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Los Angeles Gateway Region
Integrated Regional Water Management
Joint Powers Authority

(REVISED)

AGENDA

***Regular* Meeting of the Board of Directors**
Thursday, October 10, 2024 at 12:00 PM

Progress Park Plaza, 15500 Downey Avenue, Paramount, CA

1. **Roll Call**

2. **Determination of a Quorum**

3. **Additions to Agenda (Govt. Code Sec. 54954.2(b))**

4. **Oral Communications to the Board**

   This is an opportunity for members of the public to address the Board on any item under the jurisdiction of the agency. Depending upon the subject matter, the Board may be unable to respond until the item can be posted on the agenda at a future meeting in accordance with provisions of the Brown Act.

5. **Consent Calendar: (Acted as one item unless withdrawn by request)**
   a. Minutes of the Board Meeting of July 11, 2024 (Enclosure).
   b. Ratify the Warrant Register for August and September 2024 and Approve the Warrant Register for October 2024 (Enclosures).
   c. Receive and File the Updated Expenditures for Legal Counsel Services (Enclosure).

6. **Presentation Regarding Los Angeles County Water Plan by Keith Hala, Los Angeles County (Enclosures)**
   a. Adopt Resolution No. 24-03 –Adopting the Los Angeles County Water Plan

7. **Discussion/Action Regarding Statement of Qualifications for Operations, Maintenance, and Evaluation of Five (5) Regional Stormwater Capture and Treatment Projects (Enclosures)**
   a. Receive and File Statement of Qualifications and direct staff to distribute the complete Request for Qualifications/Statement of Qualifications Package to GWMA members with no recommendations.

8. **Discussion/Action Regarding GWMA Website Modernization (Enclosure)**
   a. Approve the proposal from Commune Communication.
   b. Authorize the Chair to execute an agreement with Commune Communication for website design, and maintenance.

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9. Safe Clean Water Program Transfer Agreement for Regional Pathogen Reduction Study (Enclosures)

a. Adopt Resolution No. 24-04 approving the SCWP Transfer Agreement for the Regional Pathogen Reduction Study, authorizing the Chair to execute the agreement pending non-material changes, and authorizing the Executive Officer to take all necessary actions to implement the agreement.

b. Authorize the Executive Officer to request proposals from the On-Call Consultants approved for Project Management to assist staff with project management of Tasks 1 through 4.

10. Discussion/Action Regarding GWMA Survey Results for FY 2024-2025 Project Grant Priorities (Enclosure)

a. Direct staff to request proposals from the pre-approved On-Call Consultants for Regional Planning Grant and/or Opportunities and Grant Writing services following the guidance set forth in the On-Call Consultant Policy and the Grant Policy and Procedures.

11. Discussion Regarding Monitoring Equipment for Los Cerritos Channel Watershed Group

12. Safe Clean Water Program – Oral Report

a. Lower San Gabriel River "LSGR" WASC Co-Chair – Dan Mueller

b. Lower Los Angeles River "LLAR" WASC Chair – Madeline Chen

13. Executive Officer's Oral Report

14. Directors' Oral Comments/Reports

15. Adjournment to Regular Board Meeting on January 9, 2025 at Progress Park Plaza, 15500 Downey Avenue, Paramount, CA

MINUTES OF THE GATEWAY WATER MANAGEMENT AUTHORITY
LOS ANGELES GATEWAY REGION
INTEGRATED REGIONAL WATER MANAGEMENT
JOINT POWERS AUTHORITY BOARD
THURSDAY, JULY 11, 2024

A regular meeting of the Board of Directors of the Gateway Water Management Authority was held on Thursday, July 11, 2024, at 12:00 p.m. at Progress Park Plaza, 15500 Downey Avenue, Paramount, CA.

Treasurer Thomas Bekele called the meeting to order at 12:09 p.m. Roll was called by Ms. Madeline Anderson and a quorum of the Board was declared.

BOARD MEMBERS PRESENT:

Bernardo Iniguez	Bell Gardens
Len Gorecki	Bellflower
Madeline Chen (alternate)	Central Basin Municipal Water District
Dan Mueller (alternate)	Downey
Steve Forster (alternate)	Huntington Park
Mark Stowell	La Mirada
Konya Vivanti (alternate)	Lakewood
Keith Hoey	Long Beach
Tai Tseng (alternate)	Long Beach Utilities
Julian Lee	Lynwood
Jerry Gomez	Maywood
Samantha Leyva (alternate)	Montebello
Dylan Porter (alternate)	Port of Long Beach
Thomas Bekele	Signal Hill
Rob Beste	Water Replenishment District
Vicki Smith	Whittier

STAFF AND GUESTS ON SIGN-IN SHEET:

Grace Kast	Executive Officer
Nicholas Ghirelli	Legal Counsel
Madeline Anderson	Koa Consulting
Marla Flores	Huntington Park
Jeremy Melendez	Montebello
Yoshi Andersen	Geosyntec Consultants

ITEM 3 - ADDITIONS TO THE AGENDA

None.

ITEM 4 - ORAL COMMUNICATIONS TO THE BOARD

None.

ITEM 5 - CONSENT CALENDAR

Director Forster moved to approve the consent calendar.

The motion was seconded by Director Gorecki and was approved by the following voice vote:

AYES:	**Gorecki, Mueller, Forster, Stowell, Vivanti, Hoey, Tseng, Lee, Gomez, Porter, Bekele, Smith**
NOES:	**None**
ABSTAIN:	**Beste, Levya, Chen**

ITEM 6 - PRESENTATION – LOS ANGELES COUNTY WATER PLAN BY MATTHEW FRARY

Mr. Matthew Frary from Los Angeles (LA) County Flood Control District gave a presentation about the LA County Water Plan, which serves the entire region of LA County.

He illustrated the gaps in water management and the need for collaboration on key focus areas, including regional water sustainability, water conservation and communication, nature-based solutions, and the reliability of small, at-risk water systems. He also highlighted the Water Resiliency Summit held on April 29, 2024, which served as the launch point for four task forces designed to address these focus areas. The task forces are currently open for participation and could potentially break into smaller working groups.

During the discussion, Director Forster inquired about how the LA County Water Plan aligns with state mandates on water restrictions. Mr. Frary explained that the plan aligns well with the goals of the California Water Plan. Additionally, the nature-based solutions task force will be meeting more frequently in the short term, with a goal of developing solutions by December. These solutions will tie into the Safe Clean Water initiative, which is still working on ways to quantify certain water quality measures. A "good-better-best" matrix will be used to establish performance standards, which will later be vetted by stakeholders.

Ms. Kast asked the Board if they would like staff to bring back the County Water Plan for consideration to adopt it as a partner via Resolution. She explained that the Resolution would serve as a guide without mandating any specific actions for GWMA or its members. The Board agreed that the resolution should be agendized, and requested that the County send a representative to that meeting with additional details and updated information and to answer further questions.

Director Iniguez entered the meeting at 12:31.

ITEM 7 – PRESENTATION – GATEWAY AREA PATHFINDING (GAP) PHASE II BY BRAD WARDYNSKI

Mr. Brad Wardynski from Craftwater Engineering presented an update on Phase II of the GAP Study, focusing on identifying areas for improvement. He provided an overview of the discussions from the last presentation and highlighted the importance of setting clear metrics and targets, such as equivalency metrics. Mr. Wardynski began by discussing existing projects from Phase I and introduced new projects that are still under consideration. He went over detailed charts, demonstrating how different metrics can be used to show progress in pollutant reduction and water quality improvements.

Mr. Wardynski also presented data on pollutant reduction, particularly focusing on zinc, heavy metals, and bacteria. He noted that there would be a parallel study on pathogen sources, as structural projects may not be the most effective approach for managing bacteria. The framework is currently based on project analysis, and he explained that many projects online are not meeting their original goals. The GAP Study's modeling provides a way to understand the actual impact of these projects and offers pathways for improvement. He outlined the next steps, including a future deliverable that will help close the gap in water quality objectives. He will provide an update by the October meeting.

During the discussion, Director Vivanti urged city representatives from each watershed to attend the Watershed Management Group meetings, especially the virtual ones, to hear updates firsthand. She suggested hosting virtual workshops or conducting a roadshow to present to different watershed groups. Mr. Wardynski agreed that individual presentations to watershed groups could be arranged if needed. The interaction with the study's dashboard was highlighted as a key tool for tracking progress and making informed decisions on future projects.

ITEM 8 -DISCUSSION/ACTION REGARDING ISSUING A NOTICE TO PROCEED AMENDMENT NO. 1 TO JOHN L. HUNTER & ASSOCIATES FOR THE PREPARATION OF A REQUEST FOR QUALIFICATIONS (RFQ) FOR OPERATIONS, MAINTENANCE, AND EVALUATION OF REGIONAL STORMWATER CAPTURE AND TREATMENT PROJECTS

Ms. Kast referred to a previous Board Meeting where John Hunter gave a presentation for the need to seek qualified Operation and Maintenance (O&M) contractors for stormwater projects. Since then, Staff have been working closely with him and regional project lead representatives. Staff did send out an RFQ and decided as a working group to rescind it due to the complexity of the request for services and qualification. The group has since reworked the RFQ. John has requested an increase for his time, which Ms. Kast explained is why it is being brought to the Board for a vote.

Director Vivanti moved to approve the following recommendations:

a. Approve the FY 2024-2025 budget line item transfer from the General Reserve to Special Projects in the amount of $6,000.
b. Approve John L Hunter & Associates' amendment proposal, as presented, in the amount not to exceed $6,000, and authorize the Executive Officer to issue a Notice to Proceed.

The motion was seconded by Director Gorecki, and the actions were approved by the following voice vote:

AYES: **Iniguez, Gorecki, Mueller, Forster, Stowell, Vivanti, Hoey, Tseng, Lee, Gomez, Porter, Bekele, Smith, Beste, Levya, Chen**

NOES: **None**

ABSTAIN: **None**

ITEM 9 - DISCUSSION/ACTION REGARDING GWMA SURVEY RESULTS FOR FY 2024-2025 PROJECT GRANT PRIORITIES

Ms. Kast provided an update on the survey results for FY 2024-2025 Project Grant Priorities. She noted that stormwater capture was the highest priority among the choices for project categories.

About half of the responses mentioned specific projects members wanted to include in a regional program/grant. She asked the Board to consider additional activities, including the potential for federal funding by engaging political support, government relations experts, and lobbying firms to assist at the state level. There was significant support for this approach and for taking more action on legislation. Some Board members expressed interest in re-evaluating funding and government legislation needs, suggesting the topic be added to the budget discussions for this year or next. Ms. Kast reported she would bring more detailed information and a request to move forward with implementing a program based on the survey results. She finalized her report by stating that she believes it would be more effective to focus on only the top 2 project categories instead of 3 or 4 categories.

ITEM 10 – SAFE CLEAN WATER PROGRAM – ORAL REPORT

a. Lower San Gabriel River "LSGR" WASC Chair – Dan Mueller

   Director Mueller gave a report on LSGR, noting that they had a meeting the other day, The Stormwater Investment Plan (SIP) was approved.

b. Lower Los Angeles River "LLAR" WASC Chair – Madeline Chen

   Director Chen noted that they also got their SIP approved and will have a watershed discussion, scheduled Wednesday, July 17th. They will have different workshops to start the process of getting community input to see which projects to get in the future. Director Chen also noted that applicants will need more funding to augment SCWP funds.

ITEM 11 – EXECUTIVE OFFICER'S ORAL REPORT

None.

ITEM 12 – DIRECTORS' ORAL COMMENTS/REPORTS

None.

The meeting adjourned at 1:18 p.m.

The next regular Board Meeting of the Directors of the Gateway Water Management Authority will be on Thursday, October 10, 2024 at 12:00 p.m. at the Clearwater Building, 16404 Paramount Boulevard, Paramount, CA.

_____ _____

Thomas Bekele, Treasurer Date

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Los Angeles Gateway Region
Integrated Regional Water Management
Joint Powers Authority

October 10, 2024

AGENDA ITEM 5b – Ratify the Warrant Register for August and September 2024 and Approve the Warrant Register for October 2024

SUMMARY

The Warrant Register is a listing of general checks issued since the last warrant register. Warrants will be signed by 2 of the 3 Board Officers and released by Traci Gleason, serving as the Administrative/Accounting Manager of the Gateway Water Management Authority, upon Board Approval.

DISCUSSION

The Warrant Register for expenditures dated August 2024 and September 2024 in the amounts of $306,655.82 and $271,688.10. respectively, are submitted for ratification by the Board, and the Warrant Register for expenditures dated October 2024 in the amount of $270,690.55 is submitted for approval. Invoices and supporting documentation are available for review at the office of the GWMA.

FISCAL IMPACT

The Warrant Registers for August, September and October 2024 total $849,034.47. Funds to cover payment are available in the GWMA budget.

RECOMMENDATION

Ratify the Warrant Registers for August and September 2024 and Approve the Warrant Register for October 2024.

WARRANT REGISTER
DISBURSEMENT JOURNAL
August 2024

Invoice Date	Vendor	Invoice Number	Description	Amount
6/17/2024	Anchor QEA	25513	RMC Compliance FY 23/24 (Services through 5/31/2024)	$ 18,717.68
7/18/2024	Anchor QEA	26131	RMC Compliance FY 23/24 (Services through 6/30/2024)	$ 22,931.11
8/6/2024	CASQA	2024-38	LCC Membership	$ 4,900.00
7/1/2024	City of Paramount	5239	Office Lease (July 2024)	$ 424.43
8/1/2024	City of Paramount	5247	Office Lease (August 2024)	$ 424.43
7/9/2024	Craftwater Engineering	21-040-9	SCWP LLAR and LSGR GAP Ph 2 (Services through 7/5/2024)	$ 76,475.00
7/18/2024	CWE	F24343	LAR UR2 (June 2024)	$ 20,348.54
7/31/2024	Gateway Cities Council of Goverments	7-31-24	Office Supplies (July 2024)	$ 100.00
6/14/2024	John L. Hunter & Associates	GWM1GHR12405	HTU (May 2024)	$ 77.50
7/10/2024	John L. Hunter & Associates	GWM1LLA12406	LLAR (June 2024)	$ 31,508.56
6/14/2024	John L. Hunter & Associates	GWM1LSG12405	LSGR (May 2024)	$ 43,702.16
7/10/2024	John L. Hunter & Associates	GWM1LSG12406	LSGR (June 2024)	$ 19,235.65
8/5/2024	Koa Consutling	K114-01-82	Water-Related PM Coordination Activities and Executive Officer Services, DAC Chair and DACIP Co-Chair (July 2024)	$ 39,779.52
7/17/2024	Richard Watson & Associates	24-192-003-007	LCC WMP CIMP (June 2024)	$ 27,563.74
7/19/2024	Richards Watson Gershon	248769	Legal Services for HTD (service through 6/30/24)	$ 467.50
			Total	**$ 306,655.82**

Reviewed and Approved by:

Thomas Bekele, Signal Hill

WARRANT REGISTER
DISBURSEMENT JOURNAL
September 2024

Invoice Date	Vendor	Invoice Number	Description	Amount
8/20/2024	Anchor QEA	26886	RMC Compliance FY 23/24 (Services through 7/31/2024)	$ 55,498.34
9/3/2024	CA Consulting Services	2024-GWMA-08	Accounting Support Services (Services through 8/31/2024)	$ 840.00
8/6/2024	CASQA	2024-40	LLAR Membership	$ 8,600.00
9/1/2024	City of Paramount	5254	Office Lease (September 2024)	$ 424.43
8/14/2024	Craftwater Engineering	21-040-10	SCWP LLAR and LSGR GAP Ph 2 (Services through 7/31/2024)	$ 50,255.00
8/27/2024	CWE	F24426	LAR UR2 (July 2024)	$ 24,987.84
8/30/2024	Gateway Cities Council of Goverments	8-30-2024	Office Supplies (August 2024)	$ 100.00
8/21/2024	John L. Hunter & Associates	GWM1LLA12407	LLAR (July 2024)	$ 32,394.12
4/16/2024	John L. Hunter & Associates	GWM1LSG12403	LSGR (March 2024)	$ 34,103.75
9/4/2024	Koa Consutling	K114-01-83	Water-Related PM Coordination Activities and Executive Officer Services, DAC Chair and DACIP Co-Chair (Aug 2024)	$ 39,788.52
8/13/2024	Richard Watson & Associates	24-192-003-008	LCC WMP CIMP (July 2024)	$ 23,926.10
8/21/2024	Richards Watson Gershon	249211	Legal Services - General (service through 7/31/24)	$ 687.50
8/21/2024	Richards Watson Gershon	249212	Legal Services - HTD (service through 7/31/24)	$ 82.50
			Total	**$ 271,688.10**

Reviewed and Approved by

Thomas Bekele, Signal Hill

WARRANT REGISTER
DISBURSEMENT JOURNAL
October 2024

Invoice Date	Vendor	Invoice Number	Description	Amount
9/15/2024	Allian Insurance Services	12302	SLIP (9/29/24-9/29/25)	$ 16,400.22
9/20/2024	Anchor QEA	27614	RMC Compliance FY 24/25 (Services through 8/31/2024)	$ 12,204.16
9/23/2024	Anchor QEA	27620	RMC Compliance FY 23/24 (Services through 8/31/2024)	$ 59,761.50
8/6/2024	CASQA	2024-39	LSGR Membership LSGR	$ 13,900.00
10/1/2024	City of Paramount	5259	Office Lease (Oct 2024)	$ 424.43
9/9/2024	Craftwater Engineering	21-040-11	SCWP LLAR and LSGR GAP Ph 2 (Services through 8/31/2024)	$ 13,328.50
9/19/2024	CWE	F24482	LAR UR2 (Aug 2024)	$ 12,538.64
9/30/2024	Gateway Cities Council of Goverments	9-30-2024	Office Supplies (Sept 2024)	$ 100.00
8/20/2024	John L. Hunter & Associates	GWM1GHR12407	HTU (July 2024)	$ 2,960.88
9/10/2024	John L. Hunter & Associates	GWM1GHR12408	HTU (Aug 2024)	$ 3,490.99
9/10/2024	John L. Hunter & Associates	GWM1LLA12408	LLAR (Aug 2024)	$ 20,499.01
8/21/2024	John L. Hunter & Associates	GWM1LSG12407	LSGR (July 2024)	$ 33,859.58
9/10/2024	John L. Hunter & Associates	GWM1LSG12408	LSGR (Aug 2024)	$ 12,572.09
9/10/2024	John L. Hunter & Associates	GWM1OM12408	Regional Stormwater Capture RFP Prep (Aug 2024)	$ 262.50
9/30/2024	Koa Consutling	K114-01-84	Water-Related PM Coordination Activities and Executive Officer Services, DAC Chair and DACIP Co-Chair (Sept 2024)	$ 39,788.52
9/16/2024	Richard Watson & Associates	24-192-003-009	LCC WMP CIMP (Aug 2024)	$ 28,211.88
9/23/2024	Richards Watson Gershon	249550	Legal Services - General (service through 8/31/24)	$ 387.65
			Total	**$ 270,690.55**

Reviewed and Approved by:

Thomas Bekele, Signal Hill

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Los Angeles Gateway Region
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Joint Powers Authority

October 10, 2024

AGENDA ITEM 5c – Status of Total Legal Expenditures for General Legal Counsel Services for Fiscal Year 2024-2025

SUMMARY

At the Board meeting in April 2024, the Board approved the budget for legal counsel services of $30,000 for Fiscal Year (FY) 2024-2025 to address legal issues. The Board has previously directed staff to provide monthly updates on total expenditures for legal counsel services.

Legal Counsel Services Update:

$ 30,000.00	FY 2024-2025 Budget amount for Legal Counsel services
$ 1,157.65	Expenditures for Legal Counsel services through August 31, 2024
$ 28,842.35	Remaining budget amount available through June 30, 2025

FISCAL IMPACT

The total expenditures for Legal Counsel services for FY 2024-2025 through August 31, 2024 total $1,157.65. It is projected there are sufficient funds remaining in the GWMA FY 2024-2025 budget to cover payment for legal counsel services through the end of the fiscal year.

RECOMMENDATION

Receive and file the updated expenditures for Legal Counsel Services.


LA COUNTY
WATER PLAN

Vision

The CWP articulates a shared, inclusive, regional path forward to sustainably and equitably achieve safe, clean, and reliable water resources for Los Angeles County.

Resilience Through Collaboration

LA COUNTY
WATER PLAN

4 Key Focal Areas

REGIONAL WATER SUPPLY RELIABILITY

GROUNDWATER MANAGEMENT AND QUALITY

SMALL, AT-RISK SYSTEM RESILIENCE AND DRINKING WATER EQUITY

WATERSHED SEDIMENT MANAGEMENT

Regional Water Supply Reliability Targets

A

Achieve 100% compliance with State Urban Water Use Objectives

B

Increase local supply sources by 580,000 AFY

C

Meet 100% of water demands even in times of drought

D

Maximize ability to meet health and safety needs following an emergency by maintaining access to six months of emergency supply

Groundwater Management & Quality Targets

E

Optimize production of groundwater by maintaining at least 700,000 AFY baseline groundwater production

F

Optimize production of groundwater by increasing production in areas overlying impaired groundwater by 18,000 AFY

G

Increase groundwater recharge and storage by enhancing regional facility recharge by 250,000 AFY

H

Increase groundwater recharge and storage by increasing decentralized infiltration by 80,000 AFY

Small, At-Risk System Resilience & Drinking Water Equity Targets

I

Reduce at-risk systems by 100%

J

100% of water agencies, including those in severely disadvantaged communities, have affordable cost of water to meet health and safety needs

K

Reduce color, taste, and odor drinking water quality issues by 50%

L

Maximize ability to meet health and safety needs following an emergency by confirming 100% of small community water systems have access to alternative sources of supply

Watershed Sediment Management Targets

M

Reduce fire-contributing species in riparian areas by 2,900 acres

N

Reduce human-caused ignitions by 50%

O

Maintain a minimum of 75% average available capacity in debris basins and 80% average available capacity in reservoirs

P

Confirm 100% of water management agencies within the wildland-urban interface are implementing a wildfire resilience or mitigation plan

14 Strategies

STRATEGY 1
Achieving the most efficient water use possible countywide

STRATEGY 2
Collaborating on consistent drought preparedness and response messaging

STRATEGY 3
Coupling local supply development with regional conveyance

STRATEGY 4
Managing salt and concentrate regionally

STRATEGY 5
Leveraging regional groundwater storage potential

STRATEGY 6
Collaborating on water quality needs and treatment technologies

STRATEGY 7
Enhancing cost-effectiveness of pumping and treating impaired groundwater production

STRATEGY 8
Protecting coastal groundwater basins from seawater intrusion

STRATEGY 9
Facilitating regional groundwater recharge understanding and initiatives

STRATEGY 10
Facilitating natural infiltration of precipitation

STRATEGY 11
Providing regional support for small, at-risk water systems

STRATEGY 12
Mitigating wildfire effects on water supply and quality

STRATEGY 13
Managing invasive species in riparian areas

STRATEGY 14
Facilitating sediment management and debris removal from flood control facilities

Water Resiliency Summit – April 29, 2024

4 Task Forces Launched

Water Use Efficiency & Communication

Charley Wilson

Southern California Water Coalition

Nature-Based Solutions

Eileen Alduenda

Council for Watershed Health

Regional Water Reliability

David Pedersen

Las Virgenes Municipal Water District

Small, At-Risk Water Systems

Adam Ariki

Los Angeles County Public Works

An Adaptive "Living Document"

CWP Strategies & Actions

+ YOUR Local & Regional Efforts

CWP Targets

Value of CWP Partnership

- Why Adopt the CWP Resolution?
- The Power of Collaboration and Strength in Numbers
- Together, we can:
  - Advocate for More Funding for Key Projects
  - Uplift LA County's Small, At-Risk Water Systems
  - Collaborate on Integrated Watershed Management

Date Adopted	Organization
03/27/24	Los Angeles County Sanitation Districts
04/16/24	Las Virgenes Municipal Water District
05/14/24	Crescenta Valley Water District
05/20/24	Foothill Municipal Water District
05/21/24	Water Replenishment District
07/03/24	Main San Gabriel Basin Watermaster
07/22/24	West Basin Municipal Water District
08/13/24	Los Angeles Department of Water and Power
09/24/24	City of Santa Monica

CWP Value for GWMA

- Shared interest of addressing **Groundwater Optimization, Coastal Groundwater Basin Protection, Small, At-Risk Water Systems, Water Use Efficiency**, and **collaborative climate change messaging/planning**

- Countywide Targets (2045 horizon):
  - Maintain **700,000 AFY** of Groundwater
  - Meet **100% of Water Demands** During Droughts
  - Increase Local Water Supply by approximately **600,000 AFY**

Advancing Towards Resiliency

- **Join** a Task Force
- **Adopt** the County Water Plan
- **Continue Collaboration** on Local & Regional Efforts

Keep in touch!

LACountyWaterPlan.org

LACountyWaterPlan@pw.lacounty.gov

Keith Hala, P.E.

Senior Civil Engineer

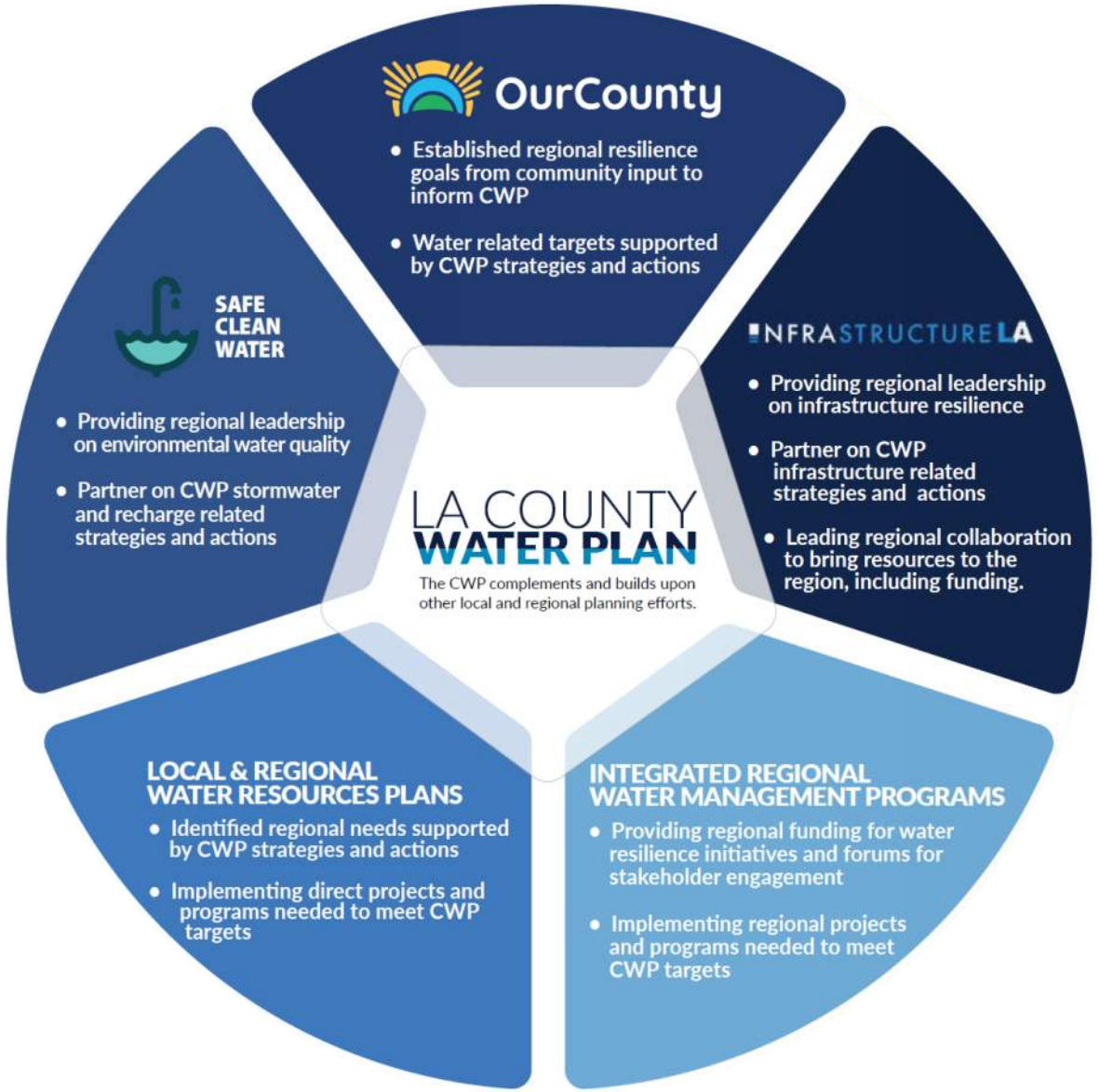
KHALA@pw.lacounty.gov

LA COUNTY WATER PLAN

Public Works
LOS ANGELES COUNTY

Complementary

LA COUNTY WATER PLAN



Efforts

LA COUNTY WATER PLAN

LA COUNTY
WATER PLAN

LOS ANGELES COUNTY WATER PLAN

2023 Edition | Water Supply Resilience

equity
sustainability
opportunity
local
water
resources
collaboration
relationships
regional
resilience

LA COUNTY WATER PLAN EXECUTIVE SUMMARY

OUR ROUTE TO RESILIENCE, TOGETHER

Climate change is establishing a "new normal" of more frequent and intense droughts, as well as less frequent and more torrential rains. Recognizing a new climate reality and the need to be thoughtful stewards of future water supplies, the Los Angeles County Board of Supervisors envisioned the development of a countywide water plan focused on collaborative management of Los Angeles County's water resources. Los Angeles County Public Works (Public Works) developed this Los Angeles County Water Plan (CWP), together with water resources organizations, and an array of diverse stakeholders, to secure Los Angeles County's water future and achieve our collective vision of equitable and sustainable water resources for everyone. The CWP builds upon the 2019 OurCounty Sustainability Plan, establishing the path to realizing our vision that is rooted in cross-sector collaboration and coalition building.

VISION

The CWP articulates a shared, inclusive, regional path forward to sustainably and equitably achieve safe, clean, and reliable water resources for Los Angeles County.

SHARED OPPORTUNITIES FOR WATER RESILIENCE

THE CWP FOCUSES ON ACHIEVING REGIONAL WATER RESILIENCE THROUGH COLLABORATIVE STRATEGIES. Over 200 agencies in Los Angeles County manage a complex network of water systems to meet the needs of our communities and environment. To achieve sustainability, resilience, and equity, cross-sector teamwork and a holistic approach to best leverage natural systems and infrastructure are essential. This plan is a living document. The targets, strategies, and actions are a starting point in this effort.

The CWP is not intended to address every water-related issue in Los Angeles County. Instead, it builds upon and complements the many existing local and regional water planning efforts by focusing on four key focal areas where new or additional regional collaboration can add value. These four key focal areas were established through a gaps analysis, which included a review of local and regional planning documents, along with initial stakeholder discussions encompassing a variety of perspectives. For each of the four key focal areas, the CWP describes shared desired outcomes, identified by Public Works through discussions with numerous groups and individuals. During our gaps analysis, Public Works evaluated disparities in water resilience throughout the County and specifically selected a focal area to address a pressing need. The CWP provides an approach for achieving these desired outcomes through collaboration and a platform for measuring progress.

CWP Four Key Focal Areas

REGIONAL WATER SUPPLY RELIABILITY

Improving regional water supply reliability by better leveraging our collective local and imported water resources and infrastructure.

GROUNDWATER MANAGEMENT AND QUALITY

Realizing our shared groundwater management opportunities by sharing expertise and resources to overcome challenges.

SMALL, AT-RISK SYSTEM RESILIENCE AND DRINKING WATER EQUITY

Ensuring a consistently high standard of water service for everyone in Los Angeles County by providing regional support for small systems, with focused attention to under-resourced communities.

WATERSHED SEDIMENT MANAGEMENT

Mitigating the impacts of wildfire on our water supplies through coordinated efforts between land and water managers.

REGIONAL STRATEGIES, REGIONAL BENEFITS

The CWP is organized around a framework of targets and strategies, which are supported by specific actions. Targets measure collective progress toward the shared desired outcomes for the key focal areas of the CWP. These targets are intended to help Los Angeles County achieve regional water resilience by 2045. See Chapter 2 for more on targets. Public Works will publish an interactive dashboard to track progress toward these targets. Strategies provide the overarching approaches to achieving the targets. Actions support the strategies and include specific steps to drive results, along with timing, responsible agencies, and potential participants.

Strategies for a Resilient Water Future

STRATEGY 1
Achieving the most efficient water use possible countywide

STRATEGY 2
Collaborating on consistent drought preparedness and response messaging

STRATEGY 3
Coupling local supply development with regional conveyance

STRATEGY 4
Managing salt and concentrate regionally

STRATEGY 5
Leveraging regional groundwater storage potential

STRATEGY 6
Collaborating on water quality needs and treatment technologies

STRATEGY 7
Enhancing cost-effectiveness of pumping and treating impaired groundwater

STRATEGY 8
Protecting coastal groundwater basins from seawater intrusion

STRATEGY 9
Facilitating regional groundwater recharge understanding and initiatives

STRATEGY 10
Facilitating natural infiltration of precipitation

STRATEGY 11
Providing regional support for small, at-risk water systems

STRATEGY 12
Mitigating wildfire effects on water supply and quality

STRATEGY 13
Managing invasive species in riparian areas

STRATEGY 14
Facilitating sediment management and debris removal from flood control facilities

VALUES GUIDING FUTURE ACTION

At the onset of CWP development, Public Works proactively reached out to a diverse group of stakeholders to understand what matters to them. We identified several broad, overarching values for the CWP through these conversations. Some of these values provided core tenets to our overall process for preparing the CWP. Others guided us in establishing targets, strategies, and actions. Other values, while not directly addressed through the actions in the CWP, will continue to inform how water resource management is approached to achieve sustainable and equitable outcomes. Each of these values will guide future iterations of the plan, as well as steps taken throughout CWP implementation.

These values are aligned with LA County's Anti-Racism, Diversity, and Inclusion (ARDI) Initiative, which aims to guide the County by offering training and capacity building; technical assistance and planning; policy analysis and development; data collection; analysis and reporting; community, tribal, and other stakeholder engagement; and equity-infused resourcing and programming to help reach its goals.

CWP VALUES

- Strive for equitable benefits and impacts of water resource management decisions
- Ensure inclusive, diverse, multigenerational, and sustained tribal and community engagement
- Use data to inform policies, priorities, and practices
- Encourage multi-benefit projects and green infrastructure
- Promote capacity building of a local, skilled workforce
- Incorporate tribal knowledge into water management
- Integrate the knowledge and experiences of local communities in water planning
- Ensure CWP is actionable and adaptable
- Address climate resiliency
- Establish clear communications (outline priorities, listen, incorporate feedback, maintain dialogue)
- Implement vegetated/nature-based solutions

The CWP outlines a path to achieve a resilient water future for all Los Angeles County residents. Everyone has a role in successfully realizing the CWP. By working across County departments and with other partners, actively engaging Tribes and other stakeholders, seeking funding to support CWP implementation, and tracking and reporting on progress, we are committed to facilitating the ongoing collaboration that is core to making the CWP successful.

CENTRAL THEMES FOR A PATH AHEAD

To lead the way on regional initiatives, the CWP was developed with resilience, equity, sustainability, and engagement as central themes. These themes will guide CWP implementation and its future iterations to create reliable water resources for all communities in Los Angeles County.

RESILIENCE

Water resilience refers to the capacity of communities and the environment to adapt to changes in the availability of water resources resulting from extreme and shifting weather patterns, as well as other stressors.

EQUITY

Water equity entails ensuring that all people and communities can depend on water management institutions and infrastructure to provide equal access to clean, safe, high-quality, and affordable water.

SUSTAINABILITY

Sustainable water management involves using water resources in a manner that fulfills current ecological, social, and economic needs without compromising the ability to meet those needs in the future.

ENGAGEMENT

Engagement means actively reaching out to and collaborating with a diverse and representative range of stakeholders to develop and implement water management policies and programs.

A FORWARD-LOOKING LIVING DOCUMENT

THE CWP IS A LIVING DOCUMENT. This inaugural 2023 Edition of the CWP marks the first iteration for this regional planning effort and focuses on water supply resilience. As a living document, future iterations of the CWP are intended to evolve and adapt to meet Los Angeles County's changing water resources needs.

WHAT IS IT? The CWP is a forward-looking strategic plan that crafts a vision for the region's water resources management. The CWP articulates strategies to align efforts both small and large in order to launch Los Angeles County on a successful path towards water supply resilience.

WHO IS IT FOR? Water knows no city or county boundaries. The CWP is a plan for the County region as a whole, not a single locality or governing body. The CWP was developed to serve – collaboratively with local agencies and stakeholders – the people and communities of Los Angeles County.

THE CWP FILLS CURRENT GAPS TO ENHANCE THE REGION'S WATER RESILIENCE. Recognizing that there are so many ambitious efforts already underway in Los Angeles County, the CWP takes a bird's-eye view on what else can be done to optimize, leverage, and align programs and processes. While the CWP does not attempt to reinvent the wheel or address every water-related issue, it complements existing efforts and fills in the gaps for matters not currently being addressed at a regional level. The CWP does not address activities best managed at the Federal, State, or local levels, nor does it recommend specific projects subject to environmental analysis or duplicate other ongoing efforts. As a strategic plan, the CWP does not supersede land use plans that have been adopted by the Board of Supervisors.

LA COUNTY **WATER PLAN**

LA COUNTY WATER PLAN

LACountyWaterPlan.org

sustainability
opportunity
water
resources
collaboration
relationships
regional
resilience
local
equity

Prepared by LA County Public Works with support from Woodard & Curran | December 2023

RESOLUTION 24-03

A RESOLUTION TO ADOPT THE LOS ANGELES COUNTY WATER PLAN

THE LOS ANGELES GATEWAY REGION INTEGRATED REGIONAL WATER MANAGEMENT AUTHORITY ("GWMA") BOARD OF DIRECTORS DOES HEREBY RESOLVE:

WHEREAS Climate change is establishing a "new normal" of more frequent and intense droughts, as well as less frequent and more torrential rains; and

WHEREAS, Recognizing a new climate reality and the need to be thoughtful stewards of future water supplies, a water resilience plan focused on collaborative management of the region's water resources was developed by Los Angeles County Public Works in partnership with countless other agencies, stakeholders, and tribes and;

WHEREAS, GWMA in partnership with Los Angeles County Public Works, together with water resources organizations and an array of diverse stakeholders, collaborated deeply to secure the region's water future; and

WHEREAS, this collaborative effort crafted a water resilience plan known as the Los Angeles County Water Plan and established the path to realizing a future which is rooted in cross-sector collaboration and coalition building; and

WHEREAS, The Los Angeles County Water Plan articulates a shared, inclusive, regional path forward to sustainably and equitably achieve safe, clean, and reliable water resources for Los Angeles County; and

WHEREAS, GWMA has reviewed the Los Angeles County Water Plan and affirms that the plan will ensure that the region has resilient, sustainable, and equitable water resources to meet its demand, particularly, during times of scarcity or crisis; and

WHEREAS, The Los Angeles County Water Plan was adopted unanimously by the Los Angeles County Board of Supervisors on December 5, 2023.

NOW THEREFORE, BE IT RESOLVED that the Board of Directors of the GWMA hereby:

1. Adopts the Los Angeles County Water Plan as a guiding document to inform pertinent and relevant aspects of GWMA's water resilience strategies.

2. Authorizes and empowers the Chair of GWMA or Executive Officer to continue collaborating and pursuing regional water resilience with the Los Angeles County Public Works and other water resource organizations, and engaging stakeholders regarding matters related to the Los Angeles County Water Plan.

3. Authorizes and empowers the Chair of GWMA or Executive Officer to actively engage in coalition building with water agencies, stakeholders, communities, and tribes to effectively establish relationships and bolster regional collaboration related to regional water resilience.

The foregoing resolution was adopted on the 10th day of October 2024 by the Board of Directors acting as the governing body of the GWMA

AYES:

NOES:

ABSTAIN:

By _____
Adriana Figueroa, Chair

16401 Paramount Boulevard
Paramount, CA 90723
562.663.6850 phone
562-634-8216 fax

www.gatewaywater.org

Los Angeles Gateway Region
Integrated Regional Water Management
Joint Powers Authority

October 10, 2024

AGENDA ITEM 7 – Statement of Qualifications (SOQ) for Operations, Maintenance and Evaluation of Regional Stormwater Capture and Treatment Projects

SUMMARY

There are currently five (5) regional projects that are complete or are expected to become operational within this calendar year. Operational and maintenance (O&M) issues are of major concern for these projects. Member agencies of the Los Cerritos Channel, Lower Los Angeles River, Lower San Gabriel River and Lower Los Angeles River Upper Reach 2 Watershed Groups requested GWMA to prepare and release a Request for Qualifications (RFQ) to solicit qualified engineering/contracting firms with stormwater, wastewater or equivalent experience to provide the following services: 1) O&M; 2) remote control and monitoring (SCADA); and 3) and/or evaluation of Regional Stormwater Capture and Treatment Projects to optimize performance as well as construction work that may be needed to achieve that optimization. GWMA would not be contracting directly with the teams. Rather, it would share the solicitation package results with the five regional project leads as well as other GWMA member cities and agencies for each of them to directly solicit proposals and enter into contracts with one or more of the qualified team, if they so choose.

DISCUSSION

An RFQ (attached) was officially released on May 1, 2024 and the Statement of Qualifications (SOQ) being due on June 5, 2024. However, due to the complexity of the required services and questions received from potential RFQ respondents, an ad hoc committee made up of lead agencies in charge of the five regional projects and GWMA staff determined a need to re-write the RFQ was in order. On July 30, 2024, a new RFQ was released and circulated with an SOQ due date of September 16, 2024.

GWMA received four SOQs (attached), each of which was made up of a Lead Firm and a team of sub-consultant/contractors. GWMA's consultant, John L. Hunter & Associates reviewed the four SOQs and determined that they all met the minimum requirements/criteria set forth in the RFQ (memo attached).

The four team lead firms are as follows:

- Craftwater
- Geosyntec Engineering
- Michael Baker International
- NV5

Staff is requesting that the board authorize staff to receive and file the SOQs and to distribute the entire RFQ package with John L. Hunter & Associate's memo to all GWMA Member Cities and Agencies to assist them with pre-qualification information for Stormwater O&M Services. GWMA will not be making recommendations on any of the firms/teams.

FISCAL IMPACT

None.

RECOMMENDATION

a. Receive and File SOQs and direct staff to distribute the complete RFQ/SOQ Package to each of the GWMA member cities and agencies with no recommendation.

JLHA
MUNICIPAL CONTRACTOR

TECHNICAL MEMORANDUM DATE: September 25, 2024

TO: Grace Kast, Executive Officer, Gateway Water Management Authority

FROM: John Hunter

SUBJECT: Evaluation of 4 Statements of Qualification
RFQ for Operation and Maintenance of Regional Stormwater Projects

JLHA has competed it's review of the four responding firms:

- Craftwater,
- Geosyntec,
- Michael Baker International,
- NV5.

Evaluation Summary

All four firms have offices in Southern California and personnel and team members with decades of stormwater knowledge and experience. All the firms have five years of experience within the stormwater field. One firm was formed in 2019, but nonetheless did meet the requisite experience criteria.

Regional Projects that will require Operations and Maintenance with specific applicability to this RFQ have only recently begun to come online and the opportunities for firms to have had actual Operations and Maintenance experience with large regional stormwater projects is limited. Therefore, the criteria for "experience" were broadly interpreted to include regional projects, sewerage treatment plants, stormwater infiltration ponds, large privately owned treatment systems such as those found at General Industrial Permitted sites (ex: airports), etc. All four firms and their subcontractor teams were deemed to meet the criteria of Operation and Maintenance experience with two or more major projects.

The responding firms and their subcontracting teams demonstrated adequate understanding of the goal of the RFQ and the ability to provide the necessary services. However, while all firms indicated familiarity with SCADA, it was not generally clear if these firms could provide off-site monitoring and control and that, if applicable, should be followed-up on by individual agencies when moving forward to the next phase of any selection process.

In summary, all four responding firms have meet the RFQ Criteria.

John L. Hunter & Associates, Inc.
6131 Orangethorpe Ave, Suite 300, Buena Park, CA 90620

16401 Paramount Boulevard
Paramount, CA 90723
562.663.6850 phone
562-634-8216 fax

www.gatewaywater.org

Los Angeles Gateway Region
Integrated Regional Water Management
Joint Powers Authority

REQUEST FOR QUALIFICATIONS

Notice is hereby given that Statement of Qualifications (SOQs) will be received from firms for Operations, Maintenance, and Evaluation of Regional Stormwater Capture and Treatment Projects.

Responding firms should have an assembled team with experience or equivalent experience in:

(1) Operations and maintenance of stormwater and/or wastewater capture and treatment systems;
(2) Remote monitoring via SCADA;
(3) Engineering analysis and design of stormwater and/or wastewater capture and treatment systems; and
(4) Construction for repairs and modifications of these types of systems.

Responses to this Request for Qualifications (RFQ) will be accepted until **5:00 PM PDT** on **Monday, September 16, 2024**. It is the responsibility of the respondent to ensure that submitted SOQs have sufficient time to be received prior to the due date and time.

SOQs shall be submitted electronically only. No hardcopies will be accepted.

Proposers shall submit one **(1) electronic file (.pdf)** of the SOQ via email to: **madelineanderson.gateway@gmail.com**.

Late SOQs will not be considered or accepted.

Key RFQ Dates (Subject to change at discretion of GWMA):

Release Date	July 30, 2024
Questions Due to GWMA	August 16, 2024 at 5:00 PM PDT
Posting of the Q&A	August 26, 2024
SOQ Due Date	September 16, 2024 at 5:00 PM PDT
SOQ Review	September 24,2024
Presented to GWMA Board	October 10, 2024

Contents

1. Introduction and Summary

The GWMA, a California joint powers authority, on behalf of the member agencies of the Los Cerritos Channel, Lower Los Angeles River, Lower San Gabriel River, Lower Los Angeles River and Upper Reach 2 Watershed Management Groups, is releasing this Request for Qualifications (RFQ) to solicit qualifications from engineering/contracting firms with stormwater, wastewater or equivalent experience. The purpose of this RFQ is to assist the GWMA member agencies in directly contracting with a qualified firm(s) to provide the following services: 1) Operations and Maintenance, 2) remote control and monitoring (SCADA); and 3) and/or evaluation of Regional Stormwater Capture and Treatment Projects to optimize performance as well as construction work that may be needed to achieve that optimization. SOQs will be received from firms with stormwater and/or wastewater or equivalent experience.

This RFQ is Step 1 of a two-step selection process. This RFQ process does not include Step 2 as described below.

Step 1: GWMA is requesting qualifications and will conduct an initial screening of submittals received. Based on the initial screening, GWMA will establish a list of pre-qualified firms. Multi-firm teams will be considered, but the SOQ must be submitted under one lead firm.

Step 2: The list of the pre-qualified firm or firms will be made available to individual GWMA member agencies. Those member agencies with jurisdiction over regional projects may then take a separate action to select pre-qualified firm(s), request specific proposal(s), and negotiate and award contract(s) for requested activities.

2. Background

There are currently five (5) regional projects that are complete or are expected to become operational within this calendar year. These five projects have immediate applicability to this RFQ and are Bolivar Park, Ruth R. Caruthers Park, Mayfair Park, Sub-Basin 4 (located at the Long Beach Airport), and Urban Orchard. An additional twelve (12) regional projects are anticipated to be constructed over the next ten to twelve years and the pre-qualification list may be used by the GWMA member agencies to select firms to assist with operations and maintenance. These projects are Hermosillo Park, El Dorado Park, Furman Park, Spane Park, John Anson Ford Park, Apollo Park, Independence Park, Cerritos Sports Complex, Lynwood City Park, Heartwell Park, Skylinks Golf Course, and Salt Lake Park.

Summaries of recent operations and maintenance work for the five regional projects are attached in Attachment 1. The additional information is being provided to describe the anticipated scope of services which may be requested by GWMA's member agencies during Phase 2 of this process.

3. STEP 1 – PREQUALIFICATION PROCESS

3.1. SUBMITTAL REQUIREMENTS

GWMA will not specify the format or organization of the SOQ but at a minimum should include the following:

- **Qualifications/Experience**

  Firms submitting an SOQ shall be a qualified California-licensed Contractor or Engineering/Contracting firm with a minimum of 5 years of experience with stormwater, or

wastewater or equivalent projects of similar size and complexity. The responding firms shall provide enough detail in their response to enable GWMA and the jurisdictional municipalities to evaluate the ability of the firm to meet or exceed the minimum requirements herein, and perform the Services described in a professional, high-quality manner.

- Responding firms shall provide prior experience history and qualifications in providing like services in a similar environment
  - A minimum of 2 projects of similar size and complexity
  - Brief description of each project
  - Record of completing project components on schedule
  - Reference contact information
- Strength and stability of the firm, as demonstrated by financial statements.

- **Organizational Chart/Team Members**

  The professional, technical and managerial qualifications and experience of personnel named in the SOQ, including the proposed Project Manager(s); previous relevant experience which demonstrates capability to successfully manage work; years of experience; extent of experience applicable to this work; experience in key staff positions; experience in successfully managing work schedules and controlling costs; qualifications of principals and associates; team organization.

- **Approach and Understanding**

  The SOQ should demonstrate a clear understanding of requirements and address all SOQ requirements adequately. For the establishment of the list of pre-qualified firms in this Step 1, below is an estimated scope of services. It is preferred that the responding firm and their team have demonstrable experience and ability to carry out services in all four categories below.

  - **Operation and Maintenance (O&M)** – O&M of regional stormwater capture infrastructure systems (regional projects), which have been designed to reduce the level of pollutants in urban and stormwater runoff primarily through sediment and trash removal and in some cases filtration. Responding firm(s) should anticipate being responsible for maintaining the equipment, including but not limited to: sensors, monitors, pumps, valves, removing sediment and trash from structures, control systems, water harvesting systems and other equipment as necessary as well as adherence to Los Angeles County Flood Control District, Sanitation Districts of Los Angeles County, and Public Health Department permits. This includes influent, effluent and other water stream monitoring as required by permits or as necessary for optimum operation of the system. The responding firm should identify one person(s) who will provide part-time administrative assistance (e.g., preparation of compliance reports, correspondence, etc.) to support a regional project's performance as reasonably needed. The SOQ should describe the identified individual's experience and qualifications (no specific criteria are established by this RFQ). The SOQ should also identify at minimum one person who will provide part-time maintenance and support services for the regional project(s). Persons with electro-mechanical, electrical, and instrumentation service backgrounds preferred.
  - **SCADA** – All five regional projects are equipped with SCADA to remotely monitor and control the regional project(s) systems. The responding firms must demonstrate experience and ability to conduct offsite monitoring and control via SCADA.

- **Engineering and Technical Services** – From time to time, the member agencies may require engineering design, evaluation and technical support services for design and implementation generally assumed to be less than $250,000 although that is subject to change at the discretion of the applicable member agency. Should a responding firm have the ability to provide such professional engineering support on a Time and Materials basis, that should be stated in the SOQ along with a list of the types of support that can be accommodated.
- **Construction/Repair** – From time to time, the member agencies may require construction services such as repairs and replacement of diversion systems, pumps, valves as well as access to underground structures necessitating confined space entry. The responding firms must provide their team's experiences with projects of this nature.

At the discretion of GWMA, additional information may be requested and evaluated, and interviews may be conducted.

Pre-qualified firms shall be selected based on the following criteria:

- Relevant experience and client references
- Organizational chart and team members
- Demonstrated approach and understanding of the scope of work.

Proposers shall submit one (1) electronic file (.pdf) SOQ not exceeding 15 MB via email to madelineanderson.gateway@gmail.com. Hard copies will not be accepted. Respondents may attach links to larger documents referencing experience. GWMA and its member agencies are not responsible for transmission difficulties.

SOQs must be submitted electronically before 5:00 PM PDT on September 16, 2024.

Gateway Water Management Authority
Attention: Madeline Anderson
Email address: madelineanderson.gateway@gmail.com
Subject Line: GWMA O&M SOQ

SOQs received after the SOQ deadline will not be opened or considered. Hard copies will not be accepted or considered.

If the GWMA's Executive Officer, in the Executive Officer's sole discretion, believes there is a need for clarification, the Executive Officer will issue an Addendum. GWMA shall make any changes to the requirements of this RFQ by written addenda only. Changes to the RFQ will be posted on GWMA's website (www.gatewaywater.org) under "GWMA News".

It is the responsibility of the responding firms to ensure that any questions or submissions have sufficient time to be received prior to the due date(s) and time. GWMA is not responsible for errors of any transmissions. An incomplete SOQ or a SOQ that does not conform to the requirements at GWMA's sole discretion will not be considered. Issuance of this RFQ does not obligate GWMA or member agencies to award a contract. GWMA is not liable for any of the responding firm's costs to prepare and submit the SOQ.

4. STEP 2 – PROPOSAL AND CONTRACT PROCESS (NOT INCLUDED AS PART OF THIS SOQ PROCESS)

The list of the pre-qualified firm(s) will be made available to each jurisdictional member agencies, many of which have jurisdiction over one or more of the regional projects. Those member agencies may then take a separate action to select pre-qualified firm(s), request specific proposal(s), and negotiate and award contract(s) for requested activities. At that time, pre-qualified firm(s) will be provided with more detailed scopes of work for the individual regional projects. Firms may be asked to provide all or specific limited tasks at the discretion of the member agency. The contracting agency may request the selected firm to be responsible for obtaining all necessary permits, including access permits from LACFCD.

5. RFQ Contact

All questions are to be directed to the RFQ contact person:

Gateway Water Management Authority
Madeline Anderson
madelineanderson.gateway@gmail.com
Subject: GWMA O&M RFQ

6. Schedule

- RFQ released: **July 30, 2024**
- Deadline for receiving questions: **August 16, 2024 at 5:00 PM PDT**
- Response to questions: **August 26, 2024**
- SOQ due: **September 16, 2024 at 5:00 PM PDT**
- SOQ Review: **September 24, 2024**
- Presented to GWMA Board: **October 10, 2024**

GWMA reserves the right to make changes to the above schedule at the discretion of the GWMA and/or its jurisdictional member agencies.

7. Questions Regarding the RFQ

Any questions will need to be submitted electronically to the RFQ contact person by the deadline specified on the front page and Section 6, “Schedule” of this RFQ.

Responses to questions will be posted on GWMA’s website (www.gatewaywater.org) home page under “GWMA News” on the date specified on the front page and Section 6, “Schedule” of this RFQ.

GWMA shall not be responsible for failure to respond to a question or request for clarification and/or comment that has not been properly labeled. Questions received after the stated deadline will not be answered.

Attachment 1 – Project Summaries

1. Bolivar Park

a. Located at:
3300 Del Amo Blvd
Lakewood, CA 90712

b. The Bolivar Park Regional Stormwater Project is located in the Bolivar municipal park in the City of Lakewood. Underlying a significant portion of this park is a 7.5 ac-ft subsurface storage and infiltration system. Wet and dry weather flows are diverted from a nearby LACFCD 48" Reinforced Concrete Pipe (RCP) channel. This regional project's major components include:

- Rubber diversion dam (base raised 3")
- Grated drop inlet and diversion valve
- Nutrient Box pretreatment unit
- Pump Station with 4 pumps
- 8.9 ac-ft subsurface storage and infiltration gallery
- Wet well with 3 pumps
- Water harvesting unit (WAHASO) with connection to the Park's irrigation system
- Overflow discharge pump back to the Flood Control System
- Water harvesting system
- Discharges to Flood Control System

c. Anticipated Scope of Service

Note that this project originally had an infiltration component, but the infiltration rates have significantly decreased and this will now be operated primarily as a storage and settling vault.

Bolivar Park Project Operation and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
1a	Diversion Structure and Rubber Dam	Rubber dam raised to capture water, lowered to flush trash and algae.	Before and after rain events and 1x per month minimum.	1x per month during the wet season 1x per qtr. during dry season.	- Rubber dam has a 3-inch lip, so there's problems with mosquitoes in the stagnant water. The system manager usually needs to flush the water. -System does not usually have enough dry weather flow, so system manager may need to accumulate flow until there is enough. - Channel may fill with trash and debris, needs to be cleared 1x per month with vacuum.
1b	Diversion Structure and Rubber Dam	TSS sensor	Before and after rain events and 1x per month minimum.	Cleaning as needed.	TSS sensor monitoring inlet flows is not working and needs to be repaired or replaced (Responding firm needs to specify replacement model and costs including installation labor).
2a	Motor Operated Valve	Regulates flow, knife-gate valve	1x per month	Cleaning quarterly minimum.	This knife-gate valve is in a vault 25 feet below the surface in a confined space. It is currently unable to be closed through SCADA. The valve does not shut properly, resulting in leaking.
3	Pre-Treatment Unit	Bio Clean Nutrient Separating Baffle Box (NSBB) is the first point of treatment.	After major storm events or 1x per month during wet season (whichever is more frequent), and once during dry season.	4x per year	-This unit has been Retrofitted to reduce bypass and the unit can be difficult to clean out. Prospective respondents are advised that previous maintenance efforts have experienced accessibility, lighting, and ventilation issues. - Estimated 38 cubic yards will be removed for cleaning.

Bolivar Park Project Operation and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
4	Inlet Pump Station	High flow pump discharges during storm events. Low flow pump only discharges dry weather flows and operates more frequently.	Clean and inspect before and after every rain event and every 6 months minimum.	Clean after every rain event and replace as needed.	Due to low dry-weather flows not activating pumps. Pumps need to be cycled regularly.
5	Subsurface Settling and Infiltration Gallery)	Sediment and debris are carried over the weir wall before full settling.	2x per year at the start and end of the rainy season.	1x per year	- Prospective respondents are advised that there are accessibility, lighting, and ventilation issues. - Hard to maintain and clean due to 1) lack of ventilation, 2) length of vacuum truck hose, 3) lack of access manholes, and debris that bypassed the settling basin. - Infiltration is not working due to fine sediment plugging infiltration pores.
6	Motor Operated Valve	An actuated valve connected from infiltration area that allows water to move into wet well to be pumped to stormwater harvesting system or back to the channel.	Before and after rain events and 1x per month minimum.	As needed, quarterly minimum.	- Not working remotely, only operated manually - in a confined space. - The valve vault and electrical box accumulates water, shortening the electrical system and corroding wiring from box down to valve.

Bolivar Park Project Operation and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
7	Multi-Media Stormwater Harvesting Facility (WAHASO System)	There are 4 stages: 1) self-backwashing Tekklen filters, 2) bag filters, 3) activated carbon filter media, and 4) ultraviolet (UV) treatment. City evacuates storage water to infiltration area when bacteria exceedances occur-happens often and WAHASO hasn't been operational since June 2022. Valves are hydraulically (water) operated.	Inspection shall occur monthly at minimum, or more frequently if needed and include: filter bags, UV bulbs, and sampling.	Every other day during wet weather, not in use as of now. Filter Bags should be replaced 1/day during wet weather, UV bulb: 1/yr or as needed, per sampling plan.	**NOTE: City staff is expending a considerable effort to maintain the water harvesting system. Concurrent with starting O&M, the selected firm shall provide an evaluation of the potential for:** ● **continued operation of the water harvesting unit or** ● **converting to a ultra-filtration SB-966 compliant system** ● **or permanently taking the water harvesting system offline.** - Bag filters clogged frequently. - Media is approx. 1/3 of the intended size system continues to have poor water quality and can't UV treat. - Turbidity sensor and flow meter are broken, pH sensor needs recalibration, intake filters have failed, and mechanical issues with irrigation pumps not sending water to WAHASO (likely due to clogging). - Media in the vessels is approaching its end-life and needs to be replaced. - Operators will consider the option of diverting captured flow to sanitary sewer for treatment.
8	Irrigation Pump and Discharge Pump	Pumps B1 and B2 deliver water to harvesting facility. A separate ejector pump (B3) discharges up to 5 cfs to FCD drain.	1x per month	As needed	- Problem is that high salt content causes sprinklers to breakdown quickly. - Reclaimed water is directed back to the storage gallery if it fails to pass the BacT test. Two pumps have been replaced in wet well. Cages installed to protect irrigation pumps.

d. Recommendations to Improve Bolivar Park Operations and Maintenance

Within one year of beginning operations, the selected firm shall provide recommendations and estimated costs for operational and structural improvements, including improvements to the infiltration aspects that can be made to operate this regional project in a more cost-effective manner while maintaining the goal of improving the quality of urban and stormwater runoff in the main channels. The jurisdictional municipality reserves the right to select another firm to install any recommended improvements. A preliminary report to this effect is included in Attachment 5.

2. Mayfair Park

a. Located at
5720 Clark Ave
Lakewood, CA 90712

b. The Mayfair Park Regional Stormwater Project is located in the Mayfair municipal park in the City of Lakewood. Similar to Bolivar, underlying a significant portion of the park is a 13.8 ac-ft underground stormwater capture and infiltration facility. The regional project receives both wet and dry weather flows from a diversion structure, located in a nearby covered LACFCD Reinforced Concrete (RC) Channel (23'W x 11"-6'H). The regional project's major components include:

- 23'W x 3'H Rubber Diversion dam
- Grated drop inlet and Diversion valve
- Pretreatment unit
- 13.8 ac-ft subsurface storage unit
- Outlet valve and a wet well with 3 pumps
- Water harvesting unit (WAHASO) with connection to the Park's irrigation system
- Kraken discharge treatment unit
- Back-up Sanitary discharge line (The city has obtained a discharge permit from the Sanitation Districts)
- Treatment unit building with RC Controls

c. Anticipated Scope of Service

Mayfair was intentionally designed as a storage and settling facility, it has no infiltration capacity.

Mayfair Park Operations and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
1	Diversion Structures and Rubber Dam	a. Air-inflatable rubber dam in Del Amo Channel). b. Grated Drop Inlet Diversion Structure.	Before and after rain events and 1x per month minimum.	1x per month during the wet season 1x per quarter during dry season.	- Rubber dam can be retracted to be flush with the channel floor. - Channel may fill with trash and debris. - Last cleaned November 29, 2023.
2	Motor Operated Valve	Regulates flow, knife-gate valve.	Before and after rain events and 1x per month minimum.	Cleaning quarterly minimum.	- Manhole access to both settling and storage are buried 4 feet under an active baseball field. - Access to knife gate is in a manhole with no ladder installed. - Knife gate does not fully close, allowing water to enter NSBB area. - Maintenance will need to be timed to avoid active recreation and soil will need to be replaced.
3	Pre-Treatment Unit	a. Bio Clean Nutrient Separating Baffle Box (NSBB) is the first point of treatment. b. Has been retrofitted with screen to reduce larger debris.	After major storm events or 1x per month during wet season (whichever is more frequent), and once during dry season.	4x per year.	- Accessibility, lighting, ventilation issues. Unit is approximately 25 feet deep with narrow accessway. - No ladder to NSBB. - The unit is not fully operational, pre-treatment unit has not been cleaned.

Mayfair Park Operations and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
4	Subsurface Storage Structure	13.8 ac-ft underground storage reservoir to provide initial detention before the captured stormwater is pumped for irrigation onsite or infiltrated into the underlying soils. City staff can send water from storage to the wet well via the actuated valve.	2x per year at the start and end of the rainy season.	1x per year.	- Top of the access way is buried approximately 4 feet under a baseball field. Maintenance will need to be timed to avoid active recreation periods soil will need to be replaced and, at a minimum, hand compacted. No access to settling basin. - Hard to maintain and clean due to 1) lack of ventilation, 2) length of Vactor truck hose, 3) lack of access manholes, and debris that bypassed the settling basin needs to be removed. - High organic contents/debris impact harvesting units.
5a	Post BMP Pump Station	Convey the captured stormwater for treatment and subsequent irrigation, or for filtration and return to the Clark Channel. Mayfair has no infiltration, only settling and storage.	After major storm events or monthly during wet season and once per dry season.	Clean annually in advance of wet season and replace every 20 years.	Exercise monthly during dry season.
5b	Motor Operated Valve	An actuated valve connected to infiltration area allows water to move into wet well, to be pumped to stormwater harvesting system or back to the channel.	Before and after rain events and 1x per month minimum.	As needed, quarterly minimum.	- Not working remotely, partially works manually. - The valve vault and electrical box accumulates water, shortening the electrical system and corroding wiring from box down to valve. - Suggest a lip above the electric box. - Mayfair is using compressed air to keep vessels pressurized. Bolivar is using water.

Mayfair Park Operations and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
6	Stormwater Harvesting Facility (WAHASO System)	a. Nearly identical unit as Bolivar. 4 stages: 1) self-backwashing Tekklen filters, 2) activated carbon filter media, and 3) ultraviolet (UV) treatment. b. Undergoing final certification testing for the Public Health Department. Has yet to go fully online. c. Valves are controlled by compressed air.	Inspection shall occur monthly at minimum, or more frequently if needed, and, UV bulbs, and sampling.	Every other day during wet weather, not in use as of now and filter bags should be replaced once per day during wet weather, UV bulb: 1x per year or as needed, per sampling plan.	**NOTE: City staff is expending a considerable effort to maintain the water harvesting system. Concurrent with starting O&M, the selected firm shall provide an evaluation of the potential for:** ● **Continued operation of the water harvesting unit or** ● **converting to an ultra-filtration SB-966 compliant system or** ● **permanently taking the water harvesting system offline.**
7	Irrigation Pump and Discharge Pump	Pumps are required to convey captured stormwater for irrigation or diversion to the stormwater channel for emergency evacuation. a. Irrigation use: 2 submersible pumps capable of 200 GPM to the irrigation system. b. Emergency evacuation diversion to the stormwater channel: 1 duty pump capable of 3,150 GPM.	1x per month.	As needed.	- Mayfair already has a recycling water irrigation system but is undergoing a test for County Health to use the collected water. They are expected to be complete by the end of 2024. - Site does have the option for discharge to the sanitary sewer. - Reclaimed water is directed back to the storage gallery if it fails to pass the BacT test.

d. Recommendations to Improve Mayfair Park Operations and Maintenance

Within one year of beginning operations, the selected firm shall provide recommendations and estimated costs for operational and structural improvements, including improvements to the infiltration aspects that can be made to operate this regional project in a more cost-effective manner while maintaining the goal of improving the quality of urban and stormwater runoff in the main channels. The jurisdictional municipality reserves the right to select another firm to install any recommended improvements.

3. Ruth R Caruthers Park

a. Located at:
10500 Flora Vista St
Bellflower, CA 90706

b. The Ruth R Caruthers Park Regional Project is located at Ruth R Caruthers Park in the City of Bellflower. The park is underlain by a 9 ac-ft stormwater capture and infiltration system. Unlike Bolivar and Mayfair, it diverts wet and dry weather runoff from two LACFCD drains. One diversion point is the 38'W x 9'H channel to the east. The second diversion point is a 72" RCP FCD storm drain located to the south of the project. Existing major infrastructure components include:

FSD Line A (east)
Flush mounted 38'x3'10" rubber dam
Grated drop inlet structure
Diversion valve
Pretreatment unit

FCD 72" RCP
Rubber dam
Grated drop inlet structure
Diversion valve
Pretreatment unit

Storage Infiltration gallery
3-way plug valve
Pump station
Post-treatment system

c. Anticipated Scope of Service

Note that this project originally had an infiltration component, but the infiltration rates have significantly decreased, and this will now be operated primarily as a storage and settling vault.

Ruth R Caruthers Park Operations and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
1	Diversion Structures (2) and Rubber Dam	a. Air-inflatable rubber dam (Project 16 Channel) b. Grated Drop Inlet Diversion Structure (Project 16 Channel) c. Junction Drop Inlet Diversion Structure (72" RCP - BI1902)	Before and after rain events and 1x per month minimum.	1x per month during the wet season 1x per qtr. during dry season.	- Caruthers system rubber dam can be retracted to be flush with the channel floor. - Channel may fill with trash and debris and may need to be cleared 1x per month with vacuum.
2	Motor Operated Valve	Regulates flow, knife-gate valve.	Before and after rain events and 1x per month minimum.	Cleaning, quarterly minimum.	
3	Pre-Treatment Unit	Bio Clean Nutrient Separating Baffle Box (NSBB) is the first point of treatment.	After major storm events or 1x per month during wet season (whichever is more frequent), and once during dry season.	4x per year.	-Needs to be retrofitted to prevent bypass and unit can be difficult to clean out. - Accessibility, lighting, ventilation issues.
4	Subsurface Storage Structure (Settling and infiltration Basin)	a. 9 ac-ft underground storage reservoir to provide initial detention before the captured stormwater is pumped for irrigation onsite or infiltrated into the underlying soils. b. City staff can send water from storage to the infiltration area via an actuated valve.	After major storm events or bi-monthly during wet season and 2x per year at the start and end of the rainy season.	1x per year cleaning or as needed.	- Hard to maintain and clean due to 1) lack of ventilation, 2) length of Vactor truck hose, 3) lack of access manholes, and debris that bypassed the settling basin needs to be removed. - High organic contents/debris impact harvesting unit.

Ruth R Caruthers Park Operations and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
5	Motor Operated Valve	An actuated valve connected to an infiltration area that allows water to move into a wet well, to be pumped to a stormwater harvesting system or back to the channel.	Before and after rain events and 1x per month minimum.	As needed, quarterly minimum.	
6	Stormwater Harvesting Facility (WAHASO System)	a. Nearly identical unit as Bolivar and Mayfair. b. 4 stages: 1) self-backwashing Tekklen filters, 2) bag filters, 3) activated carbon filter media, and 4) ultraviolet (UV) treatment. City evacuates storage water to infiltration area when bacteria exceedances occur. c. Valving is controlled electronically.	Inspection shall occur monthly at minimum, or more frequently if needed, and filter bags, UV bulbs, and sampling.	Not in use as of now and Filter Bags should be replaced once per day during wet weather, UV bulb: 1x per year or as needed, per sampling plan.	**NOTE: City staff are expending a considerable effort to maintain the water harvesting system. Concurrent with starting O&M, the selected firm shall provide an evaluation of the potential for:** • **Continued operation of the water harvesting unit or** • **converting to an ultra-filtration SB-966 compliant system or** • **permanently taking the water harvesting system offline.** -Bag filters clogged frequently. - Media is approx. 1/3 of the intended size system continues to have poor water quality and can't UV treat. - Turbidity sensor and flow meter are broken, pH sensor needs recalibration, intake filters have failed, and mechanical issues with irrigation pumps not sending water to WAHASO (likely due to clogging). - Media in the vessels is reportedly nearing its life-expectancy.

Ruth R Caruthers Park Operations and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
7	Irrigation Pump and Discharge Pump	Pumps are required to convey captured stormwater for irrigation or diversion to the stormwater channel for emergency evacuation. a. Irrigation use: 2 submersible pumps capable of 200 GPM to the irrigation system. b. Emergency evacuation diversion to the stormwater channel: 1 duty pump capable of 3,150 GPM.	1x per month.	As needed.	- Reclaimed water is directed back the storage gallery if it fails to pass the BacT test.

d. Recommendations to Improve Caruthers Park Operations and Maintenance

Within one year of beginning operations, the selected firm shall provide recommendations and estimated costs for operational and structural improvements, including improvements to the infiltration aspects that can be made to operate this regional project in a more cost-effective manner while maintaining the goal of improving the quality of urban and stormwater runoff in the main channels. The jurisdictional municipality reserves the right to select another firm to install any recommended improvements.

4. Sub Basin 4

a. Located on the Long Beach Airport property

b. The major runoff treatment component is a 14 ac-ft subsurface storage and infiltration system. Wet and dry weather flows are diverted from a nearby LACFCD channel. The regional project's major components include:

- A grated inlet structure
- Flow Splitter Vault
- Two JDS pre-treatment systems
- 14 ac-ft storage and infiltration vault

c. Anticipated Scope of Service

Note that this project originally had an infiltration component, but the infiltration rates appear to be negligible, and groundwater appears to be entering the storage/infiltration gallery through the bottom and sides of the gallery effectively negating any infiltration of runoff. Similar to the prior three projects, this gallery will be used primarily for settling and storage.

Sub Basin 4 (Long Beach Airport) Operations and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
1	Grated Drop Inlet Diversion Structure	The Los Cerritos Channel Diversion Inlet Structure is a rectangular reinforced concrete box RCB) with a 16' wide by 2.75' high diversion opening. The diversion opening will drop and transition into a 60" diameter reinforced concrete pipe (RCP), which will convey discharge to the Stormwater Flow Splitter Structure. This structure has been built into the sidewall of the existing channel.	Before and after rain events and 1x per month minimum.	1x per month during the wet season 1x per qtr during dry season.	- Channel may fill with trash and debris, may need to be cleared 1x/month during rainy season 1x per qtr during dry season. -Currently there is no way to restrict dry weather flows estimated at 100 gpm. Provide a cost estimate to install a slide gate.
2	Stormwater Flow Splitter	The Stormwater Flow Splitter Structure is a rectangular reinforced concrete vault that is used to split flows before pre-treatment. The structure does this by utilizing a split weir, which directs stormwater into the two Jensen Diversion Structure (JDS) Units for treatment. Once the water is treated, the stormwater enters the box again before exiting through the motor activate sluice gate into a 60" RCP.	Before and after rain events and 1x per month minimum.	As needed, quarterly minimum.	- The slide gate separating the flow splitter vault and the JDS units does not close. properly, which leads to water coming in when maintenance is performed. - There is essentially no bypass mechanism.

Sub Basin 4 (Long Beach Airport) Operations and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
3	Two (2) JDS Pre-Treatment Unit	The two Stormwater Pre-treatment JDS units use vortex concentration and a non-blocking screen to treat flows entering the units. This treatment allows for the capture of trash, debris, and other particulates that affect water quality.	After major storm events or 1x per month during wet season (whichever is more frequent), and once during dry season.	2x per year, contractor cleans.	- There is an accumulation of floatables and sediment at the JDS units after storm events, which is expected and indicates the units are working. -Per the O&M staff, the JDS units are cleaned twice a year. The pumping of residual water within is directed to either the inlet of the infiltration gallery or the parallel JDS unit.
	Sluice Gate	Stormwater exiting the flow splitter structure will pass through a motor activated sluice gate. This gate will be used to control the flow rate by changing the position of the gate.	Every 3 months and after runoff events of 0.8 inches or less.	See attached manual.	
4	Flow Meter	Current flow meter is inoperable.	Inspect weekly.	Once a year or as needed, whichever is more frequent.	Flow meter is submerged. Firms will provide installation cost of new meter model.
5a	Subsurface Storage Structure (Settling Basin)	The underground infiltration gallery chambers provide storage capacity to retain stormwater for groundwater infiltration. Each chamber is 14 feet in height. There are also two access shafts that are 10' by 10,' located at the north-eastern and south-western corner of the storage chamber area. For Phase 1 of construction, the approximate storage capacity is 14 acre-feet (ac-ft.).	Annually (during dry months) and after every runoff event once the water has infiltrated and the gallery is dry.	1x per year.	-There is persistent water in the structure indicating infiltration is not occurring or is otherwise well below initial expectations. - Access to the galleries is difficult.

Sub Basin 4 (Long Beach Airport) Operations and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
5b	Water Level Sensor	The water level sensor is located inside the underground infiltration gallery and measures the water surface elevation within the chambers. The programmable logic controller is used to operate the sluice gate when the infiltration gallery reaches its storage capacity.	Concurrently with the infiltration gallery inspection. Annually (during dry months) and after every runoff event once the water has infiltrated and the gallery is dry.	As needed.	Level sensor inside the infiltration gallery has a discrepancy of approximately 2.5 feet.
5c	Programmable Logic Controller (PLC)	The PLC is used to control the sluice gate by using the data gathered by the flow meter and the water level sensor. This controller is used to power the motor on the sluice gate to open and close depending on the conditions in the system.	Frequency period: weekly (preferred) or monthly at a minimum.		

d. Recommendations to Improve Sub Basin 4 Operations and Maintenance

Within one year of beginning operations, the selected firm shall provide recommendations and estimated costs for operational and structural improvements, including improvements to the infiltration aspects that can be made to operate this regional project in a more cost-effective manner while maintaining the goal of improving the quality of urban and stormwater runoff in the main channels. The jurisdictional municipality reserves the right to select another firm to install any recommended improvements. A preliminary report to this effect is included in Attachment 5.

5. Urban Orchard

a. Located at:
9475 West Frontage Road
South Gate CA 90280

b. This project differs from the above-named projects as it diverts wet and dry weather flows from the Badini Channel first to a constructed treatment wetland and a subsurface storage reservoir; a water quality pre-treatment hydrodynamic separator; and a stormwater harvesting system including additional filtration and a pump to provide irrigation for the orchard and buffer trees. This project is expected to be operational in December 2024. The selected firm will need to coordinate closely with the City of South Gate's Water and Park and Recreation Departments so as not to overlap operations and maintenance efforts. The selected firm's responsibilities will be the operation and maintenance of:

- The diversion structure in the Bandini Channel
- Pumps to the hydrodynamic separators
- Pumps to the constructed wetlands
- 2.52 ac-ft storage gallery
- Water Harvesting System
- Water overflows and discharge system
- All pumps, valves, sensors, and monitors related to the above

c. Anticipated Scope of Service

Urban Orchard Operations and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
1a	Bandini Grated Drop Inlet and Low Flow Diversion Structure	Drop Inlet Structure	Before and after major storm events or monthly during wet season, once during dry season.	- Debris removal and vacuum cleaning 3x per wet season, once per dry season after major storm events as needed. -Hydrojetting as needed.	

Urban Orchard Operations and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
1b	Actuated Valve Structure		After major storm events or monthly during wet season, once per dry season.	- Debris removal and vacuum cleaning as needed. - Hydrojetting annually or as needed. - Valve maintenance as needed. - Actuator battery replacement every 5 years.	
2a	Diversion Pump Station	Wet well	After major storm, monthly during wet season, once during dry season.	Vacuuming annually or as needed.	
2b	Diversion Pump Station	Valve Operation and Pump Operation		- Cycle monthly (minimum) during the dry season. - Clean and service annually in advance of the wet season.	
3	Hydrodynamic Separator	- -			
4a	Pump Station	6-pump configuration	Wet well inspection.		
5a	Pre-Cast Concrete Reservoir	- -	After major storm events (inspect from surface minimum 72 hrs after storm event) or monthly during wet season, once per dry season.		

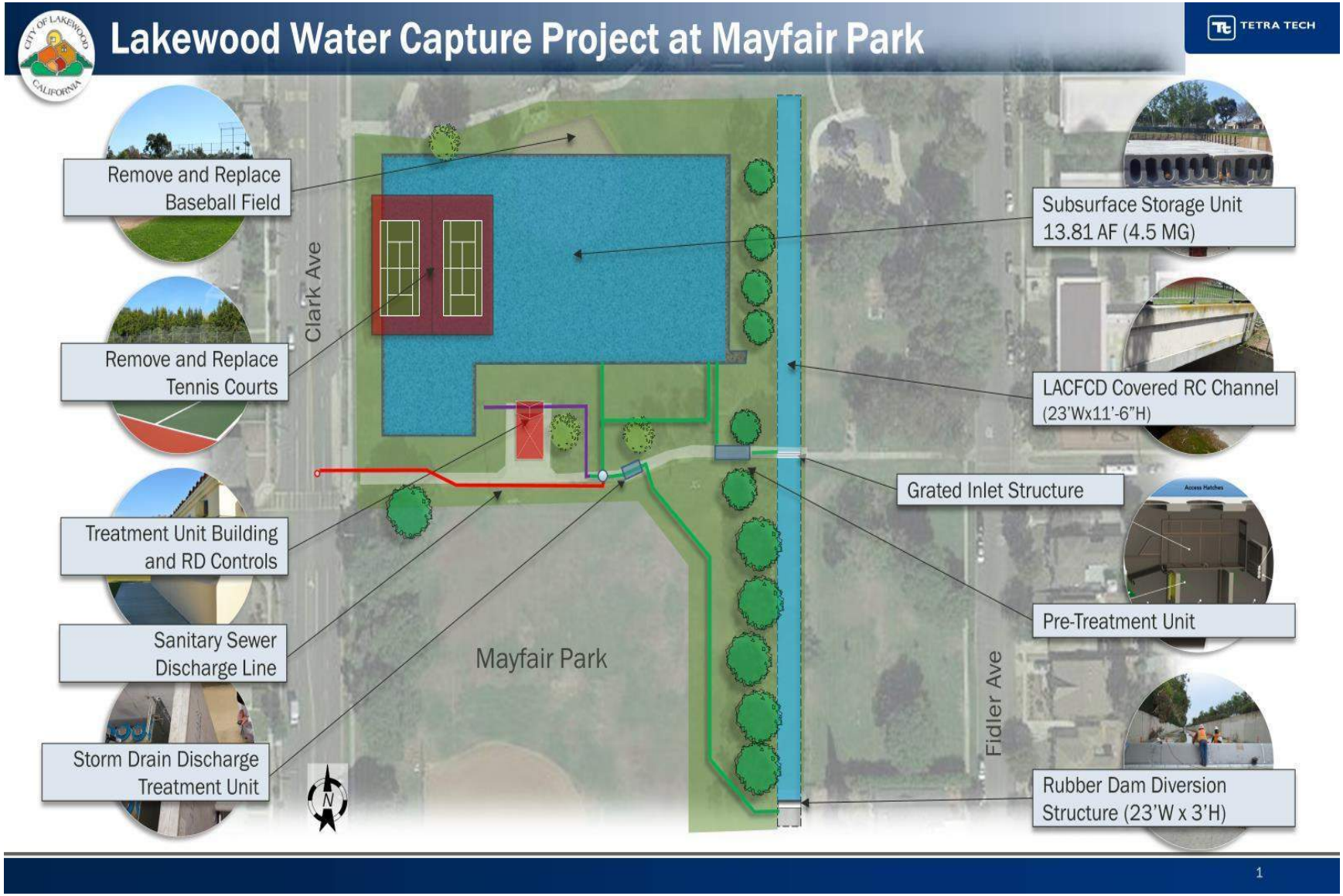
Urban Orchard Operations and Maintenance					
#	Task Name	Description	Inspection Frequency	Cleaning/ replacement Frequency	Notes
5b	Sediment Basin			Vacuum cleaning every 2 years or as needed, whichever is more frequent.	
5c	Storage/ Infiltration Chamber			Every 10 years or as needed, whichever is more frequent.	
6	Active Controls		- Monthly or as needed based on receipt of an alert. - Review annually.	As needed.	**NOTE: Contractor is required to:** ● **Review system status and performance using cloud-based dashboard** ● **Calibrate RTC logic** ● **Renew OptiRTC subscription**
7	Post BMP Pump Station	Irrigation Pumps	After major storm, monthly during wet season, once during dry season.	- Cycle monthly (minimum) during dry season. - Clean and service annually in advance of the wet season.	

d. Recommendations to Improve Urban Orchard Operations and Maintenance

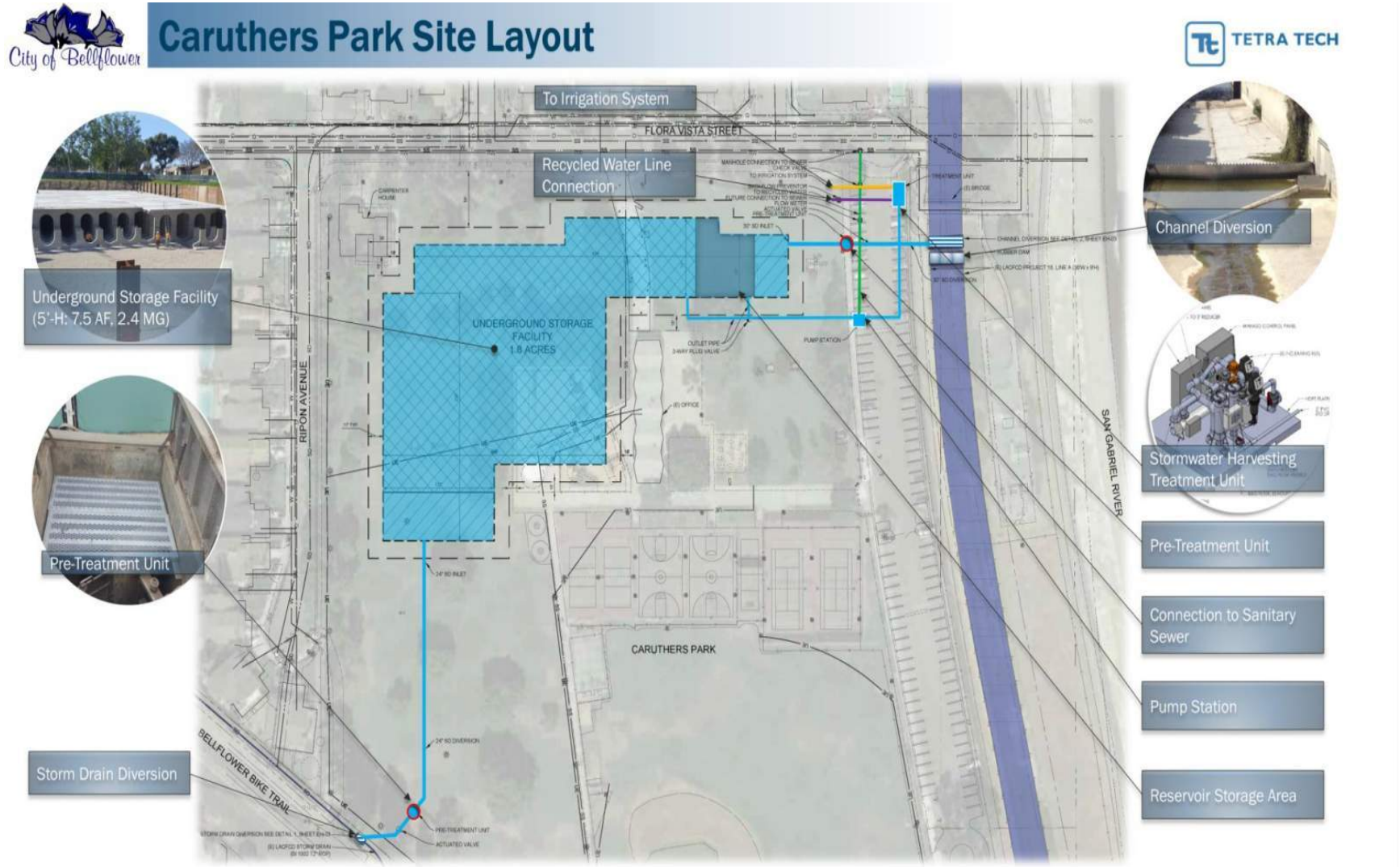
Within one year of beginning operations, the selected firm shall provide recommendations and estimated costs for operational and structural improvements, including improvements to the infiltration aspects that can be made to operate this regional project in a more cost-effective manner while maintaining the goal of improving the quality of urban and stormwater runoff in the main channels. The jurisdictional municipality reserves the right to select another firm to install any recommended improvements.

