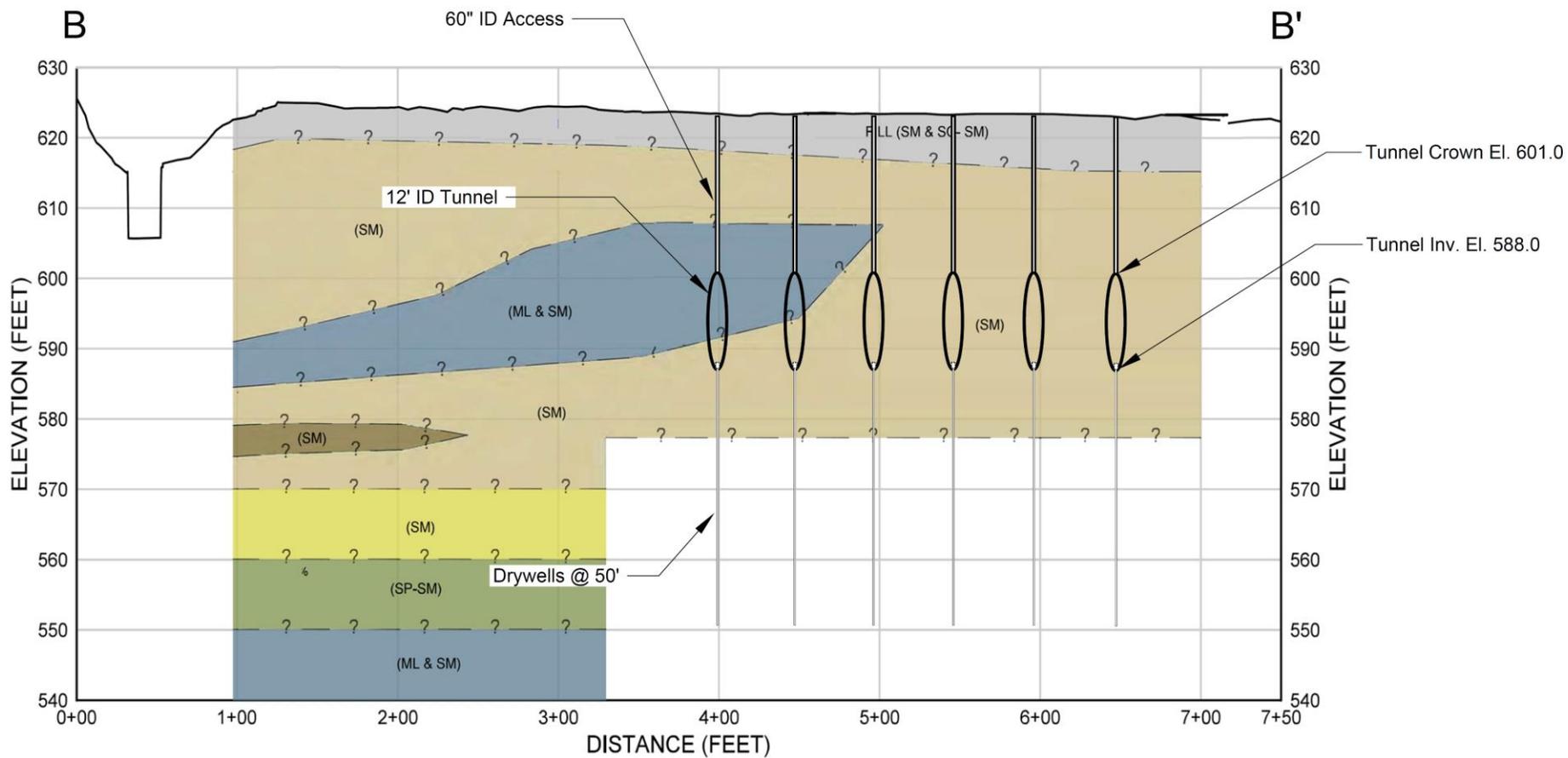


Project Details – Project Profile

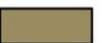




Project Details – Project Section



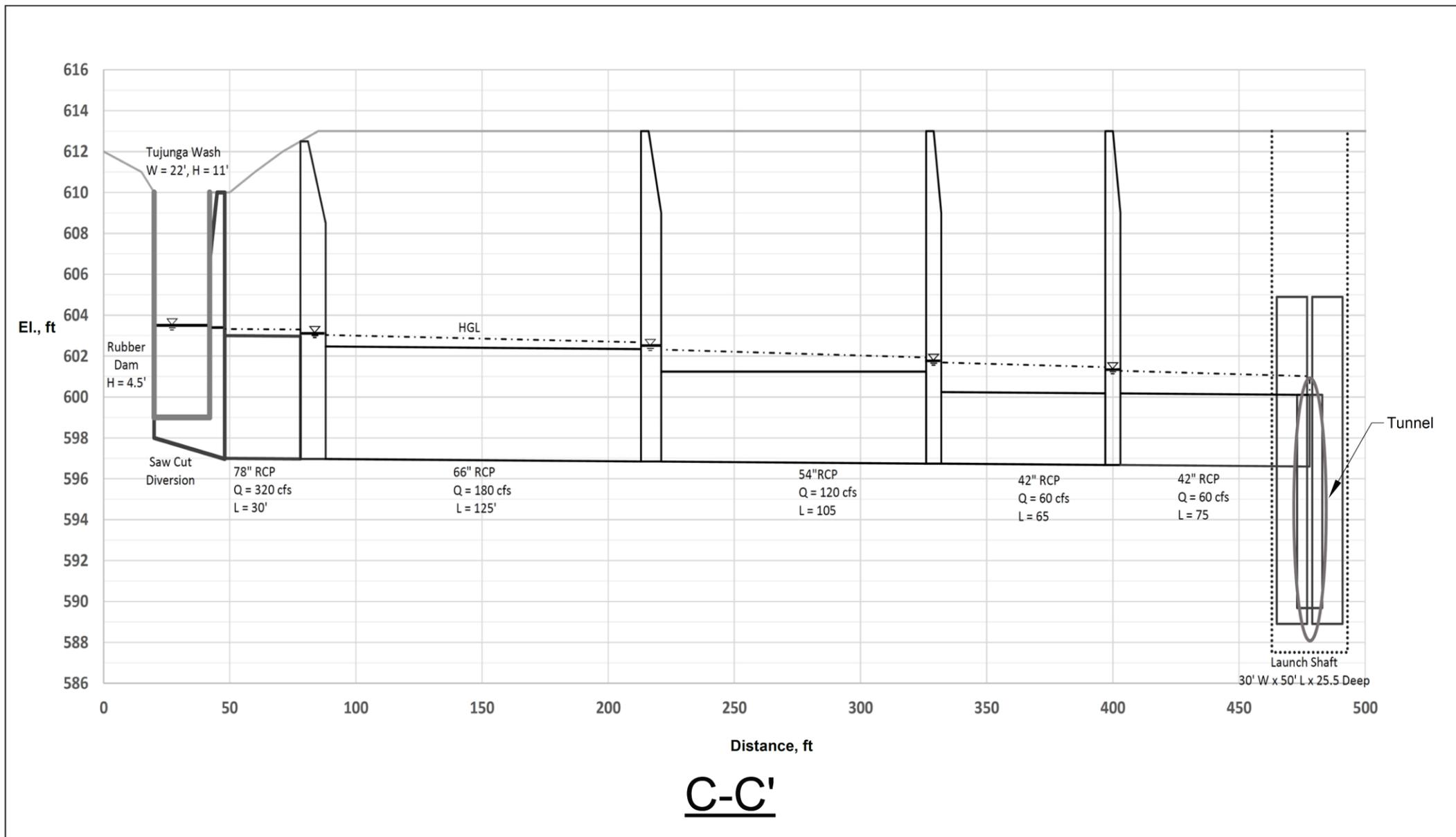
LEGEND

	ARTIFICIAL FILL (SM & SC-SM)		SANDY SILT AND SILTY SAND (ML & SM)
	SAND, SILT AND GRAVEL (SP-SM & SW-SM)		SILTY SAND (SM)
	SAND, SILTY SAND (SP, SW, SP-SM, SW-SM & SM) [FC<15%]		SILTY SAND AND GRAVEL (SM)

B-B'

