

AGENDA  
IRVINE RANCH WATER DISTRICT  
ENGINEERING AND OPERATIONS COMMITTEE  
TUESDAY, NOVEMBER 19, 2019

CALL TO ORDER 7:30 a.m., IRWD Operations Center, Committee Room  
3512 Michelson Drive, Irvine, California 92612

ATTENDANCE Committee Chair: Doug Reinhart \_\_\_\_\_  
Committee Member: Mary Aileen Matheis \_\_\_\_\_

ALSO PRESENT

Paul Cook	_____	Kevin Burton	_____	Paul Weghorst	_____
Jose Zepeda	_____	Wendy Chambers	_____	Tom Roberts	_____
Rich Mori	_____	Eric Akiyoshi	_____	Richard Mykitta	_____
Kelly Lew	_____	Jim Colston	_____	Ken Pfister	_____
Lars Oldewage	_____	Malcolm Cortez	_____	Scott Toland	_____
John Dayer	_____	Bruce Newell	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

NOTICE: If you wish to address the Committee on any item, please file your name with the Committee. Forms are provided at the meeting. Remarks are limited to three minutes per speaker on each subject.

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## COMMUNICATIONS

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1. Notes: Burton
2. Public Comments
3. Determine the need to discuss and/or take action on item(s) introduced that came to the attention of the District subsequent to the agenda being posted.
4. Determine which items may be approved without discussion.

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## INFORMATION

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5. UPCOMING PROJECTS STATUS REPORT – CORTEZ / AKIYOSHI / LEW / MORI

Recommendation: Receive and file.

6. RESEARCH BUSINESS PLAN UPDATE – OLDEWAGE / COLSTON / BURTON

Recommendation: Receive and file.

7. MICHELSON WATER RECYCLING PLANT BIOSOLIDS AND ENERGY RECOVERY FACILITIES CONSTRUCTION STATUS QUARTERLY REPORT – TOLAND / MORI / BURTON

Recommendation: Receive and file.

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**ACTION**

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8. SAN JOAQUIN RESERVOIR FILTRATION VARIANCE NO. 2 – CHO / CORTEZ / BURTON

Recommendation: That the Board authorize the General Manager to execute Variance No. 2 in the amount of \$347,129 to Carollo Engineers for the San Joaquin Reservoir Filtration, Project 10379.

9. PLANNING AREA 51 HERITAGE FIELDS CAPITAL FACILITIES – RIOS / LEW / BURTON

Recommendation: That the Board authorize the General Manager to execute a Supplemental Reimbursement Agreement with Heritage Fields for Planning Area 51, Great Park Neighborhoods, Districts 2, 3, 5, 6, 9, Domestic Water, Sanitary Sewer and Recycled Water Capital Improvements; authorize the General Manager to accept Heritage Fields' construction contract with Leatherwood Construction Inc. in the amount of \$1,615,806.60 for the Reach B East Sanitary Sewer Improvements, Project 10576; authorize the General Manager to accept Heritage Fields' construction contract with Leatherwood Construction Inc. in the amount of \$875,564.70 for the Reach C Sanitary Sewer and Recycled Water Improvements, Projects 10574 and 10734; authorize the General Manager to accept Heritage Fields' construction contract with Leatherwood Construction Inc. in the amount of \$225,835.00 for the Reach B East "P" Street Sanitary Sewer Improvements, Project 10868; and approve Contract Change Order No. 11 to Project 10117 in the amount of \$163,839.00 for the addition of deep sewer facility demolition and relocation tasks to the scope of the Reach B Sanitary Sewer Improvements.

10. PLANNING AREA 12 INNOVATION PARK CAPITAL FACILITIES – RIOS / LEW / BURTON

Recommendation: That the Board authorize the addition of the Planning Area 12 Innovation Park Capital Domestic Water Improvements, Project 11395 in the amount of \$410,000 to the FY 2019-20 Capital Budget, authorize the General Manager to execute a Supplemental Reimbursement Agreement with Irvine Community Development Company for Planning Area 12, Innovation Park, Domestic Water and Recycled Water Capital Improvements, and authorize the General Manager to accept Irvine Community Development Company's construction contract with Paulus Engineering, Inc. in the amount of \$560,844 for the Innovation Park Domestic Water and Recycled Water Improvements, Projects 11395 and 03734.

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**ACTION - Continued**

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11. SYPHON RESERVOIR GEOTECHNICAL INVESTIGATIONS PROJECT  
PERMITTING SERVICES VARIANCE NO. 2 – COREY / WELCH /  
SANCHEZ / WEGHORST

Recommendation: That the Board authorize the General Manager to execute Variance No. 2 in the amount of \$160,970 to the Professional Services Agreement with ESA for additional environmental permitting work associated with the Syphon Reservoir Geotechnical Investigations Project.

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**OTHER BUSINESS**

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12. Directors' Comments

13. Adjourn

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Availability of agenda materials: Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the above-named Committee in connection with a matter subject to discussion or consideration at an open meeting of the Committee are available for public inspection in the District's office, 15600 Sand Canyon Avenue, Irvine, California ("District Office"). If such writings are distributed to members of the Committee less than 72 hours prior to the meeting, they will be available from the District Secretary of the District Office at the same time as they are distributed to Committee Members, except that if such writings are distributed one hour prior to, or during, the meeting, they will be available at the entrance of the meeting room at the District's Operations Committee Room at 3512 Michelson, Irvine, California. The Irvine Ranch Water District's Committee Room is wheelchair accessible. If you require any special disability-related accommodations (e.g., access to an amplified sound system, etc.), please contact the District Secretary at (949) 453-5312 during business hours at least seventy-two (72) hours prior to the scheduled meeting.

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November 19, 2019

Prepared by: M. Cortez / E. Akiyoshi/  
K. Lew / R. Mori

Submitted by: K. Burton

Approved by: Paul A. Cook



ENGINEERING AND OPERATIONS COMMITTEE

UPCOMING PROJECTS STATUS REPORT

SUMMARY:

A status report of Irvine Ranch Water District's Upcoming Projects is presented to the Committee for information.

BACKGROUND:

The information, which is attached as Exhibit "A", is a status report submitted quarterly to the Committee for review.

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Upcoming Projects Status Report

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# EXHIBIT "A"

## IRWD UPCOMING PROJECTS STATUS REPORT

Project Name	Start	Start	Construction	Construction
	Planning	Design	Award	Final Acceptance
Turtle Ridge DW, RW Pipeline Rehabilitation			Winter 2020	
University Drive Widening Appurtenance Relocations (RA w/ Irvine)				Spring 2020
MWRP Tertiary Filter Rehabilitation		Fall 2019	Spring 2020	
Safety - MWRP MBR Fall Protection		Winter 2020		
MWRP Primary Tanks Replacement Covers		Fall 2019	Spring 2020	
Culver and University Intersection DW Pipeline Relocation		Fall 2019	Winter 2020	
MWRP Compressed Natural Gas Fueling Station		Fall 2019	Summer 2020	
DRWF Surge Tanks				Fall 2019
San Joaquin Reservoir Filtration Facility			Spring 2020	
MWRP Fall Protection Improvements Phase II				Fall 2019
Aliso Creek Remediation		Winter 2020		
2019 Vault Lid Replacement			Spring 2020	
Sewer Rehabilitation in Pelican Hill Golf Club			Fall 2019	
Bonita Canyon Drive Zone D to B PRV Supply Line Replacement				Spring 2020
Ladd Canyon Road DW Pipeline Replacement				Winter 2020
Lake Forest Woods Sewer Improvements		Fall 2019	Spring 2020	
Santiago Canyon Pump Station Improvements			Winter 2020	Winter 2021
MWRP Emergency Recycled Water Diversion to San Diego Creek				Fall 2019
Sewer Siphon Improvements			Winter 2020	Winter 2021
Baker Campus Entrance Improvements		Fall 2019	Winter 2020	Spring 2020
Wells 2, 17 and 52 Rehabilitation				Fall 2019
Wells 5, 14 and 16 Rehabilitation				Spring 2020
MWRP Odor Scrubber Platforms				Spring 2020
MWRP Headworks Screening Area Diverter Chute and Odor Scrubber Area Paving				Spring 2020
Bake Parkway Zone 5-4 PRV and Pipeline				Summer 2020
Baker WTP Hydrochloric Acid Scrubber Evaluation			Winter 2020	
Lake Forest Zone C Pipeline (Vista Terrace)		Fall 2019		
3.7 MG Zone 1 Reservoir				Spring 2020
Eastwood Zone A-B BPS and Zone A-C BPS				Summer 2020
Zone A-B and Zone A-C BPS Offsite Pipelines and ILP Bottom Drains				Summer 2020
Zone A to Rattlesnake Reservoir BPS			Spring 2020	
Lake Forest Zone B-C BPS			Winter 2021	
Baker WTP Softened Water Analysis		Winter 2020		
Serrano Creek Outlet Structure Improvements			Summer 2020	
ILP North Conversion - Reservoir				Fall 2019
Sewage Treatment Plant Master Plan		Summer 2020		
PDF Sodium Hypochlorite Storage and Feed System			Winter 2020	Summer 2021
Santiago Creek Dam Sloped Outlet			Fall 2021	

IRWD UPCOMING PROJECTS STATUS REPORT

Project Name	Start	Start	Construction	Construction
	Planning	Design	Award	Final Acceptance
Santiago Creek Dam Spillway Replacement		Winter 2020		
Santiago Canyon Fleming Zone 8 Tank and Zone 8-9 BPS		Fall 2019		
MWRP Biosolids and Energy Recovery Facilities				Fall 2020
Syphon Reservoir Improvements		Spring 2020		
Syphon Reservoir Geotechnical Investigation				Spring 2020
Baker WTP Solar Array				Winter 2020
MWRP Unit Substation T-1 Replacement			Winter 2020	Winter 2021
PA 1, Orchard Hills Neighborhood 3 DW and RW (RA w/ICDC)				Winter 2020
PA 1, Orchard Hills Neighborhood 3 RW (RA w/ICDC)				Winter 2020
PA 6, Neighborhood 5B and C Phase 2 RW (RA w/ICDC)				Summer 2020
PA 12, Innovation Park DW and RW (RA w/ICDC)				Fall 2020
PA 12, Innovation Park DW (RA w/ICDC)				Fall 2020
Tustin Legacy, Moffett at Peters Canyon Channel DW, RW (RA w/Tustin)				Summer 2020
Tustin Legacy, Flight Drive RW (RA w/Tustin)				Winter 2020
Tustin Legacy, Neighborhood South Phase 1, S (RA with/Tustin)			Winter 2020	
PA 51, Marine Way DW, RW (RA w/Heritage Fields)				Summer 2020
PA 51, South C St and LY St, S, RW (RA w/Heritage Fields)				Summer 2020
PA 51, Alton Pkwy from Technology to Muirlands, DW S, RW (RA w/Heritage Fields)				Summer 2020
PA 51, Marine Way from Barranca Pkwy to Alton Pkwy, DW S, RW (RA w/Heritage Fields)				Summer 2020
PA 51, Alton Interceptor Sewer (RA w/Heritage Fields)				Summer 2020
PA 51, Marine Way from Alton to Barranca Sewer (RA w/Heritage Fields)				Summer 2020
PA 51, Sociable from Z St to B St, RW (RA w/Heritage Fields)				Summer 2020
PA 51, GP1 St DW, S, RW (RA w/Heritage Fields)				Winter 2020
PA 51, GP2 St, DW, S, RW (RA w/Heritage Fields)				Winter 2020
PA 51, Magnet from Ridge Valley to Bosque RW (RA w/Heritage Fields)				Summer 2020
PA 51, Cadence South DW, S, RW (RA w/Heritage Fields)				Summer 2020
PA 51, District 5 A St DW, RW (RA w/Heritage Fields)				Winter 2020
PA 51, Chinon from Cadence South to Cadence (RA w/Heritage Fields)				Summer 2020
PA 51, Marine Way Reach C Sewer RW (RA w/Heritage Fields)				Summer 2020
PA 51, District 5, F and N St DW, RW				Fall 2020
PA 51, District 5, E St RW (RA w/Heritage Fields)				Fall 2020
PA 51, District 5, Astor DW, RW (RA w/Heritage Fields)				Fall 2020
PA 51, District 5, Merit DW, RW (RA w/Heritage Fields)				Fall 2020
PA 51, District 5, BB St RW (RA w/Heritage Fields)				Fall 2020
PA 51, District 5, P St and Cadence DW, RW (RA w/Heritage Fields)				Fall 2020
PA 51, Marine Way from Alton Pkwy to Bake Pkwy DW, RW (RA w/Heritage Fields)			Winter 2020	
Serrano Summit Phase 2 DW, RW				Summer 2020
Update to Replacement Planning Model, Phase 2	In-Process			



**IRWD UPCOMING PROJECTS STATUS REPORT**

Project Name	Start	Start	Construction	Construction
	Planning	Design	Award	Final Acceptance
Criticality Based Replacement Planning Prioritization	Fall 2019			
Tustin Legacy / W51 / W52 Treatment Alternatives	In-Process			
Sewer Lift Station Peak Wet Winter Flow Analysis	Winter 2020			
MWRP RW to GWRS Outfall - SD Creek Diversion Option	In-Process			
			<b>Category</b>	<b>Months</b>
			Winter	Jan. Feb. & Mar.
			Spring	Apr. May & June
			Summer	Jul. Aug. & Sep.
			Fall	Oct. Nov. & Dec.

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November 19, 2019  
Prepared by: L. Oldewage  
Submitted by: J. Colston / K. Burton  
Approved by: Paul A. Cook



ENGINEERING AND OPERATIONS COMMITTEE

RESEARCH BUSINESS PLAN UPDATE

SUMMARY:

Staff will provide an update on the research projects in which IRWD is currently involved.

BACKGROUND:

Periodically IRWD receives requests to participate in various research projects pertaining to emerging technologies through either direct funding or dedication of in-kind staff resources. Guidelines were developed to assist staff with its evaluation and response to those requests. These guidelines were incorporated into the IRWD Research Business Plan, which also provides a tracking mechanism for the various requests and ongoing research projects and programs in which IRWD participates. The underlying purpose of the Research Business Plan is to ensure that IRWD's research resources are being prioritized and utilized effectively.

One of the components of the Research Business Plan is for staff to provide a status update on the research projects to the Engineering and Operations Committee on a quarterly basis. A status update on the current research projects is attached as Exhibit "A".

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Research Projects Summary Table


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## Exhibit "A"

### Research Projects Summary Table

No.	Project Title	Project Description	IRWD Contact	Organizations Involved	Type of Research	IRWD Participation Resource	Start Date	Projected Completion Date	Comments/Next Steps
1	California Energy Commission - Advancing Cutting-Edge Technologies and Strategies to Reduce Energy Use and Cost in the Industrial, Agriculture, and Water Sectors; Demand Response Pilot Project	The Project will focus on testing and piloting advanced demand response technologies that co-optimize peak demand management with utility demand response events based on price signals under a range of utility tariffs at water treatment and pumping facilities.	Zepeda	California Energy Commission (CEC) & Advanced Microgrid Solutions (AMS), Lockheed Martin (LM) and Navigant	Case study, data review, best practice analysis and technical report.	Staff time for review of reports, sharing information, and site analysis.	Oct-18	Mar-20	Comments have been provided to AMS on its proposed energy saving measure at HATS and Well 21. AMS is working on responding to IRWD's comments and next steps for implementation of its recommendations.
2	Practical Framework for Water Infrastructure Resilience (WRF 5014)	This proposed project will help water utilities better understand the relationships between various "enterprise risk management" planning tools, performance, and level of service. The Project will also develop frameworks summarizing currently available resources, approaches, and legislation regarding infrastructure risk and resilience.	Akiyoshi	Water Research Foundation and Black & Veatch	Case study, data review, best practice analysis and technical report.	Staff time for review of reports, sharing information, and site analysis.	Oct-19	Feb-21	Project kickoff workshop was conducted in mid-October 2019 and an online resiliency survey was completed in early November 2019.