Attachment 2 - Illustrative Schematic for Each of the Project Site

Mayfair Park

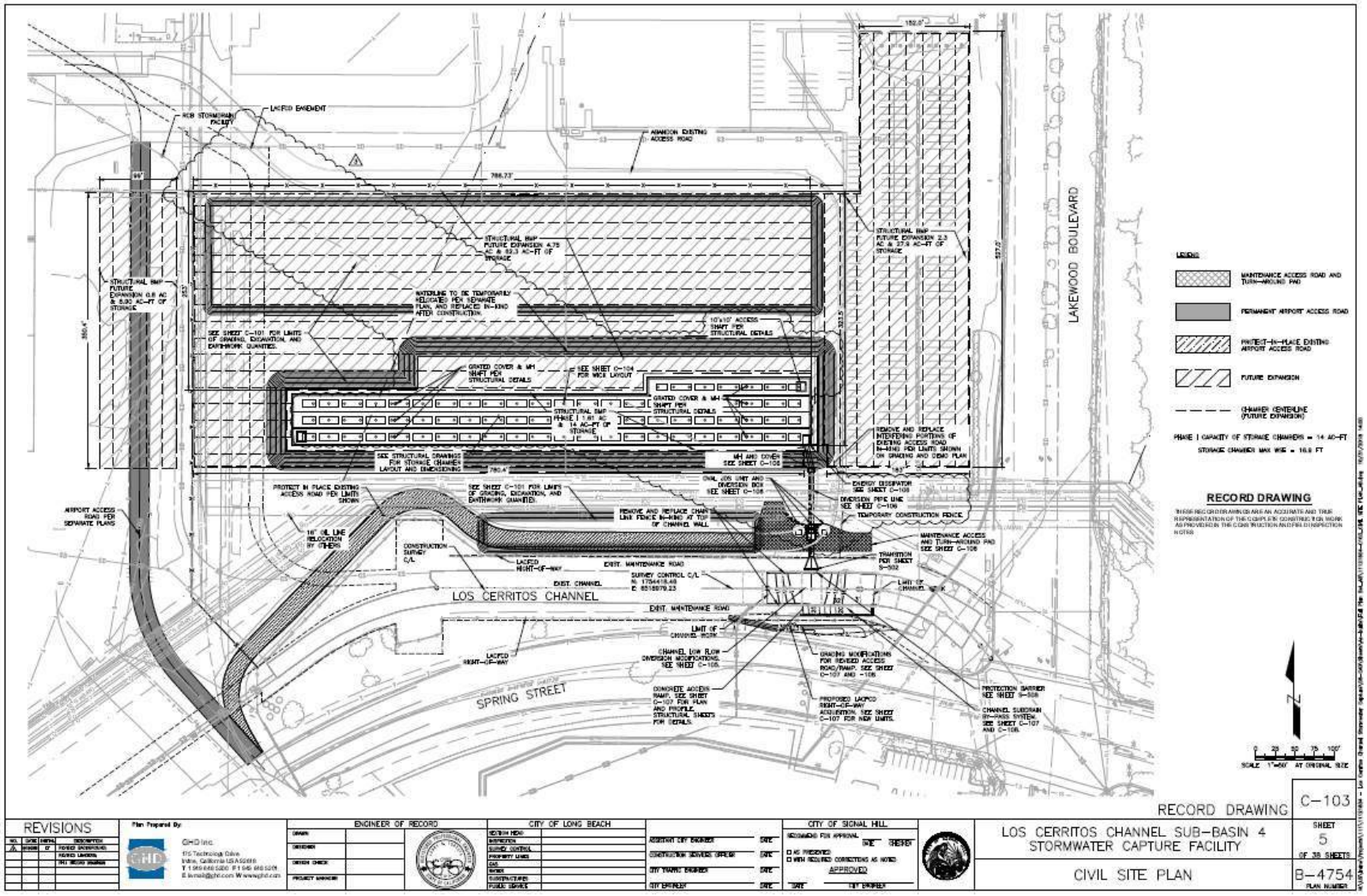


Caruthers Park



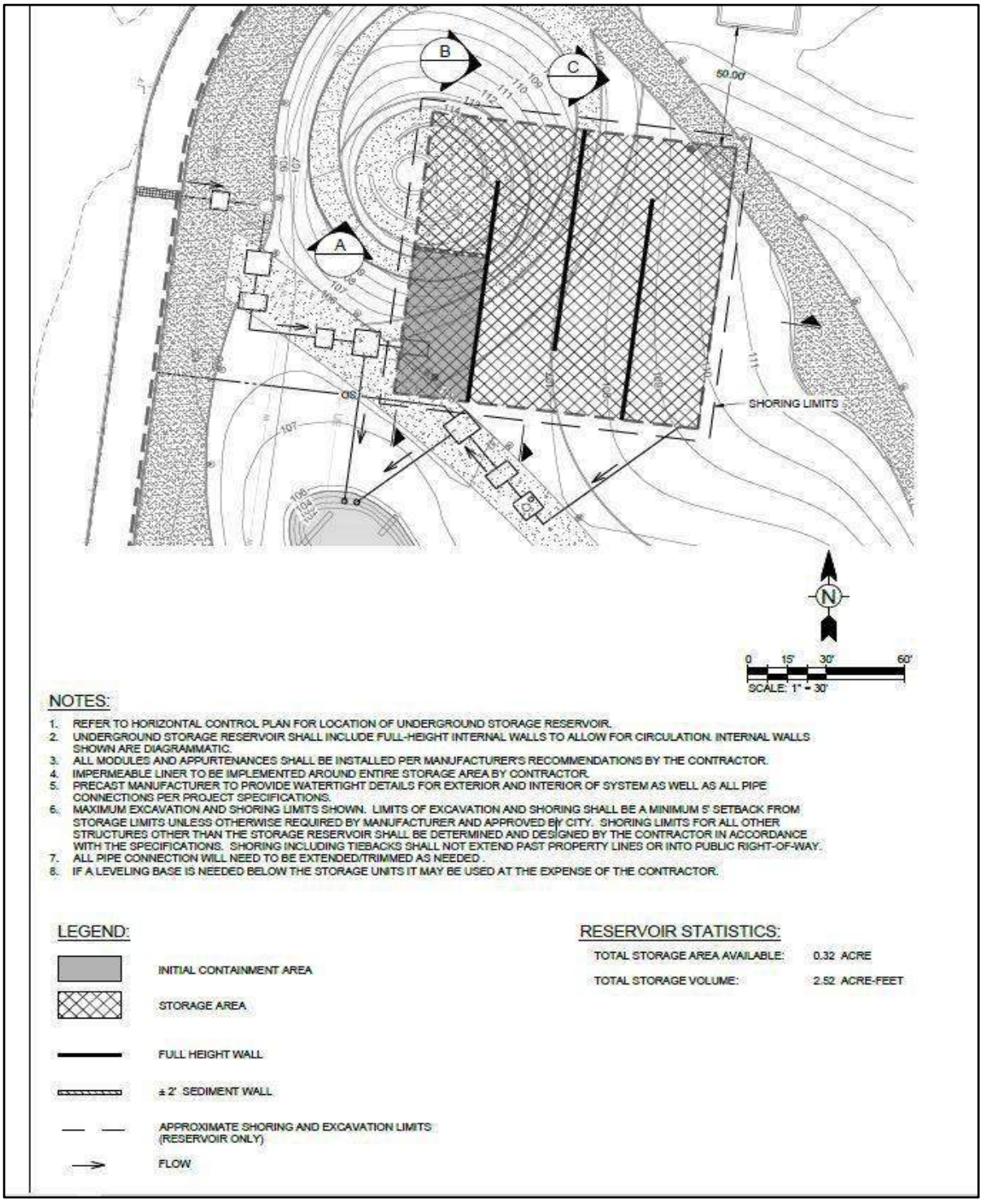
Bolivar Park

Sub Basin 4



See full map here: [LCC Sub Basin 4 Map]

Urban Orchard



NOTES:

1. REFER TO HORIZONTAL CONTROL PLAN FOR LOCATION OF UNDERGROUND STORAGE RESERVOIR.
2. UNDERGROUND STORAGE RESERVOIR SHALL INCLUDE FULL-HEIGHT INTERNAL WALLS TO ALLOW FOR CIRCULATION. INTERNAL WALLS SHOWN ARE DIAGRAMMATIC.
3. ALL MODULES AND APPURTENANCES SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS BY THE CONTRACTOR.
4. IMPERMEABLE LINER TO BE IMPLEMENTED AROUND ENTIRE STORAGE AREA BY CONTRACTOR.
5. PRECAST MANUFACTURER TO PROVIDE WATERTIGHT DETAILS FOR EXTERIOR AND INTERIOR OF SYSTEM AS WELL AS ALL PIPE CONNECTIONS PER PROJECT SPECIFICATIONS.
6. MAXIMUM EXCAVATION AND SHORING LIMITS SHOWN. LIMITS OF EXCAVATION AND SHORING SHALL BE A MINIMUM 5' SETBACK FROM STORAGE LIMITS UNLESS OTHERWISE REQUIRED BY MANUFACTURER AND APPROVED BY CITY. SHORING LIMITS FOR ALL OTHER STRUCTURES OTHER THAN THE STORAGE RESERVOIR SHALL BE DETERMINED AND DESIGNED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS. SHORING INCLUDING TIEBACKS SHALL NOT EXTEND PAST PROPERTY LINES OR INTO PUBLIC RIGHT-OF-WAY.
7. ALL PIPE CONNECTION WILL NEED TO BE EXTENDED/TRIMMED AS NEEDED .
8. IF A LEVELING BASE IS NEEDED BELOW THE STORAGE UNITS IT MAY BE USED AT THE EXPENSE OF THE CONTRACTOR.

LEGEND:

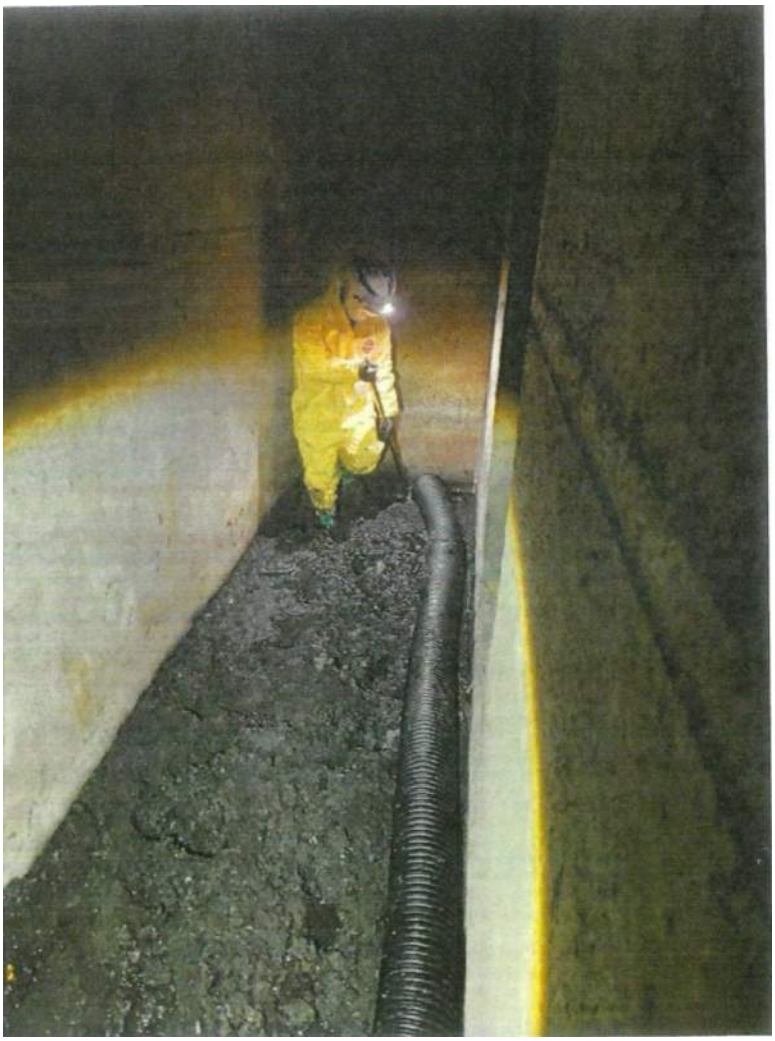
- INITIAL CONTAINMENT AREA
- STORAGE AREA
- FULL HEIGHT WALL
- ± 2' SEDIMENT WALL
- APPROXIMATE SHORING AND EXCAVATION LIMITS (RESERVOIR ONLY)
- FLOW

RESERVOIR STATISTICS:

TOTAL STORAGE AREA AVAILABLE:	0.32 ACRE
TOTAL STORAGE VOLUME:	2.52 ACRE-FEET

See full map here: Urban Orchard Map

Attachment 3 - Photos of Existing O&M Efforts (Plastic Bags in Pumps, Sludge in Storage Vaults, etc.)



Workman removing solids from vault.

Plastic bags entwined in pump impeller.

Attachment 4 - Links to O&M Manuals

Mayfair O&M Manual: Mayfair O&M Manual

Bolivar O&M Manual: Bolivar O&M Manual

Caruthers O&M Manual: Caruthers O&M Manual

Sub Basin 4 O&M Manual: Long Beach Airport O&M Manual

Urban Orchard O&M Manual: Urban Orchard O&M Manual

Attachment 5 - BMP Engineering Recommendations

Bolivar Park: Engineering Report

Ruth R. Caruthers Park: Not available at this time

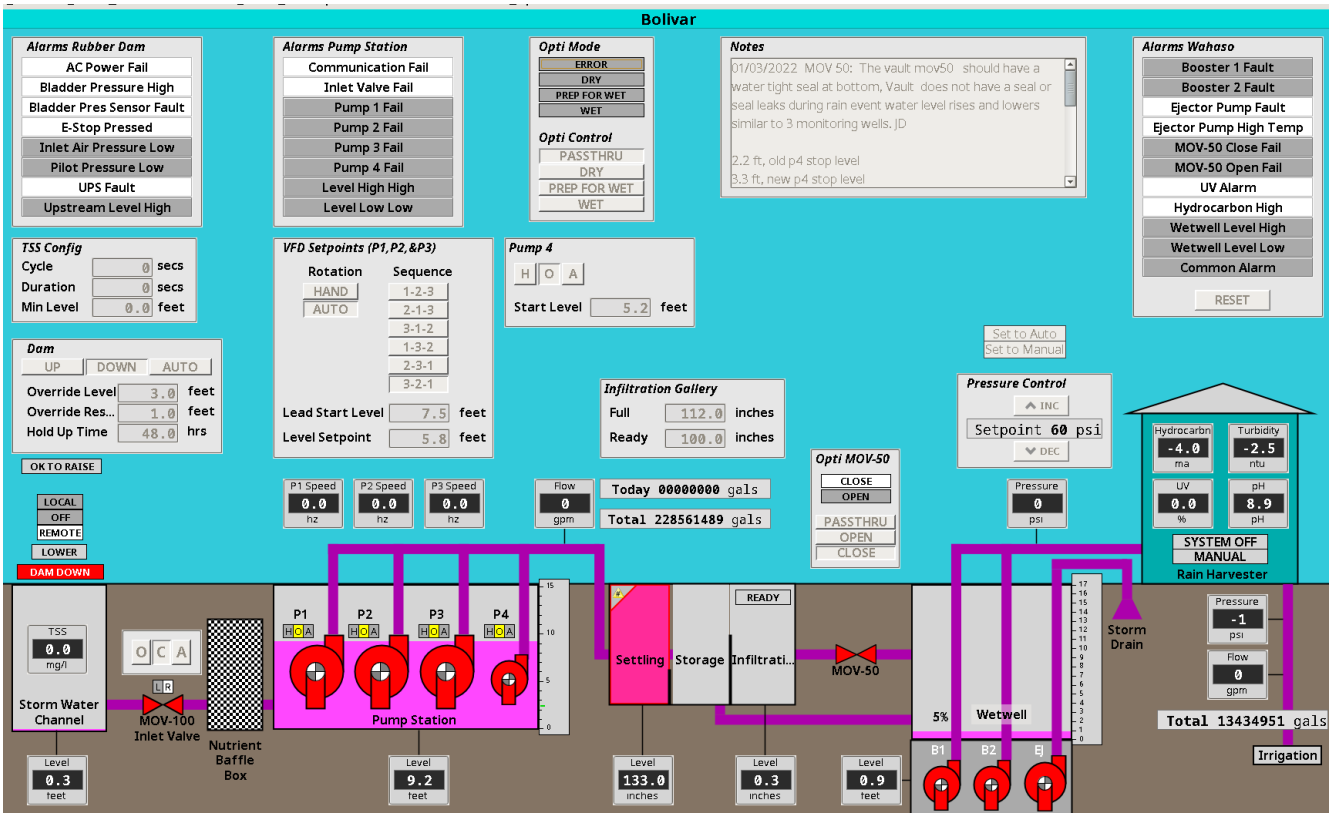
Mayfair Park: Not available at this time

Sub Basin 4: Engineering Report

Urban Orchard: This section is not applicable to Urban Orchard

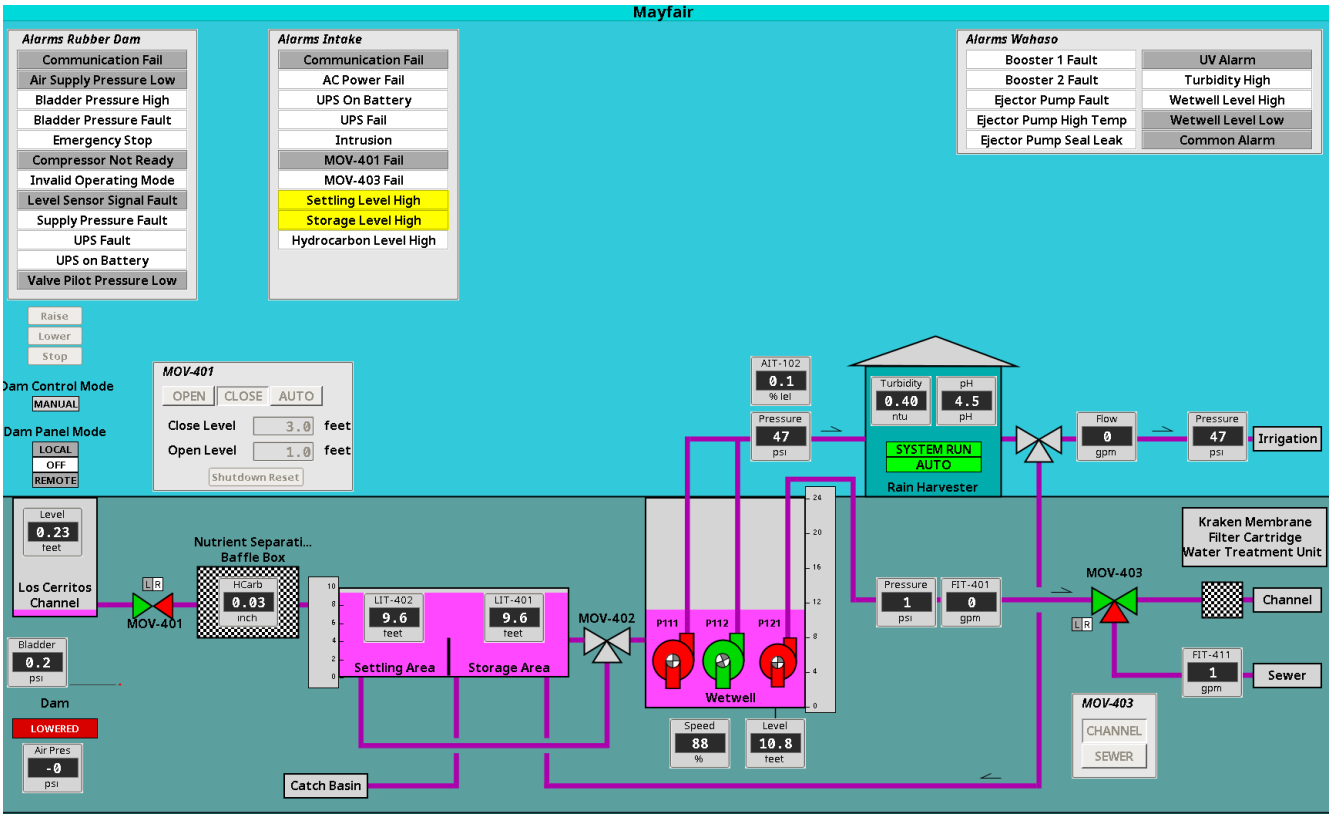
Attachment 6- SCADA Images

Bolivar SCADA



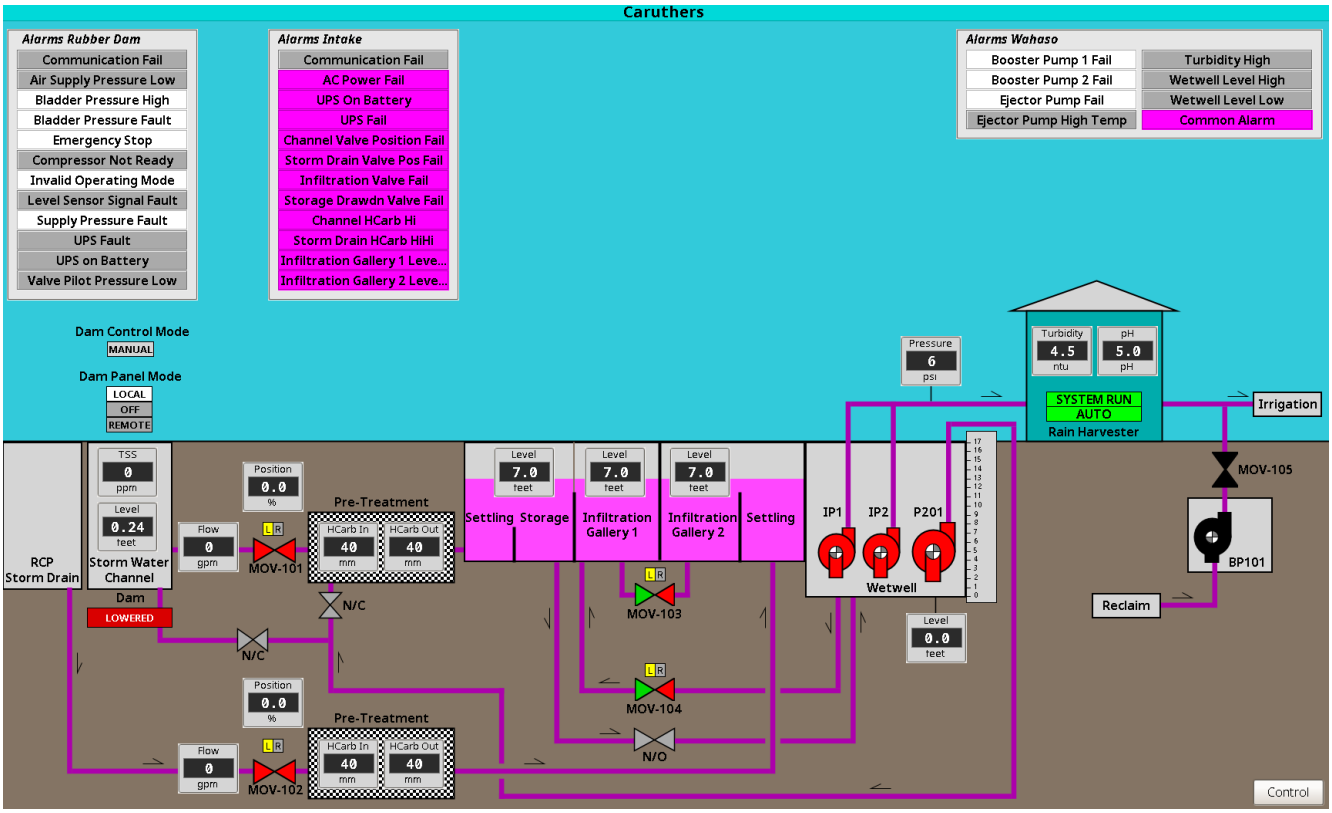
Bolivar SCADA

Mayfair SCADA



[Mayfair SCADA]

Caruthers SCADA



[Caruthers SCADA]

SCADA illustrations are not available for Sub Basin 4 and Urban Orchard.

16401 Paramount Boulevard
Paramount, CA 90723
562.663.6850 phone
562-634-8216 fax

www.gatewaywater.org

Los Angeles Gateway Region
Integrated Regional Water Management
Joint Powers Authority

Request for Qualifications for Operations, Maintenance, and Evaluation of Regional Stormwater Capture and Treatment Projects

August 21, 2024

Responses to Questions Received

A total of two questions were appropriately submitted by the deadline for receiving questions regarding the Request for Qualifications (RFQ) for Operations, Maintenance, and Evaluation of Regional Stormwater Capture and Treatment Projects issued on July 30, 2024. The following are the questions and responses to the questions.

1. **Q:** Since the balance of workload for O&M, SCADA, Engineering and Technical Services, and Construction/Repair is not established by the RFQ, can the lead, in a multi-firm submittal, be from any of these disciplines?

   A: Yes.

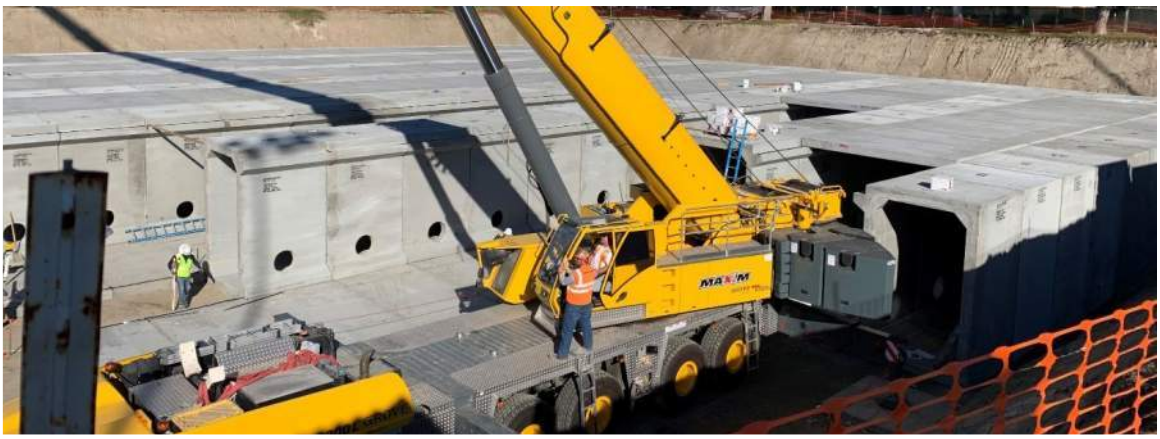
2. **Q:** For Step 1 of the RFQ process will the Lead Firm need to include SOQ information for maintenance providers that they may subcontract for sediment/trash removal from structures (e.g. pre-treatment units, diversion structures)?

   A: Yes, provide information as described in Section 3.1 of the RFQ.

STATEMENT OF QUALIFICATIONS FOR

OPERATIONS, MAINTENANCE, AND EVALUATION OF REGIONAL STORMWATER CAPTURE AND TREATMENT PROJECTS

September 16, 2024



Gateway Water Management Authority
16401 Paramount Boulevard
Paramount, California 90723

craftwater engineering, inc.
Pasadena | San Diego | California

SECTION 0 Cover Letter

San Diego | Los Angeles
805.729.0943
craftwaterinc.com

September 16, 2024

Ms. Madeline Anderson
Gateway Water Management Authority
16401 Paramount Boulevard
Paramount, CA 90723

Subject: Statement of Qualifications for Operation, Maintenance, and Evaluation of Regional Stormwater Capture and Treatment Projects

Dear Ms. Anderson:

We are pleased to submit Craftwater Engineering's (Craftwater) Statement of Qualifications (SOQ) to provide Operation, Maintenance, and Evaluation of Regional Stormwater Capture and Treatment Projects for the Gateway Water Management Authority (GWMA). The engineers at Craftwater are fortunate to have a long history of supporting the GWMA agencies featuring the development of Watershed Management Programs (WMPs), stormwater capture feasibility studies, and the design of some of the most advanced stormwater projects in Southern California.

Craftwater is the leading industry expert with the Safe, Clean Water Program (SCWP). In fact, Craftwater's personnel led or previously supported the feasibility studies and designs of 63 of the 151 SCWP Infrastructure Program projects submitted since program inception. To date, our SCWP funding applications have had over an 85% success rate, securing over $470 Million from the Safe, Clean Water Infrastructure Program, which includes $320 Million for construction funding. Our team has also successfully supported 5 SCWP Project Modifications that included site modifications and resulted in $37 Million in additional funding. Our SCWP experience has taught us that having secured the design and construction funding for this crucial project will require a design team that has the ability to evaluate site alternatives and optimize the size and performance of this infrastructure in order to implement the best project for the City while meeting key performance metrics. Our team's demonstrated success through this approach will greatly enhance the City's ability to also be in the best position for construction funding.

We have assembled the most experienced team of industry-leading experts in stormwater capture design and analysis in California. Our key project team members include **Chad Helmle, PE**, Principal in Charge, **Oliver Galang, PE**, Program Manager, and **Merrill Taylor, PE**, Lead Project Manager. Our carefully selected partners include firms with expertise in regional stormwater capture facility components including **Black & Veatch** (Operations, Maintenance, SCADA, and construction services), **Downstream Services** (BMP Cleaning Services), **Epic CleanTec** (Stormwater Harvesting Systems), **FMF Pandion** (Monitoring Services), **Opti** (Active BMP Controls and Optimization), **Pre-Con** (Pre-Cast storage units and construction services), and **Projectline** (SCADA controls and operations). Our team has been assembled to provide the GWMA agencies with a full depth of resources for this project.

Should you have any questions, you may contact me at 213-598-4178 or oliver.galang@craftwaterinc.com. As our company's Principal, I am the authorized representative for all communication and negotiations concerning this RFQ, I acknowledge by signing this cover letter that all statements are true and correct, and that we received and considered all addenda to the RFQ.

Respectfully submitted,

Oliver Galang, PE | Principal | Craftwater Engineering

craft water engineering, inc.

SECTION 1 Qualifications and Experience

1| COMPANY QUALIFICATIONS AND EXPERIENCE

This section provides an overview of the Craftwater Team (Firm and Subconsultants) and the Experience of our team. We have assembled a team to provide a full depth of resources from operation, maintenance, monitoring, SCADA, and construction services.

1.1 FIRM DESCRIPTION AND STABILITY

Craftwater Engineering, Inc., established in April 2019 and headquartered in Southern California, is a California corporation certified Disabled Veteran Owned Business Enterprise (DVBE) and Micro Business (MB) structured to deliver agile, full-spectrum service to the stormwater market in California. ***In over 5 years, our rapidly growing team of 26 associates, located in Pasadena and San Diego are skilled at adapting to the continuously evolving regulatory environment, yet grounded enough to deliver high quality and readily- constructible designs.*** We take pride in programmatic stewardship – avoiding the pitfalls of changing teams between the planning, concept, full design, construction, and monitoring phases of each project. Craftwater is poised to continue to serve the Gateway Watershed Management Authority (GWMA) by helping to deliver innovative multi-benefit project designs/bid documents and feasibility studies, shape practical regional stormwater policy, and strategically plan investments in green infrastructure and high-end monitoring. We strive to provide meaningful environmental outcomes with affordable and functional water infrastructure to California and beyond.

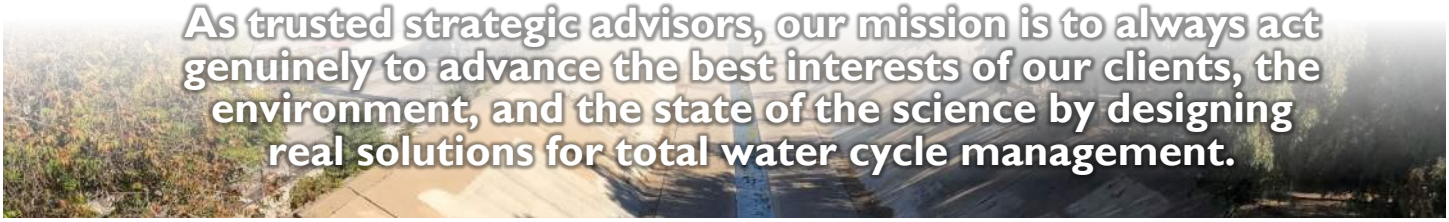
With over 120 years of combined experience in the field of civil engineering, we take pride in the fact that every project manager on our founding team is a licensed Professional Engineer in the state of California. ***Our engineers have identified, envisioned, evaluated feasibility, designed, and/or contributed to construction oversight for approximately 24 regional stormwater capture projects*** within the Los Angeles County area including but not limited to stormwater capture projects in Lakewood (Bolivar Park and Mayfair Park), Bellflower (Caruthers Park and Simms Park), Duarte (Encanto Park), Downey (Furman Park, Apollo Park, Independence Park), Lynwood (Lynwood City Park), Long Beach (Heartwell Parks, Skylinks, and El Dorado Park), Pomona (Fairplex), Paramount (Spane Park and Progress Park), Signal Hill (Reservoir Park), and Whittier (York Field). We aim to continue this proven success with the GWMA.

As trusted strategic advisers and designers, our mission is to always act genuinely to advance the best interests of our clients, the environment, and the state of science by designing real solutions for total water cycle management. Our core services include Watershed Science, Modeling, and Planning; Stormwater Capture Feasibility and Design; Operations and Maintenance, and Regulatory and Water Quality Science. Recently described as “the most well-connected firm in LA,” our agile team is prepared to leverage our national relationships and resources to provide the GWMA and its member agencies with unparalleled quality, efficiency, and a client-centric culture.

1.2 SUBCONSULTANTS

Craftwater Engineering has selected the following highly qualified teaming partner who complements our team to support the GWMA with a full spectrum of services.

Black & Veatch (B&V). Black & Veatch Corporation is a leading global engineering, consulting and construction company specializing in infrastructure development in energy, water, telecommunications, management consulting, and federal and environmental markets. Founded in 1915, Black & Veatch is an employee owned $3.3 billion company. Through 100+ years of our history, our



professionals have provided the best technology-based solutions for collection, treatment, reuse, and disposal of wastewater. Our success is secured through meeting our client's expectations, meeting schedules, and providing optimized cost-effective solutions. *Of particular value to GWMA is Black & Veatch's local experience in construction, operations and maintenance services of stormwater facilities.* Since establishing a California presence 35 years ago, Black & Veatch has fielded strong local teams while leveraging our global expertise as needed. With offices throughout Southern California, including Los Angeles, Irvine, San Marcos, and Murietta (Riverside County). Our local capabilities will allow us to be where you want us, when you want us.

Downstream Services. Downstream Services, Inc. [DSI] is a certified small business enterprise, recognized for its dynamic approach and professionalism within the environmental industry. We specialize in the assessment, maintenance, and rehabilitation of stormwater, wastewater, and underground utility systems. Currently, Downstream Services retains 77 employees between our two locations, which include our Corporate Office located in Escondido, CA and our satellite office located in Ventura, CA. DSI has continuously provided critical solutions in environmental compliance for over 21 years through working with private owners, county/city agencies and state or federal facilities. *Our team of technicians and operators are skilled cleaning and maintenance professionals who excel in expeditious situations while ensuring environmental compliance is being followed and proper reporting is being conducted. Downstream Services also staff underground repair specialists who can tackle a number of steel, concrete, or cured in place structure repairs.*

Epic CleanTec. Born out of work with the Bill and Melinda Gates Foundation's Reinvent the Toilet Challenge, **Epic Cleantec** has become a leader in the onsite water reuse space, trusted by leading players in real estate nationally. We bring multidisciplinary expertise spanning water and wastewater infrastructure, engineering, building science, and water policy to create systems that maximize water conservation potential for new development. Commonly referred to as "onsite water reuse," the concept of integrating water recycling systems into new buildings was largely driven by regulations that were adopted in San Francisco in 2015. Headquartered in San Francisco, CA, *Epic Cleantec was founded to meet the needs of the nascent onsite and stormwater harvesting/reuse market*, and ongoing building operations. Where many vendors are involved at the system level only, *Epic recognizes that most projects require a turnkey provider who will also address building integration, permitting and regulatory stakeholder management, and ongoing operations and maintenance.*

FMF Pandion. FMF Pandion is a Federally certified 8(a), Small Disadvantaged Business (SDB), Service Disabled Veteran Owned Small Business (SDVOSB) and and an Indian Small Business Economic Enterprise (ISBEE). We are also a State of California certified Small Business Enterprise – Micro (SBE), Disabled Veteran Business Enterprise (DVBE), and Disadvantaged Business Enterprise (DBE) (Native American). *FMF Pandion is a full service environmental and engineering consultancy that will provide water quality monitoring technology and services to the GWMA.* Our business model allows us the flexibility to bring the right people on board to support your project in a technically solid and cost effective manner.

Opti. Opti, an Aliaxis company, is the leading provider of digital adaptive stormwater control solutions. With over 300 deployments to date, Opti empowers customers and partners to address the impacts of climate change, aging infrastructure, urbanization, and water pollution, enabling them to secure the sustainability of our communities and natural resources. Our cloud-based platform optimizes stormwater asset performance with immediate results while providing ongoing, long-term functional insights to inform future investment priorities. *Opti revolutionizes stormwater management with a cloud-based solution that makes infrastructure smart through continuous monitoring and adaptive control (CMAC).* By seamlessly combining real-time sensor data and weather forecasts, our platform actively manages

stormwater flows and storage, ensuring efficiency and resilience across the watershed. *With Opti, every drop is managed smarter, making our communities safer and our environments healthier.*

Pre-Con. Pre-Con Products is a *general engineering contractor with a unique ability to combine construction and manufacturing within a single operation*. We have a proven record of bringing innovative solutions to remote and complex project sites. Our unique manufacturing capabilities allow us to pre-fabricate, where appropriate, those items which would be difficult, cost prohibitive, time critical or more risky to construct on-site. Our areas of expertise are in precast concrete, concrete construction, stormwater management, foundations and renewable energy products. *Pre-Con will support the GWMA with potential retrofit needs to facilitate operations and maintenance of the regional stormwater capture facilities.*

ProjectLine Technical Services, Inc.

ProjectLine Technical Services. ProjectLine is a California corporation specializing in professional and technical engineering services for infrastructure projects. ProjectLine is a Caltrans-certified Disadvantaged Minority and Women-Owned Business Enterprise and MWD and State-certified Small Business Enterprise (DBE/WBE/SBE). Our clients include national engineering companies and major infrastructure management agencies. We offer expertise to transportation, water, wastewater, energy, industrial engineering, and information technology markets. ProjectLine clients include Caltrans, Los Angeles Department of Water and Power (LADWP), Metropolitan Water District of Southern California (MWD), Orange County Sanitation District (OCSD), and Cities such as Los Angeles and Riverside, for whom we provide engineering services. *ProjectLine offer services from project planning and feasibility studies, to design and construction-phase engineering services, such as Design-build and SCADA, telecommunications, network and security upgrade designs and system integration.*

The Craftwater Team has identified, conceptualized, and designed over 100 regional stormwater capture projects totaling greater than $1 Billion of construction costs: <u>More than any other team in the region.</u>

1.3 EXPERIENCE TABLE

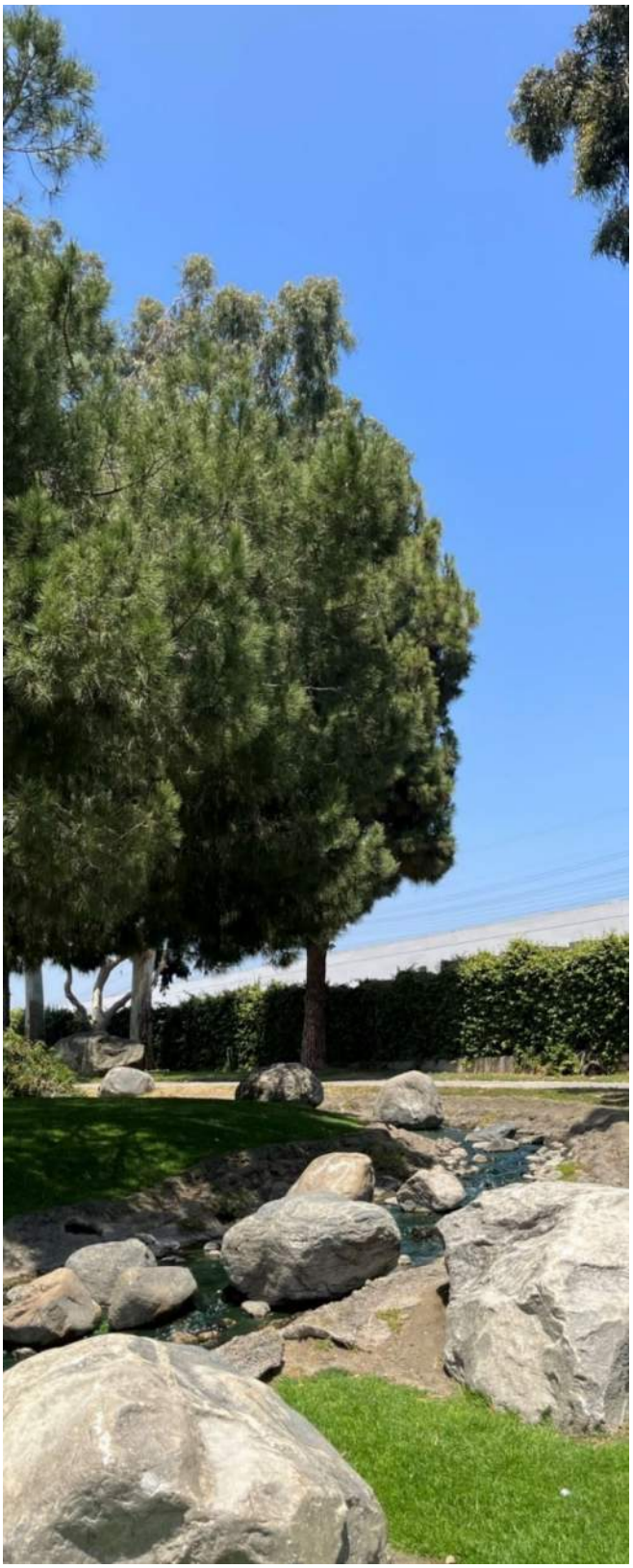
The following table provides a summary of the Craftwater Team's experience with the design of regional scale stormwater capture projects. The Table provides a project list showing completed projects and the status of current projects and percent complete.

Project Name	Project Developer	Treatment Volume (AF)	Construction Cost	Project Status	Feasibility Study	Preliminary Engineering	Final Design	Geotechnical Investigation	Permits	Construction	SCW Reporting	Public Outreach
Adventure Park Multi Benefit Stormwater Capture Project	Los Angeles County Public Works	24	$ 13,500,000	In Construction	■	■	■	■		■		
Arroyo Seco-San Rafael Treatment Wetlands	Pasadena	30	$ 12,900,000	90% Design	■	■	■	■	■		■	■
Sierra Madre Median Retrofit	Pasadena	0.25	$ 5,500,000	60% Design	■	■	■	■			■	■
Simms Park Stormwater Capture Project	Bellflower	24	$ 15,700,000	60% Design	■	■	■	■	■	■	■	■
Bolivar Park Stormwater Capture Project	Lakewood	8.9	$ 11,000,000	Constructed	■	■	■	■	■	■		■
Carriagecrest Park Stormwater Project	Carson	42	$ 13,000,000	Constructed	■	■	■	■	■	■		■
Caruthers Park	Bellflower	9	$ 13,000,000	Constructed	■	■	■	■	■	■		■
Culver Boulevard Stormwater Median	Culver City	18	$ 20,000,000	Constructed	■	■	■	■	■	■		■
El Dorado Regional Project	Long Beach	23	$ 12,000,000	60% Design	■	■	■	■	■		■	■
Encanto Park Stormwater Capture Project	Monrovia	6.5	$ 2,500,000	90% Design	■	■	■	■	■	■	■	■
Finkbiner Park Stormwater Project	Glendora	19	$ 18,500,000	90% Design	■	■	■	■	■	■	■	■

Project Name	Project Developer	Treatment Volume (AF)	Construction Cost	Project Status	Feasibility Study	Preliminary Engineering	Final Design	Geotechnical Investigation	Permits	Construction	SCW Reporting	Public Outreach
Fairplex Stormwater Capture Project	Pomona	22	$ 23,500,000	10% Design	■	■	■	■	■	■	■	■
Furman Park Stormwater Capture and Infiltration Project	Downey	9	$ 12,300,000	60% Design	■	■	■	■	■	■	■	■
Heartwell Park at Palo Verde Channel Stormwater Capture Project	Long Beach	24	$ 18,500,000	10% Design	■	■		■				■
Lynwood City Park Stormwater Capture Project	Lynwood	26	$ 18,000,000	60% Design	■	■	■	■	■	■	■	■
Mayfair Park	Lakewood	23.8	$ 15,000,000	Constructed	■	■	■	■	■	■		■
Merced Ave Stormwater Capture Project	El Monte	1.0	$ 9,800,000	10% Design	■	■	■	■	■		■	■
Rio Hondo Ecosystem Restoration Project	Monrovia	18.5	$ 20,000,000	10% Design	■	■	■	■	■		■	■
Salt Lake Park	Huntington Park	23.6	$ 25,000,000	10% Design	■	■	■	■	■		■	■
Santa Monica Clean Beaches Initiative at the Pier	Santa Monica	6.0	$ 16,000,000	Constructed	■	■	■	■	■	■		■
Skylinks Golf Course at Wardlow Stormwater Capture Project	Long Beach	22.6	$ 10,500,000	90% Design	■	■	■	■	■		■	■
Spane Park	Paramount	20.4	$ 18,900,000	90% Design	■	■	■	■	■	■	■	■
York Field Park	Whittier	28.2	$ 25,500,000	60% Design	■	■	■	■	■		■	■

SPANE PARK REGIONAL STORMWATER CAPTURE PROJECT

Paramount, CA



CLIENT REFERENCE

Adriana Figueroa; Public Works Director
562-220-2020
AFigueroa@paramountcity.com

PROJECT TEAM

- Oliver Galang | Responsible Principal
- Courtney Semlow | Design Project Manager
- Merrill Taylor | Water Quality Technical Lead
- Thom Epps | Water Quality Scientist

PROJECT DATES

March 2019 – Present

PROJECT COST	PERCENT PERFORMED
$18.9M	60%

PROJECT SUMMARY

The development of the Spane Park Stormwater Capture Project in the City of Paramount represents a major opportunity to enhance Spane Park within the City and continue the regional scale progress to achieve pollutant load reductions for the Lower LA River Watershed. Craftwater completed a Feasibility Study including the 10% Preliminary Design used to secure $1.5M in funding for the design and $18.9 Million for construction from the Safe, Clean Water Program (SCWP).

Stormwater flows are diverted from a double 10.5'W x 6.5'H RC Box storm drain at a rate of 20 cfs before being pumped to a 54" pipe that is conveyed to an existing 6' wide bottom trapezoidal channel. Flows are conveyed 1.1 miles downstream to the project site where flows are diverted to a 5.4 ac-ft subsurface storage and treatment system. The facility has been optimized and has the capacity to treat 20.4 AF of stormwater for each storm event.

Our team prepared the Feasibility Study for submission to the SCWP for funding in October 2020. After the City of Paramount received funding, Craftwater was selected to continue to carry the project through final design. The design has progressed to 90% design. Craftwater assisted the City of Paramount with obtaining **$18.9 Million in funding for construction under the Safe, Clean Water Program**.

SIMMS PARK REGIONAL STORMWATER CAPTURE PROJECT

Bellflower, CA

CLIENT REFERENCE

Len Gorecki; Assistant City Manager/Director of Public Works
(562) 804-1424 ext. 2259
lgorecki@bellflower.org

PROJECT TEAM

- Oliver Galang | Responsible Principal
- Merrill Taylor | Project Manager
- Courtney Semlow | Design Manager

PROJECT DATES

March 2022 – Present

PROJECT COST	PERCENT PERFORMED
$15.7M	60%

PROJECT SUMMARY

Craftwater Engineering, Inc, is supporting the City of Bellflower with the development of the City's next regional stormwater BMP for the Los Cerritos Channel Watershed. The goal of the project is to help the City comply with bacteria and metals TMDLs, as presented in the Los Cerritos Channel Watershed Management Program while providing additional benefits of park revitalization. This project will capture discharge from a 758-acre area from the 10'Wx7.5'H RC Box Storm Drain along the west side of the park. The objective of this project is to address the water quality needs, particularly the metals TMDLs. The facility will redirect all dry weather and wet weather runoff from the storm drain through the diversion system and pre-treatment system to remove trash, debris, and sediment. A drainage pipeline will convey the flows into a large, buried, multi-chambered storage and infiltration facility.

As part of this project, Craftwater Engineers prepared the Project Concept and Feasibility Study that met all criteria for the Safe, Clean Water Program and **secured $2.1 Million for design of this facility**. Craftwater is also preparing the construction documents to support the construction of this facility. Craftwater also assisted the City with securing **$13.7 Million in funding for construction under the Safe, Clean Water Program**.

STORMWATER CAPTURE PROJECTS AT BOLIVAR AND MAYFAIR PARK

Lakewood, CA

CLIENT REFERENCE

Kelli Pickler; City of Lakewood
562-866-9771, Ext 2501
KPickler@lakewoodcity.org

PROJECT TEAM

- Oliver Galang | Project Manager
- Chad Helmle | Responsible Principal
- Merrill Taylor | Water Quality Technical Lead
- Thom Epps | Water Quality Scientist

PROJECT DATES

August 2015 – September 2023

PROJECT COST

$11M and $15M

PERCENT PERFORMED

100%

PROJECT SUMMARY

As major steps towards implementing the Los Cerritos Watershed Management Plan, the Craftwater Team supported the City of Lakewood with implementing what are considered ***the first "smart regional stormwater BMPs"*** in Los Angeles County. The projects consist of air-inflated rubber dam diversion systems to re-direct runoff from both open and underground channels through pre-treatment systems to remove trash, debris, and sediment. Pump stations and drainage pipelines convey the pretreated water into large, buried multi-chambered storage/infiltration facilities. Stormwater collected in the underground reservoir is treated and used to irrigate the park. Excess water at Bolivar Park is infiltrated, while Mayfair Park employs a flow-through filtration system and an optional diversion to the sanitary sewer. The team modeled the performance of the facilities to demonstrate progress towards compliance, and evaluated the advantages of using smart, real-time controls to optimize system performance. Craftwater Engineers supported the City with the development of the design documents, obtained the LACFCD diversion permits, provided technical support during construction, and prepared the operations and maintenance manuals.

- *Craftwater also supported the City with the post-construction performance evaluation, modeling analysis, and developed the stormwater facility retrofit strategy at Bolivar Park for improved access and maintenance.*

STORMWATER MAINTENANCE SERVICES BY DOWNSTREAM SERVICES, INC (O&M Services)

CLIENT REFERENCE
See below

PROJECT TEAM
- Robert Carr | Project Manager
- Aaron Santamaria | Superintendent
- Rebecca Readel | Assistant Project Manager II

PROJECT DATES
March 2019 – Present

PROJECT COST
$100k to $3.6M

PERCENT PERFORMED
100%

PROJECT SUMMARY
Downstream has provided stormwater cleaning services for over 15 years, including the City of Oceanside, City of Newport Beach, the City of Carlsbad, the City of El Cajon, and the City of Irvine within the last 5 years.

Client	Contract Years	Scope	Annual $
City of Culver City Sean Singletary, Sr. Civil Engineer (310) 253-6000	2021 - 2026	Inspections, repairs, and maintenance services on stormwater pumps, actuator valves, underground galleries, Kraken units, CDS units, inlets, and junction structures per the manufacturer O&M manual	$1,395,660 Current Contract
City of Irvine Byron Gemmell, PW Supervisor (949) 724-7691	2023-2026	(14) Contech Cartridge Filter Vaults containing a total of (160) cartridge filters. Remove and replace filters with vault cleaning.	$87,244 Annually
LAX – LAWA Conor Roche, Maint. Supervisor (424) 646-7960	2019-2024	As-needed maintenance of Storm Drain Inlets, Drywells, Underground Detention Basins, Porous Pavers, and Bioswales. Includes additional maintenance of (2) Contech Cartridge Filter Vaults with (660) Cartridges in one unit and (460) in another.	$3,600,000 Current Contract

STORMWATER TRAINING SERVICES
BY BLACK & VEATCH (O&M and Construction)

CLIENT REFERENCE
Chris Lee, PE, Associate Civil Engineer
Los Angeles County Public Works
(626) 300-4652

PROJECT TEAM
- Sean Porter, QSD/P, CPESC | Project Manager

PROJECT DATES
March 2019 – Present

PROJECT COST	PERCENT PERFORMED
$1.1M	100%

PROJECT SUMMARY
Funded under SCWP, Black & Veatch is developing stormwater training videos for four stormwater capture and reuse projects in Los Angeles:

- East Los Angeles Sustainable Median Stormwater Capture Project
- Ladera Park Stormwater Capture Project
- Gates Canyon Park Regional BMP Project
- Adventure Park Multi-Benefit Stormwater Capture Project

The purpose of the videos is to introduce and identify the stormwater system components at each facility, Health and Safety elements and water quality and BMP effectiveness monitoring methods. The content developed is multi-platform, meaning it can be delivered in a variety of ways and through almost any device. This is especially useful as field staff could want a quick “refresh” of certain content before they perform an activity in the field. Content can also be multi- language and captioned if desired.

THE CAMPUS HE CAMPUS AT HORTON
BY EPIC CLEANTEC (Stormwater Harvesting and Reuse)

CLIENT REFERENCE
Available upon request

PROJECT TEAM
Eric Hough, PMP, Project Executive

Adaptive reuse project featuring office spaces, life science facilities, retail outlets, and dining establishments

The Campus at Horton is a 1,000,000 square foot redevelopment project located in San Diego, CA that will reinvent a formerly abandoned mall into a lively community complex with beautiful office spaces, life science facilities, retail outlets, and dining establishments.

The project will reuse roughly 55% of its water by deploying Epic's OneWater™ system to capture and treat 24,000 GPD of wastewater for treatment and reuse in cooling tower makeup and flushing throughout the campus. The blackwater system will recycle over 7.5 million gallons per year, saving over $170,000 per year in water and sewer fees. Epic Cleantec is overseeing the design, permitting, and startup commissioning for this innovative project.

ALBION RIVERSIDE PARK STORMWATER IMPROVEMENTS BY Projectline Technical Services (SCADA Design and Operations Services)

ProjectLine
Technical Services, Inc.

CLIENT REFERENCE

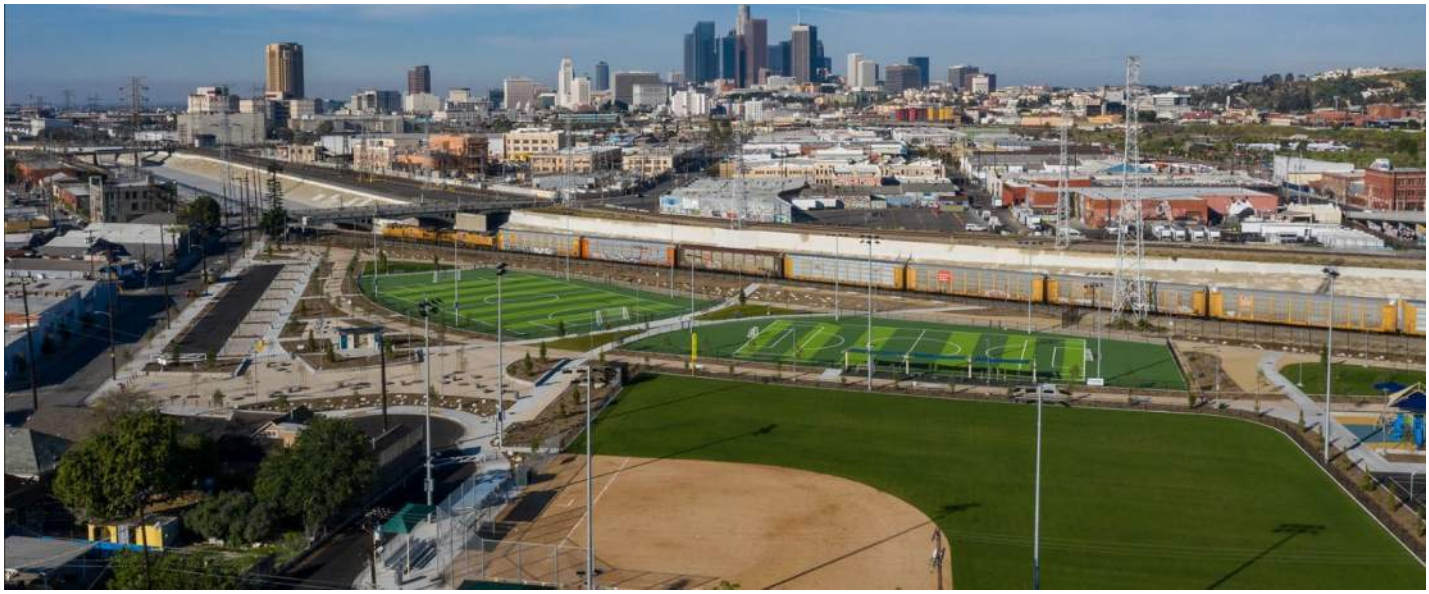
Bryan Powell, Senior Civil Engineer
City of Los Angeles, Bureau of Engineering
Bryan.Powell@lacity.org

PROJECT TEAM

Robert Getter, PE, Electrical and Controls Design, SCADA

PROJECT SUMMARY

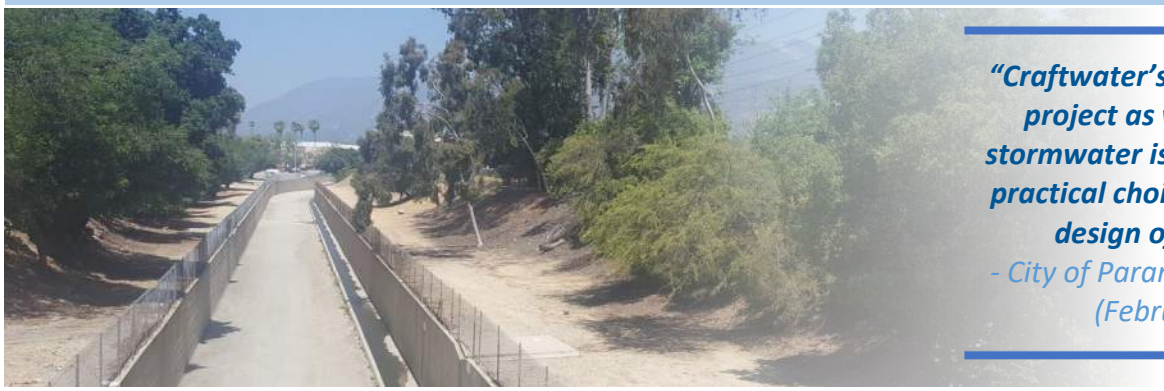
ProjectLine provided electrical design for site improvements on the City of Los Angeles Proposition O project. The Institute for Sustainable Infrastructure (ISI) named the project as recipient of the 2020 Envision® Gold award for sustainable infrastructure for delivering a heightened range of environmental, social, and economic benefits to the host and affected communities. Design for the 6-acre site included BMPs to improve water quality of stormwater prior to discharging to the Los Angeles River, and upgraded outdoor sports fields, park areas, and parking areas. The project provided multiple benefits to the neighborhood by creating visual linkages to the Los Angeles River and linkages to other projects referenced in the Los Angeles River Revitalization Master plan. ProjectLine's electrical design included innovative LED lighting for sports fields and park areas based on photometric modeling, with PC-based programmable lighting controls, and meeting the latest City lighting standards.



SECTION 2

Organization and Key Personnel

2| ORGANIZATION AND TEAM MEMBERS



"Craftwater's knowledge of the project as well as regional stormwater issues make them a practical choice to continue the design of the project"
- City of Paramount Staff Report (February 2022)

PROJECT MANAGEMENT TEAM AND KEY TEAM MEMBERS

Craftwater carefully assembled a specialized team of **nationally respected experts with local experience serving the GWMA**. We deliberately selected each member of our team to fill a specialized role and best serve the GWMA—each partner's experience, qualifications, and technical resources is complementary and focused on the specific tasks of this Statement of Qualifications. The organizational chart below outlines our staffing plan, and the following resumes highlight the outstanding qualifications of our key staff.

The following figure in the next page, **Figure 3-1**, presents the **Craftwater Project Team organization**, and resume summaries below highlight key qualifications and experience of our team. The Craftwater team of experts combine years of applied experience in municipal public works and consulting with an unmatched drive to deliver interesting solutions. Our team does not tolerate generic, plug-and-chug methodologies—instead, we are constantly innovating and using new technology to develop better projects and dynamic plans customized to specific goals of our clients.

Our leaders' experiences roles, responsibilities, credentials, and related experience are introduced in the following pages.

Resumes for Key Team Members are also available in **Appendix A. Resumes.**

Figure 3-1. Proposed Organization Chart

OLIVER GALANG, PE, ENV SP

Program Supervisor/Administrator

Time: 40% | Pasadena, CA

Oliver Galang leads Craftwater's design and management services and provides experience encompassing **30 years of planning, design, construction, and program management of multi-million-dollar municipal capital improvement projects, specifically in water resources and stormwater infrastructure throughout Los Angeles County.** Highlights of Oliver's career also include service as the Head of the Los Angeles River Watershed and for the Water Quality Monitoring Programs for the Los Angeles County Flood Control District. His responsibilities included leading the planning of multi-use, multi-benefit projects, with an estimated construction value of more than $60 million, along the Los Angeles River. He has also been responsible for managing programs of more than $10 million in urban runoff and stormwater quality monitoring programs. Oliver's role and level of involvement in the projects listed in the qualifications are summarized below:

- **Principal-In-Charge.** Oliver serves as the responsible Principal for the design of the following Safe, Clean Water Projects: Bellflower Simms Park Stormwater Project, Downey Furman Park Stormwater Project, Lynwood Park Stormwater Project, and Paramount Spane Park Stormwater Project. His depth of municipal experience and project design experience ensure that the design, funding, and construction implementation of stormwater facilities proceed in the most expeditious manner. In addition, this experience along with his years supporting the LACFCD will ensure that regional stormwater BMPs are operated and maintained to meet the water quality objectives of each project.

CHAD HELMLE, PE

QA/QC Manager & Principal-in-Charge Time: 10%, San Diego, CA

As President of Craftwater, Mr. Helmle offers national experience with a focus on the Southern California water resources service area. He has overseen hundreds of large and small water resources projects and has served as program manager or principal-in-charge of several of the largest municipal on-call stormwater-focused contracts in the country. **His experience encompasses more than 23 years of relevant experience evaluating and addressing a broad spectrum of water issues**, ranging from strategic planning to design and implementation. Examples of his project leadership include hundreds of square miles of watershed master planning efforts, over 100 regional-scale green infrastructure retrofit design or pre-design projects, and ground-breaking watershed and BMP modeling analyses. He is especially passionate about finding innovative solutions to the challenging prospect of retrofitting existing urban landscapes and infrastructure to meet the compliance, water resiliency, and runoff management needs of municipal agencies.

MERRILL TAYLOR, PE

Project Management Team Lead

Time: 50%, Pasadena and San Diego

Merrill is a Senior Civil Engineer and brings **more than 14 years of experience** leading regional stormwater capture design and BMP Operations and Maintenance services throughout California. For this project, Merrill will lead the project management team to ensure all of the GWMA Stormwater BMPs are properly operated and maintained during dry-weather and wet-weather periods. He is an expert with BMP facilities and the associated diversions, pretreatment, storage, and overflow infrastructure ensuring that all hydraulic and structural needs are met by the proposed practices while remaining cost conscience. He's previously played a key role in the design of 12 regional stormwater capture projects totaling over $150 million in construction costs including Bolivar Park and Mayfair Park Stormwater Capture Projects in Lakewood, Adventure Park Multi-Benefit Stormwater Capture Project near Whittier, and Caruthers Park Stormwater and Runoff Capture Project in Bellflower.

COURTNEY SEMLOW, PE, CFM, ENV SP

Engineering Services and Construction/Repair Lead

Time: 40%|Pasadena, CA

Courtney is a **Project Design manager with 18 years of professional experience** in site design and water resources projects. Her in-depth site design experience has installed a strong engineering toolbox enabling her to identify potential pitfalls that can be detrimental to projects. She is knowledgeable in all aspects of civil design, including erosion control, utilities, and stormwater capture design. **She is leading the design disciplines for the Arroyo Seco San Rafael Treatment Project, Encanto Park Stormwater, Finkbiner Park Stormwater, and Lynwood City Park Stormwater Capture Projects.** As the Design Manager, Courtney will serve as the primary point of contact to lead the design development teams and ensure prompt responses and transparency on behalf of the Craftwater team. She will ensure that all tasks proceed on schedule, meet necessary milestones, and produce high quality deliverables that meet project and client goals. Courtney's management and practical design experience provides her with a full understanding of the design options within the California landscape and regulatory context. Her projects are customized for the project goals and environmental settings; consistent with existing regulations and policies and stakeholder preferences; and, most important, are constructible, realistic, and will operate as designed to meet project goals.

SEAN PORTER, CPSWQ, QSD/P

Stormwater O&M Lead (Black & Veatch)

Time: 60% | San Marcos, CA

Sean Porter has 24 years of experience specializing in water resource services with a background in stormwater, wastewater, urban and natural landscape, creek watershed studies, and groundwater. **He is an expert in stormwater green infrastructure (GI), MS4 Permit compliance, NPDES permit program requirements, Areas of Special Biological Significance (ASBS) discharge requirements, total maximum daily loads (TMDLs) allocations and monitoring, and publicly funded research-driven watershed studies.** His experience includes consulting, training, monitoring and reporting for GI and trash capture projects for state, municipal, transportation, federal, and low impact development. **Mr. Porter will be responsible for coordinating with the Project Management Team to schedule the routine maintenance protocols.** Currently an Industrial General Permit (IGP) Trainer of Record (ToR), Qualified Industrial Stormwater Practitioner (QISP), he develops innovative solutions that enhance quality, maximize efficiency, improve safety, and increase responsiveness.

ROBERT GETTER, PE

SCADA Operations and Engineering Lead

Time: 40%| Costa Mesa, CA

Mr. Getter has over 30 years of experience in electrical and controls engineering and design, much of which has been for water-related facilities. His expertise includes design of stormwater diversion and pump stations, sports lighting, and sports park upgrades. He has been involved in over 12 similar stormwater diversion and pumping projects in the past 5 years. His experience includes design of over $500 million construction value for infrastructure facilities.

Mr. Getter will be leading the SCADA Design and Implementation Team to evaluate the SCADA Operations, Monitoring Systems, and potential integration opportunities for the GWMA.

ERIC HOUGH, PMP

Water Reuse/Stormwate Harvesting Lead

Time: 40%| Carlsbad, CA

Mr. Eric Hough has over 17 years of water reuse project delivery experience that spans engineering and project management. Eric is responsible for laying the foundation for success in each of Epic's projects. By maintaining a focus on the business case for water reuse, Eric thrives on connecting development projects with the best, value-driven water conservation solutions.

SECTION 3

Project Approach and Understanding

3| PROJECT UNDERSTANDING AND APPROACH

UNDERSTANDING OF SCOPE

The GWMA is a large watershed-based coalition of cities, water agencies, and a port. The GWMA member agencies are located in the southeastern area of the Los Angeles County and are responsible for addressing regulatory compliance under 4 watershed groups for the *Lower LA River Upper Reach 2*, *Lower Los Angeles River*, *Lower San Gabriel River*, and the *Los Cerritos Channel* watersheds. Together, Craftwater engineers (in their capacities at previous firms) worked closely with these permittees to develop the WMPs as an initial plan to protect the region and stormwater management and to secure interim compliance with the regional MS4 Permit.

During the years since the WMP development, the engineers at Craftwater have derived great personal satisfaction with assisting the agencies within the GWMA and around Los Angeles County with watershed master planning to identify and prioritize specific projects, evaluating project feasibility per the SCWP guidelines, and preparing construction bid documents for the implementation of the most advanced stormwater capture facilities ever developed in the Los Angeles area. Some of the first Regional BMPs were designed and constructed in the GWMA Watersheds by the Craftwater engineers. *Craftwater clearly understands and internalizes the challenges facing the GWMA because we have personally and continuously worked with all of the watersheds (LARUR2, Lower LA River, Lower San Gabriel River, and the Los Cerritos Channel),* and our core team members have been active in the watershed for over a decade. We feel ownership in the success of this group and have staked our reputation on it.

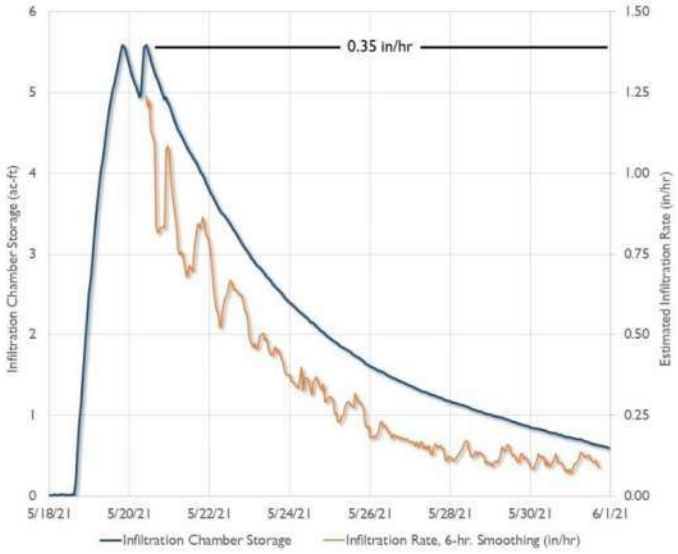
The GWMA member agencies seek the assistance of experts in regional stormwater capture facilities to provide Operations and Maintenance, SCADA controls and monitoring, and evaluation services of Regional Stormwater Capture and Treatment Projects to optimize performance as well as construction work that may be required to optimize the facility or enhance the operations and enable maintenance access of these facilities.

HISTORY WITH THE 5 REGIONAL PROJECTS

Craftwater Engineers have supported the GWMA member agencies with the implementation of the five regional projects. Also, our team has been directly supporting the GWMA member agencies with the initial assessment of 4 of the 5 regional projects at Bolivar, Caruthers, Mayfair, and Sub-Basin 4 (Long Beach Airport). In addition, Craftwater Engineers were involved at the early stages of analysis and sizing of the Urban Orchard Project.

HISTORY WITH THE ADDITIONAL REGIONAL PROJECTS

Craftwater Engineers have also been integral with the development of all the regional projects that are anticipated to be constructed by the GWMA member



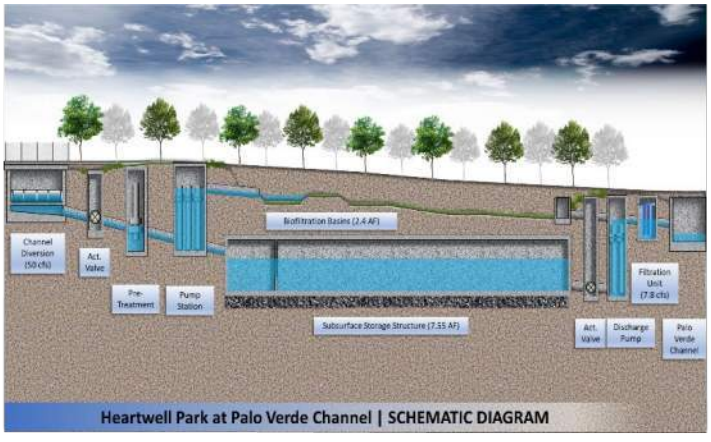
Our team developed tools to evaluate the operational infiltration rates and recommended optimization strategies for the Bolivar Park BMP treatment facility

agencies. **In fact, Craftwater is the only firm that can claim to have prepared all the Safe, Clean Water Program feasibility studies that were the basis for Hermosillo Park, El Dorado Regional, Furman Park, *Simms Park*, Spane Park, John Anson Ford Park, Apollo Park, Independence Park, Cerritos Sports Complex, Lynwood City Park, Heartwell Parks (Palo Verde and Clark Channels), Skylinks Golf Course, and Salt Lake Park.** In addition, Craftwater is leading the design and successfully secured construction funding under the Safe, Clean Water Program for Furman Park, Simms Park, Spane Park, and Lynwood City Park.

APPROACH TO SERVICE CATEGORIES

The Craftwater Team's experience with BMP operations, monitoring, and maintenance dates back to 2000 with early studies with Caltrans in the Los Angeles region that have guided the direction of many BMPs currently implemented regionally and nationally. Our understanding of BMP effectiveness is not only rooted in direct monitoring experience, but also based on a long history of BMP engineering, analysis, and design. In the past ten years, our Team members have designed more regional and green infrastructure projects in Southern California than any other group. Because of our Team's in-depth engineering knowledge of BMPs, along with extensive monitoring experience, we offer a unique perspective on the "operability and performance" of BMPs to properly evaluate their effectiveness.

Specifically, our comprehensive Team has led the design and monitoring plans for more Safe, Clean Water Program-funded projects than any other firm, so we are able to incorporate monitoring early in the design phases; we avoid overlooking key access points within the BMP to collect accurate flow data and representative samples.



Craftwater Engineers were responsible for developing over one-third of the Feasibility Studies submitted for funding under the Safe, Clean Water Program

TASK 1. OPERATION AND MAINTENANCE (O&M)

The Craftwater Team has been assembled to provide for O&M of the various facilities in accordance with the established O&M Manuals for each facility.

Craftwater will review the facility-specific Operations and Maintenance (O&M) Plans for each of the existing Regional Stormwater Capture and Treatment Projects, inspection and system maintenance activities are conducted regularly. Beginning with regular inspections to determine whether the system is properly functioning, and operating as designed, sediment and trash accumulation is documented. Inspection reports identify and document all potential problems and inform maintenance activities. Our Team's continuous approach to the Operation and Maintenance, Monitoring, and Optimization of stormwater BMPs ensures through our efforts that each municipality is receiving the most value possible from your operating assets. This requires a focus on frequent inspections, thorough documentation and reporting, and timely deployment of the cleaning and vactor equipment.

Craftwater's Services include the following team members.

- **Craftwater's Project Management Team.** Our project management team will be responsible for the overall management of these facilities. We will assign an individual Project Manager who will be responsible for the overall operations and maintenance of each facility.
- **Black & Veatch** will conduct an evaluation of the O&M Plans and establish the maintenance schedules.
- **Downstream Services** will provide routine cleaning of stormwater infrastructure including the rubber dam and diversion structures, pumps, valves, removing sediment and trash from structures.
- **Black & Veatch, Projectline, and FMF Pandion** will provide services for the testing and

calibration of monitoring equipment, SCADA control systems, and other electrical equipment.

- **Access to LACFCD Channel**. Since each project has an establish LACFCD Use and Maintenance Agreement, our team will coordinate with the local LACFCD Maintenance Yard when accessing the channel/storm drain for maintenance.
- **Sanitation Districts of LA County.** The Mayfair Park Project has a discharge option to the sanitary sewer. The status of the discharge permit will be reviewed by Craftwater to ensure that the coordination (including SCADA access) is established with the Sanitation Districts.
- **Stormwater Harvesting Units and the LA County Public Health.** In order to use the stormwater harvesting facility, the Sampling Plan must be followed as required by the Cross Connection Permits for the use of stormwater as irrigation water at Bolivar, Caruthers, and Mayfair. Our team includes Epic CleanTec, who provides operation and maintenance services for these systems.

Confined space entry is required at several facilities to maintain and clean these assets. Necessary protocols for work around open-access structures and confined spaces will be strictly followed per OSHA standards, regulations, and procedures for work in confined spaces.

Considerations for Operation and Maintenance

The following summarizes our strategies that we'll bring to each Regional Project:

- **Data collection** during operation and maintenance of key assets including regional stormwater capture and water quality treatment systems, low-flow diversion dams, pre-treatment systems, trash capture devices, and all associated monitoring equipment.
- **Stormwater Harvesting Systems.** Leverage our detailed knowledge of the existing site conditions as well as innovative technologies that support effective water quality treatment and downstream impact mitigation such as complex water harvesting treatment systems. For example, our review of the Wahaso systems at Bolivar, Caruthers, and Mayfair determined that the waste stream needs from the system should not be returned to the storage reservoir.

The Craftwater team worked closely with the LA County Public Health to approve the first stormwater capture facility permitted for spray irrigation use

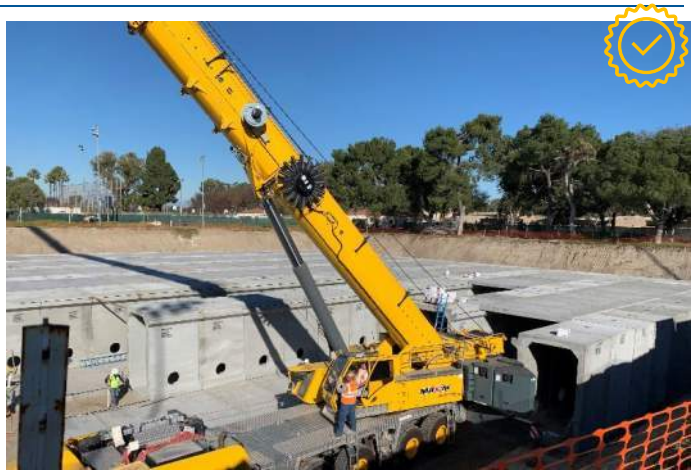
- **Monitoring System evaluation.** Craftwater will review the monitoring data from each SCADA to determine the operational status of the various sensors (water level, flow, and turbidity). Our SCADA systems team includes scientists and engineers that will support the GWMA agencies with setting up systems to provide access and enable real time evaluation.
- **Stormwater Infrastructure.** Several Projects are equipped with controls such as valves, inflatable dams, pumps, flowmeters, and sensors. The water harvesting systems are equipped with a wide variety of smaller filters and sensors as well. Our Team provides the expertise in operating and maintaining all of the equipment fitted in each Project location. This includes troubleshooting and programing logic controllers (PLCs). Craftwater's review of the infrastructure determined the following priorities to enhance the maintainability of these facilities.
  - **Pre-Treatment Systems.** The potential for overflow and bypass of flows and sediments will affect the long-term use of the subsurface storage structure and sustainability of infiltration.

- **Access for Maintenance.** Access for the vactor trucks and for personnel is necessary to ensure the facility will continue to function.

TASK 2. SCADA SYSTEMS

Our team will review the existing SCADA systems that have been implemented at each of the projects to allow for remote monitoring and control of these projects. Craftwater will utilize the services of Projectline to assist with the management of these projects. Craftwater also has included Opti to our team to provide for active controls, optimization, and multi-project management of the GWMA facilities. The Opti approach integrates the rainfall forecast to improve the systemwide management of the GWMA Facilities. The potential to integrate Opti for the GWMA can be evaluated and allow for the GWMA to oversee all of these facilities simultaneously as well.

Regional stormwater capture project performance is driven by the amount of water the system receives (inflow), the volumetric capacity (storage), and the method of treating and draining the tank (outflow). Each of these three variables—inflow, storage, and outflow—are interrelated and the adjustment of one will directly change how the other two perform (e.g., restricting the inflow rate is equivalent to "sucking through a straw" and will limit the amount of pollutants an otherwise large storage tank may have access to treat; conversely, an undersized storage tank is rapidly overwhelmed by an overdesigned inflow diversion and may fill too soon without capturing the dirtiest peak of the storm). Our experience has proven that it is essential to evaluate these three parameters simultaneously when looking at the design and performance of a regional practice. The model can evaluate select pollutants or volume, giving the design team the best combination for maximizing performance and multiple benefits. A strategic deployment of environmental sensor technology is crucial to enable an adequate assessment of the infrastructure's performance in the future.



Craftwater Engineers led the development of the most innovative stormwater capture facilities in the GWMA. Mayfair Park SW Capture Project incorporated pretreatment, filtration discharge, and sanitary sewer discharge for optimal system performance.

TASK 3. ENGINEERING AND TECHNICAL SERVICES

Craftwater's team of design engineers are available to assist the GWMA agencies with development system improvements to further enhance the operations and maintenance of these Projects or to enhance the water quality benefits. ***Craftwater led the assessment of the Los Cerritos Channel Regional BMPs, which include Bolivar Park, Caruthers Park, Mayfair Park, and Sub-Basin 4 Projects.*** Craftwater's design team will develop design drawings that can be used to install facility access improvements, such as subsurface storage access shaft, trash screens, or trash bypass deflector devices for the pre-treatment units. In addition, water quality benefits can be improved at Bolivar Park and Caruthers Park with the addition of a post-treatment filtration unit coupled with the existing discharge pumps.

Members of the Craftwater Team developed and led some of the inaugural BMP monitoring programs in California over 20 years ago for Caltrans and continue to implement monitoring programs in Los Angeles County. ***Our team was recently hired to support the County with development of program- and BMP-***

level monitoring strategies to evaluate Safe, Clean Water Program success. The outcomes of Craftwater engineers' contributions to this project will help to establish state-of-the-science protocols for new BMP monitoring efforts.

In addition, our team has been responsible for the feasibility analyses of 73 projects across California including 56 submitted to the Safe, Clean Water Program Infrastructure Program, more than any other team in the region. Craftwater Engineers developed a monitoring plan for each of these feasibility studies in order to evaluate the pre-construction and post-construction/long term performance of regional structural BMPs. For Adventure Park, our engineers managed the pre-construction monitoring of Sorensen Drain. This involved obtaining the LACFCD access permit and approval of the sampling equipment. The ***pre-construction water quality data from the Sorensen Drain was used as the basis for design optimization*** and for the sanitary sewer diversion requirements.

TASK 4. CONSTRUCTION/REPAIR SERVICES

Our team includes the following subconsultants to assist the GWMA Agencies with construction and repair needs for diversion structures, pumps, valves, and access to underground structures.

- **Downstream Services.** Standard or routine repairs of equipment, screens, etc. will be provided by Downstream Services.
- **Black & Veatch** which is an Engineering and Construction Firm. This firm has the capability to implement larger more complex repairs, retrofits, and construction for these projects. We will utilize this firm if the installation of a small pump station or filtration unit may be required.
- **Pre-Con** is a manufacturer of pre-cast concrete structures and also a construction contractor. Craftwater has recommended that the subsurface storage structures at Bolivar, Caruthers, and Mayfair could be retrofitted with additional access shaft to improve the ability to maintain these structures.

The Craftwater Team will provide technical design support and construction/repair services for the GWMA.

craft water engineering, inc.

Appendix A

Key Staff Resumes

Program Administrator

Oliver Galang, PE, ENV SP

QA/QC Manager

Chad Helmle, PE

Project Management Team

Merrill Taylor, PE
Pauline Nguyen, PE
Andrew Takahashi, PE
Yulun Wu, PE

Technical Support Team

Operations and Maintenance

Sean Porter [1]

Maintenance Services

Robert Carr [2]

SCADA System

Robert Getter, PE [6]

Stormwater Harvesting System

Eric Hough, PMP [3]
Richard Ross, PE [3]

Reporting Services

Pauline Nguyen, PE
Shane Sasaki, EIT
Heather Kurtzman, EIT

Engineering and Technical Services

Courtney Semlow, PE, ENV SP
Andrew Takahashi, PE, ENV SP, QSD
Yulun Wu, PE
Shane Sasaki, EIT
Viviana Sanchez, EIT

SCADA Systems Operations

Sean Porter [1]
Robert Getter, PE [6]
Kathy Gee, PE, PhD [4]

Construction/Repair

Courtney Semlow, PE, ENV SP

Pre-Cast Reservoirs
Dan Zarraonandia [5]
David Zarraonandia [5]

Diversion and Pretreatment
Robert Carr [2]

Stormwater Harvesting System
Eric Hough, PMP [3]

SCADA Systems and Sensors
Robert Getter, PE [6]
Kathy Gee, PE, PhD [4]

1 **Black and Veatch**
550 S Hope St, Suite 2250
Los Angeles, CA 90071

2 **Downstream Services, Inc**
2855 Progress Place
Escondido, CA 92029

3 **Epic CleanTec**
8425 Market St.
San Francisco, CA 94103

4 **Opti**
98 North Washington St.
Boston, MA 02114

5 **Pre-Con**
240 W Los Angeles Ave
Simi Valley, CA 93065

6 **Projectline**
2900 Bristol, Ste D-103,
Costa Mesa, CA 92626

craftwater engineering, inc.

SAFE CLEAN WATER PROGRAM

Chad S. Helmle, PE
President and Chief Executive Officer

Experience Summary

As President of Craftwater Engineering, Inc, Mr. Helmle offers national experience with a focus on the Southern California water resources service area. He has overseen hundreds of large and small water resources projects and has served as program manager or principal-in-charge of several of the largest municipal on-call stormwater-focused contracts in the country. His responsibilities in these roles has afforded him the unique opportunity to explore a broad spectrum of stormwater-related issues, ranging from strategic planning to design and implementation. Examples of his project leadership include numerous green infrastructure master planning efforts, over 100 regional-scale green infrastructure retrofit design or pre-design projects, and ground-breaking watershed and BMP modeling analyses. He is especially passionate about finding innovative solutions to the challenging prospect of retrofitting existing urban landscapes and infrastructure to meet the compliance, water resiliency, and/or runoff management needs of municipal agencies. He continually pushes the envelope to improve his team's methods by inventing new processes, templates, and tools for creating effective and robust design concepts and modeling approaches for stormwater capture projects. This constant push for new approaches has yielded several key innovations, such as incorporating real-time control elements to boost BMP performance while meeting the integrated needs of watershed managers. As a former Air Force civil engineering officer, Mr. Helmle has brought the lessons learned to bear by developing cost-effective concepts for municipalities and numerous military installations alike, resulting in cost savings that spans into billions of dollars. Mr. Helmle strives to strike the ideal balance between form, function, and simplicity of operation.

Relevant Experience

As-needed Stormwater Engineering and Consulting Services, City of San Diego. Program Manager for a $25M, 5-year as-needed contract (2018 – 2019) and a $21.5M, 5-year as-needed contract (2014 – 2018) to provide the full spectrum of stormwater program support to the City, including all of the City's Water Quality Improvement Plans, stormwater capital project design, special scientific studies, BMP research and development, compliance reporting, and general permit support. Managed one of the largest stormwater contracts of its kind, helping the City gain attention on a national stage, especially with regard to cutting-edge BMP master planning, stormwater design, and innovative permit compliance strategies. Managed over 100 task orders worth nearly $30 million. Signature projects completed as part of this contract include: (1) a comprehensive watershed master plan that utilized first-of-their-kind modeling approaches to strategically identify and prioritize regional and green infrastructure project opportunities; (2) an innovative regional stormwater harvesting analysis that demonstrated the degree to which local stormwater capture can feasibly and realistically augment water supplies by upwards of 25%; and (3) regionally-critical re-negotiation of bacteria TMDL requirements that will set the stage for reducing municipal bacteria mitigation requirements across the state.