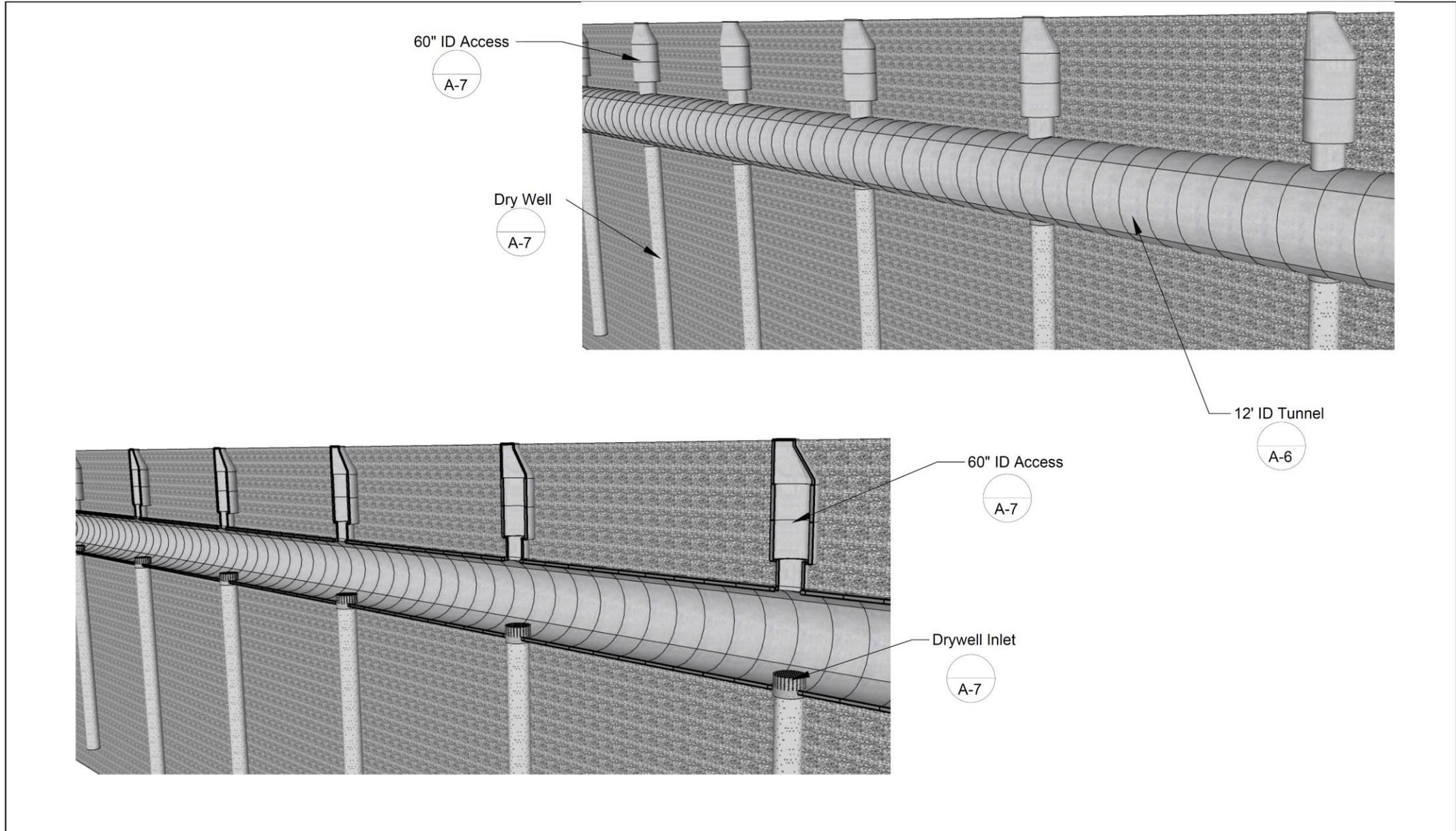


Project Details – Design Storm Hydraulic Grade Line



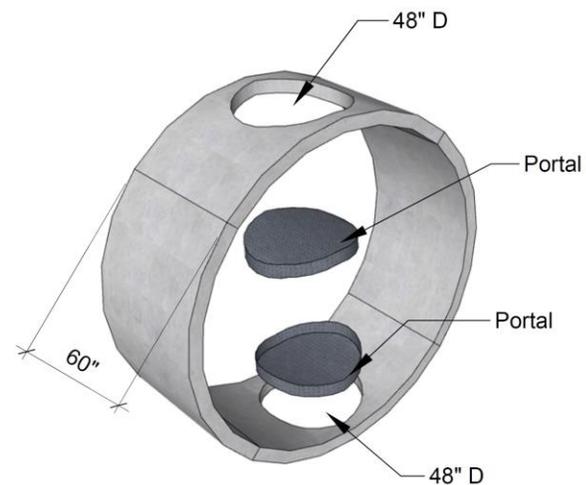
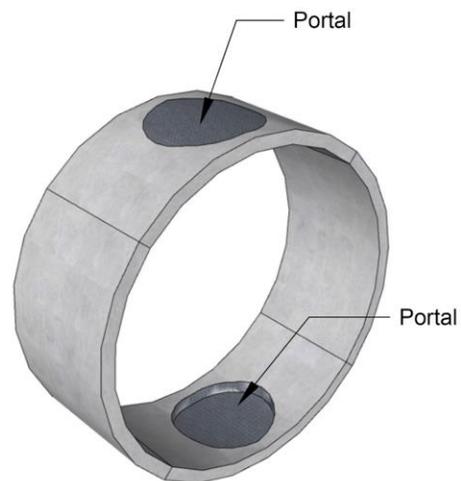
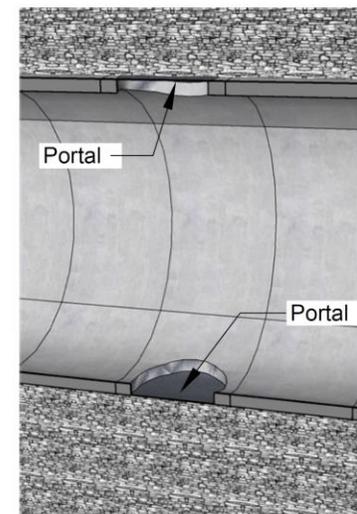
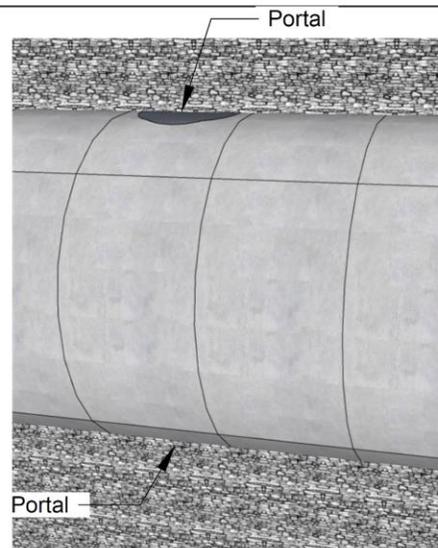
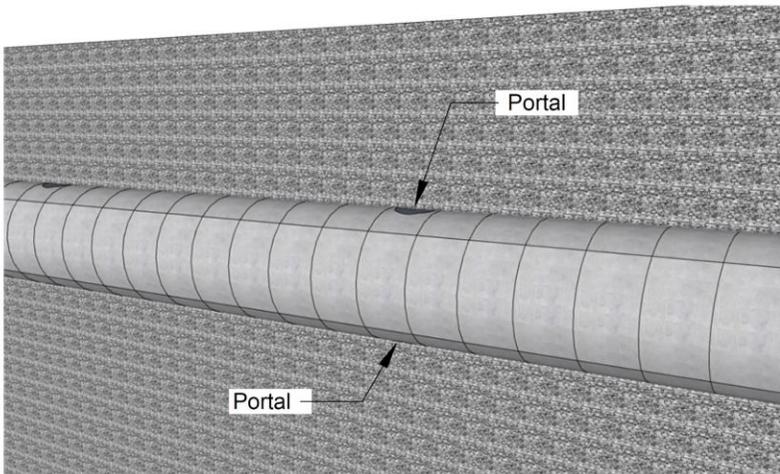