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November 19, 2019  
Prepared by: S. Toland / R. Mori  
Submitted by: K. Burton  
Approved by: Paul A. Cook 

ENGINEERING AND OPERATIONS COMMITTEE

MICHELSON WATER RECYCLING PLANT BIOSOLIDS AND ENERGY RECOVERY FACILITIES CONSTRUCTION STATUS QUARTERLY REPORT

SUMMARY:

Below is the August 2019 to October 2019 quarterly construction status report for the Michelson Water Recycling Plant (MWRP) Biosolids and Energy Recovery Facilities.

BACKGROUND:

Construction of the Biosolids project was awarded to Filanc/Balfour-Beatty Joint Venture (FBB) in March 2013 in the amount of \$163,465,940. The Biosolids project will provide biosolids digestion, dewatering, energy production, and on-site sludge drying. The project includes excavation for subsurface structures, installation of foundation piles, three egg-shaped methane digesters, a state-of-the-art odor control system, a biogas conditioning system and power generation using micro-turbines, a fats, oil and grease (FOG) receiving station, and new utility services. These facilities are being constructed on the land north of IRWD's existing Michelson Operations Center, maintenance shops, water quality laboratory, and warehouse.

General Project Information:

The project summary through October 31, 2019 and through Contract Change Order No. 109 is shown below.

Notice of Award	April 29, 2013
Contractual Project Completion Date	October 31, 2017
Estimated Project Completion Date	August 2020
Cumulative Time Extension through Change Order No. 107	368 Days
Percentage of Contractual Construction Time Elapsed	144%
Percentage of Total Contract Amount Invoiced	98.7%
Bid Amount	\$163,465,940
<u>Total Change Orders</u>	<u>\$ 21,349,052 (13.1%)</u>
Total Contract Amount	\$184,814,992
Amount Paid	\$182,104,612 (98.5%)

Project Update:

All major construction activities are complete throughout the project including the Solids Handling Building, Digesters, Digester Control Building, and ancillary facilities such as FOG, Dewatering Feed Pump Station and the Storm Water Pump Station. All site civil construction and landscape are substantially complete, with the exception of punch list items, which FBB is addressing. The new drive aisles and roadways have been completed, and IRWD has taken possession of the main road between the Michelson Operations Center and Biosolids Facilities, which is now being used as IRWD's primary access road for the Operations Center.

FBB continues to focus on startup and testing activities. Over the past quarter, process control system testing of polymer systems, duplex pump systems, polymer blending/batching and recirculation pump systems, and sludge thickening centrifuges have been completed. Equipment functional testing has also been completed for the thickening centrifuges and the valves and temperature transmitters in the acid phase digesters. FBB is now working on functional testing of the dewatering centrifuges and will soon transition to functional testing for the thickening and dewatering polymer systems. FBB continues to test and troubleshoot the overall SCADA network throughout the project.

Staff continues to focus FBB's efforts on completion of individual project components that can be finalized, tested, accepted, and turned over to IRWD for use. The recent emphasis has been on the storm water pump station and the control room and associated areas in the Solids Handling Building. The storm water pump station will be turned over to the District in the coming weeks and will be ready for service in advance of the winter season. FBB continues addressing punch list items in the control room and associated areas, and staff also anticipates that those facilities will be turned over to IRWD in the coming weeks. FBB completed installation and programming of the elevators and has requested final state inspection certification. Staff recently took possession of the IRWD storage building that was being used by FBB for equipment storage throughout the project and is again using that building for IRWD storage needs.

Schedule Update:

FBB continues advancing the start-up activities for the thickening centrifuges, Milestone No. 2, and staff anticipates completion in December 2019. Andritz will begin vendor installation verification and startup of the sludge drying systems within the next month. Staff anticipates initial introduction of activated sludge to the new facilities in January 2020 to complete the functional testing of specific processes that require sludge to adequately verify operation. After the testing is successfully completed, FBB will transition back to the use of recycled water for the remaining startup and testing of Milestones Nos. 3 (FOG Receiving Facilities), 4 (Anaerobic Digestion Facilities), and 5 (All Class B Solids Facilities). These tests will continue into mid-2020. Final overall plant commissioning is anticipated in November 2020.

FISCAL IMPACTS:

Not applicable.



ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:


Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – MWRP Biosolids and Energy Recovery Facilities Quarterly Report

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# EXHIBIT "A"




## Michelson Water Recycling Plant Biosolids and Energy Recovery Facilities

Construction Status Quarterly Report through October 2019

Engineering & Operations Committee  
November 19, 2019



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## November 2019 Quarterly Report

### Key Information / Dates

■ Contractor:	Filanc/Balfour-Beatty
■ Contract Amount:	\$163,465,940
■ Change Orders to Date (through CCO 109)	<u>\$ 21,349,052 (13.1%)</u>
■ Revised Contract Amount to Date:	\$184,814,992
■ Contractual Calendar Days:	1,646
■ Additional Days thru Change Orders:	368
■ Notice of Award:	April 29, 2013
■ Time Elapsed thru October 31, 2019:	144%
■ Contractual Completion Date:	October 31, 2017
■ Balance to Finish (as of Oct. 31, 2019)	\$2,710,380

Irvine Ranch Water District

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## November 2019 Quarterly Report

### Financial – Consultant Construction Phase Services Remaining Open Purchase Orders

Consultant	Scope	Purchase Order		Variance		Total Authorization	Total Invoice to Date	Percent of Total	Remaining Budget
		No.	Amount	Total No.	Amount				
Arcadis-US	Construction Inspection & Management	609917, 604656 521366	\$ 2,951,368.00	3	\$ 3,461,066.00	\$ 6,392,434.00	\$ (09/2019) 5,587,292.28	87%	\$ 805,141.72
Black & Veatch	Engineer of Record	609918, 609700 514248	\$ 12,509,031.00	8	\$ 11,881,634.00	\$ 24,390,663.00	\$ (08/2019) 21,160,480.37	87%	\$ 3,230,184.63
EI&C	SCADA Testing	609963, 600246 518742	\$ 2,074,867.00	3	\$ 1,693,320.00	\$ 3,768,187.00	\$ (09/2019) 2,797,476.12	74%	\$ 970,710.88
HDR	Construction Inspection	609962, 605837 321288	\$ 2,834,476.00	3	\$ 182,741.78	\$ 3,017,217.78	\$ (09/2019) 2,734,428.63	91%	\$ 282,989.15

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## November 2019 Quarterly Report

### Project Milestones

**Milestone 1 (WAS and Primary Sludge Processing) – Completed October 2017**

**Milestone 2 (Thickening Centrifuges) – Late Fall/Early Winter 2019 Completion**

**Complete Physical Construction – Late Fall 2019**

**Milestone Nos. 3 (FOG), 4 (Anaerobic Digestion), and  
5 (All Class B Facilities) – Testing through Summer 2020**

**Final Plant Commissioning – Anticipated November 2020**

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November 2019 Quarterly Report

Solids Handling Building Courtyard



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November 2019 Quarterly Report

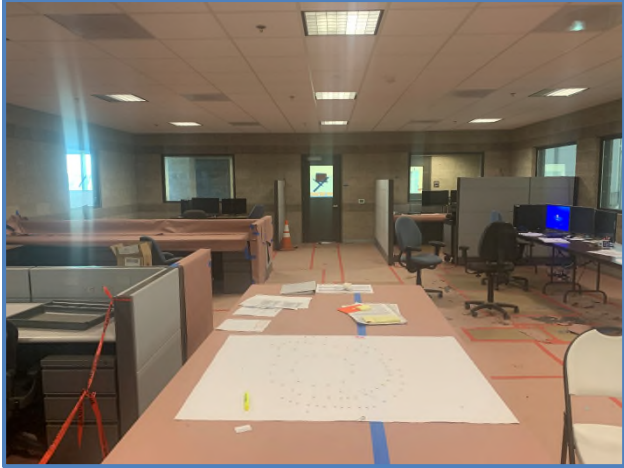
Methane Digester Complex



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November 2019 Quarterly Report

Control Room



7

November 2019 Quarterly Report

Sample Analysis Room



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# November 2019 Quarterly Report

## Break Room



# November 2019 Quarterly Report

## Men's and Women's Restrooms



# November 2019 Quarterly Report

## Solids Handling Building Hallways



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# November 2019 Quarterly Report

## Pavement and Roadway Striping

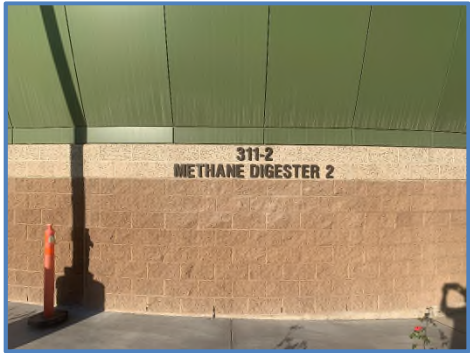


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# November 2019 Quarterly Report

## Facility Labeling



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# November 2019 Quarterly Report

## Storm Water Pump Station 3



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November 19, 2019  
Prepared by: H. Cho / M. Cortez  
Submitted by: K. Burton  
Approved by: Paul A. Cook



ENGINEERING AND OPERATIONS COMMITTEE

SAN JOAQUIN RESERVOIR FILTRATION VARIANCE NO. 2

SUMMARY:

The San Joaquin Reservoir Filtration project will install a filtration system and disinfection improvements at the reservoir to mitigate algae and debris entering the recycled water system. Staff recommends that the Board authorize the General Manager to execute Variance No. 2 in the amount of \$347,129 to Carollo Engineers for the San Joaquin Reservoir Filtration.

BACKGROUND:

IRWD's recycled water customers in the Newport Coast area have reported clogged irrigation equipment and filters on the customer side of the service meter and increased maintenance costs. Staff has identified the San Joaquin reservoir as a source of algae and debris entering the recycled water distribution system. Currently, IRWD does not have a filtration system for water drafting out of the reservoir into the distribution system. In February 2019, IRWD retained Carollo Engineers to design filtration and disinfection improvements at San Joaquin Reservoir to mitigate against algae and debris entering the Zone B system.

Design Services – Variance No. 2:

Variance No. 2 includes additional design work due to: 1) a change to the filtration system requirements, 2) addition of a concrete masonry block building to enclose the filtration system for noise abatement purposes, and 3) inclusion of a piping system to return filter backwash waste into the reservoir.

The original design scope of work included siting the proposed filtration system under a canopy structure near the reservoir's control building. The project area is shown in Exhibit "A". Based on water quality testing performed by PACE Advanced Water Engineering, the proposed filter system was to be sized with 10-micron filters for algae removal. During preliminary design, Carollo had discussions with irrigation system manufacturers and determined that current irrigation componentry (e.g., emitter and filters) are based on water filtered to a range of 70 microns to 130 microns. Therefore, the proposed filtration system will use 70-micron disc-type filters.

Depending on the reservoir's water quality, the disc filtration system may need up to six backwashes per hour to remove algae and debris from the filters. Consequently, pneumatically actuated valves will be used due to the frequent cycles of opening and closing. Pneumatic valves generate noise when in operation (more noise than motor actuated valves that are used at existing strainer facilities in the District), and staff recommends enclosing the equipment in a building for noise abatement instead of covering the equipment with a canopy. The building will substantially minimize this noise from reaching the residential developments surrounding the

reservoir. The building will also house an electrical room, have heating, ventilation and air conditioning, and a building drainage system for disc filter replacement activities.

The original design scope of work also included evaluating the use of the existing reservoir seepage drain system to convey the filter backwash material back into the reservoir because there are no nearby sewer facilities. The anticipated amount of backwash flow is approximately 600 gallons per minute; Carollo found the seepage return system to have inadequate capacity to convey both the reservoir seepage and the filter backwash flow. Carollo also reviewed the option of conveying the backwash waste to the nearest sewer. This is not a cost effective option since the new sewer would be approximately 3,000 feet in length and the existing sewers between San Joaquin Reservoir and Michelson Water Recycling Plant, as well as two sewage lift stations, would have to be upsized.

Another alternative for the backwash waste is dewatering the solids in the backwash waste and trucking to off-site disposal similar to the centrifuge operation at the Baker Plant. Due to the presence of algae in San Joaquin Reservoir, a Dissolved Air Flootation (DAF) system would be required in addition to centrifuges to separate the floating algae from the backwash waste. A DAF and centrifuge facility would be housed in a separate building, at a cost of approximately \$4.5 million. The facility would operate for only six months out of the year when water is flowing out of the reservoir and would likely require a full-time operator on site during normal work hours to monitor the process.

The recommended option for the backwash waste is conveying the waste to the back of the reservoir via a new pipeline. Returning the waste to the back of the reservoir will minimize the waste from entering the reservoir outlet valves near the front of the reservoir. Returning the backwash waste to the reservoir will likely be Phase I of filter backwash waste disposal. In the interim, staff procured ultrasonic buoys from LG Sonic that mitigate against algae growth, and these units will be deployed this month in the reservoir. The buoys use ultrasound to slow the growth of algae in the top few feet below the water surface where the algae grow in the presence of sunlight. If the buoys are successful in controlling the algae, then a Phase II may not be required. If the buoys are unsuccessful, a DAF and centrifuge facility may be needed in combination with the backwash waste return line constructed in Phase I.

The total cost of Variance No. 2 to the Carollo Professional Services Agreement is \$347,129. The cost for the additional work involving the change to a 70-micron filter screen size and researching options to dispose of or return the backwash waste to the reservoir is \$45,032. With regard to the new building, Carollo determined that an additional 68 plan sheets are required for the additional design elements resulting in a fee increase of \$302,097. The unit cost per sheet is approximately \$4,400, which staff determined to be reasonable. Variance No. 2 is shown in Exhibit "B".

#### FISCAL IMPACTS:

San Joaquin Reservoir Filtration, Project 10379, is included in the FY 2019-20 Capital Budget. The existing budget is sufficient to fund the additional engineering services.

ENVIRONMENTAL COMPLIANCE:

This project is subject to the California Environmental Quality Act (CEQA). In conformance with the California Code of Regulations Title 14, Chapter 3, Section 15004, the appropriate environmental document will be prepared when "meaningful information" becomes available.

RECOMMENDATION:

That the Board authorize the General Manager to execute Variance No. 2 in the amount of \$347,129 to Carollo Engineers for the San Joaquin Reservoir Filtration, Project 10379.