Watershed Engineering On-Call Contract, County of Los Angeles. Principal in Charge for $6M, 3-year as-needed contract to support the county with wide-ranging watershed services, including the design of regional BMPs in parks, regional master planning work, and piloting of innovative regional stormwater capture programs. Work for the County was recognized at the national and regional level as precedent-setting, especially in terms of applying technical innovation to solve emerging stormwater problems. Signature projects that Mr. Helmle has personally led include (1) the Multi-Agency Collaborative Stormcatcher Project, which demonstrated the feasibility of leveraging parcel-based real time control systems to capture runoff and augment water supplies; (2) the Lower Los Angeles River Revitalization Plan, which emphasizes a watershed-based approach to revitalizing a 19-mile long, two-mile wide reach of the LA River corridor; and (3) multiple park-based regional stormwater capture BMP designs intended to meet pressing TMDL compliance needs.

EDUCATION

M.S., Civil Engineering, Environmental Fluid Mechanics/Hydrology, Cornell University, 2005

B.S., Engineering and Environmental Science, University of Notre Dame, 1997

AREA OF EXPERTISE

- Green infrastructure
- Strategic planning
- Stormwater master planning
- BMP planning and engineering
- Integrated water resource management
- Low impact development
- BMP modeling
- Hydromodification management
- Stormwater management tool development
- Infrastructure assessment
- Military civil engineering
- Hydrology and hydraulics
- Water quality modeling
- Hydrodynamic modeling
- Guidance development

REGISTRATIONS/ AFFILIATIONS

2006, Professional Engineer (Civil), State of California (69525)

YEARS OF EXPERIENCE

22 years

CONTACT

Phone:
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Email:
Chad.helmle@craftwaterinc.com

LinkedIn:
linkedin.com/in/chad-helmle-588ab11/

Support for the City and County of San Francisco's MS4 Permit Implementation, San Francisco Public Utilities Commission (SFPUC). Principal in Charge. Provided contract and technical oversight for a task order-based contract to provide technical support to the SFPUC Regulatory Compliance Division over a 5-year period by developing program components for compliance with each element of the 2013 Phase II Permit. Streamlined program management and met required milestones through a combination of program evaluation and planning, establishment of program priorities, development of standard operating procedures (SOPs), development of outreach and training materials, creation or revisions to tracking systems and databases, and other activities to improve the efficiency and effectiveness of the MS4 program.

Chollas Creek Watershed Master Plan, City of San Diego, San Diego, CA. Project Manager for first dynamic, web-based Watershed Master Plan within the City of San Diego that build off of the recommendations made by the approved Water Quality Improvement Plans (WQIPs) and identify project-by-project priorities that will contribute towards compliance with the MS4 permit and TMDLs. Based on a ground-breaking watershed modeling framework, the project provided a comprehensive and adaptive plan containing specific projects and identified synergies with other programs (i.e., CIPs, flood control, hydromodification, stream restoration), and eliminated the inefficiencies of incremental and opportunistic project conceptualization.

Master Plan of Drainage, City of Huntington Beach, CA. Project Manager for the Master Plan of Drainage (MPD), including updating storm drain geospatial data, rapid development and execution of hydrology and hydraulics (H&H) models, assessment of system deficiencies, and prioritization of proposed improvements. Modeling was completed using customized PCSWMM models that account for the low-lying topography within the watershed, as well as pump station boundary conditions.

Strategic Green Street Implementation Plan, Dominguez Channel Watershed Management Group, 2/2017-12/2018. Principal-in-charge of developing a watershed-wide, strategic 5-year green street plan for the 80-square-mile Dominguez Channel Watershed (the most impervious watershed in the Los Angeles Basin). Implemented a novel programmatic framework to efficiently identify and prioritize street-scale project opportunities throughout the watershed. Led team to apply state-of-the-science understanding of green infrastructure to customizing green street configurations to specific environmental conditions and pollutants of concern. Facilitated coordination between nine permittees to incorporate institutional preferences and synergies into prioritization of green street configurations and locations. Ensured clear communication of results using an interactive web-based mapping application to streamline multi-agency review and data transfer with city engineers/scientists/planners, and to enable transparency with regulators/non-governmental organizations.

Green Infrastructure Master Plan, City of San Diego, CA. Project Manager to create a green infrastructure master plan for a 7-square mile pilot area in the City of San Diego. While the WQIPs established well-documented water quality goals and identified specific stormwater capture targets for each individual subwatershed, they lacked the high-resolution data needed to identify specific project needs. This master planning effort leverages a number of key innovations to create new datasets that allow for the identification of specific project opportunities, quantification of their potential costs and water quality improvement, and prioritizes them based on their potential for synergy with other existing infrastructure programs in the City. This project will redefine what constitutes a green infrastructure opportunity by outlining specific project characteristics, evaluating strict feasibility criteria, and taking advantage of cost-saving techniques such as linking related projects and integrating real time controls. Ultimately, the output of this project provides a project-by-project master strategy for achieving compliance while focusing on high-efficiency projects first and leaving the low-efficiency projects for the end.

Cottonwood Creek Watershed LID Retrofit Plan, City of Encinitas – Project Manager. Collaborated with the City to develop a cutting-edge plan for the strategic implementation of green infrastructure to improve storm water quality and reduce the impacts of frequent flooding in the watershed. The approach involved engineering and modeling analyses to provide and a robust technical foundation for the study and a strong public outreach and training campaign designed to communicate the plan to the public and generate support. A comprehensive summary of watershed conditions characterized pollutant loading issues, locates nuisance flooding areas, and identifies feasible locations for green infrastructure retrofits. A model was developed to establish a baseline condition and further GIS and field investigations are performed to narrow the list of retrofit possibilities to a shorter list of high-potential sites. Ultimately, this information was loaded into a SUSTAIN model that used a cost-optimization routine to identify the lowest cost series of green infrastructure retrofits necessary to meet the water quality and flood control objectives required. Once the optimization results were complete, the candidate projects were prioritized and conceptual designs and cost estimates were developed for the highest priority sites and incorporated into public outreach programs and training seminars.

Pilot Green Infrastructure Project Prioritization System, City of San Diego, CA. Project Manager to develop a pilot-scale green infrastructure project prioritization system to allow the City's to make data-driven project decisions in an easily accessible and understandable platform. The system includes three key elements: (1) Using LiDAR data and advanced image processing algorithms, GIS layers of green infrastructure opportunities and their associated tributary drainage areas were developed with greater than 95% accuracy; (2) High-resolution data were linked to the City's watershed modeling systems, and a series of "rules" were developed to prioritize each individual candidate project by its effectiveness and efficiency relative to other projects; (3) A web-based platform was developed to allow users to easily access and explore the data, enabling users to examine different prioritization scenarios across programs, such as LID on public land, green streets, and regional projects. The project prioritization system gives the City the ability to generate an "optimized" CIP that includes cross-program synergy and quantifies the potential cost savings that might result from coordination between programs.

Green Infrastructure Master Plan, Scott Air Force Base (2014). Project Manager for developing a unique modeling approach for demonstrating the effectiveness of green infrastructure for meeting both water quality and quantity objectives – simultaneously

achieving compliance for development projects while also resolving nuisance flooding in affected areas. The project approach involves a comprehensive field survey and model analysis to investigate individual flooding areas and reconnaissance-level surveys to identify candidate locations for LID and green infrastructure in the flooding drainage area. A SUSTAIN model is used to evaluate green infrastructure scenarios to identify the lowest cost solution that achieves the flood mitigation and development-related stormwater management objectives. Ultimately, the results of the green infrastructure optimization analysis are incorporated into a green infrastructure planning and sizing tool and conceptual BMP plans are integrated into the final Green Infrastructure Master Plan. This is a first-of-its kind multi-objective approach to be used at an AFB and is expected to pave the way for similar cost-saving efforts at other installations where nuisance flooding is present.

Integrated Stormwater Capture Strategy Pilot, City of San Diego, CA. Project Manager to quantify at the planning-level the potential water supply benefits and challenges of capturing treated effluent from green infrastructure to offset potable water supply. Given the billions of dollars of investment needed to capture stormwater to meet water quality goals in the San Diego area, this analysis evaluates the possible cross-connection between the yet-to-be-constructed stormwater capture infrastructure and the existing (and soon-to-be-upgraded) water reclamation infrastructure. Innovative new approaches are being evaluated to determine whether or not such a cross connection is feasible and cost-effective. Several metrics are being developed to support this analysis, such as unit water supply augmentation costs and quantification of water resiliency and risk. The results of this study will set the stage for a potentially unprecedented distributed stormwater capture and water supply augmentation system.

Safe, Clean Water Program Credit Trading Framework Development, Los Angeles County Flood Control District, 5/2019-Present. Principal-in-charge of providing strategic planning and program management consulting in support of developing a credit trading program that includes direct linkage to municipal stormwater Permit compliance, and that also advances the parallel goals of the Safe, Clean water Program—namely, water supply augmentation, nature-based solutions, and community investments. Establishing a framework for a strategic, market-based stormwater management program that (1) clearly satisfies Permit requirements, (2) meaningfully prioritizes multiple benefits, and (3) allows for and encourages third-party participation/investment. Specific deliverables that were developed in close collaboration with the County and The Nature Conservancy included draft ordinance language, a public-facing framework document, a workplan for further advancement of the stormwater market programs, and preparation of content and facilitation of outreach meetings with key stakeholders, including the business community and environmental advocates.

Multi-Benefit Stormwater Capture Projects for the Upper San Gabriel River Watershed Program, City of Industry, 5/2019-Present. Principal-in-charge providing strategic planning oversight.

Lower San Gabriel River Watershed Project Studies, John Hunter and Associates, 5/2019-Present. Principal-in-charge providing strategic planning oversight.

Storm Water Harvesting and Use Study, City of San Diego, 4/2019-Present. Principal-in-charge of coordinating with City Transportation and Storm Water Department and Public Utilities Department to develop a draft framework for City-wide stormwater capture planning, which will be fully built-out by our team during the following fiscal year. Also outlined presentation content to be delivered to communicate findings to the City Council Environmental Committee.

Strategic Project Pilot Study for Compton Creek Watershed, Los Angeles County Department of Public Works, 7/2018-5/2019. Principal-in-charge of inventing, implementing, and validating a strategic method for stormwater capture project planning for the 2,680 square miles of watershed that is managed by Los Angeles County Flood Control District. High-resolution data and on-the-ground engineering provided the foundation for project identification and screening, then analytical tools were used to characterize potential performance using meaningful metrics (e.g., average annual volume captured, annual pollutant load captured). The approach was pilot tested in a representative area of the County before expanding Countywide. Upon completion, the pilot study provides a framework for data-driven project selection and a standard "currency" to credit the County for building projects downstream from their Unincorporated areas, and also to trade credit with upstream cities when the County builds downstream projects.

Adaptive Management and Annual Reporting, Upper Los Angeles River and Dominguez Channel Watershed Management Groups, 5/2018-12/2018. Principal-in-charge of developing of MS4 Permit-required annual reporting for the Los Angeles River (the largest watershed in Los Angeles County) and Dominguez Channel (the most impervious watershed in Los Angeles County). Included generation of graphic-heavy documents that "tell a story" about the watersheds instead of simply reporting the facts. Also included adaptive management analysis to identify methods for streamlining watershed management programs and reducing overall costs to permittees. Adaptive management recommendations provided permittees with meaningful information to negotiate permit terms with regulators.

Dominguez Channel Watershed Management Group Report of Waste Discharge (ROWD), South Bay Cities Council of Governments, CA. Principal-in-charge for the development of the ROWD for the Dominguez Channel Watershed Management Group (DC WMG), which pioneered innovative regulatory reporting in the Los Angeles Region. The DC WMG requested an overhaul to the traditional MS4 documentation method in order to reflect the challenging conditions within the watershed, as well as the unique compliance approaches that are being implemented. Led development of a comprehensive "watershed story" that showcased the progressive vantage point of the DC WMG, while also serving as the requisite MS4 Permit reapplication and initial iteration of the adaptive management process.

Oliver D. Galang, PE, ENV SP, QSD/P, QISP
Principal Engineer

Experience Summary

Oliver Galang has more than 30 years of professional engineering experience in planning, design, construction, and program management of multi-million-dollar municipal capital improvement projects, specifically in water resources and stormwater infrastructure throughout southern California. He has extensive experience in the areas of water resources, stormwater and urban runoff management, water quality monitoring programs, flood management, and various types of green infrastructure. He is currently leading Craftwater Engineering's Water Resources services in the Los Angeles County area. Highlights of Oliver's career also include service as the Head of the Los Angeles River Watershed for the Los Angeles County Department of Public Works. His responsibilities included staff management and direction for the planning of multi-use, multi-benefit projects, with an estimated construction value of more than $60 million, along the Los Angeles River. He served as the Head of the Data Management Section for Los Angeles County Department of Public Works and was responsible for an annual budget of more than $10 million in urban runoff and stormwater quality monitoring programs, including Los Angeles County Flood Control District (LACFCD's) National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Monitoring Program. He was also responsible for managing the operations of the LACFCD flood control and water conservation system, which consisted of 14 reservoirs, 500 miles of conveyance channels, and 27 groundwater recharge facilities.

Relevant Experience

Arroyo Seco – San Rafael Wetlands and Restoration Stormwater Capture Project

Principal Engineer. This project consists of the development of a Feasibility Study and 10% Design a regional stormwater capture project that incorporates creek restoration, natural treatment wetlands, and stormwater use for irrigation. The project consists of 2 locations along the Arroyo Seco Channel in the Cities of Pasadena and South Pasadena. The project is intended to address the Cities of Pasadena's and South Pasadena's water quality actions required under the Upper Los Angeles River Enhanced Watershed Management Program. He was responsible for managing the development of the feasibility study, meeting with the Cities, stakeholders, and assisting the City with securing $5 Million in funding from the Safe, Clean Water Program.

Bellflower Water Capture Project at Caruthers Park, Phase I and II

Project Manager. This project consists of the design and construction of a regional stormwater BMP Project at the City of Bellflower's Caruthers Park. The project consists of a storm drain diversion structure, 7.5-acre-foot underground infiltration and storage facility, and pump station to the sewer and return flow to the storm drain. The project is intended to address the City of Bellflower's water quality actions stated under the Los Cerritos Channel Watershed and the Upper San Gabriel River Enhanced Watershed Management Programs. Oliver is leading the project development team and coordinating these efforts with the City Project Team and the LACFCD.

Carson Water Capture Project at Carriage Crest Park, Phase I and II, Sanitation Districts of Los Angeles County

Project Manager. This project consists of the design and construction of a regional stormwater BMP Project at the City of Carson Carriage Crest Park. The project consists of a storm drain diversion structure, 13.4 acre-foot underground storage facility, and pump station to the sewer and return flow to the storm drain. The project is intended to address the City of Carson's water quality actions stated under the Dominguez Channel Watershed Management Area Group's Enhanced Watershed Management Program. Oliver is leading the project development team and coordinating these efforts with the County Sanitation Districts, LACFCD, and the City Project Team.

EDUCATION

B.S., Civil Engineering, California State University, Fullerton, 1993

Engineering Management Graduate Studies, California State Polytechnic University, Pomona, 2005

AREA OF EXPERTISE

Water Resources, Storm water Compliance, Water Quality Monitoring Programs, BMP Design, Drainage Design, Flood Control, and Groundwater Recharge

MS Project, Primavera Scheduling

REGISTRATIONS/ AFFILIATIONS

Civil Engineer 56558, California, 1997

TRAINING/CERTIFICATIONS

Envision Sustainability Professional, November 2014

Qualified SWPPP Developer (QSD/P)

Qualified Industrial Storm Water Practitioner (QiSP)

YEARS OF EXPERIENCE

30 years

CONTACT

Email:
Oliver.Galang@craftwaterinc.com

Tel. 213.598.4178

Bolivar Park Water Capture Project, City of Lakewood Public Works Department, Lakewood, California

Project Manager. Phase I of this project consists of the development of two project concepts that will divert wet-weather and dry-weather urban runoff from the Los Cerritos Channel to an underground infiltration gallery or storage system at two City Parks, resulting in the development of 10% design documents for two City Park Regional BMPs. Phase II consisted of the development of the final design documents for an innovative regional BMP at Bolivar Park. Phase III includes the design support services during construction of the regional BMP. Oliver is leading the project development team and coordinating these efforts with the City Project Team and leading the coordination with the LACFCD.

Mayfair Park Water Capture Project, City of Lakewood Public Works Department, Lakewood, California

Project Manager. This project consists of the development of a regional BMP that will divert wet-weather and dry-weather urban runoff from the Los Cerritos Channel to an underground infiltration gallery or storage system at Mayfair Park. The project consists of the development of final design documents for an innovative regional BMP at Mayfair Park that includes stormwater capture and use for irrigation. The diversion structure consists of an air-inflated rubber dam and inlet structure. The discharge options include sanitary sewer discharge or filtration and discharge into the storm drain system. Oliver is leading the project development team and coordinating these efforts with the City Project Team and leading the coordination with the LACFCD.

AB 530 Lower Los Angeles River Revitalization Plan, Vernon to Long Beach, Los Angeles County Department of Public Works, California

Project Manager. This project consists of the development of a visionary, community-based revitalization plan for the 19-miles of the Los Angeles River, from Vernon to Long Beach. The project is being developed in response to Assembly Bill 430, which requires the development of the Lower Los Angeles River Working Group and the development of a revitalization plan that addresses the unique and diverse needs of the Lower Los Angeles River. Oliver, on behalf of the LACFCD, Rivers and Mountains Conservancy, and Assemblyspeaker Rendon, is managing the direction of the technical documentation for the Working Group, the technical teams in assessing the multiple facets of the revitalization plan, which includes a robust Community Engagement Program, assessment of the Community Economics, Public Recreation needs, sustainable water resources, and environmental enhancement opportunities.

Echo Park Lake Rehabilitation Project, City of Los Angeles, Bureau of Engineering, Los Angeles, California

Project Manager. He managed the construction phase of this $50 million project, including reviewing contractor submittals, responding to requests for information, and preparing weekly reports. This rehabilitation project was funded by the City's Proposition O Clean Water Bond. Project goals were to characterize the sediments of the existing lakebed, quantify contaminated soils, design in-lake improvements for a constructed wetland, design surrounding parkland BMPs, and provide vegetation, habitat, and parkland improvements.

Lake Hodges Reservoir Water Quality Assessment Study, City of San Diego, California

Project Manager. This project consists of an evaluation of the Lake Management issues in the reservoir and the development a conceptual design report with those recommendations. This study evaluated water quality challenges in the reservoir, including algae, regulatory demands, and quagga mussel controls in the reservoir. Scope of work also includes the development of a hydrodynamic model to estimate the potential changes to the reservoir as a result of the proposed alternatives including algae harvesting wetlands and a speece cone. He was responsible for managing the project, coordination with the stakeholders, conducting the conceptual alternatives workshop, and the development of the conceptual planning report documents.

State Route 73 Conversion from Pilot to Approved BMPs, Caltrans District 12

Technical Lead. Oliver evaluated pilot best management practices (BMPs) and developed improved skimmer designs for four pilot BMPs with skimmer outlets. This project provided a conversion plan of 22 pilot BMPs to permanent BMPs located along State Route 73 for the California Department of Transportation, and the re-design, construction, and installation of improved skimmers. He developed three concepts for improving the pilot BMP basins with skimmer outlets. These concepts consisted of improvements to the intake system, and operation and maintenance procedures.

Agua Hedionda and Calaveras Creek Channels Dredging Project, City of Carlsbad, California

Project Manager and Technical Lead. This project consists of the preparation of design plans and specifications for sloping rip rap drop structures and excavation to improve the flood control capacity of the channels. He is responsible for project management and for the development of the design documents for the City.

North Tecolote Canyon Creek Crossing, City of San Diego Public Utilities, California

Technical Lead. This project involves the development of stream crossings along the Tecolote Canyon. The stream crossings will support the City's Public Utilities to access and maintain the sewer pipeline system within the canyon areas of San Diego.

Regional Stormwater Facility Feasibility Study, City of San Jose, California

Technical Lead. The Regional Stormwater Facility Feasibility Study project consist of the evaluation of the City's requirements under the San Francisco Bay Municipal Regional Stormwater NPDES Permit for meeting Low Impact Development and Hydromodification requirements for developments and redevelopments. He was responsible for conducted the review of the permit requirements, evaluating similar programs and projects to address these requirements, and develop an approach for alternative compliance methods.

craftwater engineering, inc.

Merrill Taylor, PE
Principal Project Manager

Experience Summary

Mr. Merrill Taylor is a water resource design engineer providing support to federal, state, and municipal clients in the areas of hydrologic, hydraulic and water quality studies, storm drain and regional retention/infiltration facilities design, and plan, specifications, and estimate development, currently focusing on feasibility and design projects in Southern California. Specifically, he serves as project manager and technical lead for the research, design, and implementation of storm water management practices intended to mitigate flooding and improve water quality, including multiple projects in the Los Angeles and San Diego Region. Project experience includes full hydrology and hydraulics analyses of existing and proposed storm drain networks, design of regional retention/detention facilities including evaluation of the inflow diversions, storage capacities, and outflow/infiltration possibilities, and development of construction ready plans, specifications, and estimates for storm drain replacement and proposed regional facilities. He also provides engineering support to municipal clients to ensure practicality during the development of watershed management plans and hydromodification management plans to support BMP/LID implementation. He has practical experience in many facets of water resource engineering, with an in-depth understanding of the relationship between hydrology/hydraulics, water quality, watershed management, and regulations.

Relevant Experience

Santa Monica MS4 Compliance & Trash Reduction Project. City of Santa Monica. Project manager leading the evaluation of two potential stormwater treatment projects (Pico-Kenter Outfall Trash Capture and Memorial Park Stormwater Capture) and a Green Street Master Plan to help the City of Santa Monica gain a greater understanding of their progress towards MS4 Compliance. The project researched various trash capture strategies at the outfall, modeled hydraulic impacts, and estimated costs. Developed 10% level conceptual designs to support future grant application opportunities.

Greer Park Drainage Improvement Project Feasibility Study. City of Huntington Beach. Project manager leading the evaluation of potential stormwater improvements to mitigate localized flooding occurring around Greer Park. During storm events, the grass area around the pond and the streets surrounding the park become inundated with flow completely covering lanes of traffic and creating a safety hazard. The existing pond acts as a system sump with an outlet that does not have sufficient pressure to push water into the main storm drain during rain events necessitating a mobile pump to reduce flooding within the neighborhood. The project was identified within the Huntington Beach Master Plan of Drainage and we are modeling the existing condition and potential solutions within the PCSWMM platform. Results will be summarized within a concept design that the City can use to position for a FEMA BRIC grant.

Fern Dell Restoration & Stormwater Capture Project Feasibility Study. Friends of Griffith Park. Preparing a Feasibility Study for a regional stormwater capture project for submission to the Safe, Clean Water Program for funding. The project included working directly with the non-profit group, Friends of Griffith Park. A stormwater diversion from an existing City storm drain to a 3 acre-feet storage system beneath an existing park area is proposed. Water collected in the subsurface storage system will be pumped up the site to help feed an existing creek that travels down through the site and supports a diverse ecosystem of plants and animals. Built up debris and sediment will be removed form portions of the creek to allow for the water to flow freely and native plants will replace non-native ones with a focus on water-efficient drought tolerant plants.

EDUCATION

M.S., Civil and Environmental Engineering (Water Resources), Brigham Young University, 2010

B.S., Civil and Environmental Engineering, Brigham Young University, 2008

AREA OF EXPERTISE

Feasibility Studies

Safe, Clean Water Program

Watershed hydrology and stormwater

Watershed runoff quality

Water quality modeling

Watershed management plan development

BMP modeling, evaluation, and design

Tool development

REGISTRATIONS/ AFFILIATIONS

Professional Engineer, California No. 81590, 2013

TRAINING/CERTIFICATIONS

Project Management Training

YEARS OF EXPERIENCE

14 years

CONTACT

Email:
Merrill.Taylor@craftwaterinc.com

Arroyo Seco-San Rafael Treatment Wetlands Project Feasibility Study – Pasadena and South Pasadena, CA (2020) Prepared Feasibility Study for two regional stormwater capture practices (San Rafael and San Pascual) located within open space near the Arroyo Seco Channel. The Feasibility Studies were prepared for submission to the Safe, Clean Water Program for funding. An infiltration basin is proposed to intercept wet weather flows from the San Rafael Creek and dry weather flows will be directed to a natural stream constructed above the San Rafael Creek concrete channel. The San Pascual site will treat wet and dry weather flows diverted from the Arroyo Seco Channel using a treatment wetlands. Native, natural landscaping will improve aesthetics of the spaces and provide habitat for wildlife and recreational use.

Monument Mesa/Friendship Park Border Field State Park Stormwater Capture Project. City of Imperial Beach. Provided technical engineering support in the evaluation of retrofitting the Monument Mesa/Friendship Park Border Field State Park with stormwater capture practices to reduce site flooding and decrease sediment runoff to improve site stability and lower required water use on-site. Performed on-site evaluations, identified the possible stormwater capture low impact development practices, and generated a preliminary conceptual design layout in coordination with the landscape architect. The conceptual layout incorporated feedback from the local community and project stakeholders to ensure each of their objectives were met. The project required coordination and collaboration between the California Department of Parks, the City of Imperial Beach, the University of San Diego Department of Urban Studies & Planning, the US Customs and Border Protection, and South Bay Community Services. Directed and presented at stakeholder meetings to build towards consensus for project elements and learn of the site history and concerns. Presented to the community groups through site tours in both English and Spanish.

Santa Monica Clean Beaches Project, Santa Monica, CA. City of Santa Monica. Providing engineering design support in water quality, hydrology, and hydraulic modeling to develop the full design of two subsurface runoff storage tanks that eventually divert flows to the Santa Monica Urban Runoff Recycling Facility for treatment and use. Evaluating multiple BMP configurations, diversions, footprints, and real time inlet and outlet controls to optimize capture volumes while minimizing costs. The project will assist the City of Santa Monica with complying with the bacteria reduction requirements for dry-weather flows.

Caruthers Park Stormwater and Urban Runoff Capture Project. Bellflower, CA. City of Bellflower. Providing modeling technical lead assistance in water quality, hydrology, and hydraulic modeling to develop the full design at Caruthers Park for the City of Bellflower to assist in compliance with the Los Cerritos Channel and Lower San Gabriel River Watershed Management Program requirements. Evaluating diversion from two possible channels/pipes, BMP footprints, and real time inlet and outlet controls to optimize the compliance with water quality targets while minimizing costs. Evaluating the irrigation requirements and potable water offset for the park and nearby City owned parcels through the use of dry and wet-weather flows.

Lakewood Stormwater and Runoff Capture Project. Lakewood, CA. City of Lakewood. Providing modeling technical lead assistance in water quality, hydrology, and hydraulic modeling to develop two full designs at Bolivar Park and Mayfair Park for the City of Lakewood to assist in compliance with the Los Cerritos Channel Watershed Management Program requirements. Evaluating multiple BMP diversions, footprints, and real time inlet and outlet controls to optimize the compliance with the water quality targets while minimizing costs. Evaluating the irrigation requirements and potable water offset through use of dry and wet-weather flows. Supporting the development of the 100% design plans for implementation.

Albion Riverside Park, City of Los Angeles. Provided engineering support in the full design of a regional BMP project to reduce pollutant loads and runoff volume for a 300-acre mixed residential and commercial watershed. Work included modeling the impacts of different diversion rates on the overall water quality and associated pollutant reduction. The design involved multiple BMPs and BMP types, including bioretention, permeable pavement, and subterranean infiltration basins. Full design plans will include details for multiple BMP configurations to serve as an example project to investigate the impacts of various components of BMPs implemented in a regional setting. A full geotechnical investigation, architectural renderings, and full construction cost estimates were included in the project.

Aliso Creek-Limekiln Creek Restoration Project, City of Los Angeles. Provided engineering and modeling support to develop a full design for stream retrofit at the confluence of Aliso Creek and Limekiln Creek. The project includes construction of several BMPs intended to divert, capture, filter, and use on-site in order to reduce contamination in the Los Angeles River Watershed. The proposed BMPs include low flow channel diversions, pre-screening treatment devices, stormwater pump stations, bioswales, vegetated detention/retention basins, the restoration of upland and riparian habitats, and educational components.

Alondra Park Multi-Benefit Stormwater Capture Project, County of Los Angeles. Providing project management and modeling lead support to develop a 30% design and preliminary engineering concept report for Alondra Park Multi-Benefit Stormwater Capture Project for the County of Los Angeles. Leading the team that is evaluating diversion from two possible pipes, various BMP footprints, and differing outflow treatments. Overseeing the evaluation of the irrigation requirements and potable water offset for the park. Observed the geotechnical investigations on-site and the preparation of the geotechnical reports.

Adventure Park Multi-Benefit Stormwater Capture Project, County of Los Angeles. Providing project management and modeling lead support to develop a 30% design and preliminary engineering concept report for Adventure Park Multi-Benefit Stormwater Capture Project for the County of Los Angeles. Leading the team that is evaluating diversion from two possible pipes, various BMP footprints, and differing outflow treatments. Overseeing the evaluation of the irrigation requirements and potable water offset for the park. Performing on-site water quality monitoring to establish the baseline condition including obtaining of all necessary access and construction permits.

Santa Fe Drive Corridor Bike & Pedestrian Improvements, City of Encinitas. Provided technical expertise and engineering support in the 100% design of a green street enhancement project to introduce a protected bicycle lane and incorporate bioretention and permeable pavements to reduce localized runoff. The design involved modeling and calculating the existing and the proposed runoff conditions and sizing the BMPs to ensure permit compliance. Our team led the development of the civil design sheets for the stormwater elements, prepared all specifications related to stormwater, and generated an engineer's estimate. The project is currently under construction.

Alamo, Salvation, and 68th Street Basins Low Impact Development Retrofit, City of San Diego. Providing engineering support in the 100% design of a green street enhancement project to reduce pollutant loads and runoff volume for a 10-acre commercial watershed. The design involves multiple BMPs and BMP types, including permeable pavement and suspended pavements. Design plans included details for multiple BMP configurations, designed as retrofits, to serve as a pilot project to investigate the impacts of various components of BMPs implemented in the right-of-way. A full geotechnical investigation, architectural renderings, and construction cost estimates are included in the project.

Bannock Avenue Green Street Design, City of San Diego. Providing engineering support in the full design of a green street enhancement project to reduce pollutant loads and runoff volume for a 65-acre mixed residential and commercial watershed. The design involved multiple BMPs and BMP types, including bioretention and permeable pavement. Full design plans included details for multiple BMP configurations, designed as retrofits, to serve as a pilot project to investigate the impacts of various components of BMPs implemented in the right-of-way. A full geotechnical investigation, architectural renderings, and full construction cost estimates were included in the project.

Elmer Avenue Paseo Retrofit, City of Los Angeles. Provided engineering and modeling support to develop project retrofits to the existing BMP configuration and design of BMP implementation along the Elmer's Paseo in Los Angeles, CA. The recently completed Elmer Avenue BMP retrofit project is experiencing high sediment loads creating fouling within the newly constructed infiltration galleries and bioretention areas. The Phase II efforts require additional retrofit design to prevent fouling and allow for the BMPs to function properly. A SWMM model illustrated the current conditions and potential future designs with their expected impact. The Paseo design requires the consideration of the upstream adjustments while providing for a removal goal of 4 acre feet per year. The design configuration is optimized using the SUSTAIN model and illustrates potential construction solutions.

Eagle Rock Boulevard: A Multi-Modal Stormwater Capture Project. Prepared SUSTAIN modeling and conceptual capture strategies for a regional stormwater capture project for consideration by the City of Los Angeles for submission to the Safe, Clean Water Program for funding. The project included working directly with StreetsLA to coordinate the current 710 North Mobility Improvement efforts with the desired stormwater improvements. The project consists of a stormwater diversion from an existing City storm drain to a 5 acre-feet storage system beneath the proposed improved median and a second diversion on Alumni Avenue to a series of dry-wells beneath a proposed pedestrian plaza. Water collected in the subsurface storage system will be infiltrated (if geotechnical investigations show favorable rates) while the surface runoff will be captured in bioretention cells and pervious pavement systems along the parking lanes.

Orpheus Avenue Drainage Improvements, City of Encinitas. Providing project management, public outreach, and engineering support in the 100% design of a green street enhancement project to reduce nuisance flooding and runoff volumes for a 153-acre residential watershed. The design involves multiple green infrastructure practices, including permeable pavement and bioretention. Design plans included details for multiple BMP configurations, designed as retrofits, to serve as a green solution to reduce flooding and mitigate peak flows thus limiting the need for traditional grey infrastructure solutions within the right-of-way. A full geotechnical investigation, architectural renderings, and construction cost estimates are included in the project.

Comparison of Gray versus Green Infrastructure Solutions. Encinitas, CA. City of Encinitas. Technical modeling lead to apply SUSTAIN to evaluate potential green infrastructure solutions to manage flooding at a prominent intersection in the City. Worked with modeling team to identify all BMP opportunities and develop a continuous simulation model to evaluate the hydrology and water quality improvement from multiple BMPs, including bioretention areas and permeable pavement. Compared hydrologic performance and cost of the green infrastructure solutions to proposed gray infrastructure retrofits.

Courtney Semlow, P.E., ENV SP, CFM
Civil Design Manager

Experience Summary

Courtney Semlow is a Project Manager with 18 years of professional experience. She has provided comprehensive site design and project management for diverse projects, including 1,000-acre mixed use subdivisions and military installation infrastructure throughout the United States and abroad. Courtney is knowledgeable in all aspects of civil design, including erosion control, water resource management, and road design. She is capable of navigating complicated regulatory requirements, while producing cost-effective solutions that exceed client expectations. Another core area of her work focuses on water quality and stormwater pollution prevention by implementing environmentally sustainable stormwater management solutions, including infiltration basins, permeable pavement, and rain gardens.

Relevant Experience

Wilmington Middle School Greening Project – Los Angeles, CA (2023)
Providing project management of the civil design for the replacement of over 14,000 square feet of existing underutilized asphalt pavement areas with green program spaces and outdoor classrooms. We completed a hydrologic analysis to determine stormwater runoff amounts and provided a stormwater treatment and drainage design to improve water quality and ensure proper outflow of stormwater.

San Jose Creek Bike Trail Hydrologic and Hydraulic Analysis– Placentia, CA (2023)
Provided oversight of hydrologic and hydraulic analysis for a proposed bike trail in Pomona, CA along the San Jose Creek concrete channel. We analyzed the existing areas draining towards the channel and recommended stormwater treatment BMPs that could be implemented along the project route. We also provided a hydrologic analysis of the adjacent park to determine if a more regional BMP could be implemented at the park.

Arroyo Seco Water Reuse and Stream Restoration Project– Pasadena, CA (2022-2023)
Providing project management of the design of two regional BMPs along the Arroyo Seco channel in Pasadena and South Pasadena. Tasks included performing hydrologic and hydraulic analysis of channel diversions to above ground infiltration BMPs. Dry weather flows will travel through a rock lined stream to an existing cobble stone channel connected downstream to a golf course where it will be stored, treated, and used for irrigating the golf course.

Atwood Bike Trail Hydrologic and Hydraulic Analysis– Placentia, CA (2022)
Provided oversight of hydrologic and hydraulic analysis for a proposed bike trail in Placentia, CA. The proposed bike trail is located adjacent to the existing Atwood concrete channel and will replace the access road. We analyzed the existing areas draining towards the channel and recommended stormwater treatment BMPs that could be implemented along the project route.

Red Morton Community Park Stormwater Capture Project Design– Redwood City, CA (2021-2023)
Providing project management for the City of Redwood City to design a multi-beneficial regional stormwater capture practice at Red Morton Community Park. The project is anticipated to divert stormwater from an existing box culvert to a 43-acre-foot underground storage system set underneath existing soccer fields. The synthetic turf of the soccer fields are typically replaced every 7-10 years and the timing of this project is set to correlate with that effort. The City and Craftwater have committed to providing a design that meets community desires and stormwater treatment requirements for this 1,650-acre drainage area.

Encanto Park Stormwater Capture Project Design– Duarte, CA (2021-2023)
Providing project management to design a multi-beneficial regional stormwater capture practice at Encanto Park in Duarte,CA. The project is anticipated to divert stormwater from an existing 72" storm drain to a 0.6-acre-foot underground infiltration storage system set underneath an existing soccer field. Excess stormwater that is unable to infiltrate will overflow and be treated by an additional filtration system before returning to the storm drain. Expanded landscaping areas within the parking lot will utilize drought tolerant, native plantings that will enhance the look of the parking lot and reduce potable water used for irrigation.

EDUCATION

B.S., General Engineering, University of Illinois Urbana-Champaign, 2005.

AREA OF EXPERTISE

Civil Site Design

Hydraulics and Hydrology

REGISTRATIONS/ AFFILIATIONS

Professional Engineer (Civil), CA C94417, MA, VA.

Envision Sustainability Professional (ENV SP)

Certified Floodplain Manager (CFM)

Member, The Association of State Floodplain Management

YEARS OF EXPERIENCE

18 years

CONTACT

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LinkedIn:
linkedin.com/in/courtneysemlow

Skylinks Golf Course Stormwater Capture Project Design– Long Beach, CA (2021)
Providing project management to design a multi-beneficial regional stormwater capture practice at Skylinks Golf Course in Long Beach,CA. The project is anticipated to divert stormwater from the existing Wardlow Channel to a 9.7-acre-foot underground infiltration storage system set adjacent to an existing golf course. Dry and wet weather flows will flow through the underground storage and be pumped to a surface wetland basin that is placed above the subsurface storage system. Excess stormwater will overflow and be treated by an additional filtration system before returning to the storm drain. Walking paths around the wetland cells, a sand volleyball court for the adjacent Fire Station, and a nursery for the Golf Course are additional project amenities that have been identified while working with project stakeholders.

El Dorado Park Regional Stormwater Capture Project Design– Long Beach, CA (2021)
Providing project management to design a multi-beneficial regional stormwater capture practice at El Dorado Park in Long Beach,CA. The project is anticipated to divert stormwater from the existing Artesia Norwalk Channel to a 13.9-acre-foot underground wetland system set in a currently underutilized area within El Dorado Regional Park. The storm diversion will utilize existing storm drain pipes and ditches to convey diverted runoff to the proposed wetland area which is approximately 1.5 miles away from the channel. Dry and wet weather flows will be treated by a proprietary pretreatment device before flowing through the wetland basin that is comprised of multiple cells and planted with native vegetation selected in collaboration with the El Dorado Park staff. Excess flows will go to an existing drainage ditch before outletting downstream at Coyote Creek. The project is also considering discharging some outflow to the sanitary sewer as the Long Beach Water Reclamation path is just south of the site.

Arboretum Natural Treatment Project Feasibility Study– Arcadia, CA (2020)
Designed 10% conceptual drawings and prepared Feasibility Study for a regional stormwater capture project submission to the Safe, Clean Water Program for funding. The project includes a stormwater drop-inlet diversion from the LACFCD Arcadia Wash Channel and a 4 acre-feet treatment wetland/recharge basin. Diverse natural landscaping will complement the overall aesthetic of the Arboretum and enhance the use of the space.

Heartwell Park at Clark Stormwater Capture Project Feasibility Study – Long Beach, CA (2021)
Managed design of 10% conceptual drawings and Feasibility Study for a regional stormwater capture practice adjacent to the Clark Channel for submission to the Safe, Clean Water Program. A Pre-treatment unit will remove pollutants from runoff diverted from the Palo Verde Chanel runoff before the water is temporarily stored in a 20 ac-ft subsurface storage system. Treated outflow from the underground storage will travel through a small existing lake where it will offset the need for potable water to sustain the lake's water level. Wetland cells will enhance the aesthetics of the lake and a naturalized stream will connect the lake overflow back to the existing channel.

Apollo Park Stormwater Capture Project Feasibility Study– Downey, CA (2021)
Managed design of 10% conceptual drawings and Feasibility Study for a regional stormwater capture project submission to the Safe, Clean Water Program for funding. The project includes a stormwater diversion from an existing LACFCD storm drain to a 10 acre-feet infiltration system beneath an existing baseball surface. New catch basins and storm drain are proposed at nearby intersections and will connect to the system and help alleviate local flooding. Reductions of impervious area, a green street, permeable pavement, and diverse natural landscaping provide onsite stormwater management and improve the aesthetics of the park.

Griffith Park Stormwater Capture Project Technical Research Proposal – Los Angeles, CA (2021)
Prepared Technical Research Proposal for a regional stormwater capture project for submission to the Safe, Clean Water Program for funding. The project included working directly with the non-profit group, Friends of Griffith Park. A stormwater diversion from an existing City storm drain to a 3 acre-feet storage system beneath an existing park area is proposed. Water collected in the subsurface storage system will be pumped up the site to help feed an existing creek that travels down through the site and supports a diverse ecosystem of plants and animals. Built up debris and sediment will be removed form portions of the creek to allow for the water to flow freely and native plants will replace non-native ones with a focus on water-efficient drought tolerant plants.

Heartwell Park at Palo Verde Stormwater Capture Project Feasibility Study – Long Beach, CA (2020)
Designed 10% conceptual drawings for a regional stormwater capture practice adjacent to the Palo Verde Channel for submission to the Safe, Clean Water Program. A Pre-treatment unit will remove pollutants from runoff diverted from the Palo Verde Chanel runoff before the water is temporarily stored in a 7.5 ac-ft subsurface storage system. Outflow from the underground storage will either go back to the existing channel or an existing sanitary sewer in Palo Verde Ave depending on the time of day and the flow rate. Additionally, a surface biofiltration basin will manage dry weather flows and provide a visual to the community of stormwater treatment practices.

City of Pasadena Storm Drain Master Plan and Watershed Assessment – Pasadena, CA (2021)
The project attempts to provide a comprehensive inventory of storm drain asset locations/conditions and conduct a watershed assessment to produce an EWMP implementation strategy for the City. Coordinated assessment and inspection of existing storm drain infrastructure and

provided technical guidance on interpretations and upgrade recommendations. Utilized planimetric data generated from LIDAR and aerial photos to identify and assess parcels in the City that had regional stormwater project potential. Factors considered included parcel owner, tributary area, parcel size, upstream impervious percentage and proximity to an existing drain line.

Santa Fe Drive Bike and Pedestrian Improvements – Encinitas, CA (2021)

Prepared conceptual stormwater plans for proposed green street improvements to Santa Fe Drive in Encinitas, CA. Available space for stormwater treatment is limited in the tight roadway corridor, therefore different treatment approaches are proposed such as pre-cast subsurface biolfiltration units located beneath pavement and surface biofiltration located within landscape islands where available. Underdrains are required due to high groundwater but limited existing drain infrastructure to connect to requires careful selection of treatment cell locations to minimize additional infrastructure costs.

SEAN PORTER, CPSWQ, QSD/P, QISP, IGP ToR

TECHNICAL LEAD — STORMWATER GREEN INFRASTRUCTURE DESIGN, O&M, WATER QUALITY, AND REGULATORY

OFFICE LOCATION
San Marcos, CA

EDUCATION
- M.S., Hydrogeology and Ocean Floor Fluid Geochemistry, Georgia State University
- B.S., Geology, Chemistry, Georgia State University

YEARS EXPERIENCE
24

PROFESSIONAL REGISTRATION
- ToR Industrial (IGP Trainer of Record #093 and Compliance Group Leader)
- QISP #093 Qualified Industrial Stormwater Professional
- CPSWQ #0751 Certified Professional in Storm Water
- Quality QSD/QSP #21876 Qualified SWPPP Developer

PROFESSIONAL ASSOCIATIONS
- Co-Chair Water Committee, San Diego Industrial Environmental Association (IEA)
- CASQA IGP Subcommittee
- SWRCB Industrial General Permit Reissuance Stakeholder
- County of San Diego Technical Advisory Committee, Stormwater Capture and Reuse
- City of San Diego Stormwater/ Wastewater Fee TAC Member

Sean has 24 years of experience specializing in water resource services with a background in stormwater, wastewater, urban and natural landscape, creek watershed studies, and groundwater. He is an expert in stormwater green infrastructure (GI), MS4 Permit compliance, NPDES permit program requirements, Areas of Special Biological Significance (ASBS) discharge requirements, total maximum daily loads (TMDLs) allocations and monitoring, and publicly funded research-driven watershed studies. His experience includes consulting, training, monitoring and reporting for GI and trash capture projects for state, municipal, transportation, federal, and low impact development. Currently an Industrial General Permit (IGP) Trainer of Record (ToR), Qualified Industrial Stormwater Practitioner (QISP), he develops innovative solutions that enhance quality, maximize efficiency, improve safety, and increase responsiveness.

PROJECT EXPERIENCE

City of San Diego Stormwater Department | Green Infrastructure Group 1012; San Diego, CA

Southern California Water Lead. Sean is overseeing the detailed design of the GI Group 1012 project to create green infrastructure and stormwater quality improvements to the Logan Heights Neighborhood of San Diego. Improvements include the installation of three new linear modular wetland systems, storm drain inlets and pipelines, cleanouts, curbs and gutters, sidewalks, pavements, and work to restore improvement site areas to original conditions. GI Group 1012 is one of the first priority projects to be implemented by the City under the WIFIA stormwater program.

Unified Port District of San Diego | BMP Inspections and Maintenance; San Diego, CA

Stormwater Program Manager. The District owns and operates nearly 200 individual stormwater treatment control Best Management Practices (BMPs) installed throughout the Port Tidelands. The project includes trash capture devices and other pollutant reducing BMPs including storm drain inlet filters from various manufacturers, pervious pavements, proprietary devices such as Continuous Deflection Systems (CDS) units or modular wetland systems, bio- retention facilities, and media filters installed at

various District locations. With a large variety of BMPs, the Port is required to maintain compliance with their NPDES Stormwater Permit and ensure inspection and maintenance tracking is both accurate and efficient.

Los Angeles County Public Works | Safe Clean Water, BMP O&M Training; Los Angeles, CA

Water Lead. Providing Best Management Practice (BMP) operation and maintenance O&M inspections, maintenance training for Public Works staff, and to creation of customized video content for deployment under the County's Workforce Development plan. LACPW has also allocated a $1.1M contract capacity for to develop project- specific post-construction stormwater training media to support LACPW O&M, water quality monitoring, and BMP effectiveness monitoring of constructed and planned multi-benefit projects to address runoff water quality. Numerous projects are part of the scope of work, including, the East Los Angeles Sustainable Median Stormwater Capture Project, Ladera Park Stormwater Capture Project, Gates Canyon Park Regional BMP Project, Adventure Park Multi-Benefit Stormwater Capture Project, and up to six-Green Street Projects.

City of Santa Monica | Engineering and Street Services Division, BMP O&M Services; Santa Monica, CA

Stormwater Program Manager. The City owns, operates, and maintains a variety of structural stormwater BMPs. The list of structural BMPs includes over 600 individual BMPs such as storm drain inlet filters from various manufacturers, Low Impact Development (LID) BMPs such as porous pavement and pavers, biofiltration or bioretention BMPs, and vegetated swales. The City owns over 580 structural controls such as connector pipe screens (CPS), Automatic Retractable Screens (ARS), and sub-grade structures (CDS units and Contech Stormfilters) to capture and prevent trash from discharging to the beaches. These BMPs are installed at various City locations including roadways, sidewalks, and parks. Sean provided management and oversight including quarterly inspections and trash removal from over 580 CPS devices within the City jurisdiction, semi-annual inspections of over 50 LID-type BMPs, and operation and maintenance of two rainwater harvesting systems at Los Amigos Park and Marine Park.

Caltrans | Caltrans Construction Storm Water Training (Contract 43A0314); Statewide, CA

Principal Scientist. Sean delivered live, in-person stormwater trainings to Caltrans and developed online stormwater training based on the content of training Modules 1, 2, and 7, including additional learning evaluation quiz material to promote information retention by the student. Sean worked closely with Caltrans and Aztec Productions to; develop each Module storyboards; collect field video and photos using drones and steady-cams; develop figures and animations; video of instructors delivering trainings; field footage of stormwater BMP implementation; examples of installation of construction site BMPs; and other applicable video footage.

Waste Management | IGP Compliance; San Diego, CA

Senior Project Manager. Responsible for managing a design package installation of several structural BMPs for this large, solid waste client. Based on the updated SWPPPs compliant with the 2014 IGP, the project involves development the design documents to a roughly 35 to 40% complete level, develop a bidders list with quantities, and deliver the package to the client for implementation efficiency. The BMPs are engineered to provide water quality improvements to assist the client in Permit compliance by reducing the pollutants in discharge from the sites.

City of Poway | MS4 Compliance; Poway, CA

Senior Technical Advisor. The Poway Development Services Department is required to perform annual inflow/outflow sampling of five flood control basins within the City's business park that have been converted into permanent SUSMP treatment BMPs. The project designed the sampling points using automated sampling equipment which are triggered to begin sampling upon initiation of flow which resulted in a cost savings for the City. The sampling was conducted during one rain event per year to demonstrate the effectiveness of these basins at reducing pollutant loads.

Profession:
Civil and Environmental Engineer

Current Position:
Chief Commercial Officer, Epic Cleantec

Years of Experience:
17

Qualifications:
- PMP Certified (December 2016)
- Delivered over $100MM in successful projects
- Trained New Product Introduction (NPI) specialist

Professional Associations:
- USBGC
- ILFI Ambassador
- AIA
- American Water Works Association
- WateReuse Association
- US Water Alliance
- Water Environment Federation

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ERIC HOUGH, PMP

PROJECT EXECUTIVE

With 17 years of water reuse project delivery experience that spans engineering, project management, and sales, Eric is responsible for laying the foundation for success in each of Epic's projects. By maintaining a focus on the business case for water reuse, Eric thrives on connecting development projects with the best, value-driven water conservation solutions.

PROFESSIONAL EXPERIENCE

NSU
Vice President, Business Development
July 2011 - Feb 2021

Responsible for leading business development initiatives for onsite water treatment and reuse systems within the Western region. Tasked to lead Design/Build and Operations (DBO) project deliveries and client relations support for existing customer base to grow the Western DBO business while also assessing and developing Ownership (Water Purchase Agreement – WPA) opportunities.

William J. Worthen Foundation
Board of Directors
Aug 2017 - Sep 2019

Supported the strategic and organizational planning efforts for the foundation, a 5013c that provides a forum for design, policy, and practice professionals in the urban design and construction industries.

Cambrian Innovation
Senior Project Manager
Aug 2014 - Sep 2016

Accountable for the success of the company's portfolio of projects relating to the development, design, manufacturing, commissioning, and operation of wastewater systems in the western United States. Projects were highly technical, focusing on the development of anaerobic digesters, membrane bioreactors (MBR), solids handling, dewatering systems, and reverse osmosis wastewater treatment systems.

Enaqua
Project Manager
Oct 2008 - July 2014

Led company's delivery efforts for 40+ international water, wastewater, and water reuse installations. Other duties included instrumentation and controls engineering, developing sequences of operations and PLC controls for industrial equipment.

SELECTED PROJECTS

Microsoft Silicon Valley | Blackwater Project
Project Executive
Aug 2017 – Nov 2020

Led the successful delivery of a 20,000 gpd blackwater system for Microsoft's 644,000 square foot Mountain View campus. The project consisted of treatment process design, preparation of Water Reuse Engineering Report, controls integration, construction oversight, and system The project is targeting LEED Platinum, Net Zero Water per the Living Building Challenge, and Well Building Standard certification. The project has been designed to ensure that 100% of its non-potable demand will be offset by a recycled water system that reclaims, treats, and re-uses rainwater, stormwater, greywater, and blackwater for the project and building site. Through a variety of efficient technologies, landscape restoration, and the minimizing of wasteful independence between water and energy, the project has the potential to be Living Building Challenge Net Positive Water contributing back to the local depleted ecology.

Google Bay View
Project Executive
January 2020 – March 2020

Responsible for coordinating a complete scope, of work, trade and vendor selection and buy-out, creation of baseline schedule, and budget. Details about the project scope, budget, approach, and status are CONFIDENTIAL.

Lagunitas Brewing Company
Senior Project Manager
Aug 2014 – Sept 2016

Led overall project delivery of a 80,000 gpd onsite wastewater treatment and water reuse system or a local brewery. cope included process design, permitting coordination, construction oversight, commissioning and operation of an 80,000 gallon per day MBR system. Client chose to install an onsite treatment system to reduce water and sewer utility fees and to reduce overall water consumption. Water recycling system produced water for flushing of process lines, rinsing, brewery equipment cleaning and washdown. System generated electricity from methane gas, a byproduct of the treatment process, and recovered waste heat from power microturbines for preheating of brewery boiler systems.

Bear Republic Brewing Company
Senior Project Manager
Aug 2014 – April 2016

Led overall project delivery of a 40,000 gpd onsite wastewater treatment and water reuse system for a local brewery. Scope included process design, permitting coordination, construction oversight, commissioning and operation of an 40,000 gallon per day anaerboic digester system. System generated electricity from methane gas, a byproduct of the treatment process, and recovered waste heat from power microturbines for preheating of brewery boiler systems.

San Diego Advanced Water Purification Facility
Project Manager
Nov 2010 – May 2015

To address water security concerns for the city of San Diego, project team designed and constructed a 1 million gallon per day Advanced Water Purification Facility. Project was implemented to demonstrate the viability of Indirect Potable Reuse, which ultimately resulted in 'Pure Water San Diego, a much larger project that will meet up to 30% of San Diego's potable water demand. Turnkey Design-Build delivery included ultrafiltration, reverse osmosis, ultraviolet disinfection and advanced oxidation using hydrogen peroxide, followed by chlorine disinfection.

San Vicente Wastewater Treatment Plant Expansion
Project Manager
Oct 2011 – Dec 2013

Expansion of the existing San Vicente Wastewater Treatment Plant to increase the average dry weather flow capacity from 0.60 million gallons per day (mgd) to 0.80 mgd. Project included the following three major components: 1.) improvements and additions to the treatment process facilities at the reclamation plant site; 2.) construction of a new, 93 acre-foot storage pond and stream diversion channel on-site, west of the existing storage ponds; and, 3.) construction of a reclaimed water line from the new storage pond and under San Vicente Road to the San Vicente Golf Course, located approximately 1.5 miles to the east of the site.

Kohanaiki Resort
Project Manager
Oct 2011 – Dec 2013

Turnkey delivery of an advanced membrane treatment system, including pre-treatment and energy recovery. System sized to treat high TDS water in order to deliver water for salt-sensitive landscaping and golf course.

Hotel Marina Resort
Project Manager
Jan 2013 – June 2014

Turnkey delivery of an advanced membrane treatment system for luxury resort in El Cid, Mexico. . System designed to produce 128,000 gpd of potable water.

Project Dugway
Project Manager
Jan 2012 – May 2014

Turnkey delivery of an advanced membrane treatment system for federal testing facility located in Utah. System designed to produce 150,000 gpd of potable water.

MEGAN THOMAS, PE, PMP

PROJECT DIRECTOR

Having held positions spanning engineering, project management, and global operations, Megan brings broad organizational experience to her work at Epic. Megan fuses her passions for real estate, resilient design, and water stewardship to accelerate the adoption of sustainable infrastructure solutions.

Profession:
Civil Engineer

Current Position:
Director of Operations, Epic Cleantec

Years of Experience:
11

Qualifications:

- Bachelor of Science (Cum Laude), Civil & Environmental Engineering; Business Minor - University of Utah
- Project Management Professional (PMP)
- Professional Engineer (PE)

PROFESSIONAL EXPERIENCE

CBRE @ Salesforce - Global Real Estate and Workplace Services
Program Manager
Sep 2018 - Dec 2020

Oversaw Americas West design and construction program, performing high-level budget and schedule monitoring, vendor onboarding and performance review for delivery of ~1M SQFT in 2019. Developed & maintained Global Workplace Services playbook for operational alignment and workplace process governance of 130+ offices, 5M+ SQFT. Provided regular and ad-hoc reporting to keep client's executive management apprised of project status

Arup - Global Design Consulting
Project Manager & Senior Engineer (San Francisco)
Nov 2015 - Sep 2018

Built San Francisco Project Controls practice from zero to $75M+ portfolio of technology, infrastructure, and building projects with clients like Google, WeWork, Salesforce, and BART. Implemented financial (earned value), schedule, risk, and change management processes and tools for projects and programs ranging from $10K to $10M.

Project Manager & Engineer
(Hong Kong)
Aug 2012 - Aug 2015

Managed successful design delivery of multi-disciplinary building and infrastructure projects

Empowered Energy Solutions, Inc.
Director of Operations & Project
Manager Aug 2010 - Dec 2011

Managed successful design delivery of multi-disciplinary building and infrastructure projects

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SELECTED PROJECTS

Salesforce Denver Colorado
Program Manager
Sep 2019 – Dec 2020

- 64,000 RSF
- Design and construction of corporate office build-out including three floors delivered in two phases. My role included onboarding the project team and providing high-level budget, schedule, and risk management.

Salesforce Dallas Texas
Program Manager
Jan 2019 – Mar 2020

- 117,000 RSF
- Scope: Design and construction of corporate office build-out including four floors delivered in two phases. My role included onboarding the project team and providing high-level budget, schedule, and risk management.

Commercial Management & Project Controls – Various Projects
Project Controls Manager
Nov 2015 – Sept 2018

- Brief scope for selected projects provided below. My role was to manage commercial performance of projects & programs in San Francisco, New York, and Toronto. On a given project, this typically included project setup, creation of change and document control procedures, financial forecasting and monitoring, earned value and trend analysis, change management, risk management, cash flow and invoice management, subconsultant cost and scope monitoring, and schedule monitoring.

Selected projects & brief scope:

- WeWork Program of Projects - office MEP & IT fit-out
- Salesforce Portfolio of Projects - office MEP & IT fit-out
- Splunk Santana Row - office MEP & IT fit-out
- 555 Howard - MEP design for hotel/condo development
- Stripe 510 Townsend - office MEP & IT fit-out
- Finch West LRT - transport planning & multi-disciplinary engineering ($1B project cost)
- BART Portfolio of Projects - transport planning & engineering, including Bart to Livermore extension
- CCTA Portfolio of Projects - transport planning
- Bay Area Core Capacity Planning - transport planning
- Transbay Transit Center - structural, geotechnical & transport planning design & CA
- Bay Bridge West Span Bicycle & Pedestrian Path- preliminary design for civil & bridge engineering, lighting & transport planning

Organic Waste Treatment Facilities Phase 1 (O Park 1)
Design Manager
Jan 2015 – Jul 2018

- Hong Kong | 5.5 acre site area | $300M
- Scope: Design of a Design Build Operate waste to energy facility for all civil, structural, mechanical and electrical elements. The first of its kind in Hong Kong, this facility is receives and processes approximately 83,000 tonnes of source-separated organic waste per year. My role included design & schedule management of the civil, structural, geotechnical and landscape aspects, as well as overall discipline interface management to optimize design input from process, building services, electrical & mechanical teams. With three main buildings and several ancillary structures proposed, I also managed structural design undertaken by international design teams.

Expansion of Tai Po Water Treatment Works and Ancillary Raw Water and Fresh Water Transfer Facilities
Project Coordinator
Mar 2013 – Oct 2015

- Hong Kong | $790M
- Scope: Contractor's Principal Designer for Design Build expansion of water treatment works from 400MLD to 800MLD treatment capacity. The design scope of works included design of all facility civil structures and supporting building services as well as water treatment process design and hydraulic design of the plant. My role included design management of international teams, structural design coordination, and overall management of schedule, costing and site safety.

RICHARD ROSS, PE

SENIOR WASTEWATER ENGINEER

Richard brings 23 years of experience in municipal and private water and wastewater projects. His technical expertise and extensive experience guide his management style with a focus on problem solving. As a registered engineer, he has the knowledge to take an idea to a set of constructible plans. Over the years, Richard has had the opportunity to work on a variety of treatment system technologies and many innovative reuse projects.

Profession:
Civil Engineer

Current Position:
Director of Engineering, Epic Cleantec

Years of Experience:
27

Qualifications:

- Bachelor of Science, Chemical Engineering (San Jose State University)

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PROFESSIONAL EXPERIENCE

Essential Engineering Services
Owner
Mar 2015 - Present

Water and wastewater engineering, civil design, planning, and wastewater engineering,

Summing Engineering, Inc.
Project Manager
July 2005 - Mar 2015

Project manager for single and disciplinary projects. Duties Included oversight of Internal staff and subcontractors for design, permit submittal and support, assisting clients In selecting contractors and evaluating bids, construction assistance, and startup support.

Wastech Controls and Engineering
Project Manager
Apr 2001 - June 2005

Design of piping and control systems to facilitate In-house fabrication of equipment and systems.

A&A Engineering
Project Engineer
June 1998 - July 2000

Design and Implement prototype systems. Responsible for the design, development, contractor oversight, and field testing for water and wastewater treatment system projects.

SELECTED PROJECTS

Stanford College Codiga Resource Recovery Center
Completion Date: 2016

Development of a pilot plant for testing of emerging wastewater system technologies. Treatment processes includes anaerobic fluidized membrane bioreactor (AFMBR) and anaerobic fluidized bioreactor (AFBR) reactors. Flexibility designed to accommodate for pilot testing of trailer mounted future processes.

The infrastructure was designed based on verbal direction and rough sketches from the lead Stanford researchers (Dr. Criddle & Dr. Perry). Since the AFBR and AFMBR processes are not an established technology, reactors were designed from scratch.

In addition, permitting was complicated because the proposed treatment system was something the regulators had never seen before. Close coordination with the permitting agencies was critical to project success.

Riverstone Wastewater Treatment Plant (WWTP)
Completion Date: 2016

New WWTP to support a large residential development in Madera, CA. Phased construction from 10,000 gpd to 500,000 gpd sanitary sewage, including effluent lift station with 600 gpm firm pumping capacity with redundancy. Flow through a new 5,000 LF forcemain.

The WWTP had been designed by Provost & Pritchard as an activated sludge system and issued for bid. The lowest bid came back several million dollars more than the owner's and engineer's budget. How the wastewater was handled and treated was reimagined with a modular package treatment plant design-build approach.

Napa Berryessa Resort Improvement District
Completion Date: 2014

Wastewater System (low flows of 10,000 gpd up to a peak of 208,000 gpd) to decrease electrical consumption while improving effluent quality to tertiary treatment standards. Treated wastewater effluent storage pond system (22 MG) to meet Regional Board requirements and meet beneficial re-use water goals. Water System (peak 500,000 gpd) upgrades to meet Surface Water Treatment rules.

The wastewater treatment system design consisted of package treatment plant using state of the art pure oxygen membrane bioreactor (MBR) system and a physical-chemical system for combined stormwater/sewage management and treatment.

Anchor Brewing Wastewater Treatment Plant (WWTP)
Completion Date: 2021

Onsite treatment of up to 85,000 gpd process wastewater generated from brewery operations. Reuse of treated effluent for wash down, cooling towers, and future beer making processes. Stormwater is also captured on the site for treatment and reuse.

Brewery staff did not want to operate the facility so a water energy purchase agreement was created to allow for the plant to be operated by others with reuse water sent to the brewery.

Robert Getter, P.E.

Electrical and Controls Engineering Lead

Mr. Getter brings over 30 years of experience in electrical and controls engineering and design, much of which has been for water-related facilities. His expertise includes design of stormwater diversion and pump stations, sports lighting, and sports park upgrades. He has been involved in over 12 similar stormwater diversion and pumping projects in the past 5 years. His experience includes design of over $500 million construction value for infrastructure facilities.

Representative experience

Project Engineer, TOS-25 Stormwater Diversion Projects, City of LA BOE. Provided electrical and controls designs for stormwater diversion to on-site infiltration at 9 city parks. Three of the park sites included pump stations, five sites included EV charging stations, and 5 of the park sites included sports lighting upgrades to be constructed on top of the new infiltration basins. Coordinated with LADWP for new electric services. Prepared control systems designs for integration with the City-wide LA WINS project, linking each of the sites to the City's central SCADA control center located at Venice Pump Station.

City of Los Angeles Aliso Creek- Limekiln Creek Restoration Project. Provided electrical and controls designs for stormwater diversion and pumping as subconsultant to Tetra Tech. Aliso Creek is located within a 12,484-acre watershed that conveys upstream runoff from developed portions of the Northridge, Granada Hills, and Chatsworth to the Los Angeles River. The Project included both water quality and park facility improvements, with vegetation and wildlife habitat restoration. Water quality benefits include an increase in infiltrated water and a reduction in TMDLs. The project included dry and up to 10 cfs of wet weather diversion. Diverted flows are conveyed to and pretreated with hydrodynamic separators and then pumped to bioretention basins for additional filtration.

Project Engineer, Reseda Skate Facility, City of LA BOE. Provided MEP design for the Reseda ice skating rink as subconsultant to Brooks & Scarpa Architects. The facility was designed as an ice hockey practice facility, and includes lockers, showers, restrooms, and related support spaces, enclosed within a sprung structure. HVAC design included an AC heat pump system for the lockers, showers and restrooms, and a dehumidifier for the ice rink space. Humidity is controlled to maintain a dew point temperature that prevents condensation and assures ice surface quality. Air quality monitors are used to control fresh air intake. The facility includes specialty sports lighting for the ice rink, and for an outdoor roller skate park. Refrigeration equipment and the ice floor were designed by a specialty subconsultant.

Sendero Pump Station Upgrades, Santa Margarita Water District (SMWD). Led electrical design for addition of three 100 HP vertical turbine pumps to an existing recycled water pump station. The installation included soft starters for pump motors, surge tanks, an air compressor, a magnetic flow meter, and modification of the existing switchgear for added manual transfer switch and portable generator connection. ProjectLine was subconsultant to Dudek for this project.

Name of firm

ProjectLine Technical Services

Total years of experience

39

Years with firm

20

Education

MS Environmental Engineering, Northeastern University, Boston, MA, 1991

BS Mech Engineering, University of Kansas, Lawrence, KS, 1984

Registrations/licenses

Professional Engineer (PE): CA, #E21884;

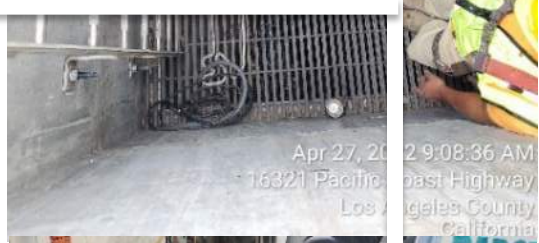
Professional affiliations

Member, CA Water and Environment Association

Member Water Environment Federation

Geosyntec consultants

engineers | scientists | innovators



OPERATIONS, MAINTENANCE, AND EVALUATION OF REGIONAL STORMWATER CAPTURE AND TREATMENT PROJECTS

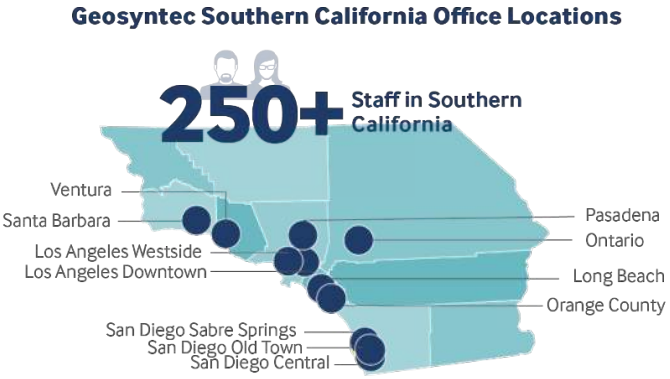
FOR GATEWAY WATER MANAGEMENT AUTHORITY

Table of Contents

QUALIFICATIONS AND EXPERIENCE

GEOSYNTEC QUALIFICATIONS

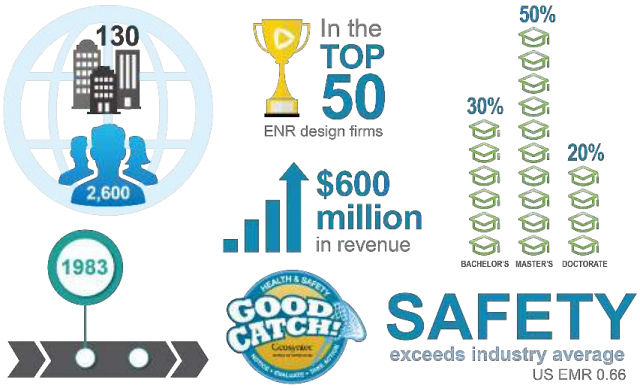
Geosyntec is a multidisciplinary engineering and consulting firm with offices in Los Angeles County and throughout Southern California. ***In addition, Geosyntec has a California General Contractor License (License No. 766859) and actively provides design-build and other alternative project delivery services.*** We work with public and private sector clients to address complex problems involving civil infrastructure, natural resources, and the environment. Since 1983, Geosyntec has supported municipalities and government agencies by providing civil, geotechnical, and environmental engineering services, planning, design, and construction management. Our technical practitioners have designed, constructed, and managed hundreds of projects and sites of various sizes worldwide. Geosyntec has a staff of over 2,000 engineers, scientists, and other technical and project staff located in over 100 offices throughout the U.S., including ***over 250 technical professionals in 11 offices throughout Southern California***.



Geosyntec is a regional and national leader in stormwater management. Our stormwater staff continue to advance the state-of-the-practice through applied research involving government agencies (e.g., State and Regional Water Quality Control Board, US EPA, CalTrans, Los Angeles County, etc.) and industry/academic associations (e.g., ASCE, CASQA, etc.). Geosyntec's staff and projects have been recognized nationally and regionally for excellence by organizations such as the ASCE, CASQA, and the American Council of Engineering Companies (ACEC).

STATEMENT OF FINANCIAL STABILITY

Geosyntec is financially stable with a strong balance sheet and has the necessary financial and personnel resources to provide services at the level required by the Gateway Water Management Authority. Over the past five years, Geosyntec averaged approximately $500 million in annual gross revenues and remains debt-free. Due to steady growth and profitability, Engineering News-Record (ENR) consistently ranks Geosyntec within the nation's top 50 environmental design firms. Geosyntec has had a positive relationship with Citibank since 1992 ($10 million untapped lines of credit). Our Dun & Bradstreet rating is IR3 ("good credit approval"). Additional information regarding financial stability is provided in **Appendix C**.



RELEVANT EXPERIENCE

Geosyntec's relevant, local, and recent project experience are summarized in table below.

Project	Client	O&M / Optimization	SCADA / Instrumentation	Engineering / Planning	Constriction / Repair	Regulatory Compliance	Treatment Systems	Pumping Systems	Infiltration Systems	Diversion Systems	Storage Systems
San Fernando Valley Green Stormwater Infrastructure	LA Sanitation	♦		♦	♦				♦	♦	
Prop O Phase I and 2 Optimization	LA Sanitation	♦	♦	♦	♦			♦	♦	♦	♦
LAX NCOS Stormwater Pump Station Repair	LA World of Airports	♦	♦	♦	♦	♦		♦			♦
Los Angeles River Low Flow Diversions	LA Bureau of Engineering	♦	♦	♦	♦			♦		♦	
Bending the River Back into the City	Metabolic Studio	♦	♦	♦	♦	♦	♦	♦		♦	♦
Wilmington Neighborhood Greening	LA Bureau of Engineering		♦	♦	♦			♦		♦	♦
Valley Plaza Park North Stormwater Capture	LA Bureau of Engineering		♦	♦	♦			♦	♦	♦	♦
Descanso Gardens Stormwater Capture	Descanso Gardens		♦	♦	♦			♦	♦	♦	♦
San Gabriel Valley Superfund Site, Operable Unit	San Gabriel Basin	♦	♦	♦	♦	♦	♦	♦			♦
El Monte Operable Unit Groundwater Remediation	Confidential Client	♦	♦	♦	♦	♦	♦	♦			♦
Groundwater Remedy at LA County Pesticide Facility	EPA Region 9	♦	♦	♦	♦	♦	♦	♦			♦
Groundwater Treatment System for Nitrate Removal	La Puente Valley Water District		♦	♦	♦	♦	♦	♦			♦
Palm Springs Aerial Tramway Wastewater Treatment	Palm Springs Aerial Tramway	♦	♦	♦	♦	♦	♦	♦			♦
Slauson Connect Safe Clean Water	LA Sanitation	♦	♦	♦	♦				♦	♦	♦
Fulton Playfield Multi-Benefit Infiltration	Redondo Beach			♦	♦				♦	♦	♦
Bowtie Wetlands Demonstration	The Nature Conservancy		♦		♦	♦	♦	♦		♦	
El Cajon Stormwater Improvement	Waste Management		♦	♦	♦	♦	♦	♦		♦	♦
Palomar Transfer Station Stormwater Improvement	Republic Services	♦	♦	♦	♦	♦	♦	♦		♦	♦

SELECT PROJECT REFERENCES

TOS SN-73: PROP O OPTIMIZATION PHASE 2 – TEMESCAL CANYON DIVERSION & PUMPING | LOS ANGELES, CA

LA Sanitation

Reference: Gordon Haines, Environmental Affairs Officer, (213) 485-0585, Gordon.Haines@lacity.org

The Temescal Canyon Park Stormwater BMP project diverts runoff from the Temescal Canyon storm drain to improve overall water quality at Temescal Canyon / Will Rogers State Beach and to help comply with the Santa Monica Bay Beaches Bacteria TMDL for coliform bacteria. Phase 1 of the Project was designed and constructed in 2011 to divert runoff through pre-treatment to a below-ground storage tank discharging to the sanitary sewer system flowing to the Hyperion Water Reclamation Plant. Phase 2 was designed and constructed in 2017 to treat the water in the storage tank for future park irrigation and included a chlorination treatment system and ancillary building. Since the completion of Phase 2, the system has not been operable. In 2019, LASAN tasked Geosyntec to review project design and components to determine how and where adjustments could be made to improve and restore functionality.

Services Provided

- Design-Build
- Pumps Replacement
- Slide Gate Installation
- Construction Management
- Hydraulic Analysis
- Plans, Specifications, and Estimates

Geosyntec prepared a memorandum detailing the project's optimization adjustment recommendations. Of the adjustments recommended, based on scope, schedule, and budget, LASAN and the Geosyntec Team prioritized two primary improvements. The first was installing a slide gate on the diversion structure inlet pipe to add a capability to shut off flows, especially persistent dry-weather flows, as part of O&M procedures to perform inspections and maintenance for the storage tank safely. Second, based on hydraulic analysis, it was determined that the existing discharge pumps were oversized for the existing sanitary sewer pipe size, which caused flooding at the park due to backflows. The existing storage tank discharge pumps were replaced with correctly sized smaller pumps, including directly connecting the pump discharge lines to the effluent outlet pipe to create a force main that discharges into the sanitary sewer system. Additionally, two combination air and vacuum valves were installed along the force main to exhaust and admit air when discharging. The Geosyntec Team, including MMC (subcontractor), completed the design and construction of these activities in December 2022.

With the optimization updates completed in December 2022, Phase 1 of the Project can be operated in two ways: Option 1 – as a dry weather low-flow diversion. Option 2 – as a stormwater capture and diversion basin, capable of capturing up to 1.25 MG of runoff per storm event and diverting average 5-10 MG of runoff annually.

LAX NCOS STORMWATER PUMP STATION REHABILITATION | LOS ANGELES, CA

Los Angeles World Airports (LAWA)

Reference: Rosa Brice, PE, CM, Senior Airport Engineer I, (310) 957-7173, rbice@lawa.org

The Los Angeles World Airports (LAWA) commissioned the North Central Outfall Sewer (NCOS) Connection Project (Project) in November 2019 at LAX, connecting the Imperial Retention Basin to the Hyperion Water Reclamation Plant (HWRP) for stormwater discharges. The Project included the installation of a pump well with three 150 HP pumps that would discharge stormwater from the basin to HWRP. Since its initial commissioning, the Project has not functioned according to its design and has not met the facility's Industrial Wastewater Permit discharge requirements. LAWA hired Geosyntec Consultants (Geosyntec) in July 2023 to investigate various system failures and identify solutions to restore the functionality of the Project and meet Industrial Wastewater Permit requirements to discharge to HWRP.

Services Provided

- Pump System Failure Investigation & Troubleshooting
- Pump Repair
- Instrumentation Repolacement
- PLC Programming
- Design-Build
- Regulatory Compliance

Geosyntec performed a series of site investigations to assess the field conditions of the Project, including pre-storm, storm, and post-storm events. During investigations, Geosyntec found submerged electrical equipment, pump failure due to high moisture, programming errors, inoperable float switches, and pressure transducer, missing air release valve, issues with the existing flow meter, and an inoperable gas detector. Investigations suggested that the existing location of equipment and pump operations caused the submergence of electrical equipment. Geosyntec also coordinated the permit-required confined space entry of a vortex manhole to assess the functionality of a gas detector and recommended relocation of the gas detector for ease of access for future inspection and maintenance.

Geosyntec, via a subcontractor, oversaw and managed the installation of a new pressure transducer and float switches for the pumps and reprogramming of the Programmable Logic Controller to run the pumps in automation at temporary set points while the Project is under additional investigation and repairs. The automation was tested and functioning as intended during a storm event, with programming correctly detecting lead/lag pump sequencing, manual overrides, and pump failure. Geosyntec is currently coordinating the pump repairs through a subcontractor and pump manufacturer and providing long-term recommendations for reinstallation, including cable protection and relocation of junction boxes.

From Notice-to-Proceed in July 2023, Geosyntec successfully got the pump system running in automation for use during the 2023-2024 wet season with one of the three pumps while the other two pumps are being repaired. System automation relieved LAWA personnel from manually operating the pumps during storm events.

SAN FERNANDO VALLEY GREEN STORMWATER INFRASTRUCTURE PROGRAM | LOS ANGELES, CA

LA Sanitation

Reference: Kevin Ho, PE, Civil Engineer, (415) 515-1545, kevin.ho@lacity.org

Los Angeles Sanitation (LASAN) implemented a green stormwater infrastructure program via alternative project delivery (design-build) in the San Fernando Valley Basin of Los Angeles to capture and infiltrate stormwater runoff and thereby increase groundwater replenishment, improve downstream receiving water quality of the Los Angeles River, and reduce localized flooding. This program consisted of seven project areas in the San Fernando Valley and is expected to capture and infiltrate over an average of 457 acre-feet per year of stormwater runoff from 594 acres of tributary drainage areas through the implementation of drywell systems, storm drain diversions, rain gardens, and catch basins.

Geosyntec provided comprehensive alternative project delivery (design-build) services as a prime contractor to design, permit, construct, monitor, and maintain green street infrastructure over seven different project locations. Geosyntec's scope of services included the development of feasibility studies for similar green stormwater infrastructure programs in other parts of the City, implementation of the Small Business Incubator Program aimed to develop and expand participation of small business contractors, public outreach, concept development, preliminary and final design, permitting and approvals, construction (at risk) and construction management, and 1 year of monitoring and maintenance.

Services Provided

- Design-Build
- Program Management
- Construction Management
- 1-Year Performance Monitoring
- 1-Year O&M
- Post-Construction Optimization

This program completed construction in June 2021, installing over 63 drywell systems with pretreatment systems and catch basins, 6 storm drain diversions, 18 rain gardens, and 3 landscaped stormwater medians. Geosyntec also completed 1 year of monitoring and maintenance of the program elements to evaluate performance and operations & maintenance procedures.

Geosyntec completed the design, outreach, permitting, and construction substantial completion in just 17 months of schedule for this $16.8M program. As part of this program, Geosyntec also implemented a Small Business Incubator Program to engage, develop, and expand the pool of local small business contractors to participate in this program as well as other future green stormwater infrastructure projects. Finally, the total change order for this program was zero ($0).

PROPOSITION O PROJECTS OPTIMIZATION, PHASE II

LA Sanitation

Reference: Gordon Haines, Environmental Affairs Officer, (213) 485-0585, Gordon.Haines@lacity.org

In November of 2004, the City of Los Angeles passed Proposition O (Prop O), which authorized the City to issue a series of general obligation bonds for up to $500 million for projects intended to improve the water quality and reduce the volume and/or rate of stormwater entering the City's surface waters. Beginning in 2014, Los Angeles Sanitation (LASAN) initiated optimization for a selection of completed Prop O projects with the goals of increasing project resiliency in order to achieve applicable water quality targets and reduce long-term operation and maintenance costs. Eleven projects were selected for optimization as part of the Phase I Prop O Project Optimization effort, and Phase II of the Prop O Project Optimization effort was initiated in 2017, focusing on eight different projects.

Services Provided

- Project Management
- Monitoring Oversight and Coordination
- Design Review
- Site Inspections
- Optimization Recommendations

Geosyntec was selected to manage the Phase II optimization contract, which included optimizing eight of the City's Proposition O-funded projects. The scope of work included five main tasks in addition to overall project management: 1) Confirmation of each project's intent and site conditions; 2) BMP monitoring during both dry and wet conditions; 3) Project optimization; 4) Reporting; and 5) Development of operations management manuals for use by the City operators at each project. In line with these tasks, Geosyntec first reviewed construction contract design plans and specifications, operations and maintenance manuals, and relevant watershed hydrology and water quality information to confirm project design intent with respect to performance. Geosyntec conducted numerous site inspections and monitored BMP performance, including management of data collected by BMP flow meters and water quality sampling, which informed the recommendations for each project in the Monitoring Plan and the preparation of the Annual and Wet-Weather Performance Reports. Geosyntec also prepared Operations Management Manuals for each project, which include Standard Operating Procedures and Field Guides to be utilized by maintenance personnel.

Geosyntec successfully managed more than ten subconsultants to complete the scope of work within budget and on task. The resulting optimized performance of the Prop O Phase II projects is essential for delivering the intended design outcomes. The quantification and reporting of BMP performance at each project has been instrumental for the City in demonstrating achievement of water quality improvement targets and estimating the volume of captured runoff infiltrated for water supply augmentation.

ORGANIZATIONAL CHART AND TEAM MEMBERS

PROJECT TEAM

Members of the Geosyntec team, illustrated in the organizational chart below, have extensive experience in the required Project disciplines and have a long history of working with one another in close collaboration on similar projects. Due to this careful selection of our Project team, the roles and responsibilities of each team member are well defined, resulting in a cohesive unit with complementing skills and resources. Summaries of our key personnel experience are provided in this section. Resumes for the Geosyntec team key staff, including subconsultants, are included in Appendix A.

ORGANIZATIONAL CHART

KEY PROJECT PERSONNEL

Our key project personnel led by Project Director Chris Wessel and overall Project Manager Yoshi Andersen, followed by our subcontractors, are provided below. Resumes are included in **Appendix A**.

15 YEARS EXPERIENCE

CHRIS WESSEL, PE, QSD/QSP | PROJECT DIRECTOR

Chris has over 15 years of experience in hydraulics, hydrology, computer modeling, and stormwater management. In his fourteen-plus years at Geosyntec, his project experience has included topics such as stormwater planning and BMP design and optimization; hydraulic and hydrologic modeling, with an emphasis on BMP design and evaluation; environmental planning for MS4 Permit compliance; stormwater pollution prevention plan development and NPDES permitting under the California Construction General Permit; and compliance monitoring programs. Chris managed multiple optimization contracts for BMP performance for the City of Los Angeles. He is currently managing on-call environmental support with Los Angeles World of Airports. Overseeing a variety of environmental projects at LAX. He has also led the modeling and development of numerous WMPs in the LA area and is supporting LA Metro in establishing their LID and CGP programs.

5 YEARS EXPERIENCE

YOSHI ANDERSEN | PROJECT MANAGER

Yoshi Andersen, EIT, has over 5 years of experience working on various projects such as stormwater infrastructure planning, civil design, dry and wet-weather flow monitoring, strategic water resources management, construction management, regulatory compliance, and investigatory fieldwork. Yoshi has helped clients apply for grant funding under the IRWM Program and the LA County Safe Clean Water Program and understands the organization and communication required to develop multi-jurisdictional projects. In construction, Yoshi has managed multiple subcontractors to deliver successful stormwater infrastructure projects using communication and organizational skills to keep complex projects moving forward. Combining hydrology and hydraulics analysis, experience developing stormwater infrastructure, and an understanding of multi-benefit projects, she has helped clients progress project concepts to place BMPs within their watersheds to maximize benefits strategically.

19 YEARS EXPERIENCE

DANIEL LEE, PE, CCM | TECHNICAL ADVISOR / ENGINEERING

Daniel has over 19 years of experience working on various public and private infrastructure projects in various phases of the project life cycle, including planning, engineering design, permitting, regulatory compliance, and construction management. His experience focuses on development of stormwater facilities (treatment, capture, reuse, and infiltration); water infrastructure (treatment, storage, and distribution); land development projects; and general civil infrastructure. Other work experience includes alternative project delivery (design-build), construction management, hydrology and hydraulics modeling; green streets design; infrastructure planning; and design of streets, drainage, and sanitary sewer facilities.

30 YEARS EXPERIENCE

PHIL REIDY, PE | PROJECT MANAGER

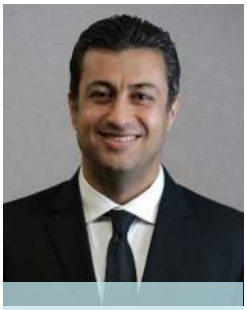
Phil has been with Geosyntec for 13 years and has more than 30 years of experience in geotechnical and water resources engineering, environmental assessments, and remediation throughout the United States and Malaysia. His expertise includes green infrastructure/urban drainage, control systems and remote sensing, and commercial-scale stormwater capture and reuse systems. Phil is currently managing the design of the Descanso Gardens Stormwater Capture project, which has many of the features similarly found in the GWMA's five regional projects, including diversion, pumping, storage, infiltration, treatment, reuse, and instrumentation.

14 YEARS EXPERIENCE

STEPHANIE ZINN, CPMSM | PROJECT MANAGER

Stephanie Zinn has over 14 years of experience in NPDES water quality compliance, multi-benefit water supply solutions, remote sensing research, and water resource policy. Stephanie has managed teams to execute work related to planning, regulatory compliance, permitting, and implementation of stormwater solutions with a lens of equity and community needs. She also has experience evaluating urban runoff diversion projects, regional water recycling systems, and reservoir operations, from planning and feasibility through to final engineering. Her passion is to help her clients implement practical multi-benefit water resource solutions to provide for a diverse water supply portfolio and improved watershed health.

More recently, she has worked with municipal clients in Southern California to view stormwater as a resource and implement stormwater programs in an efficient and effective manner to meet and exceed compliance requirements. She has managed complex water supply and infrastructure analyses as part of EIR technical reports for citywide planning efforts.



23 YEARS EXPERIENCE

HAMID AMINI, PHD, PE | ENGINEERING LEAD

Dr. Amini is a Senior Principal in the process engineering and geo-environmental groups of Geosyntec Consultants and leads Geosyntec's firm-wide process engineering practice group. Hamid has provided his technical knowledge and experience to a wide range of projects in his years of experience. These projects have involved water and wastewater management process engineering design and construction, sustainable solid waste management design and construction, compliance monitoring, renewable energy generation, hydroelectric power plant design, construction management, and construction quality assurance. Hamid also has experience conducting feasibility studies and preparing detailed cost analyses and technical specifications. For this project, he will be the task leas for engineering and technical services.