Project Details – Embedded Drywells





Project Details – Tunnel Portals for Drywells



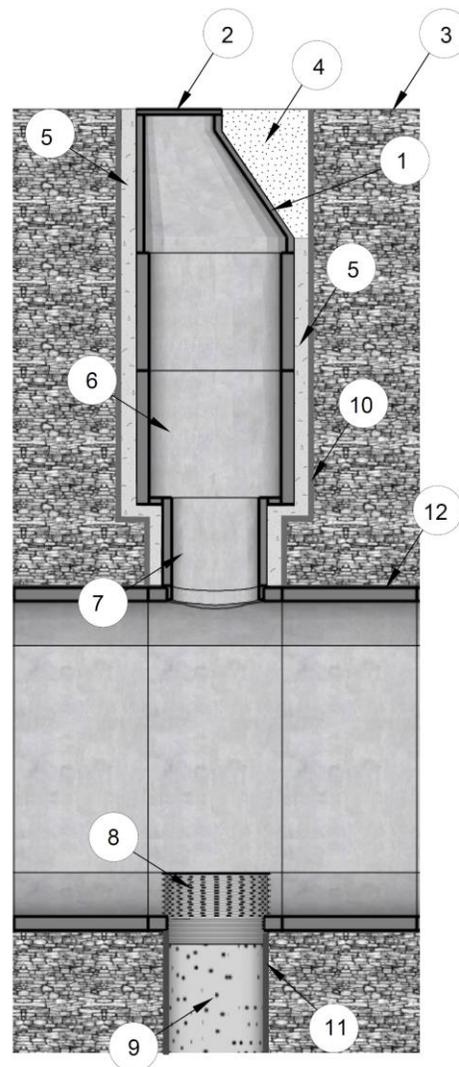


Project Details –Drywell Detail



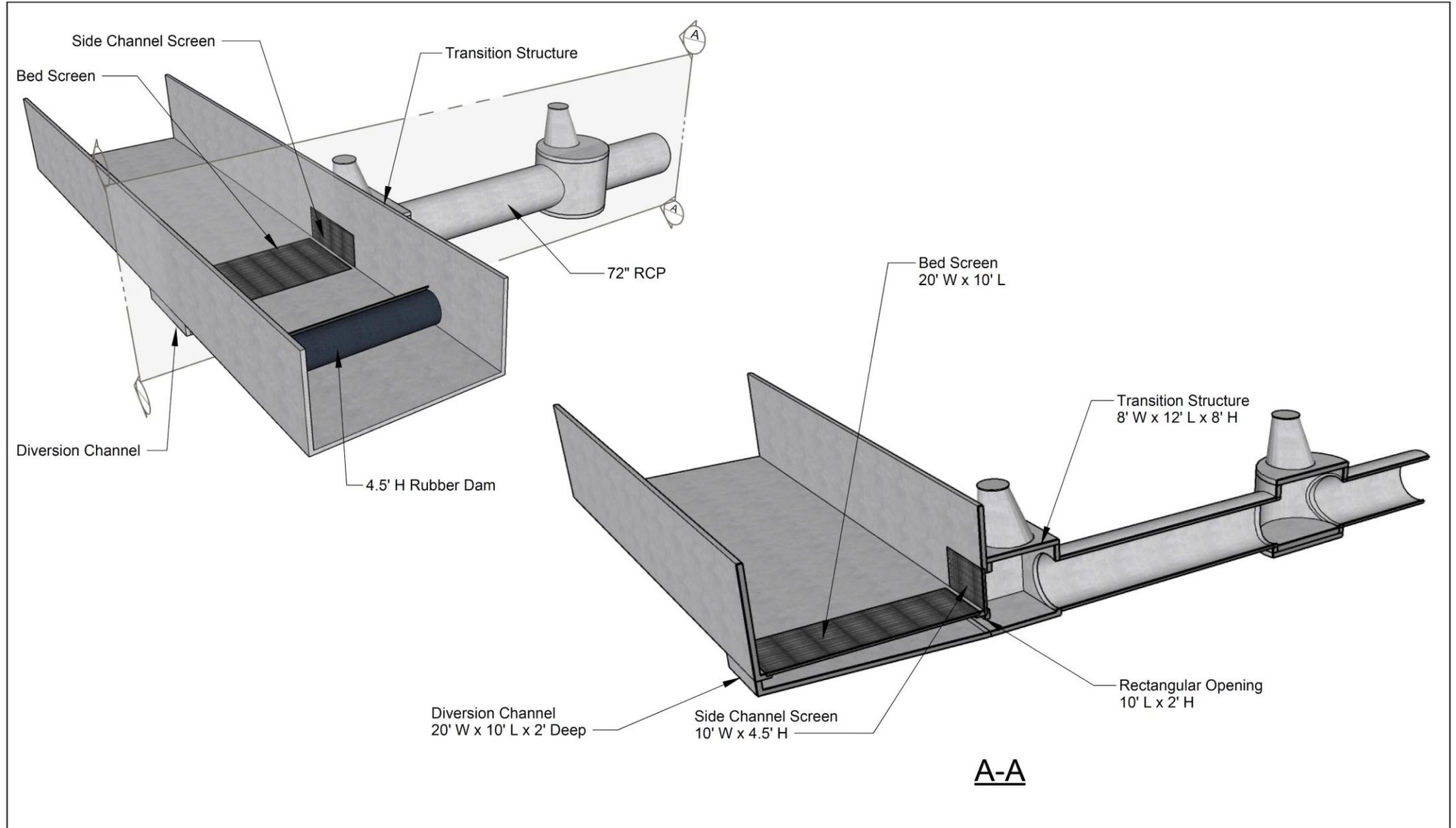
ITEM NUMBERS

1. 60" ID Precast Manhole Cone
2. Bolted Ring & Cover
3. Final Grade
4. Compacted Backfill
5. Poured Concrete
6. 60" ID Precast Manhole Shaft
7. 48" OD Precast Pipe Connector to Tunnel
8. 48" OD Slotted Corrugated HDPE Pipe, Min. 18" Tall with Filter Fabric Cover
9. Crushed Rock 3/8" and 1-1/2" per Native Soil
10. 72" Diam. Drilled Shaft
11. 48" Diam. Drilled Shaft, 75' Deep
12. Tunnel Liner Segment, 5-ft W, 12-ft ID