LIST OF EXHIBITS:

Exhibit "A" – Site Plan

Exhibit "B" – Carollo Engineers' Variance No. 2

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EXHIBIT "A"



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**IRVINE RANCH WATER DISTRICT  
PROFESSIONAL SERVICES VARIANCE**

**EXHIBIT "B"**

Project Title: San Joaquin Reservoir Filtration Project

Project No.: 10379

Date: 10/4/19

Purchase Order No.: \_\_\_\_\_

Variance No.: 2

Originator:      IRWD            ENGINEER/CONSULTANT      Other (Explain) \_\_\_\_\_

**Description of Variance (attach any back-up material):**

Discussions and decisions during the Preliminary Design phase have led to changes from the original basis of design. These changes include modifications to the filtration facility (number of filtration stages, degree of filtration, capacity), a new filtration building with structural, architectural, and HVAC requirements, new filter waste washwater return pumps and return line, and modifications to the filtration building electrical room. This has resulted in efforts outside the original scope of work and planned budget as described in the attached letter.

**Engineering & Management Cost Impact:**

Classification	Manhours	Billing Rate	Labor \$	Direct Costs	Subcon. \$	Total \$
Preliminary Design	230	Varies - Refer to attached fee table.	\$45,032	-	-	\$45,032
Final Design	1,625		\$302,097	-	-	\$302,097
<b>Total \$ =</b>						<b>\$347,129</b>

**Schedule Impact:**

Task	Task Description	Original Schedule	Schedule Variance	New Schedule
3/4	Preliminary Design/ Final Design	November 2019	+4 months	March 2020

**Required Approval Determination:**

Total Original Contract	\$ <u>634,888</u>	<input type="checkbox"/> Director: Cumulative total of Variances less than or equal to \$50,000.
Previous Variances	\$ <u>84,444</u>	<input type="checkbox"/> Executive Director: Cumulative total of Variances less than or equal to \$75,000.
This Variance	\$ <u>347,129</u>	
Total Sum of Variances	\$ <u>431,573</u>	<input type="checkbox"/> General Manager: Cumulative total of Variances less than or equal to \$100,000.
New Contract Amount	\$ <u>1,066,461</u>	
Percentage of Total Variances to Original Contract	<u>68</u> %	<input checked="" type="checkbox"/> Board: Cumulative total of Variances greater than \$100,000.

ENGINEER/CONSULTANT: Carollo Engineers, Inc.,

IRVINE RANCH WATER DISTRICT

Company Name

James A. Meuchler  
Project Engineer/Manager

10/4/19  
Date

He [Signature]  
Department Director

11/4/19  
Date

[Signature]  
Engineer's/Consultant's Management

10/4/19  
Date

General Manager/Board

Date

# IRVINE RANCH WATER DISTRICT

## PROFESSIONAL SERVICES VARIANCE REGISTER

Project Title: <u>San Joaquin Reservoir Filtration Project</u>				
Project No.: <u>10379</u> Project Manager: <u>Jim Meyerhofer</u>				
Variance No.	Description	Dates		Variance Amount
		Initiated	Approved	
1	Pilot Study	10/2/19		\$84,444
2	Preliminary Design/ Final Design	10/4/19		\$347,129

October 4, 2019

Mr. Harry Cho, P.E.  
Senior Engineer  
Irvine Ranch Water District  
3512 Michelson Drive  
Irvine Ranch, CA 92612

Subject: San Joaquin Reservoir Filtration Project  
Variance 2 Request

Dear Mr. Cho:

Discussions and decisions during the Preliminary Design phase of the San Joaquin Reservoir (SJR) Filtration Project have led to changes from the original basis of design. These changes include modifications to the filtration facility (number of filtration stages, degree of filtration, capacity), a new filtration building with structural, architectural, and HVAC requirements, new filter waste washwater return pumps and return line, and modifications to the control building electrical room. This has resulted in efforts outside the original scope of work and planned budget, described as follows.

### **Preliminary Design**

In the RFP, IRWD identified the need to filter up to 25 cfs of SJR water to 10 microns ( $\mu\text{m}$ ) by adding a filtration system and replacing the existing booster pumps. The RFP assumed that the new filtration system would be housed under a canopy on a concrete slab. In addition, the RFP assumed that the existing Seepage Return Pump Station and return pipeline would be used to return filter waste washwater to the reservoir.

Carollo sized and laid out a 25 cfs, two stage, 10  $\mu\text{m}$  filtration facility. Pumping requirements were established for the associated booster pumps and backwash pumps. Based on the anticipated backwash flow rates and volumes, Carollo determined that the existing Seepage Return Pump Station and return pipeline was undersized to serve this additional flow. Therefore, Carollo also sized a new filter waste washwater equalization basin, return pumps, and return pipeline.

IRWD communicated to Carollo that any additional noise resulting from the new filtration facility would be unacceptable by the neighboring community. After collecting noise data from existing facilities, Carollo recommended that the filtration system be housed in a new building to attenuate noise from the frequent backwashing of the strainers. Carollo developed a Sketchup model to reflect this revised baseline design.

As a result of discussions with District staff and equipment manufacturers, the decision was made to increase the filtration limit to 70  $\mu\text{m}$ , which is the accepted standard in the irrigation industry for misters (200 mesh screens). To accommodate this change, Carollo revised the model and pumping requirements to reflect a 25 cfs, single stage filtration facility. During this time it was discovered that the existing pump station configuration was limited to 18.5 cfs. Therefore, Carollo developed one solution that would meet the District's RFP capacity requirement (new pump station in the filtration facility) and two alternative solutions that would utilize the existing booster pump station as originally intended:

- Replace the existing pumps with higher head units of the same capacity and have a smaller screening facility.

- Replace the existing pumps with higher head units and a full size screening facility, operating all 3 pumps at peak flow- no standby.

The first draft preliminary design report was submitted in June based on the above revisions.

After further discussion, the District concluded that a lower capacity system that could utilize the existing pump station would be acceptable. Therefore, Carollo revised the preliminary design based on a single stage, 18.5 cfs filtration system. Per the District's request, Carollo also investigated the concept of returning filter waste washwater with reservoir inflow by analyzing historical data. This method was determined to be infeasible. The preliminary design report was revised based on the following District decisions:

- Operate pumps in a 2 duty + 1 standby configuration, where the net flow delivered is 18.5 cfs during normal filtration and less (14.5 cfs) during a backwash cycle
- Utilize existing pump room in Control Building
- Ultimate capacity will not increase beyond 18.5 cfs gross
- Ultimate degrees of filtration will not decrease (70 micron)
- Abandon concept of returning filter waste washwater with reservoir inflow
- Enlarge electrical room to accommodate new booster pump VFDs

The revised draft preliminary design report was submitted in August.

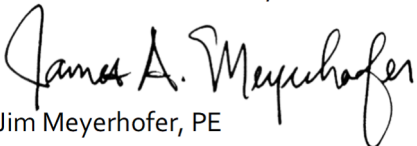
### Final Design

As described above, the recommended project is more complex than originally envisioned. The added project complexity is driven by the requirement for a new building instead of a canopy to eliminate noise concerns. Design of a new building will require additional effort from a structural, architectural, and HVAC perspective. In addition to the new building, a new filter waste washwater equalization basin and return pipeline are required. Lastly the electrical modifications (enlarging the existing electrical room) have become more complex than originally anticipated.

Our estimated effort to complete the additional scope described above is attached to this letter as Exhibits A.1 and A.2. We have also included IRWD's Professional Services Variance as Exhibit C. We appreciate your consideration in approving the requested variance issued.

Sincerely,

CAROLLO ENGINEERS, INC.

  
Jim Meyerhofer, PE

Enclosures: Budget Tables, Scope of Work (Exhibits A.1 & A.2)  
Professional Services Variance (Exhibit C)

Irvine Ranch Water District  
 San Joaquin Reservoir Filtration Project  
 Estimated Fee - Preliminary Design

Exhibit A.1

TASK	Project Manager Meyerhofer	Project Engineer Ottoboni	White	Murphy	Gatney	Hejka	Davis	Slattery	Tech	Word Processing	Carollo Task Hours	Carollo Labor Cost	Other Direct Costs	Total Project Cost
	\$233.00	\$205.00	\$233.00	\$170.00	\$233.00	\$170.00	\$233.00	\$233.00	\$175.00	\$126.00				
Task 3 - Preliminary Design		24	24	74	24	24	8	36		16	230	\$ 45,032.00	-	\$ 45,032.00
<b>Task Subtotal</b>	<b>0</b>	<b>24</b>	<b>24</b>	<b>74</b>	<b>24</b>	<b>24</b>	<b>8</b>	<b>36</b>	<b>0</b>	<b>16</b>	<b>230</b>	<b>\$ 45,032.00</b>	<b>\$ -</b>	<b>\$ 45,032.00</b>

Irvine Ranch Water District  
San Joaquin Reservoir Filtration Project  
Estimated Fee - Final Design


Exhibit A.2

ORIGINAL FINAL DESIGN ESTIMATED FEE

TASK	WORK ELEMENT	Project Manager Meyenhofer	Project Engineer Burdy	Murphy	Goddard	Rasmus	Hedlund	Doering	White	Requibert	Washbar	Technician	Word Processing	Carollo Task Hours	Carollo Task Subtotal	Other Direct Costs	Total
3	Final Design	\$ 233	\$ 205	\$ 170	\$ 170	\$ 233	\$ 233	\$ 233	\$ 233	\$ 233	\$ 205	\$ 175	\$ 126				
3.1	Project Manual	2	8	8	4		8	4	8	4	2	16	16	80	\$ 14,964	\$ -	\$ 14,964
3.2	Construction Plans	16	60	80	24			40				306	16	542	\$ 98,594	\$ 750	\$ 99,344
3.2.1	60% Design	16	60	80	24			40				306	16	542	\$ 98,594	\$ 750	\$ 99,344
3.2.2	90% Design	8	60	80	8			22				250	16	444	\$ 80,016	\$ 750	\$ 80,766
3.2.3	100% Design	8	60	80	4			22				112	40	326	\$ 58,210	\$ 750	\$ 58,960
3.2.4	Final Design	2	56	36	2			12				74	40	222	\$ 39,192	\$ 750	\$ 39,942
3.3	Electrical/Instrumentation Design		20	80			140					168		408	\$ 79,720	\$ -	\$ 79,720
3.3.1	SCE Final Service Plan		16				24							40	\$ 8,872	\$ -	\$ 8,872
3.4	Construction Phasing		16	16										32	\$ 6,000	\$ -	\$ 6,000
3.5	Permits		8			40								48	\$ 10,960	\$ -	\$ 10,960
3.6	Project Schedule	2	16											18	\$ 3,746	\$ -	\$ 3,746
3.7	Opinion of Probable Construction Costs	2	8						40					50	\$ 11,426	\$ -	\$ 11,426
	<b>TASK HOURS</b>	<b>40</b>	<b>328</b>	<b>380</b>	<b>42</b>	<b>40</b>	<b>172</b>	<b>100</b>	<b>48</b>	<b>4</b>	<b>2</b>	<b>926</b>	<b>128</b>	<b>2,210</b>			
	<b>TASK COST</b>	<b>\$ 9,320</b>	<b>\$ 67,240</b>	<b>\$ 64,600</b>	<b>\$ 7,140</b>	<b>\$ 9,320</b>	<b>\$ 40,076</b>	<b>\$ 23,300</b>	<b>\$ 11,184</b>	<b>\$ 932</b>	<b>\$ 410</b>	<b>\$ 162,050</b>	<b>\$ 16,128</b>		<b>\$ 411,700</b>	<b>\$ 3,000</b>	<b>\$ 414,700</b>

REVISED FINAL DESIGN ESTIMATED FEE

TASK	WORK ELEMENT	Project Manager Meyenhofer	Project Engineer Chabot	Murphy	Goddard	Rasmus	White	Technician	Word Processing	Electrical I/C			Structural and Architectural				Civil		HVAC and Plumbing		Carollo Task Hours	Subcontractor Task Hours	Total Task Hours	Other Direct Costs	Total	
										Hedlund	Slattery	Sr. Engineer	Structural Engineer	Sr. Engineer	Architect	Technician	Civil Engineer	Technician	Civil Engineer	Technician						
3	Final Design	\$ 233	\$ 205	\$ 170	\$ 170	\$ 233	\$ 233	\$ 175	\$ 126	\$ 233	\$ 205	\$ 170	\$ 233	\$ 164	\$ 165	\$ 130	\$ 205	\$ 156	\$ 175	\$ 126						
3.1	Project Manual	2	40					16	16	8	8											90	0	90	\$ -	\$ 16,986
3.2	Construction Plans	16	300	40	16		96	206	16			80	80	40	140	160	80	20	30	690	630	1,320	\$ 750	\$ 245,052		
3.2.1	60% Design	16	300	40	16		96	206	16			80	80	40	140	160	80	20	30	690	630	1,320	\$ 750	\$ 245,052		
3.2.2	90% Design	8	200	20			42	150	16			28	30	20	60	40	40	10	20	436	248	684	\$ 750	\$ 126,320		
3.2.3	100% Design	8	160	20			42	112	12			20	21	10	40	40	24	10	10	354	175	529	\$ 750	\$ 99,620		
3.2.4	Final Design	2	56				42	74	12			20	20	10	40	30	20	10	10	186	160	346	\$ 750	\$ 64,014		
3.3	Electrical/Instrumentation Design							269	34	49	159	135									646	0	646	\$ -	\$ 118,321	
3.3.1	SCE Final Service Plan		16							24											40	0	40	\$ -	\$ 8,872	
3.4	Construction Phasing		16																		16	0	16	\$ -	\$ 3,280	
3.5	Permits		40			40															80	0	80	\$ -	\$ 17,520	
3.6	Project Schedule	2	16																		18	0	18	\$ -	\$ 3,746	
3.7	Opinion of Probable Construction Costs	2	8				40				8										58	8	66	\$ -	\$ 13,066	
	<b>TASK HOURS</b>	<b>40</b>	<b>852</b>	<b>80</b>	<b>16</b>	<b>40</b>	<b>262</b>	<b>827</b>	<b>106</b>	<b>81</b>	<b>175</b>	<b>135</b>	<b>148</b>	<b>151</b>	<b>80</b>	<b>280</b>	<b>270</b>	<b>164</b>	<b>50</b>	<b>70</b>	<b>2,614</b>	<b>1,221</b>	<b>3,835</b>			
	<b>TASK COST</b>	<b>\$ 9,320</b>	<b>\$ 174,660</b>	<b>\$ 13,600</b>	<b>\$ 2,720</b>	<b>\$ 9,320</b>	<b>\$ 61,046</b>	<b>\$ 144,725</b>	<b>\$ 13,356</b>	<b>\$ 18,873</b>	<b>\$ 35,875</b>	<b>\$ 22,950</b>	<b>\$ 34,484</b>	<b>\$ 24,764</b>	<b>\$ 13,200</b>	<b>\$ 36,400</b>	<b>\$ 55,350</b>	<b>\$ 25,584</b>	<b>\$ 8,750</b>	<b>\$ 8,820</b>				<b>\$ 3,000</b>	<b>\$ 716,797</b>	

November 19, 2019  
Prepared by: B. Rios / K. Lew  
Submitted by: K. Burton  
Approved by: Paul A. Cook 

ENGINEERING AND OPERATIONS COMMITTEE

PLANNING AREA 51 HERITAGE FIELDS CAPITAL FACILITIES

SUMMARY:

Heritage Fields El Toro, LLC (Heritage Fields) is proceeding with development of Planning Area (PA) 51 (Great Park), which includes the construction of streets, storm drains, domestic water, sanitary sewer, and recycled water improvements. As part of the development, Heritage Fields will construct IRWD capital facilities under a proposed Supplemental Reimbursement Agreement (SRA). Staff recommends that the Board:

- Authorize the General Manager to execute a Supplemental Reimbursement Agreement with Heritage Fields for Planning Area 51, Great Park Neighborhoods, Districts 2, 3, 5, 6, 9, Domestic Water, Sanitary Sewer and Recycled Water Capital Improvements;
- Authorize the General Manager to accept Heritage Fields' construction contract with Leatherwood Construction Inc. in the amount of \$1,615,806.60 for the Reach B East Sanitary Sewer Improvements, Project 10576;
- Authorize the General Manager to accept Heritage Fields' construction contract with Leatherwood Construction Inc. in the amount of \$875,564.70 for the Reach C Sanitary Sewer and Recycled Water Improvements, Projects 10574 and 10734;
- Authorize the General Manager to accept Heritage Fields' construction contract with Leatherwood Construction Inc. in the amount of \$225,835.00 for the Reach B East "P" Street Sanitary Sewer Improvements, Project 10868; and
- Approve Contract Change Order (CCO) No. 11 to Project 10117 in the amount of \$163,839.00 for the addition of deep sewer facility demolition and relocation tasks to the scope of the Reach B Sanitary Sewer Improvements.