8 YEARS EXPERIENCE

JOSE AVINA, PE | PROJECT MANAGER

Jose brings over 8 years of experience in civil design, construction oversight, and stormwater management, emphasizing O&M and system optimization. His expertise extends throughout the project lifecycle, from initial design to construction and post-construction monitoring. Jose has worked with various clients to develop designs prioritizing ease of use, maintenance, and operational efficiency. He has experience collaborating with O&M teams from local municipalities to ensure that designs are functional and optimized for long-term performance. His post-construction monitoring experience includes overseeing the functionality of stormwater infrastructure, such as infiltration BMPs and pump equipment, further highlighting his commitment to optimizing system performance and reliability.

6 YEARS EXPERIENCE

HALEY BAUER, PE | PROJECT MANAGER

Haley Bauer has over 6 years of experience working on various private and public development projects, including engineering design, construction and post-construction water quality compliance, hydrology and hydraulics, and construction management. Ms. Bauer's most recent experience includes the development of affordable housing land development projects, stormwater Best Management Practice (BMP) design, and water quality compliance in California. Before her work in California, Ms. Bauer spent 2 years as a stormwater engineer for the Minnesota Pollution Control Agency, and during this time, she developed standards and guidance documents for the state's State Revolving Fund (SRF) Program, provided technical review and design support for municipalities applying through the SRF program, and helped write the state's 2018 NPDES/SDS Permit for Construction Activity.

40 YEARS EXPERIENCE

JEFF WILLIAMS | OPERATIONS & MAINTENANCE LEAD

With over 40 years in corporate Construction Quality Assurance and Control (CQA/CQC), construction risk management, scheduling, permitting, and cost estimating, Jeff's experience includes: multiple jobsite supervision; remote sites, preparation and implementation of CQC manual; scheduling; safety indoctrination and training of company and subcontractor personnel; construction systems analysis and development; evaluation of architectural and structural drawings; RFI and change order processing; project engineering management; supervision of on-going construction and materials testing; and verification of all inspections and testing, estimating, and sales.

12 YEARS EXPERIENCE

STEPHEN BRODIE, P.ENG | SCADA & INSTRUMENTATION LEAD

Stephen Brodie is a process and project engineer with a focus on water and wastewater treatment. He is a Professional Engineer with 12 years of experience within the mining, municipal, food and beverage, shale gas, and heavy oil industries. His expertise involves engineering design, cost estimation, procurement, and construction management of water and wastewater treatment systems. He also has experience in providing onsite technical services across North America including piloting, plant optimization, field investigations, operator training and commissioning. His attention to detail and technical competence enables him to find solutions and lead projects effectively.

16 YEARS EXPERIENCE

LEVI WALDEN | CONSTRUCTION & REPAIR LEAD

As a general contractor and construction manager, Levi has over 16 years of experience in civil and mechanical construction, primarily in pump stations, treatment systems, storage systems, and pipelines. He has been involved with projects from concept design to construction and final completion, including project change orders, RFIs, submittals field engineering, cost estimating, scheduling, value engineering, construction, construction monitoring, testing, inspections, and operations and maintenance for underground utilities (sewer, water, and storm drain), green street infrastructure (bioswales, rain gardens, and permeable pavement), stormwater capture and reuse, pump stations, and water treatment.

20 YEARS EXPERIENCE

MISTY STEELE | REGULATORY COMPLIANCE LEAD

Misty has over 20 years of experience in environmental consulting, including regulatory compliance program management, stormwater general permit compliance, and routine monitoring and reporting activities. Misty is an Industrial General Permit (IGP) Trainer of Record, a Qualified Industrial Stormwater Practitioner (QISP), and a Construction General Permit (CGP) Qualified Stormwater Pollution Prevention Plan Developer/Practitioner (QSD). She currently leads the local stormwater compliance practice and team in Orange County.

KEY SUBCONTRACTORS

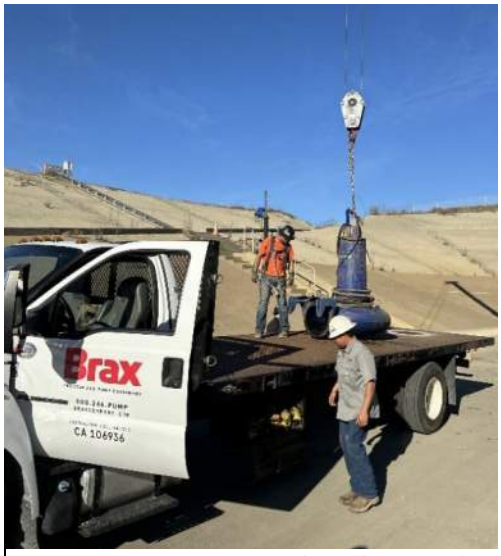
INFRAMARK
INFRASTRUCTURE MANAGEMENT SERVICES

Inframark has been delivering best-in-class, full-service contract operations, maintenance, and management of municipal water and wastewater treatment facilities and lift stations since 1983, and over 25 years in California. They have over 560 water and wastewater facilities under management for municipalities of all sizes, including 12 clients and their communities in California. They provide technical support with on-site, regional, and national experts throughout the design, construction, commissioning, and startup of treatment systems, maintaining an exceptional compliance track record.

Inframark recently won a contract with the City of Burbank to provide O&M for a 12.5 MGD wastewater treatment plant, serving a population of approximately 105,000 people. Additionally, Inframark manages their Industrial Pretreatment Program and the Illicit Stormwater Program.

Brax

Brax Company, Inc. (Brax) was founded in 1986 in San Diego, California. Since its inception, it has stood out in the industry with its unwavering commitment to providing the highest-quality pumps, process equipment, and services in all markets. ***Brax is a "one-stop shop" offering all aspects of pump and process equipment engineering design, replacement, repair, and servicing.*** Because of this, they have on-staff mechanical engineers, are fully licensed and bonded through CSLB with Class A, C-57, C61/D21 & C-10, and can manage every aspect of a project. In support of the expanding need for quick turnaround of replacement units and repairs, Brax now has three full-service facilities between San Diego, Inland Empire & Bakersfield, with an average of $1M in inventory between all locations and full-service machining capabilities up to 30" in house, trained service technicians and full-service crane service trucks up to 50T.



Geosyntec & Brax are currently working together to repair and upgrade existing pumps for LAX NCOS Stormwater Pump Station.

Their full-service machine shops allow them to expedite all repair services even when parts have been discontinued or are hard to find. They will disassemble, inspect where applicable, and provide a top-quality system rebuild and reassembly to avoid expensive equipment replacement.

Downstream Services, Inc. is a certified small business enterprise, incorporated in 2001, and is recognized for its dynamic approach and professionalism within the environmental industry. They specialize in assessing, maintaining, and rehabilitating stormwater, wastewater, and underground utility systems. Currently, Downstream Services retains 77 employees between two locations in Escondido, CA, and Ventura, CA. ***Their technicians are experienced in maintaining, inspecting, and assessing pump and instrumentation systems, pipelines, detention and retention basins, hydrodynamic separator units, green infrastructure, trash and debris screens, and other stormwater BMPs.***

Their highly skilled personnel and substantial fleet of specialty equipment serve the needs of California communities, delivering quality service and customer experience centered on the client's goals and objectives. In accordance with the Clean Water Act and the National Pollutant Discharge Elimination System Permit Program (NPDES), they have established a dedicated division to assist clients with compliance with federal, state, and local regulations. Downstream Services works closely with various stormwater product manufacturers to offer dependable, cost-effective solutions.

United Storm Water has been in business since 1999 and was incorporated by the owners of United Pumping Service, which has been among the forerunners in hazardous waste transportation since 1970. ***This family-owned and operated Minority Business Enterprise (MBE) has a long-standing history and experience in stormwater management and maintenance.*** United Storm Water is a qualified firm having demonstrated experience and expertise including but not limited to:

- Storm drain inspection & monitoring
- Trash quantification
- Conveyance system maintenance
- Channel cleaning
- Pump house and lift station cleaning
- Sand filter maintenance
- Fabrication and installation of LA County-approved BMPs (filter inserts, automatic retractable screens, connector pipe screens, etc.)
- Certified Contech maintenance provider
- Hazardous waste removal

Innovative Construction Solutions (ICS) is a fully integrated environmental construction company delivering and implementing turnkey self-perform construction solutions to environmental challenges in water (groundwater, stormwater, water/wastewater). ICS is a licensed Class A general engineering contractor in CA certified to perform hazardous substance removal. They also possess a California Demolition (C-21) license. ***ICS employs 170 employees, owns and operates a large fleet of specialty and heavy equipment, and carries a $ 125 million bonding capacity.***

ICS provides diverse capabilities and services, including:

- Stormwater capture, treatment, and infiltration
- Retention basins and reservoirs
- Wastewater and wastewater treatment systems
- Mechanical systems
- Heavy civil (excavations, shoring, and foundation)
- Structural concrete
- Environmental remediation
- Transportation and disposal
- Hazardous waste management

American Integrated Services (AIS) is a full-service, minority-owned (MBE) company specializing in environmental construction and remediation, industrial demolition and abatement, waste management, and specialty transportation services, industrial cleaning services, and 24/7 emergency response. AIS is recognized as an industry leader in turn-key environmental services, ranking in the top 30 of Engineering News-Record's (ENR) "All Environmental Firms" for the last five years.

AIS has eight office locations and equipment yards stationed strategically throughout California. AIS employs over 450 employees, including a large field staff consisting of heavy equipment operators and environmental technicians, construction and confined space trained rescue crews, and hazardous waste certified drivers. Most of their staff are cross-trained in areas including confined space and trench/excavation and are all certified per OSHA and/or DOSH requirements.

AIS owns over $45 million dollars in equipment and assets, including excavators, loaders, dozers, backhoes, bobcats, hazardous certified transportation vehicles (vacuum trucks, hydro vacs, roll-off trucks, drum trucks, flat beds, end dumps), and over 450 hazardous certified and specialized roll-off bins.

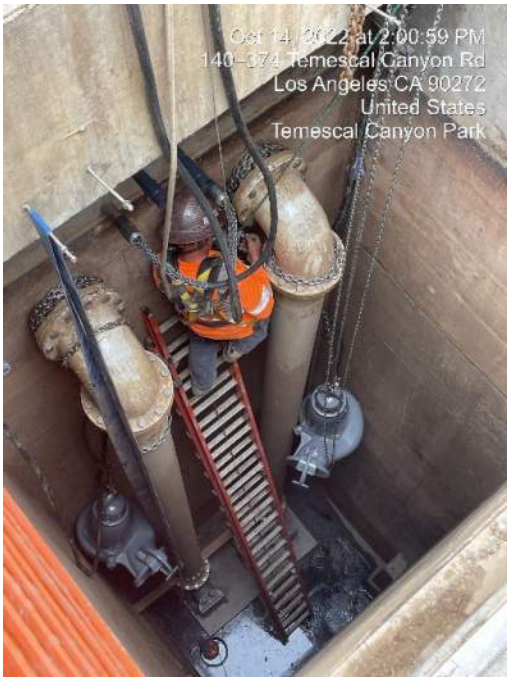
Additional subcontractor qualifications for InfraMark, ICS, and Brax are provided in **Appendix B**.

APPROACH AND UNDERSTANDING

STORMWATER EXPERTISE

Geosyntec's Southern California operations have been providing surface water and stormwater technical solutions to clients for almost 35 years; Geosyntec currently maintains a staff of approximately 250 full-time employees in 11 offices in Southern California, allowing us to provide the bench strength that GWMA and its member agencies may need on a project-specific basis. Geosyntec's engineers and scientists are technical leaders in stormwater management.

Geosyntec's comprehensive background in local stormwater infrastructure planning, design, permitting, regulatory compliance, construction, monitoring, and maintenance is unique. Our extensive experience in each of these areas will be leveraged to:



Geosyntec re-evaluated hydraulic design, re-sized and replaced discharge pumps, and modified discharge configuration to optimize stormwater discharge for Temescal Canyon Park Stormwater

- Tackle complex issues and problems
- Recommend and implement cost-effective solutions for long-term success
- Navigate ever-evolving regulatory compliance requirements
- Optimize systems for increased reliability, better performance, and reduced maintenance
- Understand and see the "big picture" for operations and maintenance (e.g., water quality drivers, regional planning efforts for infrastructure and O&M resources, standardization of practices, materials, and equipment, etc.)

PROJECT MANAGEMENT AND STAFFING

Geosyntec will assign a project manager and appropriate technical leads and subcontractors for each project depending on the project scope (e.g., O&M, engineering design, permitting, etc.). We have a deep bench of experienced project managers and technical leads. ***Our selected project managers have relevant technical backgrounds and excel in communications, project coordination, and scope, budget, and schedule management***. Our selected technical leads are senior personnel with demonstrated expertise and will lead the delivery of relevant scope while working with the selected project manager. All fieldwork, including O&M and construction, will be implemented by our subcontractors and supervised by qualified Geosyntec personnel. Field reports will be generated for each day of fieldwork.

HEALTH & SAFETY

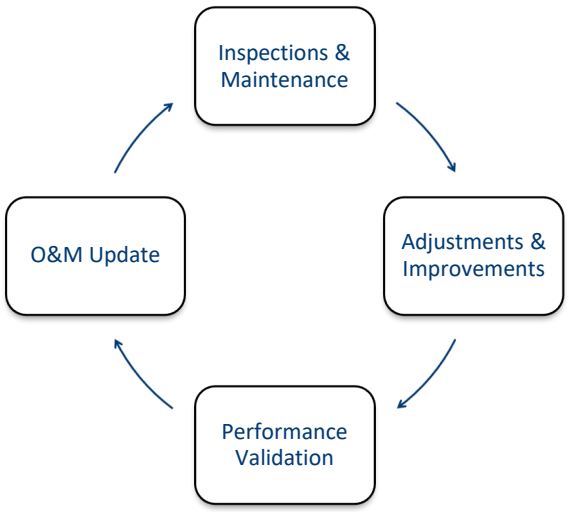
Health and safety are an absolute priority for all fieldwork. Geosyntec will develop and implement a Health & Safety Plan (HASP) and conduct Task Hazard Analysis (THA) for all fieldwork for each project. In addition, our standard health and safety practices include the following:

- Review and incorporate health and safety requirements from the Owner.
- ***Geosyntec requires all subcontractors to be in good standing for health and safety records. Subcontractor health and safety records are reviewed every year for compliance.***
- Require subcontractors to implement their own HASP consistent with Geosyntec's HASP.
- Require appropriate training and qualifications (e.g., confined space entry) where applicable.
- Conduct daily tailgate health and safety meetings.
- Conduct routine safety site visits and audits by the Geosyntec health and safety manager.

OPERATIONS AND MAINTENANCE (O&M)

Having delivered similar projects in various capacities, Geosyntec is intimately familiar with the anticipated O&M elements, which may include the following:

- Sediment and trash removal
- Custom and packaged treatment systems (e.g., Wahaso Rainwater Harvesting)
- Pumps, valves, and pipes
- Instrumentation, including sensors, monitors, switches, gauges, alarms, etc.
- SCADA (Supervisory Control and Data Acquisition) and PLC (Programmable Logic Controller) programming and controls systems
- Electrical equipment (e.g., motor control centers, variable frequency drives, switchboards, etc.)
- Other O&M improvements, including access, lighting, ventilation, and security
- O&M inspections and database



Geosyntec's O&M approach includes continuous feedback and adjustments to improve O&M program

Our O&M approach is a continuous loop process that involves routine inspections and maintenance, evaluation and implementation of improvements with approval by the Owner, analysis and validation of performance, and updates to the O&M program. ***In the long term, our approach will increase reliability, enhance performance and safety, reduce regulatory risks, and reduce O&M burdens.***

SCADA AND INSTRUMENTATION

Geosyntec routinely designs and works with process mechanical systems involving complex instrumentation in treatment and pumping systems. As part of this effort, we routinely work with SCADA and PLC programming contractors during systems testing, start-up, and commissioning phases. More importantly, our team understands the fundamental connection between design intent and control systems. As such, we have a deep understanding when it comes to diagnosing

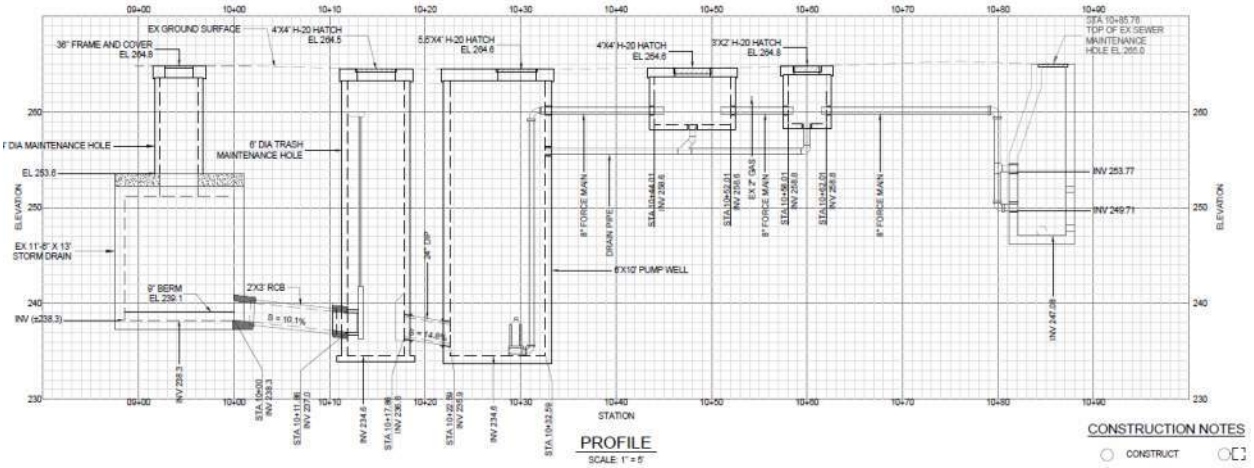
and troubleshooting system issues (e.g., design flaws vs defective construction/equipment vs illogical programming).

Geosyntec investigated, troubleshoot, and updated PLC programming to restore automation and partial capacity for a 50-cfs stormwater pump station at LAX Airport.

Our key subcontractor, Inframark, specializes in and has been providing advanced automation and intelligence solutions through SCADA for over 560 water and wastewater agencies. Their capabilities include:

- SCADA and PLC design, installation, commissioning, and programming
- Control panel manufacturing
- Hosted (off-site) SCADA
- Remove proactive monitoring
- Data analysis and customized data dashboards
- Applied machine learning

ENGINEERING AND TECHNICAL SERVICES



Geosyntec developed civil design for the Los Angeles River Low Flow Diversions Project for the City of LA

Because we have over 250 professional staff in Southern California, Geosyntec will be ready to respond to most engineering and technical service requests, including emergency responses, promptly with in-house and local personnel. ***Geosyntec's in-house engineering capabilities include civil, geotechnical, environmental, mechanical, process, structural, instrumentation, and electrical engineering, and we have been providing engineering and technical services to many of the municipal, regional, state, and utility agencies throughout California for decades.*** Specifically, our local stormwater engineering and technical expertise include:

- Feasibility studies and grant funding applications (e.g., Safe Clean Water Program)
- Stormwater and watershed master planning
- Hydrology and hydraulics analysis

- Drainage and water quality studies
- Geotechnical investigations
- Preliminary design reports
- Plans, specifications, and estimates
- Scheduling
- Environmental and construction approvals and permits
- Construction bid phase support
- Construction management, administration, and inspections
- Post-construction inspections and monitoring
- Regulatory compliance and reporting

CONSTRUCTION AND REPAIR

Geosyntec carries a California General Contractor license and has been actively implementing design-build projects as the prime contractor (we carry the "contract"). ***Because of our experience and capabilities in project delivery, we streamline the implementation of construction, big and small, and repair work for our clients.*** While Geosyntec does not self-perform construction work, we partner with preferred subcontractors to perform work, and we maintain full control of the subcontractor work through subcontracting, coordination, and oversight.

Geosyntec designed and substantially constructed over $17M of green stormwater infrastructure, including over 60 drywells, for the City of LA in just 18 months. Geosyntec also provided 1 year of performance monitoring and maintenance for the built green stormwater infrastructure.

We can successfully oversee and deliver construction projects as the design-builder because 1) many of our local professionals have a background in construction as general contractors and/or as construction managers, and 2) we maintain long-standing relationships with high-caliber subcontractors. This brings about some key benefits to the client:

- Design integrity is maintained throughout the construction because we are responsible for construction oversight and field quality control.
- There is less risk for the client because a single entity is responsible for design, construction, and warranty.
- There is a single point of contact for the client throughout the entirety of the design, construction, and post-construction phases for any issues (e.g., performance).
- There are potentially significant savings in schedule and administrative costs if there is no separate procurement of construction contractors.

Appendix A:
Resumes of Key Staff

Geosyntec consultants

CHRISTOPHER WESSEL, P.E., QSD/QSP

stormwater management
MS4 permit compliance
watershed planning
monitoring

EDUCATION

M.S., Civil Engineering, University of California, Los Angeles, 2009
B.S., Civil Engineering, University of California, Los Angeles, 2007

REGISTRATIONS AND CERTIFICATIONS

Professional Civil Engineer (P.E.), California, Number C78522
Qualified SWPPP Developer/Practitioner, California, Number 20321

CAREER SUMMARY

Chris Wessel, P.E., QSD/QSP, is a Senior Principal Engineer and Qualified SWPPP Developer and Practitioner. He has over 15 years of experience in watershed planning, hydrology, computer modeling, and stormwater management. In his fourteen years at Geosyntec, his project experience has included topics such as stormwater planning and BMP design; hydraulic and hydrologic modeling, emphasizing BMP design and evaluation; environmental planning for MS4 Permit compliance; and BMP performance and optimization. Mr. Wessel is Geosyntec's project manager for on-call environmental support with LAWA, overseeing a variety of environmental projects at LAX. He has also led the modeling and development of numerous WMPs in the LA area; managed the optimization of eight regional stormwater projects for the City of Los Angeles; and is supporting LA Metro with the establishment of their LID and CGP programs.

City of Los Angeles Optimization of Eight Proposition O Stormwater Projects, *City of Los Angeles Bureau of Sanitation. Los Angeles, CA.* Project Manager overseeing the optimization of eight regional stormwater BMPs funded via Prop O. Project duties include design review and summaries; wet and dry weather monitoring; optimization adjustment activities; performance reporting; and the development of operations management manuals, to support the City with the transitioning of the projects from completion of construction to O&M.

Safe Clean Water (SCW) Program Feasibility Study Development, *Los Angeles County, CA.* Mr. Wessel has managed and/or supported multiple projects throughout Los Angeles County applying for SCW Regional Program funding, including Fulton Playfield in Redondo Beach, the Slauson Connect Clean Water Partnership, and LA Metro Orange Line, among others. Support has included

project identification, preliminary design, geotechnical investigation oversight, completion of full Feasibility Studies, and support during Scoring Committee meetings.

Los Angeles County Metro (Metro) Water and Sustainability On-Call Services, Los Angeles, CA. Mr. Wessel supports the overall contract management for providing on-call consulting services to LA Metro. Geosyntec's scope of work covers a wide array of service areas, including industrial wastewater, stormwater, and sustainability. Chris helped Metro establish their Construction Water Program and their Low Impact Development Program, and continues to serve as the lead consultant of those programs on behalf of Metro.

One Water LA Project, *City of Los Angeles Department of Public Works. Los Angeles, CA.* Project Manager for Task 8 (Stormwater Infrastructure Master Plan) of the One Water LA Project, which involves the City of Los Angeles Bureau of Sanitation, Bureau of Engineering, and Department of Water and Power. Project tasks include the collection and analysis of all existing and available stormwater infrastructure spatial data within the City of Los Angeles, and the analysis of system performance over the next 25 years.

Southbay Beach Cities Coordinated Integrated Monitoring Program (CIMP) Implementation, *Manhattan Beach, CA.* Since 2015, Mr. Wessel has been managing the implementation of the Beach Cities CIMP on behalf of the cities of Manhattan Beach (lead agency), Redondo Beach, Hermosa Beach, and Torrance. Responsibilities include stormwater and non-stormwater sampling (outfall and receiving water), data processing and analyses, and annual reporting per the Los Angeles MS4 Permit.

City of Los Angeles LID Handbook, City of Los Angeles, *Los Angeles, CA.* Responsible for drafting the technical sections of the City of Los Angeles' new LID Handbook. Specific content included residential BMP design guidance and factsheets, large development BMP design guidance and feasibility criteria, constraint mapping, and technical writing. The Handbook was designed to be highly user-friendly while still remaining technically advanced.

Los Angeles World Airports (LAWA) Environmental On-Call Services, *Los Angeles, CA.* Mr. Wessel is the Project Manager overseeing and managing Geosyntec's prime contract with LAWA, which includes services in stormwater compliance, noise management, remediation, and sustainability, among others. As part of his responsibilities, Mr. Wessel manages LAX's Work Plan and Implementation Report for PFAS investigations at the airport, and currently leads the Geosyntec team in its assessment of solutions for AFFF impacts in the West Campus Fire System. He also assisted with LID review and support for multiple projects at LAX, supporting LAWA with analyses and coordination for regional project approval and the creation of a LID crediting system.

Geosyntec consultants

YOSHIYE ANDERSEN, E.I.T. (CA)

civil water resources design
construction management
regulatory compliance

EDUCATION

B.S., Environmental Science and Engineering, Harvard College, Cambridge, MA, 2016

REGISTRATIONS AND CERTIFICATIONS

OSHA 40-Hour HAZWOPER Certificate
OSHA 30-Hour Construction Certificate

CAREER SUMMARY

Ms. Andersen has over five years of experience working on a variety of projects, such as stormwater planning, civil design, construction management, wet and dry weather flow monitoring, strategic water resources management, emergency response, regulatory compliance, HEC-RAS modeling, and investigatory fieldwork. She pursued Environmental Science and Engineering with a focus on water resources during her undergraduate degree.

PROJECT EXPERIENCE

Wilmington Neighborhood Greening Project, *Wilmington, CA, City of Los Angeles Bureau of Engineering. Design, permitting, fieldwork, and stormwater sampling.* This City of Los Angeles project, funded through the LA County SCWP, includes the installation of a 5.5 AF stormwater detention tank beneath ballfields that will pump recycled water supply to the local water reclamation plant. Responsibilities include project management and coordinating a diverse sub-consultant team, completion of the pre-design report, production of civil design construction drawings and specifications, fieldwork oversight, permitting coordination, stormwater sampling, and the development of O&M plans and post-construction monitoring plans.

Rolling Hills Estates Stormwater Capture Project, *City of Rilling Hills Estates, CA. Design, bid phase support, construction management.* This project involves the evaluation, design, and installation of stormwater infiltration infrastructure in the City of Rolling Hills estates to provide water quality treatment associated with local MS4 permit compliance. The project team performed investigations to determine the extent of the damage to a City storm drain and designed a replacement, conducted site investigations, produced construction drawings, developed bid materials and evaluated submitted bids. Currently performing construction management.

Willows Wetland TRP Project, *City of Gardena, CA. Concept Development and Grant Application.* The Gardena Willows Wetlands Preserve provides protection to natural wetland habitat. The project team performed drainage area delineations and developed preliminary BMP concepts, desktop utility and soil data analysis and evaluation of as-built stormwater infrastructure.

The project team performed site visits and coordinated with the local non-profit group to develop a grant application for the LA County Safe Clean Water Program Technical Resources Program. The project team also developed grant application submittals and presentation materials. The project was accepted by the local Watershed Area Steering Committee for funding.

Gateway Water Management Authority Regional Recycled Water Project Grant Application, *Los Angeles, CA. Project evaluations, grant application, member agency coordination.* The Gateway Water Management Authority (GWMA) sought to develop a regional recycled water project application. Geosyntec collected information about the member agency projects and developed a multi-agency grant application. The project team evaluated potential grant opportunities to determine the most compatible opportunity for the eligible projects, provided regular updates to the GWMA member agencies, and developed and presented project information to the grant agencies. The grants were successfully obtained from the CA Prop 1 Round 2 funds.

San Fernando Valley Green Streets Projects, *North Hollywood, CA, LASAN. Civil design, field investigation, and construction management.* This project aims to increase groundwater recharge in the San Fernando Groundwater Basin and eliminate nuisance flooding that occurs in the region. The project included the installation of drywells strategically placed in the public right of way to capture significant flows in key drainage areas along with rain. Responsibilities included performing field investigations of utilities to inform the design, field testing to calculate stormwater capture potential of the drywell systems, civil engineering plan sets, and construction oversight working with multiple subcontractors and LA City inspectors to ensure regulatory compliance and adherence to design.

Bending the River Back into the City, *Los Angeles, CA, Metabolic Studio. Design, field sampling, regulatory compliance, and construction management.* This project will place a diversion structure in the LA River to guide water toward a treatment station located near the Los Angeles State Historic Park that will provide irrigation to the surrounding park area. Responsibilities include providing design and researching alternatives for low-flow diversion pipes and the water treatment system, collection and analysis of field samples to ensure regulatory compliance and writing environmental reports to the required regulatory agencies reporting results.

SCG Playa Del Rey Well Abandonment Site Plans, *Playa del Rey, CA, Southern California Gas Company. Design.* SoCalGas will be plugging and abandoning inactive well sites at the Playa del Rey facility. Responsibilities include taking field measurements at each well site and creating site plans to support permit applications for SoCalGas.

Long Beach Drywells Pilot Project, *Long Beach, CA. City of Long Beach. Civil design, construction administration.* This project included the development a pilot drywell system in the City of Long Beach to help determine the feasibility of future drywell projects and alleviate nuisance flooding while also contributing to the augmentation of the groundwater table in the local area. Responsibilities included full construction stormwater infrastructure design and construction administration.

Geosyntec consultants

DANIEL LEE, P.E., CCM
Senior Principal Engineer

civil design
construction management
stormwater management

EDUCATION

M.S., Hydrology and Water Resources Engineering, University of California Los Angeles, 2007
B.S., Civil and Environmental Engineering, University of California Los Angeles, 2006

REGISTRATION

Professional Civil Engineer, CA, License No. 73263
Certified Construction Manager (CCM)
Certified Construction Contract Administrator (CCCA)
Certified Construction Specifier (CCS)
Envision™ Sustainability Professional (ENV SP)
Qualified SWPPP Developer/Practitioner (QSD/QSP)
National Association of Sewer Service Companies (NASSCO) Cured-in-Place Pipe (CIPP) Certified Inspector

CAREER SUMMARY

Mr. Lee, PE, CCM, has over 19 years of experience working on a variety of private and public development projects in all phases of the project life cycle, including planning, engineering design, regulatory compliance, and construction management. Mr. Lee's experience focuses on development of land development projects; water infrastructure (treatment, storage, and distribution); and stormwater facilities. Other work experience includes hydrology and hydraulics modeling; stormwater management; infrastructure planning; design of streets, drainage, and sanitary sewer facilities; LEED projects; and 3D BIM projects.

Construction Services

San Fernando Valley Green Streets Infrastructure Program, *City of Los Angeles, Los Angeles, CA. Program Manager/Engineer of Record.* Provided a program of design-build services including planning, outreach, design, permitting, procurement, construction, maintenance, and monitoring services for implementation of green streets infrastructure projects in the San Fernando Valley area of City of Los Angeles. The program, through implementation of 5 separate projects, will provide stormwater capture and groundwater recharge of approximately 470 acre-feet per year from 600 acres of tributary drainage area. The program elements include installation of drywells, diversion structures, storm drains, catch basins, curb outs, rain gardens, and landscaping in the public right-of-way.

Van Nuys Green Streets*, City of Los Angeles, Los Angeles CA. Project Manager/Engineer of Record.* Provided design-build services including planning, outreach, design, permitting, procurement, construction, maintenance, and monitoring services for installation of 21 drywells and pre-treatment systems (bio-retention planter and porous concrete gutter) in public right-of-way to provide stormwater capture and groundwater recharge of up to 75 acre-feet per year.

MTA 35KV Electrical Equipment Relocation*, MTA and Metabolic Studio, Los Angeles, CA. Construction Manager.* Provided design-build services including design, agency coordination, construction management, inspection and testing, construction bidding, and construction (subcontractor) for relocation of removal of existing and

Geosyntec consultants

installation of new 35KV switchgear, 500KVA transformer, 480V distribution boards, and miscellaneous improvements at MTA Gold Line Yard Facility.

Los Angeles Aqueduct UV Filtration Plant, *Los Angeles Department of Water and Power, Los Angeles, CA. Project Engineer.* Provided construction support services for construction of 650 MGD UV treatment facility, which included installation of pipelines up to 144 inches in diameter, 48-inch diameter medium pressure UV reactor trains, utility station and electrical building, inlet and outlet channels, weir gates, and 15,000 square feet metal building, at terminal point of the LA Aqueduct. Construction support services included engineering support for equipment procurement and construction, inspections, assistance with start-up, testing, and commissioning, scheduling, and punchlist development and tracking.

Wilson Reservoir Replacement, *City of South Pasadena, San Gabriel, CA. Resident Engineer.* Provided construction management services for replacement of existing reservoir facilities with new 1.3 MG concrete reservoir, clearwell, 6,500 GPM pump station, and operations building while maintaining existing water production services through use of temporary facilities. Construction management services include resident engineering and inspections, document control, schedule and pay application reviews, change order negotiations, and assistance with start-up and commissioning.

Stormwater Management

Valley Plaza Park North Stormwater Capture, *City of Los Angeles, Los Angeles, CA. Lead Civil Engineer.* Currently providing complete civil engineering services from planning to final design and permitting of a regional stormwater capture facility with a tributary watershed of 900 acres. The facility consists of a 22 ac-ft subsurface infiltration gallery, a 30-cfs stormwater pump station, a low flow diversion from existing LA County Flood Control District 144”Wx126”H RCB, pre-treatment BMP, and other associated appurtenances and miscellaneous park improvements.

LA River/Downtown Low Flow Diversion Projects, *City of Los Angeles, Los Angeles, CA. Project Director/Civil Engineer of Record.* Provided civil engineering services, as a subconsultant, for civil design of low flow diversion systems from large stormwater outfalls at 3 different locations to the LA River. Scope of work included hydraulic design and civil drawings and specifications from preliminary design to 100% construction documents. Diversion systems include diversions from: 1) 11’-6”Wx13’H RCB (location R2-2); 2) 12’Wx9’H RCB, 7’-6” Reinforced Concrete Arch Pipe, and 12’Wx10’H RCB (location R2-G); and 3) two 90” RCPs (location R2-J). Typical low flow diversion system consists of existing storm drain modification for diversion, trash collection structure, pump station, and flow meter.

Van Nuys Terminal Stormwater Improvement*, Chevron, Los Angeles CA. Project Manager/Engineer of Record.* Provided design, permitting, construction support, and inspection services as Engineer of Record for construction of a stormwater management system including 50,000-gallon underground containment vault, clarifier, lift station,

metering system, and repair of existing stormwater treatment system to comply with industrial stormwater discharge requirements.

Carlsbad Desalination Plant (Stormwater)*, Kiewit Shea Desalination, Carlsbad CA. Project Engineer/Engineer of Record.* Provided stormwater management design services as Engineer of Record and QSD/QSP (stormwater portion only) for development of a new 6-acre saltwater desalination plant, including pretreatment and post treatment facilities, electrical, chemical storage, and administration buildings, clearwell, product water tank, and intake pump station, currently under construction. Services provided include preparation of SUSMP, SWPPP, and Drainage Study documents.

Hansen Dam Wetlands Restoration*, City of Los Angeles, Los Angeles CA. Project Engineer.* Provided complete engineering, permitting, and construction support services as project engineer for development of a regional stormwater treatment for a 150 acre watershed contributing to riparian wetlands at Hansen Lake. Project tasks included preliminary design report, drainage analysis, and preparation of construction documents for construction of vegetated infiltration basins and swales, landscaping, and parking lot modifications.

Alvarado Water Treatment Plant SUSMP*, City of San Diego, San Diego, CA. Project Engineer.* Provided complete engineering, permitting, and construction administration services to retrofit a 7.2-acre water treatment facility with stormwater BMPs. Engineering and construction administration included water quality management plan, grading and drainage improvements.

Civil Design

Kenneth Hahn State Recreation Area Overflow Parking Improvement*, Los Angeles County Department of Parks & Recreation, Los Angeles, CA. Project Manager/Engineer of Record.* Currently providing complete engineering, permitting, and construction support services as Engineer of Record for development of an overflow parking lot at Kenneth State Recreation Area. Proposed development includes 105 parking spaces, retaining walls, and stormwater facilities including infiltration basins.

Los Angeles Reservoir UV Disinfection Plant, *Los Angeles Department of Water and Power, Los Angeles, CA. Assistant Project Manager/Design Manager.* Provided design management, project coordination, and engineering services as assistant design manager for design of 600 MGD UV treatment facility, which includes pipelines and valves up to 144 inches in diameter, 48-inch diameter UV reactor trains, utility station and electrical buildings, and 30,000 square feet metal building, at LA Reservoir.

GE Mobile Water Services Upgrade & Expansion (Civil), *General Electric Mobile Water, Fontana, CA. Project Engineer/Engineer of Record.* Provided civil engineering services as Engineer of Record (civil portion only) for upgrade of existing wastewater treatment facility including wastewater process, secondary containment, loading, and trash enclosure areas, improvement of site and fire access, fire hydrant relocation, and expansion of existing truck and car parking lot areas. Project tasks included preparation of construction documents, water quality management plan, and permitting.

Geosyntec consultants

PHILIP REIDY, P.E.

Engineering Design and Design-build
Green Infrastructure/Stormwater Capture/Use Systems
Environmental, Water Resources and Geotechnical Engineering
Project and Program Management

EDUCATION

M.S., Civil Engineering/Geotechnical, Northeastern University, Boston, Massachusetts
B.S., Civil Engineering, University of Massachusetts, Amherst, Massachusetts

REGISTRATIONS AND CERTIFICATIONS

Registered Professional Engineer, Massachusetts #35885
Registered Patent Holder, Advanced Harvesting Controller Logic, US8591147 B2

CAREER SUMMARY

Mr. Reidy has more than 30-years' experience in stormwater, geotechnical, and environmental engineering in the US and abroad. Mr. Reidy is a seasoned program and project manager having led several multi-jurisdictional, multi-million-dollar projects in the design and construction of green infrastructure, distributed stormwater management and environmental management systems. His expertise includes design and construction of large-scale underground infiltration and stormwater storage structures, integrated stormwater management and water conservation systems, remote sensing and controller logic. Local project experience includes managing large, multi-stakeholder projects for municipal and regional agencies and private clients.

PROJECT EXPERIENCE

East 6th Street Green Infrastructure Corridor (TOS 75), *City of Los Angeles Bureau of Engineering, Los Angeles, California.* Mr. Reidy managed the team and directed overall project activities in the civil design for a 0.7-mile stormwater management and streetscape beautification project that decreases local flooding and improves stormwater water quality while providing community benefits to the Boyle Heights neighborhood. The project design includes catch basin connected biofiltration planters with storm drain connected underdrain, tree wells and landscape parkways, and pilot curb extensions. Project deliverables included a Preliminary Design Report (PDR), 100% Design Planset, Specifications, Cost Estimates, and Maintenance Plan.

Descanso Gardens Stormwater Capture Project, *Descanso Gardens/ LA County Safe-Clean-Water Program, La Canada Flintridge, CA*. Mr. Reidy led the engineering analysis and design of this $8 M LA County Safe-Clean-Water Program project. The project provides approximately 60 acre-feet per year of stormwater runoff water quality improvements and reduces the use of potable water for irrigation at Descanso Gardens by approximately 12 acre-feet per year by diverting stormwater from the Winery Canyon Channel to a 4.6-acre-foot underground storage chamber before its final treatment and use in the Gardens' onsite landscape irrigation system. The 50-year event peak flow of the Winery Canyon Channel is approximately 660 cubic feet per second (cfs). The project involves surface drainage improvements and porous pavements to manage surface water across the site.

San Fernando Valley Green Streets Infrastructure Program, *City of Los Angeles, Los Angeles, CA*. Mr. Reidy is providing Construction Management support for this aggressive, multi-site program implemented

under 5 separate projects in the San Fernando Valley. The project provides stormwater capture and groundwater recharge of approximately 470 acre-feet per year from 600 acres of tributary drainage area via 46 BMP installation sites encompassing 43 large scale drywells, 104 new catch basins and other stormwater diversion structures.

Headworks West Reservoir Improvements Project, *City of Los Angeles, Los Angeles,* CA. Mr. Reidy is project manager for this signature park and civil design project incorporating the roof and grounds of the 52-million-gallon West Reservoir as part of the Headworks Park complex. Geosyntec's scope includes site grading and drainage, innovative stormwater management, geo-structural engineering, and multi-agency permitting support for this nearly 30 acres of site improvements.

Southeast Los Angeles Cultural Center, *San Gabriel & Lower Los Angeles Rivers and Mountains Conservancy, Los Angeles, CA.* Mr. Reidy is providing senior review and project management support for this urban redevelopment project on the LA River near the Rio Hondo Confluence. Geosyntec's work includes site selection and feasibility studies, conceptual and schematic of geotechnical, civil, hydraulics and hydrology, stormwater management, environmental engineering, and support of permitting, CEQA, and community engagement.

Stormwater Capture and Reuse Community Deployment Program, *Ipswich River Watershed, Massachusetts.* Mr. Reidy served as program director and chief engineer for design and construction of stormwater capture and use systems for this water-shed wide study. The program included development, construction, and deployment of over 40 harvesting systems at residential and municipal properties throughout the watershed to demonstrate the effectiveness of harvesting systems in offsetting municipal water for non-potable uses.

Site Water Management System*, Brooklyn Botanic Garden, Brooklyn, New York.* Mr. Reidy led the analysis, design and permitting efforts associated with a site-wide water management system at the 31-acre botanic garden in New York City. The system incorporates real-time sensors and weather-based controls to manage two onsite ponds for stormwater storage and onsite use, and mitigation of combined sewer overflows.

Integrated Stormwater Capture and Site Drainage System, *St. Louis Housing Authority Green Retrofit Program, St. Louis, Missouri.* Mr. Reidy served as principal engineer for this watershed-level project to implement integrated water conservation and stormwater control systems at seven sites in the City of St. Louis. The system uses real-time sensor and control systems to integrate weather forecast information with onsite stormwater storage to achieve significant water conservation and combined sewer overflow mitigation.

Stormwater Capture Foundation Recharge System, *LendLease, Boston, MA.* Mr. Reidy served as project principal engineer for this unique roof water collection and groundwater recharge system used to elevate and maintain groundwater levels in the City's groundwater protection district to mitigate wood pile foundations deterioration in historic structures.

Stormwater Capture/Combined Sewer Overflow Mitigation System, *City of New York Parks and Recreation Department Brooklyn, New York.* Mr. Reidy served as project principal and chief engineer for stormwater capture and sewer overflow mitigation at the Bushwick Inlet Park, a waterfront park on the East River in Brooklyn, NY. The project featured collection of surface and green roof run-off to support landscape irrigation at the site and mitigate stormwater flows to combined sewers.

Geosyntec consultants

Stephanie Castle Zinn, CPMSM

NPDES Water Quality Compliance
Multi-Benefit Water Supply Solutions
Remote Sensing Research
Water Resource Policy

EDUCATION

Master of Science in Civil Engineering, University of California, Irvine
Master of Urban Planning and Regional Planning, University of California, Irvine
Bachelor of Science in Earth System Science, University of California, Irvine

REGISTRATIONS AND CERTIFICATIONS

Certified Professional in Municipal Stormwater Management

CAREER SUMMARY

Stephanie Zinn has over 14 years of experience in NPDES water quality compliance, multi-benefit water supply solutions, remote sensing research and water resource policy. ly, she has worked with municipal clients in Southern California to view stormwater as a resource and implement stormwater programs in an efficient and effective manner to meet and exceed compliance requirements. She has managed complex water supply and infrastructure analyses as part of EIR technical reports for citywide planning efforts to ensure no significant impacts exist or develop mitigation measures targeted for improved local water policy. She has published methodologies to help her clients achieve their compliance goals in more cost-effective ways using tools under the umbrella of artificial intelligence. Her passion is to help her clients implement multi-benefit water resource solutions that are practical to provide for a diverse water supply portfolio and improved watershed health.

PROJECT EXPERIENCE

South OC Stormwater Capture Master Planning and Regional Collaboration Framework, *Orange County Stormwater Program, California. Assistant Project Manager.* Contributing to identification and development stormwater capture projects with climate resiliency and community benefits. Leading preparation of a white paper outlining rationales and options for regional collaboration on watershed project planning, funding and delivery.

BMP Inspection Verification and Maintenance Agreement Plan Checks, *County of San Diego, California. Assistant Project Manager.* Working with County staff to review constructed stormwater BMPs to confirm they were constructed per plan prior to providing certificate of occupancy. Effort includes reviewing photographs of BMPs, landscape plans and maintenance agreements for consistency.

City of Laguna Woods Stormwater Planning and Engineering Support, *City of Laguna Woods, California. Project Manager.* Currently serving as Project Manager and overseeing several stormwater planning and engineering projects to support the City. Efforts include advising on trash provisions compliance strategies, performing hydraulic modeling to improve drainage condition throughout the City

and providing engineering support for various capital projects including roadway improvements, trails and parks.

City of Anaheim Stormwater Program Support, *Anaheim, California. Project Manager.* Currently serving as Project Manager overseeing the City's Stormwater Program. Effort includes advising on trash provisions compliance, overseeing WQMP guidance for internal staff and applicants, and researching novel approaches for more effective BMP design. Also led the development of guidance for City staff that summarizes the various roles and responsibilities of multiple departments in implementation of the City's Stormwater Program. Effort has included interviewing Code Enforcement, Building, Utilities, Parks, and Public Works departments over multi-year period on current practices and provide recommendations on how to implement program elements more efficiently to meet and exceed minimum compliance requirements. Ultimate deliverable includes a user-friendly, electronic document that is easy to navigate and offers a step-by-step overview of each departments roles and responsibilities of implementing the Stormwater Program. Stormwater Program Guidance Document may also be used for new staff training.

This section contains Ms. Zinn's recent experience with her former employer.

City of Brea Harvest and Reuse Feasibility Assessment (2022). Project Manager on progressing the City's sustainability initiatives by conducting a feasibility assessment of implementing harvest and reuse systems within four parks throughout the City. Assessment includes conceptual design of drainage diversions, sizing and locations of storage systems based off irrigation existing use and infrastructure, and ultimate water treatment requirements for reuse. Recommendation provided for most feasible and cost effective option to be shared with City staff for future final engineering of potential harvest and reuse system(s).

TrashVision™ Methodology Development and Publication (2019-2022). Developed and co-authored the TrashVision™ methodology which was published in Computers, Environment and Urban Systems in April 2022 (*Using a deep learning model to quantify trash accumulation for cleaner urban stormwater*). The methodlogy employs optical capture and machine learning to quantitatively categorize levels of trash accumulation in the urban environment. TrashVision™ can be implemented by municipalities to expedite on-land visual trash assessments (OVTAs) to assist with California Trash Amendments compliance needs.

Orange County Hotel Combined Graywater and Stormwater Reuse System Design (2020). Served as the technical lead on the design of a multi-benefit water reuse solution for a hotel within Orange County. Strategy includes a stormwater harvest and reuse system within parking garage due to limited space for at-grade water quality BMPs. Stormwater will be routed through a pretreatment system, into a storage tank, and into a certified water filtration plant for ultimate reuse for lavatory flushing and landscape irrigation. To maximize efficiency, the system will also tie in greywater sources (e.g. sinks and showers) to allow for a daily source of water for reuse. Return-on-investment assessment results in a 10-year return period that will save money for the hotel in the long term.

City of Anaheim Bio-Char BMP Pollutant Removal Effectiveness Evaluation (2020-present). Project Manage development of Bio-Char BMP to allow for the design and construction of City pretreatment BMP to save on cost and allow for streamlined operation and maintenance. Coordinated with external consultants on BMP removal effectiveness and TAPE/TARP certification protocols to confirm Bio-Char BMP is designed to maximize removal of pollutants within stormwater prior to infiltration.

Geosyntec consultants

Hamid Amini, Ph.D., P.E.

Water/Wastewater Management
Process Engineering
Civil and Environmental Engineer

EDUCATION

Ph.D., Environmental Engineering, University of Central Florida, Orlando, FL, 2011
M.Sc., Environmental Engineering, Iran University of Science & Technology, Tehran, Iran, 2006
B.Sc., Civil Engineering, Iran University of Science & Technology, Tehran, Iran, 2002

REGISTRATIONS AND CERTIFICATIONS

Professional Engineer, California, No. C 85896

40-Hour HAZWOPER Training in accordance with OHSA 29 CFR 1910.120(e)

CAREER SUMMMARY

Dr. Amini is a Senior Principal in the process engineering and geo-environmental groups of Geosyntec Consultants and leads Geosyntec's firm-wide process engineering practice group. Dr. Amini has provided his technical knowledge and experience to a wide range of projects in his years of experience. These projects have involved water and wastewater management process engineering design and construction, sustainable solid waste management design and construction, compliance monitoring, renewable energy generation, hydroelectric power plant design, onshore oil drilling platforms construction quality assurance. Dr. Amini also has experience in conducting feasibility studies, preparing detailed cost analyses, and technical specifications.

Dr. Amini has published several peer-reviewed articles in ISI rated journals and made several presentations at national and international technical conferences and symposiums. Dr. Amini also has experience in teaching and mentoring graduate and undergraduate level classes/students at the University of Central Florida.

PROJECT EXPERIENCES

WATER

BOPU Lake Water Study, *Feasibility Study for Reuse of Treated Wastewater for Lake Recharge, Board of Public Utilities, Cheyenne, WY.* Project director and technical expert support for preparing the work plan and implementing the feasibility study to reuse treated wastewater to recharge three recreational lakes.

LPVCWD Hill St. Pipeline Interconnection, *Engineering Design for Pipeline Interconnection, La Puente Valley County Water District, Baldwin Park, CA.* Project director and Engineer of Record for designing an interconnection between two water

utilities (i.e., LPVCWD and CIWS), which provides system redundancy and community service.

LPVCWD Hudson St. Pump Station, *Engineering Design for Pump Station and Pipeline Interconnection, La Puente Valley County Water District, Baldwin Park, CA*. Project director and Engineer of Record for designing a new pump station, as well as interconnection, between two water utilities, (i.e., LPVCWD and Suburban Water System [SWS]), which provides system redundancy and community service.

Baldwin Park Operable Unit, *Feasibility Study, Design, and Permitting of Nitrate Removal System, La Puente Valley County Water District, Baldwin Park, CA.* Project director and Engineer of Record for designing and permitting a 2,500 gallon-per-minute (gpm) nitrate treatment system for potable water supply. The nitrate treatment system will be a new process within an existing groundwater remedy system. The treated water is served to the local communicate for potable use.

Confidential Groundwater Remediation Superfund Site, *Design of the Drinking Water Treatment System, San Gabriel Valley, Confidential Client, Los Angeles, CA.* Project engineer and assistant project manager for designing and preparing bid documents for construction of a 3 MGD treatment plant to produce drinking water for the La Puente Valley County community. The main treatment processes of the system include liquid granular activated carbon (LGAC) for treatment of VOCs, 1,2,3-trichloropropane, and PFAS, ion exchange (IX) resin for treatment of perchlorate and PFAS, ultraviolet light/hydrogen peroxide advanced oxidation (UV/Ox) for treatment of 1,4-dioxane, and reverse osmosis (RO) polishing for treatment of inorganics and PFAS to meet drinking water standards.

Confidential Groundwater Remediation Superfund Site, *Design of the Groundwater Treatment System, San Gabriel Valley, Confidential Client, Los Angeles, CA.* Project manager and Engineer of Record for designing and permitting a 300 gpm groundwater treatment plant. The remedy system includes major treatment processes including LGAC, UV/Ox, Media Filtration, and RO, as well as extraction wells, inline booster pumps, conveyance pipelines, reservoir, and other ancillary processes.

Omega OU2 Groundwater Remediation, *Design of the Water Conveyance Pipeline, Responsible Parties Group, Los Angeles, CA.* Project engineer and assistant project manager for designing extraction wells and ~10 miles of groundwater conveyance pipelines. The remedial project includes siting and installation of several groundwater extraction wells, conveyance pipelines, and treatment system. The treated water is planned to be discharged to surface waters.

Catalina DBP Mitigation System, *Design of the Disinfectant Byproduct (DBP) Mitigation System on Drinking Water Network, Southern California Edison, Catalina Island, CA.* Project manager and engineer performing technology analysis and feasibility study, designing and preparing bid documents, and coordinating and overseeing construction and installation work of the DBP mitigation system on the Catalina drinking water network.

WASTEWATER

Los Angeles Metropolitan Transportation Authorities, *Engineering Support for Wastewater Treatment and Permitting, Los Angeles, CA.* Project manager and senior

technical support for feasibility studies, treatment system design, permitting and permit compliance, and operation support to Los Angeles Metropolitan Transportation Authorities (LA Metro) for several site facilities.

Palm Springs Aerial Tramway, *Wastewater Treatment System, Palm Springs, CA.* Project director and Engineer of Record for engineering-procurement-construction (EPC) of two wastewater treatment system projects for removal of organic loadings through solids handling and SBR system, for total project value of $6 million.

Confidential Mining Client, *Alternatives Analysis and Treatment System Design, Denver, CO.* Project manager and design engineer for conducting an alternatives analysis and preparing design documents for industrial/mine wastewater treatment system.

Zume, *Wastewater Treatment and Permitting, Camarillo, CA.* Project director and senior technical support for designing a TSS treatment system, as well as permitting support and compliance negotiations with the POTW.

Turano Baking Co., *Wastewater Treatment System Design, Henderson, NV.* Project manager for EPC of a $500,000 wastewater treatment system at the production facility for removal of organic loadings.

Swire Coca-Cola, Fruitland, Idaho, *Wastewater Treatment System, Fruitland, ID.* Project manager for EPC of a $2 million wastewater treatment system for pH adjustment prior to discharge to the POTW.

Other Water-Related Projects

Hillcrest Country Club, *Conceptual Engineering Design of Groundwater Treatment System for Irrigation Use, Hillcrest Country Club, Los Angeles, CA*. Senior technical support for feasibility studies and conceptual design for two groundwater extraction wells, conveyance pipeline, two 500,000-gallon storage tanks, as well as a treatment system.

Los Angeles River, Bending the River, *Feasibility Study and Engineering Design for Water Treatment System for Irrigation Reuse, Metabolic Studios., Los Angeles, CA.* Senior technical support for conceptual and detailed engineering design of a treatment system to treat water from the Los Angeles River for irrigation reuse.

Edwards Life Sciences Dewatering System, *Engineering Design and Permitting Support of Water Treatment System for Irrigation Reuse, Irvine, CA.* Senior technical support for feasibility study, permitting support, and detailed engineering design of a pH adjustment system to treat water from a dewatering system for irrigation reuse.

Weber Metals Stormwater Treatment System, *Design of Stormwater Collection, Control, and Treatment System, Weber Metals Inc., Long Beach, CA*. Assistant project manager and project engineer for designing, permitting, and implementing a new stormwater collection, control, and treatment system for removal of metal constituents from surface runoff water at the Weber Metals Inc. metal forging facility.

Geosyntec consultants

JOSE L. AVINA, PE

stormwater management
civil design
construction management

EDUCATION

M.S., Civil and Environmental Engineering, California State University, Fullerton, 2016
B.A., Geophysics, University of California, Berkeley, 2013

REGISTRATIONS AND CERTIFICATIONS

Professional Civil Engineer, California, No. 92876
OSHA 24-Hour Hazardous Waste Operations Worker Certification
OSHA 30-Hour Construction Safety

CAREER SUMMARY

Mr. Avina has nearly 7 years of experience working on projects involving civil design, construction oversight and management, stormwater management, regulatory compliance, and field work. Mr. Avina's experience includes work for both private and public clients from design to construction. His graduate studies focused on stormwater management, water and wastewater treatment design, and groundwater modeling.

Project Experience

TOS-62 Wilmington Neighborhood Greening Project, *City of Los Angeles, Bureau of Engineering, Los Angeles, CA.* Civil designer and assistant project manager for a stormwater diversion and reuse project in the Wilmington neighborhood of Los Angeles. Design includes diversion from an existing 36-inch drain to a 5.5 acre-feet subsurface tank for temporary storage. Diverted water will be discharged to sewer for treatment at the Terminal Island Water Reclamation Plant for downstream reuse.

Descanso Gardens Stormwater Capture and Reuse Project, *Descanso Gardens, La Canada-Flintridge, CA.* Civil designer and assistant project manager for a stormwater diversion and reuse project in La Canada-Flintridge. Design includes diversion from Winery Canyon Channel to a 4.5 acre-feet subsurface tank for temporary storage. Diverted water will be treated onsite and reused on-site for irrigation.

Isla Vista Trash Capture Project, *Santa Barbara County, Isla Vista, CA.* Civil designer and assistant project manager for design and installation of full capture devices designed to meet the Trash Amendment and associated 13383 Orders issued by the State Water Board in 2015 and 2017,

respectively. Full capture devices include CDS units and connector pipe screens throughout catch basins in the Isla Vista storm drain network.

Dry Weather Flow Abatement Project, *Riverside County Flood Control and Water Conservation District, Riverside County.* Lead designer for evaluating conceptual level screening of dry weather flow diversions to meet NPDES and TMDL regulations for bacteria. Developed 13 concept designs including dry weather flow diversion to sewer or UV treatment for 11 unique outfalls in Riverside County.

City of Long Beach Pilot Drywells Project, *City of Long Beach Department of Public Works, Long Beach, CA.* Civil design, hydrologic and hydraulic analysis, and client coordination. Assistant Construction Manager for installation of drywell infiltration systems and stormwater facilities.

Palomar Transfer Station Stormwater Improvements, *Confidential Client, Carlsbad, CA.* Civil design, hydrologic and hydraulic analysis, hydromodification analysis, and client coordination. Stormwater improvements include new storm infrastructure, pump, and active treatment system. Assisting client in obtaining construction permits, coordination with City on client's behalf.

San Fernando Valley Green Streets Project, *LASAN, North Hollywood, CA.* Design, hydrologic and hydraulic analysis, and client coordination. Assistant Construction Manager for installation of drywell infiltration systems and stormwater facilities.

Lankershim Stormwater Diversion Project, *LASAN, North Hollywood, CA.* Design and drafting of construction documents of stormwater diversion from existing storm drain for groundwater recharge. Role on project: Engineering Support, Assistant Project Manager, Lead Designer.

TOS 14 Low Flow Diversion, *City of Los Angeles Bureau of Engineering, Los Angeles, CA.* Design and drafting civil discipline construction documents for three project locations near downtown Los Angeles. Civil components include site and demolition plans, plans and profiles, and civil sections and details. Role on project: Lead Designer, Engineering Support.

Van Nuys Green Streets Project, *LASAN, Pacoima, CA.* Provided field oversight for installation of 21 drywells, 19 porous gutters, and 9 bioretention planters in public right-of-way. Conducted hydrology and hydraulic analysis to optimize BMP placement throughout project area. Provided engineering support in drafting design drawings of drywell, porous gutters, and drywells. Role on project: Engineering Support and Field Support.

Carpinteria Via Real Stormwater Improvement Project, *City of Carpinteria Public Works, Carpinteria, CA.* Conducted drainage analysis in flooding prone areas to recommend stormwater infrastructure improvements and design of detention basin and bioswales. Designed and prepared 30% design drawings. Role on project: Engineering Support.

Geosyntec consultants

HALEY BAUER, PE

water resources
civil design
construction management

EDUCATION

B.S., Biosystems and Bioproducts Engineering (Environmental and Ecological Engineering), University of Minnesota – Twin Cities, Minneapolis, Minnesota, 2016

REGISTRATIONS AND CERTIFICATIONS

Professional Civil Engineer, California, No. C 96220
OSHA 40-Hour HAZWOPER Certification

CAREER SUMMARY

Haley Bauer has over 6 years of experience working on a variety of private and public development projects, including engineering design, construction and post-construction water quality compliance, hydrology and hydraulics, and construction management. Ms. Bauer's most recent experience includes the development of affordable housing land development projects, stormwater Best Management Practice (BMP) design and water quality compliance in the state of California. Prior to her work in California, Ms. Bauer spent 2 years as a stormwater engineer for the Minnesota Pollution Control Agency, and during this time she developed standards and guidance documents for the state's State Revolving Fund (SRF) Program, provided technical review and design support for municipalities applying through the SRF program, and helped write the state's 2018 NPDES/SDS Permit for Construction Activity. She received her B.S (2016) in Biosystems and Bioproducts Engineering with a focus on environmental engineering and water resources from the University of Minnesota – Twin Cities.

Slauson Connect Safe Clean Water Project, *Los Angeles, CA.* Civil and water resources engineer for the design of a subsurface cistern to provide stormwater capture in the Wildasin Neighborhood of the City of Los Angeles and diversion to the sanitary sewer for regional reuse. The project involves the implementation of multi-benefit BMPs that will improve environmental and water quality, reduce local flooding, and increase the greening and community value of the project area. The volume of runoff captured by the project will contribute to the City of Los Angeles' progress towards its Ballona Creek Enhanced Watershed Management Program pollutant reduction targets. The project also incorporates Green Alley enhancements, including the implementation of high-albedo pavement to reduce the urban heat island effect within the neighborhood.

Fulton Playfield Multi-Benefit Infiltration Project, *Redondo Beach, CA.* Civil and water resources engineer for the conversion of an existing Los Angeles County flood control subsurface

tank located beneath an open green space (Fulton Playfield) in the City of Redondo Beach to a multi-benefit regional infiltration project while maintaining its flood control capacity and function. The project involves the installation of drywells within the Playfield and the adjacent City streets and modifying the existing weir diversion chamber to divert nearly all stormwater runoff from the 465-acre drainage area to the basin system to infiltrate. The project also incorporates a variety of other benefits, including parkway greening via the installation of parkway bioretention cells along the streets adjacent to the Playfield, public education opportunities through the installation of an ocean-friendly garden along the border of the Playfield, and park enhancements per community stakeholder input.

Rancho Mission Viejo Subarea 3.14 Water Quality Management Plan Review, *Rancho Mission Viejo, CA.* Civil and water resources engineer providing technical review on behalf of the County of Orange for the Rancho Mission Viejo (RMV) Subarea 3.14 Water Quality Management Plan for the proposed regional C-Complex infiltration basin, which included a review of the Water Quality Management Plan (WQMP), grading plans and storm drain plans associated with the proposed water quality infrastructure to ensure the proposed system would provide adequate water quality treatment for the ultimate 1,300-acre RMV development.

City of Anaheim WQMP Plan Check Review, *Anaheim, CA* Civil and water resources engineer providing technical review on behalf of the City of Anaheim of WQMPs and associated grading plan sets for a variety of private development projects within the City.

ocV!BE Stadium Redevelopment Project, *Anaheim, CA.* Water resources engineer for the water quality treatment design of the 94-acre stadium redevelopment project around the existing Honda Center within the city of Anaheim in Orange County, including the overall water quality strategy for the project entitlements phase, final water quality improvement plan sets, and final Water Quality Management Plan reports. The project involves redeveloping the existing surface parking surrounding the stadium into community spaces such as a new restaurant row, a concert hall, an amphitheater, and several parks. The water quality strategy for the project includes subsurface infiltration galleries, surface bioinfiltration basins within the community parks, and biofiltration.

City of Brea Harvest and Reuse Assessment, *Brea, CA.* Water resources engineer for the engineering feasibility assessment and preliminary design for harvest and reuse systems at four parks within the City of Brea. The feasibility assessment includes the determination of the drainage areas tributary to the four parks and the determination of the volume of water available for capture and reuse as irrigation at the park sites. The preliminary design includes the diversion structures to divert flows from the existing stormwater infrastructure to the storage systems, and the storage tank siting and sizing for each park site.

Geosyntec consultants

Jeff Williams
Senior Construction Manager

construction management & scheduling
cost estimating
construction quality assurance/control
constructability reviews
risk management

EDUCATION

University of Notre Dame, Business Management for Contractors, 2007
Orange Coast College, Ornamental Horticulture Program, 1987
Orange Coast College, Construction Management Program, 1985

REGISTRATIONS AND CERTIFICATIONS

- California, State Contractors C-8 (Concrete) #838125
- U.S. Army Corp of Engineers/NAVFAC, Construction Quality Control Management Certification
- North Carolina, General Contractor #68559
- ISO 14001:2015 Auditor
- ISO 45001:2018 Auditor
- HAZWOPER 40 Hour
- OSHA 30-Hour Safety
- OSHA Fall Protection
- EM385 40-Hour Safety
- ECATTS 3-28-11
- Anti-Terrorism Awareness Level I
- Asbestos for the Competent Person
- GCI-ICP Certified Inspector
- Certified Construction Manager CMCI# 14242

CAREER SUMMARY

With over 40 years in corporate CQA/CQC, construction risk management, scheduling, and cost estimating Mr. William's experience include multiple jobsite supervision; remote sites, preparation and implementation of the CQC manual and three phases of control, preparation, and implementation of IIPP/APP; scheduling; safety indoctrination and training of company and subcontractor personnel; construction systems analysis and development; evaluation of architectural and structural drawings; RFI and change order processing; project engineering management; supervision of on-going construction and materials testing; and verification of all inspections and testing, estimating, and sales.

Mr. William's project experience includes both vertical and horizontal construction on projects up to 100,000 square feet of building and up to 20+ acres of site footprint. New construction and renovation, including historical buildings. Horizontal and site work has included storm drainage, stormwater retention ponds, underground water, sewer, electrical, communication, gas, grading, blasting, paving (asphalt and concrete), retaining walls (cast-in-place, gravity, and CMU), irrigation, and landscape. Vertical work has included structural steel, CMU, cast-in-place concrete, pre-engineered metal buildings, metal framing, wood framing, mechanical, electrical, plumbing, fire sprinkler, life safety, abatement (ACM and LBP), and interior finishes.

RELEVANT PROJECT EXPERIENCE

PROJECT MANAGEMENT QC/QA PROJECTS

Palm Springs Aerial Tramway-Valley Station, Wastewater Treatment Facility, *Palm Springs, CA* – Mr. Williams served as Senior Construction Manager for the Design-Build construction of a new above-ground wastewater treatment facility for an existing tourist tramway. Scope of work included grading, civil improvements, a pre-engineered metal building, underground utilities, coordination of and installation

support for a new electrical service, and installation of the treatment equipment and controls. Project Cost $2,000,000.00. Completed: 2020

Turano Baking Company Wastewater Treatment Facility, *Henderson, NV* – Mr. Williams served as Senior Construction Manager for the Design-Build construction of a new underground wastewater treatment system at an existing commercial baking facility. Scope of work included demolition of existing improvements and the existing treatment system, underground utilities, precast underground treatment tanks, installation of a prefabricated building to house the dosing equipment, installation of the treatment system, and restoration of the site to its original condition. Project Cost: $550,000.00. Project Completion: 2020

Swire Coca-Cola Wastewater Treatment Plant, *Fruitland, ID* - Mr. Williams served as Senior Construction Manager for this Design-Build construction of a 1,600 SF pre-engineered metal building housing a pH treatment system at an existing soft drink bottling facility. Scope included earthwork, underground utilities, structural concrete, building erection, plumbing, electrical, lighting, controls, 8,600-gallon underground fiberglass lift station tank, above-ground EQ tanks and caustic tank, skid mounted treatment system, and SCADA system. Project Cost: $2,000,000. Project Completed: 2019

Metropolitan Water District of Southern California, Employee Housing Upgrades, Gene, Iron Mountain, Eagle Mountain, and Julian Hinds Pumping Stations, *Various Locations, Riverside and San Bernardino Counties, California** Mr. Williams served as Project Manager on this Design-Build Project to construct ten new homes at remote pumping stations along the Colorado River Aqueduct. Scope of work included earthwork underground and above-ground utilities, cast-in-place concrete foundations, installation of modular homes, and construction of detached garages utilizing Structural Insulated Panels. Project Cost: $2,400,000.00. Project Completed: 2018

Naval Air Weapons Station (NAWS) China Lake North Range Darwin Wash Support Facility - *China Lake, California.** Mr. Williams served as Project Manager/Alternate QCM/SSHO for this Design-Build project of a 2,800 SF Dormitory on a remote site. Scope included earthwork, underground utilities, 70 KW generator power, concrete footings and slab, erection of a pre-engineered metal building, and full interior build-out including MEPFS, sleeping quarters, bathrooms, and kitchen. LEED Silver. Project Cost: $1,669,245. Project Completed: 2017.

Naval Air Weapons Station (NAWS) China Lake South Range Flash Site UxS High Bay Facility - *China Lake, California.** Mr. Williams served as Project Manager/Alternate QCM/SSHO for this Design-Build of a 5,000 SF High Bay hanger for unmanned aerial vehicles. Scope included earthwork, underground utilities, concrete footings and slab, erection of a pre-engineered metal building, full interior build-out included MEPFS, bathroom, and powered hanger doors. LEED Silver. Project Cost: $1,806,515. Project Completed: 2017.

U.S. Army Reserve Center - *Knightdale, North Carolina*.* Mr. Williams served as Project Manager/Alternate QCM/SSHO for this Design-Bid-Build of a 100,000 SF Army Reserve Center on a 21-acre greenfield site. Included timber harvest, blasting of rock, processing of rock, retaining walls, stormwater retention ponds, all underground utilities, paving, and building core and shell. LEED Silver. Project Cost: $19,500,000. Project Completed: 2013.

TRACKS MCAGCC - *Twentynine Palms, California.** Mr. Williams served as Project Manager for this Design-Build construction project of solar power and above-ground water supply and pump for the Tortoise Research and Rearing Captivity Site. The site is in a remote portion of MCGAC 29 Palms. The project included trenching, grading, 2,000 feet of water line and power, new transformers and switchgear, a 20 KW photovoltaic field, biological monitoring, geotechnical observation, and concrete flatwork. Project Cost: $549,519. Project Completed: 2010.

**Project work completed while employed with another firm.*

Geosyntec consultants

Stephen Brodie, B.ASc., P.Eng. (BC)

Project Engineer

Specialties

- ✓ Water and Wastewater Treatment Systems
- ✓ Onsite Technical Services
- ✓ Process Engineering
- ✓ Environmental Engineering

Education

B.ASc., Chemical Engineering (with Distinction), University of Waterloo, Waterloo, 2012

Registrations and Certifications

Professional Engineer, British Columbia (# 47991)

CAREER SUMMARY

Stephen Brodie is a process and project engineer with a focus on water and wastewater treatment. He is a Professional Engineer with 12 years of experience within the mining, municipal, food and beverage, shale gas, and heavy oil industries. His expertise involves engineering design, cost estimation, procurement, and construction management of water and wastewater treatment systems. He also has experience in providing onsite technical services across North America including piloting, plant optimization, field investigations, operator training and commissioning. His attention to detail and technical competence enables him to find solutions and lead projects effectively.

Stephen's technical fields of competence include strategic planning, project execution, subcontractor management, technology review and selection, development and review of material balances, process calculations, PFDs, P&IDs, equipment lists, and coordination of discipline deliverables (electrical / mechanical / I&C / structural / architectural). He is knowledgeable in many water treatment technologies including but not limited to biological systems, chemical precipitation, coagulation / flocculation, sedimentation / clarification, filtration, and sludge dewatering.

KEY PROJECT EXPERIENCE

1,4-Dioxane Treatment, *UV/AOP Technology Section, Engineering, Procurement, Construction Management, Tucson, Arizona.* Project technical lead providing direction on technology review and selection of 1,4-dixane treatment equipment, 90% engineering design, equipment procurement and contractor engagement, and construction reviews. Collaborated with internal team, existing site operators, and State stakeholders to successfully integrate and commission new equipment into existing infrastructure and improve removal of 1,4-dioxane to below health based guidelines.

Chlorine Dioxide Biocide, *Improved Groundwater Well Operation Through Biocide Injection, Lathrop, California.* Process engineering lead providing review and selection of biocide technology. Completed 90% engineering design for two separate biocide systems – submitted for construction permit approval. Led contractor bid process and successfully engaged with mechanical, civil, and electrical contractors. Provided technical direction during construction and commissioning.

Surface Water Reuse, *Surface water Treatment System and Distribution Design, Los Angeles, California*. Process engineer leading 60% and 90% engineering design to support waste discharge permit application. Collaborate with the California Water Boards to submit and obtain waste discharge permits for the water treatment system. Coordinate electrical, structural, and architectural subcontractors to obtain complete construction package for contractor engagement on a brownfield project.

Groundwater Remediation, *Groundwater Injection/Extraction and Treatment System Design, Karratha, Australia*. Process engineer lead providing 90% design to produce a Class 1 cost estimate for construction. Collaborated with a team of hydrogeologists and local contractor to produce a customized mobile design suitable for existing infrastructure.

Ammonia and Metals Removal, *Water Treatment Feasibility, Permitting, Detailed Engineering, British Columbia*. Project and process engineer lead on providing Class 3 and Class 4 cost estimates for permitting and construction. Water treatment included a novel combination of biological and lime treatment to remove ammonia and metals species from several sources across the site including TMF water and underground mine contact water.

Metals and Selenium Removal, *Water Treatment Plant Detailed Engineering and Fabrication, British Columbia*. Project engineer providing technical oversight, detailed engineering, and fabrication management for a water treatment plant at a mine in North Central British Columbia. The scope included all detailed discipline engineering and fabrication for a modular treatment plant designed for sulphate and selenium removal, including Mechanical, Electrical, Structural I&C Engineering as well as procurement and construction management. Key process components include pre-treatment, pH adjustment, precipitation, sulphate-targeted ion exchange, metals removal for selenium and polishing.

Copper and Selenium Removal, *Water Treatment Feasibility Engineering, British Columbia*. Project and process engineer assessing several selenium removal technologies. The selected process was advanced by completing engineering deliverables including PFDs, P&IDs, major mechanical equipment list, electrical load list, 30% model, Piping GAs, and a Class 4 cost estimate.

Nutrient Recycling System, *Hydroponics Water Recycling Detailed Design, New Zealand*. Project and process engineer lead on providing detailed design. The water recycling system (WRS) was based on an existing plant in Ontario. The scope included design improvements, cost reduction, and modularization of the WRS for construction in Canada and installation in New Zealand. The WTS system consisted of source water treatment, pH control, and nutrient water makeup / distribution / collection.

Water Treatment and Reuse, *Water Treatment Plant Design, Los Angeles, USA*. Project and process engineer leading a multidisciplinary team to complete a 30% process mechanical design. Major treatment stages include pH adjustment, media filtration, disinfection, storage, and distribution for irrigation.

Municipal Drinking Water Treatment, *Plant Design and Construction, British Columbia*. Project and process engineer lead on providing technical execution. The scope included a site review, detailed design, permitting and construction. The potable water treatment plant consisted of a lake water intake, filtration, UV and chlorine disinfection, distribution, and discharge of backwash water. Included was a review and renovation of existing building for suitability for new equipment.

Camp Wastewater Treatment Plant, *Wastewater Treatment Plant Design and Procurement, Yukon*. Project engineer providing technical oversight, design and procurement support for sanitary collection, treatment, and effluent dispersal. Completed a wastewater treatment and field disposal design for submission to regulating body for water license approval. Reviewed and created piping and instrumentation diagrams (P&IDs), process flow diagrams (PFDs), general arrangement drawings and technical bid evaluations.

Modular Water Treatment Plants, *Membrane Water Treatment Design and Construction, Alberta/British Columbia*. Project engineer and technical execution of four full-scale, modular membrane plants. Provided complete project oversight, design, procurement, and construction management. Key deliverables included: writing SOPs, P&ID drafting and organizing documentation package. Support equipment specification and procurement. Provide project management, engineering support, construction management during construction, commissioning, and operator training.

Field Programs

Tsawwassen First Nations Sewage Treatment Plant, *Chemical Selection Investigation, Tsawwassen, British Columbia*. Performed jar testing on a set of chemical flocculants to confirm product selection for centrifuge dewatering.

Process Water Treatment, *Membrane Pilot Plant Operation, Taber, Alberta*. Operated pilot plant for a 2-week trial. Optimized system performance including transmembrane pressure, backflush intervals and crossflow velocity. Provided support on tying in pilot plant to battery plant.

Silt Water Treatment, Membrane Pilot Plant Operation, *Ryley, Alberta*. Operated pilot plant for a 1-week trial. Optimized system performance including transmembrane pressure, backflush intervals and crossflow velocity.

Produced Water Treatment, *Membrane Pilot Plant Operation, Fort St. John, British Columbia*. Operated pilot plant for a 4-week trial. Optimized system performance including transmembrane pressure, backflush intervals and crossflow velocity. H2S safety and training provided during operation.

Geosyntec consultants

LEVI J. WALDEN

Field Engineering
Construction Management & Scheduling
Constructability Review
Cost Estimating
Underground Utilities

REGISTRATIONS AND CERTIFICATION

10 hr. General Industry Safety and Health, OSHA
30 hr. Construction Safety, OSHA
40 hr. OSHA HAZWOPER
8 hr. OSHA HAZWOPER Refresher
Asbestos Awareness
Confined Space
Excavating and Trench Safety

CAREER SUMMARY

Mr. Walden has over 16 years of experience in civil construction, including underground utilities, structural concrete, earthwork, site work, stormwater retention, water treatment, and pump stations. He has extensive field experience and operating experience with heavy equipment. He has been involved with projects from the start of construction to finish, aiding in project change orders, RFIs, submittals, scheduling, as-builts, field design, start-up procedures, subcontractor management, and cost estimating.

CONSTRUCTION SERVICES

Bending the River Back Into the City, Phase 1 – Diversion Pipeline, Metabolic Studio, Los Angeles, CA. *Construction Manager & Site Health & Safety Officer.* Provided construction management, observation, documentation, daily field reporting, scheduling, and water quality management for installing 300 LF of 42-inch Vitrified Clay Pipe as diversion pipeline in the LA River channel and future connection to the Metabolic Studio site as part of Phase 1 to the BRBC project. Throughout 2022, assist the Geosyntec design team with a water well concept for the client to divert water from the LA River and install a prefabricated pump station to lift the water from a pump well to water treatment for future irrigation use at nearby local and state parks. As the project estimator, prepare a multi-phase rough order of magnitude cost opinion for BRBC baseline construction and baseline plus alternatives, including a 48' deep pump well, Jack & Boring, LA River Improvements, Electrical Improvements, Water Treatment, Site Plan, development for the LA State Historic Park.

Pilot Drywell Project, City of Long Beach, Long Beach, CA. *Construction Manager.* Provided design-build services, including design, geotechnical, utility investigations, construction management, oversight, documentation, subcontractor communications, and daily field reporting for the construction of 2 dual drywell and pretreatment systems with catch basins strategically installed in the public right-of-way to provide stormwater capture and infiltrate the 85th percentile 24-hour design storm event from the tributary drainage areas.

Carpinteria Via Real Storm Water Project, City of Carpinteria, CA. *Construction Manager.* Performed utility investigations and provided constructability reviews for civil, utility relocation, and landscape design, including the development of complete plans, specifications, and cost estimates for the construction of a 1,700 SF bioretention basin, bioswales, water main relocation, and storm drain improvements which intercept and convey residential and agricultural stormwater runoff to a Caltrans-owned ditch, ultimately discharging to the Carpinteria Creek.

San Fernando Valley Green Stormwater Infrastructure Program, City of Los Angeles Bureau of Sanitation and Environment, Los Angeles, CA. *Construction Manager.* Performed BMP inspections, coordinated, observed, and documented the maintenance of the stormwater capture and conveyance systems as part of the one-year monitoring and maintenance program to evaluate the performance of the seven project areas in the San Fernando Valley that is designed to capture and infiltrate over an average of 457 acre-feet per year of stormwater runoff from 594 acres of tributary drainage areas through implementation of drywell systems, storm drain diversions, rain gardens, and catch basins.

ANR Madisonville Compressor Station – Madisonville Pond and Process Water System Decommissioning, TC Energy, Madisonville, KY. *Construction Manager.* Provided construction management, observation, documentation, daily field reporting, project coordination, and schedule for the closure/decommissioning of the stormwater system, process water system, and pond at the ANR Madisonville Compressor Station. Polychlorinated Biphenyls (PCBs) waste was managed in general accordance with the PCB Mega-Rule 40 CFR 761.61(b) under the Performance-Based disposal provision. Items with PCB concentrations greater than or equal to one (1) milligram per kilogram (mg/kg) were managed as TSCA waste.

Prop O Optimizations Phase 2 – Temescal Canyon Park, City of Los Angeles Bureau of Sanitation and Environment, Pacific Palisades, CA. *Construction Manager.* Performed construction management duties tracking submittals, scheduling, client subcontractor and inspection communication, daily field observations, field engineering, documenting, and daily field reporting for the installation of a 30" isolation valve in the diversion structure for a 1.25 M gal water storage tank and the design modifications to the existing dewatering discharge system that led to the start-up and manual operation of the Temescal Canyon Park stormwater capture and discharge project for the City of Los Angeles, Bureau of Sanitation & Environment.

PROJECT EXPERIENCE

Performing work on various water infrastructure projects, including Rancho Water Pump Station for the City of Temecula; a water pump station and chemical feed building for Western Municipal Water District (WMWD); Imperial County Water District filter to waste utility pipeline add-on, *Serving Cora Constructors, Palm Desert, CA. Operating Foreman*. Levi was a Heavy Equipment Operator and grade checker for over-excavating building foundations and underground utilities. He installed chemical feed components such as analyzers, metering pumps, eyewash stations, and sample stations. Levi was also responsible for the start-up and testing procedures of several different water district pump stations, such as the Rancho Water with the City of Temecula, WMWD in Murrieta, and 12 different entities with Chino Basin Desalter Authority for projects in Chino.

Performing work on various general civil infrastructure projects, including Van Nuys green streets bio-retention and pervious gutters for Geosyntec; Concrete site work and water retention for Long Beach Car Dealership; Underground utilities, concrete, stormwater retention for multi-level townhomes with WCH Communities, *Serving El Camino Construction and Engineering, Long Beach, CA. Operator/Foreman/Superintendent.* In this role, Levi managed 3 to 5 job sites at any time. He worked on underground utilities, primarily water and storm drain; concrete demolition, design-build, flatwork, and structural; grading for parking lots, sidewalks, patios, and driveways; and excavations for wall and pier footings. Levi was involved in the company's overall daily reporting, team building, and growth, including meetings with clients and estimating to include a successful track record of change orders during active jobs to protect the company's liability and profitability.

Geosyntec consultants

MISTY STEELE, CPSWQ, IGP TOR, QSD **Regulatory Compliance Program Management**
Industrial General Permit Compliance

EDUCATION

B.S., Environmental Engineering, Montana Tech of the University of Montana

REGISTRATIONS AND CERTIFICATIONS

Certified Professional in Storm Water Quality, No. 0787
Qualified Industrial Stormwater Practitioner Trainer of Record, No. 120
Qualified SWPPP Developer/Practitioner, No. 01365
Certified Engineer-in-Training, 14155EI

EXPERIENCE

Ms. Steele has over 20 years of experience in environmental consulting which includes regulatory compliance program management, stormwater general permit compliance, and routine monitoring and reporting activities. Ms. Steele is an Industrial General Permit (IGP) Trainer of Record, a Qualified Industrial Stormwater Practitioner (QISP), and a Construction General Permit (CGP) Qualified Stormwater Pollution Prevention Plan Developer/Practitioner (QSD). Representative project experience includes:

Routine Regulatory Compliance Services, OC Waste & Recycling, Orange County, California. Ms. Steele is the project director for the County of Orange OC Waste & Recycling departments Routine Regulatory Compliance Services project for compliance with the IGP, individual landfill Waste Discharge Requirements (WDRs) and Monitoring and Reporting Programs (M&RPs), Spill Prevention Control and Countermeasure (SPCC) program, and flare testing requirements. She also assists OC Waste & Recycling with various non-routine regulatory compliance projects for the three active landfills and numerous closed landfills operated and maintained by the County. Ms. Steele provides support for OC Waste & Recycling's storm water programs at the County's three active landfills in compliance with the IGP. The storm water program support provided by Ms. Steele includes conducting annual inspections which involve evaluating Best Management Practices (BMPs) utilized at the sites, providing annual training for site personnel, preparing annual reports in the Storm Water Multiple Application and Report Tracking System (SMARTS), and updating the Storm Water Pollution Prevention Plans (SWPPPs) for each site. Ms. Steele is also the Compliance Group Leader which has resulted in a reduction of the number of stormwater samples each facility is required to collect on an annual basis. She is also the QISP who prepares Exceedance Response Action (ERA) reports, if needed.

Ms. Steele provides as-needed stormwater compliance support for OC Waste & Recycling which has included preparing comment letters on draft general permits, providing Construction General Permit support, developing BMP implementation strategies to meet the IGP numeric action levels (NALs) and designing and conducting a flocculant pilot test at the Olinda Alpha landfill. Following the pilot test, permanent dosing systems were installed, and stormwater discharges returned to below

applicable NALs. The facility has since been able to reduce their annual sampling requirement from two samples per year to one sample per year.

Industrial General Permit Program Management, Los Angeles County Metropolitan Transportation Authority, Los Angeles County, California. Ms. Steele is the project manager and the Compliance Group Leader for LA Metro's IGP program. Ms. Steele has developed a programmatic approach for LA Metro's IGP compliance program to streamline the program implementation and reduce LA Metro's risk. The project team is currently working on implementing this approach under Ms. Steele's direction. LA Metro previously had IGP coverage for 23 bus and rail car maintenance facilities, many of which were in elevated ERA levels for copper and zinc. Following initial site visits, Ms. Steele identified that six of the 23 facilities had IGP coverage in error and pollutant source assessments revealed that many facilities do not have industrial sources of copper or zinc on-site and therefore should not be sampling stormwater discharges for copper or zinc. Ms. Steele has been working with the RWQCB, including facilitating site inspections, to terminate IGP coverage for six facilities and remove copper and zinc analysis for 12 facilities. To date, two facilities have been removed from IGP coverage and 12 facilities have received RWQCB approval to discontinue sampling for copper and zinc. Program modifications for the nine remaining facilities are either pending exposure elimination BMP installation or are undergoing changes in use by LA Metro. Routine support for LA Metro includes coordinating and overseeing routine monthly inspections, stormwater sampling, and pre-rainy season maintenance. Ms. Steele oversees and provides annual training for site personnel, prepares annual reports in SMARTS, updates the SWPPPs for each site, and prepares ERA reports, as needed.

Industrial General Permit Compliance Support, Southern California. Ms. Steele provides IGP compliance support for multiple industrial clients operating in various industrial sectors, including transportation, metal forging, metal stamping, metal finishing, food and beverage manufacturing, household goods manufacturing, heavy equipment manufacturing, and municipal solid waste disposal, in Los Angeles, Orange, San Diego, Ventura, and Santa Clara counties. The range of compliance support services provided includes conducting and overseeing routine and non-routine inspections, stormwater discharge sampling and visual observations, evaluation of adherence to BMPs as they are described in each site's SWPPP, recommendations for additional BMP implementation, annual training to site employees regarding stormwater BMPs, completing and submitting ad hoc monitoring and annual reports via SMARTS, and performing periodic SWPPP updates. Ms. Steele develops strategies for facilities that enter into elevated ERA Levels and has been successful at getting these facilities back to baseline through implementation of source area specific BMPs. Ms. Steele has also assisted multiple clients with obtaining No Exposure Certification for their facilities.