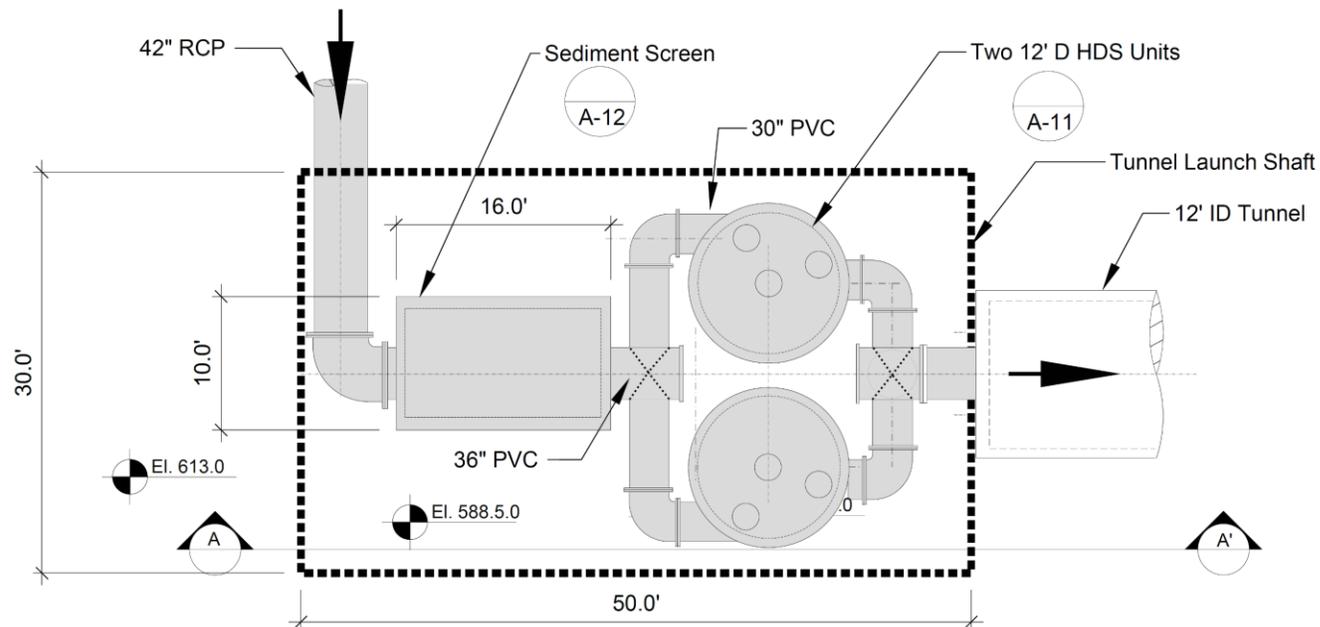


Project Details – Diversion Structure

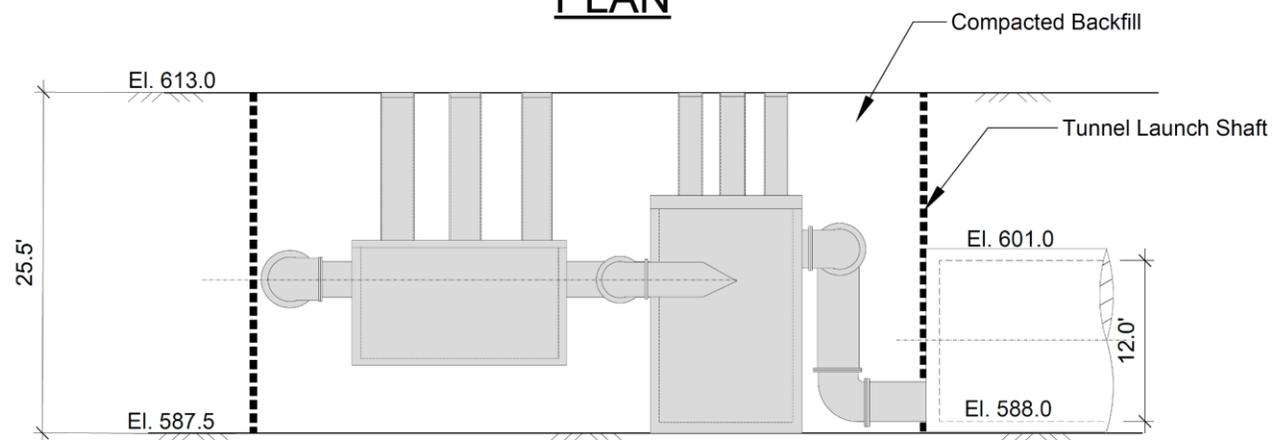




Project Details – Treatment System



PLAN



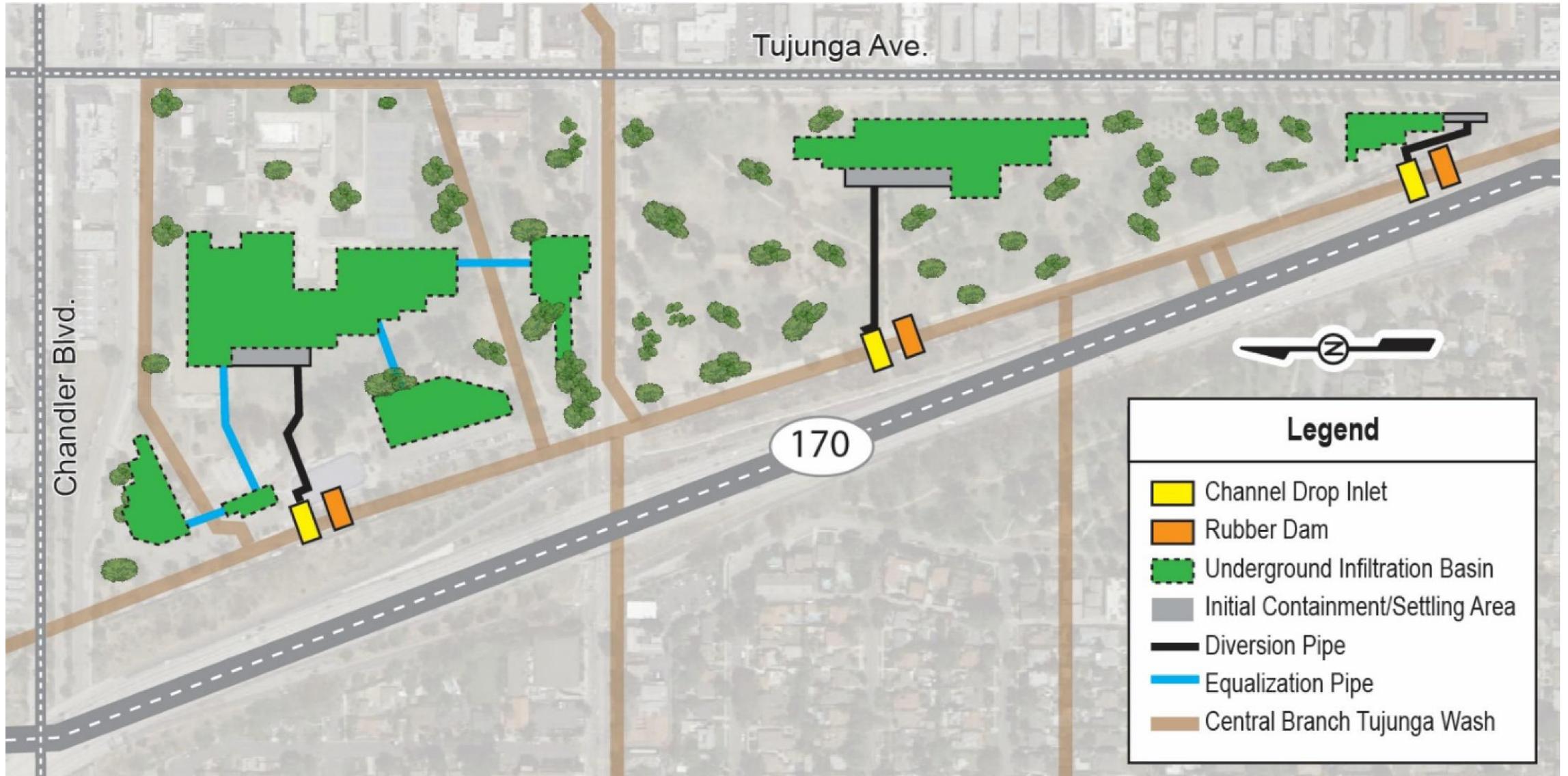
A-A'