BACKGROUND:

Heritage Fields is moving forward with the residential development of District 5 and the backbone streets of District 6 within PA 51. District 5 is bound by Irvine Boulevard, Chinon, O Street and Lynx. District 6 is south of Marine Way, east of the County of Orange parcel and north of the Barranca Parkway. The project location map is shown as Exhibit "A". As part of this development, Heritage Fields will design and construct IRWD's domestic water, sanitary sewer, and recycled water capital improvements. The required IRWD capital facilities are documented in the September 2016 PA 51 Sub-Area Master Plan Update and all subsequent addendums and updates prepared by Stantec.

The design and construction of the IRWD facilities will be performed under the terms of the Master Reimbursement Agreement approved by the Board in August 2012 and as further refined in the SRA. The SRA, which covers capital facilities in Districts 2, 3, 5, 6 and 9, is attached as Exhibit "B" and has been reviewed by IRWD's legal counsel.

Reach B East Sanitary Sewer Improvements:

The Reach B East Sanitary Sewer Improvements consist of installing approximately 4,000 feet of 18-inch sewer pipeline and 90 feet of 24-inch sewer pipeline north of and parallel to the Orange County Transportation Authority (OCTA) railroad, then north to the future Marine Way. This portion of the Reach B sewer will be placed within an easement across County Property, the Second Harvest Site and other FivePoint Properties before reaching the future right of way within Marine Way. Heritage Fields retained ProActive Engineering Consultants to prepare the plans and received bids from four contractors. Heritage Fields recommends awarding the construction contract to the low bidder, Leatherwood Construction Inc., for a bid amount of \$1,615,806.60 as shown on Page 3 of Exhibit “C”. In addition, Heritage Fields has received consultant proposals for geotechnical observation and testing, surveying, construction support services, design and field archeological and paleontological monitoring. Staff has reviewed the consultant proposals and the construction bids and found the amounts to be acceptable. A summary of the Reach B East Sanitary Sewer Improvements costs is shown below.

Design (ProActive)	\$ 110,200.00
Construction (Leatherwood)	\$1,615,806.60
Geotechnical Services (Engeo)	\$ 28,700.00
Construction Engineering/Surveying (ProActive)	\$ 73,890.00
Archeo/Paleo Monitoring (LSA)	\$ 9,500.00
Heritage Fields Administration Fee (1%)	<u>\$ 16,158.07</u>
	\$1,854,254.67

Reach C Sanitary Sewer and Recycled Water Improvements:

The Reach C Sanitary Sewer and Recycled Water Improvements consist of installing approximately 700 feet of 18-inch sewer pipeline and 700 feet of 16-inch recycled water pipeline from the intersection of Marine Way and Barranca Parkway north across the OCTA railroad. Approximately half of the length of these pipelines will be bored under the railroad and stubbed north of the tracks within the alignment of the future Marine Way. Heritage Fields retained ProActive Engineering Consultants to prepare the plans and received bids from four contractors. Heritage Fields recommends awarding the construction contract to the low bidder, Leatherwood Construction Inc., for a bid amount of \$875,564.70 as shown on Page 5 of Exhibit “C”. In addition, Heritage Fields has received consultant proposals for geotechnical observation and testing, surveying, construction support services, design and field archeological and paleontological monitoring. Staff has reviewed the consultant proposals and the construction bids and found the amounts to be acceptable. A summary of the Reach C Sanitary Sewer and Recycled Water Improvements costs is shown below.

Design (ProActive)	\$ 83,300.00
Construction (Leatherwood)	\$ 875,564.70
Geotechnical Services (Engeo)	\$ 15,500.00
Construction Engineering/Surveying (ProActive)	\$ 49,390.00
Archeo/Paleo Monitoring (LSA)	\$ 5,100.00
Heritage Fields Administration Fee (1%)	<u>\$ 8,755.65</u>
	\$1,037,610.35



Reach B East “P” Street Sanitary Sewer Improvements:

The Reach B East “P” Street Sanitary Sewer Improvements consist of installing approximately 200 feet of 18-inch sewer pipeline and 100 feet of 12-inch sewer pipeline near the intersection of “O” Street and “P” Street. Heritage Fields retained Hunsaker and Associates to prepare the plans and received bids from four contractors. Heritage Fields recommends awarding the construction contract to Leatherwood Construction Inc. for a bid amount of \$225,835.00 as shown in Exhibit “D”. In addition, Heritage Fields has received consultant proposals for geotechnical observation and testing, surveying, construction support services, design and field archeological and paleontological monitoring. Staff has reviewed the consultant proposals and the construction bids and found the amounts to be acceptable. A summary of the Reach C Sanitary Sewer and Recycled Water Improvements costs is shown below.

Design (Hunsaker)	\$ 35,500.00
Construction (Leatherwood)	\$225,835.00
Geotechnical Services (Engeo)	\$ 4,000.00
Construction Engineering/Surveying (Hunsaker)	\$ 8,600.00
Archeo/Paleo Monitoring (LSA)	\$ 1,350.00
Heritage Fields Administration Fee (1%)	<u>\$ 2,258.35</u>
	\$277,543.35

Reach B Sanitary Sewer Improvements CCO No. 11:

CCO No. 11 to the Reach B Sanitary Sewer Improvements represents revisions made during construction that included the removal of a deep manhole, repair of a segment of 24-inch sewer, sewer bypassing operations for the repair work, and the removal and relocation of a deep sewer lateral. These changes were made as a result of coordination with IRWD’s Collections staff for facilities that fell within sports fields that were not accessible for maintenance. The redesign of these facilities and additional excavation and soils testing also resulted in additional consultant amounts. Staff has reviewed the costs and quantities associated with this change order and finds them to be acceptable. CCO No. 11 in the amount of \$163,839.00 is attached as Exhibit “E”.

FISCAL IMPACTS:

Projects 10576, 10574, 10734, 10868, and 10117 are included in the FY 2019-20 Capital Budget and the budgets are sufficient to fund the construction.

ENVIRONMENTAL COMPLIANCE:

Construction of capital domestic water, sewer, and recycled water facilities for the Great Park Development is subject to CEQA. In conformance with the California Code of Regulations Title 14, Chapter 3, Article 7 an Environmental Impact Report was certified by the City of Irvine, the lead agency on April 4, 2012 (SCH# 2002101020).

RECOMMENDATION:

That the Board authorize the General Manager to execute a Supplemental Reimbursement Agreement with Heritage Fields for Planning Area 51, Great Park Neighborhoods, Districts 2, 3, 5, 6, 9, Domestic Water, Sanitary Sewer and Recycled Water Capital Improvements; authorize the General Manager to accept Heritage Fields' construction contract with Leatherwood Construction Inc. in the amount of \$1,615,806.60 for the Reach B East Sanitary Sewer Improvements, Project 10576; authorize the General Manager to accept Heritage Fields' construction contract with Leatherwood Construction Inc. in the amount of \$875,564.70 for the Reach C Sanitary Sewer and Recycled Water Improvements, Projects 10574 and 10734; authorize the General Manager to accept Heritage Fields' construction contract with Leatherwood Construction Inc. in the amount of \$225,835.00 for the Reach B East "P" Street Sanitary Sewer Improvements, Project 10868; and approve Contract Change Order No. 11 to Project 10117 in the amount of \$163,839.00 for the addition of deep sewer facility demolition and relocation tasks to the scope of the Reach B Sanitary Sewer Improvements.

LIST OF EXHIBITS:

Exhibit "A" – Location Map

Exhibit "B" – Supplemental Reimbursement Agreement with Heritage Fields for Planning Area 51, Great Park Neighborhoods, Districts 2, 3, 5, 6, 9, Domestic Water, Sanitary Sewer and Recycled Water Capital Improvements

Exhibit "C" – Bid Summary, Reach B East Sanitary Sewer Improvements and Reach C Sanitary Sewer and Recycled Water Improvements

Exhibit "D" – Bid Summary, Reach B East "P" Street Sanitary Sewer Improvements

Exhibit "E" – CCO No. 11, Reach B Sanitary Sewer Improvements

# EXHIBIT "A"

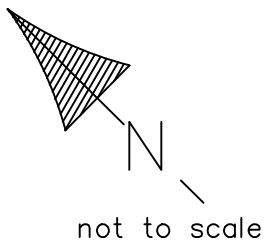
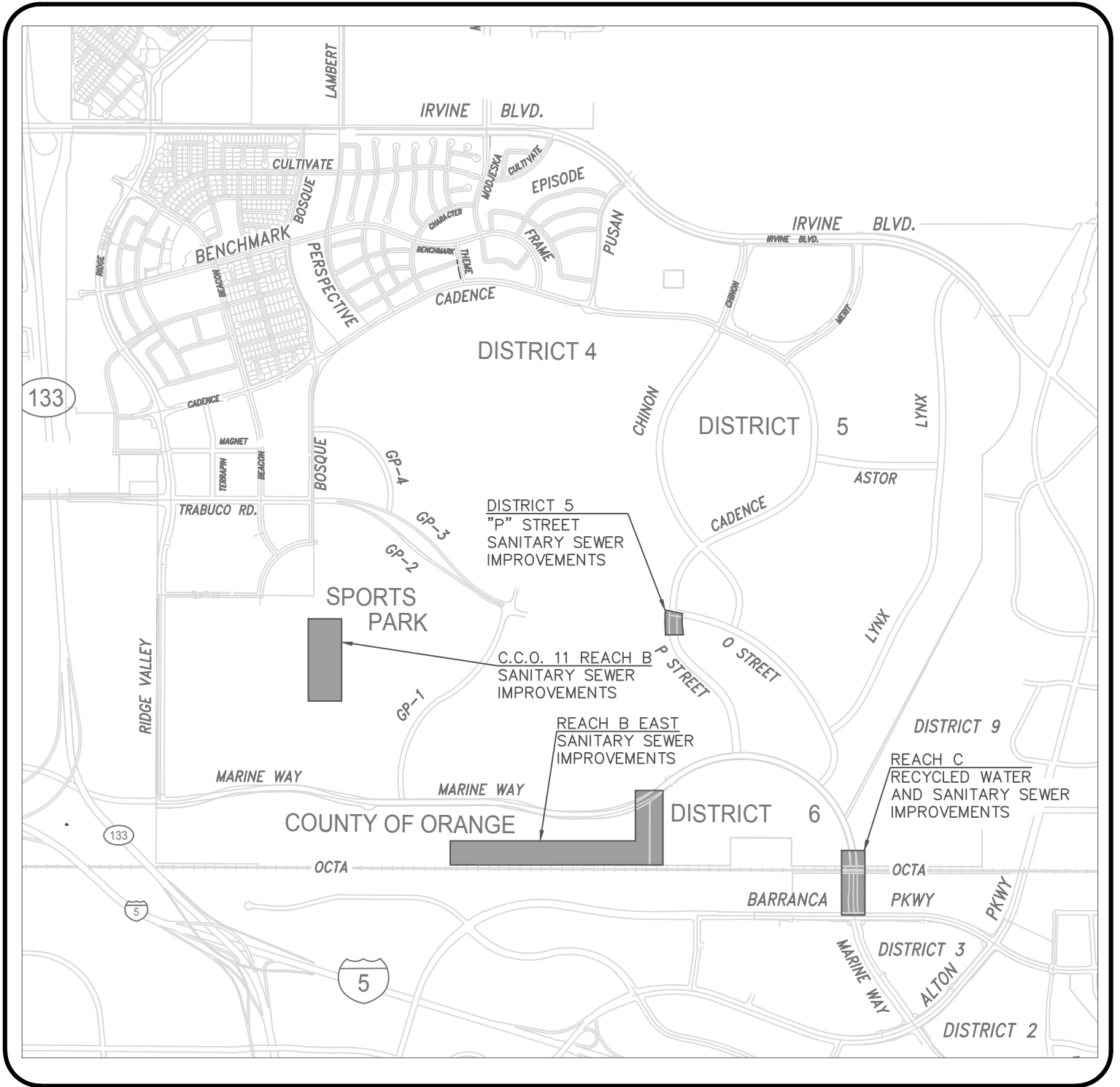


EXHIBIT "A"  
LOCATION MAP

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EXHIBIT "B"

EXHIBIT "A"  
to Reimbursement Agreement

SUPPLEMENTAL REIMBURSEMENT AGREEMENT

BY AND BETWEEN  
IRVINE RANCH WATER DISTRICT  
AND  
HERITAGE FIELDS EL TORO, LLC

This SUPPLEMENTAL REIMBURSEMENT AGREEMENT ("Agreement") is entered into as of this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, by and between Irvine Ranch Water District, a California water district formed and existing pursuant to the California Water District Law of the State of California ("IRWD"), and Heritage Fields El Toro, LLC, a Delaware limited liability company ("COMPANY"). All capitalized terms used herein and not otherwise defined shall have the meanings given such terms in the Reimbursement Agreement.

WHEREAS, IRWD and COMPANY have previously entered into that certain Reimbursement Agreement dated \_\_\_\_\_ ("Reimbursement Agreement") respecting construction of Capital Facilities; and

WHEREAS, said Reimbursement Agreement made reference to the fact that certain supplemental agreements would be entered into by the parties regarding construction of Capital Facilities and reimbursement therefor consistent with the provisions of said Reimbursement Agreement; and

WHEREAS, the parties now wish to enter this Agreement regarding the construction of Capital Facilities described below, subject to all of the terms of the Reimbursement Agreement, except as provided herein.

NOW, THEREFORE, the parties agree, in consideration of the mutual promises and covenants hereinafter set forth, do agree as follows:

1. Except as provided herein, the parties hereby incorporate by reference all of the terms and conditions of the Reimbursement Agreement into this Agreement.
2. The name of the Project to which this Agreement pertains is: Planning Area 51, Great Park Neighborhoods, Districts 2, 3, 5, 6, 9, Domestic Water, Sanitary Sewer and Recycled Water Capital Improvements.

The Project is depicted on Exhibit 1 attached to this Agreement.

3. The Capital Facilities to be constructed pursuant to this Agreement are as follows: Approximately 32,000 lineal feet of 12-inch domestic water, 13,800 lineal feet of 12-inch, 15-inch, 18-inch, and 24-inch sewer, and 33,200 lineal feet of 10-inch, 12-inch, and 16-inch recycled water pipelines as shown in Exhibit 1.