Construction General Permit Compliance Support, Southern California. Ms. Steele provides CGP compliance support for a variety of construction projects including projects at active and closed landfills, flood channel improvements, and soil and sediment remediation sites.

Appendix B:
Subcontractor Qualifications

Additional Subcontractor Qualifications can be found here

We are
engineers, scientists
and innovators.

CONTACT INFORMATION

Daniel Lee, PE, CCM
310.957.6109
1031 S Broadway, Suite 300
Los Angeles, CA 90015

Geosyntec consultants

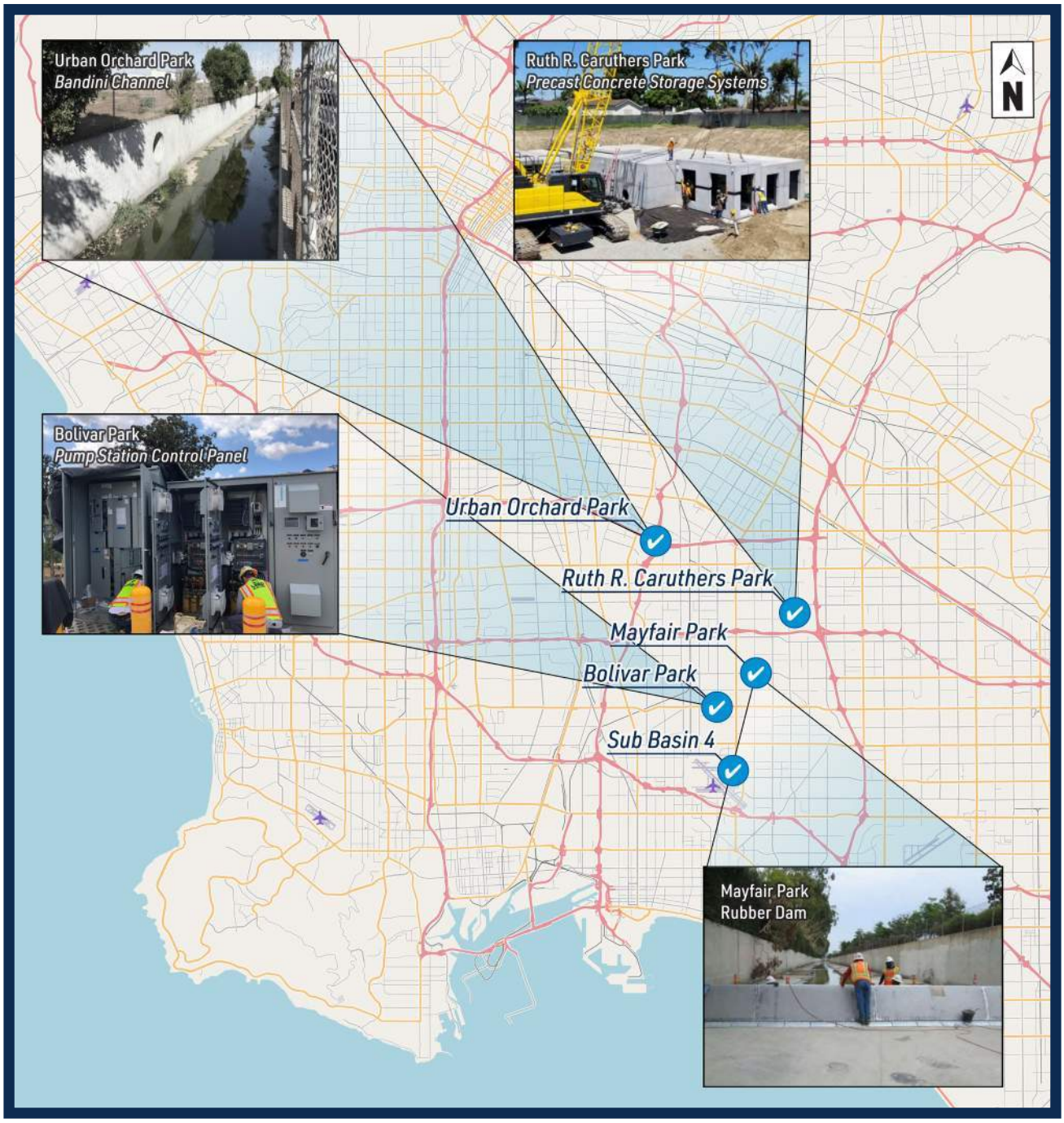
engineers | scientists | innovators

Offices in Principal Cities of the United States and Select International Locations

geosyntec.com

STATEMENT OF QUALIFICATIONS FOR:

OPERATIONS, MAINTENANCE, AND EVALUATION OF REGIONAL STORMWATER CAPTURE AND TREATMENT PROJECTS



SEPTEMBER 16, 2024

Michael Baker
INTERNATIONAL

SUBMITTED TO:

GWMA
Gateway Water Management Authority

Michael Baker
INTERNATIONAL

STATEMENT OF QUALIFICATIONS FOR:
OPERATIONS, MAINTENANCE, AND EVALUATION OF REGIONAL STORMWATER CAPTURE AND TREATMENT PROJECTS

September 16, 2024

Gateway Water Management Authority (GWMA)
16401 Paramount Boulevard, Paramount, CA 90723
Attention: Madeline Anderson
Submitted Via Email: madelineanderson.gateway@gmail.com

RE: GWMA O&M SOQ

Dear Ms. Anderson and Members of the Selection Committee:

Over the past decade, tens of millions of dollars have been invested to improve water quality and diversify local water supply in the Gateway Region. The return on that investment is not being fully realized. The Request for Qualifications (RFQ) for Operations, Maintenance, and Evaluation of Regional Stormwater Capture and Treatment Projects in this area is a significant step for GMWA and its member agencies from the Gateway region and seeks to achieve results that exceed the performance achieved to date. By developing a list of qualified teams to operate and maintain the existing and future regional stormwater capture projects GWMA intends to will realize the benefits originally envisioned and enhance the region's watershed needs.

Michael Baker International, Inc. (Michael Baker), has brought together a top-level team to evaluate, operate, maintain, and improve these facilities in a way that will meet GWMA's goals. By selecting the Michael Baker Team, GWMA will gain access to partners that offer the ideal confluence of technical expertise, relevant experience, creativity for solving complex project issues, and positive working relationships. This Team can provide service in all four of the categories listed in the RFQ.

MICHAEL BAKER AND OUR TEAM OFFERS GWMA THE FOLLOWING:


Chris Crompton

Highly Qualified Project Manager. Our Project Manager, Chris Crompton, brings 39 years of experience managing stormwater programs. Chris most recently led the North Orange County Stormwater Program and has spent decades focused on implementing high-value multi-stakeholder projects like these. He understands why projects like these are needed along with their design and operation challenges.

Exceptionally Experienced Team. Key professionals from within Michael Baker and our teaming partners bring extensive experience with complex water infrastructure as well as a comprehensive understanding of the water quality, supply, and compliance issues that motivate these types of projects. Our Team is comprised of Pacific Advanced Civil Engineering, Inc., (PACE) which has designed sophisticated stormwater capture and treatment facilities, Downstream Services, Inc. (DSI) has extensive experience with inspection and maintenance services, Mladen Buntich Construction Company's (Buntich) experience includes the construction and operation of stormwater facilities, and PERC Water Corporation (PERC) has experience with the ongoing operation of advanced water treatment systems. Michael Baker has carefully chosen these partners based on their reputation in their field, experience working together previously, and the specific skill set they bring for the services identified in the RFQ including Operations and Maintenance, SCADA, Engineering Design, Evaluation and Technical Support Services, and Construction.

Superior Project Understanding and Solutions for Key Issues of the Project. Having reviewed the RFQ with the Team in-depth, we can confirm that we have a deep understanding of the key issues described. Collectively, we have evaluated, operated, and maintained many similar facilities for other agencies and cities in Southern California such as Culver City, Inglewood, County of Los Angeles, Orange County Sanitation District, and Los Angeles World Airports. This Team's requisite skills, experience, and effective redundancy will ensure GWMA is provided with robust and well-integrated solutions.

Michael Baker has carefully chosen partners based on their reputation in their field, experience working together previously, and the specific skill set they bring for the services identified in the RFQ. Michael and our partners, PACE, DSI, Buntich, and PERC have robust experience in every aspect of the work requested in the RFQ, and beyond. We appreciate the opportunity to submit our qualifications and should you have any questions contact Project Manager, Chris Crompton, at (714) 225-2085.

Sincerely,
MICHAEL BAKER INTERNATIONAL, INC.

Chris Crompton, Project Manager
(714) 225-2085 | chris.crompton@mbakerintl.com

Dave Mercier, PE, Project Principal
(949) 330-4118 | dmercier@mbakerintl.com

TABLE OF CONTENTS

QUALIFICATIONS & EXPERIENCE

With a robust capacity bolstered by intentional redundancy, the Michael Baker Team possesses the resources and capabilities to comprehensively address GWMA's identified needs, ensuring continuous service for GWMA across multiple facilities.

QUALIFICATIONS/EXPERIENCE

Firm Profiles

Michael Baker is a leading global provider of engineering and consulting services which include environmental, planning, engineering, architectural, construction, program management, sustainability, and resiliency planning services as well as information technology, communications services, and outreach solutions.

Engineering News-Record (ENR) magazine consistently ranks Michael Baker in the top 10 percent of the 500 largest U.S. engineering design firms. Michael Baker has more than 3,400 employees in nearly 100 offices across the U.S., including 10 locations in California. Locally, we provide a staff of over 500 engineers and technical staff in our Southern California offices.

We have a specialized staff of over 80 local engineers dedicated to water and wastewater design, flood control engineering, instrumentation and controls, stormwater management, construction management of water infrastructure, and water quality services providing a tremendous depth of resources and experience to compliment and lead the exceptional team of firms we have assembled to support GWMA and its member agencies.

Michael Baker's Water Practice has provided comprehensive engineered solutions for client stormwater, wastewater, and similar project challenges in southern California for more than 50 years.

Our local team is focused on maintaining and advancing the resilience and reliability of potable, recycled, and wastewater systems through improvements to conveyance and storage infrastructure. Our strength lies with new and retrofit projects that include pipelines, pump stations, valves, sensors, and integrated controls. We can provide complete solutions under one roof by having our civil engineers work side by with electrical engineers who have the capability to address power and lighting requirements as well as instrumentation and control systems. This is coupled with our surface water management team that understands why facilities like there are needed and the challenges of designing infrastructure able to withstand the urban runoff environment.

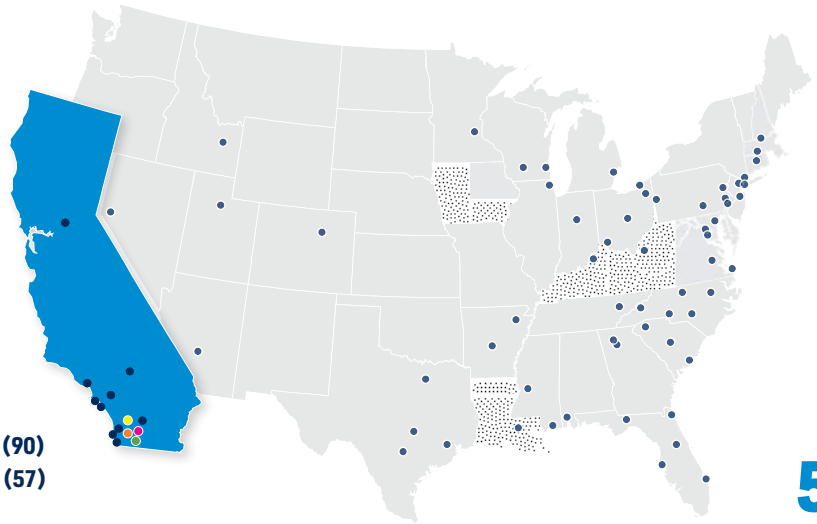
MICHAEL BAKER RESOURCES

10

CA Offices
(No. of Employees)

Long Beach **(41)**
Los Angeles **(20)**
Santa Ana **(227)**
San Diego **(117)**
Carlsbad **(44)**
Palm Desert **(25)**
Temecula **(43)**
Ontario **(48)**
Rancho Cordova **(15)**
Walnut Creek **(7)**

- PACE, Fountain Valley **(90)**
- PERC, Fountain Valley **(57)**
- DSI, Escondido **(76)**
- Buntich, Upland **(60)**



Founded in
1940
Form of the Organization
Pennsylvania C Corporation

580
LOCAL STAFF

587 **PROFESSIONALS** IN CALIFORNIA

PACE is a 100-person civil engineering firm formed in 1987 and headquartered in Fountain Valley, CA specializing solely in environmental water resources through advanced technical analysis, design, and applied research. PACE offers a wide range of applied engineering services and research related to water, wastewater, stormwater management and water resource permitting, and regulatory compliance to make water resource projects both economically viable and environmentally sustainable. Clients rely on PACE's expertise in hydrology, hydraulics, and stormwater systems to help them develop practical solutions to challenging problems.

PACE has a unique mix of expertise and experience in planning, design, construction support, and operations in mechanical and biological stormwater management capture, treatment, reuse/recharge, and controlled discharge systems. **Project experience includes highly automated stormwater diversion systems utilizing inflatable dams, LA County Public Works approved diversion structures, pumping, and customized treatment processes.** PACE's team includes an i**n-house Instrumentation and Controls department that specializes in SCADA and automated controls responding to a wide range of wet and dry weather conditions**.

PACE has led the design of sophisticated stormwater capture and treatment systems for the Los Angeles County Parks Earvin Magic Johnson Park and SoFi Stadium and continues to provide operations support for regulatory reporting and ongoing operations optimization.

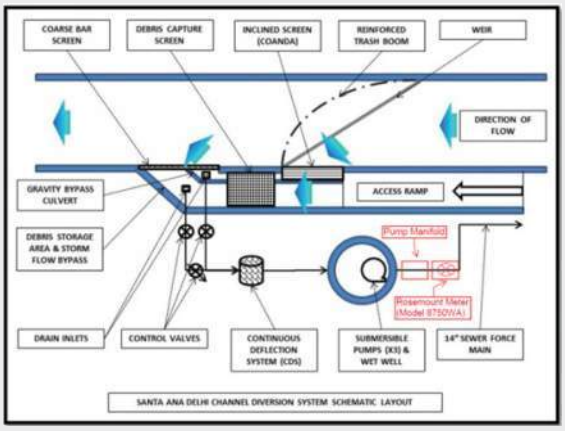
PACE's team offers an in-house team of instrumentation and controls (I&C) experts specializing solely in water systems made up of programmers, water engineers, electrical engineers and water facility operations experts. The key benefit this team offers is the engineering knowledge of water infrastructure and treatment systems that gives them key perspective on instrumentation and controls needs. Proper instrumentation and controls are a critical component that can make the difference between success and failure of a project.

PACE can provide:

- Design and specification of control systems performed by senior process engineers, operators and certified programmers, working together, to ensure full understanding of design intent and operational needs.
- Practical control strategies that provide effective and easy-to-use logic and graphical interfaces, tailored to the field operators' requirements.
- Advanced experience and understanding of compatibility issues common with computer operating systems, network communications and SCADA platforms; with developed, proven strategies for ensuring seamless integration.
- Experience in developing and implementing sophisticated custom program algorithms, utilizing current and historical data to automatically increase process efficiency, reduce maintenance and improve performance using standard hardware platforms.
- On-site programming and commissioning of control systems, working directly with facility design engineers and operators to ensure true turn-key implementation.

PERC Water Corporation, (PERC), State of California Contractor's License #932074, was established in 1998, is an innovative water infrastructure company that develops, designs, builds, operates and manages water infrastructure throughout the United States. They have designed more than 75 water infrastructure projects, 31 of which have been built and placed into operation over the past 20 years.

They have a 26-year history of successful start-up, **commissioning, operation, maintenance and management of water, wastewater treatment and water reuse facilities in California**. PERC currently operates 27 water and wastewater facilities, including advanced water treatment facilities (AWTFs) and Indirect Potable Reuse (IPR) systems permitted and in compliance with the Division of Drinking Water (DOW) and Regional Water Quality Control Board (RWQCB).



Michael Baker and PACE are working together on the evaluation of 21 existing diversions as part of the Urban Runoff Optimization Study for the Orange County Sanitation District.
The Santa Ana-Delhi Channel diversion project in Newport Beach shown above.

DSI, State of California Contractor's License #807953, is a certified small business enterprise, incorporated in 2001, and is recognized for its dynamic approach and professionalism within the environmental industry. DSI specializes in the assessment, maintenance, and rehabilitation of stormwater, wastewater, and underground utility systems. DSI retains 77 employees between two locations, which include Corporate Office located in Escondido, CA and a satellite office located in Ventura, CA. Some of the services they provide include stormwater compliance, pump station maintenance and instrumentation, pipeline cleaning/hydro-jetting, CCTV inspection for condition assessment per the national standard (NASSCO PACP), pipeline rehabilitation, and the underground installation of wet utilities.

DSI's highly skilled personnel and fleet of specialty equipment serves the needs of California communities, delivering quality service and customer experience that is centered on the client's goals and objectives. DSI is a defender of water resources, and the life it supports.

Michael Baker and DSI have collaborated several times over the years, most notably on assessing storm drain conditions for the City of Chula Vista and a sewer replacement project in Coronado. DSI has been at the forefront of best management practice (BMP) operations and maintenance including working with Michael Baker's project manager on the Glassell Campus Low Impact Development Retrofit Project for the County of Orange and additional projects described in this proposal.

Technical Capabilities: DSI strives to ensure the sustainability of waterways for future generations by addressing pollution prevention, establishing Preventative Maintenance Programs (PMP), Treatment Control Programs (TCP) and providing ongoing education to clients and staff. Scheduled Inspection and maintenance of conveyance systems is not only required but is necessary to remove contaminants from stormwater runoff and effectively sustain water resources. In accordance with the Clean Water Act (CWA) and National Pollutant Discharge Elimination System Permit Program (NPDES), DSI has established a dedicated division to assist clients with compliance of federal, state, and local regulations. DSI works closely with various stormwater product manufacturers to offer dependable and cost-effective solutions. **DSI's technicians are experienced at installing and maintaining:**

- Pump systems
- Detention and Retention Basins
- Catch Basin Inlet Filters
- Trash and Debris Screens
- Hydrodynamic Separator Units
- Isolator Rows
- Pervious Surfaces

Available Equipment: DSI maintains a three-acre facility located in Escondido, California. Which includes a machine and welding facility for the design and fabrication of custom components, full-service mechanics shop, and equipment storage.

Qty.	Description of DSI Equipment
7	Camel Jet/Vacuum Combo Trucks
7	750 Gallon Mini Pumper Trucks – Catch Basin Clean
7	CCTV Inspection Trucks (IT Pipes and WinCan)
1	Robotic Pipeline Cutter Truck
2	4500 Gallon 3 axle Pumper Trucks
1	6" Trailer Mounted Bypass System
10	3" Trash Pumps
4	Hydraulic Submersible Pumps
4	4" Diesel Self-Priming Bypass Trailer Pumps
4	4" Electric Submersible Pumps
4	Jetter Trailers
2	UV-Cured Fiberglass Lining Cure Truck/Trailer
1	Liner Support/Blower/Crane Truck
2	Liner Support Trailer
1	Mortar Spray lining Trailer
1	Epoxy Component Spray Trailer
2	3 Axle Roll-Off Trucks
2	Mechanics Crane Trucks
16	TTU/Dewatering Bins
2	Confined Space/SCBA Support Trailer
2	Traffic Control Trucks
3	Flashing Arrow Boards - Trailer
1	CMS Board - Trailer
1	Crash Attenuator
5	Service Bed Utility Trucks - Underground
30	Crew/Support Trucks
3	Tow Behind Dump Trailers
8	Tow Behind Support Trailers
1	Large Diameter Long Range Hydro Jet Unit
2	Sewer Bucket Cleaning Machines
8	SCBA Units
1	Pull Plate Cable Cleaning Machine
2	4,000 to 10,000 Gallon Bulk Storage Tanks
1	CASE Rubber Tire Backhoe
1	CASE Rubber Tire Backhoe 4x4
1	WA250 Wheel Loader
1	PC 228 Excavator
1	Bobcat 10k Mini Excavator
20	Road and Shoring Plates
1	2500 Gallon Water Trucks

Buntich, State of California Contractor's License #532604, is a successful and innovative general engineering contractor based in Southern California since 1975. Buntich's business is focused on the infrastructure industry, performing new installation and trenchless rehabilitation construction services.

Whether bidding competitively or handling emergency projects, they consistently foster professional relationships by offering owners expedited pipeline construction solutions, leveraging the expertise of Buntich's top engineers, and skilled crews, and using specialized industry equipment.

Buntich's current equipment fleet allows them to perform almost any civil project in-house ranging from pipe installations, soil retention shoring, pit excavations, tank removals, structural concrete, and grading.

Buntich's fleet of specialty equipment for pipeline rehabilitation work includes: Pipe jacking frames, large diameter slip lining machine, pipe carriers, interior pipe scaffolding, low clearance interior demolition equipment, t-lock lining pipe forms, and CCFRPM joint milling machines. In addition to motorized equipment, Buntich owns over 3 million pounds of trench plates, wide flange beams, tubing, shields, trench jacks (aluminum, hydraulic, A frame shores) and lagging for shoring and trench safety measures.

Coupled with extensive shoring, open cut, and pipeline rehabilitation skills, Buntich self performs: Demolition, excavation, shoring, subgrade preparation, pipeline repair, rehabilitation, vault installations, pipeline cleaning, new installation, encasements, base paving, CCTV inspections, CPM scheduling, safety management, project management, and quality control.

Buntich's Etiwanda Pipeline North Liner Repair Project in Rancho Cucamonga, California for Metropolitan Water District.

Available Equipment

Qty.	Description of Buntich's Equipment
11	Delivery Flat Beds
12	Water Trucks
6	Dump Trucks
2	Semi Trucks
2	Drop Deck Trailers
1	Removable Goose Neck Heavy Haul Trailer
1	Flat Bed
3	Vehicle Mounted Drill Rigs (Ten Foot Diameter to Ninety Foot Deep)
1	Vacuum Trailer
17	Miscellaneous Equipment Trailers
5	Office Trailers
3	Street Sweepers
3	Ride On Rollers
3	Skip Loaders
3	Track Skid Steers
9	Wheel Loaders
1	Asphalt Grinder
10	Backhoes
32	Excavators (ranging from 8,000 lbs. to 110,000 lbs.)
3	Long Reach Excavators
3	Six Thousand Pound Demo Hammers
8	Rough Terrain Cranes (15 Ton to 80 Ton)
10	Reach Lift/Forklifts
2	Blades
2	Dozer's
2	Water Towers
3	Tack Rigs
5	Light towers
25	Traffic Control Boards
7	Air Compressors
14	Generators (up to 75 KVA)
3	Powered Screens
3	Conveyors
4	Pipe Tuggers
3	Vibrating Extractors
4	Air Blowers
1	Giken Silent Piler
20	Foreman and Superintendent Vehicles
14	Service Trucks
2	Lube Trucks
1	Video Inspection Van

Project Experience

Michael Baker provides a host of differentiated and innovative services all under one roof. We strive to make communities safer, more accessible, sustainable, and livable through transformative projects, technologies, and dedicated employees.

The matrix below crosswalks the Michael Baker team's project experience with the aggregate diversion maintenance needs identified in the Project Summaries and Operations and Maintenance Manuals provided in the RFQ. The matrix shows that the assembled team has deep project experience in all the RFQ's identified categories of Operations and Maintenance, SCADA, Engineering and Technical Services, and Construction/Repair. The matrix also shows that the team provides for intentional and effective redundant skill sets.

Project Name	Firm Name	Operations and Maintenance					SCADA	Engineering Design, Evaluation and Technical Support Services					Construction		
		Inspection	CDS, Dry wells, Underground Detention	Filters, Pumps and Valves	Meters and Sensors	Monitoring and Reporting		Rubber Dam	Project/ Construction Management	Inlets, Pretreatment, Pump Stations	Infiltration, Underground Storage	Water Harvesting - Reuse	Concrete Structures and Flatwork	Pumps, Valves, Irrigation	Electrical, Instrumentation
Culver Boulevard Realignment and Stormwater Treatment	Michael Baker DSI	◆	◆	◆	◆	◆			◆						
Urban Runoff Optimization Study	Michael Baker PACE						◆	◆	◆	◆		◆			
Santa Ana Civic Center Stormwater Lift Stations	Michael Baker						◆		◆	◆					
Gobernadora Multi-Purpose Basin	PACE				◆	◆	◆	◆	◆	◆	◆	◆			
Earvin Magic Johnson Park Urban Runoff Water Recycling and Storm Drain Diversion	PACE PERC	◆		◆	◆	◆	◆		◆	◆		◆			
SoFi Stadium Stormwater Management and Recycling	PACE PERC	◆		◆		◆	◆		◆	◆		◆			
Los Angeles International Airport/Los Angeles World Airports, As-Needed Maintenance	DSI			◆	◆										
Sustainable Median Stormwater Capture Project	Buntich												◆	◆	◆
Etiwanda Pipeline North Liner Repair	Buntich												◆	◆	

2021 B.E.S.T. Award from APWA So. California Chapter

award WINNING

CULVER BOULEVARD REALIGNMENT AND STORMWATER TREATMENT

Culver City, California

The Michael Baker Team has supported the City throughout the construction and operation of this facility, having provided construction management, operation and maintenance, and monitoring and reporting services. The facility was constructed underneath a new landscaped median and bikeway. A portion of the captured run-off will be stored in an underground basin, treated on-site, and used to supplement the required irrigation for the landscaping along Culver Boulevard. The excess captured run-off will be filtered through proprietary BMPs and discharged downstream of the project. This project captures and treats up to 19.51 acre-feet (AF) of stormwater in a 24-hour period.

Michael Baker provided project management, construction administration, office engineering, inspection, construction close-out, and public engagement on the behalf of the City for construction activities with impacts to the surrounding neighborhood and businesses. This role provided Michael Baker with a clear understanding of the challenges associated with regional stormwater capture facility construction and operation.

DSI was selected by the City to operate and maintain facility once complete. When DSI came on-board the actuated valves, SCADA, and instruments were no longer functioning properly. City operators were not able to receive alarms and notifications and had no access to the SCADA interface. To remedy these issues DSI:

- Diagnosed the actuated valves failure to operate and fixed the situation by calibrating the torque limiters and preventing water infiltration into the electronic actuator head.
- Systematically checked and calibrated every field sensor in the system, through a combination of field and office work, adjusted ranges and set points in the local PLC, and remote SCADA system.
- Made changes to the VHF radio transmission system to allow the various control stations to communicate properly.
- Made recommendations for operational improvements to the SCADA and local PLC to allow the city operator(s) to understand the data being displayed.
- Addressed the lack of alarms by working with the installation contractor to provide repairs to the system coding, which allows city personnel to receive phone notifications and remotely access the system.

Continued on the following page

Michael Baker INTERNATIONAL

DownStream Services, Inc.

Client: City of Culver City

Contact: Sean Singletary
Senior Civil Engineer
sean.singletary@culvercity.org
(310) 253-6457

Completion Date:
Estimated 2025. Work is ongoing and will completed on schedule

Project Costs:
$19 million (Construction)
$1,616,674 (Michael Baker Fee)
$750,000 (DSI Fee)

PROJECT RELEVANCE

Regional BMP Construction Management
Regional BMP Operation and Maintenance
Regional BMP Monitoring and Reporting

DSI continues to provide calibration and maintenance services on all electronic and electromechanical devices, including the instruments and controls. DSI also continues to provide feedback on system performance and operational upgrades. DSI also performs regularly scheduled inspections and maintenance for a variety of BMPs and stormwater structures within the facility, including:

- (2) Hydrodynamic Separators
- (2) Underground Detention Galleries
- (2) Kraken Filter Vaults
- (1) Wet Well
- (6) Junction Structures
- +/- 1,500 LF of storm drainpipe

Using the O&M plans for each of the stormwater structures, DSI has worked with the City of Culver City to implement a maintenance schedule that encapsulates the requirements of these various designs, and maintenance needs. Throughout this process, DSI has provided city personnel with detailed information that has allowed them to better understand the design function, and specific needs of each unique device within the system. This includes suggestions regarding additional, or less, maintenance services per year based on the data collected during inspections in conjunction with the manufacturer's O&M manuals, potentially purchasing an additional set of filters for the Kraken system to limit maintenance costs and increase maintenance efficiency and adjusting the flap gates downstream from the HDS units to eliminate the issues with trash and debris bypassing the units at high flow periods.

Michael Baker also continues to support the City by performing monitoring and reporting. This began with the development of a Sampling and Analysis Plan (SAP) that documented the necessary sampling frequency and locations. The reporting requirements required by the entity who provided the grant, and the Coordinated Integrated Monitoring Program (CIMP) were also included in the SAP. In addition, a review of the facility to determine how safe access would be achieved was captured in a Health and Safety Plan (HSP). Michael Baker then coordinated sampling with the City during expected rain events. Staff trained for confined space entry were provided by Michael Baker to support this effort.

CDS System

Kracken System

URBAN RUNOFF OPTIMIZATION STUDY

Orange County, California

Michael Baker, with PACE as a major subconsultant, is actively conducting a comprehensive 2-year study of the feasible opportunities for cooperative projects to improve existing and add new urban runoff diversions to the Orange County Sanitation District (OC San) to improve surface water quality and **increase water recycling to the Orange County Water District Groundwater Replenishment System,** while protecting infrastructure and habitat resources.

As a part of the comprehensive study, Michael Baker has evaluated options to optimize the operation and maintenance of 21 currently permitted diversions within OC San's service area. The operating and monitoring information for these existing diversions was reviewed to identify potential individual physical changes needed at each diversion (and common changes to be incorporated into future diversions) to attain standardization and increased efficiency of system-wide operations and to maximize urban runoff capture (e.g., year-round, non-storm operations). Conceptual designs were developed on five existing diversions that yielded the greatest additional dry-weather urban runoff capture benefit.

Michael Baker also considered system enhancements that will allow for automated, active, coordinated, standardized optimization and control of the existing diversion facilities, including monitoring and reporting flow and water quality information and other compliance parameters to efficiently manage diversions as an integrated system, rather than unconnected individual facilities. Cost estimates for the proposed changes and systems were developed as well as cost allocations amongst the agencies involved, including OC San, Orange County Water District, Orange County Public Works, and the current city diversion operators.

Michael Baker INTERNATIONAL

PACE

Client: Orange County Sanitation District

Contact: Cindy Murra
Senior Engineer
cmurra@ocsan.gov
(714) 593-7327

Completion Date:
Estimated 2025
Work is ongoing and will completed on schedule

Project Costs:
$782,000 (Fee)

PROJECT RELEVANCE

Urban Water Runoff Capture

Water Quality Improvements

Water Recycling Collection Systems

SANTA ANA CIVIC CENTER STORMWATER LIFT STATIONS

Santa Ana, California

Michael Baker performed preliminary studies and final design services to identify options, **recommend upgrades, and provide final construction plans for two stormwater lift stations** at the Santa Ana Civic Center. After flooding during the 2016 El Nino season, both lift stations' mechanical and electrical equipment were deemed to have reached the end of their lifespans. Michael Baker **designed upgrades for both stations, including replacing pumps, sump pumps, motors, piping, and valves; structural and electrical improvements; site and drainage enhancements; and upgrades to SCADA and electrical instrumentation.**

The Santa Ana station was constructed in 1963 as part of the Civic Center Construction Program and operates during storms to prevent flooding of the parking structure and southern walkways. It is a vertical concrete structure with a concrete slab separating the lower wet well from the upper dry well. The dry well is set three feet below grade and houses three pumps and the electrical equipment. These pumps are 60 horsepower (hp), 30 hp, and 15 hp, and are driven by electric motors. The 60-hp pump and motor were replaced in 2016.

Michael Baker
INTERNATIONAL

Client: City of Santa Ana

Contact: Edward Torres
Project Manager
etorres@santa-ana.org
(714) 719-0013

Completion Date:
June 2019
Work completed on schedule

Project Costs:
$135,309

PROJECT RELEVANCE

SCADA

Instrumentation

Lift Station Upgrades

Mechanical and Electrical Engineering

GOBERNADORA MULTI-PURPOSE BASIN

Orange County, California

PACE provided design services for the 26-acre Gobernadora Multi-Purpose Stormwater Treatment and Storage project that **recycles urban dry weather and stormwater provides greening and recreational opportunities and provides regional flood control benefits**.

This basin provides several benefits including **treatment and recycling of captured runoff and storm flows, reduction of downstream erosion and sedimentation,** detention of peak storm flows, and water quality improvement to Gobernadora Creek.

The system is successful due to its dynamic **hydraulic operating system incorporating automated controls** that can respond to both low flow and high storm flow conditions in the creek.

Operational flexibility is facilitated through multiple hydraulic systems including a dry weather nuisance runoff diversion structure featuring a **rubber inflatable dam system to divert flows** into natural water quality treatment and infiltration cells, an elevated side weir to capture storm flows for peak flow storage, **a secondary rubber dam for large flood flow water level control,** sedimentation basin and fine straining, disinfection, and a pump station to transport treated flows for recycled water applications.

The system accommodates a projected 350 to 800 AF of dry weather flow recovery and provides storm flow detention up to the 100-year storm event.

PACE

Client: Santa Margarita Water District

Contact: Rich Kissee
Rancho Mission Viejo
(Formerly with Santa Margarita Water District)
Operations Manager
rkissee@ranchomv.com
(949) 625-6500

Completion Date:
March 2016
Work completed on schedule

Project Costs:
$1.2 million (Fee)

PROJECT RELEVANCE

Rubber Inflatable Dam System

Recycled Urban Dry Weather and Stormwater

Treatment and Recycling of Captured Runoff and Storm Flows

Instrumentation and Controls Programming for Automated Operations

CASQA 2022 Outstanding Stormwater Capture Award
ACEC, 2022, Engineering Excellence Honor Award

award WINNING

EARVIN MAGIC JOHNSON PARK URBAN RUNOFF WATER RECYCLING AND STORM DRAIN DIVERSION

Los Angeles, California

PACE designed a unique new stormwater management system in Los Angeles through collaboration with Los Angeles County Community Development Commission (CDC) and Los Angeles County Department of Public Works (DPW) Watershed Division to develop a sustainable new water source for Earvin Magic Johnson Park that **captures urban runoff (dry and wet weather first-flush flows)**, treats the captured flows to improve water quality, and **recycles the water for on-site irrigation.**

The treated recycled water is stored within the park's lakes to enhance the appearance and water quality of the lake system for a renovated recreational lake amenity. This system collects, retains, and reuses 60% wet weather first-flush flows of the 375-acre watershed, amounting to approximately 14-acre feet (4.5 million gallons) of flows from a significant wet weather event.

PACE provides weekly monitoring of the stormwater management system, including taking weekly **water quality samples at the diversion structure, at the treatment system**, and at various locations at both lakes. Samples were analyzed for nutrients, residual chemicals, turbidity, color ROP, and pH. This data is compiled into quarterly reports delivered to the County. Adjustments and refinements to the treatment system are recommended, as needed.

The **treatment process consists of ozone, coagulation, circulation, aeration and water conditioning.** There is chlorine injection prior to entering the irrigation system. The entire park is irrigated from this treatment pump station and design calculations estimate the park is a net zero water user ¾ of the year due to the runoff recycling. The entire system is **operated via automated controls and a sophisticated SCADA system**.

Continued on the following page

PACE

Client: Los Angeles County Community Development Commission

Contact: Thuan Nguyen
Senior Civil Engineer
tnguyen@dpw.lacounty.gov
(626) 458-7165

Completion Date: February 2021. Work completed on schedule (permitting and compliance support ongoing)

Project Costs:
$931,000 (Fee)

perc water

Contact: Kara Plourde, PE
Civil Engineer
kdroz@dpw.lacounty.gov
Office: (626) 300-4634

Project Costs: $1.4 million (contract value)

PROJECT RELEVANCE

Operated via Automated Controls and Sophisticated SCADA System
Ozone, Coagulation, Circulation, Aeration and Water Conditioning Treatment
Harvesting Dry Weather Flow for Recycling
Stormwater Diversion System
Operations and Maintenance
Water Quality Sampling and Reporting for RWQCB Compliance

PERC Water provided system commissioning, start-up, and testing services and has operated the facility since completion. PERC's scope of services includes operations and maintenance of the water treatment system and training for Los Angeles County Staff.

PERC is contracted to operate and maintain the water treatment and filtration system and chemical addition systems, including instruments and pumps. PERC's operators perform required water quality analysis of treated water to control bacteria management and remain in compliance with applicable Los Angeles County and State of California water quality laws.

Staffing for the Earvin Magic Johnson Water Treatment System includes a certified treatment operator. PERC's operator is on-site daily during weekdays and available for on-call emergency response during nights, weekends, and holidays. Maintenance staff is available for heavy maintenance repairs and replacements as needed.

Operation, maintenance, and management services commenced at the completion of the system performance test.

PERC Water's operation and maintenance services include:

- Provide one water/wastewater operator to oversee system operation and maintenance, sample collection, and laboratory submittal.
- The diversion pump station and ancillary equipment including the flex rake and the chlorine injection if needed.
- Ozone disinfection and oxidation system.
- Aluminum coagulant dosing system.
- Recirculation pumping system.
- Maintain sedimentation boxes for total suspended solids (TSS) removal.
- Irrigation pump skid.
- Lake aeration.
- Chlorine dosing for disinfection.
- Daily system checks to ensure proper operation.
- Development and continued use of the daily logs, system logbook and monthly report.
- Daily chlorine residual checks to verify proper dosing.
- Oversee and manage screening residual removal and disposal.
- Check all setpoints daily to confirm proper system operation and control.
- Day-to-day operational tasks.
- Preventive maintenance for all treatment system components per the original equipment manufacturer's recommendations.
- CMMS System – eMaint is utilized to track and schedule and document all preventive maintenance tasks.
- Repair and maintenance is managed by PERC's on-site operator.
- Prepare and submit a monthly report of operation detailing operation and maintenance efforts completed for the month.

2023, ASCE, Outstanding Civil Engineering Achievement Award

award WINNING

SOFI STADIUM STORMWATER MANAGEMENT AND RECYCLING

Inglewood, California

PACE completed mechanical and water quality design for the stormwater management system at SoFi Stadium as a subconsultant. The multi-purpose 5-acre lake serves as the site's central stormwater management system and includes state-of-the-art water conservation and recycling features, making it among the most advanced integrated lakes in existence.

The lake incorporates many advanced features to enhance water resource management at the site by **serving as a stormwater treatment system for much of the stadium and entertainment district,** integrating recycled wastewater and stormwater seamlessly within the lake to be fed into an on-site irrigation system, obtaining recycled water from West Basin Water District during dry weather to supply the lake make-up water, and by serving as a short-term flood attenuation basin to minimize flood risks.

The custom **treatment system consists of ion exchange with zeolite, alum, and filtration to support nitrogen (ammonia) and phosphorus removal.**

Within the lake, the water is continuously recirculated and treated with ozone and additional alum. With the combination of reclaimed water and stormwater in this lake system being a first of its kind in California, current permitting regulations were not set up to address this approach. Therefore, the lake's stormwater discharge required a unique and lengthy permitting process before an individual NPDES stormwater discharge for the lake was approved by the Los Angeles Regional Water Quality Control Board in June 2020. This permit authorizes the discharge of excess water from the lake during storm events, which consists of a mixture of recycled water and stormwater.

PACE performs monthly water quality sampling of the untreated recycled water and dry/stormwater runoff, treated water, and water from various locations within the lake. Samples are analyzed for nutrients, residual chemicals, turbidity, color ROP, and pH. The data is compiled into quarterly reports delivered to the RWQCB.

Continued on the following page

PACE

Owner: West Basin Municipal Water District

Contact: Rick Gunter
Principal
rgunter@hksinc.com
(424) 248-2729

Completion Date: December 2020
Work Completed on schedule (operations support ongoing)

Project Costs: $770,000 (Fee)

perc water

Contact: Otto Benedict
Sr. VP, Facility and Campus Operations
Otto.Benedict@hollywoodparkca.com
(310) 617.2516

Project Costs: $2.9 million (contract value)

PROJECT RELEVANCE

Recycled Water Treatment Process
Lake Stormwater Treatment System
Recycled Wastewater and Stormwater
Harvesting Dry Weather Flow for On-Site Irrigation
Operations and Maintenance
Water Quality Sampling and Reporting for RWQCB Compliance

PERC Water proudly operates SOFI's stadium's Lake. The Lake Water Treatment System consists of multiple packaged treatment processes, which remove ammonia and treat the recycled water the site receives from the West Basin Water District.

Each process system has an integrated instrumentation and control system, which provides automated control of that system. A main facility control panel coordinates the operation of each of the process systems. The main panel currently provides only local central management of the system.

PERC Water oversaw the installation of a Supervisory Control and Data Acquisition ("SCADA") system that provides remote access and/or operation, alarm notification, and process performance data logging.

PERC's staff has remote access via laptop computer and smart phone allowing for monitoring and emergency response at all times of the day and night.

In addition, PERC provides the following operations and maintenance services:

- One project technician/water treatment operator to operate and maintain the water treatment and filtration system and chemical addition systems, including instruments, pumps and appurtenances.
- Perform required water quality analysis of treated water to control microbial bacteria management to remain in compliance with applicable laws. Analysis shall include pH, alkalinity, dissolved oxygen, temperature monitoring, and visual observations.
- Prepare and submit monthly, quarterly, and annual regulatory reports in accordance with applicable laws.
- Provide nutrient influx monitoring and analysis on a monthly schedule including nitrate and orthophosphate sampling.
- Conduct a thorough visual inspection of lakes and planters weekly, documenting all material findings.
- Monitor all pumps, motors, blowers, and mechanical equipment per the original manufacturer's recommendations.
- Perform monthly maintenance inspections on all mechanical and process equipment.
- Adjust all chemical dosing to maintain water chemistry and lake feature functionality in accordance with applicable permits.
- Perform annual mechanical equipment maintenance per the lake management plan.
- Generate and transmit monthly service reports.

LOS ANGELES INTERNATIONAL AIRPORT/LOS ANGELES WORLD AIRPORTS AS-NEEDED MAINTENANCE

Los Angeles, California

DSI has provided stormwater maintenance services for the City of Los Angeles, Los Angeles World Airports, and Los Angeles International Airport for 5 years, and has just renewed an additional 5-year contract for the same services. **The scope of work includes inspection and maintenance services for all stormwater BMPs within LAX property lines. A majority of these BMPs are located on the LAX Air Operations Area (AOA), which can prove to be challenging for maintenance purposes.**

To provide these services, all DSI stormwater technicians performed multiple badging processes, tests, and training to obtain access to the AOA.

In addition to the badging process, DSI's management staff must communicate with their point of contact at LAX to ensure maintenance is completed safely, and in a timely manner. This includes working night shifts when required, completing the work within a limited time frame, and working with airport operations to close down areas of the AOA while work is being performed.

The support provided **includes maintenance of storm drain inlets, drywells, underground detention basins, porous pavers, and bioswales.** In addition, the team is providing maintenance in **confined space** for two proprietary cartridge filter vaults with 660 cartridges in one unit and 460 in another.

DownStream

Client: Los Angeles World Airports

Contact:
Conor Roche
Maintenance Supervisor
croche@lawa.org
(424) 646-7960

Completion Date:
2024-2029 Contract Years
Completed on schedule

Project Costs:
$3.6 million (contract value)

> *Projects are performed on a live airfield and most often on off shifts however the projects are delivered on time and to spec.*
>
> *From Conor Roche, Maintenance Supervisor, Los Angeles World Airports in a 2023 review of DSI's performance on this project.*

PROJECT RELEVANCE

Inspection and Maintenance of Conveyance Systems

Preventative Maintenance Programs

Compliance of Federal, State, and Local Regulations

CASQA, 2023, Outstanding Stormwater Capture and Use Project or Program

award WINNING

SUSTAINABLE MEDIAN STORMWATER CAPTURE

East Los Angeles, California

The award-winning East Los Angeles Sustainable Median Stormwater Capture Project is located in the unincorporated area of East Los Angeles, in Landscape Maintenance District Zone 35, and **improves water quality, increases water supply, and enhances recreation, and the community.**

The project is nestled in a dense urban environment, in immediate proximity to schools, and multiple parks. Coordination with school districts and residents created perpetual challenges that were met successfully.

This project captures and infiltrates approximately 21 acre-feet of urban and stormwater runoff from a 3,000-acre tributary area of mostly residential and commercial land areas. Buntich was responsible for the installation of 103 drywells intended to retain this runoff. Each drywell was 100-feet deep with a 6-foot diameter. The drywells and connections to and from the storm drain system required the installation of 6,363-feet of 18-inch to 24-inch RCP piping through major streets and landscaped areas.

Along with the drywells, Buntich was responsible for above ground improvements such as jogging paths, drought tolerant landscaping, planting of over 300 trees, and educational signage. In total, there were 7-acres of landscape improvements.

The project was **completed on the schedule and budget agreed to with the client.** Buntich accomplished this through innovative and coordinated approaches. First, Buntich recognized the existing sandy material encountered on-site could be used as bedding material. This saved money and time by avoiding the import of additional material. Buntich's efficient scheduling and organization also allowed us to maintain concurrent work efforts at five separate work areas during critical periods. Second, efficient scheduling and organization allowed the project to maintain concurrent work efforts at five separate work sites during critical periods. This allowed the project to maintain the approved schedule.

buntich

Client: Los Angeles County Public Works

Contact:
Regina Quan
Capital Projects Manager
RQuan@dpw.lacounty.gov
Mobile: (626) 701-4014

Completion Date:
December 2021
Completed on schedule

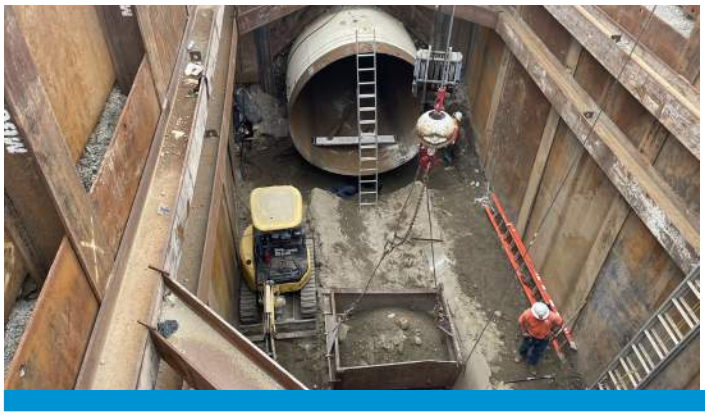
Project Costs:
$27 million (Construction)

PROJECT RELEVANCE

Urban and Stormwater Runoff

Construction in dense urban environment

Construction of stormwater capture infrastructure



ETIWANDA PIPELINE NORTH LINER REPAIR

Rancho Cucamonga, California

This project required Buntich to deliver on a tight schedule in extremely confined conditions. A limited shutdown window for the pipeline required the team to work around the clock. The project was in a residential neighborhood and required 600 linear feet (LF) of 20-foot-tall sound walls to reduce the sound impact to the neighbors. The goal of the project was to replace and reinforce the interior mortar lining on the Etiwanda Pipeline. Completion of project required work in confined spaces.

This project had restricted site access with many of the openings being limited to 48 h in diameter. In order to accomplish the required tasks, Buntich implemented an innovative approach by designing and fabricating specialty equipment to fit through these narrow openings. The approach required that Buntich source specialty equipment, disassemble the equipment, strategically lower it down and through the 48 diameter openings, and reassemble the equipment to perform the work.

Project elements included:

- Improvement of 28,171 LF of existing buried 144" diameter welded steel pipe
  - » *14,407 LF of blasting and relining of the pipe*
  - » *12,820 LF of cement mortar lining removal*
  - » *1,200 LF of 136" diameter welded steel pipe slip lining inside the existing 144" pipe*
- 26 total access pits
  - » *Two 42 foot long by 21-foot-wide roll out pits that were up to 30 feet deep*
  - » *Eight 48-inch outlets*
  - » *Sixteen 24-inch outlets*

buntich

Client: Metropolitan Water District of Southern California

Contact: Shalia Coburn
Associate Engineer
scoburn@mwdh2o.com
310-966-0898

Completion Date: July 2023, Work completed on schedule

Project Costs:
$26 million(Fee)

PROJECT RELEVANCE

Confined space entry

Work within urban and residential environments

Retrofit of subsurface infrastructure

Strength and Stability

Michael Baker has been solving some of the world's most complex infrastructure challenges for more than 84 years with a legacy of expertise, experience, innovation and integrity.

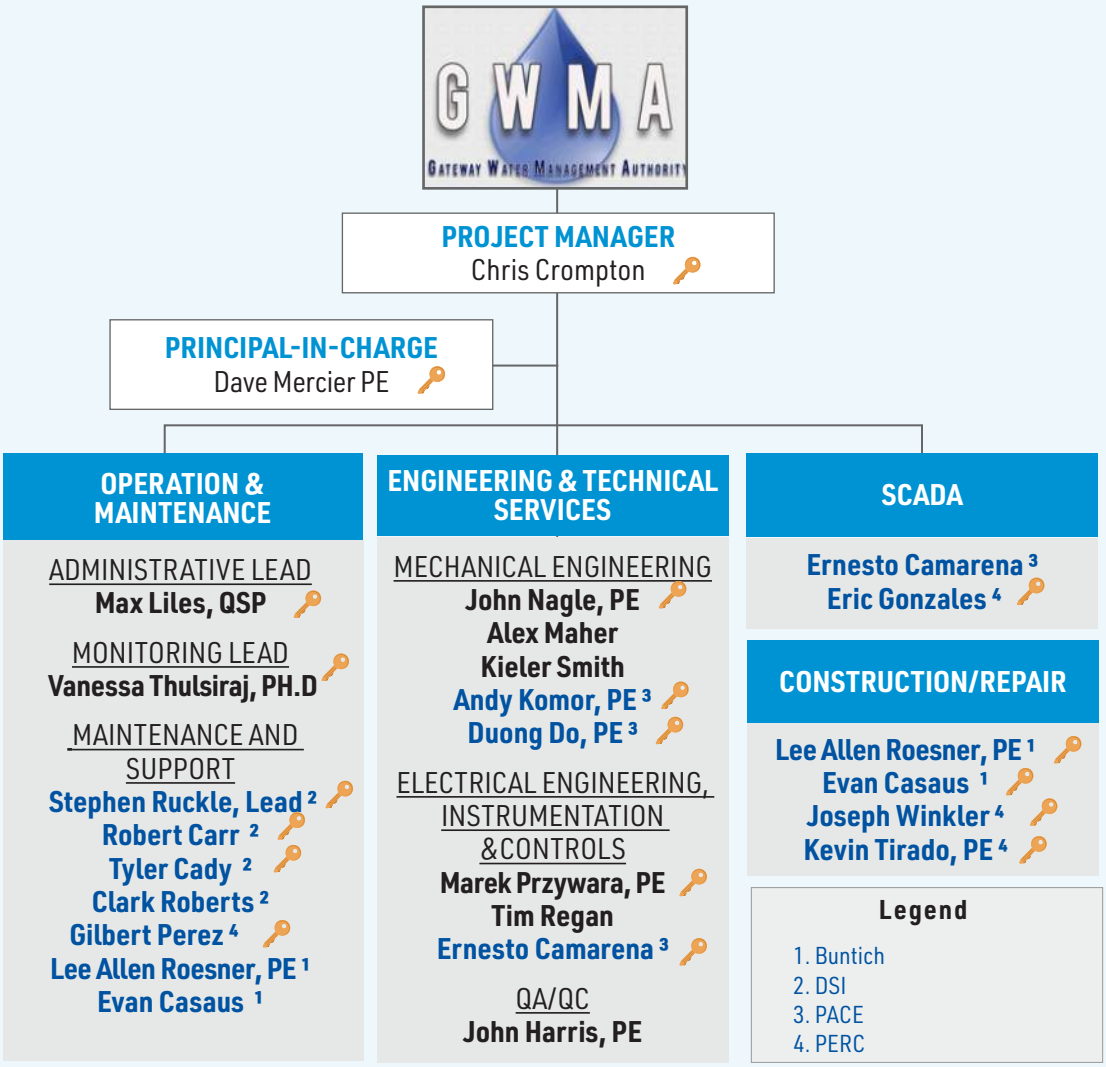
We are a strong and stable firm as demonstrated by our confidential financial statements in the appendix of this proposal.

ORGANIZATIONAL CHART & TEAM MEMBERS

Michael Baker provides GWMA with top technical resources and the right expertise for the project. We understand the importance of these facilities functioning at a high level following the significant investment to construct them.

ORGANIZATIONAL CHART/TEAM MEMBERS

We have tailored our project team specifically for the GWMA Operations, Maintenance, and Evaluation of Regional Stormwater Capture and Treatment projects. Our team comprises specialized professionals familiar with water quality, whose expertise allows us to provide the GWMA with comprehensive solutions tailored to the unique challenges of these regional projects. Our project management team oversees the entire process, ensuring effective coordination and communication across all disciplines.



Resumes provided for key personnel on the following pages

PROJECT MANAGER

Chris Crompton

Mr. Crompton manages a two-year urban runoff optimization study with the Orange County Sanitation District to assess 21 diversion structures transferring urban runoff to the sanitary sewer.

Mr. Crompton's experience includes more than 30-years managing the Orange County Stormwater Program; oversight of water quality and hydrologic data collection systems; and development of the urban runoff diversion program that has transferred over 10 billion gallons to the sanitary sewer over 20 years. He currently supports stormwater compliance activities for government agencies and serves as project manager for work for Riverside County Flood Control District and Orange County Sanitation District.

Years with Michael Baker **2**

Years experience **39**

RELEVANT EXPERIENCE

Urban Runoff Optimization Study, Fountain Valley, California. *Orange County Sanitation District.* PROJECT MANAGER. This is an ongoing two-year study to assess 21 existing dry weather diversions to the sanitary sewer for optimization of water capture and to screen and develop additional locations as projects for future urban runoff capture.

Jurisdictional Runoff Management Plan (JRMP) Annual Report, San Diego, California. *City of San Diego.* PROJECT SUPPORT. Providing ongoing MS4 support to the City in preparing and reviewing the annual JRMP report on City compliance activities.

Total Maximum Daily Load (TMDL) Compliance Support, Orange and Riverside Counties, California. *Orange County Public Works and Riverside County Flood Control and Water Conservation District.* PROJECT MANAGER AND PROJECT SUPPORT. Provided support to the County of Orange and Riverside County Flood Control District in complying with TMDL issues in Newport Bay, the Middle Santa Ana River, and the San Jacinto watershed. Provided technical and engineering support services to generate a pollution prevention plan for fecal indicator bacteria in the Newport Bay watershed, including stakeholder outreach and coordination.

Stormwater Facilities Implementation Plan, Carson, California. *City of Carson.* PROJECT SUPPORT. Provided support for master plan development and lead the ordinance revisions as part of development of the Stormwater Facilities Implementation Plan.

Orange County Stormwater Program, County of Orange, California. *Orange County Public Works.* NORTH ORANGE COUNTY DIVISION MANAGER. Managed the collaborative Orange County Stormwater Program for the County of Orange, Orange County Flood Control District, and 34 permittee cities. Roles included permittee coordination, compliance program development and implementation, permit renewal, water quality monitoring, public education, and annual reporting.

Urban Runoff Diversion Program, County of Orange, California. *Orange County Public Works.* NORTH ORANGE COUNTY DIVISION MANAGER. Following extensive beach closures in Huntington Beach, worked with Orange County Sanitation District to divert all urban runoff in the area (both City and Flood Control District) to the sanitary sewer. After 20 years, over 10 billion gallons of urban runoff had been diverted and a repeat closure situation was avoided.

Cooperative Funding Agreements, County of Orange, California. *Orange County Public Works.* NORTH ORANGE COUNTY DIVISION MANAGER. Working for Orange County Public Works, developed and gained approval of multiple countywide and watershed cooperative funding agreements with revenues >$200 million over 30 years. Included were project agreements with multiple funding partners for urban runoff diversions to the sanitary sewer on Peters Canyon Channel and Santa Ana-Delhi Channel.

Michael Baker INTERNATIONAL

Education

BS, 1976, Biological Sciences, University of Nottingham

Post-Baccalaureate Certificate, 1977, Education, University of Nottingham

Professional Affiliations

American Public Works Association

ASTM International

California Stormwater Quality Association

Water Environment Federation

University of California, Irvine Customer Experience Program Advisory Board

Former MCAS El Toro and Tustin Restoration Advisory Boards

PRINCIPAL-IN-CHARGE

Dave Mercier, PE

Mr. Mercier's background includes a variety of experience focusing on surface water management and water quality. His management process focuses on understanding the clients core business and project needs to drive program development and the generation of practical solutions.

Years with Michael Baker **21**

Years experience **21**

RELEVANT EXPERIENCE

Creston Avenue Drywell System, Signal Hill, California. *City of Signal Hill.* PROJECT MANAGER. Design of a drywell system to address the City's water quality runoff from a 24-acre portion of the City. The BMP system included a diversion system from an existing Los Angeles County storm drain, a storage system with incorporated pre-treatment, and a series of drywells for infiltration. Diversion of runoff to the system is hydraulically controlled to reduce project materials and a secondary connection back to the storm drain. Michael Baker worked with multiple vendors to optimize the storage and drywell configurations which resulted in a system capable of capturing the entire water quality volume. The project will be constructed using funding received as part of a grant and required an expedited design schedule, which was met. Michael Baker delivered the plans on budget and within the design schedule.

Garfield Avenue Improvements, Monterey Park, California. *City of Monterey Park.* WATER QUALITY LEAD. Design and plan production of the Green Infrastructure elements included in the street improvement plan for Garfield Avenue. The plan included bioretention bulb outs to improve the safety of the new pedestrian crossing location as well as a location for water quality improvement. The project did not require the inclusion of a water quality element. However, the Michael Baker team proposed these enhancements to complement the traffic calming design. The team coordinated the geotechnical investigation at multiple potential BMP locations. Ultimately, one bulb out was designed as a bioretention planter due to soils with high infiltration rates while the other was designed as a biofiltration planter due to clay soils. Michael Baker optimized the design, including protective curbing and grade control, to maximize the captured runoff from the surrounding drainage area.

Environmental Compliance Program, Los Angeles, California. *City of Los Angeles.* TECHNICAL MANAGER. Michael Baker supported the County transportation agency with stormwater permit compliance. Mr. Mercier led an effort to provide alternative compliance approaches using the Compliance Options included in the Industrial General Permit. On-site stormwater management solutions included infiltration, harvest and use, evapotranspiration, and discharge to sewer. Improvement project concepts were developed for each facility based on identified opportunities. Off-site project locations were identified by reviewing publicly owned parcels adjacent to or downstream from each facility drainage path. Once locations were identified concept plans were developed to facilitate coordination with municipalities regarding partnerships on multi-benefit stormwater solutions. These alternative solutions were then incorporated into Time Schedule Orders for each facility and negotiated with the Regional Board.

On-Call WQMP Implementation Services, Orange County, California. *County of Orange.* TECHNICAL MANAGER. Michael Baker is assisting with on-call WQMP implementation services, including meeting post-construction permit requirements primarily regarding LID and hydromodification controls for new development and significant redevelopment. Mr. Mercier's focus has been developing and coordinating training materials and sessions. He led the development and presentation of trainings focused on treatment BMP construction and maintenance along with program updates following the shift to the San Diego Regional MS4 permit in south Orange County.

Michael Baker INTERNATIONAL

Education
B.S., 2003, Civil and Environmental Engineering, University of California, Los Angeles

Licenses/Certifications
Professional Civil Engineer, California, 2007, 71531

Qualified SWPPP Developer (QSD), California, 2010, 00396

Qualified SWPPP Practitioner (QSP), California, 2010, 00396

LEED Accredited Professional, California, 2009

Qualified Industrial Stormwater Practitioner, California, 2016, 161

Professional Affiliations
California Stormwater Quality Association (CASQA)

ADMINISTRATIVE LEAD

Max Liles, QSP

Mr. Liles has experience managing surface water resources that provide for improved resiliency and enhanced water quality. He has built and monitored stormwater and urban runoff treatment systems, optimizing their performance and maintenance.

Mr. Liles has used his experience to assist other public and private stormwater programs in stakeholder-driven processes that provide for cost-effective community benefits.

Years with Michael Baker **2**

Years experience **30**

RELEVANT EXPERIENCE

Urban Runoff Optimization Study, Orange County, California. *Various Agencies.* ENVIRONMENTAL LEAD. Reviewed and summarized existing Dry Weather Urban Runoff (DWUR) diversion systems, policies and goals for multiple agencies including Orange County Sanitation District, Orange County Water District and Orange County Department of Public Works. Agencies also included Irvine Ranch Water District, City of Huntington Beach, and the City of Newport Beach. Michael Baker examined the challenges and gaps associated with existing policies, infrastructure and operational practices potentially inhibiting additional diversion and provided recommendations to improve both existing and future diversion performance. As part of existing diversion's operational assessment, the Michael Baker team performed an in-depth review of design drawings and historical performance data for each diversion. The improvement concepts were prioritized and agreed upon with the operators as viable opportunities, including physical infrastructure changes, inspection, monitoring, operating methods, and streamlined maintenance procedures. Cost estimates and benefits for the improvements were documented and presented to agencies for consideration.

Stormwater Program Development and Operation, Los Angeles, California. *Universal Studios.* ENVIRONMENTAL LEAD. Established a stormwater program that brought the property into compliance with an individual NPDES permit and then enhanced the program to have the permit formally rescinded. The program involved elements of dry weather discharge characterization from 400-acres of multiple land uses, providing for source control where possible and diverting remaining flows to sewer in compliance with an existing City of Los Angeles Industrial Waste discharge permit. Multiple urban runoff pretreatment and stormwater treatment technologies were deployed, tested, and improved upon in conjunction with maintenance methods realizing a consistent and cost-effective operation while achieving water quality objectives. A portion of the diverted flows were intercepted and harvested for on-site reuse working collaboratively with Los Angeles County, Department of Public Health on an approved spray irrigation water system to supplement existing domestic water supply. A series of infrastructure and operating improvements were necessary to bring the Wahaso-provided water harvesting system into reliable and complaint operation. These improvements included additional, active pretreatment, modified irrigation demand schedules, an enhanced recirculation loos, installation of a SCADA-enabled backflow preventer and a larger storage reservoir to maximize stable treatment. The facility was the model for the credit program developed as part of Los Angeles County's Safe Clean Water Program which included elements of dry weather diversion, stormwater treatment and on-site water reuse.

Stormwater and Non-Stormwater Inspection Services, Various Locations, California. *Southern California Edison Company.* ENVIRONMENTAL LEAD. Responsible for stormwater and non-stormwater inspection services in support of the project's Construction General Permit compliance program.

Stormwater Facilities Implementation Plan, Carson, California. *City of Carson.* ENVIRONMENTAL LEAD. Provided support of the Master Plan development and ordinance revisions. Michael Baker is providing a holistic view of stormwater management in the city of Carson through development of the Stormwater Facilities Implementation Plan (SWFIP) by working with internal and external stakeholders through community outreach and engagement.

Michael Baker INTERNATIONAL

Education
B.S., 1995, Hydrology and Water Resources, University of Arizona

Licenses/Certifications
Qualified SWPPP Practitioner (QSP), California, 2023, 28364

Professional Affiliations
Measure W Safe Clean Water Program Steering Committee, Los Angeles County

MONITORING LEAD

Vanessa Thulsiraj, PH.D.

Dr. Thulsiraj has experience in water quality monitoring and assessment, microbial source tracking, and development and optimization of rapid methods for measuring fecal indicator bacteria. Her work is focused on assisting watershed managers and municipalities to identify major sources (human and non-human) of fecal indicator bacteria that may contribute to exceedances of water quality standards.

Years with Michael Baker **4**

Years experience **16**

RELEVANT EXPERIENCE

Culver Boulevard Realignment and Stormwater Treatment Culver City, California. *City of Culver City.* TECHNICAL SPECIALIST, WATER QUALITY. Oversaw the confined space entry of the Culver City BMP for the installation of an automated flow monitor and led a field team in collecting grab samples and automated sampler collections during both dry and wet weather conditions. Michael Baker is leading the monitoring of BMP effectiveness to evaluate the treatment system's performance and assess water quality improvements. Michael Baker assisted the City in creating a Monitoring and Reporting Plan (MRP) that documents sampling protocols, as well as a Health and Safety Plan (HSP) detailing safety measures for confined space entry. Michael Baker also supported the City in regulatory compliance reporting. The analysis and reporting of water quality data focused on TMDL-listed constituents such as bacteria, metals, nitrogen, and PCBs and achieving compliance with current regulatory limits.

Dry-Weather MS4 Outfall Monitoring, San Diego, California. *County of San Diego.* TECHNICAL SPECIALIST, WATER QUALITY. Michael Baker provided engineering support services for county compliance with stormwater bacteria total maximum daily load (TMDL). As part of the project, Michael Baker performed dry-weather monitoring of 143 MS4 outfalls within the Los Penasquitos and San Dieguito watersheds. This monitoring entailed weather conditions, flow measurements, assessments of structural conditions of the outfall, the biological and sediment status of the outfall, and evidence of illicit discharges or illicit connections. Michael Baker also recorded field observations and measurements using the county's Survey123 and Collector apps.

Wet-Weather Monitoring, San Diego, California. *County of San Diego.* TECHNICAL SPECIALIST, WATER QUALITY. As part of the San Diego Department of General Services Environmental As-Needed Contract, Michael Baker provided monitoring and sampling of stormwater best management practices (BMPs) at eight county-owned sites. At each site, it measured the effectiveness of BMPs at reducing flow volume, flow rate, and stormwater contaminants. Michael Baker leveraged extensive BMP monitoring experience to provide quality data and reporting for a variety of stormwater BMP types and configurations and conducted agency coordination to help the county understand BMP performance for future installations.

Industrial General Permit Tenant Outreach, Los Angeles, California. *Port of Los Angeles.* TECHNICAL SPECIALIST, WATER QUALITY. Michael Baker provided technical services to support the client in conducting a tenant outreach program for industrial stormwater management. The program supported industrial activities at the port in complying with a California Industrial General Permit (IGP) and municipal separate storm sewer system (MS4) requirements About 60 tenants/facilities were visited and evaluated, from large container terminals to smaller industrial sites. Michael Baker interviewed site managers, operators, and stormwater compliance staff; reviewed site stormwater pollution prevention plans (SWPPP), drainage system maps, and sampling results; provided recommendations to improve industrial stormwater compliance; prepared evaluation reports covering improvement opportunities and approaches; and evaluated the client's entire outreach program to provide recommendations for program improvement.

Michael Baker INTERNATIONAL

Education

Ph.D., 2014, Civil Engineering, University of California, Los Angeles

M.S., 2010, Civil Engineering, University of California, Los Angeles

B.S., 2007, Environmental Engineering, University of California, Irvine

Professional Affiliations

American Society of Civil Engineers

MECHANICAL ENGINEERING

John Nagle, PE

Mr. Nagle has extensive experience planning, designing, and providing construction support services for major water and wastewater facilities. He has prepared numerous construction plans, specifications, and cost estimates for water and sewer pipelines, water pumping stations, wastewater lift stations, wells, and reservoirs. He has prepared master plans for potable water, sanitary sewer, and recycled water systems.

Years with Michael Baker **37**

Years experience **37**

RELEVANT EXPERIENCE

Baker Regional Water Treatment Plant (BRWTP), Lake Forest, California. *Irvine Ranch Water District.* QA/QC REVIEWER. Michael Baker was the lead consultant for the Baker Regional Water Treatment Plan (BRWTP). For a number of years, water agencies in South Orange County have investigated alternatives for improving both water supply and water system reliability. These agencies determined that a local treatment plant utilizing untreated surface water from Metropolitan Water District as its source of supply would be the preferred alternative. Michael Baker provided preliminary and final design services for the BRWTP. The plant is sized for a capacity of 28 mgd and will utilize microfiltration as the primary method of treatment. Additional project components include raw water pump station; raw water pump station for Trabuco Canyon Water District; pretreatment, including chlorine dioxide and coagulant; pressurized MF membranes; UV disinfection; chloramination; backwash recovery system; solids handling facilities; DYK reservoir modifications; and product water pump station.

Sterling Pumping Station and Reservoir Project, Riverside County, California. *Western Municipal Water.* PRINCIPAL-IN-CHARGE. Michael Baker provided engineering, design services and construction engineering support services. Water resources include treated surface water and treated groundwater. The surface water is imported from Northern California and treated at the Mills Water Treatment Plant. The local groundwater is treated at the Chino II Desalter and the Arlington Desalter. Michael Baker assisted in designing pumping station and reservoir facilities to transfer treated groundwater to a residential area of the district where customers are currently receiving water from the Mills Water Treatment Plant only, including a new 1.5 MG concrete reservoir and a high-pressure pumping station. When completed, the facilities will allow the client to transfer up to 20 cubic feet per second of treated groundwater from the desalination plants to the area. The work included P&ID development, SCADA, electrical distribution, and controls design.

Santa Clarita Valley Water Agency - Sulfuric Acid Injection Study, Santa Clarita, California. *Santa Clarita Valley Water Agency.* PROJECT MANAGER. Michael Baker provided engineering services to evaluate the sulfuric acid injection system for the perchlorate treatment system for Saugus Well No. 1 and 2, determine the cause of leakage, and recommend improvements to prevent future pipe damage. Michael Baker's services included reviewing record data, including water quality information, operating conditions, and parameters; reviewing reports, design calculations, and record drawings.

Industrial Waste Discharge Permit Review, Orange County, California. *Santa Margarita Water District.* PROJECT ENGINEER. Michael Baker provided Industrial Wastewater Engineering services for the Water District, and developed the Industrial Wastewater Discharges Regulations for the District. Michael Baker reviewed all industrial permit applications for regulatory compliance, evaluated the industrial treatment process, and made recommendations for permit conditions and monitoring. The industrial wastewater treatment permits analyzed included laboratory facilities, research and development facilities, manufacturing, and plating.

Michael Baker INTERNATIONAL

Education

M.S., 1996, Civil Engineering, Loyola Marymount University

B.S., 1987, Civil Engineering, Loyola Marymount University

Licenses/Certifications

Professional Engineer - Civil, California, 1991, 46972

Professional Affiliations

American Public Works Association (APWA)

American Society of Civil Engineers (ASCE)

American Water Works Association (AWWA)

Orange County Water Association (OCWA)

ELECTRICAL ENGINEERING AND CONTROLS

Marek Przywara, PE

Mr. Przywara has experience in with water/wastewater facilities including wastewater treatment plants, pump stations, sewer stations, reservoirs, and solid waste facilities. Responsibilities have included engineering, procurement, and construction activities. He prepared process instrumentation drawings (P&ID), ladder logic control, loop diagrams, and schematics to integrate process automation.

Years with Michael Baker **10**

Years experience **40**

RELEVANT EXPERIENCE

Baker Regional Water Treatment Plant, Lake Forest, California. *Irvine Ranch Water District.* ELECTRICAL ENGINEER. Michael Baker was the lead consultant and provided preliminary and final design services. For a number of years, water agencies in South Orange County have investigated alternatives for improving both water supply and water system reliability. These agencies determined that a local treatment plant utilizing untreated surface water from Metropolitan Water District as its source of supply would be the preferred alternative. The plant is sized for a capacity of 28 mgd and will utilize microfiltration as the primary method of treatment. Additional project components include raw water pump station; raw water pump station for Trabuco Canyon Water District; pretreatment, including chlorine dioxide and coagulant; pressurized MF membranes; UV disinfection; chloramination; backwash recovery system; solids handling facilities; DYK reservoir modifications; and product water pump station.

Flow Control Facility, Lake Forest, California. *Irvine Ranch Water District.* ELECTRICAL ENGINEER. Responsible for the electrical construction phase. Michael Baker was selected as the lead consultant for Irvine Ranch Water District's (IRWD's) Baker Regional Water Treatment Plant (BRWTP), a 28-million-gallon-per-day treatment plant utilizing untreated water from Metropolitan Water District (MWD). The project included the design and construction of the OC-33 Flow Control Facility (FCF) from MWD's Santiago Lateral to provide 28 cubic feet per second of flow capacity to the BRWTP. Preliminary design of the OC-33 FCF included a detailed hydraulic analysis and evaluation of alternative valve and meter types and configurations, and extensive coordination with IRWD and MWD engineering and operations and in securing MWD design approval.

Rio Vista Water Treatment Plant Clearwell Improvements, Santa Clarita, California. *Santa Clarita Valley Water Agency.* ELECTRICAL ENGINEER. Provided electrical engineering and design services including a new 480V three phase power distribution system, electrical cabinets, power and lighting plans as well as instrumentation and controls. The instrumentation and controls were integrated with the City's SCADA system. Remote and local monitoring and control of the equipment was provided, including equipment status, and alarm conditions. Michael Baker provided construction management and inspection services to for the Clearwell No. 1 Improvements project, which was partially funded by a USEPA Grant. The modifications to this 15-million-gallon treated water clearwell included demolition and removal of geomembrane liner, baffles, and floating cover; grading within the clearwell; installation of drain pipes, liner leakage collection pipes, concrete anchor curbs, geomembrane liner, CSPE baffles, and CSPE floating cover; installation of water quality monitoring system, site electrical, SCADA improvements, and perimeter railing; modifications to existing access platforms; and restoration of existing asphalt pavement.

Sterling Pumping Station and Reservoir Project, Riverside County, California. *Western Municipal Water.* QA/QC. Design for electrical and control systems and evaluated project constructability. Michael Baker provided engineering and design services and is currently providing construction engineering support services. The client provides drinking water to customers located within a 510-square-mile district of western Riverside County. Water resources include treated surface water and treated groundwater. The surface water is imported from Northern California and treated at the Mills Water Treatment Plant.

Michael Baker INTERNATIONAL

Education

M.S., 1974, Electrical Engineering, AGH University of Science & Technology

B.S., 1972, Electrical Engineering, AGH University of Science & Technology

Licenses/Certifications

Professional Engineer 1994- Electrical, California, 14537

Professional Affiliations

IEEE Computer Society

MECHANICAL ENGINEERING

Andy Komor, PE

Mr. Komor is a technical consultant and designer on water resources projects including stormwater quality, stormwater infrastructure/pumping facilities, drinking water, ocean and brackish water desalination, groundwater recharge, advanced wastewater treatment and water recycling, lake and reservoir water quality enhancements and new technology research and development.

Years with PACE **24**

Years experience **24**

RELEVANT EXPERIENCE

Gobernadora Multi-Purpose Basin, Orange County, California. *Santa Margarita Water District, Sr.* CONSULTING ENGINEER. Led the design of the diversion pump station and inflatable dam system for the 31-acre Gobernadora Multi-Purpose Basin designed to capture and naturally treat urban nuisance runoff through constructed wetlands. This multi-purpose basin provides flood detention through the first diversion system, collection and treatment of urban runoff through a second diversion, capture of shallow groundwater, and reuse into the existing recycled water network. The basin is designed to decrease storm flow, improve water quality and reclaim water supply for non-potable purpose.

Earvin Magic Johnson Park Stormwater Pump Station and Pipeline, Los Angeles, California. *Los Angeles County Public Works.* PROJECT MANAGER. Led the design of an urban runoff water recycling and stormwater runoff drain diversion system. A diversion structure was designed to tap into an existing Los Angeles Department of Public Works 84-inch diameter stormdrain to divert flows of up to 33 cfs to a new pump station that sends the flows to the park. The diversion structure is comprised of a low height partition that prevents dry weather and first-flush wet weather flows from continuing to flow through the stormdrain line and instead are diverted into a new 36-inch pipeline, ½ mile long, to transfer the flows to the diversion pump station. Wet weather flows beyond the first-flush volume will continue to flow down the existing stormdrain line. A pump station was designed containing mechanical screening to prevent trash and debris from being discharged downstream to Compton Creek. The flows captured from the stormdrain line are pumped into a sophisticated treatment facility with ozone, coagulation, circulation, aeration, and water conditioning prior to discharge to the wetlands at the renovated lake system. A pump at the north lake also recirculates water to the treatment system in the south lake at 2,500 gpm to maintain high water quality in the lakes. Lake water is also used for irrigation of the entire park, and potable water make-up is minimized by using the new treated stormwater source.

SoFi Stadium Advanced Stormwater Management Pump Station and Pipeline, Inglewood, California. *HKS.* PROJECT MANAGER. The SoFi Stadium multipurpose lake combines aesthetics with function through water conservation, flood attenuation and irrigation storage. The system recycles treated wastewater and urban runoff for irrigation use, significantly offsetting potable water demand. Design included the six-acre stadium multipurpose lake that receives, treats and attenuates the surrounding areas' stormwater runoff with the help of the adjacent Lake Pump Station. During a storm event, run-off enters the lake through the six storm drain discharges located in the wetland planters at the shoreline and then treated together with the lake water by a continuous treatment loop. The equipment for this treatment is located in the adjacent Lake Pump Station which continuously pulls water from the lakes, disinfects it with ozone and treats it with an alum coagulant which ensures better filtration when the water is discharged back into the lakes through the wetland planters. The pump station also houses the equipment that provides the continuous aeration of the lakes to maintain water quality, as well as a custom treatment system for the recycled water used for lake fill.

PACE

Education

MS Civil and Environmental Engineering, Arizona State University, 2001

BS Civil Engineering University of Minnesota,1999

Licenses/Certifications

Professional Engineer California, 2003, #64928

Professional Engineer Arizona, 2007, #46719

Professional Affiliations

Adjunct Instructor of Water Reuse, Santiago Community College

Past President of Orange County Water Association (OCWA)

California Water Environment Association (CWEA)

WateReuse Foundation

National American Lake Management Society (NALMS)

MECHANICAL ENGINEERING

Duong Do, PE

Mr. Do's expertise includes all areas of water resources, including stormwater BMP and LID infrastructure design, water and wastewater treatment processes and design; water distribution and wastewater collection; water and wastewater storage and pump infrastructure, and water resource master planning and permitting.

Years with PACE **24**

Years experience **28**

RELEVANT EXPERIENCE

Via Princessa Park Infiltration BMP Feasibility Study and River Revetment Study and Design, Santa Clarita, California. *City of Santa Clarita.* PROJECT MANAGER. Leading the feasibility study and design for a 30-acre foot (AF) infiltration BMP system and 2,000 linear feet (LF) of streambank stabilization for a new park in Santa Clarita. The feasibility study was completed in compliance with LA County's Safe Clean Water program guidelines for further consideration for project implementation funding. The study included summarizing the project's objectives, including a schematic of the project layout with diversion structures, hydrodynamic separator, underground infiltration BMP, onsite LIDs, and monitoring requirements, an outline of the capture area, as well as indicating the benefits regarding water quality, water supply, community investments, and nature-based solutions. This study also included a monitoring plan, O&M plan, engineering analysis including geotechnical investigation, site survey, hydrology analysis, a CEQA preliminary assessment, and gained approval from LA County Flood Control District to install the diversion structure and improvements to the existing storm drain infrastructure and facilities. The proposed design underway on the infiltration BMP facility incorporates sedimentation management through a corrugated metal pipe stormwater conveyance system. A dry wash will convey on-site flows and serve as a park amenity feature. BMP access for maintenance was facilitated in challenging areas such as playfields.

Vincent Lugo Park Stormwater Capture Project Feasibility Study, San Gabriel, California. *Los Angeles County Public Works.* PROJECT MANAGER. Part of the Technical Assistance Team for the Safe, Clean Water (SCW) Program assigned to develop a Feasibility Study for the Vincent Lugo Park Stormwater Capture concept as identified in the Rio Hondo Watershed Area Steering Committee's Stormwater Investment Plan. PACE provided peer-review on the BMP and stormwater capture process, which included diverting dry-weather flow from the Alhambra Wash and treat the flow through a series of bioswales infiltration BMPs that would also serve as stream amenity for the Park.

Newhall Park Diversion and BMP Infiltration Facility Safe Clean Water Feasibility Study and Design, Santa Clarita, California. *City of Santa Clarita.* PROJECT MANAGER. Performed site selection / feasibility analysis and design. Several potential sites were identified within the Upper Santa Clara River Watershed Management Group, Enhanced Watershed Management Plan, but a more in-depth analysis was required to determine the viability and infiltration effectiveness of each location. To help the City reach its short-term infiltration goals, PACE performed an investigation of the potential sites, which included site evaluations for suitability, infiltration optimization, development of optimum layouts, and construction cost estimates. Factors such as infiltration rates, proximity of the groundwater table, utility conflicts, 85th percentile watershed runoff volume, and feasibility of diverting from the adjacent storm drain system heavily influenced the investigation. The City selected Newhall Park, and PACE performed final engineering design and developed construction documents to support the implementation of the selected regional BMP location. PACE also assisted the City with securing funding by helping with the development of the Safe, Clean Water (SCW) Program's Measure W Feasibility Study for the project.

PACE

Education
B.S. Environmental Engineering, California Polytechnic University, San Luis Obispo, 1997

Licenses/Certifications
Professional Engineer, California, 2002, #C62802

Professional Engineer, Arizona, 2003, #40050

Professional Affiliations
American Society of Civil Engineers (ASCE)

Water Environment Federation (WEF)

Ernesto Camarena

Mr. Camarena's expertise includes controls and automation design for pump stations, water and wastewater treatment, wells, and storage reservoirs. He is a unique designer and startup expert of water infrastructure due to his extensive background in hands-on implementation of projects including panel building, programming, troubleshooting, and installation in the field during construction and operations.

Years with PACE **19**

Years experience **28**

RELEVANT EXPERIENCE

Gobernadora Multi-Purpose Basin, South Orange County, California. *Santa Margarita Water District.* SR INSTRUMENTATION AND CONTROLS SPECIALIST. Design of this project recycles urban dry weather and stormwater and provides regional flood control benefits. This basin provides several benefits including treatment and recycling of captured runoff and storm flows, reduction of downstream erosion and sedimentation, detention of peak storm flows, and water quality improvement to Gobernadora Creek. The system incorporates automated controls respond to both low flow and high storm flow conditions in the creek. Operational flexibility is facilitated through multiple hydraulic systems including a dry weather nuisance runoff diversion structure featuring a rubber inflatable dam system to divert flows into natural water quality treatment and infiltration cells, an elevated side weir to capture storm flows for peak flow storage, a secondary rubber dam for large flood flow water level control, sedimentation basin and fine straining, disinfection, and a pump station to transport treated flows for recycled water applications.

LA County Earvin Magic Johnson Park Stormwater Diversion and Treatment System, Los Angeles, California. *Los Angeles County Public Works.* SR INSTRUMENTATION AND CONTROLS SPECIALIST. Design of an urban runoff diversion structure that taps into an existing Los Angeles Department of Public Works 84-inch diameter stormdrain to divert flows of up to 33 cubic feet per second (cfs) to a new pump station that sends the flows to the park. The diversion structure is comprised of a low height partition that prevents dry weather and first-flush wet weather flows from continuing to flow through the stormdrain line and instead are diverted into a new 36-inch pipeline, approximately ½ mile long, to transfer the flows to the diversion pump station. Wet weather flows beyond the first-flush volume will continue to flow down the existing stormdrain line. The pump station will contain mechanical screening to prevent trash and debris from being discharged downstream to Compton Creek.

SoFi Stadium Advanced Stormwater Management System, Inglewood, California. *HKS.* SR INSTRUMENTATION AND CONTROLS SPECIALIST. Mechanical and water quality design of the multi-purpose 5-acre lake at Hollywood Park, the new SoFi Stadium site. The lake serves as the site's central stormwater management system and includes state-of-the-art water conservation and recycling features, making it among the most advanced integrated lakes in existence. The lake incorporates many advanced features to enhance water resource management at the site by serving as a stormwater treatment system for much of the stadium and entertainment district, integrating recycled wastewater and stormwater seamlessly within the lake to be fed into an onsite irrigation system, obtaining recycled water from West Basin Water District during dry weather to supply the lake make-up water, and by serving as a short-term flood attenuation basin to minimize flood risks. With the combination of reclaimed water and stormwater in this lake system being a first-of-its-kind in California, current permitting regulations were not set-up to address this approach. Therefore, the lake's stormwater discharge required a unique and lengthy permitting process before an individual NPDES stormwater discharge for the lake was approved by the Los Angeles Regional Water Quality Control Board in June 2020.

PACE

Education
A.A. / Applied Science, Computer Aided Drafting, ITT Technical Institute, 1993

Licenses/Certifications
SCADA and SCADAPak Certification, Los Angeles, 2009

SCADA

Eric Gonzales

Mr. Gonzales is a dedicated operations supervisor, and brings to the job experience in operating, supervising, and managing treatment systems and expertise in diagnosing equipment and process problems, troubleshooting system issues and taking corrective action within policy and procedures.

Years with PERC **7**

Years experience **12**

RELEVANT EXPERIENCE

LA County Earvin Magic Johnson Park Stormwater Diversion and Treatment System, Los Angeles, California. *Los Angeles County Public Works.* OPERATIONS AND MAINTENANCE. Responsible for the Earvin "Magic" Johnson Park Urban Runoff Water Recycling system. This unique stormwater system captures urban runoff (dry and wet weather first-flush flows), treats the captured flows, recycles the water for onsite irrigation, and stores the treated recycled water within the park's newly renovated lake. PERC Water provided system commissioning, start-up and testing services and has operated the facility since completion. The scope of services includes operations and maintenance of the water treatment system and training for Los Angeles County Staff.

SoFi Stadium Lake Park Water Treatment System, Inglewood, California. OPERATIONS AND MAINTENANCE. Responsible for the SoFi Stadium Lake Water Park Treatment System. The treatment system consists of multiple packaged treatment processes, which remove ammonia and further treat the recycled water that the site receives from West Basin Water District. The 5-acre lake sits in front of the stadium is much more than a decorative water feature; it also collects and treats runoff, attenuates storm flows, and stores recycled water for irrigation. This system significantly reduces potable water use, supporting the stadium's sustainability practices. PERC Water is contracted to operate and maintain the water treatment and filtration system and chemical addition systems, including instruments and pumps. The operators perform required water quality analysis of treated water to control bacteria management and remain in compliance with applicable Los Angeles County and State of California water quality laws.