Alternative Considered

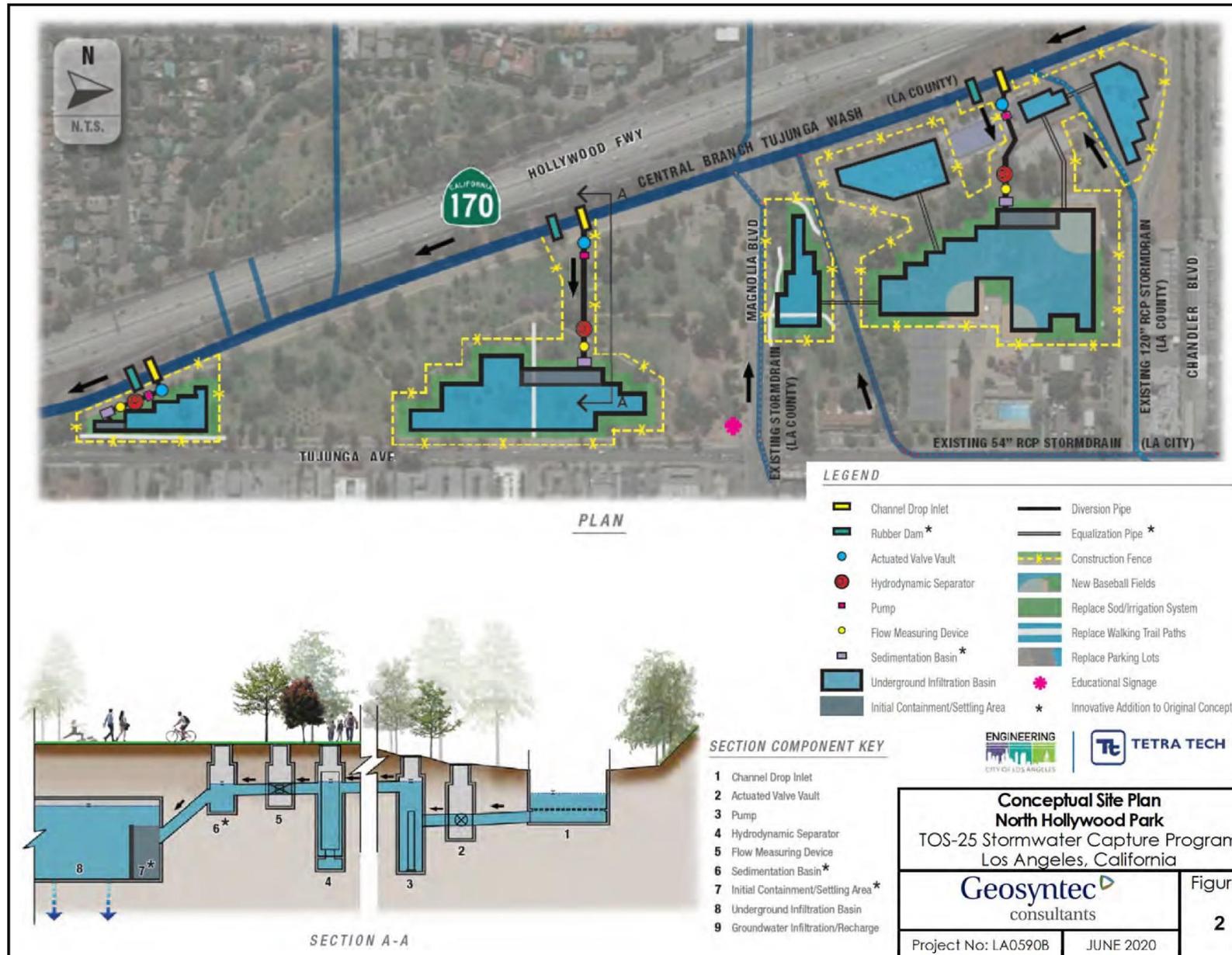


N. Hollywood Park DWP Scheme - Plan



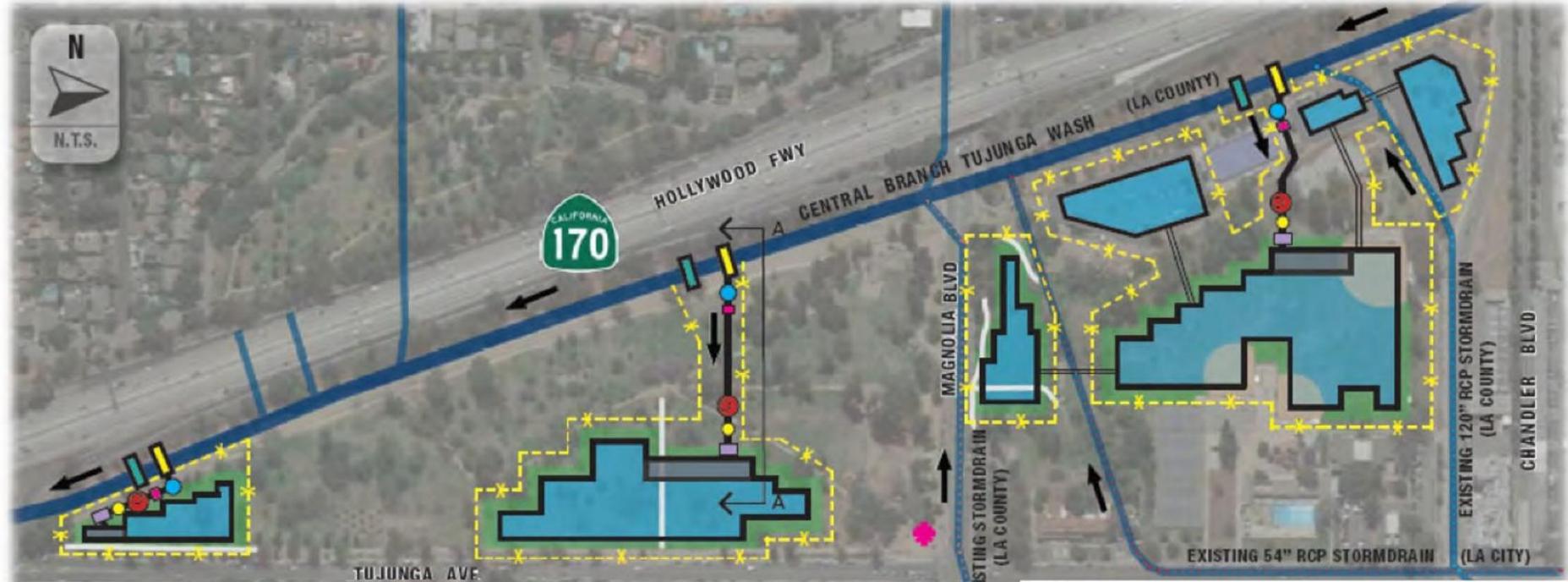


N. Hollywood Park DWP Scheme – BMPs





N. Hollywood Park DWP Scheme – BMPs



- Three 50 cfs pump station diversions
- Three infiltration galleries –
11.1 acres footprint, 122 AF storage
- Three sedimentation basins
- Three hydrodynamic separators



N. Hollywood Park DWP Scheme – Cost & Schedule



Phase Costs			
Phase	Description	Cost	Completion Date
Design	Pre-design, design, geotechnical, environmental, outreach, permitting, grant applications, grant reporting.	\$ 29,431,000.00	12/2021
Construction	Bid & award, construction, construction management, post-construction management, outreach, grant reporting.	\$ 157,224,000.00	10/2026
Total Funding:		\$ 186,655,000.00	

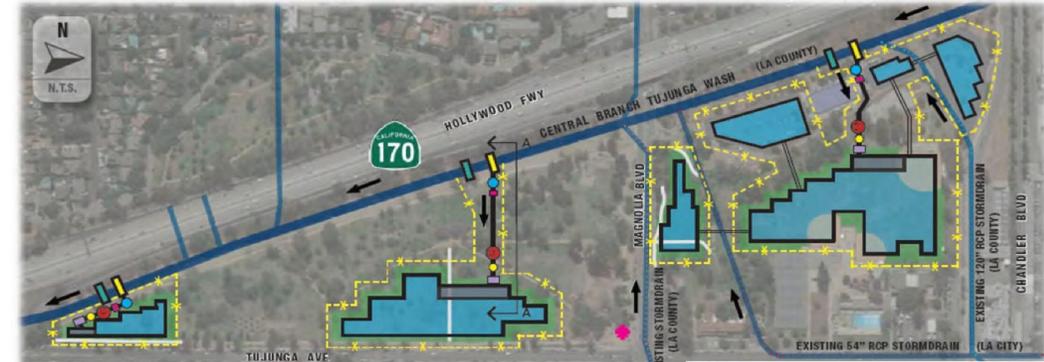
\$186.7 Million, 6 years



Alternative Considered – Comparison

Comparison of the LADWP Scheme with Current Project