4. The total costs for the Capital Facilities shall include, but not limited to, the actual costs for construction, surveying, compaction testing, permits, construction bonds, legal fees and an administration fee equal to one percent (1%) of the actual cost of construction (all such actual costs are collectively referred to as the "Costs"). The estimated amount of the Costs is \$21,500,000.

5. The following special terms apply to the construction of the Capital Facilities under this Agreement and supersede the provisions of the original Reimbursement Agreement referenced above: None.

6. In accordance with Section 10 of the Reimbursement Agreement, COMPANY is executing concurrently herewith an Assignment Agreement in the form of Exhibit 2, to be effective upon the Effective Date specified in the Assignment Agreement.

IN WITNESS WHEREOF, the parties have entered this Agreement as of the date set forth above.

IRVINE RANCH WATER DISTRICT

By: \_\_\_\_\_  
General Manager

[SIGNATURES CONTINUED]

HERITAGE FIELDS EL TORO, LLC,  
a Delaware limited liability company

By: Heritage Fields El Toro Sole Member LLC,  
a Delaware limited liability company  
Its: Sole Member

By: Heritage Fields LLC,  
a Delaware limited liability company  
Its: Sole Member

By: Lennar Heritage Fields, LLC,  
a California limited liability company  
Its: Administrative Member

By: Lennar Homes of California, Inc.,  
a California corporation  
Its: Sole Member

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Print Title: \_\_\_\_\_

EXHIBIT "2"  
to  
Supplemental Reimbursement Agreement

Assignment Agreement

This Assignment Agreement is made as of \_\_\_\_\_, 20\_\_ , by and between HERITAGE FIELDS EL TORO, LLC, a Delaware limited liability company ("Assignor"), to IRVINE RANCH WATER DISTRICT, a California water district formed and existing pursuant to the California Water District Law of the State of California ("Assignee") based upon the following recitals:

A. Assignor has previously (or will, prior to the Effective Date hereof, have) entered into that certain Construction Contract to the Project and Capital Facilities identified in Schedule A hereto (the "Construction Contract").

B. Assignee desires to acquire (I) Assignor's right, title and interest in and to the Capital Facilities constructed under the Construction Contract, and (II) the warranty rights of Assignor as to the Capital Facilities under the Construction Contract, and Assignor desires to assign such rights to Assignee.

NOW, THEREFORE, in consideration of the foregoing, the covenants and agreements contained herein and other valuable consideration, receipt of which is hereby acknowledged, the parties hereto agree as follows:

1. ASSIGNMENT. Effective upon the date specified in Section 2 hereof (the "Effective Date"), Assignor assigns and transfers to Assignee all of Assignor's right, title, claim and interest in and to (a) the Capital Facilities constructed pursuant to the Construction Contract, and (b) the warranties and guarantees of contractor as to the Capital Facilities constructed pursuant to the Construction Contract. This Assignment is made by Assignor pursuant to the provisions of Section 10, entitled "Assignment of Interest", contained in that certain Reimbursement Agreement between Assignor and Assignee dated as of \_\_\_\_\_.

2. EFFECTIVE DATE. The Effective Date shall be the date of the filing of the Notice of Completion for the Construction Contract unless a different date is inserted in the following space: \_\_\_\_\_.

3. TRANSFER OF DOCUMENTATION. On or prior to the Effective Date, Assignor shall provide Assignee with a copy of the Construction ntrat.



IN WITNESS WHEREOF, Assignor has executed this Assignment Agreement as of the date first above written.

ASSIGNOR:

HERITAGE FIELDS EL TORO, LLC,  
a Delaware limited liability company

By: Heritage Fields El Toro Sole Member LLC,  
a Delaware limited liability company  
Its: Sole Member

By: Heritage Fields LLC,  
a Delaware limited liability company  
Its: Sole Member

By: Lennar Heritage Fields, LLC,  
a California limited liability company  
Its: Administrative Member

By: Lennar Homes of California, Inc.,  
a California corporation  
Its: Sole Member

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Print Title: \_\_\_\_\_

Schedule A  
to  
Assignment Agreement

This Schedule A to Assignment Agreement relates to the assignment of certain matters pursuant to the Supplemental Reimbursement Agreement between Assignor and Assignee dated \_\_\_\_\_ ("Supplemental Reimbursement Agreement").

Insert name of Project from Section 2 of Supplemental Reimbursement Agreement: Planning Area 51, Great Park Neighborhoods, Districts 2, 3, 5, 6, 9, Domestic Water, Sanitary Sewer and Recycled Water Capital Improvements.

Insert description of Capital Facilities from Section 3 of Supplemental Reimbursement Agreement: Approximately 32,000 lineal feet of 12-inch domestic water, 13,800 lineal feet of 12-inch, 15-inch, 18-inch, and 24-inch sewer, and 33,200 lineal feet of 10-inch, 12-inch, and 16-inch recycled water pipelines.

Contractor's Name: \_\_\_\_\_

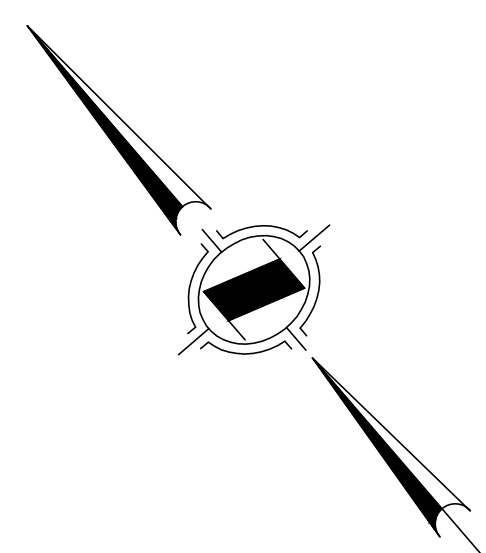
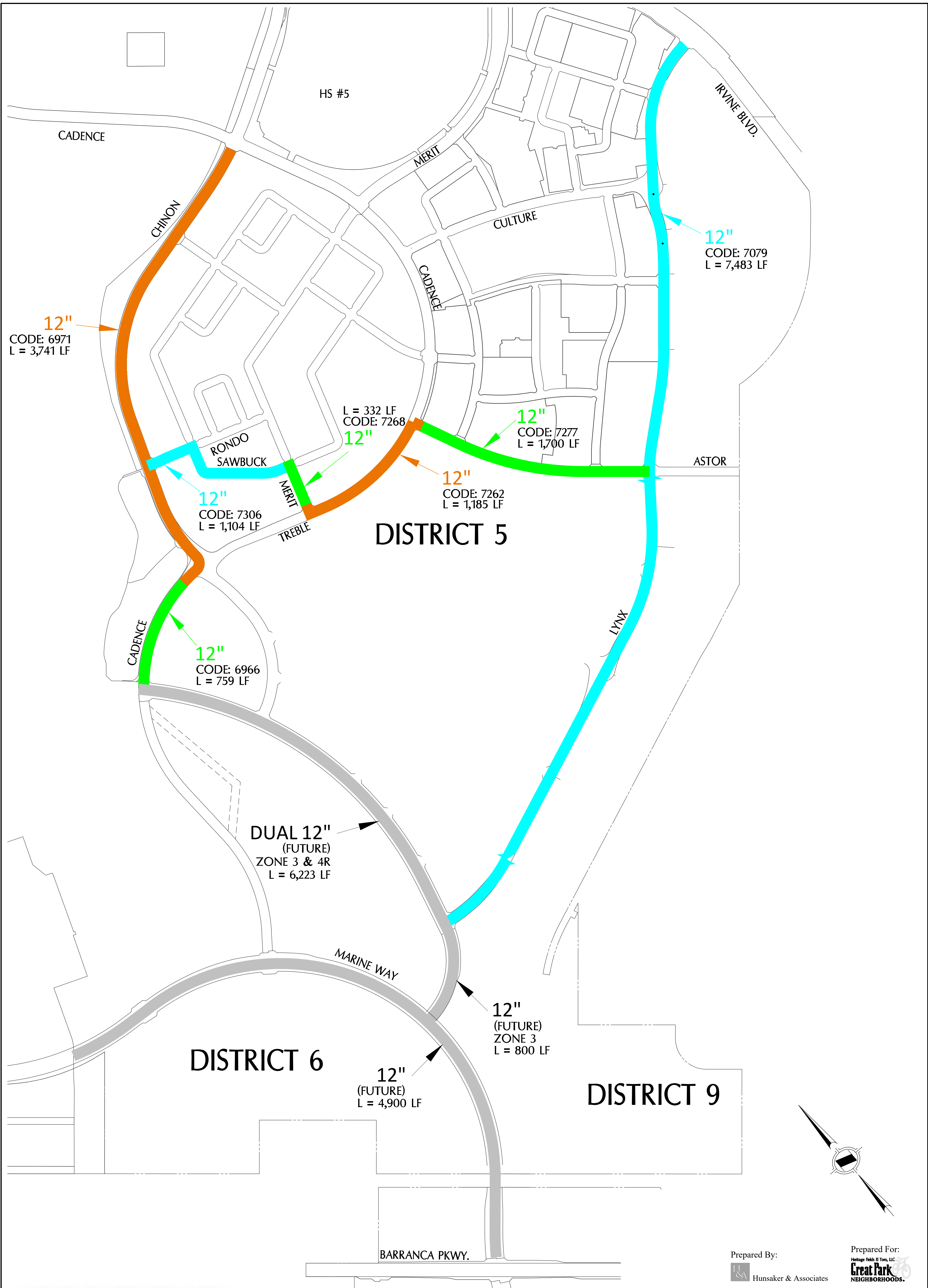
License No.: \_\_\_\_\_


Address: \_\_\_\_\_


\_\_\_\_\_

Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_

Contact Person: \_\_\_\_\_



Prepared By:  
 Hunsaker & Associates

Prepared For:  
 Great Park NEIGHBORHOODS.

900 600 300 0 150 300  
 FEET  
 Original Size=24"x36" INCHES



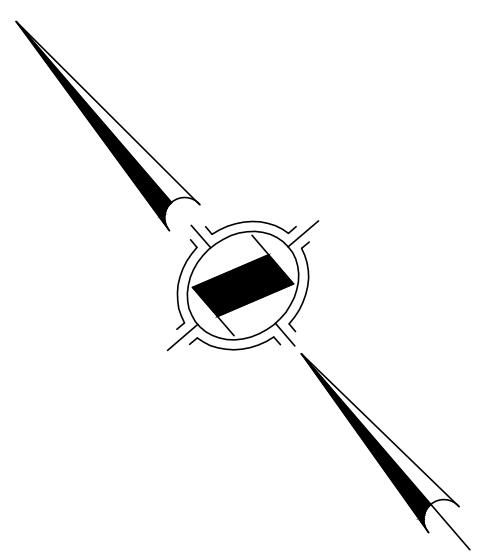
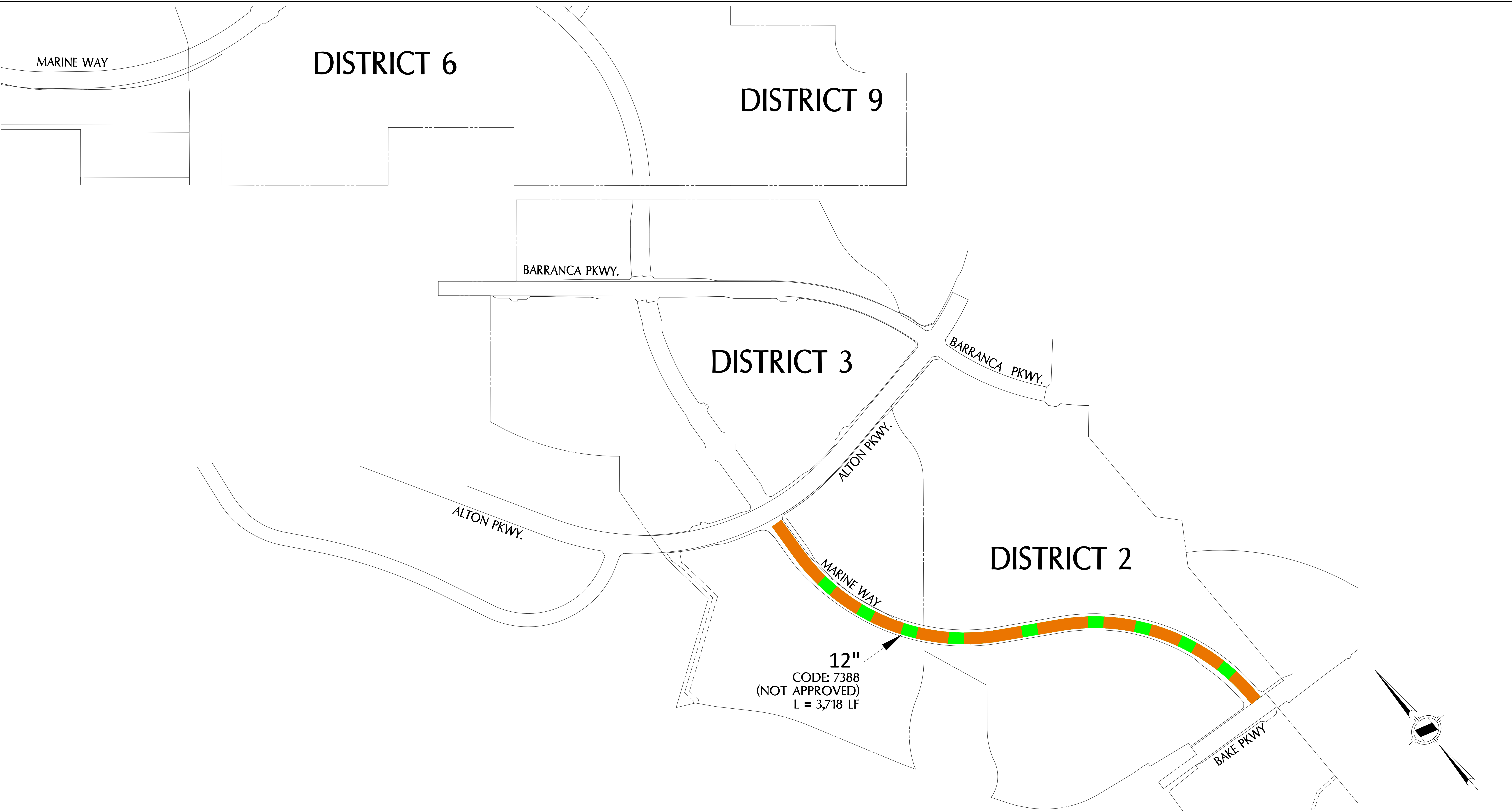
**B-7**


**DISTRICT 5 & 6**


**CAPITAL DOMESTIC WATER**

 **HUNSAKER & ASSOCIATES**  
 IRVINE, INC.  
 PLANNING ■ ENGINEERING ■ SURVEYING  
 Three Hughes ■ Irvine, CA 92618 ■ PH: (949) 583-1010 ■ FX: (949) 583-0759

**DATE: 10/18/2019**



Prepared By:  
 Hunsaker & Associates


Prepared For:  
 Heritage Field 8 Toro, LLC  
 Great Park NEIGHBORHOODS.