Albert Robles Center (ARC) for Water Recycling and Environmental Learning, Pico Rivera, California. OPERATIONS AND MAINTENANCE. Eric leads PERC Water's Operations Team at the 15 MGD ARC Facility in Pico Rivera, Eric has been involved in the ARC project throughout the 24-month construction and commissioning period, developed the Plant Operating Protocol and Monthly Operating Reports, and assisted with the Facility design and operability review. Eric also assisted with the review of system functionality and test plans; the development, review and approval of the Plant's Operation and Optimization Plan (OOP), Operation and Maintenance Manual and CMMS Plan; and the development of the Process Monitoring and Regulatory Reporting Plan in compliance with Title 22 Permit requirements. Eric also has responsibility to recruit, hire and train all plant operations and maintenance personnel. In addition to these responsibilities, Eric has an active role in preparing, in coordination with the project Contractor, the following documents: Staff Development Plan; Operations and maintenance Plan; Health and Safety Plan (with respect to operations and maintenance); Emergency Response Plan; and Operations and Maintenance Staff job descriptions. He coordinates all operations activity and reporting, and works closely with project partners to ensure the safe and successful operation of the Facility. The ARC Facility utilizes the latest advanced water treatment technologies to process tertiary treated wastewater for the purpose of indirect potable reuse. Ultrafiltration trains directly coupled to a Reverse Osmosis system, seamlessly allows the flow of water from one system to next, and an industry first, Ultraviolet Advanced Oxidation system utilizing sodium hypochlorite, traditionally hydrogen peroxide, as an oxidizer to produce water that meets or exceeds stringent California State water quality parameters.

perc water

Education
BA, Biology, Whittier College, 2007

Licenses/Certifications
Wastewater Treatment Plant Operator, Grade 5, State Water Resource Control Board, 2013

Professional Affiliations
Southwest Membrane Operator Association

Gilbert Perez

Mr. Perez's experience includes wastewater treatment operations and ongoing maintenance, and knowledge of applicable laws and regulations. Most recently serving as the Operations Manager for the City of Riverside, He oversaw all regulatory compliance, environmental compliance, safety, collection system, mechanical, electrical, instrumentation maintenance and day to day operations along with managing engineering and construction management.

Years with PERC **3**

Years experience **35**

RELEVANT EXPERIENCE

Earvin "Magic" Johnson Park Urban Runoff Water Recycling, Los Angeles, California. TECHNICAL SUPPORT. Responsible for operations and maintenance of the Earvin "Magic" Johnson Park Urban Runoff Water Recycling system. This unique stormwater system captures urban runoff (dry and wet weather first-flush flows), treats the captured flows, recycles the water for onsite irrigation, and stores the treated recycled water within the park's newly renovated lake. PERC Water provided system commissioning, start-up and testing services and has operated the facility since completion. The scope of services includes operations and maintenance of the water treatment system and training for Los Angeles County Staff.

SoFi Stadium Lake Park Water Treatment System, Inglewood, California. TECHNICAL SUPPORT. Responsible for ongoing technical support to the SoFi Stadium Lake Water Park Treatment System. The treatment system consists of multiple packaged treatment processes, which remove ammonia and further treat the recycled water that the site receives from West Basin Water District. The 5-acre lake sits in front of the stadium is much more than a decorative water feature; it also collects and treats runoff, attenuates storm flows, and stores recycled water for irrigation. This system significantly reduces potable water use, supporting the stadium's sustainability practices. PERC Water is contracted to operate and maintain the water treatment and filtration system and chemical addition systems, including instruments and pumps. The operators perform required water quality analysis of treated water to control bacteria management and remain in compliance with applicable Los Angeles County and State of California water quality laws.

City of San Diego Morena Pump Station, San Diego, California. START-UP AND COMMISSIONING MANAGER. Responsible for a new 37.7 MGD Morena Wastewater Pump Station Facility, including Odor Control Systems, Electrical Building, Screening Facility, High Purity Oxygen System, Maintenance Building, associated civil site work including storm drainage, yard piping, perimeter walls, access gates, pavement, landscaping and other appurtenances. The project also includes the construction of 48-inch, 60-inch & 66-inch diversion and overflow sewers, three diversion structures with slide gates and one junction structure on Friars Rd.

Vista Canyon Water Factory, Santa Clarita, California. OPERATIONS AND MAINTENANCE. Responsible for management and troubleshooting of the 0.415 MGD Vista Canyon Water Factory. Water treated at the factory is recycled and delivered via "purple pipe" to provide for 100 percent of all the community's non-potable water uses including open spaces, landscaping, community garden and neighborhood parks. Environmentally sensitive and resourceful, PERC Water's design of the facility offers flexibility of operation and excellent water quality within a small footprint of less than an acre. Disinfection is performed by UV and effluent is be treated to Title 22 standards for unrestricted reuse.

Pala Casino Spa Resort Wastewater Treatment Plant, Pala, California. OPERATIONS AND MAINTENANCE. Responsible for management of the 1.6 MGD Pala Casino Spa Resort Wastewater Treatment Plant.

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Licenses/Certifications

CA Grade V WWTP Operator / #7715

Professional Affiliations

California Water Environment Association (CWEA)

CWEA Desert and Mountain Section, Director, Vice President and President

Southwestern Membrane Operator Association (SWMOA)

Water Environment Federation (WEF)

CONSTRUCTION/REPAIR

Kevin Tirado, PE

Mr. Tirado is a strategic Professional Civil Engineer who is committed to streamlining processes and procedures to ensure maximum cost-effectiveness and efficiency. Dedicated professional who builds lasting, productive relationships with leaders of public organizations, private entities, and stakeholders. Technically skilled leader who brings a depth of engineering knowledge to complex business challenges and communicates effectively with across all levels of a company.

Years with PERC **1**

Years experience **27**

RELEVANT EXPERIENCE

Kalaeloa Seawater Desalination Facility (KSDF) Project, Kapolei, Hawaii. *Board of Water Supply, City and County of Honolulu.* DESIGN-BUILD MANAGER. Project included the design, build, operate and maintain a new 1.7 million gallons per day (MGD) seawater desalination facility on the island of Oahu. The new facility, which will draw seawater to be treated through seawater reverse osmosis treatment processes. Treated water will ultimately be discharged and blended with existing BWS water. The new Facility will also feature an administration building with accommodations for public visitors and will support sustainability initiatives set forth by BWS. The seawater desalination plant will supplement BWS' ongoing efforts to encourage conservation, use recycled water for non-potable water demands, and leverage brackish and saline aquifer supplies where possible. The KSDF current has a targeted operational start date in 2027, which is subject to change.

Valencia Water Reclamation Plant Advanced Water Treatment Facility, Valencia, California. *Valencia Water Treatment.* SENIOR PROJECT MANAGER. PERC Water is the lead entity for start-up and commissioning services (Commissioning & Startup). The project is an advanced treatment facility consisting of microfiltration (MF) for particulate removal, nanofiltration (NF) for water softening, an enhanced membrane system (EMS) using high recovery reverse osmosis (RO) for chloride removal targeting 99.2% recovery, and a truck loading station for brine disposal. Approximately 8.3 MGD of VWRP tertiary-treated water will be diverted to the AWTF, which will produce 6.5 MGD of low chloride product water that will be blended with the remaining VWRP tertiary-treated water.

Santa Monica Sustainable Water Infrastructure Project (SWIP), Santa Monica, California. *City of Santa Monica.* SENIOR PROJECT MANAGER. As part of the progressive design-build team, this project allows the City to take a major step toward water independence, supporting existing programs designed to create a sustainable water supply. PERC Water is leading the design team, responsible for start-up and commissioning activities and will operate the facility upon project completion. The first-of-its-kind SWIP takes a forward-thinking approach to help secure the City's water future by leveraging the use of existing City infrastructure and by linking together three new distributed water reuse elements into a single cohesive and comprehensive project to harvest, treat, and reuse non-conventional water resources. The SWIP is comprised of: 1 Million Gallon Per Day Advanced Water Treatment Facility (AWTF), 1.5 Million Gallon Stormwater Harvesting Tank and upgrades to Santa Monica Urban Runoff Recycling Facility (SMURFF) The SWIP will deliver reliable advanced treated water to be injected into local groundwater basins for indirect potable reuse via aquifer recharge while meeting the non-potable reuse demands. Mr. Tirado is responsible for design drawing and specification oversight and submittal reviews of the AWTF, preparation of NPR and IPR Engineering Reports, DDW and RWQCB regulatory coordination, construction coordination including field observation, submittal/shop drawings review, preparation of the Start-Up and Commissioning Plans, DDW Acceptance Test Plan, Operation Optimization Plan (OOP), Operation and Maintenance Manuals, and field work for the start-up and commissioning of the AWTF.

perc water

Education
BS/Civil Engineering/ University of California, Davis

Licenses/Certifications
California Professional Civil Engineer / No. C72958

California State Water Resources Control Board:

- T2 Water Treatment Operator / No. 32230
- D2 Water Distribution Operator / No. 38693

Professional Affiliations
American Water Works Association

WateReuse Association

Southwest Membrane Operator Association

CONSTRUCTION/REPAIR

Joseph Winkler

Mr. Winkler has experience with civil, environmental remediation commercial/industrial, residential and government construction. At PERC Water, he is responsible for all aspects of estimating, budgeting, scheduling, contracting and management for water infrastructure projects. Mr. Winkler's professional expertise includes contract negotiations, document preparation, value engineering and design conflict resolution assistance.

Years with PERC **3**

Years experience **21**

RELEVANT EXPERIENCE

Kalaeloa Seawater Desalination Facility (KSDF) Project, Kapolei, Hawaii. *Board of Water Supply, City and County of Honolulu.* PROJECT MANAGER. Project included the design, build, operate and maintain a new 1.7 million gallons per day (MGD) seawater desalination facility on the island of Oahu. The new facility, which will draw seawater to be treated through seawater reverse osmosis treatment processes. Treated water will ultimately be discharged and blended with existing BWS water. The new Facility will also feature an administration building with accommodations for public visitors and will support sustainability initiatives set forth by BWS. The seawater desalination plant will supplement BWS' ongoing efforts to encourage conservation, use recycled water for non-potable water demands, and leverage brackish and saline aquifer supplies where possible. The KSDF current has a targeted operational start date in 2027, which is subject to change.

Pala Wastewater Treatment Plant, Pala, California. *Pala Band of Mission Indians.* PROJECT MANAGER. Project included the operations, maintenance, and facility upgrades of the Pala Wastewater Treatment System.

Camp Pendleton North and South Regional Tertiary Treatment Plants, Camp Pendleton, California. *Naval Facilities Engineering Command Southwest (NAVFAC Southwest).* ON-SITE PROJECT MANAGER. Project included the operations, maintenance, and facility improvements of the 4.0 MGD North Regional Tertiary Treatment Plant (NRTTP) and 7.5 MGD South Regional Tertiary Treatment Plant (SRTTP) located on Marine Corps Base Camp Pendleton.

Sarival Water Reclamation Facility (WRF), Goodyear, Arizona (DB). *City of Goodyear.* PROJECT MANAGER. The new facility will treat an average day flow capacity of 4.0 Million Gallon per Day (MGD) with a maximum day flow capacity of 6.0 MGD and a peak-hour capacity of 10.0 MGD in Phase 1. The facility will utilize a membrane bio-reactor treatment process, followed by chlorination disinfection, to meet ADEQ Title 18 Class A+ requirements for unrestricted reuse of recycled water. Each phase of the facility will be constructed with parallel unit processes capable of treating raw wastewater with one unit out of service, ultimately based around increased facility reliability and redundancy. Construction began in June 2022 and is expected to be completed in 2024.

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Licenses/Certifications

Contractors State License Board C54 Tile & Stone License

Professional Affiliations

Building Industry Association of San Diego Storm Water Task Force Committee

USACE NAVFAC Southwest Division Quality Control Manager

MAINTENANCE AND SUPPORT LEAD

Stephen Ruckle

Mr Ruckle's experience includes wastewater construction, PLC programming, industrial machine repair (both electrical and mechanical), electronics design, mechanical machine repair and a lifetime of computer programming he maintains a wide range of wastewater and pumping systems. Troubleshooting and repairing instrumentation sensors, 4-20mA loops, relays, power supplies, PLC and HMI hardware and software, fuses, circuit breakers, solenoids, pump motors, contactors, pump motor overloads and many other components are well within his capabilities.

Years experience **7**

RELEVANT EXPERIENCE

Sewer Flow Monitoring and Treatment, Ventura, California. *Naval Base Ventura County.* OPERATOR. Operate and maintain all sewer and stormwater main lines on Point Mugu, Port Hueneme, and Saint Nicholas Island. Including the design and implementation of a preventative maintenance program. Also provided pump station maintenance.

Water and Wastewater Upgrade, Los Angeles, California. *Caltrans 11-409104.* LEAD INSTRUMENTATION TECHNICIAN. Demolition and installation of a completely self-contained water and wastewater treatment and distribution/ collection system. The wastewater treatment system includes commission and integration of the control system into statewide SCADA software (Tesco). Install an uninterruptable power supply with a 150kw Generator.

Municipal and Industrial Flow Monitoring. LEAD INSTRUMENTATION TECHNICIAN. Calibrate, install, and collect deliverable information for flow monitoring reporting for many projects from recording sewer inflows to assist in pump station design to complete collection system I and E studies.

Special Project Robotics, Hardware, and Software Design. LEAD INSTRUMENTATION TECHNICIAN. Design, test, and build special projects such as flow monitoring automation for municipal rate structuring. Specializing in designing circuitry and software for automation of processes.

Instrumentation, Various Projects, California. *Caltrans Orange County, the Cities of El Segundo, Santa Monica, Anaheim, Pico Rivera, Naval Bases San Diego County, and various private organizations.* LEAD INSTRUMENTATION TECHNICIAN. Various projects with government and private entities to maintain and repair waste and stormwater instrumentation, flow monitoring, and pump systems. Included are Caltrans Orange County, the City of El Segundo, Santa Monica, Anaheim, Pico Rivera, Naval Bases San Diego County, and various private organizations.

DownStream Services, Inc.

Education

Westwood College of Aviation, San Diego Community College District, Associate's Degrees, Airframe and Powerplant

San Diego Community College District, Mechanical Engineering

Licenses/Certifications

Confined Space Entry
Traffic Control
Flagger
Safety Training

MAINTENANCE AND SUPPORT

Tyler Cady

Mr. Cady is responsible for managing and coordinating large underground, lining, and instrumentation projects. He is accountable for creating the project work plans and schedules as well as appropriately identifying the resources and personnel needed to complete the project successfully.

Years experience **13**

RELEVANT EXPERIENCE

San Elijo Wet Well Rehabilitation, San Diego, California. *San Diego Department of Parks and Recreation.* PROJECT MANAGER. Performed rehabilitation of three wet wells using Mainstay Composite Liner System, which included Microsilica Resurfacing Mortar (ML-72) and high-build 125 mils, 100% solids epoxy coating (DS-5). Chemical injection grouting was used to stop all active leaks.

Bangerter Bridges Project, CIPP Liner and Manhole Rehabilitation, Salt Lake City, Utah. *Utah Department of Transportation.* PROJECT MANAGER. Preformed rehabilitation work on storm drainpipes as well sewer lines under the new proposed highway. Each Manhole for the sewer system had to be inspected and then leaks were stopped using injection grout method with Spectec PU H100. The manhole was then epoxy coated.

24-Inch Trunk Sewer Rehabilitation, Park City, Utah. *Snyderville Basin Water Reclamation District, Silver Creek Junction.* PROJECT MANAGER. Preformed rehabilitation of 24-Inch trunk line with manhole rehabilitation for each of the 65 manholes on the project. Each manhole had to be prepped by removing existing old and corroded steps and loose concrete, as well as active leaks stopped.

Education

BS Civil Engineering, Utah State University

Licenses/Certifications

UV-GRP CIPP Lining

Cosmic Top Hat Installer Certification

Utah Division of Drinking Water Operator Grade 4

Utah Wastewater Operator Grade 3

MAINTENANCE AND SUPPORT

Robert Carr

Mr. Carr is an experienced Project Manager and has field experience in CCTV inspections, cleaning, and point repairs in stormwater and sanitary sewer systems. He has a CWEA Grade 4 in collection systems maintenance, carries a NASSCO PACP certificate and remains involved in CCTV training and operations. He is responsible for project scheduling, field operations, and ensures work remains in compliance with project specifications and standards.

Years experience **16**

RELEVANT EXPERIENCE

Culver Boulevard Stormwater Retention Operations and Maintenance Services. *City of Culver City.* PROJECT MANAGER. As-needed inspection and maintenance for the Culver Boulevard Stormwater Retention System. The system includes 2 large underground detention galleries, 2 CDS units, 2 Kraken units, 2 actuator valves, 1 pump station, and multiple junction boxes.

Sacramento International Airport. *County of Sacramento.* PROJECT MANAGER. Yearly contract for quarterly storm filter unit's inspection including 346 cartridge filters and as-needed cleaning and replacement of ZPG cartridges.

LAX Stormwater BMP System and Device Inspection. *City of Los Angeles.* PROJECT MANAGER. Management and implementation of the inspections and cleanings/replacement parts for all LAX owned stormwater devices annually.

Newport Beach Annual Stormwater Maintenance. *City of Newport Beach.* PROJECT MANAGER. Management and implementation of cleaning services for the City's 11 continuous deflective separation units, 29 structures, 3,236 catch basins and 17,090 feet of v-ditches.

Licenses/Certifications

CWEA Grade 4 Collection Systems Maintenance

OSHA 30 Hour

NASSCO- LACP, MACP, PACP

Confined Space Entry

Fall Protection

HAZWOPER

MAINTENANCE AND SUPPORT AND CONSTRUCTION/REPAIR

Lee Allen Roesner, PE

Mr. Roesner has engineering and management experience in of all aspects of heavy Civil construction projects including sewers, sewer rehabilitation, drainage, domestic and reclaimed water lines ranging up to 20' diameter, plant work, tunneling, micro tunneling and hazardous material handling.

Years experience **38**

RELEVANT EXPERIENCE

Buntich Construction, Upland, California. VICE PRESIDENT OF OPERATIONS. Manage engineering staff and field supervision to ensure projects are completed safely and on time. Review CPM schedules, plan and manage construction labor and equipment force, resolve construction problems by providing owners with resourceful and innovative ideas, track, prepare and negotiate claims and change orders, ensure project acceptance and payment. Management duties have included estimating, budgeting, preparing safety programs and training classes, engineering design and oversight, scheduling, supervision of staff, engineers, field construction employees, claims preparation and negotiating.

Best Western Paving Company, Walnut, California. PUBLIC WORKS CONSTRUCTION SUPERINTENDENT. Responsible for company Public Works construction projects. Prepared and planned construction activities, managed crews and equipment for on and off site projects, handled all contract administrative issues with contractors and owners.

Los Angeles County Department of Public Works, Los Angeles, California. CONSTRUCTION LIAISON ENGINEER. Managed public works underground construction projects.

Education
Michigan Technological University, BS Civil Engineering,1986

Licenses/Certifications
California Professional Civil Engineer, #C046151

MAINTENANCE AND SUPPORT AND CONSTRUCTION/REPAIR

Evan Casaus

Mr. Casaus is a project manager responsible for planning, scheduling, conducting, and coordinating the technical management aspects of projects. Ensures operations follow design and specifications and that all construction operations are completed on schedule, within budget and to quality standards.

Years with Experience **8**

RELEVANT EXPERIENCE

Emergency Underground Projects, Los Angeles, California. *City of Los Angeles Department of Public Works.* EMERGENCY SERVICES MANAGER. Oversee emergency underground projects. These projects provide emergency sewer and storm drain repairs and/or replacement when failure jeopardizes public health and safety. Work ranges from emergency spot repairs to large emergency repairs/rehabilitation of sewers and storm drains. Responsible for construction process, scheduling, labor, and equipment. Manage project finances, cost estimates, progress billings, and final billings. Develop subcontracts, obtain and review subcontractor proposals, manage subcontractors, and approve subcontractor billings. Responsible for the identification, analytics, and resolution of day-to-day challenges in a fast paced and changing environment.

Emergency Sewer Repair, Venice Blvd, Los Angeles, California. PROJECT MANAGER. Emergency sewer repair that involved the replacement of a broken 8"x6" VCP wye connection at a depth of 9'. After the repair was performed, a sectional CIPP lining and top hat were installed at the new wye connection.

Emergency Sewer Repair – Wetherly Drive, Los Angeles, California. PROJECT MANAGER. Emergency sewer repair that involved removing a blockage from an 8" VCP sewer. After the initial cleaning performed by a hydrojetting truck did not clear the blockage, a higher pressurized jetting machine was used. Although the heavy cleaning allowed flow, the line was still obstructed. A total of 6' of 8" VCP and one 8"x6" VCP wye connection was removed to clear the blockage.

Education
B.A., Cum Laude, Intensive Psychology, UC Santa Cruz, CA, 2015

Certifications
- OSHA 30 Hour Safety Training
- Competent Person Trenching and Excavation
- Competent Person Confined Space
- Forklift Operator Training

UNDERSTANDING & APPROACH

GWMA can achieve time and cost savings and increased operational efficiency with the Michael Baker team–a trusted, well-known partner with experience delivering stormwater, wastewater, and similar projects in communities throughout California.

UNDERSTANDING & APPROACH

PROJECT UNDERSTANDING

GWMA, on behalf of its members, has issued a RFQ for Operations, Maintenance, and Evaluation of Regional Stormwater Capture and Treatment Projects, initially identifying five potential locations:

1. **Bolivar Park:** 3300 Del Amo Blvd., Lakewood, CA 90712
2. **Mayfair Park:** 5720 Clark Ave, Lakewood, CA 90712
3. **Ruth R. Caruthers Park:**10500 Flora Vista St, Bellflower, CA 90706
4. **Sub Basin 4 (Long Beach Airport)Long Beach Airport**
5. **Urban Orchard Park:** 9475 West Frontage Road, South Gate, CA 90280

An additional 12 regional projects are anticipated to be constructed over the next 10 to 15 years at Hermosillo Park, El Dorado Park, Furman Park, Spane Park, John Anson Ford Park, Apollo Park, Independence Park, Cerritos Sports Complex, Lynwood City Park, Heartwell Park, Skylinks Golf Course, and Salt Lake Park. These new facilities, once constructed, may also use the services covered under the RFQ.

The RFQ does not identify a specific commitment for work at the five existing projects, but notes that member agencies "may then take a separate action to select pre-qualified firm(s), request specific proposal(s), and negotiate and award contract(s) for requested activities."

Each of the five existing projects has been constructed to achieve improvements in water quality as well as beneficial usage for a portion of dry and wet weather flows that otherwise would be conveyed untreated to DSI marine waters. **The following is an overview of the five projects:**

Bolivar Park : The Bolivar Park Regional Stormwater Project is located in a municipal park in the City of Lakewood and includes a 7.5 acre-feet subsurface storage system. Wet and dry weather flows are diverted from the nearby Del Amo Channel. Project infiltration rates have significantly decreased and the water harvesting system has required extensive maintenance. Major components include:

- Rubber diversion dam
- Grated drop inlet diversion structure
- Low flow drop inlet structure
- Actuated diversion valve
- Pretreatment unit, Nutrient Separating Baffle Box (NSBB)
- Pump station with 4 pumps
- 8.9 acre-feet subsurface storage and infiltration gallery
- Wet well with 3 pumps
- Water harvesting unit (WAHASO) with connection to the Park's irrigation system
- Overflow discharge pump back to a storm drain

Mayfair Park: The Mayfair Park Regional Stormwater Project is located in a municipal park in the City of Lakewood and includes a 13.8 acre-feet subsurface storage system. Wet and dry weather flows are diverted from the nearby Clark Channel. The water harvesting system has required extensive maintenance. Major components include:

- Rubber diversion dam
- Grated drop inlet structure
- Actuated diversion valve structure
- Pretreatment unit, NSBB
- 13.8 acre-feet subsurface storage gallery
- Outlet valve and a wet well with 3 pumps
- Water harvesting unit (WAHASO) with connection to the Park's irrigation system
- Kraken cartridge filtration units
- Back-up sanitary discharge line
- Treatment unit building with controls

Ruth R. Caruthers Park: The Ruth R Caruthers Park Regional Project is located in a municipal park in the City of Bellflower and includes a 9-acre-feet subsurface storage system. Wet and dry weather flows are diverted from two Los Angeles County Flood Control District facilities, BI1902 Drain and Project 16 Channel. Project infiltration rates have significantly decreased and the water harvesting system has required extensive maintenance. Major components include:

- Two rubber diversion dams
- Grated drop-inlet structures
- Junction diversion structure
- Two actuated valve structures
- Two pretreatment units, NSBBs
- 9 acre-feet subsurface infiltration and storage facility
- Pump station, 3 pumps
- 3-way plug valve
- Water harvesting unit (WAHASO)

Sub Basin 4: Located at Long Beach Airport, the project includes a 14-acre-feet subsurface storage system. Wet and dry weather flows are diverted from nearby Los Cerritos Channel. Infiltration appears to be negligible, and groundwater appears to be entering the storage/infiltration gallery through the bottom and sides. Major components include:

- A grated inlet structure
- Flow splitter vault
- Two pre-treatment units
- Motor activated sluice gate
- Energy dissipater structure
- 14 acre-feet subsurface storage and infiltration vault

Urban Orchard: Located in the City of South Gate, the project (not yet operational) will divert wet and dry weather flows from the Bandini Channel first to a constructed treatment wetland and then to a 2.52 acre-feet subsurface storage system. A water harvesting system, including additional filtration and a pump, can provide irrigation for the orchard and buffer trees. Major components include:

- Grated drop inlet structure in the Bandini Channel
- Actuated valve structure
- Pumps to hydrodynamic separators
- Pumps to constructed wetlands
- 2.52 ac-ft subsurface storage
- Water harvesting system
- Water overflows and discharge system
- Related pumps, valves, sensors, and monitors

Michael Baker assumes from the RFQ that all or a portion of operations and repairs at the five facilities will be transferred from local agency operations to companies selected under the RFQ process. As such, the RFQ provides O&M manuals for all five projects describing the systems in place and the level of maintenance required. In addition, the RFQ provides links to engineering reports for Bolivar Park and Sub Basin 4, as well as including summary tables that point to a wide variety of operational challenges and systems deficiencies. As an example, for the Bolivar Park project:

- Rubber dam: Mosquitoes from standing water, too little dry weather flow, and trash and debris
- Total suspended solids sensor: Sensor not working
- Motor operated valve (2): 1) Valve leaking, not controllable by SCADA, and in a confined space; 2) valve not controllable by SCADA, in a confined space, valve vault accumulates water
- Pre-treatment unit: Difficult to clean, and accessibility issues including ventilation and lighting
- Subsurface storage: Accessibility issues including ventilation and lighting, hard to maintain, and infiltration not working
- WAHASO water harvesting system: Excess staff time utilized, frequent clogging of bag filters, undersized activated carbon media filters, poor water clarity that impedes UV treatment, broken sensor and flow meter, and clogging
- Irrigation pump and discharge pump: Salt causes sprinkler failures, and pumps have failed and had to be replaced

The engineering report (October 2023) elaborates on these issues and identifies others, such as lack of replacement of activated carbon and odors from a lack of disinfection and provides some initial recommendations.

As an example of the Team's approach to facility operational issues, we have reviewed the Bolivar Park project documentation provided in the RFQ and, based on that information, we have identified the following issues for further consideration.

- Settling Basin: The existing settling basin is undersized relative to the inlet pump station capacity. The current configuration provides for a detention time of only four minutes. This short detention time does not a provide for the settling required for treating storm flows and results in heavy sediment loading to the storage basin. Sediment in the storage basin can lead to poor water quality, increased maintenance and an adversely affected WAHASO Treatment system. We estimate that the existing recommendation to add a taller brick screen only increases detention time to eight minutes in the storage basin which is still not sufficient. This recommendation is also costly and time consuming. A more cost-effective modification could be to reduce the inlet pump rate to provide at least 30 minutes of settling time. Another option could be to limit the pump rate to accommodate dry-weather flow that does not carry the same high sediment load, allowing the existing settling basin to be more effective.
- Pretreatment design capacity: From the provided documentation, it is unclear if the existing Bioclean pretreatment system was designed for both trash and sediment capture. Reducing the inlet pumping rate could help improve the existing pretreatment system's performance thereby improving the overall system's performance.
- WAHASO Treatment System inlet design: The documentation does not describe how water in the storage basin is drawn into the WAHASO treatment system for reuse. Ensuring that the inlet for the WAHASO is properly placed with suitable pretreatment could further reduce sediment loading and improve the treatment system's performance while also reducing maintenance.

- Mechanical Ventilation: Active mechanical ventilation that provides for at least six air changes per hour will reduce air stagnation and odor by providing proper continuous airflow through the system. This air flow design could eliminate the need for an odor control system with high power and maintenance costs. Active air exchanges also facilitate safe occupancy when maintenance procedures require access for cleaning or other operations.
- Perched Groundwater: The structural design of the underground facility should be re-evaluated for buoyancy and structural strength. While eliminating the existing groundwater leaks into the structure may be desirable for water quality assurances, the additional stress brought by the groundwater onto the structure should be thoroughly evaluated before proceeding.

Michael Baker has assembled a diverse and extremely experienced team that is capable of helping GWMA's member agencies in addressing these challenges and putting each of these projects on track to operate efficiently and cost-effectively by providing recommendations for the most cost-effective operational and structures improvements that maintain project goals for improving water quality. **We have designed, built, monitored, and operated projects like these for several years and can provide the O&M, SCADA monitoring, engineering, technical services, and construction/repair capabilities needed to do the job.**

PROJECT APPROACH

The Michael Baker Team presented in this response to the RFQ is intentionally robust and includes redundancy throughout by design, as there are potentially multiple facilities requiring operations, maintenance, and evaluation at the same time. Such a large undertaking, often around storm events, is expected to require significant effort and resources to provide optimum best management practices (BMP) functioning.

Given the contractor licensing status of DSI, Buntich, and PERC with related liability issues, Michael Baker recommends that while the team will work as a cohesive whole, with Michael Baker as the lead, any subsequent contracts be awarded recognizing the individual contractor responsibilities of DSI, Buntich, and PERC.

The Team provides all services listed in the RFQ for the four work categories. The following identifies the specific roles in each category:

- O&M of regional stormwater capture infrastructure systems.
  - » *Michael Baker – Administrative, reporting, and monitoring lead.*
  - » *DSI - Electro-mechanical, electrical, and instrumentation service lead.*
  - » *Buntich and PERC – O&M support and overflow work.*
  - » *Michael Baker and PACE – O&M optimization evaluations and recommendations.*
- Off-site monitoring and control via SCADA.
  - » *PERC– SCADA monitoring and control for daily operation and data tracking.*
  - » *Michael Baker and PACE – monitoring and analysis of operations data for O&M optimizations.*
- Engineering and technical services for design, evaluation, and technical support.
  - » *Michael Baker and PACE.*
- Construction and repair services for repairs and replacement of diversion systems, pumps, valves as well as access to underground structures.
  - » *Buntich and PERC.*

PROJECT MANAGER AND LEADS

Chris Crompton will lead Michael Baker Team. Externally, Chris will serve as the main point of contact with each City project owner and facilitate communications on needs and expectations. He will set up standing calls with City representatives on progress and performance and ensure that all routine work performed is documented and reported.

A key role at the outset will be in facilitating decisions about any additional engineering assessments needed, any O&M and structural alterations needed to bring the four current operating facilities up to City expectations, and the viability of the infiltration and water harvesting capabilities as continued components.

PROJECT MANAGER

Chris has spent the past 39 years working with stormwater programs and facilities to improve communities throughout southern California. His experience working collaboratively with regulators, leading multi-agency efforts to develop stormwater infrastructure, and understanding what makes facilities work well has led him to this point and makes him a compelling selection to orchestrate the Michael Baker Team. He consistently produces positive outcomes in difficult projects by establishing partnerships and appropriate expectations with all invested stakeholders.

Chris will do this by evaluating the O&M asset assessments and engineering and technical studies already conducted with the Michael Baker Team and identify whether sufficient information is available to make decisions with respect to the operability issues identified. If sufficient information is available, recommendations on next steps will be made. If more information is needed, the nature and cost of these further investigations will be identified and shared with the City project owner for consideration. An example of this process was included in our discussion of the Bolivar facility included in the Understanding. The goal at the outset will be to identify a clear path forward for improved performance through prioritized actions and identify achievable performance metrics.

Internally, Chris will ensure work is distributed amongst the Team members and tracked such that it is completed on schedule with clearly defined performance metrics. Chris will be supported by the three main task leads identified in the RFQ:

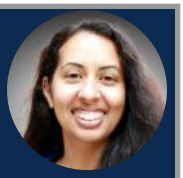
Max Liles of Michael Baker will provide the administrative support lead role for the O&M of the projects. He will provide as-needed day-to-day coordination (referred to as a part-time role in the RFQ) on items such as the preparation of compliance reports, correspondence, and coordination with Michael Baker Team members on assignments, work progress, and performance. Max will be Michael Baker's most frequent "boots on the ground" providing a regular presence to interact with each city on routine matters.

ADMINISTRATIVE LEAD

In Max's role as Universal Studio's Environmental Program Manager, he was responsible for campus-wide compliance with discharge, air quality, and hazardous materials and other environmental programs imposed by state and local regulatory agencies. His role included directing operation and maintenance personnel to ensure on-site mechanical systems, including a Wahaso water harvesting unit, functioned in a manner that produced results and met regulatory standards. He liaised with regulatory agencies, including the Public Health Department and Regional Water Quality Control Board, City of Los Angeles Sanitation District and Los County Department of Public Works, and interacted with their staff frequently. He oversaw system monitoring and ensured proper reporting to regulators was completed. His demonstrated success in this role properly prepared him to serve as the Administrative Lead for this program.

Vanessa Thulsiraj of Michael Baker will provide the water quality monitoring lead role for the O&M of the projects. She will oversee required monitoring programs required by permits, as applicable, from Los Angeles County Flood Control District, Sanitation Districts of Los Angeles County, and Public Health Department. This will include both volumetric measurement of flow and as well as sampling and lab assessments of required constituents. She will be responsible for any necessary compliance reports. Of equal importance, she will assist the Michael Baker Team in determining and measuring the performance of each project based on the metrics that are set. This, for example, could include volumetric performance of amounts and percentages of water captured and treated, as well as loading assessments of pollutants and bacterial organisms removed.

MONITORING LEAD



Vanessa offers demonstrated experience overseeing teams responsible for developing and executing plans for the sampling and analysis of discharges associated with stormwater treatment systems. Over the past decade she has served as faculty at both the University of California, Los Angeles and University of California, Irvine which has exposed her to the leading edge of stormwater quality, and where she developed innovative monitoring methods. Her experience spans programs built around complex, automated sampling systems through simplified, grab sample operations. Vanessa is ideally suited to lead the monitoring of influent, effluent, and other water streams associated with these facilities.

Stephen Ruckle of DSI will provide the maintenance and support lead role for O&M of the projects. He will be available as needed for day-to-day coordination (referred to as a part-time role in the RFQ) on electro-mechanical, electrical, and instrumentation service issues related to the projects. He will oversee and respond to routine maintenance issues and will engage with Michael Baker's project manager and/or administrative support lead on larger issues that require engineering, SCADA, or construction services, or in situations where workload requires bringing in additional Team members.

MAINTENANCE AND SUPPORT LEAD

Stephen brings decades of mechanical machine repair, a decade of electronics design, and a lifetime of computer programming to the Team. He will be available to provide part-time maintenance and support on an as-needed basis. His combination of experience, spanning programmable logic controls, water infrastructure construction, industrial and mechanical machine repair, along with programming allows him to service a wide range of systems.

Operation and Maintenance (O&M)

The Michael Baker Team has experience operating and problem-solving with systems similar to the five regional projects. We are used to the systems, familiar with the equipment, understand the common design features, and have experience with the most frequent problems to occur. We are also adept at using existing information and will utilize available data and reports on performance to ensure the most efficient use of resources to the extent possible.

The Michael Baker Team's O&M approach will be based on three core principles: protection of human life and health; maintaining permit compliance; and maximizing equipment performance and life:

- Safe work is paramount to the Michael Baker Team and will be an integral component of our work practices, including higher risk categories such as confined space entry. Key safety practices to be followed include:
  - *Use of a Designated Safety Officer certified to provide training on safety procedures per Injury and Illness Prevention Plans that will conduct regular onsite safety inspections and provide job-specific safety documentation to remain on the jobsite.*
  - *Traffic control, including traffic control trucks outfitted with built-in arrow boards, designed to handle any traffic control setup required. Includes training on proper traffic control and flagging procedures and the California Manual on Uniform Traffic Control Devices (MUTCD) WATCH manual.*
  - *Training and certifications in confined space entry procedures and regular inspections, testing, and calibrations of equipment. Occasionally, confined space rescue elements including the use of self-contained breathing apparatus may be required to safely complete the task at hand.*
- The Michael Baker Team brings both understanding and experience of regulatory and permit compliance and meeting all set requirements will be a major emphasis of our work and performance monitoring.
- At the outset, the Michael Baker Team will spend a significant amount of time gathering an inventory of the system components on-site, reviewing the plans and O&M manuals, reaching out to the manufacturers of the stormwater devices and the City owner for additional insight regarding device functionality and design, and understanding the overall intended functionality and actual, experienced performance. Throughout this process, the Team will recognize current and future bottlenecks or potential design flaws and create resolutions for these issues. An early goal will be to create a prioritized initial corrective action plan for each project in conjunction with the City owner and, in the long term, an updated asset management plan.

Scheduling will be coordinated with the City owner and inspections will initially be performed per the O&M manuals. Maintenance data will be collected and reviewed in conjunction with performance monitoring data to ensure goals are understood and that path is established to have them met.

The Michael Baker Team will employ robust training for all Team members to ensure that the redundant O&M capacity described earlier is effective. Training will be complemented by extensive documentation such as standard operating procedures and updates of the O&M manuals as needed following any upgrades or process improvements. To the extent possible both electronic and hard copies will be utilized since misplacement of O&M procedures and manuals can be a common occurrence.

SCADA Monitoring and Control

The Michael Baker Team will refine and ensure the appropriate utilization of the controls program and data tracked through each of the projects' SCADA systems. Our team will use the systems to monitor and respond to alarms utilizing remote control access, as applicable and make emergency system changes, as needed in consultation with the City project owner. The data that is tracked through the project SCADA systems will be evaluated to drive and optimize preventative maintenance practices and operational adjustments.

Our Team intends to create an operational linkage from the SCADA monitoring function to the O&M response function to ensure that all parts of the Team are utilizing the information to maximize operational performance.

Our Team has expertise with a wide range of Programmable Logic Controller (PLC) hardware and SCADA software platforms, including:

- PLC:
  - *Allen Bradley*
  - *Automation Direct*
  - *Control Microsystems*
  - *GE Fanuc*
  - *Modicon*
  - *Motorola*
- SCADA:
  - *Allen Bradley*
  - *Citect*
  - *C-More*
  - *iFix*
  - *Lookout*
  - *Wonderware*
  - *Ignition*

Michael Baker Team member, PACE, is currently regularly evaluating and providing operational consulting on Los Angeles County's Earvin Magic Johnson (EMJ) Park's stormwater management system and utilizes performance data to continuously refine operational strategies and metrics for evaluating its effectiveness. PACE additionally provides ongoing monitoring of the SoFi Stadium stormwater management system to ensure compliance with the Los Angeles Regional Water Quality Control Board discharge permit, while PERC provides day-to-day O&M support. A similar strategy is proposed for the five projects with DSI, Buntich, and/or PERC in the O&M role.

Engineering and Technical Services

The Michael Baker Team understands that the member agencies may require engineering and technical support services for the five regional projects to effect modifications to optimize operations. Our Team has a strong depth of specialized technical expertise specifically well-suited for these existing facilities. Expertise areas include stormwater treatment and reuse processes, regulatory compliance, pumping facilities, rubber dams and diversion structures, sedimentation management, hydraulics, and electrical and automated control systems. Our Team regularly evaluates existing systems to determine how to best utilize and optimize existing components to meet design intent in the following areas: System Evaluations and Improvement Designs

The Michael Baker team can perform evaluations to identify root cause issues of deficiencies and to identify standard operating procedures that will ensure design intent is attained and the long-term viability of the systems is promoted. If requested, findings and recommendations will be categorized and prioritized to guide GWMA in making informed decisions on improvements and O&M procedures. System evaluations can include:

- Physical condition assessment
- Structural inspection
- Water quality sampling/testing and performance analysis
- Regulatory compliance
- Mechanical condition evaluation such as pumping, piping, valves, and ventilation equipment
- Electrical condition evaluation such as condition of the power supply, service entrance, backup power supply, motor controls, instrumentation, National Electrical Code compliance, capacity deficiencies, proper sealing, and coating, etc.
- Hydraulic/hydrologic model and design assumptions review
- Troubleshooting of PLC controls, field instrumentation, and SCADA systems

The Michael Baker Team offers an instrumentation and control group that specializes in the latest, proven hardware and software systems along with cutting-edge water process engineering and operations to ensure that facilities operate reliably and efficiently. The Team is experienced in collecting and evaluating real-time data from apps on computer systems and smartphones using a range of industry-standard hardware and software applications. With this experience, existing controls can be evaluated and re-built or modified based on current functionality and expandability. Changes to SCADA and PLC platforms may also be performed should additional system tasks be identified that could improve performance. Determining factors in this analysis include new and existing communication protocols, remote terminal unit (RTU) communication via radio or cell modems, alarming, reporting, real-time trending, security, and remote access.

For all Engineering and Technical Services, a designated QA/QC Manager will implement and maintain the QA/QC Program. The Program will be used to prevent errors and omissions before they occur by giving every Team member the respect, information, and rapid feedback needed to produce an accurate, consistent, and complete product. This approach reduces the cost and effort required for the QC phase, which provides for the systematic elimination of defects from the project documents. A continuous QC process will be applied daily as the workflows from desk-to-desk, discipline-to- discipline, and at milestones when work moves from the Team to the City project owner. The Michael Baker Team will utilize this approach on each project to deliver a high-quality product on schedule and within budget.

Construction/Repair

When an issue is identified that rises to the level of major repair or construction, Michael Baker Team member Buntich or PERC will be engaged to provide services and expertise in support of operation and maintenance activities. Major construction tasks could involve demolition of existing facilities, excavation for access, excavation for new construction, new structure installation, new pipe installation, modification or reconfiguring of structures, subgrade preparation, structural backfill, surface restoration, and traffic control for construction access.

Once a specified task or issue is identified that needs major construction the Michael Baker Team, upon approval of the City project owner, will visit the project to review the project details, and project constraints, and investigate access restrictions. A work plan will be developed identifying the scope of work, a schedule of major activities, critical long lead time procurements, vital submittals, and permitting needs. The work plan, including initial cost estimates, will then be submitted for concurrence to the City project owner.

Upon approval of the approach, the labor, equipment, and temporary facilities required to complete the work will be identified as well as material pricing, specialty subcontractors for installation pricing, and a detailed cost estimate for the work to be performed will be assembled. Once approval has been secured from the City project owner, permits will be secured, and work will commence.

Residents and businesses may require notice of the potential work impacts and letters may be sent to those affected. The Team will focus on keeping the lines of communication open and minimizing impacts on the community.

The Michal Baker Team can self-perform surveys, demolition, excavation, subgrade preparation, pipeline installation, mechanical installations, backfill, base paving, and fine grading. If required, structural concrete installation, final pavement restoration, concrete flatwork, and landscaping will be subcontracted.

During the construction phase weekly construction meetings will be held to review the project schedule, critical submittals, and unforeseen conditions. A three-phase quality control process will be implemented - the preparatory phase, initial phase, and follow-up phase of task implementation. This methodical process of construction eliminates rework, thus completing quality work the first time. This process also ensures that all involved parties are kept in the loop about all materials and construction methods to be installed. Using this approach Michael Baker's Team members have a proven record of successfully completing projects in densely populated urban environments under critical timelines.

Once the project is substantially complete, inspections of the project will be performed with the City's project owner and a Punch List record of items required for completion prepared as needed. After the punch list is completed, the repairs will be executed and documented, and the project closed-out. A final acceptance will be requested.

Michael Baker

INTERNATIONAL

We Make a Difference

MICHAEL BAKER INTERNATIONAL
5 Hutton Centre Drive, Suite 500
Santa Ana, CA 92707

PROPOSAL
STATEMENT OF QUALIFICATIONS
SEPTEMBER 16, 2024

Prepared For:
GATEWAY WATER MANAGEMENT AUTHORITY
Attention: Madeline Anderson

N V 5

3777 Long Beach Boulevard,
Annex Building
Long Beach, CA 90807
Phone: 562.495.5777

P44724-0006181.00

September 16, 2024

Gateway Water Management Authority (GWMA)
Attention: Madeline Anderson
Email address: madelineanderson.gateway@gmail.com

SUBJECT: GATEWAY WATER MANAGEMENT AUTHORITY OPERATIONS & MAINTENANCE STATEMENT OF QUALIFICATIONS

Dear Ms. Anderson,

The Gateway Water Management Authority (GWMA) plays a crucial role in advancing stormwater quality management across Southern California. As regional stormwater capture projects come online, there is an increasing demand for expert operation, maintenance, monitoring, and optimization services to help these systems achieve their intended environmental benefits and comply with MS4 permit requirements. NV5 is uniquely positioned to support GWMA in these efforts, and we are pleased to submit the following proposal to continue our partnership in delivering these essential services.

Proven Expertise in Operation, Maintenance, Monitoring, and Optimization of Stormwater Facilities: NV5's Long Beach office is dedicated to providing comprehensive stormwater management services that meet the rigorous requirements of the MS4 permit across Los Angeles County and beyond. Our extensive experience includes the operation, maintenance, and monitoring of stormwater Best Management Practices (BMPs) for key entities such as Los Angeles County Public Works, Los Angeles World Airports (LAWA), and other industrial and commercial facilities throughout Southern California. Our services extend to supporting the MS4 programs for the Counties of Orange, San Diego, and Riverside, where we implement sophisticated monitoring and sampling programs, including the innovative Smart Watershed Network in Orange County.

Specialized Telemetry and SCADA System Implementation: NV5's team includes highly skilled electrical engineers and information technology experts who understand the intricacies of telemetry and SCADA systems used in stormwater management. Our collaboration with industry leaders such as TESCO and Utility Systems, Science, and Software allows us to offer comprehensive support for all telemetry, programmable logic controller (PLC), and SCADA system requirements. Our team's expertise provides innovative and reliable solutions that align with GWMA's operational needs.

Experienced and Dedicated Project Management: David "Dave" Renfrew, PMP, CPSWQ, QSD/P, QISP-ToR, will serve as the Project Manager for this contract. As Vice President and Water Resources Director for NV5's Long Beach office, Dave brings over 25 years of experience in water quality management, specializing in operations and maintenance (O&M), monitoring, training, and related services. His extensive certifications and proven track record in managing large municipal and commercial water quality programs make him an invaluable asset to this project. Dave is currently leading the operation and maintenance task order for the Gates Canyon Stormwater Capture Project.

Strategic Partnerships and Specialized Services: NV5 understands that successful stormwater management requires the right tools and expertise. With decades of experience managing stormwater treatment facilities, we have built strong relationships with specialized service providers. Our proposal includes a detailed organizational chart of our team, highlighting the specialized services and vendors selected to meet the specific needs outlined in the GWMA RFP.

Collaboration with GWMA and Public Works Teams: We recognize the importance of collaboration in managing and maintaining stormwater facilities. Our ongoing work with various Public Works divisions has demonstrated the benefits of leveraging internal resources to enhance efficiency and reduce costs. NV5 is committed to continuing this collaborative approach, working closely with GWMA agencies' teams to for a seamless project execution.

For this statement of qualifcations, Michael Drennan will be the designated contact person authorized to represent NV5. His contact information is provided below.

We look forward to the opportunity to continue our partnership with GWMA and to contribute to the success of your stormwater management initiatives.

Sincerely,
NV5, Inc.

David S. Renfrew, CPSWQ, QISP/ToR, QSD/P, PMP
Project Manager
(760) 908-5749
David.Renfrew@NV5.com

Michael Drennan, PE
Vice President
(310) 384-8240
Michael.Drennan@NV5.com

TABLE OF CONTENTS

A. QUALIFICATIONS / EXPERIENCE

FIRM PROFILE & INTRODUCTION

Established in 1949 and headquartered in Hollywood, Florida, NV5 has provided engineering and consulting services to public and private sectors for more than 75 years. Our focus is on communities and our mission is to use engineering to improve the quality of those communities. Our services are traditional-but our attitude, approach, and delivery are unique, and the result is that we go above and beyond in way that gives our clients a competitive advantage. We primarily focus on six business verticals: infrastructure support services, construction quality assurance, utility services, buildings & program management, environmental health sciences, and geospatial technology services.

NV5 TEAM BENEFITS

- Number of Years in Business: 75
- Date Established: 1949
- Business Structure: NV5 is a Corporation and is a publicly traded company.

NV5 CORPORATE INFORMATION:

- Company Name: NV5, Inc.
- Parent Company: NV5 Global
- Corporate Address: 200 South Park Road, Suite 350, Hollywood, FL 33021
- Senior Officials: Dickerson Wright, CEO | Alexander Hockman, COO | MaryJo O'Brien, CAO
- Website: www.NV5.com
- Federal Tax I.D, Number: 27-1979486

With more than 100 offices worldwide, NV5 assists our clients in the development and delivery of cost-effective, sustainable projects, and our combined capabilities bring effective solutions to complex issues in the communities where we live and work. Our focus is on communities and our mission is to use engineering to improve the quality of those communities. Our services are traditional—planning, surveying, civil engineering design, water and wastewater master planning, construction management and construction support— but our attitude, approach, and delivery are unique, and the result is that we go above and beyond in a way that gives our clients a competitive advantage.

Through NV5's previous experience in cities and counties throughout Southern California, we have a thorough understanding of local laws, design criteria, and standard and permitting requirements. We currently hold over 100 on call contracts with local government agencies throughout Southern California. Our team has a solid understanding of the local environment and design issues through the delivery of many capital projects for public agencies throughout Southern California. We have also successfully coordinated many projects involving multiple stakeholders such as utility companies, regulatory and municipal agencies.

QUALIFICATIONS & EXPERIENCE

The NV5 Team implements a proven project approach, including frequent high-quality client communications, realistic work schedules, adherence to budget, and effective staff communication. The NV5 Team takes pride in performing work as an extension of your staff, to the highest standards, and in the safest manner possible. The NV5 Team will work collaboratively with the GWMA and draw on our technical experience in the region to provide the full suite of services requested in the scope of work.

NV5 TEAM BENEFITS

- Ability to work alongside the stormwater maintenance division team when needed (such as when they have vactor crews available to provide as backup or to reduce external costs).
- Flexibility to use GWMA operations sites for disposal of vactored materials (this helps to reduce cost to transport heavy loads and reduces impact to the environment).
- Ability to utilize GWMA equipment to reduce costs if applicable (one example is our use of pneumatic plugs and partnering with Public Works for traffic control efforts).

STANDARD SERVICES

The Gateway Water Management Authority (GWMA) and its member agencies require skilled consultants with extensive experience in the operations, maintenance, and evaluation of regional stormwater capture and treatment systems. NV5, along with our teaming partners, is well-equipped with the expertise and direct experience needed to support GWMA in these critical functions. We understand that GWMA's member agencies are responsible for a range of stormwater infrastructure projects, including those emerging under the Los Angeles County Measure W, Safe Clean Water Program. This program focuses on increasing local water supply, improving water quality, and safeguarding public health across various watersheds in the region.

These projects involve complex systems such as stormwater capture, infiltration to groundwater, and treatment systems designed to reuse captured stormwater and dry weather runoff. Effective operations and maintenance (O&M) services, alongside robust monitoring protocols, are essential to these systems performance.

NV5 has a proven track record of supporting public agencies with comprehensive services encompassing the assessment, evaluation, design, implementation, O&M, monitoring, training, and data system management of stormwater Best Management Practices (BMPs) and treatment system operations. Notably, we are currently managing the O&M and effectiveness monitoring for the Gates Canyon Stormwater Capture and Use System in Calabasas, CA. Additionally, we have developed the Stormwater Quality Project Overview Portal for LA County Public Works and prepared the CEQA Addendum for the Hasley Canyon Stormwater Capture and Infiltration Project. These projects, and others under our current Public Works On-Call Water Quality and Related Services Contract, highlight our ability to deliver high-quality services tailored to the unique needs of stormwater infrastructure.

The NV5 Team's experience is directly aligned with the scope of services required by GWMA and its member agencies. Throughout this proposal, we showcase our capabilities, including an in-depth understanding of treatment system design, O&M optimization, monitoring for effectiveness assessments, and the development and implementation of specialized training and information technology systems. Our team is committed to helping GWMA achieve its objectives in maintaining and optimizing regional stormwater systems, ultimately contributing to the overall improvement of water quality and public health in the region.

THE NV5 TEAM'S SERVICE AREAS

The icons below are shown with each representative project to demonstrate the services requested in the RFP's scope of services which were provided on each project.

Relevant projects with coordinating service icons can be found on the following pages.

OPERATION & MAINTENANCE

SCADA SYSTEM IMPLEMENTATION AND CONTROL

ENGINEERING & TECHNICAL SERVICES

CONSTRUCTION/REPAIR

Vactor/hydrojet and maintenance service for the Gates Canyon Motor Operated Slide Gate Pre-storm Season Service. Trash rack and slide gate components were cleaned and shaft and spline and gate features were lubricated per specification.

GATES CANYON PARK STORMWATER IMPROVEMENTS PROJECT MONITORING, OPERATIONS & MAINTENANCE

CALABASAS, CA

Under the On-Call Water Quality Monitoring and Related Services Contract (PW15263), NV5 has been supporting the Los Angeles County Public Works (Public Works) Stormwater Quality Division with Operations and Maintenance Support services for the Gates Canyon Park Stormwater Improvements Project (Project). The Project is located at Gates Canyon Park (Park) in Calabasas, CA. The Park is located within the low-density residential portion of the upper Malibu Creek Watershed (MCW) and is owned and operated by the City of Calabasas. The project captures dry-weather urban runoff and stormwater from approximately 105 acres of single-family residential area. By diverting flows from existing storm drains in this neighborhood, runoff that would otherwise discharge directly to Las Virgenes Creek (and eventually to Malibu Creek and Santa Monica Bay) is treated and re-used for irrigation or infiltrated. The Project site features consist of a stormwater diversion, a motor operated slide gate, a stormwater pre-treatment system, an underground cistern for stormwater storage, ozone system, infiltration wells, and a real-time controller to make sure seamless operation. NV5 is providing monitoring and O&M essential to consistently meet the projects design objectives and provide a safer environment for operators and the general public. Under this project, we have performed site training, safety inspections, system maintenance on the diversion, the motor operated slide gate, the stormwater pre-treatment system, the underground cistern, the ozone system, infiltration wells, and pump well. NV5 with Cbelow has performed CCTV Surveys and hydrojetting and vactor service of the system components. NV5 has also worked seamlessly with LA County Project Management Team, Maintenance Team, and other contractors to guarantee timely communications and planning to make sure work is performed safely and within the scope of services.

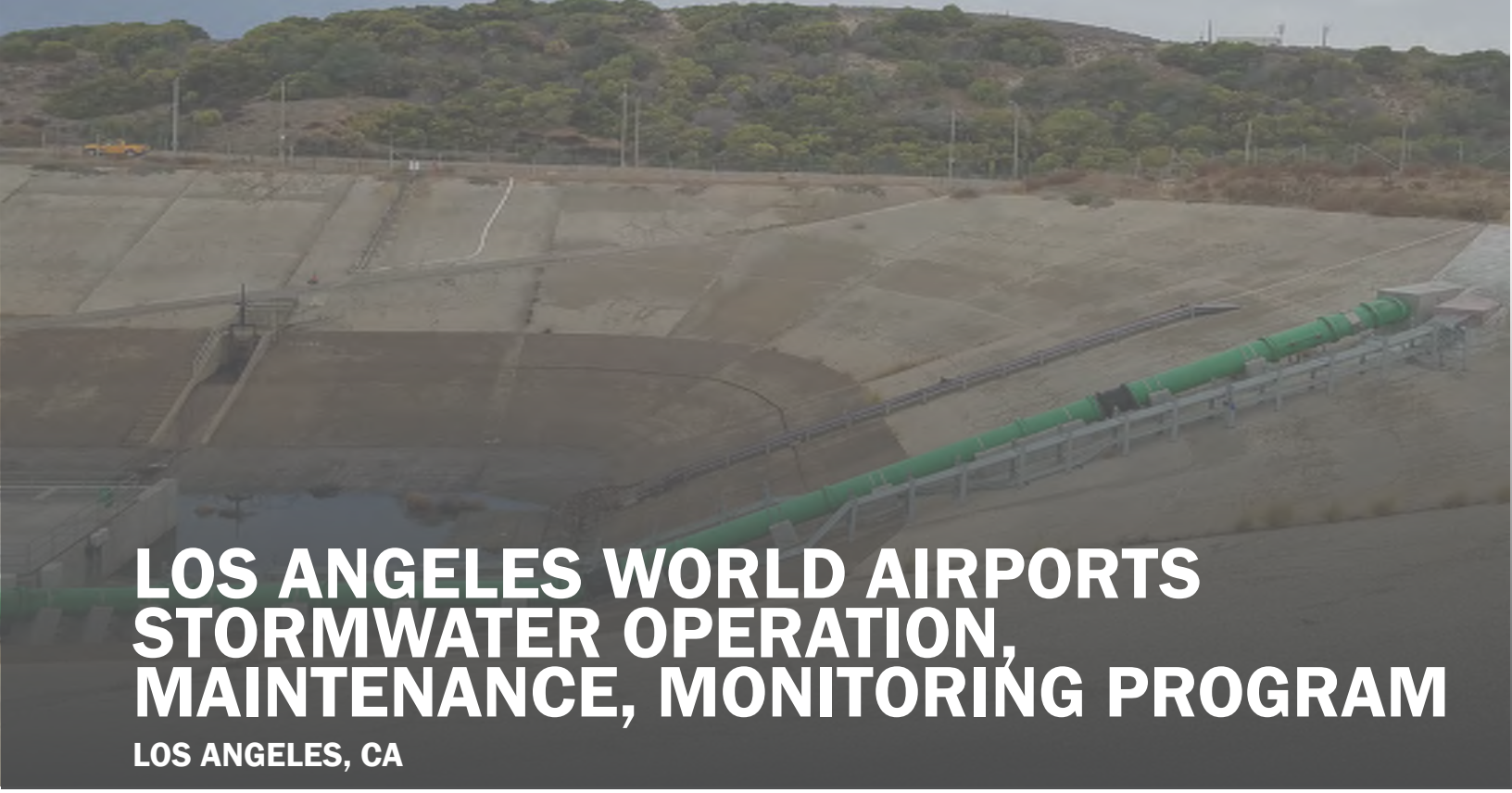
Services:

Client: Los Angeles Department of Public Works

Reference:
Alberto Grajeda, Associate Civil Engineer
Los Angeles County Public Works
algrajeda@dpw.lacounty.gov
(626) 300-4622

Completion Date: Ongoing

Fee: $670K



LOS ANGELES WORLD AIRPORTS STORMWATER OPERATION, MAINTENANCE, MONITORING PROGRAM

LOS ANGELES, CA

NV5 provided storm water monitoring, operation, maintenance, analysis, and reporting services for Los Angeles World Airports (LAWA) at Los Angeles International Airport (LAX) and Van Nuys Airport (VNY) to comply with California's Industrial Storm Water Permit (IGP). LAWA is required to perform storm water monitoring, as required under the IGP. Sampling at LAX is required to use automated flow and sampling equipment. However, the previously existing equipment required replacement in 2015 and a more robust remote telemetry system was required to be implemented. As part of this major undertaking, NV5's work included procurement and installation of new Hach/Sigma flow meter/data loggers, rain gauges, auto-samplers, solar panels, custom IP ready high speed cellular modems and serial servers for remote telemetry access, development of installation diagrams, standard operating procedures, and training LAWA staff on the remote operation of the equipment. Installation of equipment required confined space entry into the existing storm drain system, removal of old equipment, and reconfiguration and installation of the new equipment. NV5 developed flow equations and runoff estimates for sampler flow pacing, conducted four storm water monitoring events at LAX and VNY per year, prepared rainfall analysis, develops sampling hydrographs, manages subcontract laboratories including microbiological analyses, performs data QA/QC and data management, and annual reports each monitoring year.

NV5 also conducted on-call storm water regulatory services for IGP compliance including preparation of sediment and erosion control plans for the LAX Dunes Habitat Area, inspections and annual training for industrial compliance at over 100 leaseholds at LAX and VNY, and installation, operations, and maintenance of 55 storm drain inlet filters at LAX and VNY airports.

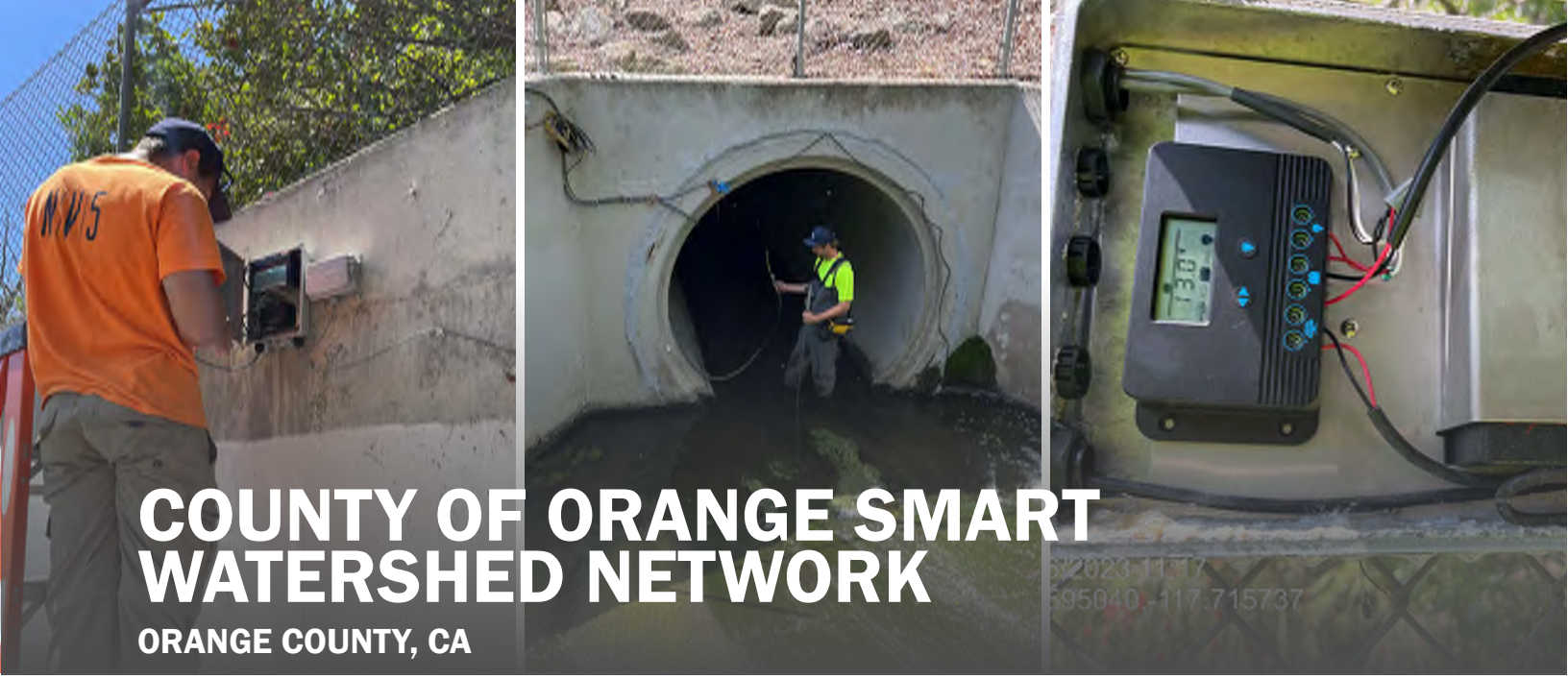
Services:

Client: Los Angeles World Airports

Reference:
Robert Freeman, Airport Environmental Manager
Los Angeles World Airports
r.freeman@lawa.org
(424) 646-6474

Completion Date: 2023

Fee: $1.2M



COUNTY OF ORANGE SMART WATERSHED NETWORK

ORANGE COUNTY, CA

The Smart Watershed Network will provide information and tools to evaluate the sustainable use of urban runoff and stormwater as a potential water supply within the Aliso Creek Watershed. The project will improve resiliency of the region's water supply by providing a new way to look at the urban water balance to identify potential resource recovery projects (e.g, dry weather diversion). The project advances the field of knowledge in urban runoff recovery and provides a methodology and tools that can be applied to both other Metropolitan Member Agencies as well as water agencies throughout the region. Municipal Water District of Orange County (MWDOC) is the Lead Member Agency, supported by Moulton Niguel Water District (MNWD) and the County of Orange as Co-Program Managers. The Smart Watershed Network grant funded project was submitted and approved through the Metropolitan Water District of Southern California's (MWD's) 2018 Future Supply Actions Funding Program.

NV5 has been providing the County of Orange Public Works Department with assistance in implementing flow monitoring as part of a Smart Watershed Network. NV5 supported the grant proposal effort and was contracted through the County of Orange as the technical expert consultant responsible for developing and installing the flow monitoring network of the Smart Watershed Network Project. NV5 has implemented Task 3, which included pilot testing of a range of sensors and telemetry devices, site reconnaissance, permitting, installation, calibration, rating table development, and maintenance of 50 flow monitoring stations and 20 conductivity monitoring stations within outfalls and receiving waters in the Aliso Creek Watershed connected to MNWD's Advanced Metering Infrastructure (AMI) network. The flow data is directly integrated into MNWD's existing water metering network and is managed and analyzed through a cloud-based analytics software platform. NV5 assists with both flow data quality assurance/quality control (QA/QC) through the hydrologic data platform Hydstra and in managing the data in the analytics platform to provide comprehensive watershed information as well as support planning and decision making. Flow monitoring data will be used to populate information in a new cloud-based data management, integration, and analytics space. Data feeds and applied algorithms developed in the analytics platform will provide comprehensive watershed information and scenario results to support planning and decision making at multiple scales.

Services:

Client: County of Orange

Reference:
Grant Sharp, Manager, South OC Watershed Management Area
County of Orange Public Works
grant.sharp@ocpw.ocgov.com
(714) 955-0633

Completion Date: Ongoing

Fee: $116K

B. ORGANIZATIONAL CHART / TEAM MEMBERS

Core Team
- NV5
- Subcontractor

Project Manager
David Renfrew, CPSQW, QISP/ToR, QSD/P, PMP

Principal In Charge, QA/QC
Michael Drennan, PE

A. Operation & Maintenance

TASK LEAD
David Renfrew, CPSQW, QISP/ToR, QSD/P, PMP

Jeff Rex, QSD / QSP, QISP, CPESC, LEED AP, ENV SP
Matt Renaud CPESC, QISP, QSD/P ToR
Mike Smyth, ASLA (Landscape Architect/Native Landscape Maintenance Leader)
Jacqueline McMillen, PE, QISP, QSD
Inez Bretado, QISP, QSP, CESSWI
Harsho Sanyal, QISP
Nick Poser, QISP, CESSWI
Matt Muilenberg, QISP
TJ Hackett, QISP, CSM-CO
Multi W Systems
TESCO
C Below
United Stormwater

B. SCADA System Implementation and Control

TASK LEAD
Ronald (RJ) Enard, PE (Telemetry and SCADA Team Leader)

Brendon Horn (Networking & Telemetry Manager) - TESCO
Derrick Marlow (SCADA Engineering Supervisor) - TESCO
Raju Nair (PLC Applications Engineering Manager) - TESCO
Charles Foerster, PMP (Director of Field Activities) - TESCO
Tom Williams - US3

C. Engineering and Technical Services

TASK LEAD
Matt Moore PE, QSD, ENV SP

Julian Palacios, PE (Treatment System Services Leader)
James Owens, PE
Brendon Horn (Networking & Telemetry Manager) - TESCO
Derrick Marlow (SCADA Engineering Supervisor) - TESCO
Raju Nair (PLC Applications Engineering Manager) - TESCO

D. Construction/Repair

TASK LEAD
Jeff Rex, QSD / QSP, QISP, CPESC, LEED AP, ENV SP

Matt Renaud CPESC, QISP, QSD/P ToR
Eric Fraske, P.E.
Inez Bretado, QISP, QSP, CESSWI
Harsho Sanyal, QISP
Innovative Construction Solutions
Jerry Rice (Rice General, Inc.)

CORE SUPPORT TEAM LIST

Subcontractors

C Below Subsurface Imaging (C Below)
Multi W Systems, Inc. (Multi W Systems) - CBE
TESCO Controls, Inc. (TESCO)
Utility Systems Science & Software, Inc. (US3) – CBE
United Stormwater, Inc. (United Stormwater) – CBE
Innovative Construction Solutions
Rice General, Inc.

*ELAP Certified Laboratories

Water and Sediment Quality Chemistry Laboratories
Eurofins

Microbial Analyses
Applied Microbiological Service

SAN DIEGO, CA
David.Renfrew@nv5.com

EDUCATION
BS, Geological Sciences (Emphasis in Hydrogeology)

Graduate Studies, Hydrogeology-Multiphase Flow, Environmental Fate of Organic Contaminants

EXPERIENCE
26 Years

REGISTRATIONS
Certified Professional in Storm Water Quality (CPSWQ), No. 0249

Project Management Professional (PMP), No. 1703435

Qualified SWPPP Developer/ Qualified SWPPP Practitioner (QSD/P), No. 20993

Qualified Industrial Storm Water Practitioner/Trainer of Record (QISP/ToR)

AFFILIATIONS
California Storm Water Quality Association (CASQA)

Industrial Environmental Association

Building Industry Association

San Diego Environmental Professionals

DAVE RENFREW, CPSWQ, QISP/TOR, QSD/P, PMP

Project Manager

David Renfrew brings over 26 years of experience in the environmental industry with a focus on Phase I Municipal, Industrial, and Construction NPDES Compliance Programs. Mr. Renfrew provides specialty professional expertise to municipal, industrial, commercial, and institutional clientele. He has implemented full scale monitoring and reporting projects and provided extensive program management support. Through his career, he has conducted extensive regulatory reviews, and developed strategic technical comments to shape regulatory policy and permits on behalf of his clients. His project work includes management of municipal contracts to ensure quality project delivery.

Project work includes compliance with Phase I and II NPDES Permit requirements including inspections, reporting, database development, site assessments, watershed assessments, water quality management plans, BMP effectiveness assessment, aerial deposition, site specific objectives, toxicity identification evaluations, water scarcity assessments, and resiliency planning documents. Mr. Renfrew is a member of several CASQA subcommittees: the Industrial Subcommittee, Policy and Permitting Subcommittee, and Pesticide Subcommittee. He was also recently appointed to the IGP Train the Trainers Workgroup by the State Water Resources Control Board. He has supported numerous municipal and Regional Water Board efforts through providing regulatory comment letters, reviewing statewide workplans, and assessing related water quality studies. His work provides his clients with a pathway for economically responsible compliance that results in significant savings for the client and associated stakeholders.

Relevant Project Experience

STORMWATER QUALITY PROJECT OVERVIEW PORTAL
LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS | LOS ANGELES, CA
Technical Advisor. David is supporting the Stormwater Quality Division with development of an online dashboard or portal that allows for ease of navigating the extensive amount of data required to operate, maintain, and assess effectiveness of stormwater quality capture and treatment facilities. The team includes subject matter experts in stormwater quality, green infrastructure, telemetry, SCADA, system operation as well as system and software experts in GIS, geospatial solutioning, portal development, and stormwater maintenance software such as Maximo and Cityworks, The tool is being developed in coordination with the Information Technology Division and under their strict protocols so that data management will be integrated into the portal be compatible with the County's IT infrastructure, meet the County's user and functional requirements, and be consistent with the County's IT standards. Ultimately the tool will allow project managers to monitor status and easily assess the effectiveness of stormwater capture facilities over selected durations including daily, weekly, monthly, annually, or for the most recent storm event.

LOS ANGELES WORLD AIRPORTS ON-CALL ENVIRONMENTAL SERVICES
LAWA | LOS ANGELES & VAN NUYS, CA
Stormwater Program Manager. Managed the storm water monitoring program for Los Angeles International Airport (LAX) and Van Nuys Airport (VNY). Program included compliance with Industrial and Phase I Permit Requirements at LAX and VNY for compliance with their Industrial Storm Water Permits. Monitoring included flow and load monitoring, sampling of a full suite of priority pollutants, laboratory analysis, data

management, and reporting. NV5 prepared the Monitoring and Implementation Plan, prepared SWPPP revisions, and Exceedance Response Action Reports. Conducted a Source Identification Special Study for metals based on 60 discreet land use sampling locations. Installed drain inlet filter BMPs at 62 locations for trash, TSS, and heavy metals to address discharges to the Dominguez Channel. Also conducts facility BMP inspections at over 100 tenant facilities annually, provides technical support for TMDL compliance assessment, review and responses for Regional Water Quality Control Board requests and provided training to LAX Environmental Staff and conducted the annual tenant training.

CITY OF COMPTON NPDES MONITORING & REPORTING

CITY OF COMPTON | COMPTON, CA

Project Manager. Provides the City of Compton with as-needed monitoring and reporting to support compliance with the Los Angeles Regional Water Quality Control Board's (RWQCB) monitoring and reporting requirements of Attachment E of the NPDES Permit No. CAS004001: Order No. R4-2012-0175 (Permit). Conducts wet weather and dry weather sampling at receiving water and MS4 Outfall sites discharging to Compton Creek and the Dominguez Channel including preparation and installation of flow monitoring and autosampling equipment, field staffing and collection of samples for microbiology, chemistry, toxicity, toxicity identification evaluations, Bioassessment, and field parameters, managing sample laboratory delivery under chain of custody protocols, and preparation of field forms including trash assessments.

RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT ON-CALL SERVICES CONTRACT

COUNTY OF RIVERSIDE | RIVERSIDE COUNTY, CA

Conducts program management for the On-call Contract. Task orders included the Santa Margarita River Transitional Wet Weather Monitoring at the mass loading stations and MS4 outfall locations, Post-Fire Special Studies, Santa Margarita Investigative Order Monitoring, and Dry Weather Flow Studies. Responsibilities included oversight of field reconnaissance, equipment installations, flow monitoring, automated sample collection, data collection, and CEDEN data formatting. Managed all aspects of the special studies required under the 2010 San Diego County Regional MS4 Permit (Section E. of R9-2010-0016). Studies conducted included Sediment Toxicity Study, Trash and Litter Investigation, and Agricultural, Federal, and Tribal Input Study. The program included develop of study workplans; conducting field monitoring; data analysis; report writing; budget preparation; and client/regulatory agency interaction. Also provided an evaluation of the Coachella Valley 2012 303(d) Toxicity Listing for the Whitewater Region for the purposes of evaluating the potential for delisting based on available data and providing future monitoring recommendations.

ONTARIO INTERNATIONAL AIRPORT AUTHORITY STORM WATER COMPLIANCE PROGRAM

ONTARIO INTERNATIONAL AIRPORT AUTHORITY | ONTARIO, CA

Industrial Permit Team Manager. Provided stormwater program management services for Ontario International Airport Authority (OIAA). Program included monitoring and reporting activities at Ontario Airport (ONT) for compliance with their Industrial Storm Water Permit. Additional support included preparation of Stormwater Pollution Prevention Plans, annual reporting, training, BMP design and technical support, tenant inspections, regulatory technical reviews and preparation of technical comments, and third-party litigation support. NV5 performs BMP inspections at over 23 tenant locations.

PORT OF LONG BEACH AS-NEEDED MS4 STORMWATER MONITORING & REPORTING SERVICES

PORT OF LONG BEACH | LONG BEACH, CA

Program Manager. Provided regulatory support, development of a consistent sampling and analysis program, quality assurance program plans, and conducted monitoring and reporting for MS4 Permit Compliance. Provided TMDL Program Reviews and Comments, MS4 Program Compliance review, reporting, and engineering assistance for SUSMP Plan Check reviews. Also assisted the Port with literature reviews and recommendations for low impact development mitigation strategies and developed a mitigation banking and water quality credit trading assessment.

PALOS VERDES PENINSULA CIMP MS4 OUTFALL MONITORING

CITY OF RANCHO PALOS VERDES | RANCHO PALOS VERDES, CA

Managed the MS4 outfall monitoring requirements for the Peninsula CIMP as a key subconsultant. Prior to commencing field work, he conducted field reconnaissance and worked with the Peninsula Watershed Management Group agencies to obtain encroachment and traffic control permits, developed a sampling and analysis plan, and developed a health and safety plan. Procured, installed, calibrated, and maintained two flowmeters at MS4 outfall locations, which have been installed since late 2016. Conducting wet weather monitoring at six MS4 outfall locations during three storm events per year and dry weather MS4 outfall monitoring at four locations monthly which includes protocols for TMDL compliance, including MS4 outfall investigations of non-stormwater discharges to identify potential source(s) of illicit discharges and connections and/or discharges of non-stormwater flows.

SAN DIEGO, CA
Jeff.Rex@nv5.com

EDUCATION
M.S. Engineering

B.S. Science, Biology and Enviromental Science

EXPERIENCE
22 Years

LICENSES/CERTIFICATES
QSD/QSP, QISP, CPESC, LEED AP, ENV SP

30-Hour Construction Safety Training, Number 36-600971527

40-Hour HAZWOPER, Number 130809186379
OSHA Envision Sustainability Professional (ENV SP)

LEED Accredited Professional, Number 10715619

QSP / QSD-Qual SWPP Practitioner / Stormwater Developer, Number 22262

Qualified Industrial Stormwater Practitioner (QISP), Number 00610

Certified Professional in Erosion / Sediment Control (CPESC)

NASSCO PACP
SCAQMD Fugitive Dust
ISO 14001 Lead Auditor

JEFFREY REX, QSD/QSP, QISP, CPESC, LEED AP, ENP SP

Senior Environmental Consultant

Jeffrey is a Senior Environmental Consultant with extensive experience in environmental engineering. His expertise spans water quality management, environmental permitting and compliance, CEQA/NEPA processes, sustainability initiatives, and water/wastewater engineering. Additionally, Jeffrey is skilled in EHS auditing, ESA due diligence, and construction site management. He has demonstrated strong leadership throughout his career, having served as an area manager, supervisor, and office practice lead. With a proven track record in project and program management, Jeffrey is highly respected in the industry for his expertise.

Relevant Project Experience

REAL ESTATE DUE DILIGENCE
BNSF | SOUTHERN CALIFORNIA
Program Manager for the BNSF Real Estate Department, responsible for conducting environmental site inspections across a portfolio of over 100 sites in Southern California and the Inland Empire. Coordinated access with property owners and managed the completion of Phase I and II Environmental Site Assessments (ESAs) for property acquisitions. Successfully conducted over 140 site inspections, ensuring environmental compliance and completing Phase I and II ESAs for real estate acquisitions valued at over $300 million—all without incident.

ENVIRONMENTAL COMPLIANCE AND STORMWATER SERVICES
NORTH COUNTY TRANSIT DISTRICT | SAN DIEGO, CA
ROW Stormwater Inspection Lead, overseeing inspections across all rail corridors to ensure compliance with 49 CFR 213.33 – drainage. Utilized a digital data solution, including submeter GPS and tablet technology, for completing digital forms and capturing photographs. Identified “Hotspot” areas where sediment discharges occurred from NCTD’s ROW, provided recommendations for Best Management Practices (BMPs), and conducted quarterly inspections of these Hotspots to evaluate current conditions and the need for BMP maintenance, upgrades, or replacement. Additionally, performed SWPPP document reviews and developed detailed comment letters.

ENVIRONMENTAL HEALTH SERVICES COMPLIANCE BLITZ
PENSKE TRANSPORTATION SOLUTIONS | SOUTHERN CALIFORNIA
Team Lead for Penske Transportation Solutions, responsible for overseeing environmental processes and procedures at truck leasing locations across California. Acted as an extension of the Penske Environmental Services Department, assisting in the review, implementation, and enhancement of the existing program. Conducted site visits to provide training to on-site personnel, assess compliance with environmental regulations and Penske standards, address non-conformance issues during visits, and track and document the resolution of corrective actions.

STORMWATER & SPCC INSPECTIONS
UNION PACIFIC RAILROAD | SOUTHERN CALIFORNIA
Served as the Regional Industrial Stormwater Manager for 10 rail facilities in Southern California. Managed staff and provided senior oversight for SWPPP inspections of regulated areas, outfalls, and Best Management Practices (BMPs) in compliance with state-specific and site-specific permits.

LONG BEACH TERMINAL PHASE II ESA & CULTURAL AND PALEONTOLOGICAL RECORD REVIEW

ZENITH ENERGY TERMINALS HOLDINGS, LLC | LONG BEACH, CA

Project Manager for a Phase II Environmental Site Assessment (ESA) and Cultural and Paleontological Record Review at a bulk oil storage and pipeline facility in the Port of Long Beach. Oversaw and coordinated the project team, managing costs, timelines, and client communications. Responsibilities included underground utility clearance, permitting, soil and groundwater sampling, PFAS sampling, soil vapor sampling, and the review and reporting of cultural and paleontological records.

CAL POLY HUMBOLT BATTERY STORAGE FACILITY

TOTAL ENERGIES | HUMBOLT, CA

Project Manager for the development of an approximately 8 MW Battery Energy Storage System (BESS) project associated with Humboldt University. Provided oversight, cost control, and time management for key project tasks, including the topographic survey, ALTA survey, geotechnical report, electrical audit, and Phase I Environmental Site Assessment (ESA).

ENVIRONMENTAL ENGINEERING AND CONSULTING SERVICES

LA METRO | LOS ANGELES, CA

Project manager who led the water program compliance services for the Los Angeles County Metropolitan Transit Authority (Metro), ensuring adherence to industrial wastewater regulations by managing the collection, analysis, and reporting of discharge samples for various Metro divisions. Oversaw compliance with the Industrial General Permit by supervising stormwater discharges at 21 Metro bus and rail maintenance facilities regulated under the NPDES General Permit for Storm Water Discharges Associated with Industrial Activities (Order 2014-0057-DWQ). Managed discharges from Metro's utility vaults and underground structures in accordance with the NPDES General Permit for Utility Vaults and Underground Structures (Order 2014-0174-DWQ). Ensured regulatory compliance of stormwater discharges at Metro construction sites under the NPDES General Permit for Construction and Land Disturbance Activities (Order 2009-0009-DWQ, as amended).

ENVIRONMENTAL PROJECTS

ORANGE COUNTY TRANSPORTATION AUTHORITY | ORANGE COUNTY, CA

Provided on-call environmental support for the OC Streetcar Project, offering construction stormwater expertise to ensure contractor compliance with the Construction Stormwater Permit. Oversaw stormwater inspection reports and reviewed and updated stormwater management contract language. At Travel Centers of America in Ontario, CA, leveraged inter-departmental relationships within Kleinfelder to extend stormwater management services to a national client based on the East Coast. Successfully proposed and was awarded a $100,000/year task order to manage and implement stormwater program compliance services for Travel Centers of America's Ontario East and West facilities in Southern California. Managed the stormwater team and ensured permit compliance with industrial stormwater regulations by overseeing discharge sample collection, analysis, and reporting for each facility.

CRENSHAW TRANSIT CORRIDOR ENVIRONMENTAL SERVICES

WALSH SHEA CORRIDOR CONSTRUCTORS | LOS ANGELES COUNTY, CA

The LAX / Crenshaw Transit Corridor Project involved an 8.5-mile light rail transit alignment designed to connect the existing Metro Exposition Light Rail Line with the Metro Green Line Aviation/LAX Station. This extensive project included six new stations and seven new grade separations. Mr. Rex provided comprehensive environmental compliance services for the project, including environmental consulting and project management. His responsibilities encompassed developing and implementing a Stormwater Pollution Prevention Plan (SWPPP), ensuring compliance with MS4 and dewatering regulations, and creating a soil mitigation plan. He also managed the contractor-generated hazardous waste management plan, wastewater management plan, and fugitive dust emissions control plan, and developed a training video on fugitive dust emissions. Additionally, Mr. Rex obtained all required environmental permits and notification forms, including biological permits, master cooperative agreement permits, water/wastewater/stormwater permits, Cal/OSHA permits for diesel-powered equipment, South Coast Air Quality Management District Rule 403 Notification Form, hazardous waste/material permits, and noise variance requests.

COMPTON NPDES MONITORING AND REPORTING PROGRAM

CITY OF COMPTON | COMPTON, CA

Project Manager to provide monitoring services for the City of Compton's (City) compliance with National Pollutant Discharge Elimination System (NPDES) requirements. Performed Compton Creek receiving water monitoring in three (3) Municipal Separate Storm Sewer System (MS4) outfalls, and continued monitoring services for the Non-Stormwater Outfall-Based Screening and Monitoring requirements.

LONG BEACH, CA
Michael.Drennan@nv5.com

EDUCATION
MS, Civil Engineering

BS, Civil Engineering

EXPERIENCE
44 Years

REGISTRATIONS
Professional Engineer, Civil (CA) No. 32971

AFFILIATIONS
American Society of Civil Engineers (ASCE)

California Stormwater Quality Association (CASQA)

National Water Environment Federation (WEF)

* = indicates a project that was performed while employed at a different firm.

MICHAEL DRENNAN, PE

Principal in Charge, QA/QC

Michael serves as Director of NV5's Water Resources Practice for the West, with a focus on water, green infrastructure, and integrated urban design. Michael has dedicated his career to helping design and fund a healthy balance between the built environment and the natural ecosystem. He helps communities meet their goals for stormwater supply, water quality and public infrastructure while protecting and enhancing their natural ecosystems. He is a California licensed civil engineer and has over forty years of experience in the fields of water, wastewater, stormwater and recycled water, green infrastructure solutions, and dedicated funding mechanisms. Michael targets finding practical solutions that provide both community benefits and regulatory compliance. He has a successful track record bringing diverse stakeholders together and helping them align on a united purpose with win-win results.

Relevant Project Experience

STORMWATER QUALITY PROJECT OVERVIEW PORTAL

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS | LOS ANGELES, CA

Project Manager. Michael is leading a technical team to support the Stormwater Quality Division with development of an online dashboard/portal that allows for ease of navigating the extensive amount of data required to operate, maintain, and assess effectiveness of stormwater quality capture and treatment facilities. The team includes subject matter experts in stormwater quality, green infrastructure, telemetry, SCADA, system operation as well as system and software experts in GIS, geospatial solutioning, portal development, and stormwater maintenance software such as Maximo and Cityworks, The tool is being developed in coordination with the Information Technology Division and under their strict protocols so that data management will be integrated into the portal be compatible with the County's IT infrastructure, meet the County's user and functional requirements, and be consistent with the County's IT standards. Ultimately the tool will allow project managers to monitor status and easily assess the effectiveness of stormwater capture facilities over selected durations including daily, weekly, monthly, annually, or for the most recent storm event.