Description		Units	DWP Scheme	Current Project	Diff.	Ratio
Total Earthwork		CY	912,000	150,000	-762,000	0.2
BMP Capacity	Det. Volume	AF	122.1	25.5	-96.6	0.2
	Infil. Capacity	CFS	31.8	60.3	28.5	1.9
85th P. Storm	Captured Volume	AF	102.1	132.0	29.9	1.3
	Peak Flow Diverted	cfs	150.0	320.0	170.0	2.1
Ave. Ann. Stormwater Capture		AF/Y	1,182	1,378	196.0	1.2
Project Life Span		Years	40	50	10.0	1.3
Project Cost	Design & Const.	\$M	186.7	68.2	-118.5	0.4
	O&M	\$M/Y	1.09	0.12	-0.97	0.1
	Life Cycle	\$M	210.4	71.2	-139.2	0.3
	Annualized Cost	\$M/Y	9.7	3.0	-6.7	0.3





Cost & Schedule – Design and Construction

Phase	Description	Cost	Completion Date
Design	Prepare Plans & Specs, Obtain Permits	\$ 8,187,490	06/2023
Construction	Construct Project	\$ 60,041,591	06/2026
TOTAL	Design and Construction	\$ 68,229,081	06/2026



Cost & Schedule – Annual O&M

Annual Cost Breakdown

Annual Maintenance Cost:	\$ 60,000.00
Annual Operation Cost:	\$ 40,000.00
Annual Monitoring Cost:	\$ 23,000.00
Total Annual Cost	\$123,000