900 600 FEET 300 0 150 300  
 Original Size=24"x36" INCHES

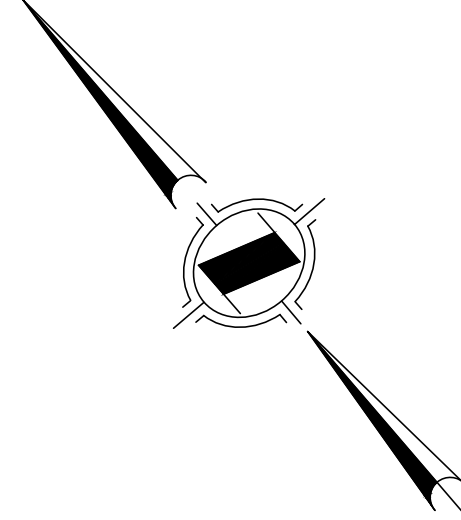
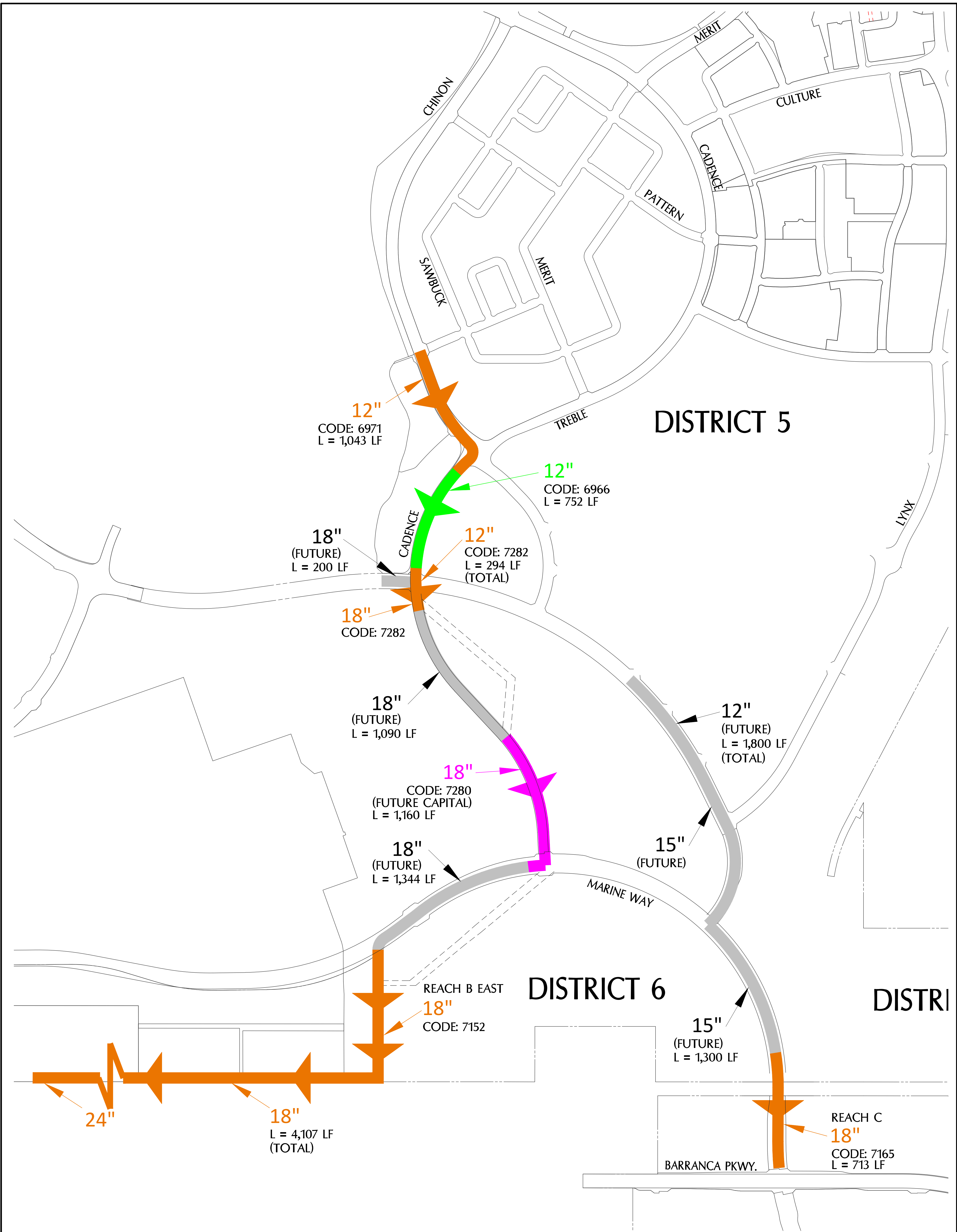


**B-8**

DISTRICT 2 & 3  
 CAPITAL DOMESTIC WATER

 **HUNSAKER & ASSOCIATES**  
 IRVINE, INC.  
 PLANNING ■ ENGINEERING ■ SURVEYING  
 Three Hughes ■ Irvine, CA 92618 ■ PH: (949) 583-1010 ■ FX: (949) 583-0759

DATE: 10/18/2019



Prepared By:  
 Hunsaker & Associates

Prepared For:  
 Great Park NEIGHBORHOODS.

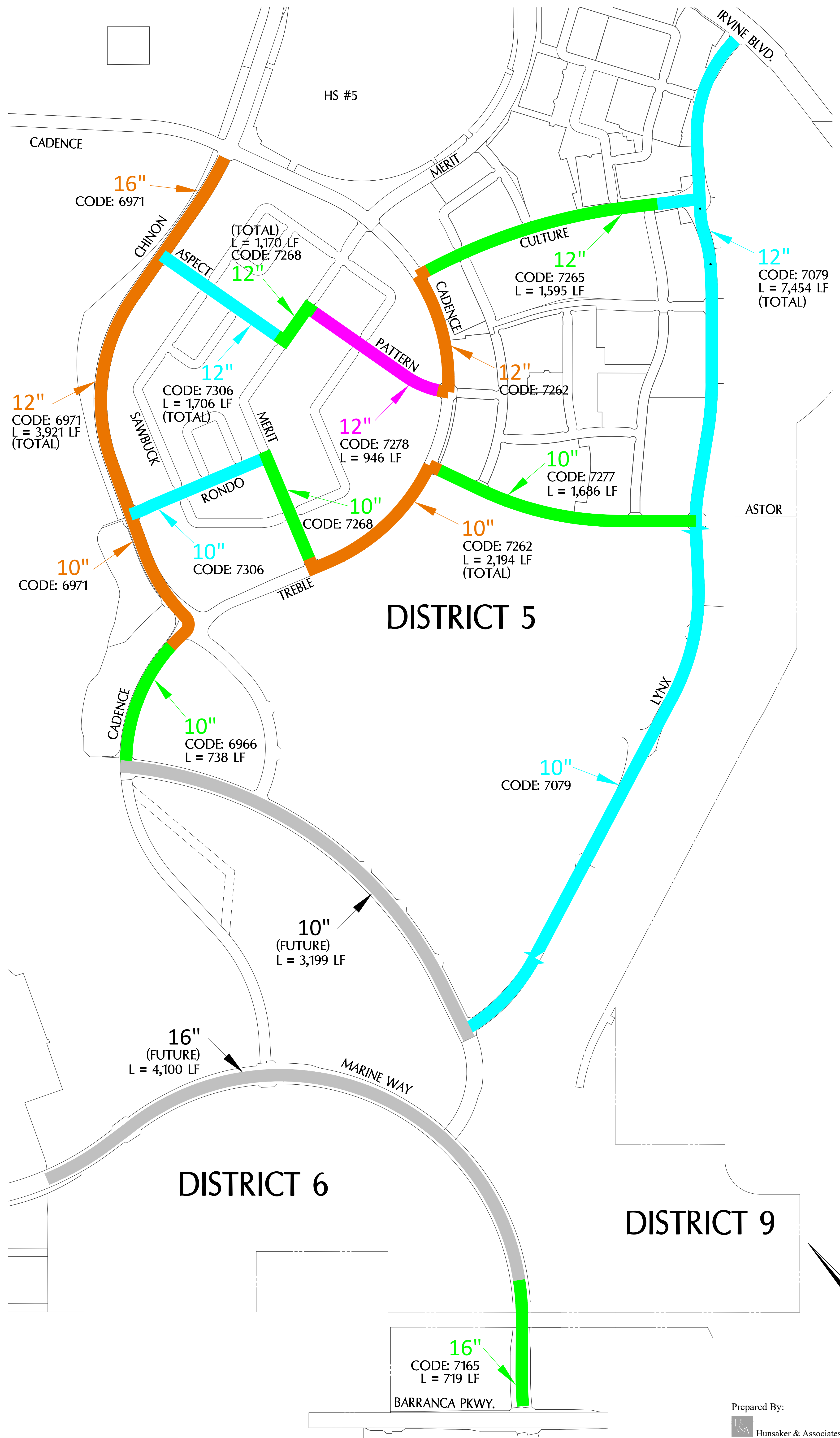
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 FEET  
 Original Size=24"x36" INCHES



**B-9**  
**DISTRICT 5 & 6**  
**CAPITAL SANITARY SEWER**

**HUNSAKER & ASSOCIATES**  
 IRVINE, INC.  
 PLANNING ■ ENGINEERING ■ SURVEYING  
 Three Hughes • Irvine, CA 92618 • PH: (949) 583-1010 • FX: (949) 583-0759

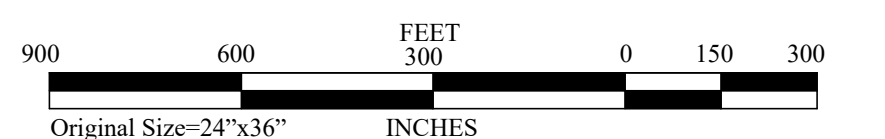
DATE: 10/18/2019



# B-10 DISTRICT 5 & 6 CAPITAL RECYCLED WATER

Prepared By:  
Hunsaker & Associates

Prepared For:  
Heritage Fields II Tom, LLC  
**Great Park  
NEIGHBORHOODS.**



**HUNSAKER & ASSOCIATES**  
IRVINE, INC.  
PLANNING ■ ENGINEERING ■ SURVEYING  
Three Hughes • Irvine, CA 92618 • PH: (949) 583-1010 • FX: (949) 583-0759

DATE: 10/18/2019

DISTRICT 6

DISTRICT 9

BARRANCA PKWY.

DISTRICT 3

ALTON PKWY.

BARRANCA PKWY.

ALTON PKWY.

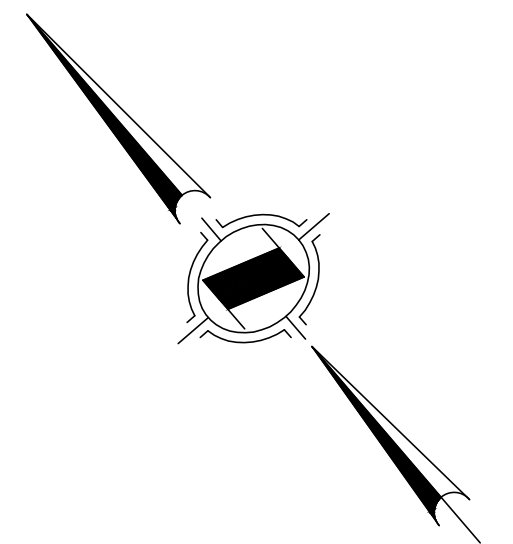
DISTRICT 2

MARINE WAY

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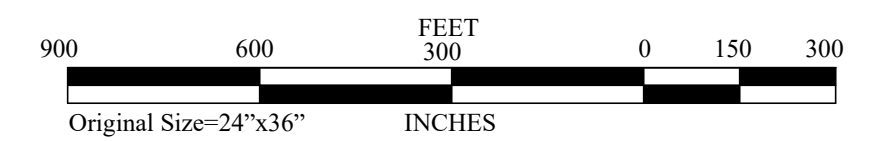
16"  
CODE: 7142  
L = 17 LF

BAKE PKWY



Prepared By:  
Hunsaker & Associates

Prepared For:  
Heritage Fields II Farm, LLC  
Great Park  
NEIGHBORHOODS.



Great Park Neighborhoods

# B-11 DISTRICT 2 & 3 CAPITAL RECYCLED WATER

**HUNSAKER & ASSOCIATES**  
IRVINE, INC.  
PLANNING ■ ENGINEERING ■ SURVEYING  
Three Hughes ■ Irvine, CA 92618 ■ PH: (949) 583-1010 ■ FX: (949) 583-0759

DATE: 10/18/2019

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# EXHIBIT "C"

**Owner:** Heritage Fields El Toro, LLC **Project:** District 2 - Reach B Sewer and Reach C Sewer and Recycled Water (Zone B) Improvements **Bid Date:** June 19, 2018  
**CODES 7152 and 7165**