MIDDLE SANTA ANA RIVER MULTI-BENEFIT WATER QUALITY STRATEGY

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Project Manager. Michael is leading a team to develop the Middle Santa Ana River Multi-Benefit Water Quality Strategy. The proposed work product will serve as a tool for District personnel to use in discussions with the Santa Ana Regional Water Board, co-permittees and other stakeholders about a vision for a Revitalized Middle Santa Ana River. The document will present a preliminary vision for how this strategy is aligned with the Santa Ana Regional Board's Order R8-2024-0001 which allows for development of a Watershed Management Plan as an alternative approach to immediate attainment of receiving water objectives. It will also demonstrate how this vision is consistent with Board Resolution R8-2024-0029, which includes the Board's commitment to the "...promotion of multi-benefit water quality projects to increase access to parks, open spaces, greenways, and other green infrastructure."

AS-NEEDED WATER RESOURCES ENGINEERING*

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS | LOS ANGELES, CA

Project Manager. Led a multidisciplinary team to support the County with multiple task orders on this five-year, $5M contract vehicle. Led the team that Planned, designed, and constructed water resources projects including the capture, retention and conveyance

of stormwater, surface water, imported water and recycled water; groundwater recharge; multipurpose watershed management facilities; low impact development (LID) measures and enhanced watershed management (EWM) facilities to improve stormwater quality; engineered wetlands for stormwater water treatment; landscaping that utilizes plant species that are native, or drought tolerant and non-invasive; and stream and upland habitat creation and restoration.

HYDROLOGY AND HYDRAULICS ON CALL PROFESSIONAL SERVICES*

RIVERSIDE COUNTY FLOOD CONTROL DISTRICT| RIVERSIDE, CA

Project Manager. Led a multidisciplinary team to support the County with task orders on this 2-year contract vehicle. The scope of work for this contract vehicle includes: master drainage plans, hydrology and other planning studies, hydraulic modeling, two-dimensional floodplain modeling, and design of flood control facilities (full PS&E).

WASTEWATER, STORMWATER, AND SOLID RESOURCES PROGRAMS ON CALL*

CITY OF LOS ANGELES BUREAU OF SANITATION | LOS ANGELES, CA

Contract Manager. Led a multidisciplinary team to support multiple task orders to provide specialized technical services to support the Bureau's Clean Water, Environmental Quality, Solid Resources, Watershed Protection Programs, and related services on an as-needed basis.

LOS ANGELES COUNTY WATER QUALITY FUNDING INITIATIVE*

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT | LOS ANGELES COUNTY, CA

Senior Consultant. Assisted with strategic planning and outreach for the County's "Clean Water, Clean Beaches Measure". The initiative is a multibillion-dollar funding measure to clean up waterways throughout the most populated County in the United States. To meet the clean water challenge, and to help with critical funding needed to implement the newly adopted NPDES MS4 Stormwater Permit, the Los Angeles County Flood Control District proposed a new Water Quality Improvement Program to manage stormwater and urban runoff, reducing pollution and contamination of waterways, while also reducing flooding, maximizing groundwater resources, and protecting and restoring habitat associated with water quality projects and programs.

TAYLOR YARD LOS ANGELES RIVER PARK*

CITY OF LOS ANGELES BUREAU OF ENGINEERING | LOS ANGELES, CA

Project Manager. This 40-acre riverfront parcel is considered the "crown jewel" in the City's plan to revitalize the Los Angeles River. The project includes environmental and geotechnical site assessments, community stakeholder engagement, and development of an Implementation Plan/ Pre-Design Report which includes both interim and long-term uses of the site. The recommended project is presented in the draft final Implementation Feasibility Report dated February 2021.

ONE WATER LA 2040 PLAN*

CITY OF LOS ANGELES BUREAU OF SANITATION | LOS ANGELES, CA

Project Advisor and Contract Manager. The One Water LA 2040 is a comprehensive plan being developed by the City of Los Angeles to manage water more sustainably and identify synergies for collaboration within the City and other agencies related to wastewater facilities, watersheds, water facilities and water resources. One Water LA included an extensive stakeholder process to all City departments and relevant regional agencies in the development of this approach for sustainable water management. One Water LA is being developed in two phases.

ENHANCED WATERSHED MANAGEMENT PLANS*

CITY OF LOS ANGELES BUREAU OF SANITATION | LOS ANGELES COUNTY, CA

Contract Manager and Regional Projects Task Leader. Managed this $2.7M contract to develop EWMPs for the upper Los Angeles River watershed and the Ballona Creek watershed. The plans identify a set of projects and provide the basis for a multi-billion-dollar capital improvement program that provides multiple benefits to the cities including: stormwater quality improvement, groundwater recharge, increased water supply, habitat restoration, recreation, and neighborhood improvement. Served as the contract manager for this project, overseeing all technical tasks including: EWMP Workplan, Coordinated Integrated Stormwater Monitoring Plan, Stakeholder Outreach, and Final EWMP Plan Development. Also served as the Regional Projects Task Leader to develop a final list and provide engineering feasibility of regional projects that will be included in the EWMPs.

INTEGRATED REGIONAL WATER MANAGEMENT PLAN*

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS | LOS ANGELES COUNTY, CA

Program Manager. Managed this $2.5 million comprehensive planning study which resulted in the Integrated Regional Water Management Plan (IRWMP) for Los Angeles County. The plan was completed and identifies a comprehensive set of solutions and cost estimates to address the region's water resource needs and help to attract the funding needed to implement these solutions. The plan has been described as the basis for a multi-billion-dollar capital improvement plan to address the water resource needs of the most populous county in the United States. The American Society of Civil Engineers awarded the plan the 2007 Outstanding Civil Engineering Project in the Los Angeles Region.

SAN DIEGO, CA
Matthew.Moore@nv5.com

EDUCATION
MS, Civil Engineering

BS, Civil Engineering

EXPERIENCE
27 Years

REGISTRATIONS
Professional Engineer, Civil (CA) No. 56780

Envision Sustainability Professional (ENV SP) (CA) No. 10891

Qualified SWPPP Developer and Practitioner (QSD/P) No. 00046

Trainer of Record for QSD/QSP, No. 00046

AFFILIATIONS
American Society of Civil Engineers

* = indicates a project that was performed while employed at a different firm.

MATT MOORE, PE, ENV SP, QSD/P, TOR

Above Ground Services Lead

Matt brings more than 27 years of experience in water resources, including hydrologic and hydraulic engineering design for drainage, green infrastructure, flood control, water quality, and erosion control facilities. His work has included preliminary and final engineering design phases, as well as Federal Emergency Management Agency (FEMA), Caltrans, National Pollution Discharge Elimination System (NPDES), and environmental documentation and permitting. He has extensive experience in hydrologic and hydraulic analyses including preparation of storm drainage plans and stormwater quality best management practices (BMP) design and documentation. Matt served on the technical advisory committee for the development of the first San Diego County LID Manual and the San Diego County Hydrology Manual update.

Relevant Project Experience

LOS ANGELES COUNTY WORLD AIRPORTS (LAWA), LAX TERMINALS 1, 2 & 3 EXPANSION STORMWATER QUALITY BMP DESIGN*

LAWA | LOS ANGELES, CA

Project consisted of preparing the 100% stormwater quality BMP design sheets for retrofit of storm drain inserts and construction of a new stormwater quality hydrodynamic separator. Duties included hydrologic and hydraulic design of the post-construction BMPs, coordinating with BMP vendors, Project Architect, and LAWA.

INTERSTATE 105 EXPRESSLANES SEGMENT 1 DRAINAGE & STORMWATER*

LOS ANGELES COUNTY METROPOLITAN AUTHORITY | LOS ANGELES, CA

Drainage and Stormwater Lead for the Interstate 105 ExpressLanes Segment 1 project and oversaw preparation of the hydrology and hydraulic analysis, drainage report, stormwater data report, drainage plans, specifications, and estimate through 100-percent design.

LOS ANGELES COUNTY ALONDRA PARK MULTI-BENEFIT STORMWATER CAPTURE PROJECT*

LOS ANGELES COUNTY | LOS ANGELES, CA

Project Manager and Storm Drain Design Lead for this multi-discipline design project. The project will revitalize an existing park with new stormwater infrastructure, new soccer and multi-purpose turf fields, two rehabilitated baseball fields, landscaping, and lighting. The Project will capture and treat dry-weather and stormwater runoff from a 4,495-acre drainage area, with up to 34 acre-feet of runoff during a single storm event, by retaining runoff in a subsurface storage system. The Project also includes low impact development features including the planting of native and drought-tolerant vegetation and trees, bio-swales, and permeable pavements. This project will revitalize an existing park with new stormwater infrastructure, new soccer and multi-purpose turf fields, two rehabilitated baseball fields, landscaping, and lighting. The project will capture and treat dry-weather and stormwater runoff from a 4,495-acre drainage area, with a minimum of 34 acre-feet of runoff during a single storm event, by retaining runoff in a subsurface storage system. The project also includes low impact development features including the planting of native and drought-tolerant vegetation and trees, bio-swales, and permeable pavements. Project funding is provided through Measure W, County of Los Angeles, local municipalities, and Caltrans.

LOS ANGELES COUNTY EASTVIEW FEASIBILITY STUDY*

LOS ANGELES COUNTY | LOS ANGELES, CA

Provided oversight reviews of this feasibility study including hydrology, hydraulic, and BMP design input.

LOS ANGELES METROPOLITAN TRANSPORTATION AUTHORITY (LA METRO) WEST SANTA ANA BRANCH (WSAB) STORMWATER SUSTAINABILITY STUDY*

LA METRO | LOS ANGELES, CA

Task Leader for developing a report evaluating sustainable stormwater practices along the project alignment. The WSAB Transit Corridor is a proposed light rail transit line that would extend approximately 19 miles from downtown Los Angeles through southeast Los Angeles County. Work included evaluation of Low Impact Development BMP feasibility, and preliminary location and sizing information for feasible BMPs. Green street and green parking lot features were evaluated and included in the recommendations.

COUNTY OF SAN DIEGO GREEN STREET & GREEN PARKING LOTS GUIDELINES & STANDARDS*

COUNTY OF SAN DIEGO | SAN DIEGO, CA

Project Manager for this project that involves development of Green Street and Green Parking Lots technical guidance documents, standard drawings, and specifications to educate and assist developers and County staff in implementing sustainable green infrastructure. The guidebooks and standards provide a consistent approach to Green Infrastructure design and implementation. Development of the guidelines, standard drawings and specifications included input from a diverse group, including client, stakeholders, and the public, to evaluate overlapping interests and regulations. The information is now included as part of the County's Best Management Practice Design Manual.

STATE ROUTE 76 WIDENING & IMPROVEMENTS DRAINAGE DESIGN*

COUNTY OF SAN DIEGO/GRANITE CONSTRUCTION | SAN DIEGO COUNTY, CA

Drainage Lead for engineering construction drawings for a 2.3-km widening and realignment of an existing rural state route along San Luis Rey River and bridge widening along a river tributary. Matthew's duties included the preparation of hydrology and hydraulic analyses, reports, and storm drain design for final engineering construction drawings, including Rational Method and Unit Hydrograph Method hydrology calculations, culvert, ditch and inlet design and analysis using WSP-GW and hydraulic floodplain calculations and mapping using HEC-RAS; bridge scour analysis using HEC-18; sediment transport and scour protection design along San Luis Rey River using HEC-6 and HEC-23; and FEMA CLoMR and Caltrans plan/report preparation and processing.

SANTA MARGARITA RIVER HYDRAULIC FLOODPLAIN ANALYSIS, MARINE CORPS BASE CAMP PENDLETON*

NAVAL FACILITIES COMMAND SOUTHWEST | SAN DIEGO COUNTY, CA

Updated an existing HEC-RAS floodplain analysis within Santa Margarita River in the vicinity of Marine Corps Base Camp Pendleton utilizing field surveyed cross sections and vegetation survey within the 100-year floodplain. The purpose of the study was to verify the existing freeboard condition along the levee protecting Camp Pendleton and at Topomai Bridge.

TIJUANA RIVER FLOODPLAIN ANALYSIS*

INTERNATIONAL BOUNDARY & WATER COMMISSION | SAN DIEGO, CA

Drainage Design Engineer. Prepared a HEC-RAS floodplain analysis for the Tijuana River from the US-Mexico border to the Pacific Ocean using field surveyed cross sections and LiDAR topographic data. The floodplain analysis updated the draft FEMA HEC-RAS floodplain analysis in support of the levee re-certification process for the portion of the river within the IBWC right of way.

MID-COAST CORRIDOR TRANSIT PROJECT DRAINAGE DESIGN*

SAN DIEGO ASSOCIATION OF GOVERNMENTS | SAN DIEGO, CA

Drainage Design Lead for the Mid-Coast Corridor Transit Project design services during construction and the Central Mobility Hub advanced engineering tasks. Responsibilities include drainage and water quality design for the civil improvements consisting of new tracks (at grade and elevated), stations, roadways, retaining walls and bridges. Floodplain analyses were conducted for longitudinal and transverse (bridges) encroachments. Water quality design consists of post-construction Low Impact Development and hydromodification management features to comply with the local MS4 permits.

LONG BEACH, CA
Matthew.Renaud@NV5.com

EDUCATION
BS, Environmental Studies, Policy and Management; State University of New York College of Environmental Science and Forestry, Syracuse, NY

EXPERIENCE
21 Years

CERTIFICATIONS
Qualified SWPPP Developer/ Practitioner - Trainer of Record (QSD/P ToR), No. 0740

Certified Professional in Erosion and Sediment Control (CPESC), No. 6156

Certified Erosion, Sediment and Storm Water Inspector (CESSWI), No. 2487

Qualified Industrial Stormwater Practitioner (QISP), No.00527

AFFILIATIONS
International Erosion Control Association, Regional President

California Stormwater Quality Association (CASQA)

MATTHEW RENAUD, QISP, CPESC, CESSWI, QSD/P TOR

Testing and Disposal Leader

Matt Renaud has 21 years of experience in environmental remediation and storm water compliance consulting, with a scientific specialization in water quality investigations. Additional areas of expertise include construction and industrial storm water compliance: SWPPP writing, site inspections/audits, discharge sampling, compliance programs development, and ERA Reports. His responsibilities include the evaluation of analytical data and compilation of data for regulatory filing and final reports.

Relevant Project Experience

LINXS CJV LAX AUTOMATED PEOPLE MOVER ENVIRONMENTAL MANAGEMENT/CONSTRUCTION GENERAL PERMIT COMPLIANCE

LOS ANGELES, CA | PROJECT MANAGER

Provide primary environmental compliance services to the construction Joint Venture. Provide QSD services for the creation of a multi-phase SWPPP for a 2.5-mile elevated rail line. Provide QSP inspection oversight throughout the course of the construction activities. Coordinate the environmental compliance activities related to soil management, paleo/cultural/biological, mold/lead/asbestos/PCB sampling and oversight.

LOS ANGELES WORLD AIRPORTS (LAWA) INDUSTRIAL GENERAL PERMIT COMPLIANCE

LOS ANGELES, CA | SENIOR CONSULTANT

Provided industrial permit compliance technical and field support for the airport's internal compliance group. Performed monthly Dry Weather Observations, Annual Facility Inspections, spill investigation and reporting, SWPPP amendments, Annual Report preparation. Produced and provided the required Annual Training for airport and tenant facility personnel. Provided technical advice on compliance approaches.

CITY OF CULVER CITY, DIVERSION PIPELINE

CULVER CITY, CA | QUALIFIED SWPPP DEVELOPER/PRACTITIONER

NV5 is currently providing construction management, inspection, and engineering services for the construction of diversion sewer pipes to abandon Mesmer and Overland sewer pump stations. The goal of the project is to divert flows from four of the City's sewer pump stations to a new sewage pump station, Bankfield Station, another project in which NV5 is providing construction management and inspection services during construction.

ONTARIO INTERNATIONAL AIRPORT AUTHORITY (OIAA) CONSTRUCTION GENERAL PERMIT COMPLIANCE

ONTARIO, CA | CONSTRUCTION STORM WATER CONSULTANT

Developed the Airport's "Guidance Manual for Construction Storm Water Pollution Prevention." Provided direct oversight for 3rd party compliance audit program of capital investment projects occurring on airport property. Managed SMARTS records for all SWRCB Permits; prepared Annual Reports, COIs and Notice of Termination (NOTs). Reviewed SWPPPPs and Amendments prepared by contractors for compliance with the CGP and the airport's Guidance Manual minimum requirements.

SANTA ANA USD CONSTRUCTION GENERAL PERMIT COMPLIANCE

SANTA ANA, CA

Responded to RWQCB issued Notices of Non-Compliance for multiple facilities regarding previously completed construction projects. Communicated compliance actions with RWQCB staff, filed NOTs and Annual Reports.

Matthew Renaud, QISP, CPESC, CESSWI, QSD/P ToR

COACHILLIN' HOLDINGS, LLC CONSTRUCTION GENERAL PERMIT COMPLIANCE

DESERT HOT SPRINGS, CA | ENVIRONMENTAL COMPLIANCE CONSULTANT

Provide QSD services for the creation of a multi-phase SWPPP for a 160-acre development project. Provide QSP inspection services throughout the course of the construction activities. Prepared soil management report for landscape compliance reporting, Sludge Management Report as part of the facility's WDR for an onsite septic system, and storm water quality investigations.

US COAST GUARD BASE LA/LONG BEACH INDUSTRIAL GENERAL PERMIT COMPLIANCE

SAN PEDRO, CA | QUALIFIED INDUSTRIAL SWPPP PRACTITIONER

Provide QISP services for the Level 1 Exceedance Response Actions (ERA) and Level 2 ERAs for the Base. Authored the Facility's revised SWPPP. Perform QISP duties of Annual Inspection and Reporting and advisement on BMP practices.

ANVIL CONSTRUCTION GENERAL PERMIT COMPLIANCE

IRVINE, CA

Serve as the firm's storm water compliance expert in the preparation of SWPPPs, NOIs, RWQCB communications regarding compliance issues, file Annual Reports, perform compliance inspections, and NOTs for all active construction projects.

DOJA, INC. CONSTRUCTION GENERAL PERMIT COMPLIANCE

IRVINE, CA

Project QSD Prepared SWPPP for outdoor areas rehabilitation project at the Cypress High School in Cypress, CA. Performed routine and storm inspection services.

FEDEX – BROWN AND CALDWELL INDUSTRIAL GENERAL PERMIT

SOUTHERN CALIFORNIA | PROJECT MANAGER

Provide management of sampling team for nine FedEx facilities to be sampled according to IGP Compliance Group requirements. Weather tracking and mobilization of sampling teams performed, as well as sampling of facilities.

PORTLAND, OR
mike.smyth@nv5.com

EDUCATION
BS Landscape Architecture
Washington State University

EXPERIENCE
35 Years

REGISTRATIONS
Registered
Landscape Architect-
CA No. 3231, OR No. 317,
WA No. 1070, AZ No. 56354

Council of Landscape Architectural Registration Boards (CLARB), National #773

AFFILIATIONS
American Society of Landscape Architects (ASLA)

MIKE SMYTH, RLA

Landscape Architect/Native Landscape Maintenance Leader

Mike has decades of professional landscape architect experience working on a diverse mix of public and private projects throughout the west. His experience with public agencies has included management of landscape architecture on-call contracts. Mike is also experienced in varied facets of environmental design, including wetland and buffer restoration and mitigation design, and stormwater infrastructure design. Mike has years of experience establishing solid client relationships, managing project teams, designing and collaborating with allied design disciplines, and delivering comprehensive service on projects of all sizes and complexities. Mike is licensed by the California Department of Consumer Affairs Board of Landscape Architects to practice in the State of California, and he is registered with the American Society of Landscape Architects (ASLA). Mike is actively managing or working on public sector projects throughout southern California

Relevant Project Experience

MAYORS' DISCOVERY PARK RECREATIONAL ENHANCEMENTS, LA CANADA FLINTRIDGE, CA

CITY LA CANADA FLINTRIDGE, CA

The proposed park redevelopment improvements include a new outdoor exercise circuit, new children's playground with compliant fall protection, removal of an under-used water feature and mechanical system, a new bocce ball/mixed use lawn court, an outdoor performance stage/platform, new site furnishings, new outdoor lighting, and a myriad of improvements to deferred maintenance items throughout the larger park. Elements of the existing park landscaping will be removed and replaced with native and adapted ornamental, drought tolerant groundcover, perennial, and woody shrub plant materials. When selecting plants for the park improvements an emphasis will be placed on Green Infrastructure BMP's such as compatible drought tolerant water needs, low maintenance requirements, beneficial habitat characteristics, and food sources for essential pollinators. Furthermore, parts of the existing conventional spray irrigation system will be replaced with a modernized, automated low-flow, subsurface irrigation system that will reduce municipal water consumption. Stormwater captured in the project impact area will be retained and infiltrate directly on site, reducing supplemental irrigation demand and impacts to the existing storm sewer infrastructure.

FOOTHILL BLVD, VERDUGO BLVD, AND ANGELES CREST HIGHWAY LANDSCAPE MEDIAN REPLACEMENT

CITY OF LA CANADA FLINTRIDGE, CA

Interested in achieving sustainable, xeric landscapes the City of La Canada hired NV5 to replace turf grass and ornamental shrubs with a mosaic of new native, drought tolerant groundcover, herbaceous, succulent, and woody shrub material. The preferred plants will integrate well with the protected street trees and require little to no irrigation once they are fully established. In addition, NV5 will design a modernized subsurface, low-flow automatic irrigation system that will reduce municipal water consumption while promoting healthier plants that also offer beneficial habitat to essential pollinators. To reduce the use of chemical herbicides the amended median soils will be top dressed with a thick layer of aged, wood-based mulch that will contribute nutrients during decomposition, and eliminate or suppress weed seed germination. Stormwater captured in the median island landscapes will be retained and infiltrate directly on site, reducing supplemental irrigation demand and impacts to the existing storm sewer infrastructure.

BROADWAY CREEK RESTORATION

EL CAJON, CA – CITY OF EL CAJON

Mike led the planting and irrigation design for the Broadway Creek Restoration. Much of the existing creek was heavily degraded by erosionand overgrowth of invasive species.. The project will be restored using plants native to the coastal inlands. ..

SAN DIEGO, CA
julian.palacios@nv5.com

EDUCATION
M.S. Environmental Engineering

B.S. Civil Engineering

EXPERIENCE
22 Years

CERTIFICATIONS
Civil Engineer (CA) No. 67735

Civil Engineer (Mexico) No. 2760774

Certificate Urban Water Management Plan Training

AFFILIATIONS
American Society of Civil Engineers (ASCE)

JULIAN PALACIOS, PE

Treatment System Services Leader

Mr. Palacios is an engineering manager with 22 years of experience providing planning, design, construction support services and feasibility studies for water and wastewater treatment, water distribution, wastewater collection, and hydraulic modeling of water and wastewater systems.His experience includes completing water and wastewater infrastructure projects for local public agencies, including the City of Oceanside, City of Carlsbad, City of Vista, Vallecitos Water District, Olivenhain Municipal Water District, Ramona Municipal Water District and the San Diego County Water Authority.

Relevant Project Experience

PEARL AVENUE SEWER REPLACEMENT

CITY OF COMPTON | COMPTON, CA

QA/QC Manager. Mr. Palacios is serving as QA/QC Manager for the preparation of updated engineering design plans, specifications and construction cost estimates for the Pearl Avenue Sewer Replacement Replacement. There are 29 plan sheets and a full set of construction specifications prepared in the old CSI format signed and sealed by the City's former Public Works Director from January 2016. The City requested NV5 to perform a constructability review on the existing plans, discuss with the City any cost-savings recommendations, update construction costs estimate, update construction specifications, and incorporate updated underground utility research on the current set of plans. There is an additional reach of 400 LF Pearl Avenue Sewer Additions between Rosecrans Avenue and East Kay Street that are not included in the previous 29 sheets that the City needs to be added to this project. NV5 is also providing survey services by providing necessary survey crew coordination and office support to dispatch survey crews with necessary support data as follows: Horizontal, Vertical & Boundary Control, Topographic Survey Field Locations and Elevations, and Compile Topographic Survey Map.

BRAWLEY WASTEWATER TREATMENT PLANT WETLANDS

IMPERIAL IRRIGATION DISTRICT | BRAWLEY, CA

Project Engineer. Mr. Palacios was responsible for the design of a wetland to further treat the effluent of the City of Brawley Wastewater Treatment Plant prior to discharge into the New River. The project was part of the Citizen's Congressional Task Force on the New River aimed at the development and implementation of wetlands and sedimentation basins to reduce pollutants in the river. The project included a pre-design report and construction documents (plans and specifications) and provides bidding assistance. The design incorporated three open water wetland cells placed in a "U" shaped configuration, which resulted in no impact on the hydraulic profile of the facility or the downstream UV disinfection system. The project included the design of approximately 10 acres of a riparian forest planted with native species, part of a mitigation measure by Caltrans for the construction of the Brawley By-Pass Project. The design included several sustainable features, including use of an impermeable onsite clay liner to prevent impact to groundwater, not requiring a synthetic liner or imports, additional treatment (BOD, TSS, nutrients) with no additional energy use, a low maintenance system, wetlands, and riparian forest to create additional wildlife habitat for migrating birds and native species, and improvement of water quality in the New River and the Salton Sea by further reducing contaminants in the effluent of the treatment facility and exceeding discharge requirements.

WASTEWATER SYSTEM FEASIBILITY STUDY

CITY OF TWENTYNINE PALMS | TWENTYNINE PALMS, CA

Project Engineer. Mr. Palacios was responsible for a feasibility study for the City of Twentynine Palms to convert the City's septic system to a combined system, including an evaluation of groundwater recharge and treatment plant options. The Community's development was limited because new businesses are required to have small waste treatment plants installed. The community is also adjacent to a military base that was concurrently upgrading its wastewater treatment plant. The City has received State funding to do its own analysis to confirm the best strategy to serve the City. The effort involved preliminary planning for sizing and laying out the collection system throughout the City of approximately 59 square miles, evaluation of treatment options, and a hydrogeological analysis of the three optional groundwater basins for recharge.

MARKETPLACE DEL RIO SEWER REPLACEMENT

CITY OF OCEANSIDE | OCEANSIDE, CA

Project Manager. Mr. Palacios provided engineering services in support of the replacement of the existing 21-inch trunk sewer along an existing easement. The project included upsizing 1,250 feet of the existing 21-inch trunk sewer to 24-inches utilizing a parallel alignment installed via micro-tunneling. Conducted all preliminary research and field work, including review of the existing utilities consisting of as-built drawings, maps, geotechnical reports for other local projects, CCTV video, and shutdown constraints.

MISSION/EL CAMINO TRUNK SEWER

CITY OF OCEANSIDE | CITY OF OCEANSIDE, CA

Mr. Palacios prepared a base map and topographic survey of a strip of land approximately 1,200 feet in length in a shopping mall, including locating and measuring inverts of sewer manholes. Developed the base map from assessor and record maps and based on survey monuments which were found and tied to the city's control survey, Record of Survey 21787. The topographic survey was also tied to ROS 21787 and was performed using photogrammetric methods and supplemented by field survey shots. Located and mapped all visible improvements along the strip and developed a digital terrain model (DTM) of the surface.

HARBOR LIFT STATION NO. 4 FORCE MAIN

CITY OF OCEANSIDE | OCEANSIDE, CA

Project Manager. Mr. Palacios provided engineering design services for a new 8-inch sewer forcemain that replaced an existing 8-inch sewer forcemain for the City of Oceanside. Was responsible for conducting an aerial topographic with supplemental field survey and mapping the existing utilities from as-builts. Prior to design, prepared a feasibility study that presented several alignment alternatives. Worked closely with both the City and the North County Transit District (NCTD) to select the best alternative. Construction plans and technical specifications were finalized, which included piping improvements inside an existing pump station and an existing wet well, open-trench construction along South Harbor Drive, and jack and bore construction underneath South Harbor Drive and the NCTD railroad right-of-way.

LOS COCHES CREEK SEWER DESIGN

COUNTY OF SAN DIEGO | SAN DIEGO, CA

Mr. Palacios was responsible for designing a sewer replacement and upgrade in an environmentally-sensitive area along Los Coches Creek. Managed the preparation of plans and specifications for the replacement of 1,100 feet of 15-inch sewer and designed two stream crossings with permanent erosion protection to maintain bank and creek bottom stability around the sewer. Developed a construction sequence for temporary stream diversion during construction. The design incorporated two creek crossings. The project required extensive coordination with County Environmental Services.

FIRE LINE AND PUMP STATION

MIRACOSTA COLLEGE | OCEANSIDE, CA

Mr. Palacios prepared final design plans and specifications to upgrade the fire protection pumping and distribution system of the Oceanside Campus for MiraCosta College. The project included the design of a new booster station with duplex fire pumps with a capacity of 1,500 gpm, 400 gpm irrigation pumps, standby generator, CMU pump station building, and approximately 8,000 linear feet of 8- and 10-inch PVC C900 pipelines. Provided aerial topography surveying, existing utility mapping and field locating, and potholing services to accurately locate existing utilities and create base maps to be used in the design of the proposed fire protection system.

PUMP STATION 4 AND 5 REHABILITATION

CITY OF IMPERIAL BEACH | IMPERIAL BEACH, CA

Project Manager. Mr. Palacios was responsible for preparation of final construction plans, specifications, and estimates, for the rehabilitation of two sewer pump stations. Pump Station No. 4 is a dry pit/wet well configuration that was built in the 1950s, still operating with the original pumps, motors, and piping. Pump Station No. 6 is also a dry pit/wet well configuration put in operation in the 1950s, with outdated valves, piping, supports, and electrical switchgear. The project included replacement of suction piping and valves, pumps and motors for Pump Station No. 4, discharge piping, discharge isolation valves, and check valves, installation of bypass pumping connection, replacement of pressure transducer stilling wells, lighting improvements, installation of a transfer switch, and replacement of outdated electrical switchgear. The improvements to Pump Station No. 4 included relocation of the electrical service and meter from an existing power pole to a concrete pad. The project also included a structural assessment of the condition of concrete and placement of steel reinforcement in Pump Station's No. 6 dry pit, utilizing Ground Penetrating Radar (GPR) technology.

LONG BEACH, CA
Jacqueline.McMillan@nv5.com

EDUCATION
BS, Chemical Engineering

EXPERIENCE
13 Years

REGISTRATIONS
Professional Engineer (Civil), (CA) No. C80930

Qualified Industrial Stormwater Practitioner (QISP), No. C80930

Qualified SWPPP Developer (QSD), No. C80930

AFFILIATIONS
California Stormwater Quality Association (CASQA)

American Society of Civil Engineers Environmental & Water Resources Institute

JACQUELINE MCMILLEN, PE, QISP/TOR, QSD/P

BMP Operation and Maintenance, Monitoring and Optimization

Jacqueline has over 13 years of experience supporting industrial and municipal clients with their environmental compliance programs. Her areas of expertise include environmental permitting, regulatory review and research, stormwater compliance and reporting, plan check reviews, engineering design, sediment and erosion control plans, and stormwater drainage analyses. She has direct experience developing and managing extensive stormwater compliance programs for industrial and municipal clients and serving in an advisory capacity regarding stormwater programs to local government agencies within California.

She has supported a wide variety of clients in navigating the SUSMP plan checks, construction, IGP requirements including permit registration document preparation, development of Stormwater Pollution Prevention Plans (SWPPP), performance of site inspections, monitoring, and reporting, and electronic reporting via the Stormwater Multiple Application and Report Tracking System (SMARTS). She has prepared Water Quality Management Plans, performed plan check reviews for compliance with local regulations, and has assisted in defending third-party Clean Water Act citizen suits. Her understanding of implementing well documented projects and the importance of respecting sensitive communications to protect her clients demonstrates her commitment to excellence.

- In-depth understanding of National Pollutant Discharge Elimination System (NPDES) permit, current Municipal Separate Storm Sewer System (MS4) permit and Los Angeles Regional Water Quality Control Board (RWQCB) requirements for storm water programs.
- Responsible for the development of Storm Water Pollution Prevention Plans (SWPPP) for compliance with Industrial General Permit and implementation of municipal and industrial compliance programs.
- Responsible for Best Management Practices (BMP) assessment, implementation, and design.
- Data review, formatting and submission to the Stormwater Multiple Application and Report Tracking Systems (SMARTS).
- Evaluation and compilation of analytical data for graphics and reporting.

Relevant Project Experience

LOS ANGELES WORLD AIRPORTS (LAWA) STORM WATER MONITORING

LAWA | LOS ANGELES & VAN NUYS, CA

Currently supporting the storm water monitoring program for Los Angeles International Airport (LAX) and Van Nuys Airport (VNY). Program includes monitoring station equipment procurement, installation, maintenance, and continuous monitoring at three mass loading stations at LAX and monitoring at one station at VNY for compliance with Industrial Storm Water Permits. Monitoring includes flow and load monitoring, sampling of a full suite of priority pollutants, laboratory analysis, data management, and reporting.

LOS ANGELES WORLD AIRPORTS (LAWA) ANNUAL SUSTAINABILITY REPORT

LAWA | LOS ANGELES, CA

Prepared Annual Sustainability Reports based on a review of performance trends and progress by assessing data and analyzing metrics in the following categories to align

with the Sustainability Action Plan: Corporate Responsibility, Energy Management, Water Management, Air Emissions Management, Material Resources Management, Sustainable Construction Practices, Noise Management, and Natural Resources Management.

LOS ANGELES WORLD AIRPORTS (LAWA) TRANSFER OF SUSTAINABILITY-BY-THE-NUMBERS APPLICATION & DATABASE

LAWA | LOS ANGELES, CA

Transferred data hosting and management of the Sustainability-by-the-Numbers application and database. Transferred all programming code and environment components. Additionally, provided informal virtual training, on an as-needed basis, for LAWA staff on the Sustainability-by-the-Numbers application, SQL Server database, Power BI files, Administrator application, and Python scripts.

VETERANS AFFAIRS GREATER LOS ANGELES HEALTH CARE SYSTEM PHASE II MS4 COMPLIANCE SUPPORT SERVICES

VETERANS AFFAIRS | LOS ANGELES, CA

Provided Phase II MS4 compliance support services for the VA Greater Los Angeles Health Care System as acting Project Manager. The VA is a Non-Traditional Permittee under the MS4 Permit and was seeking additional compliance support for the facility in West Los Angeles. NV5 prepared the Guidance Document and Facility Maps to apply for coverage under the Phase II MS4 Permit. NV5 has also been responsible for preparation of annual reports and development of training programs for facility personnel. One key task performed by NV5 involved a two-day comprehensive site visit and GPS data collection of catch basin locations and conditions, as well as potential pollutant hot spot allocations, using Trimble PathFinder Office and a professional grade Trimble Geo 7x GPS device, to support the Jurisdictions trash assessment and development of a Track 2 Implementation.

NV5 field staff combined the data, attributes, and photo logs and transferred these to ArcGIS. QA/QC measures were performed on the data for alignment with aerial imagery of the site. The information gathered during the visit was utilized by the client to determine areas where potential threats to water quality may occur, and NV5 provides ongoing recommendations and support to assist the VA facility in achieving compliance.

PORT OF LONG BEACH INDUSTRIAL & MS4 STORM WATER MONITORING & REPORTING SERVICES

PORT OF LONG BEACH | LONG BEACH, CA

Provided regulatory support for compliance with MS4 programs; lead development of industrial, commercial and construction inspection training programs; development of a consistent sampling and analysis program; quality assurance program plans; and provided support during site walks and identification of potential sampling sites. The Port's goals were to collect robust high-quality data that would provide support with analysis of receiving water Total Maximum Daily Loads (TMDL) and to characterize storm water quality from the permittees' facilities. Following transition to individual tenant Permits, the Port required assistance with complying with Phase I MS4 Permit.

SSA MARINE INDUSTRIAL STORM WATER PROGRAM SUPPORT

PORTS OF LONG BEACH & LOS ANGELES | LONG BEACH & LOS ANGELES, CA

Lead task to provide technical support to six cargo terminals located in the Port of Long Beach and Port of Los Angeles to ensure compliance with the Industrial General Permit. After the first year of reporting, all six of the SSA Marine terminals progressed from Baseline to Level 1. Relevant QISP services were provided as required by the Industrial General Permit, including Level 1 ERA site evaluations, evaluation of existing BMPs and recommendations for additional BMPs, development of Level 1 ERA, reports revisions of facility SWPPPs, review of laboratory reports and upload of Ad Hoc reports to SMARTS, and annual reporting. NV5 also serves as a technical resource for SSA Marine facility managers for questions and advice regarding compliance with the Industrial General Permit. Program includes site walks at each of the six terminals to review potential compliance issues and make ongoing BMP recommendations and site-specific training with facility managers and Pollution Prevention Team members. Training has included identification of potential pollutant sources, installation of BMPs, proper sampling techniques, and reporting requirements via SMARTS.

CITY OF MAYWOOD PHASE I MS4 NPDES PERMIT PROFESSIONAL SUPPORT SERVICES

CITY OF MAYWOOD | MAYWOOD, CA

Ms. McMillen is the Project Manager, providing professional support services for the City of Maywood's Phase I Municipal Separate Storm Sewer System (MS4) NPDES Permit compliance. The team is supporting the City with development and implementation of required programs to achieve compliance with the objectives of the amended Coastal Los Angeles County MS4 NPDES Permit (Order No. R4-2012-0175-A01). Services completed to date under the current as-needed services contract include conducting an annual storm water program training webinar for municipal staff; development of public outreach brochures on BMPs to be employed at Food Service Establishments; Automotive Service Facilities, and Industrial Facilities; and development of an Industrial and Commercial Facilities database. This database is used to inform and track future inspection activities within the City. Ongoing work with the City includes, but is not limited to, inspections of construction sites by QSD/P, post-construction BMP inspections, review of municipal facilities and activities, and conducting concurrent Fats, Oils, and Grease (FOG)/storm water commercial and industrial facility inspections. The team will also support illegal discharge investigations as needed.

SAN DIEGO, CA
Nicholas.Poser@NV5.com

EDUCATION
MS, Geology, San Diego State University, 2022

BS, Environmental Geoscience, San Diego State University, 2019

EXPERIENCE
3 Years

CERTIFICATIONS
Qualified Industrial Stormwater Practitioner (QISP), No. 01210

Confined Space Entry and Attendant (2020)

40 Hour HAZWOPER (2020)

AFFILIATIONS
San Diego Environmental Professionals

San Diego Association of Geologists

NICHOLAS POSER, QISP, CESSWI

BMP Operation and Maintenance, Monitoring and Optimization

Nicholas is a Water Resources Specialist with NV5. Nick's experience includes storm water monitoring, dry weather monitoring, water quality sampling, preparation of water quality samplers, and evaluation of analytical data. He is 40 Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) certified, Occupational Safety and Health Administration (OSHA) Confined Space Certified and a certified Qualified Industrial Stormwater Practitioner (QISP). .

Relevant Project Experience

LOS ANGELES WORLD AIRPORTS (LAWA) STORM WATER MONITORING PROGRAM

LOS ANGELES, CA

Currently supporting the storm water monitoring program for Los Angeles International Airport (LAX). Program includes monitoring station equipment, installation, maintenance, and continuous monitoring at three mass loading station at LAX for compliance with their Industrial Storm Water Permits.

CITY OF COMPTON NPDES MONITORING

COMPTON, CA

Currently supporting the City of Compton with wet weather and dry weather monitoring at receiving water and MS4 Outfall sites. Conducts wet weather sampling at MS4 Outfall sites including preparation and installation of flow monitoring and auto sampling equipment and collection of samples for microbiology, chemistry, toxicity, toxicity identification evaluations, Bioassessment, and field parameters.

CITY OF OCEANSIDE NPDES MS4 OUTFALL MONITORING AND ASSESSMENT PROGRAM

OCEANSIDE, CA

Provided support to the City of Oceanside Monitoring and Assessment Program in the Carlsbad Watershed Management area (WMA) and San Luis Rey WMA as part of the requirements of the City's Water Quality Improvement Plan (WQIP). Responsibilities include implementing detailed MS4 outfall visual observations, Illicit Discharge Detection Elimination Investigations, dry weather sampling, and data QA/QC.

SAN DIEGO, CA
james.owens@nv5.com

EDUCATION
MBA, Business Administration

B.S. Civil Engineering

Foreign Study, Spain

EXPERIENCE
23 Years

CERTIFICATIONS
Civil Engineer (CA)
No. 66067

LEED Accredited Professional

JAMES OWENS, PE, LEED AP

BMP Operation and Maintenance, Monitoring and Optimization

Mr. Owens is a water/wastewater engineer with 23 years of experience with NV5 in Southern California. He regularly reviews technical documents, design drawings, and specifications packages prepared by others in NV5's water/wastewater group to provide an arm's length review free from the day-to-day development of these documents.

Mr. Owens leads a variety of water and wastewater projects during the troubleshooting, conceptual design, planning, financing, and design phases. He is experienced in performing population and demand projections, hydraulic analysis and design, project, and system financial analysis, and planning and design of facilities. He has extensive knowledge of software tools such as AutoCAD, WaterCAD, SewerCAD, H2OMap, Flowmaster, and MS Office.

Relevant Project Experience

LAKE BOULEVARD SEWER IMPROVEMENTS
CITY OF OCEANSIDE | OCEANSIDE, CA
Quality Assurance/Quality Control. Mr. Owens provided QA/QC to prepare construction documents for a gravity sewer line replacement. The project included rerouting existing 8-inch and 12-inch gravity sewers, a 16-inch force main, and a 6-inch lateral from an adjacent senior community center and reconnecting these pipelines to the proposed 15-inch sewer.

MEADOWLARK WATER RECLAMATION FACILITY FORCE MAIN
VALLECITOS WATER DISTRICT | SAN MARCOS, CA
Quality Assurance/Quality Control. Mr. Owens provided QA/QC for construction documents to replace the existing 12-inch asbestos cement effluent pipeline with a 24-inch CML&C welded steel pipeline. The new 24-inch pipeline is located in a congested utility corridor, including a 12-inch DI outfall sewer, a 10-inch techite sewer, a 24-and 30-inch DI sewer, a 6-inch DI sludge line, a 2-inch water line, and overhead electric lines. The pipeline connects the effluent pump station with an existing 24-inch reclaimed water line along Rancho Santa Fe Drive.

RELOCATION OF PIPELINES ALONG SAN VICENTE ROAD
COUNTY OF SAN DIEGO | RAMONA, CA
Quality Assurance/Quality Control. Mr. Owens provided QA/QC for a pre-design report and construction drawings and specifications for the relocation of distribution and transmission pipelines that were impacted by the realignment of San Vicente Road by the County of San Diego. The project included the design of 12,600-LF of 16-inch CMLC steel transmission pipeline, 4,000-LF of 12-inch CMLC steel distribution pipeline, and 560-LF of PVC distribution pipeline and appurtenances.

UNIT AA PARALLEL RAW WATER PIPELINE
OLIVENHAIN MUNICIPAL WATER DISTRICT | SAN DIEGO, CA
Quality Assurance/Quality Control. Mr. Owens provided QA/QC reviews for the Olivenhain Municipal Water District's Unit AA Pipeline. The project consisted of approximately three miles of 48" steel water pipeline connecting the San Diego County Water Authority's aqueducts to OMWD's treatment facility at the Olivenhain dam. The proposed pipeline crossed beneath Escondido Creek. Therefore, the pipeline was installed using trenchless construction techniques beneath the Creek.

HOUSTON, TX
ronald.enard@nv5.com

EDUCATION
BS, Electrical Engineering,
Lamar University, 2002

EXPERIENCE
20 Years

REGISTRATIONS
Registered Professional Engineer, Electrical:

AL:	PE #36839
LA:	PE #40635
MS:	PE #26567
NM:	PE #24309
TX:	PE #112830

RONALD (RJ) ENARD, PE

Telemetry and SCADA Team Leader

RJ has 20 years of experience in operating, troubleshooting, and designing substations. He has a diverse background in the utility industry and consulting. RJ's expertise installing 240 VAC service drops to designing 345 kV substations and line terminals is a benefit to the team.

His designs range from simple metering points to large substations requiring redundant control houses and station service buildings. He has performed fault studies, load analysis, motor starts, and arc flash studies. RJ has developed relay settings for ring bus substations and 345 kV transmission lines. He has created lighting and station service designs and been hands-on with SCADA implementation.

RJ has extensive experience with SCADA, telemetry systems and communications. He has designed RTUS, managed SCADA servers and data bases, integrated substation IEDs and generation facilities into HMI, developed control logic for solar and wind farm production, and designed communications systems ranging from self-healing fiber rings to ethernet radio networks.

Relevant Project Experience

MIDWAY WIND PROJECT

APEX CLEAN ENERGY | TAFT, TX

Senior Project Engineer - NV5 designed the HMI infrastructure of the 163 MW Midway Wind Project in Taft, TX. NV5 used the SEL RTAC as the platform to integrate the protective relays, substation breakers, transformers, capacitor banks, metering and wind farm plant controller into one cohesive system capable of being monitored and operated 24/7/365 by Apex in its harlottesville, VA Operations Control Center. The RTAC served multiple tasks. It is a data concentrator, gathering input from all available IED and equipment in the field and disseminating that information to multiple parties. Through its HMI, the RTAC allows the Apex System operators to control breakers, operate the online tap changer, cap banks and wind turbines. NV5 utilized custom programming to interface with these devices. DNP 3.0, SEL FastMeter and MODBUS were the main protocols used in this project. NV5 worked closely with the facility's telecom engineers to ensure connectivity within the substation and with the outside entities. NV5 assisted with integration, testing and troubleshooting the system. It also provides ongoing support for the facility on an as-needed basis.

EL SAUZ RANCH WIND PROJECT

APEX CLEAN ENERGY | SAN PERLITA, TX

Senior Project Engineer - NV5 designed the HMI infrastructure of the 300 MW Midway Wind Project in San Perlita, TX. NV5 used the SEL RTAC as the platform to integrate the protective relays, substation breakers, transformers, capacitor banks, metering and wind farm plant controller into one cohesive system capable of being monitored and operated 24/7/365 by Apex in its Charlottesville, VA Operations Control Center. The RTAC served multiple tasks. It is a data concentrator, gathering input from all available IED and equipment in the field and disseminating that information to multiple parties. Through its HMI, it allows the Apex System operators to control breakers, operate the online tap changer, cap banks and wind turbines. NV5 utilized custom programming to interface with these devices. DNP 3.0, SEL FastMeter and MODBUS were the main protocols used in this project. NV5 worked closely with the facility's telecom engineers to ensure connectivity within the substation and with theoutside entities. NV5 assisted with integration, testing, and troubleshooting the system. It also provides ongoing support for the facility on an as-needed basis.

PITTSBURGH, PA
elizabeth.dreimiller@nv5.com

EDUCATION
BS, GIS, Slippery Rock University, Slippery Rock, PA

EXPERIENCE
8 Years

ELIZABETH DREIMILLER

Information Technology

Ms. Dreimiller is a technical Operations Manager with over 8 years of experience across the geospatial, self-driving vehicle, and financial technology industries. My strong early-stage process development skills, experience with strategic planning, and expertise with applying Atlassian based tools in an Agile setting allow me to create robust quality practices and help technical teams and programs achieve their objectives

Relevant Project Experience

LOS ANGELES COUNTY STORM WATER QUALITY IT DIVISION AND GIS TEAM
LOS ANGELES COUNTY | LOS ANGELES, CA
Led cross-functional collaboration with the LA County's Storm Water Quality Team, Information Technology Division and GIS team to evaluate requirements and help design a unified platform, tailored for decision-makers that optimizes access to information for the client.

AXIM GEOSPATIAL
PITTSBURGH, PA
Architected an internal pipeline process study where I worked with stakeholders across the company including Sales, Finance, IT and Project Management to document their perspective, discuss their pain-points, find common-ground, and generate actionable suggestions for improvement on an executive level. Proposed a serious of standard operating procedures and tooling recommendations to improve the scaling and operations of their geospatial-based project management process. Directly managed budgets, schedules, and scope for over 10 client-facing projects, and worked with clients closely to understand their needs in future initiatives. Project scopes included data management initiatives including Cloud Services: Architecture, Migration and managed services, and Esri ArcGIS Utility Network configuration and implementation. Managed a program portfolio consisting of 2 Project Managers with a total project value of over $8 million focused on Lidar. and Imagery initiatives for state and local transportation departments, and telecom service clients.

SHARP SHIELD MANAGEMENT LLC
PITTSBURGH, PA
Drove the logistics of planning for the fundraising for grass-roots, private, alternative investment fund and management company with over $5 million private equity raised, reaching the firm's target . Participated in high-pressure sales and pitching environments, acting as the technical and day-to-day operations expert where I answered potential client questions and help them feel at ease with their potential investment. Drove external service-provider interactions, including holding interviews, requirement suitability analysis, developing and executing onboarding timelines, working with internal stakeholders to provide necessary documentation. Partnership increased transparency for the firm's stakeholders and moved the firm launch date up by 2 months. Researched and outlined requirements for state and SEC registration compliance. Partnered with CTO and CEO to write the company's Cybersecurity Policy, Business Continuity Plans, Risk Assessments, and Form ADV. Worked with external council to customize documents to fit firm's specific needs to technically describe the trading process. Transformed ambiguous software goals and software scope into a cohesive and complete storyline for non-technical leaning audiences, which contributed to the firm gaining 15+ clients. Created marketing material utilizing Tableau, Google Suite, and Excel which were used in over 30 executive meetings.

SUBCONSULTANTS

The NV5 Team has selected a team of specialty subconsultants to assist with performing the scope of work. We are committed to partnering with Community Business Enterprise (CBE) organizations, while also delivering flexible and quality services. Therefore, we have added 3 firms that are CBE certified: Multi W Systems, United Storm Water, and US3.

C BELOW SUBSURFACE IMAGING (C BELOW) locates horizontal and vertical locations of underground utilities including gas, power, waste, communications, and cable/TV. Many different methods are used to locate these utilities; GPR (ground penetrating radar), CCTV, utility locators, electromagnetic locators, and potholing. C Below has been in the utility locating business for fourteen years (Founded in 2009) and employs the most experienced technicians in the industry, some with over twelve years of experience.

MULTI W SYSTEMS, INC. (MULTI W SYSTEMS) is a full service pump company that designs, packages, sells and services pump and control systems in house. They have a UL Listed Panel shop with in-house PLC programmers. Multi W Systems have access to a wide range of Pump manufacturers through direct distribution as a contracted distributor/manufacturer's rep, and also through OEM accounts we hold. Multi W Systems have a service group with the capability to troubleshoot, replace and retrofit pump stations.

TESCO CONTROLS (TESCO) is a full-service, Level One CSIA-Certified Systems Integrator and OEM with 53 years of experience specializing in the design and implementation of control solutions required to automate water/wastewater and stormwater treatment systems and related processes throughout the U.S. During this time, TESCO's focus has been involved with the design and implementation of PLC, SCADA, telemetry, and computer integrated control systems, many of which have been in operation for more than twenty-five years.

UNITED STORM WATER, INC. (UNITED STORM WATER) is experienced in storm water maintenance, and BMP fabrication and installation. United Storm Water has successfully provided these services to numerous public agencies throughout California for 24 years. They have a long standing business relationship with the County of Los Angeles, County approved BMP devices, as well as a stellar reputation among its Engineering and Public Works officials.

UTILITY SYSTEMS SCIENCE & SOFTWARE, INC. (US3) apply advanced instrumentation system technology to water/wastewater monitoring & control systems, pipeline evaluation, engineering, and data analysis. US3's industrial hardware & software solutions address production operations, performance, utility intelligence, operations management, and collaboration. US3 is one of the leading sewer flow monitoring companies in the United States. With over a decade of specialization in wastewater management, US3 offers a comprehensive suite of services that includes but is not limited to Sewer and Open Channel Flow Monitoring, Level Monitoring, SSO/CSO Monitoring, and Wastewater Quality Assessment.

ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM (ELAP) CERTIFIED LABORATORIES

APPLIED MICROBIOLOGICAL SERVICES (AMS) located in Long Beach, CA and meeting the analytical testing needs of Southern California for more than three decades. AMS has been both responsive and flexible in providing testing for various studies including local CIMP and Public Works projects. These include marine and fresh water sample analysis requested from both regulatory and private clients. AMS satisfies the requirements of a small business enterprise, and is currently self-certified as both a small and minority business.

EUROFINS ENVIRONMENT TESTING SOUTHWEST, LLC. (EUROFINS CALSCIENCE) is the largest full-service environmental testing laboratory on the West Coast offering a comprehensive portfolio of analytical methods for the testing of air, wastewater, groundwater, sea water, sediment, soil, and tissue. Eurofins Calscience built their reputation on service and quality, consistently delivering on-time legally defensible results, and offering rush turn-around time that clients have come to rely upon. They employ a staff of nearly 150 professionals, including chemists, technicians, project managers, and engineers. Eurofins Calscience holds numerous state certifications and approvals and is certified under the National Environmental Laboratory Accreditation Program (NELAP) (Oregon Health Authority, Public Health Division), Environmental Laboratory Accreditation Program (ELAP), and California State Water Resource Control Board.

RICE GENERAL (RICE) is a leading Southern California environmental construction company with over 40 years of experience in commercial and industrial projects. They specialize in a wide range of services, including facility and system demolition, excavation, concrete cutting, and the installation of soil vapor extraction and groundwater recovery systems. Rice has a proven track record working with a variety of industries, from petrochemical facilities to aerospace, military installations, and private industrial sectors. Their strong commitment to safety, certified staff, and focus on meticulous planning and budget management make them a trusted partner for complex environmental construction projects. Additionally, Rice is certified as a Small Business Enterprise (SBE) and brings a solid history of collaborating with engineering and construction firms across the region.

Innovative Construction Solutions (ICS) , founded in 1999, is a premier environmental construction company specializing in remediation, water and wastewater infrastructure, and environmental restoration projects across California. ICS holds a Class A general engineering contractor's license with certifications in hazardous substances removal, demolition, and electrical work. Their unique integration of technical engineering expertise with hands-on construction management allows them to self-perform most tasks, ensuring greater control over project schedules and quality. ICS delivers a wide range of services, including contaminated soil remediation, groundwater treatment systems, stormwater capture, and wastewater treatment system upgrades. Their commitment to addressing environmental challenges makes them a trusted partner for complex infrastructure projects.

Community Business Enterprise (CBE) Teaming Partners

Subconsultant	Services to be Provided	DIR Registration No.	Certifications
Multi W Systems, Inc. (Multi W Systems)	Pump Systems	1000844390	State of California DGS SBE
United Stormwater, Inc. (United Storm Water)	Structural BMPs	1000012438	City of LA MBE
Utility Systems Science & Software, Inc. (US^3)	Telemetry and SCADA System Implementaiton and Control	1000014022	City of LA MBE

C. APPROACH & UNDERSTANDING

SCOPE OF SERVICES

NV5 understands the services to be rendered on an on-call basis shall include all services and provisions as described herein, and shall consist of all services customarily rendered when providing On-Call Engineering Operation and Maintenance, Water Quality Monitoring and Assessment, and Best Management Practices (BMP) Optimization Services.

NV5 has the proven expertise to successfully execute all aspects fo this program and our key peronnel have significant experience with O&M, stormwater program support, water resources related engineering services, and education outreach.

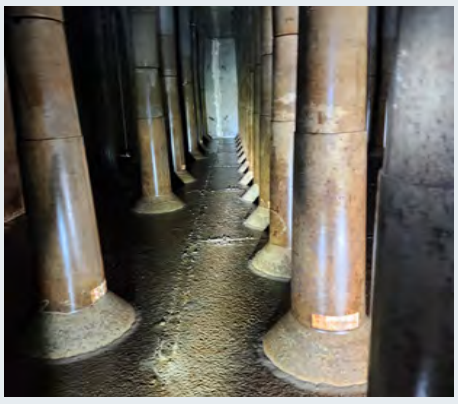
Descriptions of our methodology for project execution and providing any of the services identified in the RFP are provided below:

EXPERTISE IN OPERATION AND MAINTENANCE OF BMP DEVICES AND STORMWATER QUALITY SYSTEMS

NV5 designed and manufactured a special tool to remove, secure and replace the gate shaft access lid (approx. 500 lbs each) so that proper access could occur.

NV5 has extensive experience with the O&M of stormwater Best Management Practice (BMP) devices and stormwater quality systems, essential for the GWMA projects. As the Prime Contractor for the Gates Canyon Stormwater Capture and Use System in Calabasas, CA, we have successfully overseen the transition of services to Public Works. Our work includes comprehensive reviews of service manuals, development of training content, and refinements to O&M procedures. The Gates Canyon facility, which incorporates a stormwater diversion system, motor-operated slide gates, a pre-treatment system, underground cisterns, ozone and UV disinfection, and infiltration wells, is a prime example of our capability. NV5 provides monitoring and O&M services to assure these systems meet their design objectives and operate safely.

In addition to site-specific services such as site training, safety inspections, and system maintenance, NV5 has performed BMP feasibility studies, installation, maintenance, and monitoring for various clients, including airports and industrial facilities in Los Angeles County. These projects, which address Total Maximum Daily Load (TMDL) requirements, demonstrate our ability to handle complex stormwater treatment systems with components like media filters, active treatment systems, and flow monitoring. Our training programs have educated over 100 clients on BMP maintenance and compliance, highlighting the necessity of ongoing maintenance for optimal system performance.



Service of Gates Canyon Underground Cistern

KNOWLEDGE OF DEVELOPMENT AND OPERATION OF TELEMETRY AND SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEMS ASSOCIATED WITH STORMWATER SYSTEMS

NV5 has partnered with industry leaders such as MultiWSystems, USCubed, and TESCP to deliver state-of-the-art SCADA system integration and maintenance for stormwater systems. Our electrical and mechanical engineers bring extensive experience in remote telemetry and SCADA systems, ensuring seamless integration and operation. For example, NV5 supported Orange County Public Works in implementing the Smart Watershed Network, a project that included site reconnaissance, installation, and maintenance of 60 flow monitoring stations across the Aliso Creek Watershed. This project exemplifies our ability to manage large-scale deployments of telemetered flow meters and integrate them with advanced monitoring networks.

Sampling the LAX Imperial Stormwater Basin for the NCOS Connection Stormwater Permit Application.

We also specialize in the design, installation, and maintenance of advanced flow monitoring systems, using technologies from Hach/Sigma and Teledyne/Isco. These systems are critical for accurate water quality monitoring and data collection, ensuring that stormwater systems operate within the specified parameters. NV5's ability to calibrate and maintain these systems guarantees reliable data for ongoing management.

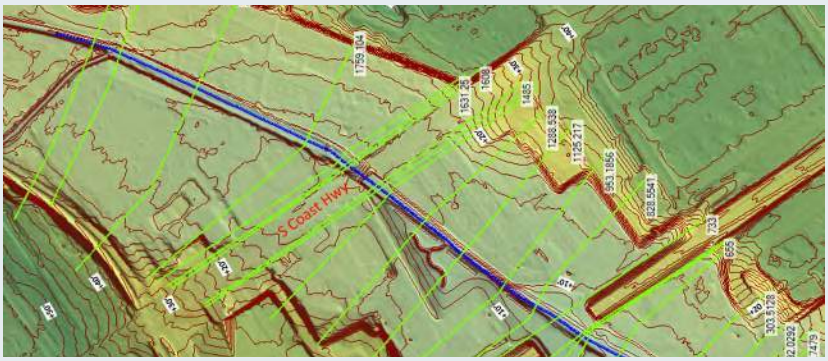
EXPERTISE IN WATER QUALITY, CHEMISTRY, MICROBIOLOGY, TOXICOLOGY, ZOOLOGY, BOTANY, WATER RESOURCES, AND ENVIRONMENTAL ENGINEERING

NV5 has a proven track record in implementing projects related to water quality, chemistry, microbiology, toxicology, zoology, botany, water resources, and environmental engineering. We collaborate with ELAP-certified laboratories to confirm compliance with NPDES permits and TMDL requirements. Our long-standing relationships with these labs allow us to offer specialized testing and certification services, including those required for non-potable water systems.

Our staff have authored numerous Sampling and Analysis Plans (SAPs) and Quality Assurance Project Plans (QAPPs) that meet Surface Water Quality Ambient Monitoring Program (SWAMP) standards. These plans are essential for ensuring data quality in monitoring programs across Los Angeles County. NV5's expertise in data quality assurance makes us an ideal partner for GWMA's water quality monitoring and reporting needs.

EXPERTISE IN WATER QUALITY SAMPLING, LABORATORY ANALYSIS, COMPUTER MODELING, DATA ANALYSIS, ENVIRONMENTAL PLANNING, EVALUATING STORMWATER BMPS, AND GEOGRAPHIC INFORMATION SYSTEM (GIS)

NV5's comprehensive experience in water quality sampling, laboratory analysis, computer modeling, and GIS allows us to meet GWMA's needs for monitoring, data management, and reporting. Our team has conducted extensive monitoring across Southern California, from inland watersheds to the Pacific Ocean, providing the data needed to optimize BMP performance.



NV5 has extensive experience in hydrologic and hydraulic computer modeling and is very familiar with the County's Hydrology and Sedimentation Manual and Hydraulic Design Manual. The NV5 team is skilled in the following hydrology and hydraulic computer models: HydroCalc (MODRAT), HEC-HMS, WSPG, HEC-RAS (1D & 2D), HEC-FDA, RMA2, RMA4, SED2D, SWMM (1D & 2D), FLO-2D, SRH-2D, SAM, MODFLOW, HY-8, CivilDesign, AES, Bentley and AutoCAD H&H Software and RUSLE2.

Our GIS capabilities, supported by subsidiaries Axim Geospatial and Quantum Geospatial, are among the best in the industry. These capabilities enable us to manage and analyze large datasets, offering valuable insights into stormwater system performance. NV5's current work on the Stormwater Quality Project Overview Portal for LA County Public Works is a testament to our expertise in integrating GIS with water quality management.

UTILIZE STATE ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM (ELAP) CERTIFIED LABORATORY, WITH PREFERRED PARTICIPATION IN SOUTHERN CALIFORNIA STORMWATER MONITORING COALITION'S (SMC) LABORATORY INTERCALIBRATION PROJECTS

NV5 has incorporated ELAP-certified laboratories into our team, all of which have experience participating in the SMC intercalibration projects. Our Project Manager, Dave Renfrew, was a co-author of the first SMC intercalibration QA Program Manual, ensuring that all laboratories meet the highest data quality standards. We work closely with these labs to align their methodologies with the project's goals and data quality objectives, ensuring that all samples are collected and analyzed to meet or exceed required standards.

WORKING KNOWLEDGE OF FEDERAL AND STATE WATER QUALITY AND ENVIRONMENTAL LAWS, INCLUDING, BUT NOT LIMITED TO, CLEAN WATER ACT, SAFE DRINKING WATER ACT, CALIFORNIA WATER CODE, CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA), AND NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

NV5's environmental and engineering teams possess a deep understanding of Federal and State water quality laws, including the Clean Water Act, Safe Drinking Water Act, California Water Code, CEQA, and NEPA. Our expertise allows us to design and maintain BMPs in compliance with these regulations, while also achieving multi-benefit objectives that score highly under programs like the Safe Clean Water Program.

SOUND KNOWLEDGE OF MONITORING REQUIREMENTS FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS, MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMITS, WASTE DISCHARGE REQUIREMENTS (WDRS), TOTAL MAXIMUM DAILY LOADS (TMDLS), 404 PERMITS, AND 401 CERTIFICATIONS IN LOS ANGELES COUNTY

NV5's team includes experts with extensive experience in meeting the monitoring requirements for NPDES, MS4, WDRs, TMDLs, 404 Permits, and 401 Certifications within Los Angeles County. Our professionals are seasoned veterans in Southern California, with a deep understanding of local regulatory frameworks and a proven ability to navigate complex compliance challenges.

Our environmental planning services includes, but is not limited to, providing legal defense and strategic support for municipalities, industrial clients, and construction projects, ensuring that all activities meet regulatory requirements. NV5's track record in Los Angeles County's regulatory environment makes us a valuable partner for GWMA and its member agencies.

- Biological Investigations
- CEQA Compliance; Initial Studies, Negative Declaration, Mitigated Negative Declaration, and Environmental Impact Report Preparation
- NEPA CEs, EAs, and EISs Consultation and Preparation
- Endangered Species Protocol Surveys
- Environmental Protection Agency (EPA) and State Data Validation and Verification and Quality Assurance
- Environmental Reports, and Environmental Information Documents
- Feasibility Studies, Alternatives Modeling, Section 4(f) Evaluations

Underground service cleaning and inspection of Level loggers at Gates Canyon Project

APPROACH & UNDERSTANDING

The team will be lea by Project Manager, David Renfrew, who will verify client needs are met, resolve any issues, and make sure that the team has all the necessary resources to guarantee project success. Mr. Renfrew is available 24 hours per day, seven days a week, and will have the ultimate responsibility for project delivery. Mr. Michael Drennan will provide technical support and quality performance reviews and will serve as a Project Principal.

The project team includes environmental professionals who best meet the requirements for performing the scope of work of this RFP. The Project Manager will assign personnel to a project based on the qualifications, expertise, and experience needed for the scope of work and as requested by the GWMA and it's member agencies' technical needs. NV5 will develop a competitive scope, cost, and a schedule for implementing each task order.

NV5 will manage each project in a manner that will preserve and protect the health and safety of its employees, GWMA personnel, the public, and the environment. NV5 maintains an overall Project Management Program (PMP) that guarantees project completion within budget and schedule, and all projects are reviewed at each phase to facilitate their completion in accordance with standard industry principles and regulatory agency requirements. All projects are implemented based on industry standards, engineering judgment and regulatory guidelines, and all work products are peer reviewed for quality assurance. NV5's PMP includes the following functions:

Project Team Assembly | The Project Manager will assemble a project team to complete the project scope, develop a cost-effective and time sensitive proposal based on the scope of work, and submit both a proposal with detailed cost and an MS project schedule.

Subconsultant and Subcontractor Management | The Project Manager will engage each required subconsultant and/or subcontractor (if needed) and provide specific project details including any site restrictions/requirements and will inform each subconsultant/subcontractor of their responsibilities and expectations. The Project Manager, assisted by administrative staff will make sure that:

- Each subconsultant/subcontractor has a current contract with NV5
- Each assigned subconsultant/subcontractor has current insurance and that both NV5 and the GWMA are named additionally insured
- The scope of work is clearly stated and understood by the subconsultant/subcontractor
- Ensuring subconsultants invoices match the agreed upon and approved scope provided to the GWMA member agencies.

Project Implementation | The Project Manager will make sure the project stays within the scope of work, budget, and time frame.

Project Kick-Off Meeting | At the start the project, the Project Manager will conduct a kick-off meeting with the GWMA's Project Team to discuss assignments, scope of work, budget, scheduling, critical paths, deliverables, field work, subcontractor coordination, quality control, and health and safety.

Project Team Coordination and Communication | The assigned staff will be in communication with the Project Manager to make sure that proper protocols are being followed during the life of the project. For example, if interagency or regulatory communications are required, NV5's staff will coordinate with the GWMA's Project Team to make sure the GWMA's legal and regulatory sensitivities are respected. NV5 staff are trained that our role is to serve and to advise the agencies but we do not represent the agencies unless specifically directed.

Data Review and Report Preparation | Project data will be logged at our office, with notes immediately scanned and a PDF file saved to the server. The Project Manager will review all documentation to make sure the information is complete and that data adheres to the required protocol prior to the actual report preparation. Reports are prepared in-house with an executive summary, relevant project dates and timelines, involved key personnel and certifications, data summary and field documentation. Reports are reviewed by a Professional Geologist or Engineer as needed, a senior reviewer,

City of Compton Biological, Bioassessment, and Water Quality Monitoring.

and a technical editor. Following these reviews, a draft report will be submitted to the agencies allowing ample time for the agencies' staff to review and comment on the draft reports prior to finalization.

NV5 uses these organizational steps daily to every project to guarantee technical excellence with attention to detail.

Risk Management | We will address risk management with the following approach throughout the duration of the project:

The NV5 team will approach risk as follows:

- Take the necessary time to identify and assess potential risks
- Be cognizant of the root causes of the risk through our significant experience
- Measure and evaluate risks and prioritize with control measures to reflect this analysis
- Utilize our experience to both mitigate and monitor the risk.

Escalating Issues | NV5 will address all issues at the project level; however, we will elevate issues that are important enough to engage the GWMA's project manager. Internally, David Renfrew, NV5's Project Manager, will work closely with the project team to guarantee smooth internal operations on all projects. As Vice President, David has the authority and resources to make sure issues are addressed in a swift, clear, and transparent manner. Our task leader's approach to escalating issues is to work with the project team to identify collaborative solutions and mitigate issues to make sure all projects are safe, on-time, on-scope, and within budget.

Timely escalation will guarantee that the GWMA's stakeholders are able to facilitate a response with the necessary institutional information. NV5 understands that our authority as a contractor can only solve certain types of problems and that engaging the GWMA's management may be necessary in some cases. During the kick-off meeting and project set-up we identify the critical stakeholder pathways at the GWMA and discuss methods of issue escalation. Expectations are established so there are no surprises or conflicts when, and if, an issue needing escalation arises. Additionally, we get agreement and consensus on critical items such as the GWMA's decisions, deliverable review times, milestones, and GWMA's expectations so that escalated issues can be minimized.

Scope Management Tools and Processes | All projects will be managed locally, by senior level professionals. NV5 will make sure project completion is within budget and schedule. The project will be reviewed at each phase to facilitate the completion in accordance with standard industry principles and regulatory agency requirements. The project is implemented based on industry standards, sound engineering judgment, and regulatory guidelines. Management tools we engage include:

Deltek Vantagepoint | NV5 uses Deltek Vision to track and control projects and task orders, related expenses, to measure overall progress against project budgets, and to generate billing invoices. It provides visibility for NV5 project managers, senior management, and clients on the financial performance of each task order in the system.

NV5 Employee Portal | NV5 has developed a proprietary employee portal website (internal, password protected) to provide visibility for all NV5 employees to information about their employee performance, workload balancing, current proposals and projects, and team and company-wide messaging and strategic marketing initiatives. The employee portal also provides easy access to document templates, human resources information, and a company directory.

Client Portal | NV5's client portal allows for the seamless and secure transfer of large of data providing easy, timely, and stress-free document management.

We have assembled a team comprised of seasoned professionals to manage assigned tasks. NV5's management group meets weekly to review staff and resource allocations. Any known resource needs are shared in the meeting and proactively managed by the senior management team. As needs arise, the team works closely to make sure that adequate resources exist to provide quality service to our clients.

OPERATION AND MAINTENANCE (O&M)

NV5 has extensive experience with structural and non-structural best management practices (BMPs) which are often implemented to help improve water quality, and/or mitigate downstream impacts. Structural BMPs include, but are not limited to, regional stormwater capture and treatment systems, trash capture devices, low-flow diversions, dry wells, various on-site low impact development practices, off-site mitigation measures, sediment removal/mitigation practices, and green streets. Non-structural BMPs may include institutional controls, such as public outreach and can include ordinances, and policies. The assessment of the effectiveness and optimization of these BMPs requires sound operation, maintenance, and monitoring and possibly implementing reasonable updates when needed. Further, BMP-related grant agreements often require monitoring. To this end, the NV5 team has demonstrated the following:

NV5 has the direct capability to operate and maintain structural BMPS, including but not limited to regional stormwater capture and treatment systems, trash capture devices, low-flow diversions, dry wells, various on-site low impact development practices, off-site mitigation measures, sediment removal/mitigation practices, and green streets.

Our explicit experience has been unequivocally demonstrated on the Gates Canyon Stormwater Capture and Use System and the LA World AirportsLAX and VNY Airports BMP O&M projects. Our approach is based on the importance of operating to the highest safe work practices while improving water quality. Many of these BMP locations are located in parks or areas with high potential for public interactions and public safety concerns. Coordinating with GWMA's member agencies and our Subcontractors is key to the planning and implementation efforts to make sure the scope is executed properly. As an example, Vactor Service trucks often have limited capabilities with regards to vacuum reaches and hose limitations in wet environments such as those encountered when working on pre-treatment devices including trash screens and sediment chambers that may have overlying water and persistent dry weather flows. It is important to manage the inflow and have work around solutions to limit the inflow of water when performing the vactor service. NV5 uses a variety of pump systems, pneumatic plugs, and training of the service staff to make sure the goals of the maintenance are accomplished as desired. Our team has prepared training diagrams for site specific operations of Oldcastle Nutrient Separating Baffle Boxes to perform the trash rack cleanouts, the sediment settling chamber services, and the replacement of the hydrocarbon/ oil sorbent booms. These training diagrams greatly assist staff in completing services they may need to complete.

Another factor important for performing service operations include storage volumes and factors for discharge to infiltration wells. Regarding the Gates Canyon Project, having the awareness that the cistern takes three days of continuous pumping to reach a dry state for safe access, service, and inspection is key to planning and scheduling. Once the discharge of the Cistern begins, the infiltration wells levels increase and are monitored. This provides an opportunity to verify level loggers are being read accurately and if any calibrations are needed. NV5 has performed level logger inspection, cleaning, and calibration service in the infiltration wells and cistern to guarantee accurate reading are achieved. NV5 uses Solinst water level tapes to accurately read the water level in each well to the depth of the well to top of casing to record the sediment accumulation depth and the water levels. Reading the well levels over time allows for assessment of hydrologic conditions and assessment of the effectiveness of the infiltration rates.

Training by Pureflow at the Gates Canyon water treatment facility with Public Works and NV5 Staff.

In many instances, most features of a stormwater BMP project are located underground and consist of devices that require the use of confined space entry and fall protection equipment. Only confined space certified staff are legally allowed to perform these services. NV5 utilizes a complete confined space setup that includes duplicative continuous 4-gas monitoring meters (oxygen, LEL, hydrogen sulfide, and carbon monoxide) both above ground (in space) (Eagle) and personal meters (RKI Entry RAE) for the entrant. Once the space is monitored and determined safe for entry, the space is continuously ventilated as needed, staff use fall protection harnesses including tripod, winches, and reserve escape air are allowed to enter the space for work for inspection or service. Wherever possible, NV5 uses GoPro Technology to inspect and document underground conditions to limit risk to staff and to provide the potential of reduced costs by providing a visual inspection of the state of the infrastructure to allow for the GWMA's PMs to make informed service scheduling decisions in real time, as needed.

When considering the O&M of these projects, it is of importance to consider traffic safety, confined space operations, fall protection, waste discharge concerns, leaks, spills, and potential water discharges generated by the O&M operations, lock out tagout procedures for both electrical and mechanical service, and concerns to make sure manholes are never left unattended and are secured at the end of each work shift. We prepare site specific Health and Safety Manuals and require all staff and team subcontractors to sign off on the requirements specified in the Health and Safety Manuals for the project. We also instruct all staff to document the condition of each project site prior to departing each day to make sure the area is safe and clean for the public to enjoy.

Project work commences with the field team leader conducting a daily safety tailgate meeting with all staff, subcontractors, and any additional staff attending the work effort, including GWMA staff. A review of site hazards, site concerns, and communications lines and contacts are well understood and signed off on before work commences. Lockout tag out of devices such as the pump well or mechanically operated sluice gate may be required. Once those operations are conducted, work commences and proceeds per standard operating conditions.

Ability to operate and maintain above-ground landscaping and recreational components associated with multi-benefit stormwater quality projects, including but not limited to walking paths, benches and tables, and exercise equipment.

NV5 has a team of landscape architects and maintenance professionals who design and maintain stormwater capture, green infrastructure, parks and native vegetation. We also routinely partner with more traditional landscape contractors to assure park amenities such as benches, tables, exercise equipment and hardscape are maintained. We have teamed with Oakridge Landscape for this proposal because of their local presence and experience in the Los Angeles region and because they are one of our trusted partners. We have also included Stover Seed on our team because of their understanding of how to maintain native plants but also their sophisticated experience with obtaining local native seeds in the Los Angeles Gateway Region.

In-depth knowledge of BMPS and innovative technologies commonly used for water quality treatment and/or downstream hydromodification impact mitigation. Such technologies will include complex water harvesting treatment systems, including but not limited to ozone, ultraviolet, and flocculation systems.

NV5 has included MultiWSystems to provide in depth operations and maintenance service of water quality treatment systems, as needed. Multi W Systems provides pump maintenance and SCADA system maintenance and has direct experience working with the Los Angeles Gateway Region.

Example of Lock out tagout procedure for the Pump Well service.

The NV5 team is well informed on the water quality standards and monitoring requirements by the Los Angeles County Department Of Public Health (DPH). The DPH, Environmental Health Division (EH) prepared the guidelines for alternate water sources: indoor and outdoor non-potable uses document, as a guide for the safe use of alternate water sources in indoor and outdoor settings. The guidelines provide a roadmap for alternate water use; however, it points out that it is ultimately the responsibility of the system owner and operator to guarantee that non-potable water sources are used appropriately and monitored for safety throughout the life of the project. The guidelines are divided into two sections; indoor use and outdoor use of alternate water sources. Under each of these two sections, the four alternate water sources are discussed: rainwater, graywater, stormwater, and recycled water. Each of these alternate water sources is represented in terms of a "Tier." Tier 1 represents rainwater; Tier 2, graywater; Tier 3, stormwater; and Tier 4, recycled water. Each tier has specific guidelines and requirements. NV5 has assisted clients with determining which tier is applicable and the monitoring requirements and permit applications needed to demonstrate the project is safe for operations for both the public and worker safety. Such as the Tier 3 outdoor use of stormwater for spray irrigation requires NSF 350 standard systems, if sprayed, or CCR title 22 recycled water quality equivalence at the point of use and meets all bacterial limits at point of use when distributed offsite and meets california maximum contamination levels, and the california toxics rule standards. The treatment process for packaged units specifies design build units shall be NSF 350 certified as a complete system. The monitoring requirements specify stormwater influent shall be tested to characterize chemical components after the first rain event of the rain fall year and at least two additional times during each rain fall year. Summary of stormwater analyses shall be maintained on premises, and annual reporting of final water quality. Additional permit requirements are also specified and NV5 has the experience and expertise to permit these systems.

Experience with developing and conducting monitoring programs for structural BMP effectiveness assessment, including pre-construction and post-construction monitoring programs.

NV5 conducted a Drain Inlet Pilot BMP study to assess load reductions at various airport land use settings. Following successful inlet filter media assessments, NV5 installed Best Management Practices (BMPs) drain inlet filters at 55 priority drain inlets in the Dominguez Drainage Area and LAWA Maintenance Yard to meet Industrial General Permit (IGP) requirements with specific deadlines in 2032. The Dominguez Drainage Area posed the highest threat to water quality at LAX, with elevated concentrations of copper, aluminum, and zinc. NV5 also implemented filter wattles and drop inlet filters at VNY Airport for IGP compliance, showcasing BMP usage in representative drainages. In conjunction with LAX's Stormwater Capture and Use BMPs, NV5 supported LAWA in demonstrating stormwater capture, compliance, and resiliency pathways. NV5 conducted over 125 annual tenant inspections, offering targeted training emphasizing the link between tenant BMP source controls and LAWA's IGP obligations.

Experience with grant-funded BMP projects and their monitoring requirements.

NV5 is familiar with grant funded O&M project support. For instance, Safe Clean Water O&M funding can be requested with the initial project application or applied for separately, for a period of 5 year increments and includes the annual O&M costs and annual monitoring. For Proposition 1 funded projects, O&M and monitoring is a requirement of receiving the funds for a period of 20 years, the lifetime of the project for it to be functioning as intended, to be funded by the grantee. Reporting including monitoring is required to be completed on an annual basis.

As an example, NV5 supported the City of Vista with their green street project, including BMP effectiveness monitoring, grant reporting requirements, and meeting grant deadlines.

SCADA SYSTEM IMPLEMENTATION AND OVERSIGHT

NV5 has over 15 years' experience with iFIX, which is a Human-Machine Interface (HMI) and Supervisory Control and Data Acquisition (SCADA) software platform developed by GE Digital for industrial automation and control systems. It allows operators and engineers to monitor and control various processes and equipment in real-time. Outlined below is a technical approach to working with iFIX HMI:

- **System Requirements:** NV5 will guarantee that the system computers and servers meet the hardware and software requirements specified by iFIX. This includes the operating system version, RAM, processor, and disk space.
- **Installation:** NV5 will install and maintain the iFIX software on system designated server or computer. Follow the installation instructions provided by GE Digital.
- **Licensing:** NV5 will acquire the necessary licenses for iFIX based system project's requirements. Ifix typically requires licenses for the number of clients, tags, and drivers you plan to use.
- **Database Configuration:** NV5 will provide the setup of the database server, including the historical database for data storage and reporting. iFIX supports various database systems like Microsoft SQL Server, Oracle, and PostgreSQL.
- **Project Configuration:** NV5 will install and maintain the iFIX project or open an existing one. This includes the project design HMI screens, configure data sources, alarms, trends, and security settings.
- **HMI Screen Design:** NV5 will design and maintain the HMI screens using the iFIX WorkSpace. NV5 will create graphical displays, control elements (buttons, switches, sliders), and data displays (trends, alarms, data grids) to visualize and control the industrial processes.
- **Data Sources:** NV5 will install, maintain and configure the data sources to connect to industrial devices, PLCs, or data sources. iFIX supports various communication protocols, including OPC, Modbus, and DDE, to gather real-time data.
- **Alarms and Events:** NV5 will install, maintain and configure alarm and event management in iFIX to monitor critical conditions and generate notifications or responses when alarms are triggered.
- **Trends and Historical Data:** NV5 will install, maintain and configure trends to visualize historical data trends over time. iFIX stores historical data in the database for analysis and reporting.
- **Security:** NV5 will install, maintain and configure security measures to control user access and permissions. iFIX supports user authentication and authorization to make sure that only authorized personnel can access and modify the system.
- **Testing and Debugging:** NV5 will thoroughly test the iFIX project to make sure that HMI screens, data sources, alarms, and events work as intended. Use the debugging tools provided by iFIX to troubleshoot any issues.
- **Deployment:** NV5 will deploy the iFIX project to the target HMI devices or client computers. Make sure that the necessary runtime licenses are available for each client.
- **Monitoring and Maintenance:** NV5 will continuously monitor the iFIX system for performance, alarms, and data quality. Implement a maintenance plan to keep the system up to date and secure.
- **Training:** NV5 will provide training to operators and engineers who will be using iFIX to make sure they are proficient in operating and maintaining the system.
- **Documentation:** NV5 will provide and maintain thorough documentation of the iFIX project, including system architecture, configuration settings, and procedures for troubleshooting and maintenance.

This technical approach proposal prioritizes the seamless maintenance and integration of SCCADA systems within the regional projects' wider network, ensuring continuous functionality and reliability. Accompanying the proposal is an illustrative graphic, showcasing an optimized maintenance process, and a caption highlighting the substantial benefits in terms of improved system stability and reduced downtime for the client.

ENGINEERING & TECHNICAL SERVICES

NV5 understands that the GWMA requires comprehensive engineering and technical services to support the operation, optimization, and ongoing maintenance of regional stormwater capture and treatment projects. Our approach is grounded in an understanding of the engineering challenges and technical requirements associated with stormwater infrastructure. This includes the design, evaluation, and technical support necessary to meet regulatory requirements while ensuring systems operate efficiently and sustainably over time.

- **Tailored Engineering Solutions:** Our team will conduct a thorough assessment of each stormwater capture and treatment system to identify specific operational challenges and optimization opportunities. By leveraging our extensive experience in designing and implementing stormwater infrastructure across Southern California, we tailor our recommendations to the unique conditions of each project site, including hydrologic, geotechnical, and environmental factors. Whether the task involves system modifications, upgrading treatment technologies, or integrating new data systems, NV5 is equipped to deliver innovative, cost-effective solutions.
- **System Evaluation and Optimization:** NV5's technical services extend beyond routine maintenance, with a focus on evaluating the long-term performance of stormwater systems. Using advanced modeling tools such as hydraulic modeling and water quality simulations, we predict system behavior under various operational and climatic conditions. This allows us to implement enhancements that maximize efficiency and extend the life of infrastructure. Our services include:
  - Performance assessments of BMPs and treatment systems.
  - Engineering evaluations to identify areas for optimization and upgrades.
  - Analysis of stormwater inflows and treatment outputs to for compliance with TMDL and other regulatory requirements.
- **Project Design and Implementation Support:** NV5 provides engineering design services for new projects as well as modifications to existing infrastructure. Our design team works closely with GWMA's member agencies to develop project plans that meet current regulatory requirements and industry best practices. Our process includes:
  - Site investigations to assess current infrastructure conditions.
  - Preparation of technical design documents, including engineering drawings, specifications, and cost estimates.
  - Collaboration with regulatory agencies to provide compliance with local, state, and federal standards.
  - Development of construction plans for system repairs, modifications, or new installations.
- **Technical Support for Ongoing Operations:** In addition to design services, NV5 provides technical support during the operation and maintenance of stormwater systems. This includes troubleshooting complex mechanical systems such as pumps, valves, filtration units, and advanced treatment technologies. Our team will confirm all technical components are functioning optimally through regular monitoring, maintenance, and system adjustments as needed.
- **Integration of SCADA and Telemetry Systems:** NV5 recognizes the critical role of SCADA systems in stormwater management. Partnering with TESCO, experts in networking, telemetry, SCADA, and PLC engineering, we deliver seamless integration with existing infrastructure. TESCO enables comprehensive solutions for real-time monitoring, system control, and data management, enhancing GWMA's visibility and management of stormwater systems.
- **Key Team Members and Expertise:**
  - Matt Moore, PE, QSD, ENV SP (NV5) will serve as the Task Lead for Engineering & Technical Services, overseeing all aspects of stormwater treatment system design and operations.
  - Julian Palacios, PE, and James Owens, PE (NV5) will assist Matt in delivering treatment system services and other scope requirements, bringing expertise in water resources engineering and system optimization.
  - TESCO will lead the SCADA and telemetry system integration, providing industry-leading engineering solutions for real-time system management and data collection.

NV5's engineering and technical services are designed to provide GWMA with top expertise in stormwater management. By leveraging our team's experience, specialized support from subcontractors like TESCO, and our collaborative approach, we are confident in optimizing the operation, maintenance, and monitoring of regional stormwater capture and treatment projects. This approach promotes compliance with regulatory standards and enhances the long-term sustainability of stormwater systems.

CONSTRUCTION/REPAIR

NV5 understands that the successful execution of stormwater infrastructure projects relies on precise construction and repair services that meet both functional and regulatory requirements. We recognize the critical importance of constructing and maintaining stormwater capture, treatment, and conveyance systems that are resilient and capable of long-term performance. Our approach to the Construction/Repair scope of services emphasizes technical precision, safety, and compliance with all relevant regulations.