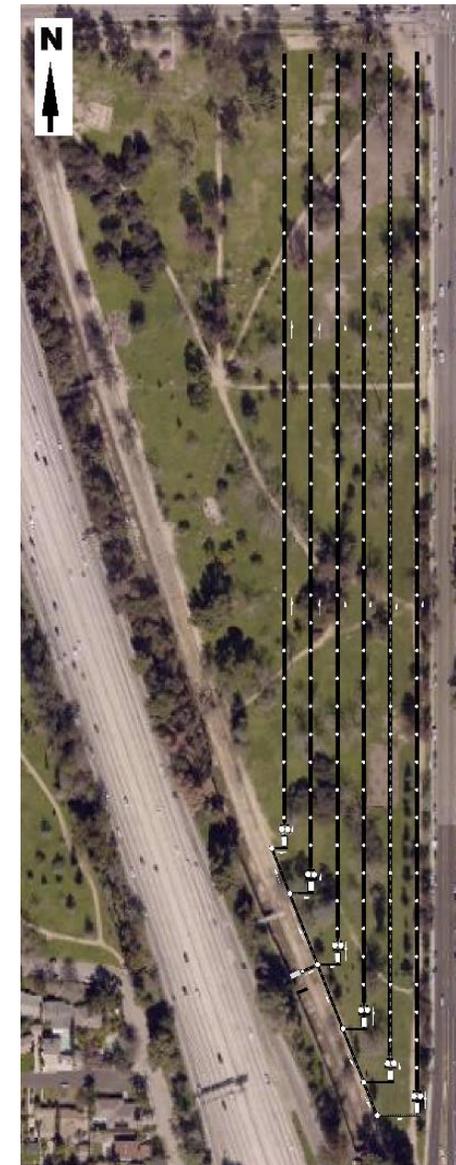




Cost & Schedule – Life Span & Lifecycle Cost

Life Span & Lifecycle Cost

Project Life Span	50 Years
Life Cycle Cost	\$ 71,180,331
Annualized Cost	\$ 2,966,601





Funding Request

Year	SCW Funding Requested	Phase	Efforts during Phase and Year
1	\$ 8,000,000	Design	Design and Permitting
2	\$ 8,000,000	Construction	Diversion Structure, Gravity Pipes
3	\$ 30,000,000	Construction	Tunnels and Drywells
4	\$ 15,000,000	Construction	Pretreatment System, Park Improvements
5	\$ 7,229,081	Construction	Park Improvements, Balance of Work, Project Commissioning
TOTAL	\$ 68,229.081		

- Leveraged Funding amount: **None**
- Future SCW funding requests: **O&M (\$123,000 per Year)**



Scoring Committee Score & Watermaster Letter



UPPER LOS ANGELES RIVER AREA WATERMASTER
Richard C. Slade - Watermaster

ularawatermaster.com
14051 Burbank Blvd, Suite 300
Sherman Oaks, CA 91401
818-506-0418 PHONE
818-506-1343 FAX

January 10, 2022

To: Applicants for Regional Projects under the Safe Clean Water Program

Regarding: Support for Infiltration Project at North Hollywood Park

The Upper Los Angeles River Area (ULARA) Watermaster is aware that many local agencies will be applying for Regional Project funds under the Los Angeles County Flood Control District's Safe Clean Water Fund program. One of the provisions of that application process requires applicants to contact the groundwater management agency (in this case, the ULARA Watermaster) for concurrence in support of the proposed project.

The purpose of this letter is to advise those agencies within or overlapping the ULARA's jurisdiction that the ULARA Watermaster is in general support of regional projects that provide infiltration of pre-treated captured runoff in order to help recharge and benefit the overall health of the local groundwater basin, in this specific case, the San Fernando Groundwater Basin.

Based on the information provided by one such applicant (SEITec), the proposed North Hollywood Park Stormwater Capture Project appears to be such a project that could benefit the San Fernando Groundwater Basin. The project proposes to direct stormwater to a series of tunnels and dry wells beneath North Hollywood Park (located south of Magnolia Blvd, between Tujunga Ave and the CA-170 Hollywood Freeway) so that the redirected stormwater has the potential to deep percolate into the aquifers within the San Fernando Groundwater Basin. The ULARA Watermaster concurs that the project has the potential to increase groundwater recharge in the San Fernando Basin.

It should be noted that this letter from the Watermaster's office is intended to assess the concept of the proposed infiltration (and recharge) project, but is not intended to serve as a review of the technical issues related to groundwater infiltration (including, but not limited to percolation rates, the potential for mounding, potential for liquefaction, etc.).

We look forward to working with our many agency partners on projects that promote groundwater recharge via infiltration for management of stormwater runoff in the Court-adjudicated ULARA region.

Respectfully Submitted,

Richard C. Slade
ULARA Watermaster

Safe, Clean Water Program Scoring Rubric - Fiscal Year 2022-2023

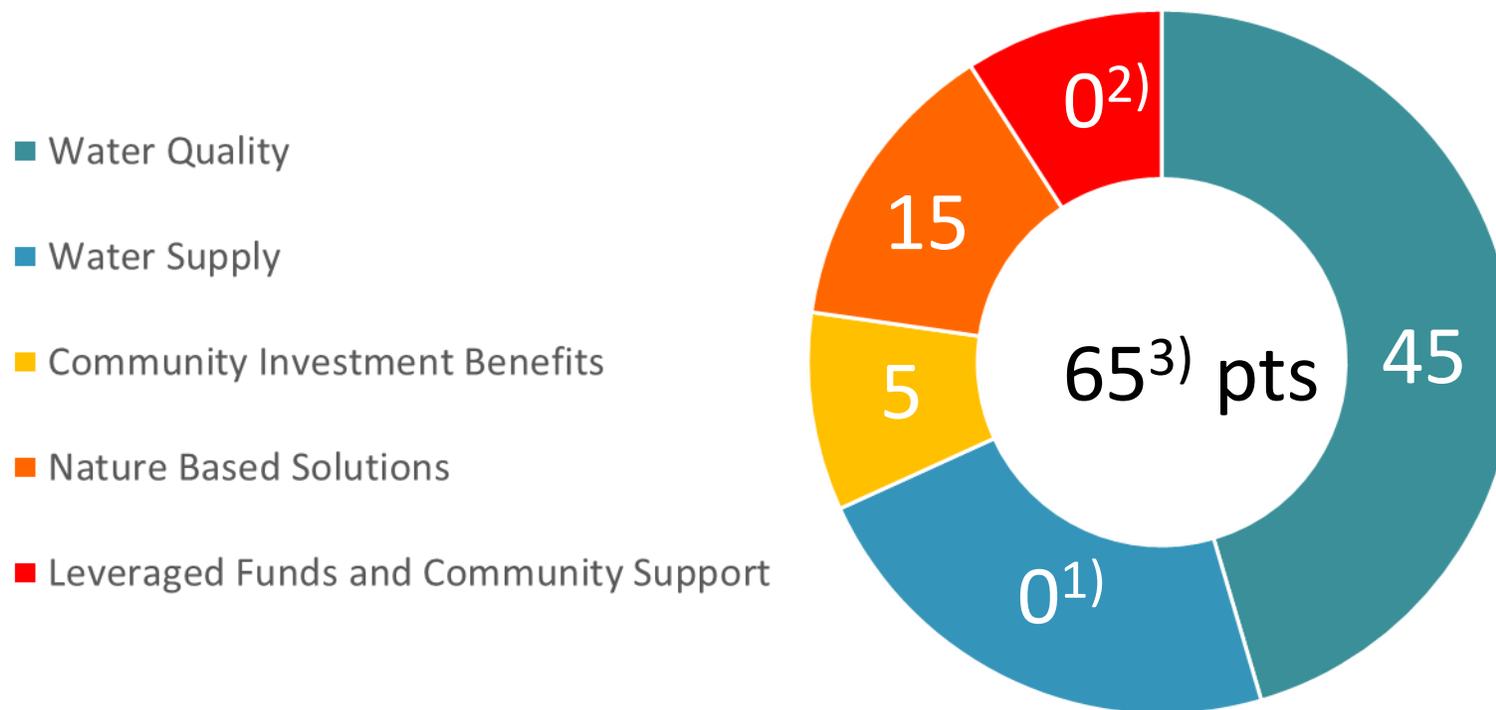


Watershed Area	Upper Los Angeles River
Project Name	North Hollywood Park Stormwater Capture Project
Project Lead	SEITec
Total Funding Requested	\$68,229,081
Project Type	Wet