ITEM NO.	I. IRWD CODE 7152 CAPITAL SEWER	UNIT	QY	ENGINEER ESTIMATE		Leatherwood - LOW <i>Attn: Bobby Kawai Tel: 714.593.6575</i>		FYDAQ <i>Attn: Greg Huntley Tel: 714.447.9760</i>		L&S <i>Attn: Elton Welham Tel: 714.528.3232</i>		KEC <i>Attn: James Elfring Tel: 951.734.3010</i>		Kennedy - No Bid <i>Attn: David Chorak Tel: 949.380.8363</i>	
				PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT
1.	Mobilization (Not to Exceed 2% of Section A Price)	LS	1	\$ 37,000.00	\$ 37,000.00	\$ 32,300.00	\$ 32,300.00	\$ 2,250.00	\$ 2,250.00	\$ 41,000.00	\$ 41,000.00	\$ 6,000.00	\$ 6,000.00	\$ -	\$ -
2.	Performance, Labor & Payment Bond	LS	1	\$ 27,750.00	\$ 27,750.00	\$ 18,200.00	\$ 18,200.00	\$ 17,329.10	\$ 17,329.10	\$ 39,000.00	\$ 39,000.00	\$ 18,000.00	\$ 18,000.00	\$ -	\$ -
3.	SWPPP & BMP's - Interim Erosion Control	LS	1	\$ 18,500.00	\$ 18,500.00	\$ 500.00	\$ 500.00	\$ 2,500.00	\$ 2,500.00	\$ 8,500.00	\$ 8,500.00	\$ 5,000.00	\$ 5,000.00	\$ -	\$ -
4.	Traffic Control	LS	1	\$ 9,250.00	\$ 9,250.00	\$ 500.00	\$ 500.00	\$ 1,000.00	\$ 1,000.00	\$ 8,000.00	\$ 8,000.00	\$ 5,000.00	\$ 5,000.00	\$ -	\$ -
5.	Development & Application of Construction Water	LS	1	\$ 9,250.00	\$ 9,250.00	\$ 1,000.00	\$ 1,000.00	\$ 2,500.00	\$ 2,500.00	\$ 1,500.00	\$ 1,500.00	\$ 6,000.00	\$ 6,000.00	\$ -	\$ -
6.	Air Test and Video Sewer per IRWD Standards and Specifications, Complete	LF	4,092	\$ 2.50	\$ 10,230.00	\$ 8.00	\$ 32,736.00	\$ 1.00	\$ 4,092.00	\$ 2.50	\$ 10,230.00	\$ 4.25	\$ 17,391.00	\$ -	\$ -
7.	Install temporary construction fence one foot inside the Metrolink right of way including all post, fabric, fittings and any other appurtenant work, complete.	LF	2,730	Complete		Complete		Complete		Complete		Complete		Complete	
8.	Clear and Grub site in preparation of sewer trenching, including removal, hauling and disposal of all material cleared and grubbed off-site, application of construction water, and any other appurtenant work, complete.	LS	1	\$ 12,000.00	\$ 12,000.00	\$ 10,900.00	\$ 10,900.00	\$ 1,835.00	\$ 1,835.00	\$ 5,000.00	\$ 5,000.00	\$ 34,000.00	\$ 34,000.00	\$ -	\$ -
9.	Remove Existing Sewer Manhole, Foundation and appurtenant material as appropriate within IRWD Easement and dispose of at Owner's Concrete stockpile, within 2 miles.	EA	1	\$ 5,000.00	\$ 5,000.00	\$ 3,000.00	\$ 3,000.00	\$ 8,765.00	\$ 8,765.00	\$ 3,500.00	\$ 3,500.00	\$ 3,500.00	\$ 3,500.00	\$ -	\$ -
10.	Remove Existing Sewer Lateral and appurtenant material as appropriate within IRWD Easement and Dispose of Off-Site, including trenching, filling in trenching, compaction, capping exposed ends of sewer lateral.	LF	40	\$ 100.00	\$ 4,000.00	\$ 85.00	\$ 3,400.00	\$ 178.50	\$ 7,140.00	\$ 125.00	\$ 5,000.00	\$ 97.00	\$ 3,880.00	\$ -	\$ -
11.	Remove Existing Chain Link Fence including Chain Link Fabric, Posts, Post Foundations and appurtenant material as appropriate, and dispose of off-site.	LF	56	\$ 20.00	\$ 1,120.00	\$ 30.00	\$ 1,680.00	\$ 11.00	\$ 616.00	\$ 20.00	\$ 1,120.00	\$ 48.00	\$ 2,688.00	\$ -	\$ -
12.	Remove Existing AC Pavement and appurtenant material as appropriate and dispose of in Owner's AC Stockpile, within 2 miles, including saw cutting.	SF	200	\$ 10.00	\$ 2,000.00	\$ 8.00	\$ 1,600.00	\$ 9.00	\$ 1,800.00	\$ 6.00	\$ 1,200.00	\$ 24.00	\$ 4,800.00	\$ -	\$ -
13.	Remove Existing Concrete Curb and appurtenant material as appropriate and place in Owners stockpile within 2 miles, including saw cutting.	LF	36	\$ 24.00	\$ 864.00	\$ 30.00	\$ 1,080.00	\$ 52.00	\$ 1,872.00	\$ 20.00	\$ 720.00	\$ 90.00	\$ 3,240.00	\$ -	\$ -
14.	Relocate Railroad Property (Approximately 50 LF of Switching Track, 10 CY of Ballast) from Within Reach B Alignment to Temporary Fence Along Railroad Property Line (Final Location to be Determined by Owner's Field Representative)	LS	1	\$ 4,000.00	\$ 4,000.00	\$ 5,500.00	\$ 5,500.00	\$ 1,270.00	\$ 1,270.00	\$ 3,500.00	\$ 3,500.00	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -
15.	Sawcut and remove existing curb, AC and concrete pavement (north of Marine Way) including removal and delivery to Owners stockpile within 2 miles, loading and hauling CMB for Owners stockpile within 2 miles, placement and compaction of CMB, application of construction water, and any other appurtenant work, complete.	LF	180	\$ 45.00	\$ 8,100.00	\$ 42.00	\$ 7,560.00	\$ 44.00	\$ 7,920.00	\$ 35.00	\$ 6,300.00	\$ 63.00	\$ 11,340.00	\$ -	\$ -
16.	Remove Existing Temporary Cleanout and appurtenant material as appropriate and dispose of off-site, and Join Existing Sewer, Complete.	EA	1	\$ 5,000.00	\$ 5,000.00	\$ 6,700.00	\$ 6,700.00	\$ 5,990.00	\$ 5,990.00	\$ 4,500.00	\$ 4,500.00	\$ 4,500.00	\$ 4,500.00	\$ -	\$ -
17.	Furnish 18" C-900 green PVC (DR-18) pipe, per IRWD standards, and any other appurtenant work, compete <small>(Pre-Ordered by Owner)</small>	LF	4,004	\$ 48.90	\$ 195,795.60	\$ 48.90	\$ 195,795.60	\$ 48.90	\$ 195,795.60	\$ 48.90	\$ 195,795.60	\$ 48.90	\$ 195,795.60	\$ -	\$ -
18.	Install 18" C-900 green PVC (DR-18) pipe, d=10.7" to 21.8", per IRWD standard S-6 including, trench excavation, backfill, PVC fittings, removal of trench spoils to Owners stockpile within 2 miles, sewer indicator tape, application of construction water, and any other appurtenant work, compete.	LF	3,270	\$ 115.00	\$ 376,050.00	\$ 85.00	\$ 277,950.00	\$ 124.50	\$ 407,115.00	\$ 225.00	\$ 735,750.00	\$ 77.50	\$ 253,425.00	\$ -	\$ -
19.	Install 18" C-900 green PVC (DR-18) pipe, d=16.2" to 17.3", in Jack and Bored Steel Casing, per IRWD standard S-6, including stainless steel casing spacers, application of construction water, and any other appurtenant work, compete.	LF	734	\$ 80.00	\$ 58,720.00	\$ 115.00	\$ 84,410.00	\$ 38.00	\$ 27,892.00	\$ 56.00	\$ 41,104.00	\$ 95.00	\$ 69,730.00	\$ -	\$ -
20.	Furnish and install 24" C-900 green PVC (DR-25) pipe, d=11.3" to 11.8", per IRWD standard S-6 including, trench excavation, backfill, PVC fittings, removal of trench spoils to Owners stockpile within 2 miles, sewer indicator tape, application of construction water, and any other appurtenant work, compete.	LF	88	\$ 300.00	\$ 26,400.00	\$ 245.00	\$ 21,560.00	\$ 260.00	\$ 22,880.00	\$ 325.00	\$ 28,600.00	\$ 250.00	\$ 22,000.00	\$ -	\$ -
21.	Construct pits for Jack and Bore per details per plans including, excavation of pit, shoring, backfilling, compaction, removal of spoils to Owners stockpile within 2 miles, temporary safety and security fence (for pit and work area), application of construction water, and any other appurtenant work, complete.	EA	4	\$ 40,000.00	\$ 160,000.00	\$ 21,000.00	\$ 84,000.00	\$ 29,770.00	\$ 119,080.00	\$ 46,000.00	\$ 184,000.00	\$ 54,500.00	\$ 218,000.00	\$ -	\$ -
22.	Furnish and install 29.5" ID steel casing per IRWD standard S-7 by jack and bore method including, removal of trench spoils to Owners stockpile within 2 miles, application of construction water, and any other appurtenant work, compete.	LF	720	\$ 700.00	\$ 504,000.00	\$ 465.00	\$ 334,800.00	\$ 818.00	\$ 588,960.00	\$ 590.00	\$ 424,800.00	\$ 656.00	\$ 472,320.00	\$ -	\$ -

23.	Furnish and install 29.5" ID steel casing per IRWD standard S-7 Closure Piece, including, removal of trench spoils to Owners stockpile within 2 miles, application of construction water, and any other appurtenant work, complete.	LF	14	\$ 800.00	\$ 11,200.00	\$ 1,400.00	\$ 19,600.00	\$ 850.00	\$ 11,900.00	\$ 350.00	\$ 4,900.00	\$ 395.00	\$ 5,530.00	\$ -	\$ -
24.	Furnish and install casing test station per IRWD standard CP-3 including trenching, backfill, frame and cover, concrete collar, wire, conduit, identification tape, application of construction water, and any other appurtenant work, complete.	EA	6	\$ 2,500.00	\$ 15,000.00	\$ 2,000.00	\$ 12,000.00	\$ 1,610.00	\$ 9,660.00	\$ 3,200.00	\$ 19,200.00	\$ 2,500.00	\$ 15,000.00	\$ -	\$ -
25.	Remove and replaced existing survey monument, including coordinating with the surveyor, installation of new monument, application of construction water, and any other appurtenant work, complete.	EA	1	\$ 2,500.00	\$ 2,500.00	\$ 1,200.00	\$ 1,200.00	\$ 2,040.00	\$ 2,040.00	\$ 750.00	\$ 750.00	\$ 5,000.00	\$ 5,000.00	\$ -	\$ -
26.	Construct 60" diameter sewer manhole, d=10.7' to 17.3', per IRWD standard S-1 including, concrete, finishing the concrete base, manhole shaft, steps, manhole frame and cover, excavation, backfill, concrete pad, adjustment to grade of access road, application of construction water, and any other appurtenant work, complete.	EA	9	\$ 10,000.00	\$ 90,000.00	\$ 6,900.00	\$ 62,100.00	\$ 15,735.00	\$ 141,615.00	\$ 13,000.00	\$ 117,000.00	\$ 18,000.00	\$ 162,000.00	\$ -	\$ -
27.	Construct Temporary 8" Sewer Cleanout per IRWD standard S-5, d=21.8', including, pipe, pipe fittings, excavation, backfill, frame and cover, concrete collar, application of construction water, and any other appurtenant work, complete.	EA	1	\$ 3,500.00	\$ 3,500.00	\$ 2,200.00	\$ 2,200.00	\$ 5,565.00	\$ 5,565.00	\$ 2,400.00	\$ 2,400.00	\$ 7,000.00	\$ 7,000.00	\$ -	\$ -
28.	Remove and Replace Existing Storm Drain Grate Inlet per SPPWC Standard Plan 304-3 and Detail on plans including removing existing grate and box (concrete to be delivered to Owners Concrete stockpile within 2 miles), construction of concrete box, installation of grate, excavation, backfill, application of construction water, and any other appurtenant work, complete.	EA	1	\$ 10,000.00	\$ 10,000.00	\$ 13,000.00	\$ 13,000.00	\$ 8,290.00	\$ 8,290.00	\$ 7,500.00	\$ 7,500.00	\$ 14,000.00	\$ 14,000.00	\$ -	\$ -
29.	Remove and Replace Existing Asphalt Pavement (at Trenches and Manholes) per City of Irvine standard plan 223, Alternative B, including saw cutting, AC removal and delivery to Owners stockpile within 2 miles, CMB placement and compaction, loading and hauling CMB from Owners stockpile within 2 miles, placement and compaction of AC, application of construction water, and any other appurtenant work, complete.	LF	699	\$ 60.00	\$ 41,940.00	\$ 120.00	\$ 83,880.00	\$ 62.00	\$ 43,338.00	\$ 90.00	\$ 62,910.00	\$ 115.00	\$ 80,385.00	\$ -	\$ -
30.	Remove and Replace Existing Asphalt Pavement (at Jack and Bore Pits, curb replacement and SD catch basin) per City of Irvine standard plan 223, Alternative B, including saw cutting, AC removal and delivery to Owners stockpile within 2 miles, CMB placement and compaction, loading and hauling CMB from Owners stockpile within 2 miles, placement and compaction of AC, application of construction water, and any other appurtenant work, complete.	SF	1,160	\$ 25.00	\$ 29,000.00	\$ 33.00	\$ 38,280.00	\$ 15.00	\$ 17,400.00	\$ 18.00	\$ 20,880.00	\$ 35.00	\$ 40,600.00	\$ -	\$ -
31.	Remove and Replace Concrete Curb per City of Irvine Standard Plan 200 including saw cutting, concrete removal and disposal at Owners Concrete stockpile within 2 miles, forms, transitions, concrete, finishing, application of construction water, and any other appurtenant work, complete.	LF	45	\$ 60.00	\$ 2,700.00	\$ 55.00	\$ 2,475.00	\$ 156.00	\$ 7,020.00	\$ 90.00	\$ 4,050.00	\$ 165.00	\$ 7,425.00	\$ -	\$ -
32.	Remove and Replace Exist Concrete V-Gutter in kind, including saw cutting, removal of existing v-gutter and disposal at Owners Concrete stockpile within 2 miles, forming, flares, concrete, finishing, application of construction water and any other appurtenant work, complete.	LF	50	\$ 80.00	\$ 4,000.00	\$ 55.00	\$ 2,750.00	\$ 122.00	\$ 6,100.00	\$ 105.00	\$ 5,250.00	\$ 143.00	\$ 7,150.00	\$ -	\$ -
33.	Construct 6" Concrete Curb per City of Irvine Standard Plan 200 including, concrete, forming, finishing, removal of forms, application of construction water and any other appurtenant work, complete.	LF	36	\$ 50.00	\$ 1,800.00	\$ 60.00	\$ 2,160.00	\$ 89.00	\$ 3,204.00	\$ 55.00	\$ 1,980.00	\$ 111.00	\$ 3,996.00	\$ -	\$ -
34.	Construct 14" All Weather Access Road, 14" Minimum CMB over Prepared Subgrade (Minimum load of 66,000 lb.) per Detail on plans including roadway grading, remove of spoils to Owners stockpile within 2 miles, header boards, loading and hauling CMB from Owners stockpile, compaction of CMB, application of construction water, and any other appurtenant work, complete.	SF	36,556	\$ 5.00	\$ 182,780.00	\$ 5.00	\$ 182,780.00	\$ 4.75	\$ 173,641.00	\$ 4.40	\$ 160,846.40	\$ 4.35	\$ 159,018.60	\$ -	\$ -
35.	Restripe Existing Parking Stalls to Match Existing where damaged or removed in the construction process, including paint, legends, and markings, including those for ADA Parking Spaces, and any other appurtenant work, complete.	LS	1	\$ 3,000.00	\$ 3,000.00	\$ 2,900.00	\$ 2,900.00	\$ 1,050.00	\$ 1,050.00	\$ 3,900.00	\$ 3,900.00	\$ 6,000.00	\$ 6,000.00	\$ -	\$ -
36.	Furnish and Paint Striping to Stripe Out Parking Stall with 4" white stripes with traffic paint any other appurtenant work, complete.	LS	1	\$ 2,000.00	\$ 2,000.00	\$ 2,900.00	\$ 2,900.00	\$ 1,050.00	\$ 1,050.00	\$ 3,500.00	\$ 3,500.00	\$ 6,000.00	\$ 6,000.00	\$ -	\$ -
37.	Replace damaged landscape and irrigation in kind including, reconnection to irrigation system, all plant material, all irrigation material, application of construction water and any other appurtenant work, complete.	LS	1	\$ 5,000.00	\$ 5,000.00	\$ 2,500.00	\$ 2,500.00	\$ 3,150.00	\$ 3,150.00	\$ 7,500.00	\$ 7,500.00	\$ 13,000.00	\$ 13,000.00	\$ -	\$ -