- **Tailored Construction and Repair Solutions:** NV5 provides comprehensive construction and repair services for stormwater projects, including the installation, repair, and optimization of BMPs and stormwater infrastructure. We will tailor each solution to the specific needs of the project to meet all structural, environmental, and operational standards. This approach includes rigorous pre-construction planning, site assessments, and ongoing quality control throughout the project lifecycle.
- **Key Subcontractors and Expertise:** To deliver high-quality construction and repair services, NV5 has partnered with Innovative Construction Solutions and Rice General, Inc., both of whom have proven expertise in stormwater infrastructure construction and repair. These subcontractors bring specialized experience in heavy construction, structural repair, and civil works related to stormwater projects. Their involvement supports the execution of all construction tasks with a high degree of professionalism, technical competence, and safety.
- **Project Leadership and Team Expertise:** Jeff Rex, QSD/QSP, QISP, CPESC, LEED AP, ENV SP (NV5) will serve as the Task Lead for Construction/Repair. With a strong background in stormwater infrastructure and compliance, Jeff will oversee all aspects of construction and repair activities. He will be supported by experienced NV5 staff and our trusted subcontractors, Innovative Construction Solutions and Rice General, Inc., to deliver high-quality, efficient project execution.
- **Construction Oversight:** Our construction process includes robust oversight and quality control measures to guarantee that all work is completed on time, within budget, and to the highest standards. The NV5 team will provide detailed construction planning, scheduling, and coordination with subcontractors to promote seamless execution. Our quality control process includes:
  - Pre-construction assessments and site preparation.
  - Continuous monitoring and inspections during construction.
  - Post-construction evaluations.
- **Safety and Environmental Compliance:** Safety is a top priority for NV5 during all construction and repair activities. We will develop and implement comprehensive health and safety plans for each project, making certain that all team members and subcontractors adhere to strict safety protocols. In addition, we will maintain full compliance with environmental regulations, including stormwater pollution prevention plans (SWPPPs), erosion control measures, and sediment management best practices.

NV5's approach to the Construction/Repair scope of services combines technical expertise, experienced leadership, and collaboration with highly qualified subcontractors such as Innovative Construction Solutions and Rice General, Inc. By leveraging our team's extensive background in stormwater management and construction, we are confident in delivering high-quality, resilient stormwater infrastructure that aligns with GWMA's goals and regulatory requirements.

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Los Angeles Gateway Region
Integrated Regional Water Management
Joint Powers Authority

October 10, 2024

AGENDA ITEM 8 – GWMA Website Modernization

SUMMARY

GWMA's website has become increasingly important as a resource for information related to water and watershed-related activities. The original website was created in 2016 and has not been updated since that time. GWMA staff is recommending the selection of a professional website firm to modernize and update the website with more user-friendly accessibility, management and security.

DISCUSSION

In April of this year, the Board approved its FY 2024-2025 Operating Budget which included an amount of $16,000 to redesign the website and continue its hosting services. Since then, staff has reached out to several cities and public agencies for Website design recommendations.

In accordance with GWMA's Policy on Purchasing Goods and Services, Section C:

> ***C. SERVICES AND OTHER MISCELLANEOUS ACTIVITIES (Services that do not include maintenance and operations)***
>
> 1. *Chair may authorize a Service contract of less than $10,000. For services up to and including $2,500, multiple bids are not required. For services more than $2,500 and up to $10,000, 3 bids are encouraged.*
> 2. *Procurement of Services above $10,000 are subject to a Bidding process which requires at least (3) three written bids. GWMA Board approval is required for selection of the lowest responsive and responsible service provider. In determining the lowest responsive and responsible bidder, the following will be considered:*
>
>   a. *Price*
>   b. *Quality of services offered*
>   c. *Ability and capacity to provide services*
>   d. *References*

Staff received 3 proposals and met with each of them to determine which firm would best be suited to GWMA's informational needs, budget, and website maintenance/updates that could easily be handled by staff on an on-going basis.

The three firms are:

- **CV Strategies** - utilizes basic Wordpress tools and applications; basic, general web design cost of $12,000 and $500/yr for website hosting. On-going technical support is on an as-needed basis charged at $100/hr. Does not include inter-active maps and other options suggested by GWMA Staff.
- **Revize** – utilizes proprietary web design tools and applications; basic, general web design and maintenance of $10,390 for first year with additional options for custom modules offered at additional costs; on-going annual maintenance and hosting at $2,300/yr.
- **Commune Communication** – utilizes basic Wordpress tools and applications; general web design/development includes interactive maps and calendar options (suggested by GWMA staff) with a cost of $13,000; $500/month for the first six months after website is launched which includes all maintenance, training, publishing support. Thereafter, hourly charge on an as-needed basis. Does not include website hosting.

It is important to note that the proposals from all three firms were within GWMA's budget. However, after 1) evaluating the proposals according to the criteria as listed in the policy; 2) checking references; 3) meeting with all three firms; 4) reviewing some of their website creations, capabilities, and responsiveness; 5) proposal costs; and 6) post development services including on-going maintenance and training, staff is recommending the selection of Commune Communication.

FISCAL IMPACT

The FY 2024-2025 includes a budget line item of $16,000 for website design and hosting. The proposal from the recommended firm, Commune Communication is within the budgeted amount.

RECOMMENDATION

a. Approve the proposal from Commune Communication.
b. Authorize the Chair to execute an agreement with Commune Communication for website design, and maintenance.

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Los Angeles Gateway Region
Integrated Regional Water Management
Joint Powers Authority

October 10, 2024

AGENDA ITEM 9 – Safe Clean Water Program Regional Pathogen Reduction Study

SUMMARY

On December 15, 2019, Mr. Richard Watson of Richard Watson and Associates, on behalf of the Bacteria Study Coordination Committee, submitted a proposal concept for a regional study to be funded by Safe Clean Water Program (SCWP) Funds. On January 9, 2020, the GWMA Board voted to serve as the lead agency for the regional study. The study was not approved for funding by any of the SCWP Watershed Area Steering Committees (WASCs) the first year it was submitted. Based on general comments, the proposal was revised and submitted three more times and was eventually recommended for funding by all nine (9) WASCs over the course of the next few application years. Once the Board of Supervisors approves the latest Stormwater Investment Plans (SIPs) for Los Angeles County (expected October 2024), funding for the entire regional study in the amount of $8,594,600 will be approved and ready for next steps.

BACKGROUND AND OBJECTIVES

To protect human health, state and federal water quality standards have been established to regulate bacteria concentrations in the County's waterbodies. These standards are based on fecal indicator bacteria (FIB), which are used as proxies for the pathogens that are actually responsible for the illnesses but were historically too difficult to measure using older analytical methods. FIB in stormwater may come from a variety of sources including humans (e.g., sewer line leakage, homeless encampments), animals (e.g., birds, dogs, squirrels, and racoons) and other environmental sources. Because their sources are so ubiquitous, FIB concentrations exceed water quality objectives in runoff from nearly all urban land uses and in waterbodies throughout the County. As a result, eleven (11) total maximum daily loads (TMDLs) for FIB have been adopted in the Los Angeles County MS4 Permit area and FIB impairments have been identified in other waterbodies. The TMDLs and impairment listings span the entire MS4 Permit area and a majority of the beaches and inland surface waters in the Los Angeles region, including all nine SCWP watershed areas.

Driven by the ubiquity and urgency of FIB TMDLs and impairments within the Los Angeles County MS4 Permit area, all 19 Watershed Management Programs and Enhanced Watershed Management Programs (E/WMPs) developed in Los Angeles County have identified attainment of FIB water quality objectives as a top priority and a major focus of stormwater control. To address the bacteria problem within the MS4 Permit area, the

E/WMPs have identified strategies that are largely based on stormwater capture. However, because FIB is so abundant in urban stormwater runoff, these structural control measures would need to be implemented in a vast network spanning the entire Los Angeles County MS4 Permit area in order to adequately provide the necessary protection to human health and meet water quality standards. This approach has been projected to cost over $5 billion dollars and take decades to implement. As such, it is important to identify methods to focus on the highest risk sources of human pathogens and to identify and prioritize Best Management Practices “BMPs) within the urbanized portion of the MS4 Permit area that will result in a greater and more immediate reduction of human health risk.

Recent scientific advancements provide an opportunity to improve the current bacteria strategy to protect human health more quickly and effectively. Novel source-specific indicators (e.g., HF183), improvements in viral detection methods, and recently developed risk modeling frameworks are enabling a targeted, science- and source-based strategy that could lead to a sea change in how pathogen pollution is reduced. These developments have spurred past and ongoing studies in California and nationwide that are being used to modernize management of pathogen pollution. This Study will leverage these recent technological advancements and complement previous and existing work by collecting the site-specific information needed to implement a modernized source- and risk- based strategy in the Los Angeles County MS4 Permit area.

The Study will leverage recent research to produce strategies that prioritize the highest risk sources of human pathogens, protect public health more effectively and efficiently, and can be incorporated into Watershed Management Programs and Enhanced Watershed Management Programs (E/WMPs). Specific technical objectives of the Study include:

1. Determining the sources with the highest risk to human health;
2. Identifying the beaches and inland waterbodies within the MS4 Permit area where the risk to human health is higher so that E/WMPs can target those areas earlier in the implementation process; and,
3. Identifying management actions to address high-risk sources and areas more effectively.

The SCWP staff and their legal counsel have agreed to develop a single Transfer Agreement (TA) for all 9 WASCs instead of 9 separate TAs which will make the administrative support and reporting more efficient for all involved. After the Board of Supervisors approves the FY23-24 Stormwater Investment Plans (SIPs), staff will send a single consolidated transfer agreement for signature. The single Transfer Agreement will be followed by the transfer of $1,483,442.49 (FY21-23, FY22-23, and FY23-24 funding total) to get the study started. Additional funding based on addenda to the Transfer Agreement will be transferred to GWMA in FY24-25, FY25-26, FY26-27, and FY27-28.

In order to proceed with the Study, GWMA must enter into the consolidated Transfer Agreement with the Safe, Clean Water Program and also adopt a resolution to approve and authorize execution of the Agreement. Additionally, staff is requesting authorization to solicit proposals from GWMA's On-Call Consultants pre-qualified for Project Management to manage the project tasks as described below.

Overview of Project Tasks

The Study will collect samples from beaches, rivers, creeks, and channels within the urbanized areas of the participating Watershed Areas identified by the SCWP. Samples will be analyzed for traditional bacterial indicators (i.e., E. coli, Enterococcus, and Fecal Coliform), viruses (e.g., norovirus), and human markers (e.g., HF183) during wet and dry weather. The Study will utilize efforts under the ongoing Coordinated Integrated Monitoring Programs (CIMPs) to efficiently collect samples that are directly applicable to the MS4 Permit area within each participating Watershed Area. The number of samples and constituents collected is expected to follow the methodology used for similar studies conducted in Southern California. However, as outlined below, development of the Study Work Plan will be conducted through a stakeholder-led process with the input of technical experts including academia. The Workplan will be used to solicit qualified persons, schools or firms as recommended by the Stakeholders to conduct the regional scientific study. The entire project is comprised of the following tasks.

Task 1 – Stakeholder Process

Stakeholder engagement is at the forefront of the Study to ensure that diverse viewpoints are incorporated. This task will support engagement, transparency, and communication between the Study Lead (GWMA) and Collaborators (WASCs, Watershed Groups, and municipalities), interested Stakeholders, an independent Technical Advisory Committee (TAC), regulators, academia, and the broader scientific community. The goal of this task is to provide meaningful opportunities for engagement and review of work products throughout the development and implementation of the Study. This will ensure that the Study's findings are accepted and supported and can be effectively applied when identifying and implementing projects to effectively protect human health. Deliverables provided under this task include draft and final versions of a coordination approach document and relevant meeting materials.

Task 2 – Health Risk Assessment

This task will support the assessment of existing health risks to water contact recreators at beaches and inland surface waters in Watershed Areas participating in the study. The goals of this task is to gain an understanding of where risk is elevated using the latest science, identify the potential sources of risk and their magnitude, and identify a target

condition based on pathogens and/or pathogen indicators that will support implementation efforts. This task will involve collection of samples from beaches, rivers, creeks, and channels within the urbanized areas of the participating Watershed Areas during both wet and dry weather. Samples will be analyzed for a range of risk-relevant constituents, the full list of which will be determined in consultation with the TAC and stakeholders to ensure the latest scientific developments and watershed/waterbody specific considerations are incorporated into the study. For example, watersheds with water reclamation plant discharge may require different techniques to differentiate between viable and non-viable pathogens when using polymerase chain reaction (PCR) analytical methods. It is expected that the target constituents will include traditional FIB (E. coli in freshwater / Enterococcus and Fecal Coliform in saltwater), bacterial and viral pathogens, viral indicators of fecal contamination, and bacterial indicators of human-derived fecal contamination. Analytical methods for traditional FIB are likely to be culture based whereas analytical methods for non-traditional indicators and pathogens are likely to primarily be PCR based. Analysis of non-traditional indicators and pathogens using culture- and microscopy-based methods will be considered for incorporation into the study. This task will be guided by and built on information developed by other relevant studies. Additionally, relevant risk assessment or source studies conducted by E/WMP Groups, NGOs, and academic institutions that occur during the implementation of the Study will be considered. The study questions presented in the subtasks below may be revised as part of work plan development.

Task 3 – Risk Management

This task will support the assessment of potential control measures (individually and collectively) that could be implemented to reduce health risk at beaches and inland waterbodies in the urbanized portions of the Watershed Areas participating in the Study. The goal of this task is to understand the effectiveness and cost efficiency of control measures that can be implemented to address the sources of pollution responsible for elevated health risk. This information will be used to develop tools that support evaluation and selection of control measures for implementation within a risk-based planning framework that can be integrated into E/WMPs. This task will be guided by and built on information developed as part of other relevant studies including existing modeling tools used for the development of the E/WMPs, where appropriate. Additionally, relevant studies assessing control measures conducted by E/WMP Groups, NGOs, and academic institutions that occur during the implementation of the Study will be considered.

Task 4 – Application of Study Findings

This task will support the application of the findings of the study. The goal is to translate the results of the Study into meaningful, appropriate, and productive outcomes that will support MS4 Permittees in developing a prioritized implementation approach that effectively reduces human health risks. Deliverables will vary based on the information

needed by MS4 Permittees to make informed decisions that reflect study outcomes and support MS4 Permittees with implementation of new or revised strategies that more effectively reduce pollution and protect human health.

Outcomes

The Study aims to achieve a range of outcomes that will improve protection of human health while maximizing future BMP implementation efficiency and effectiveness. Anticipated outcomes include the following:

- Identification of areas where the risk to human health is higher so that E/WMPs can target those areas earlier in the implementation process.
- Determination of the relative contribution of likely major sources (e.g., pathogens transported via stormwater runoff, illicit discharges) to the overall risk.
- Identification of supplemental measurements that can be used to increase the ability to assess the risks to human health as it relates to recreators and support identification of more effective control measures.
- Evaluation of which control measures are most effective at reducing risk for each significant source, what range of performance can be expected given site-specific conditions, and what normalized cost of risk reduction can be expected.
- Evaluation of how implementation of risk-based water capture and/or treatment strategies can support water quality improvement with the maximum benefit to human health.
- Development of a modeling tool that evaluates the effectiveness of various scenarios (i.e., the number, type, and placement of control measures) designed to reduce risk within the watersheds of interest, which can be used to support adaptive management.
- Fostering development of regional expertise in the use and interpretation of modern microbial detection and risk assessment technologies.

Benefits

By developing a better understanding of the pathogens present in the region's watersheds, the relative risk these pathogens present to human health, and the effectiveness of various control measures at reducing pathogen concentrations and/or loads, new or adapted BMPs can be established that improve water quality and reduce risks posed to human health at our beaches and inland waterbodies in a more effective, efficient, and timely manner. In the immediate term (within two years) this information could be used to protect people from health risks that aren't currently known. In the long term (after three years), the information collected by the scientific study will enable the targeted placement of BMPs in locations where they can maximize the prevention or treatment of key sources of pathogens. This will allow a more efficient allocation of

community investments and ensure that these investments result in the greatest benefit to regional water quality and public health.

FISCAL IMPACT

To date, nominal staff and legal time is being expended to assist in preparing the information for Board consideration, to review/develop the Transfer Agreement and Resolution, and to solicit Requests for Proposals from On-Call Consultants. GWMA's administrative costs and On-Call Consultant to manage the program will be funded from five percent (5%) of the $8,574,600 budget which is allocated for this purpose.

RECOMMENDATION

a. Adopt Resolution No. 24-04 approving the SCWP Transfer Agreement for the Regional Pathogen Reduction Study, authorizing the Chair to execute the agreement pending non-material changes, and authorizing the Executive Officer to take all necessary actions to implement the agreement;

b. Authorize the Executive Officer to request proposals from the On-Call Consultants approved for Project Management to assist staff with project management of Tasks 1 through 4.

RESOLUTION NO. 24-04

A RESOLUTION OF THE LOS ANGELES GATEWAY REGION INTEGRATED REGIONAL WATER MANAGEMENT AUTHORITY BOARD APPROVING THE SAFE, CLEAN WATER PROGRAM REGIONAL PROGRAM TRANSFER AGREEMENT, AUTHORIZING THE BOARD CHAIR TO EXECUTE THE AGREEMENT, AND AUTHORIZING THE EXECUTIVE OFFICER TO TAKE ALL NECESSARY ACTIONS TO IMPLEMENT THE AGREEMENT

THE LOS ANGELES GATEWAY REGION INTEGRATED REGIONAL WATER MANAGEMENT AUTHORITY ("GWMA") BOARD OF DIRECTORS DOES HEREBY RESOLVE:

SECTION 1. The GWMA is the lead agency for the Regional Pathogen Reduction Study (the "Study"). The Study has been selected for inclusion in the Lower San Gabriel River, Lower Los Angeles River, Santa Clara River, Rio Hondo, North Santa Monica Bay, Central Santa Monica South Santa Monica Bay, Upper San Gabriel and Upper Los Angeles River Stormwater Investment Plans ("SIP") under the Safe, Clean Water Program's Regional Scientific Studies Program (the "Program").

SECTION 2. As a condition for receiving funding under the Program, lead agencies must approve and execute a template Transfer Agreement for the Safe, Clean Water Program's Regional Program.

SECTION 3. The GWMA Board hereby approves the Transfer Agreement between the Los Angeles County Flood Control District and the GWMA, attached hereto as Attachment A.

SECTION 5. The GWMA Board hereby authorizes and directs the Chair to execute the attached Transfer Agreement on behalf of the GWMA.

SECTION 6. The GWMA Board hereby authorizes and directs the Executive Officer to take all other actions necessary to implement the attached Transfer Agreement in accordance with this Resolution.

PASSED, APPROVED and ADOPTED by the GWMA Board at a regular meeting held on the 10th day of October, 2024 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

_____
Adriana Figueroa, Chair

ATTEST:

_____
Traci Gleason, Program Administrator

ATTACHMENT A

Transfer Agreement

-DRAFT TEMPLATE-

TRANSFER AGREEMENT BETWEEN THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT AND (*INSERT PROJECT DEVELOPER*) AGREEMENT NO. _____ SAFE, CLEAN WATER PROGRAM – REGIONAL PROGRAM

This Transfer Agreement, hereinafter referred to as "Agreement," is entered into as of _____ by and between the Los Angeles County Flood Control District, hereinafter referred to as "District," and ___(*Project Developer/Scientific Studies Applicant Entity*)____, hereinafter referred to as "Recipient."

WHEREAS, District, pursuant to the Los Angeles Region Safe, Clean Water (SCW) Program ordinance (Chapter 16 of the Los Angeles County Flood Control District Code) and the SCW Program Implementation Ordinance (Chapter 18 of the Los Angeles County Flood Control District Code), administers the SCW Program for the purpose of funding Projects and Programs to increase stormwater and urban runoff capture and reduce stormwater and urban runoff pollution in the District;

WHEREAS, Recipient proposes to implement a Funded Activity (as hereafter defined) that is eligible for funding under the SCW Program;

WHEREAS, the Funded Activity is included in a Stormwater Investment Plan (SIP) that has been approved by the County of Los Angeles Board of Supervisors;

WHEREAS, the Board approved a standard template Agreement as required by and in accordance with Section 18.09 of the Los Angeles County Flood Control District Code.

NOW, THEREFORE, in consideration of the promises, mutual representations, covenants and agreements in this Agreement, the District and the Recipient, each binding itself, its successors and assigns, do mutually promise, covenant, and agree as follows:

I. DEFINITIONS

The definitions set forth in Sections 16.03 and 18.02 of the Los Angeles County Flood Control District Code shall apply to this Agreement. In addition, the following definitions shall also apply:

"Activity Completion" means that the Funded Activity is complete to the reasonable satisfaction of the District based on review of reports and other documentation as deemed appropriate by the District. If the Funded Activity is an Infrastructure Program Project on District Right-of-Way a separate use and maintenance agreement is required.

"Activity Costs" means the total costs necessary to achieve Activity Completion. The Activity Costs for the Funded Activity are described in Exhibit A.

"Agreement" means this Transfer Agreement, including all exhibits and attachments hereto.

"Budget Plan" means a Recipient's plan for funding Activity Completion, including a description of all sources of funds for Activity Costs and a description of how the SCW Program Contribution will be allocated among the tasks identified in the Scope of Work within each fiscal year. Recipient's Budget Plan is described in Exhibit A.

"Days" means calendar days unless otherwise expressly indicated.

"Fiscal Year" means the period of twelve (12) months terminating on June 30 of any year.

"Funded Activity" means the Infrastructure Program Project, or Scientific Study described in Exhibit A – Scope of Work, including the Stakeholder and Community Outreach Plan and all other tasks and activities described in Exhibit A.

"Safe Clean Water (SCW) Program Contribution" means the portion of the Activity Costs to be paid for with Regional Program funds provided by the District from the SCW Program as described in the Budget Plan.

"Year" means calendar year unless otherwise expressly indicated.

II. PARTY CONTACTS

The District and the Recipient designate the following individuals as the primary points of contact and communication regarding the Funded Activity and the administration and implementation of this Agreement.

Los Angeles County Flood Control District		Municipality/Entity Name:	
Name:	(Program Manager)	Name:	(Project Manager)
Address:		Address:	
Phone:		Phone:	
Email:		Email:	

Either party to this Agreement may change the individual identified above by providing written notice of the change to the other party.

III. EXHIBITS INCORPORATED BY REFERENCE

The following exhibits to this Agreement, including any amendments and supplements hereto, are hereby incorporated herein and made a part of this Agreement:
EXHIBIT A – SCOPE OF WORK

EXHIBIT B – GENERAL TERMS AND CONDITIONS

EXHIBIT C – SPECIAL CONDITIONS

EXHIBIT D – ADDENDUM TO AGREEMENT

EXHIBIT E – NATURE-BASED SOLUTIONS (Best Management Practices)

EXHIBIT F – OPERATIONS AND MAINTENANCE GUIDANCE DOCUMENT

IV. ACTIVITY COMPLETION

A. The Recipient shall implement and complete the Funded Activity in accordance with the work schedule described in Exhibit A,

B. The Recipient shall comply with the terms and conditions in Exhibits B, C, D, E, and F of this Agreement, and all applicable provisions of Chapters 16 and 18 of the Code.

C. The Recipient shall fulfill all assurances, declarations, representations, and commitments made by the Recipient in its application for SCW Program Contributions, accompanying documents, and communications filed in support of its application for SCW Program Contributions.

V. SCW PROGRAM FUNDING FOR FUNDED ACTIVITY

A. The District shall disburse the SCW Program Contribution for the _____ Fiscal Year as described in the corresponding approved Stormwater Investment Plan (SIP) within 30-days of receipt of the signed executed Agreement.

B. If the Funded Activity is included in a duly approved SIP for a subsequent Fiscal Year, the parties shall enter into an addendum to this Agreement, in the form attached as Exhibit D, regarding the disbursement of the SCW Program Contribution for that subsequent Fiscal Year. The Recipient expressly acknowledges and agrees that the District is not obligated to disburse any SCW Program Contributions to Recipient for any Fiscal Year beyond the 2020-21 Fiscal Year unless the Funded Activity is included in a duly approved SIP for a subsequent Fiscal Year and the parties have duly executed an addendum to this Agreement for that Fiscal Year.

C. Notwithstanding any other provision of this Agreement, no disbursement shall be made at any time or in any manner that is in violation of or in conflict with federal, state, County laws, policies, or regulations.

E. All disbursements shall be subject to and be made in accordance with the terms and conditions in this Agreement.

F. The Recipient shall submit the scope of work described in Exhibit A 30-days after execution of this Agreement. If the Funded Activity is included in a duly approved SIP for a subsequent Fiscal Year, subsequent Exhibit A – Scope of Work will be required 30-days after execution of the addendum to this Agreement.

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.

___(*Project Developer*)____:

By: _____

Name:

Title:

Date: _____

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT:

By: _____

Name:

Title:

Date: _____

EXHIBIT A – SCOPE OF WORK

A-1. Budget Plan

[The Recipient shall submit a detailed Budget Plan for all eligible expenditures (those incurred after November 7, 2018) for all phases and tasks included in the work schedule for the Funded Activity. The Recipient shall include a summary of leveraged funds and in-kind services for the Funded Activity. For a Funded Activity that will be performed over more than one Fiscal Year, the Budget Plan must clearly identify the amount of SCW Program Contribution for each Fiscal Year.]

A-2. Consistent with SCW Program Goals

[By signing this Agreement, the Recipient shall provide certification that the Budget Plan is consistent with SCW Program Goals as described in Chapter 18, Section 4 of the Los Angeles County Flood Control District Code.]

A-3. Estimated Reasonable Total Activity Cost

[The Recipient shall submit a detailed estimate total Activity Cost for all phases and tasks included in the work schedule for the Funded Activity.]

A-4. Funded Activity Description and Scope of Work

[The Recipient shall provide a general description of the Funded Activity and a detailed scope of work. The scope of work may include:

1. Project Management, including required reporting
2. General Compliance Requirements/Project Effectiveness and Performance
3. Permitting and Environmental Compliance
4. Planning, Design, and Engineering
5. Right of Way Acquisition
6. Construction and Implementation
7. Operation and Maintenance]

A-5. Operations and Maintenance (O&M) Plan

[Where the Funded Activity is an Infrastructure Program Project, the Recipient shall submit a plan describing the activities necessary to perform O&M for the Infrastructure Program Project to ensure it remains in good working order throughout the useful life of the Infrastructure Program Project using SCW Program Contributions. The O&M plan shall address the activities described in Exhibit F to the greatest extent feasible. The Recipient shall specifically identify the entity that will be performing the O&M for the

lifetime of the Project. If this is not the Recipient, the Recipient shall submit a letter of commitment from the entity that will be performing the O&M (See Exhibit F, for example activities). The letter of commitment shall include details demonstrating how the provider is qualified and capable of providing the necessary ongoing O&M services.

The Recipient may elect to request the local municipality or District to provide O&M for the useful life of the Infrastructure Program Project using SCW Program Contributions. If the Recipient does not elect to seek the District's services or if the District is unable to provide the services as requested, the Recipient shall include in the letter of commitment reference to the above details demonstrating how the provider is qualified and capable of providing the necessary ongoing O&M services.]

A-6. Post-Construction Monitoring

[Where the Funded Activity is an Infrastructure Program Project, stormwater quality monitoring data shall be collected and reported in a manner consistent with the SWRCB database, the CEDEN for a period of three years. The Recipient shall submit a post-construction monitoring plan when the design phase is complete. The post-construction monitoring plan will evaluate the effectiveness of stormwater treatment facilities and include the project description; quality objectives; sampling design; sampling procedures; quality control; data management verification, and reporting; data quality assessment; and data analysis procedures.]

A-7. Sustainability Rating

[Where the Funded Activity is an Infrastructure Program Project that has applied for Institute for Sustainable Infrastructure (ISI) verification, the Recipient shall submit the final score and Envision award level.]

A-8. Stakeholder and Community Outreach/Engagement Plan

[The Recipient shall submit a plan for Community Outreach/Engagement for Infrastructure Program Projects. The plan shall, at a minimum include:

1. Community outreach activities to provide information to residents and information about upcoming meetings or other engagement activity event is scheduled. Outreach methods used should be appropriate in scale and type to the community being served. Outreach methods include but are not limited to: Online Media Outreach (email blasts, social media, publication on a website) Local Media Outreach (newsletters, local and regional newspapers, and local radio and television) and/or Grassroots Outreach (door-to-door canvassing, phone banking, surveys and focus groups, and distribution of flyers or other printed materials). The District will support outreach efforts through web-based platforms if requested at least four weeks prior to the requested publish date. The District should be included in all social media outreach and notified of all meetings and other engagement events.

2. Community engagement activities solicit, address and seek input from community members for Funded Activities. These events may occur as part of any public meeting with multiple agenda items such as council, commission or committee meetings where public input is invited; or at festivals, fairs, or open houses where a table or booth may be set up.

3. Community Outreach/Engagement requirements:

   Community Outreach/Engagement activities should occur at the onset of the project, during the design phase, and during construction.

Infrastructure Program Project Funds	Required Activity 1	Required Activity 2
Up to $2 M	Outreach or Engagement	
Up to $10 M	Outreach	Engagement
Over $10 M	Outreach	2 Engagements

4. If the Funded Activity is for the O&M of an Infrastructure Program Project Community Outreach/Engagement activities should occur biennially to remind communities of the SCW Program Contribution.

5. Activities and measures to mitigate against displacement and gentrification. This includes, as applicable, an acknowledgment that the Funded Activity will be fully subject to and comply with any County-wide displacement policies as well as with any specific anti-displacement requirements associated with other funding sources.]

A-9. Tracking Infrastructure Program Project Benefits

[The Recipient shall submit an overview of the benefits achieved upon the Activity Completion.]

A-10. Work Schedule and Completion Date

[The Recipient shall submit a detailed schedule, including start and completion dates for all phases and tasks of the scope of work for the Funded Activity. For Funded Activities that will be performed over more than one Fiscal Year, the work schedule must clearly identify the phases and tasks that will be performed in each Fiscal Year.]

EXHIBIT B – GENERAL TERMS AND CONDITIONS

B-1. Accounting and Deposit of Funding Disbursement

1. SCW Program Contributions distributed to the Recipient shall be held in a separate interest-bearing account and shall not be combined with other funds. Interest earned from each account shall be used by the account holder only for eligible expenditures consistent with the requirements of the SCW Program.

2. The Recipient shall not be entitled to interest earned on undisbursed SCW Program Contributions.

3. The Recipient shall operate in accordance with Generally Accepted Accounting Principles (GAAP).

4. The Recipient shall be strictly accountable for all funds, receipts, and disbursements.

B-2. Acknowledgement of Credit and Signage

The Recipient shall include appropriate acknowledgement of credit to the Los Angeles County Flood Control District for its support when promoting the Funded Activity or using any data and/or information developed under this Agreement. When the Funded Activity involves an Infrastructure Program Project, signage shall be posted in a prominent location at Project site(s) or at the Recipients headquarters and shall include the Safe, Clean Water Program color logo and the following disclosure statement: “Funding for this project has been provided in full or in part from the Los Angeles County Flood Control District’s Safe, Clean Water Program.” At a minimum the sign shall be 2’ x 3’ in size. The Recipient shall also include in each of its contracts for work under this Agreement a provision that incorporates the requirements stated within this paragraph.

When the Funded Activity involves a scientific study, the Recipient shall include the following statement in the study report: “Funding for this study has been provided in full or in part from the Los Angeles County Flood Control District’s Safe, Clean Water Program.” The Recipient shall also include in each of its contracts for work under this Agreement a provision that incorporates the requirements stated within this paragraph.

B-3. Acquisition

The Recipient shall not use SCW Program Contributions to acquire real property or interests in real property except as necessary to implement the Funded Activity and only from a willing seller. If real property is acquired adjacent to District Right-of-Way efforts will made to establish Right-of-Way for the Funded Activity site.

B-4. Amendment

No amendment or variation of the terms of this Agreement shall be valid unless made in writing, signed by the parties, and approved as required. No oral or written understanding or agreement not incorporated in this Agreement is binding on any of the parties.

B-5. Assignment

The Recipient will not assign this Agreement without the prior consent of the District.

B-6. Audit and Recordkeeping

1. The Recipient shall retain for a period of seven (7) years after Activity Completion, all records necessary in accordance with Generally Accepted Accounting Principles to determine the amounts expended, and eligibility of Projects implemented using SCW Program Contributions. The Recipient, upon demand by authorized representatives of the District, shall make such records available for examination and review or audit by the District or its authorized representatives. Records shall include: accounting records, written policies and procedures, contract files, original estimates, correspondence, change order files, including documentation covering negotiated settlements, invoices, and any other supporting evidence deemed necessary to substantiate charges related to SCW Program Contributions and expenditures.

2. The Recipient is responsible for obtaining an independent audit to determine Funded Activity compliance with the terms and conditions of this Agreement and all requirements applicable to the Recipient contained in chapters 16 and 18 of the Code promptly upon Activity Completion. For a Funded Activity that will be performed over the course of a period exceeding three years, Recipient shall also obtain an interim independent audit every three (3) years until Activity Completion. Audits shall be funded with Regional Program funds.

3. Recipient shall file a copy of the Activity Completion audit report with the District by the end of the sixth (6^{th}) month from Activity Completion. Recipient shall file a copy of all interim audit reports by the sixth (6^{th}) month from the end of each three (3) year period. Audit reports shall be posted on the District's publicly-accessible website.

End-of-Activity		**Every Third Fiscal Year**		
Projected End Date	**Audit Report Due To District**	**SIP Fiscal Year**	**Audit Begins**	**Audit Report Due to District**
1/15/2022	No later than 7/31/2022	2020-21	7/1/2023	No later than 12/31/2023

4. At all reasonable times, the Recipient shall permit the Chief Engineer to examine the Funded Activity. The Recipient shall permit the authorized District representative, including the Auditor-Controller, to examine, review, audit, and transcribe any and all audit reports, other reports, books, accounts, papers, maps, and other records that relate to the Funded Activity.

5. Unsupported or ineligible expenditures, as described but not limited to those in Section 16.05.A.3 of Code, shall be disallowed upon audit. The Recipient will be required to repay the District for all disallowed costs.

If at any time the Funded Activity cannot fulfill the provisions outlined in Exhibit A, the accounts and books of the Recipient may be reviewed or audited by the District.

B-7. Availability of Funds

District's obligation to disburse the SCW Program Contribution is contingent upon the availability of sufficient funds to permit the disbursements provided for herein. If sufficient funds are not available for any reason including, but not limited to, failure to fund allocations necessary for disbursement of the SCW Program Contribution, the District shall not be obligated to make any disbursements to the Recipient under this Agreement. This provision shall be construed as a condition precedent to the obligation of the District to make any disbursements under this Agreement. Nothing in this Agreement shall be construed to provide the Recipient with a right of priority for disbursement over any other recipient. If any disbursements due the Recipient under this Agreement are deferred because sufficient funds are unavailable, it is the intention of the District that such disbursement will be made to the Recipient when sufficient funds do become available, but this intention is not binding. If this Agreement's funding for any fiscal year is reduced or deleted by order of the Board, the District shall have the option to either cancel this Agreement with no liability occurring to the District or offer an amendment to the Recipient to reflect the reduced amount.

1. The Recipient will not seek disbursement of any Activity Costs that will be disbursed or reimbursed from other funding sources.

2. The Recipient agrees that it will not request a disbursement unless that cost is allowable, reasonable, and allocable.

B-8. Choice of Law

The laws of the State of California govern this Agreement.

B-9. Claims

Any claim of the Recipient is limited to the rights, remedies, and claims procedures provided to the Recipient under this Agreement.

B-10. Completion of Funded Activity by the Recipient

The Recipient agrees to pay any and all Activity Costs in excess of the SCW Program Contribution necessary for Activity Completion. The Recipient expressly acknowledges and agrees that if the SCW Program Contribution is not sufficient to pay the Activity Costs in full, the Recipient shall nonetheless complete the Funded Activity and pay that portion of the Activity Costs in excess of the SCW Program Contribution, subject to the provisions of Exhibit C, as applicable.

B-11. Compliance with Law, Regulations, etc.

The Recipient shall, at all times, comply with and require its contractors and subcontractors to comply with all applicable County, state and federal laws, rules, guidelines, regulations, and requirements. Without limitation of the foregoing, the Recipient agrees that, to the extent applicable, the Recipient shall comply with the Code.

B-12. Competitive Bidding and Procurements

The Recipient's contracts with other entities for the acquisition of goods and services and construction of public works with SCW Program Contributions must be in writing and shall comply with all applicable laws and regulations regarding the securing of competitive bids and undertaking competitive negotiations. If the Recipient does not have a written policy to award contracts through a competitive bidding or sole source process, the State Contracting Manual rules must be followed and are available at: https://www.dgs.ca.gov/OLS/Resources/Page-Content/Office-of-Legal-Services-Resources-List-Folder/State-Contracting#@ViewBag.JumpTo

B-13. Continuous Use of Funded Activity; Lease or Disposal of Funded Activity

Where the Funded Activity involves an Infrastructure Program Project, the Recipient agrees that, except as provided in this Agreement, it will not abandon, substantially discontinue use of, lease, or dispose of all or a significant part or portion of the Funded Activity during the useful life of the Funded Activity without prior written approval of the District. Such approval may be conditioned as determined to be appropriate by the District, including a condition requiring repayment of all disbursed SCW Program Contributions together with accrued interest and any penalty assessments that may be due, or the relinquishment by Recipient of all or any portion of the remaining funds covered by this Agreement.

B-14. Default Provisions

The Recipient will be in default under this Agreement if any of the following occur:

1. Material breaches of this Agreement or any addendum to it

2. Making any false warranty, representation, or statement with respect to this Agreement or the application filed to obtain this Agreement;

3. Failure to operate or maintain Project in accordance with this Agreement;

4. Failure to submit timely progress reports

Should an event of default occur, the State shall provide a notice of default to the Recipient and shall give the Recipient at least ten calendar days to cure the default from the date the notice is sent via first-class mail to the Recipient. If the Recipient fails to cure the default within the time prescribed by the District, the District may do any of the following:

1. Declare the SCW Program Contribution be immediately repaid, with interest, which shall be equal to the State of California general obligation bond interest rate in effect at the time of the default.

2. Terminate any obligation to make future payments to the Recipient.

3. Terminate the Agreement.

4. Take any other action that it deems necessary to protect its interests.

B-15. Disputes

Should a dispute arise between the parties, the party asserting the dispute will notify all other parties in writing of the dispute. The parties will then meet and confer within 21 calendar days of the notice in a good faith attempt to resolve the dispute.

If the matter has not been resolved through the process set forth in the preceding paragraph, any party may initiate mediation of the dispute. Mediation will be before a retired judge or mediation service mutually agreeable to the parties. All costs of the mediation, including mediator fees, will be paid one-half by the District and one-half by the Recipient. SCW Program Contributions shall not be used to pay for any costs of the mediation.

The parties will attempt to resolve any dispute through the process set forth above before filing any action relating to the dispute in any court of law.

B-16. Final Inspection and Certification of Registered Professional

Where the Funded Activity is an Infrastructure Program Project, upon completion of the design phase and before construction, the Recipient shall provide certification by a California Registered Professional (i.e., Professional Civil Engineer, Engineering Geologist) that the design has been completed.

Where the Funded Activity is an Infrastructure Program Project, upon completion of the Project, the Recipient shall provide for a final inspection and certification by a California Registered Professional (i.e., Professional Civil Engineer, Engineering Geologist), that the Project has been completed in accordance with submitted final plans and specifications and any modifications thereto and in accordance with this Agreement.

B-17. Funded Activity Access

When the Funded Activity involves an Infrastructure Program Project, the Recipient shall ensure that the District or any authorized representative of the foregoing, will have safe and suitable access to the site of the Funded Activity at all reasonable times through Activity Completion.

B-18. Funding Considerations and Exclusions

1. All expenditures of the SCW Program Contribution by Recipient must comply with the provisions of Chapters 16 and 18 of the Code, including but not limited to the provisions regarding eligible expenditures contained in Section 16.05.A.2 and the provision regarding ineligible expenditures contained in Section 16.05.A.3.

2. SCW Program Contributions shall not be used in connection with any Funded Activity implemented as an Enhanced Compliance Action ("ECA") and/or Supplemental Environmental Project ("SEP") as defined by State Water Resources Control Board Office of Enforcement written policies, or any other Funded Activity implemented pursuant to the settlement of an enforcement action or to offset monetary penalties imposed by the State Water Resources Control Board, a Regional Water Quality Control Board, or any other regulatory authority; provided, however, that SCW funds may be used for a Funded Activity implemented pursuant to a time schedule order ("TSO") issued by the Los Angeles Regional Water Quality Control Board if, at the time the TSO was issued, the Funded Activity was included in an approved watershed management program (including enhanced watershed management programs) developed pursuant to the MS4 Permit.

1. Recipient certifies that: (a) the Funded Activity is not being implemented as an ECA or SEP; (b) the Funded Activity is not being implemented pursuant to the settlement of an enforcement action or to offset monetary penalties imposed by the State Water Resources Control Board, a Regional Water Quality Control Board, or any other regulatory authority; and (c) the Funded Activity is not being implemented pursuant to a TSO issued by the Los Angeles Regional Water Quality Control Board unless, at the time the TSO was issued, the Funded Activity was included in an approved watershed management program (including enhanced watershed management programs) developed pursuant to the MS4 Permit.

B-19. Indemnification

The Recipient will indemnify, defend and hold harmless the District and their elected and appointed officers, agents, and employees from and against any and all liability and expense arising from any act or omission of the Recipient, its officers, employees, agents, or subconsultants or contractors in conjunction with Recipient’s performance under or pursuant to this Agreement, including defense costs, legal fees, claims, actions, and causes of action for damages of any nature whatsoever, including but not limited to bodily injury, death, personal injury, or property damage.

B-20. Independent Actor

The Recipient, and its agents and employees, if any, in the performance of this Agreement, shall act in an independent capacity and not as officers, employees, or agents of the District.

The Recipient shall not contract work with a contractor who is in a period of debarment from any agency within the State. (LACC Chapter 2.202)

B-21. Integration

This is an integrated Agreement. This Agreement is intended to be a full and complete statement of the terms of the agreement between the District and Recipient, and expressly supersedes any and all prior oral or written agreements, covenants, representations and warranties, express or implied, concerning the subject matter of this Agreement.

B-22. Lapsed Funds

1. The Recipient shall be able to carry over uncommitted Special Parcel Tax funds for up to five (5) years from the end of the fiscal year in which those funds are transferred from the District to the Recipient.

2. If the Recipient is unable to expend the SCW Program Contribution in a timely manner, then lapsed funding procedures will apply. Lapsed funds are funds that were transferred to the Recipient but were not committed to eligible expenditures by the end of the fifth (5^{th}) fiscal year after the fiscal year in which those funds were transferred from the District.

3. Lapsed funds shall be allocated by the Watershed Area Steering Committee of the respective Watershed Area to a new Project with benefit to that Municipality or Watershed Area.

4. In the event that funds are to lapse, due to circumstances beyond the Recipient's control, then the Recipient may request an extension of up to six (6) months in which to commit the funds to eligible expenditures. Extension Requests must contain sufficient justification and be submitted to the District in writing no later than six (6) months before the funds are to lapse.

5. The decision to grant an extension is at the sole discretion of the District.

6. Funds still uncommitted to eligible expenditures after an extension is granted will be subject to lapsed funding procedures without exception.

Fiscal Year* Awarded	**Funds Lapse After**	**Extension Request Due**	**Commit By**
2019-20	6/30/2025	No later than 12/31/2024	No later than 12/31/2025

B-23. Modification

This Agreement may be amended or modified only by mutual written consent of the Board and Recipient.

B-24. Non-Discrimination

The Recipient agrees to abide by all federal, state, and County laws, regulations, and policies regarding non-discrimination in employment and equal employment opportunity.

B-25. No Obligation of the District

The District will transfer the SCW Program Contribution to the Recipient for the funding of the Funded Activity. The District will have no further obligation, other than to transfer the funds, with respect to the Funded Activity itself.

B-26. No Third-Party Rights

The parties to this Agreement do not create rights in, or grant remedies to, any third party as a beneficiary of this Agreement, or of any duty, covenant, obligation, or undertaking established herein

B-27. Notice

1. The Recipient shall notify the District in writing within five (5) working days of the occurrence of the following:

    a. Bankruptcy, insolvency, receivership or similar event of the Recipient; or

    b. Actions taken pursuant to State law in anticipation of filing for bankruptcy.

2. The Recipient shall notify the District within ten (10) working days of any litigation pending or threatened against the Recipient regarding its continued existence, consideration of dissolution, or disincorporation.

3. The Recipient shall notify the District promptly of the following:

    a. Any proposed change in the scope of the Funded Activity. Under no circumstances may the Recipient make changes to the scope of the Funded Activity without receiving prior approval from the District.

    b. Cessation of work on the Funded Activity where such cessation of work is expected to or does extend for a period of thirty (30) days or more;

    c. Any circumstance, combination of circumstances, or condition, which is expected to or does delay Activity Completion;

d. Discovery of any potential archaeological or historical resource. Should a potential archaeological or historical resource be discovered during construction, the Recipient agrees that all work in the area of the find will cease until a qualified archaeologist has evaluated the situation and made recommendations regarding preservation of the resource, and the District has determined what actions should be taken to protect and preserve the resource. The Recipient agrees to implement appropriate actions as directed by the District;

e. Any public or media event publicizing the accomplishments and/or results of this Agreement and provide the opportunity for attendance and participation by District representatives with at least fourteen (14) days' notice to the District;

f. Activity completion.

B-28. Public Records

The Recipient acknowledges that, except for a subset of information regarding archaeological records, the Funded Activity records and locations are public records including, but not limited to, all of the submissions accompanying the application, all of the documents incorporated by reference into this Agreement, and all reports, disbursement requests, and supporting documentation submitted hereunder.

B-29. Recipient's Responsibility for Work

The Recipient shall be responsible for all work and for persons or entities engaged in work performed pursuant to this Agreement including, but not limited to, contractors, subcontractors, suppliers, and providers of services. The Recipient shall be responsible for responding to any and all disputes arising out of its contracts for work on the Project. The District will not mediate disputes between the Recipient and any other entity concerning responsibility for performance of work.

B-30. Related Litigation

The Recipient is prohibited from using the SCW Program Contribution to pay costs associated with any litigation the Recipient pursues. Regardless of whether the Project or any eventual related project is the subject of litigation, the Recipient agrees to complete the Project funded by the Agreement or to repay all the SCW Program Contribution plus interest to the District.

B-31. Remaining Balance

In the event that the Recipient does not spend all of the SCW Program Contribution disbursed for the Funded Activity, Recipient shall promptly return the unspent SCW Program Contribution to the District.

B-32. Reporting

The Recipient shall be subject to and comply with all applicable requirements of the District regarding reporting requirements.

1. Quarterly Progress/Expenditure Reports. The Recipient shall submit Quarterly Progress/Expenditure Reports, using a format provided by the Program Manager, within forty-five (45) days following the end of the calendar quarter (March, June, September, and December) to the Program Manager. The Quarterly Progress/Expenditure Reports may be posted on the District's publicly accessible website. The Quarterly Progress/Expenditure Report shall include:

    a. Amount of funds received;

    b. Percent overall Funded Activity completion estimate;

    c. Breakdown of how the SCW Program Contribution has been expended;

    d. Documentation that the SCW Program Contribution was used for eligible expenditures in accordance with Chapters 16 and 18 of the Code;

    e. Description of activities that have occurred, milestones achieved, and progress made to date, during the applicable reporting period;

    f. Scheduling concerns and issues encountered that may delay completion of the task;

    g. Work anticipated for the next reporting period;

    h. Any anticipated schedule or budget modifications;

    i. Photo documentation (e.g. photos of community outreach events, stakeholder meetings, ground breaking ceremonies, and project site that may be used on the publicly accessible District website) of the phases or tasks of the Project completed during the reporting period, as appropriate; and

    j. Additional financial or project-related information as required by the District.

    k. Certification from a California Registered Professional (Civil Engineer or Geologist, as appropriate), that the Project was conducted in accordance with Exhibit A.

    l. Status of Recipient's insurance

    m. Description of post-performance for each completed infrastructure project is required after the first operational year and for a total of three years after the project begins operation. Post-performance reports shall focus on how

each project is actually performing compared to its expected performance; whether the project is operated and maintained and providing intended benefits as proposed. A post-performance template will be provided by the District.

2. Quarterly Progress/Expenditure Reports shall be submitted to the District Program Manager no later than forty-five days following the end of the calendar quarter as follows:

Quarter	**End of Quarter**	**Report Due**
First Quarter	March	15 May
Second Quarter	June	15 August
Third Quarter	September	15 November
Fourth Quarter	December	15 February

3. Annually, a summary of the Quarterly Progress/Expenditure Reports shall be submitted to the Watershed Area Steering Committees to explain the previous year's Quarterly Progress/Expenditure Reports by the Recipient. The summary report shall also include a description of the Water Quality Benefits, Water Supply Benefits, and Community Investment Benefits and a summary of how funds have been allocated to achieve SCW Program Goals as articulated in Chapter 18, Section 4 of the Code for the prior year.

4. Annually, the Recipient shall prepare and provide members of the public with up-to-date information on the actual and budgeted use of the SCW Program Contribution.

5. As Needed Information or Reports. The Recipient agrees to promptly provide such reports, data, and information as may be reasonably requested by the District including, but not limited to material necessary or appropriate for evaluation of the SCW Program or to fulfill any reporting requirements of the County, state or federal government.

B-33. Representations, Warranties, and Commitments

The Recipient represents, warrants, and commits as follows:

1. Authorization and Validity. The execution and delivery of this Agreement, including all incorporated documents, by the individual signing on behalf of Recipient, has been duly authorized by the governing individual(s), board or body of Recipient, as applicable. This Agreement constitutes a valid and binding obligation of the Recipient, enforceable in accordance with its terms, except as such enforcement may be limited by law.

2. No Violations. The execution, delivery, and performance by the Recipient of this Agreement, including all incorporated documents, do not violate any provision of

any law or regulation in effect as of the date set forth on the first page hereof, or result in any breach or default under any contract, obligation, indenture, or other instrument to which the Recipient is a party or by which the Recipient is bound as of the date set forth on the first page hereof.

3. No Litigation. There are no pending or, to the Recipient's knowledge, threatened actions, claims, investigations, suits, or proceedings before any governmental authority, court, or administrative agency which affect the the Recipient's ability to complete the Funded Activity.

4. Solvency. None of the transactions contemplated by this Agreement will be or have been made with an actual intent to hinder, delay, or defraud any present or future creditors of the Recipient. As of the date set forth on the first page hereof, the Recipient is solvent and will not be rendered insolvent by the transactions contemplated by this Agreement. The Recipient is able to pay its debts as they become due.

5. Legal Status and Eligibility. The Recipient is duly organized and existing and in good standing under the laws of the State of California and will remain so through Activity Completion. The Recipient shall at all times maintain its current legal existence and preserve and keep in full force and effect its legal rights and authority through Activity Completion.

6. Insurance. The Recipient shall follow the Insurance Manual prepared by the Risk Management Office of the Los Angeles County Chief Executive Office. For Infrastructure Program Projects the Recipient shall provide General Liability, Automobile Liability, Worker's Compensation and Employer's Liability, Builder's Risk Course of Construction Insurance, and Professional Liability as specified in the Insurance Manual: https://riskmanagement.lacounty.gov/wp-content/uploads/2019/06/Insurance-Manual-revised-May-2019.pdf

B-34. Requirements for Good Standing

The Recipient must currently be in compliance with the District requirements set forth in this Agreement. The Recipient must demonstrate it has not failed to comply with previous County and/or District audit disallowances within the preceding ten years.

B-35. Requirements Related to Recipient's Contractors

1. The Recipient shall apply and enforce provisions mirroring those set forth in the then-current version of the County's Local and Targeted Worker Hire Policy (LTWHP) as to contractors performing work on such a Project. Alternatively, if the Recipient is a Municipality and has adopted its own policy that is substantially similar to the LTWHP, the Recipient may, at its election, choose to apply and enforce the provisions of its own such policy as to contractors performing work on such a Project in lieu of the provisions of the LTWHP.

2. The Recipient shall apply and enforce provisions mirroring those set forth in Los Angeles County Code (LACC) Chapter 2.211 (Disabled Veteran Business Enterprise Preference Program), LACC, Chapter 2.204 (Local Small Business Enterprise Preference Program), LACC, Chapter 2.205 (Social Enterprise Preference Program), LACC, Chapter 2.203 (Contractor Employee Jury Service Ordinance), LACC Chapter 2.206 (Defaulted Tax Program), LACC, Chapter 2.200 (Child Support Compliance Program, LACC, Chapter 2.160 (County Lobbyist Ordinance), Safely Surrendered Baby Law, and Zero Tolerance Policy on Human Trafficking, as to contractors performing work on such an Infrastructure Program Project, subject to statutory authorization for such preference program(s), and subject to applicable statutory limitations for such preference(s); and, furthermore, the Recipient shall take actions to promote increased contracting opportunities for Women-Owned Businesses on the Project, subject to applicable State or federal constitutional limitations.

3. The Recipient shall obtain all necessary approvals, entitlements, and permits required to implement the Project. Failure to obtain any necessary approval, entitlement, or permit shall constitute a breach of a material provision of this Agreement.

4. With respect to a Project funded with SCW Program Contributions through the Regional Program, if the Project has an estimated capital cost of over twenty-five million dollars ($25,000,000),as adjusted periodically by the Chief Engineer in accordance with changes in the Consumer Price Index for all urban consumers in the Los Angeles area, or other appropriate index, a provision that the Infrastructure Program Project Developer for such a Project must require that all contractors performing work on such a Project be bound by the provisions of: (1) a County-wide Project Labor Agreement (Community Workforce Agreement), if such an agreement has been successfully negotiated between the County and the Trades and is approved by the Board, or (2) a Project Labor Agreement (''PLA'') mirroring the provisions of such Community Workforce Agreement.

5. With respect to a Project funded with SCW Program Contributions through the Regional Program, if one or more of the Municipalities that is a financial contributor to a Project has its own PLA, a provision that the Infrastructure Program Project Developer for the Project must require that contractors performing work on the Project are bound to such PLA. If more than one of the contributing Municipalities to a capital project has a PLA, the Project Developer shall determine which of the PLAs will be applied to the Project.

6. Payment Bond. Payment bonds for exceeding twenty-five thousand dollars are required. A payment bond is defined as a surety bond posted by a contractor to guarantee that its subcontractors and material suppliers on the Project will be paid.

7. Performance Bond. Where contractors are used, the Recipient shall not authorize construction to begin until each contractor has furnished a performance bond in favor of the Recipient in the following amounts: faithful performance (100%) of

contract value, and labor and materials (100%) of contract value. This requirement shall not apply to any contract for less than $25,000.00. Any bond issues pursuant to this paragraph must be issued by a California-admitted surety. (Pub. Contract Code, 7103; Code Civ. Proc. 995.311.)

8. Prevailing Wage. The Recipient agrees to be bound by all the provisions of Sections 1771 and 1774 of the California Labor Code regarding prevailing wages and requires each of subcontractors to also comply. The Recipient shall monitor all contracts resulting from this Agreement to assure that the prevailing wage provisions of the Labor Code are being met. The Recipient affirms that it is aware of the provisions of section 3700 of the Labor Code, which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance, and the Recipient affirms that it will comply with such provisions before commencing the performance of the work under this Agreement and will make it contractors and subcontractors aware of this provision .

9. Public Funding. This Funded Activity is publicly funded. Any service provider or contractor with which the Recipient contracts must not have any role or relationship with the Recipient, that, in effect, substantially limits the Recipient's ability to exercise its rights, including cancellation rights, under the contract, based on all the facts and circumstances.

B-36. Travel

Any reimbursement for necessary ground transportation and lodging shall be at rates not to exceed those set by the California Department of Human Resources; per diem costs will not be eligible expenses. These rates may be found at http://www.calhr.ca.gov/employees/Pages/travel-reimbursements.aspx. Reimbursement will be at the State travel amounts that are current as of the date costs are incurred by the Recipient. No travel outside the Los Angeles County Flood Control District region shall be reimbursed unless prior written authorization is obtained from the Program Manager.

B-37. Termination

The District has the right to terminate this Agreement should the Recipient be in material breach of its terms. Upon receipt of a notice of intent to terminate this Agreement from the District, the Recipient shall promptly return to the District any previously disbursed funds that Recipient has not yet expended or committed for expenditure in conjunction with the Funded Activity.

B-38. Unenforceable Provision

In the event that any provision of this Agreement is determined by a court of competent jurisdiction to be unenforceable, the parties agree that all other provisions of this Agreement have force and effect and shall not be affected thereby.

B-39. Required Repayment of SCW Program Contributions and Material Violations

The District may demand repayment of all or any portion of the SCW Program Contribution along with interest at the California general obligation bond interest rate at the time of the notification of termination, as directed by the District and take any other action that it deems necessary to protect its interests for the following conditions:

1. The Recipient has violated any provision of this Agreement; or

2. The Recipient fails to maintain reasonable progress toward SCW Program Goals as described in Section 18.04 of the Code.

3. The Recipient fails to maintain reasonable progress toward Project Completion.

4. The Recipient has failed in any other respect to comply with the provisions of the Agreement if the Recipient does not remedy any such failure to the District's satisfaction.

5. Failure by the Recipient to submit complete and accurate Quarterly Progress/Expenditure Reports by the required due dates, unless otherwise approved by the District.

6. Use of SCW Program Contributions for ineligible expenses and/or activities not consistent with the Agreement.

7. Inappropriate use of SCW Program Contributions, as deemed by the District

8. Making any false warranty, representation, or statement with respect to this Agreement or the application filed to obtain this Agreement.

EXHIBIT C – SPECIAL CONDITIONS

[If the Recipient is a public agency]

C-1. The Recipient acknowledges and agrees that the Recipient is the "lead agency" regarding compliance with the California Environmental Quality Act (CEQA) in connection with the Funded Activity and shall be responsible for the preparation of all documentation, analysis and other work and any mitigation necessary to comply with CEQA in connection with the Funded Activity prior to implementation. By entering into this Agreement, the District is not approving any activity that would be considered a project under CEQA.

C-2. In addition to its other indemnification obligations pursuant to this Agreement, the Recipient hereby agrees to indemnify, defend, and hold harmless District, the County of Los Angeles and their officers, employees, and agents from and against any and all claims and/or actions related to the Funded Activity that may be asserted by any third party or public agency alleging violations of CEQA or the State CEQA Guidelines or the NEPA.

C-3. Notwithstanding any other provision of this Agreement, if any documentation or other analysis pursuant to CEQA discloses that the Funded Activity, or portion thereof, will have one or more significant environmental impacts that cannot be feasibly mitigated, the Recipient shall promptly notify and consult with the District. With the District's approval, the Recipient may determine to terminate or modify the implementation of all or any portion of the Funded Activity in order to avoid such environmental impacts.

C-4. In the event the parties, pursuant to the preceding paragraph, determine to terminate the implementation of the entirety of the Funded Activity, the Recipient shall promptly return all previously disbursed but unspent SCW Program Contributions and the Recipient shall thereafter have no further obligation under this Agreement to implement the Funded Activity. In the event the parties determine to terminate the implementation of a portion of the Funded Activity, the Recipient shall promptly return all previously disbursed but unspent SCW Program Contributions for the terminated portion of the Funded Activity and the Recipient shall thereafter have no further obligation under this Agreement to implement the terminated portion of the Funded Activity, but this Agreement shall remain in full force and effect as to the portion of the Funded Activity not terminated.

[If the Recipient is not a public agency]

C-1. The Recipient shall be responsible for the preparation of all documentation in cooperation with the lead agency, analysis and other work, including any mitigation, necessary to comply with the California Environmental Quality Act (CEQA) in connection with the Funded Activity prior to implementation. Environmental documentation prepared in connection with the Funded Activity will

be subject to the review and analysis of the District. Any decisions based on the documentation prepared by the Recipient will reflect the independent judgment of District. By entering into this Agreement, the District is not approving any activity that would be considered a project under CEQA.

C-2. In addition to its other indemnification obligations pursuant to this Agreement, the Recipient hereby agrees to indemnify, defend, and hold harmless District, the County of Los Angeles and their officers, employees, and agents from and against any and all claims and/or actions related to the Funded Activity that may be asserted by any third party or public agency alleging violations of CEQA or the CEQA Guidelines or the NEPA.

C-3. Notwithstanding any other provision of this Agreement, if any documentation or other analysis pursuant to CEQA discloses that the Funded Activity or any portion thereof will have one or more significant environmental impacts that cannot be feasibly mitigated, the District, after consultation with the Recipient, may terminate the SCW Program Contribution for all or any portion of the Funded Activity or may request that the Funded Activity be modified in order to avoid such environmental impact(s).

C-4. In the event that the District terminates the SCW Program Contribution for the entirety of the Funded Activity, the Recipient shall promptly return all previously disbursed but unspent SCW Program Contributions and the Recipient shall thereafter have no further obligation under this Agreement to implement the Funded Activity. In the event the District terminates the SCW Program Contribution for a portion on of the Funded Activity, the Recipient shall promptly return all previously disbursed but unspent SCW Program Contributions for the terminated portion of the Funded Activity and the Recipient shall thereafter have no further obligation under this Agreement to implement the terminated portion of the Funded Activity, but this Agreement shall remain in full force and effect as to the portion of the Funded Activity for which the SCW Program Contribution was not terminated.

EXHIBIT D – ADDENDUM TO AGREEMENT

-DRAFT TEMPLATE-

ADDENDUM NO. ___ TO
TRANSFER AGREEMENT NO. _____ BETWEEN
THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
AND (*INSERT PROJECT DEVELOPER*)
SAFE, CLEAN WATER PROGRAM – REGIONAL PROGRAM

This Addendum No. ___ to Transfer Agreement No. _____, hereinafter referred to as "Addendum No. ___", is entered into as of _____ by and between the Los Angeles County Flood Control District, hereinafter referred to as "District," and ___(*Project Developer/Scientific Studies Applicant*)____, hereinafter referred to as "Recipient."

WHEREAS, District and Recipient entered into Transfer Agreement No. _____ , hereinafter referred to as "Agreement", pertaining generally to the transfer of a SCW Program Contribution (as therein defined) from District to Recipient for the implementation by Recipient of a Funded Activity (as therein defined) to increase stormwater and/or urban runoff capture and/or reduce stormwater and/or urban runoff pollution, on _____;

WHEREAS, the Agreement provides for the disbursement of the SCW Program Contribution for the 2020-21 Fiscal Year (as therein defined), and further provides that if the Funded Activity is included in a duly approved Stormwater Investment Plan (as therein defined) for a subsequent Fiscal Year, the parties shall enter into an addendum to the Agreement regarding the disbursement of the SCW Program Contribution for that subsequent Fiscal Year;

WHEREAS, the Funded Activity has been included in a duly approved Stormwater Investment Plan for Fiscal Year _____;

NOW, THEREFORE, in consideration of the promises, mutual representations, covenants and agreements in this Agreement, the District and the Recipient, each binding itself, its successors and assigns, do mutually promise, covenant, and agree as follows:

1. The definitions set forth in Sections 16.03 and 18.02 of the Los Angeles County Flood Control District Code together with the definitions set forth in the Agreement shall apply to this Addendum No. ___.

2. The District shall disburse the SCW Program Contribution for the _____ Fiscal Year as described in the Budget Plan within ___ days of the execution of this Addendum by the last party to sign.

3. All terms and conditions of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, this Addendum No. ___ has been executed by the parties hereto.

___(*Project Developer*)____:

By: _____

Name:

Title:

Date: _____

LOS ANGELES COUNTY
FLOOD CONTROL DISTRICT:

By: _____

Name:

Title:

Date: _____

EXHIBIT E – NATURE BASED SOLUTIONS (NBS) BEST MANAGEMENT PRACTICES

Nature-based solutions (NBS) refers to the sustainable management and use of nature for undertaking socio-environmental challenges, including climate change, water security, water pollution, food security, human health, and disaster risk management. As this environmental management practice is increasingly incorporated into projects for the SCW Program, this guidance document may be expanded upon to further quantify NBS practices based on benefits derived from their incorporation on projects.

The SCW Program defines Nature-Based Solutions as a Project that utilizes natural processes that slow, detain, infiltrate or filter Stormwater or Urban Runoff. These methods may include relying predominantly on soils and vegetation; increasing the permeability of Impermeable Areas; protecting undeveloped mountains and floodplains; creating and restoring riparian habitat and wetlands; creating rain gardens, bioswales, and parkway basins; enhancing soil through composting, mulching; and, planting trees and vegetation, with preference for native species. Nature-Based Solutions may also be designed to provide additional benefits such as sequestering carbon, supporting biodiversity, providing shade, creating and enhancing parks and open space, and improving quality of life for surrounding communities. Nature-Based Solutions include Projects that mimic natural processes, such as green streets, spreading grounds and planted areas with water storage capacity. Nature-Based Solutions may improve water quality, collect water for reuse or aquifer recharge, or to support vegetation growth utilizing natural processes. Recipients are to consider using Nature-Based Solutions for infrastructure projects and include in each quarterly and annual report whether and how their project achieves a good, better, or best for each of the 6 NBS methods in accordance with the guidance below. Additionally, reports should include discussion on any considerations taken to maximize the class within each method. If at least 3 methods score within a single class, the overall project can be characterized as that class.

METHODS	GOOD	BETTER	BEST
Vegetation/Green Space	Use of climate-appropriate, eco-friendly vegetation (groundcover, shrubs, and trees) / green space 5%-15% covered by new climate-appropriate vegetation	Use of native, climate-appropriate, eco-friendly vegetation (groundcover, shrubs, and trees) / green space 16%-35% covered by new native vegetation	Establishment of plant communities with a diversity of native vegetation (groundcover, shrubs, and trees) / green space that is both native and climate-appropriate More than 35% covered by new native vegetation
Increase of Permeability	Installation of vegetated landscape – 25%-49% paved area removed Redesign of existing impermeable surfaces and/or installation of permeable surfaces (e.g. permeable pavement and infiltration trenches)	Installation of vegetated landscape – 50%-74% paved area removed Improvements of soil health (e.g., compaction reduction)	Installation of vegetated landscape – 75%-100% paved area removed Creation of well-connected and self-sustained natural landscapes with healthy soils, permeable surfaces, and appropriate vegetation
Protection of Undeveloped Mountains & Floodplains	• Preservation of native vegetation • Minimal negative impact to existing drainage system	• Preservation of native vegetation • Installation of new feature(s) to improve existing drainage system	• Creation of open green space • Installation of features to improve natural hydrology
Creation & Restoration of Riparian Habitat & Wetlands	• Partial restoration of existing riparian habitat and wetlands • Planting of climate appropriate vegetation - between 5 and 15 different climate-appropriate or native plant species newly planted • No potable water used to sustain the wetland	• Full restoration of existing riparian habitat and wetlands • Planting of native vegetation - between 16 and 30 different native plant species newly planted • No potable water used to sustain the wetland	• Full restoration and expansion of existing riparian habitat and wetlands • Planting of plant communities with a diversity of native vegetation – greater than 31 native plant species newly planted • No potable water used to sustain the wetland

New Landscape Elements	Elements designed to capture runoff for other simple usage (e.g. rain gardens and cisterns), capturing the 85th percentile 24-hour storm event for at least 50% of the entire parcel	Elements that design to capture/redirect runoff and filter pollution (e.g. bioswales and parkway basins), capturing the 85th percentile 24-hour storm event from the entire parcel	Large sized elements that capture and treat runoff to supplement or replace existing water systems (e.g. wetlands, daylighting streams, groundwater infiltration, floodplain reclamation), capturing the 90th percentile 24-hour storm event from the entire parcel and/or capturing off-site runoff
Enhancement of Soil	Use of soil amendments such as mulch and compost to retain moisture in the soil and prevent erosion Planting of new climate-appropriate vegetation to enhance soil organic matter	Use of soil amendments such as mulch and compost that are locally generated to retain moisture in the soil, prevent erosion, and support locally-based composting and other soil enhancement activities Planting of new native, climate-appropriate vegetation to enhance soil organic matter	Use of soil amendments such as mulch and compost that are locally generated, especially use of next-generation design with regenerative adsorbents (e.g. woodchips, biochar) to retain moisture in the soil, prevent erosion, and support on-site composting and other soil enhancement activities Planting of new native, climate appropriate vegetation to enhance soil organic matter

EXHIBIT F – OPERATIONS AND MAINTENANCE GUIDANCE DOCUMENT

Operational maintenance is the care and upkeep of Projects that may require detailed technical knowledge of the Project's function and design. Operational maintenance may include but not be limited to those activities listed below. Operational maintenance is to be performed by the operator of the Project with a purpose to make the operator aware of the state of readiness of the Project to deliver stormwater and urban runoff benefits. Recipients are to consider using the following guidance for operations and maintenance for Infrastructure Program Projects.

1. Litter Control
    - Weekly removal of litter, nonhazardous waste materials, and accumulated debris near planted areas, rock areas, decomposed granite areas, rest areas, fence perimeters, adjoining access roads and driveways, drains, pedestrian trails, viewing stations, shelter houses, and bicycle pathways.
    - Weekly inspection and maintenance of pet waste stations
    - Maintaining trash receptacles
    - Removal of trash, debris, and blockages from bioswales
    - Inspection and cleaning of trash booms
    - Inspection of weir gates and stop logs to clean debris, as required.

2. Vegetation Maintenance

    - Weed control
        - Recognition and removal of weeds, such as perennial weeds, morning glory, vine-type weeds, ragweed, and other underground spreading weeds.
        - Avoiding activities that result in weed seed germination (e.g. frequent soil cultivation near trees or shrubs)
        - Weekly removal of weeds from landscape areas, including from berms, painted areas, rock areas, gravel areas, pavement cracks along access roads and driveways, drains, pedestrian trails, viewing stations, park shelters, and bicycle paths.

    - Tree and shrubbery trimming and care
        - Removal of dead trees and elimination of diseased/damaged growth
        - Prevent encroachment of adjacent property and provide vertical clearance
        - Inspect for dead or diseased plants weekly

    - Wetland vegetation and landscape maintenance
        - Installation and maintenance of hydrophytic and emergent plants in perennially wet and seasonal, intermittent habitats.
        - Draining and drawdown of wetland and excessive bulrush removal
        - Weed and nuisance plant control
        - Removal of aquatic vegetation (e.g. algae and primrose) using appropriate water craft and harvesting equipment

- Wild flower and meadow maintenance
- Grass, sedge, and yarrow management
- Removal of unwanted hydroseed

3. Wildlife Management

- Exotic species control
- Provide habitat management; promote growth of plants at appropriate densities and promote habitat structure for animal species
- Protect sensitive animal species (e.g. protection during critical life stages including breeding and migration)
- Avoid disturbances to nesting birds
- Avoid spread of invasive aquatic species

4. Facility Inspection

- Inspect project sites for rodent and insect infestations on a weekly basis
- Inspect for and report graffiti in shelter houses, viewing stations, benches, paving surfaces, walls, fences, and educational and directional signs
- Inspect facilities for hazardous conditions on roads and trails (e.g. access roads and trails, decomposed granite pathways, and maintenance roads)
- Inspect shade structures for structural damage or defacement
- Inspect hardscapes
- Inspect and maintain interpretive and informational signs
- Inspect site furnishings (e.g. benches, hitching posts, bicycle racks)
- Maintain deck areas (e.g. benches, signs, decking surfaces)
- Visually inspect weirs and flap gates for damage; grease to prevent locking.
- Inspect all structures after major storm events, periodically inspect every 3 months, and operate gates through full cycles to prevent them from locking up.

5. Irrigation System Management

- Ensuring automatic irrigation controllers are functioning properly and providing various plant species with proper amount of water.
    - Cycle controller(s) through each station manually and automatically to determine if all facets are functioning properly.
    - Inspection should be performed at least monthly.
    - Recover, replace, or refasten displaced or damaged valve box covers.
    - Inspect and repair bubbler heads.
    - Repair and replace broken drip lines or emitters causing a loss of water (to prevent ponding and erosion).
    - Maintain drip system filters to prevent emitters from clogging. Inspection and cleaning should occur at least monthly.

    - Inspect and clean mainline filters, wye strainers, basket filters, and filters at backflow devices twice a year.
    - Maintain and check function of the drip system.

- Keeping irrigation control boxes clear of vegetation
- Operating irrigation system to ensure it does not cause excessively wet, waterlogged areas, and slope failure
- Utilizing infrequent deep watering techniques to encourage deep rooting, drought tolerant plant characteristics to promote a self-sustaining, irrigation free landscape
- Determine watering schedules based on season, weather, variation in plant size, and plant varieties. At least four times a year (e.g. change of season), reschedule controller systems.
- Turn off irrigation systems at the controller at the beginning of the rainy season, or when the soil has a high enough moisture content.
- Use moisture sensing devices to determine water penetration in soil.

6. Erosion Management and Control

- Inspect slopes for erosion during each maintenance activity
- Inspect basins for erosion
- Take corrective measures as needed, including filling eroded surfaces, reinstalling or extending bank protection, and replanting exposed soil.

7. Ongoing Monitoring Activities

- Monitor controllable intake water flow and water elevation
- Examine inflow and outflow structures to ensure devices are functioning properly and are free of obstructions.
- Quarterly water quality sampling
- Checking telemetry equipment
- Tracking and reporting inspection and maintenance records

8. Vector and Nuisance Insect Control

- Monitoring for the presence of vector and nuisance insect species
- Adequate pretreatment of influent wastewater to lessen production of larval mosquitos
- Managing emergent vegetation
- Using hydraulic control structures to rapidly dewater emergent marsh areas
- Managing flow velocities to reduce propagation of vectors

Overview of Project Tasks

The Study will collect samples from beaches, rivers, creeks, and channels within the urbanized areas of the participating Watershed Areas identified by the SCWP. Samples will be analyzed for traditional bacterial indicators (i.e., E. coli, Enterococcus, and Fecal Coliform), viruses (e.g., norovirus), and human markers (e.g., HF183) during wet and dry weather. The Study will utilize efforts under the ongoing Coordinated Integrated Monitoring Programs (CIMPs) to efficiently collect samples that are directly applicable to the MS4 Permit area within each participating Watershed Area. The number of samples and constituents collected is expected to follow the methodology used for similar studies conducted in Southern California. However, as outlined below, development of the Study Work Plan will be conducted through a stakeholder-led process with the input of technical experts including academia. The Workplan will be used to solicit qualified persons, schools or firms as recommended by the Stakeholders to conduct the regional scientific study. The entire project is comprised of the following tasks.

Task 1 – Stakeholder Process

Stakeholder engagement is at the forefront of the Study to ensure that diverse viewpoints are incorporated. This task will support engagement, transparency, and communication between the Study Lead (GWMA) and Collaborators (WASCs, Watershed Groups, and municipalities), interested Stakeholders, an independent Technical Advisory Committee (TAC), regulators, academia, and the broader scientific community. The goal of this task is to provide meaningful opportunities for engagement and review of work products throughout the development and implementation of the Study. This will ensure that the Study's findings are accepted and supported and can be effectively applied when identifying and implementing projects to effectively protect human health. Deliverables provided under this task include draft and final versions of a coordination approach document and relevant meeting materials.

Task 2 – Health Risk Assessment

This task will support the assessment of existing health risks to water contact recreators at beaches and inland surface waters in Watershed Areas participating in the study. The goals of this task is to gain an understanding of where risk is elevated using the latest science, identify the potential sources of risk and their magnitude, and identify a target condition based on pathogens and/or pathogen indicators that will support implementation efforts. This task will involve collection of samples from beaches, rivers, creeks, and channels within the urbanized areas of the participating Watershed Areas during both wet and dry weather. Samples will be analyzed for a range of risk-relevant constituents, the full list of which will be determined in consultation with the TAC and stakeholders to ensure the latest scientific developments and watershed/waterbody specific considerations are incorporated into the study. For example, watersheds with water reclamation plant discharge may require different techniques to differentiate between viable and non-viable pathogens when using polymerase chain reaction (PCR)

analytical methods. It is expected that the target constituents will include traditional FIB (E. coli in freshwater / Enterococcus and Fecal Coliform in saltwater), bacterial and viral pathogens, viral indicators of fecal contamination, and bacterial indicators of human-derived fecal contamination. Analytical methods for traditional FIB are likely to be culture based whereas analytical methods for non-traditional indicators and pathogens are likely to primarily be PCR based. Analysis of non-traditional indicators and pathogens using culture- and microscopy-based methods will be considered for incorporation into the study. This task will be guided by and built on information developed by other relevant studies. Additionally, relevant risk assessment or source studies conducted by E/WMP Groups, NGOs, and academic institutions that occur during the implementation of the Study will be considered. The study questions presented in the subtasks below may be revised as part of work plan development.

Task 3 – Risk Management

This task will support the assessment of potential control measures (individually and collectively) that could be implemented to reduce health risk at beaches and inland waterbodies in the urbanized portions of the Watershed Areas participating in the Study. The goal of this task is to understand the effectiveness and cost efficiency of control measures that can be implemented to address the sources of pollution responsible for elevated health risk. This information will be used to develop tools that support evaluation and selection of control measures for implementation within a risk-based planning framework that can be integrated into E/WMPs. This task will be guided by and built on information developed as part of other relevant studies including existing modeling tools used for the development of the E/WMPs, where appropriate. Additionally, relevant studies assessing control measures conducted by E/WMP Groups, NGOs, and academic institutions that occur during the implementation of the Study will be considered.

Task 4 – Application of Study Findings

This task will support the application of the findings of the study. The goal is to translate the results of the Study into meaningful, appropriate, and productive outcomes that will support MS4 Permittees in developing a prioritized implementation approach that effectively reduces human health risks. Deliverables will vary based on the information needed by MS4 Permittees to make informed decisions that reflect study outcomes and support MS4 Permittees with implementation of new or revised strategies that more effectively reduce pollution and protect human health.

Outcomes

The Study aims to achieve a range of outcomes that will improve protection of human health while maximizing future BMP implementation efficiency and effectiveness. Anticipated outcomes include the following:

- Identification of areas where the risk to human health is higher so that E/WMPs can target those areas earlier in the implementation process.

- Determination of the relative contribution of likely major sources (e.g., pathogens transported via stormwater runoff, illicit discharges) to the overall risk.
- Identification of supplemental measurements that can be used to increase the ability to assess the risks to human health as it relates to recreators and support identification of more effective control measures.
- Evaluation of which control measures are most effective at reducing risk for each significant source, what range of performance can be expected given site-specific conditions, and what normalized cost of risk reduction can be expected.
- Evaluation of how implementation of risk-based water capture and/or treatment strategies can support water quality improvement with the maximum benefit to human health.
- Development of a modeling tool that evaluates the effectiveness of various scenarios (i.e., the number, type, and placement of control measures) designed to reduce risk within the watersheds of interest, which can be used to support adaptive management.
- Fostering development of regional expertise in the use and interpretation of modern microbial detection and risk assessment technologies.

Benefits

By developing a better understanding of the pathogens present in the region's watersheds, the relative risk these pathogens present to human health, and the effectiveness of various control measures at reducing pathogen concentrations and/or loads, new or adapted BMPs can be established that improve water quality and reduce risks posed to human health at our beaches and inland waterbodies in a more effective, efficient, and timely manner. In the immediate term (within two years) this information could be used to protect people from health risks that aren't currently known. In the long term (after three years), the information collected by the scientific study will enable the targeted placement of BMPs in locations where they can maximize the prevention or treatment of key sources of pathogens. This will allow a more efficient allocation of community investments and ensure that these investments result in the greatest benefit to regional water quality and public health.

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Los Angeles Gateway Region
Integrated Regional Water Management
Joint Powers Authority

October 10, 2024

AGENDA ITEM 10 – GWMA Grant Priorities for FY 2024-2025 Programs

SUMMARY

As reported at the July Board Meeting, the results of a Board survey were shared regarding potential priorities for the upcoming fiscal year. The Fiscal Year (FY) 2024-2025 Operating Budget approved by the Board in April includes $100,000 for consultants to aid in identifying projects for regional programs and applying for grant funding. Staff is now requesting authorization to issue Request for Proposals from the approved On-Call Consultants list for the top two priorities identified in the survey results: 1) Stormwater Capture/Treatment/Reuse and 2) Groundwater Contamination/Treatment.

BACKGROUND

The Board has pro-actively and regularly reviewed regional needs in order to serve its members in the best way possible. GWMA has been very successful in bringing millions of regional grant dollars since its inception in 2007. In total, more than $31M has been awarded to GWMA by Federal, State and local agencies for a variety of projects.

Grant Amount	Funding Agency	Grant Project	Status
$10M	State Water Resource Control Board	LA River Trash Reduction	Completed
$950k	California Department of Water Resources	Gateway IRWM Plan	Completed
$338k	State Water Resource Control Board	Los Cerritos Channel (LCC) Watershed Segmentation and Low Impact Development (LID)	Completed
$1M	United States Bureau of Reclamation	Gateway Region Advanced Meter Infrastructure Program	Completed
$1.07M	State Water Resource Control Board	Proposition 84 Regional Stormwater LID Best Management Practices (BMP)	Completed
$3.94M	California Department of Water Resources	Proposition 84 IRWM Drought Emergency	Completed
$3.41M	California Department of Water Resources	Proposition 84 IRWM (4 projects)	On-going
$9.9M	State Water Resource Control Board	Proposition 1 Stormwater Grant for John Anson Ford Park Infiltration Cistern: Phase 1	On-going
$150k	Safe Clean Water Program	Gateway Area Pathfinding Analysis Phase 1 LLAR & LSGR	Completed
$460k	Safe Clean Water Program	Gateway Area Pathfinding Analysis Phase 2 LLAR & LSGR	On-going
$8.9M	Safe Clean Water Program	Regional Pathogen Reduction Study	Awarded
$475k	Safe Clean Water Program	Targeted Human Waste Source Reduction Strategy to Address Bacteria-Related Compliance Objectives for the Los Cerritos Channel	Awarded
$3.37M	California Department of Water Resources	Prop 1 Round 2 IRWM	Awarded

With technology now facilitating the process of collecting information, staff has utilized online surveys over the past several years to gather anonymous data from its member agencies to help determine priorities for GWMA.

Eighteen (18) survey responses were received. The results are presented on the following page.

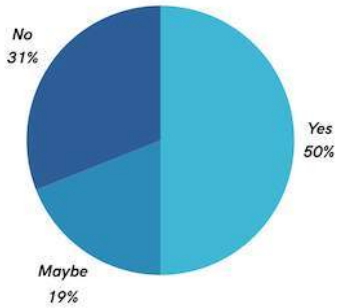
Project Priorities

Based on the survey, the following types of projects are listed in the order of priority according to the survey.

1. **Stormwater Capture/Treatment /Reuse**
2. **Groundwater Contamination/Treatment**
3. Recycled Water
4. Drought Preparedness/Conservation
5. Advanced Meter Replacement
6. Water Storage

Potential Projects

When inquired if the member agency has a potential project to include in the FY 2024-2025 grant process, fifty percent (50%) of the agencies that responded have potential projects that could be included in the grant process. Nineteen percent (19%) of the agencies that responded may potentially have projects that can be included in the process.



The following are responses received for potential member agency projects:

- Stormwater Capture (5 responses)
- PFAS Treatment Project (3 responses)
- New Water Storage Reservoir (1 response)
- AMI projects (2 responses)
- Long Beach Groundwater Augmentation Study ($2.5 million), associated infrastructure resulting from the study, including, but not limited to new injection wells, extraction wells, conveyance pipelines and treatment ($250 million)

Additional Priorities for Consideration

Other priorities listed for GWMA to consider during the upcoming year are as follows:

- Retain federal and/or state government relations consultant to assist with funding requests (*12 votes*)
- Support and/or oppose legislation related to GWMA activities (*10 votes)*
- Other – Seat on LA County Water Plan Panel (*1 vote*)

With this information in hand, staff is requesting authorization from the Board to further the top two (2) project types which includes soliciting specific projects, coordinating and creating a regional program for potential grant funding on behalf of GWMA's members. Per GWMA's grant policy, GWMA may fund grant application costs in accordance with the following:

1. GWMA to fund application development and submission costs:
   a. No minimum or maximum application cost, but must meet the following:
      i. Single project with multiple benefits and indirect or direct benefit to the region; or
      ii. Single project with specific, multiple beneficiaries; or
      iii. On a case-by-case basis, GWMA Board may consider funding other grant applications if project is a priority and has special circumstances.

2. Criteria for Grant Applications
   a. Implementation Grants - $1M minimum total project cost per regional application (i.e. 5 sub-projects at $200k each);
   b. Planning Grants – No minimum project cost per regional application;
   c. If project is mandated by a regulatory agency, seek all grants without consideration of minimum match; and
   d. If project is not mandated by a regulatory agency, seek grants with no more than 60% local match required.

In November of 2023, the Board updated GWMA's On-Call Consultant list. Staff is recommending that the Executive Officer solicit proposals from the On-Call Consultant list under the category of Grant Writing in accordance with the On-Call Consultant Policy. Once proposals are received, an ad hoc committee of the board will be requested to review and evaluate the proposals and make recommendations for board consideration. Staff will then present them to the Board for consideration and approval using the existing On-Call Professional Services Agreement. It is anticipated that the estimated cost for grant writing services for each project type will fall into the category of services between $10k and $75k, meaning that those procedures will be followed for this scope. As reference, the On-Call Consultant policy for this category states:

a. *Consulting Services between $10k and $75k. Based on a general scope of services, staff will request proposals from all consultants listed under the appropriate category(ies) on the approved On-Call Consultant List.*

b. *The Executive Officer will evaluate, rank, and select the top ranked consultant upon negotiation until an agreement is met on the final fees. The Executive Officer will request authorization from the GWMA Board for award of contract to selected consultant. The request must include a brief description of the scope of work,*

background information regarding the amount being requested and the number of proposals sought and received. Upon approval, the Executive Officer will issue a Notice To Proceed using the existing PSA on file. If no agreement is on file, staff will utilize the pre-approved general PSA template and attach the proposal as an exhibit prior to execution.

The following lists for regional grant planning/opportunities and grant writing services were approved last November.

Scope of Work Category: ***Regional Planning Grant and/or Opportunities (including Development of Associated Documents.***

Firm	Contact	Email	On-Call Agreement Term
Craftwater Engineering	Oliver Galang	oliver.galang@craftwaterinc.com	2023-2028
CWE	Vik Bapna	vbapna@cwecorp.com	2023-2028
John L. Hunter & Associates	John Hunter	jhunter@jlha.net	2023-2028
Richard Watson & Associates	Richard Watson	rwatson@rwaplanning.com	2021-2026
Tetra Tech	Justin Smith	justin.smith@tetratech.com	2021-2026
Geosyntec Consultants	Ken Susilo	ksusilo@geosyntec.com	2023-2028

Scope of Work Category: ***Grant Writing and/or Grant Implementation Management.***

Firm	Contact	Email	On-Call Agreement Term
Craftwater Engineering	Oliver Galang	oliver.galang@craftwaterinc.com	2023-2028
CWE	Vik Bapna	vbapna@cwecorp.com	2023-2028
John L. Hunter & Associates	John Hunter	jhunter@jlha.net	2021-2026
Richard Watson & Associates	Richard Watson	rwatson@rwaplanning.com	2021-2026
SA Associates	Shahnawaz Ahmad	sahmad@saassociates.net	2023-2028

FISCAL IMPACT

The approved FY 2024-2025 administrative budget includes a specific line item for this work in the amount of $100,000.

RECOMMENDATION

a. Direct staff to request proposals from the pre-approved On-Call Consultants for Regional Planning Grant and/or Opportunities and Grant Writing services following the guidance set forth in the On-Call Consultant Policy and the Grant Policy and Procedures.