Scoring Section	Applicant Score	Maximum Points	Scoring Committee Score	Notes
Water Quality Wet + Dry Weather Part 1	20	20	20	<ul style="list-style-type: none"> Request for additional information to demonstrate how various values were calculated Provided requested app justification values
Water Quality Wet + Dry Weather (30 pts) Part 2 Dry Weather (20 pts) Part 2	25	30	25	<ul style="list-style-type: none">
Water Supply Part 1	3	13	0	<ul style="list-style-type: none"> No letter of support attached from LADWP, if provided would have awarded 15 pts for Water Supply 1+2
Water Supply Part 2	12	12	0	<ul style="list-style-type: none">
Community Investment	10	10	5	<ul style="list-style-type: none"> No points for enhancing access to waterway and greening of school
Nature-Based Solutions	15	15	15	<ul style="list-style-type: none">
Leveraging Funds Part 1	N/A	6	0	<ul style="list-style-type: none">
Leveraging Funds Part 2	4	4	0	<ul style="list-style-type: none"> One way outreach. Need clarity on entities supporting project
TOTALS	89	110	65	<ul style="list-style-type: none">



Project Score

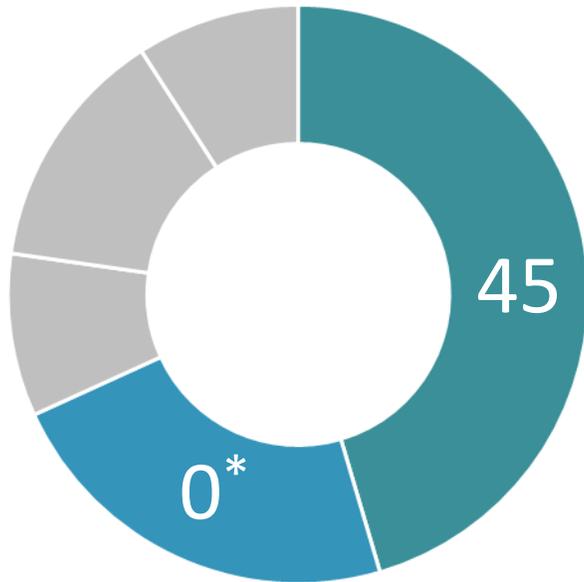


Notes:

1. Because of no letter from Watermaster with original application. Watermaster has since provided letter. **Therefore, per scoring committee Notes, Water Supply Score is 15.**
2. Because of no formal letter of support.
3. **With Water Supply score of 15 per Scoring Committee Notes, true score is 80.**



Water Quality & Water Supply Benefits

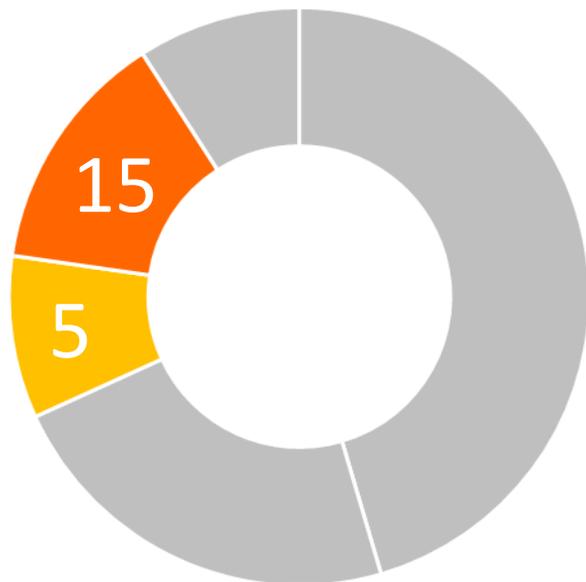


- Primary mechanisms – Detention/Infiltration
- Dry/Wet – Wet
- Tributary Area – 2,045 Acres (net area)
- BMP Capacity – 114 acre-ft
- Pollutant Reduction – Calculated 10-year 85.9%
- Annual Water Supply Volume – 1,378 acre-ft
- Water Supply Use – Aquifer Recharge
- Water Quality Cost Effectiveness – 1.7
- Water Supply Cost Effectiveness \$ 2,151 per ac-ft

* Because of no letter from Watermaster with original application. Watermaster has since provided letter. Therefore, per scoring committee Notes, **Water Supply Score is 15.**



Community Investment Benefits and Nature Based Solutions



- **Community Investment Benefits**

- Revitalizes community park and sport facilities
- Provides new lighting and hydration stations
- Creates new recreational opportunities
- Plants new trees and natural grass
- Reduces heat island effect and increases shade

- **Nature Based Solutions**

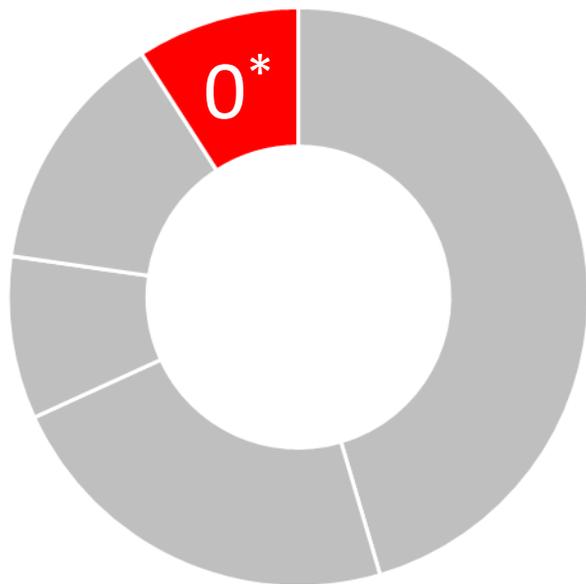
- 100% Gravity solution
- Restores natural infiltration and aquifer replenishment
- Removes impermeable area



Leveraging Funds and Community Support

- Leveraging Funds

- None



- Community Support

- Project is significantly less disruptive to construct and vastly more beneficial than previous alternative, which enjoys wide community support.

* Because of no formal letter of support.



Questions?