38.	Furnish and install 16' wide perimeter fence access gate per material and height to match existing fence including, removal of existing perimeter fence, posts, post foundations, fabrication of gate (match existing fence aesthetics and quality), hardware, application of construction water, and any other appurtenant work, complete.	EA	2	\$ 25,000.00	\$ 50,000.00	\$ 15,900.00	\$ 31,800.00	\$ 4,725.00	\$ 9,450.00	\$ 4,500.00	\$ 9,000.00	\$ 17,000.00	\$ 34,000.00	\$ -	\$ -
39.	Furnish and install 6' chain link fence per SPPWC standard plan 600-1 including fabric, post, post foundations, hardware, application of construction water, and any other appurtenant work, complete.	LF	70	\$ 80.00	\$ 5,600.00	\$ 84.00	\$ 5,880.00	\$ 98.00	\$ 6,860.00	\$ 47.00	\$ 3,290.00	\$ 95.00	\$ 6,650.00	\$ -	\$ -
40.	Furnish and Install 6' High Double Access Gate per SPPWC Standard Plan 600-1 including post, post foundation, fabric, hardware, application of construction water, and any other appurtenant work, complete.	EA	2	\$ 4,500.00	\$ 9,000.00	\$ 8,200.00	\$ 16,400.00	\$ 4,495.00	\$ 8,990.00	\$ 3,250.00	\$ 6,500.00	\$ 9,000.00	\$ 18,000.00	\$ -	\$ -
41.	Raise Manhole to Final Grade After Improvements are Complete or Requested by Owner including Extra Move-In, Complete	EA	9	\$ 800.00	\$ 7,200.00	\$ 605.00	\$ 5,445.00	\$ 400.00	\$ 3,600.00	\$ 650.00	\$ 5,850.00	\$ 2,000.00	\$ 18,000.00	\$ -	\$ -
42.	Raise Cleanout to Final Grade After Improvements are Complete or Requested by Owner including Extra Move-In, Complete	EA	1	\$ 500.00	\$ 500.00	\$ 385.00	\$ 385.00	\$ 350.00	\$ 350.00	\$ 525.00	\$ 525.00	\$ 1,850.00	\$ 1,850.00	\$ -	\$ -
<b>TOTAL, CODE 7152 PR 10576 IRWD CAPITAL IMPROVEMENTS .....</b>				<b>\$1,951,749.60</b>		<b>\$1,615,806.60</b>		<b>\$1,892,874.70</b>		<b>\$2,196,851.00</b>		<b>\$1,969,214.20</b>		<b>\$0.00</b>	

ITEM NO.	II. IRWD CODE 7165 CAPITAL SEWER	UNIT	QY	ENGINEER ESTIMATE		Leatherwood - LOW Attn: Bobby Kawai Tel: 714.593.6575		FYDAQ Attn: Greg Huntley Tel: 714.447.9760		L&S Attn: Elton Welham Tel: 714.528.3232		KEC Attn: James Elfring Tel: 951.734.3010		Kennedy - No Bid Attn: David Chorak Tel: 949.380.8363	
				PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT
43.	Mobilization (Not to Exceed 2% of Section C Price)	LS	1	\$ 13,300.00	\$ 13,300.00	\$ 10,500.00	\$ 10,500.00	\$ 2,250.00	\$ 2,250.00	\$ 18,000.00	\$ 18,000.00	\$ 6,000.00	\$ 6,000.00	\$ -	\$ -
44.	Performance, Labor & Payment Bond	LS	1	\$ 9,975.00	\$ 9,975.00	\$ 6,200.00	\$ 6,200.00	\$ 6,174.43	\$ 6,174.43	\$ 5,200.00	\$ 5,200.00	\$ 7,000.00	\$ 7,000.00	\$ -	\$ -
45.	SWPPP & BMP's - Interim Erosion Control	LS	1	\$ 6,650.00	\$ 6,650.00	\$ 500.00	\$ 500.00	\$ 2,500.00	\$ 2,500.00	\$ 4,800.00	\$ 4,800.00	\$ 5,000.00	\$ 5,000.00	\$ -	\$ -
46.	Traffic Control	LS	1	\$ 3,325.00	\$ 3,325.00	\$ 500.00	\$ 500.00	\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 500.00	\$ 5,000.00	\$ 5,000.00	\$ -	\$ -
47.	Development & Application of Construction Water	LS	1	\$ 3,325.00	\$ 3,325.00	\$ 1,200.00	\$ 1,200.00	\$ 2,500.00	\$ 2,500.00	\$ 1,500.00	\$ 1,500.00	\$ 6,000.00	\$ 6,000.00	\$ -	\$ -
48.	Railroad Flagman While Working Within OCRRA/Metrolink R/W	DAY	16	\$ 1,750.00	\$ 28,000.00	\$ 1,750.00	\$ 28,000.00	\$ 1,500.00	\$ 24,000.00	\$ 1,950.00	\$ 31,200.00	\$ 2,500.00	\$ 40,000.00	\$ -	\$ -
49.	Air Test and Video Sewer per IRWD Standards and Specifications, Complete	LF	713	\$ 5.00	\$ 3,565.00	\$ 12.00	\$ 8,556.00	\$ 10.00	\$ 7,130.00	\$ 3.50	\$ 2,495.50	\$ 10.00	\$ 7,130.00	\$ -	\$ -
50.	Clear and Grub site in preparation of sewer trenching, including removal, hauling and disposal of all material cleared and grubbed off-site, application of construction water, and any other appurtenant work, complete.	LS	1	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 3,500.00	\$ 3,500.00	\$ 2,200.00	\$ 2,200.00	\$ 12,500.00	\$ 12,500.00	\$ -	\$ -
51.	Remove and Dispose of Existing Sewer and appurtenant material, as appropriate, Off-Site, including trenching, filling in trenching, compaction, application of construction water, and any other appurtenant work, complete.	LF	16	\$ 120.00	\$ 1,920.00	\$ 45.00	\$ 720.00	\$ 200.00	\$ 3,200.00	\$ 250.00	\$ 4,000.00	\$ 210.00	\$ 3,360.00	\$ -	\$ -
52.	Furnish 18" C-900 Green PVC (DR-18) Pipe, per IRWD Standards, and any other appurtenant work, complete [Pre-Ordered by Owner]	LF	713	\$ 48.90	\$ 34,865.70	\$ 48.90	\$ 34,865.70	\$ 48.90	\$ 34,865.70	\$ 48.90	\$ 34,865.70	\$ 48.90	\$ 34,865.70	\$ -	\$ -
53.	Install 18" C-900 Green PVC (DR-18) Pipe, d=27.1' to 34.4', per IRWD Standard S-6 including, trench excavation, backfill, PVC fittings, removal of trench spoils to Owners stockpile within 2 miles, sewer indicator tape, application of construction water, and any other appurtenant work, complete.	LF	403	\$ 280.00	\$ 112,840.00	\$ 235.00	\$ 94,705.00	\$ 225.00	\$ 90,675.00	\$ 430.00	\$ 173,290.00	\$ 253.00	\$ 101,959.00	\$ -	\$ -
54.	Install 18" C-900 Green PVC (DR-18) Pipe, d=31.8' to 34.3', in Jack and Bored Steel Casing, per IRWD Standard S-7, including stainless steel casing spacers, end seals and any other appurtenant work, complete.	LF	310	\$ 80.00	\$ 24,800.00	\$ 115.00	\$ 35,650.00	\$ 38.00	\$ 11,780.00	\$ 56.00	\$ 17,360.00	\$ 125.00	\$ 38,750.00	\$ -	\$ -
55.	Furnish and Install 29.5" OD Steel Casing per IRWD Standard S-6, d=27.2' to 28.2', including, removal of trench spoils to Owners stockpile within 2 miles, application of construction water, and any other appurtenant work, complete.	LF	60	\$ 600.00	\$ 36,000.00	\$ 425.00	\$ 25,500.00	\$ 850.00	\$ 51,000.00	\$ 755.00	\$ 45,300.00	\$ 717.00	\$ 43,020.00	\$ -	\$ -
56.	Furnish and Install 29.5" OD Steel Casing, Minimum Thickness 0.500", per IRWD Standard S-7 by Jack and Bore method, d=31.8' to 34.3', including, removal of trench spoils to Owners stockpile within 2 miles, application of construction water, and any other appurtenant work, complete.	LF	250	\$ 800.00	\$ 200,000.00	\$ 485.00	\$ 121,250.00	\$ 818.00	\$ 204,500.00	\$ 590.00	\$ 147,500.00	\$ 622.00	\$ 155,500.00	\$ -	\$ -
57.	Construct Jacking and Receiving Pits for Jack and Bore of Sewer Casing per Details on Plans including, excavation of pit, shoring, backfilling, compaction, removal of spoils to Owners stockpile within 2 miles, temporary safety and security fence (for pit and work area), application of construction water, and any other appurtenant work, complete.	EA	2	\$ 40,000.00	\$ 80,000.00	\$ 30,000.00	\$ 60,000.00	\$ 45,000.00	\$ 90,000.00	\$ 58,500.00	\$ 117,000.00	\$ 85,000.00	\$ 170,000.00	\$ -	\$ -
58.	Furnish and Install Casing Test Station per IRWD Standard CP-3, including trenching, backfill, frame and cover, concrete collar, wire, conduit, identification tape, application of construction water, and any other appurtenant work, complete.	EA	4	\$ 2,500.00	\$ 10,000.00	\$ 2,000.00	\$ 8,000.00	\$ 1,610.00	\$ 6,440.00	\$ 3,200.00	\$ 12,800.00	\$ 2,500.00	\$ 10,000.00	\$ -	\$ -

59.	Remove and Dispose of Existing Temporary Cleanout and Appurtenant material as appropriate and dispose of off-site and Join Existing Sewer and any other appurtenant work, Complete.	EA	1	\$ 4,500.00	\$ 4,500.00	\$ 11,000.00	\$ 11,000.00	\$ 6,500.00	\$ 6,500.00	\$ 8,800.00	\$ 8,800.00	\$ 12,000.00	\$ 12,000.00	\$ -	\$ -
60.	Furnish and Install 4" PVC C900 DR14 or DR18 Sewer Lateral (Modified to have Terminal Cleanout per IRWD Standard S-5 for Recycled Water Blow-off Assembly), d=30.8' per IRWD Standard S-3 including, trench excavation, backfill, PVC fittings, removal of trench spoils to Owners stockpile within 2 miles, sewer indicator tape, application of construction water, and any other appurtenant work, complete.	LF	35	\$ 240.00	\$ 8,400.00	\$ 300.00	\$ 10,500.00	\$ 225.00	\$ 7,875.00	\$ 310.00	\$ 10,850.00	\$ 426.00	\$ 14,910.00	\$ -	\$ -
61.	Construct 72" Diameter Sewer Manhole, d=29.1' to 34.3', with Special Manhole Base per Detail on Plan and per IRWD Standard S-1 including, concrete, finishing the concrete base, manhole shaft, steps, manhole frame and cover, excavation, backfill, concrete pad, adjustment to grade of access road, application of construction water, and any other appurtenant work, complete.	EA	4	\$ 25,000.00	\$ 100,000.00	\$ 21,400.00	\$ 85,600.00	\$ 25,625.00	\$ 102,500.00	\$ 23,000.00	\$ 92,000.00	\$ 29,000.00	\$ 116,000.00	\$ -	\$ -
62.	Construct Temporary 8" Sewer Cleanout per IRWD Standard S-5, d=34.0', including riser pipe, pipe fittings, excavation, backfill, frame and cover, concrete collar, application of construction water, and any other appurtenant work, complete.	EA	1	\$ 5,500.00	\$ 5,500.00	\$ 4,600.00	\$ 4,600.00	\$ 7,500.00	\$ 7,500.00	\$ 2,750.00	\$ 2,750.00	\$ 12,500.00	\$ 12,500.00	\$ -	\$ -
63.	Raise Manhole to Final Grade After Improvements are Complete or Requested by Owner including Extra Move-In, Complete	EA	4	\$ 800.00	\$ 3,200.00	\$ 605.00	\$ 2,420.00	\$ 400.00	\$ 1,600.00	\$ 650.00	\$ 2,600.00	\$ 2,000.00	\$ 8,000.00	\$ -	\$ -
64.	Raise Cleanout to Final Grade After Improvements are Complete or Requested by Owner including Extra Move-In, Complete	EA	2	\$ 600.00	\$ 1,200.00	\$ 385.00	\$ 770.00	\$ 350.00	\$ 700.00	\$ 575.00	\$ 1,150.00	\$ 1,600.00	\$ 3,200.00	\$ -	\$ -
65.	Remove and Replace Existing Asphalt Pavement per City of Irvine standard plan 223, Alternative B, including saw cutting, AC removal and delivery to Owners stockpile within 2 miles, CMB placement and compaction, loading and hauling CMB from Owners stockpile within 2 miles, placement and compaction of AC, application of construction water, and any other appurtenant work, complete.	LF	10	\$ 200.00	\$ 2,000.00	\$ 375.00	\$ 3,750.00	\$ 200.00	\$ 2,000.00	\$ 200.00	\$ 2,000.00	\$ 575.00	\$ 5,750.00	\$ -	\$ -
66.	Remove and Replace Existing Metal Beam Guardrail and Dead End Signing per City of Irvine Standards 400 and 401.	LS	1	\$ 4,000.00	\$ 4,000.00	\$ 6,400.00	\$ 6,400.00	\$ 4,250.00	\$ 4,250.00	\$ 6,600.00	\$ 6,600.00	\$ 7,000.00	\$ 7,000.00	\$ -	\$ -
<b>SUBTOTAL, CODE 7165, PR 10574 IRWD CAPITAL IMPROVEMENTS .....</b>				<b>\$702,365.70</b>		<b>\$566,186.70</b>		<b>\$674,440.13</b>		<b>\$744,761.20</b>		<b>\$825,444.70</b>		<b>\$0.00</b>	

ITEM NO.	III. IRWD CODE 7165 CAPITAL RECYCLED WATER	UNIT	QY	ENGINEER ESTIMATE		Leatherwood - LOW Attn: Bobby Kawai Tel: 714.593.6575		FYDAQ Attn: Greg Huntley Tel: 714.447.9760		L&S Attn: Elton Welham Tel: 714.528.3232		KEC Attn: James Elfring Tel: 951.734.3010		Kennedy - No Bid Attn: David Chorak Tel: 949.380.8363	
				PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT	PRICE	AMOUNT
67.	Mobilization (Not to Exceed 2% of Section D Price)	LS	1	\$ 8,800.00	\$ 8,800.00	\$ 5,800.00	\$ 5,800.00	\$ 2,250.00	\$ 2,250.00	\$ 13,500.00	\$ 13,500.00	\$ 6,000.00	\$ 6,000.00	\$ -	\$ -
68.	Performance, Labor & Payment Bond	LS	1	\$ 6,600.00	\$ 6,600.00	\$ 3,700.00	\$ 3,700.00	\$ 4,841.65	\$ 4,841.65	\$ 2,500.00	\$ 2,500.00	\$ 4,000.00	\$ 4,000.00	\$ -	\$ -
69.	SWPPP & BMP's - Interim Erosion Control	LS	1	\$ 4,400.00	\$ 4,400.00	\$ 500.00	\$ 500.00	\$ 2,500.00	\$ 2,500.00	\$ 4,800.00	\$ 4,800.00	\$ 5,000.00	\$ 5,000.00	\$ -	\$ -
70.	Traffic Control	LS	1	\$ 2,200.00	\$ 2,200.00	\$ 500.00	\$ 500.00	\$ 1,000.00	\$ 1,000.00	\$ 500.00	\$ 500.00	\$ 5,000.00	\$ 5,000.00	\$ -	\$ -
71.	Development & Application of Construction Water	LS	1	\$ 2,200.00	\$ 2,200.00	\$ 1,000.00	\$ 1,000.00	\$ 2,500.00	\$ 2,500.00	\$ 1,000.00	\$ 1,000.00	\$ 6,000.00	\$ 6,000.00	\$ -	\$ -
72.	Railroad Flagman While Working Within OCRRA/Metrolink R/W	DAY	5	\$ 1,750.00	\$ 8,750.00	\$ 1,750.00	\$ 8,750.00	\$ 1,500.00	\$ 7,500.00	\$ 1,750.00	\$ 8,750.00	\$ 2,500.00	\$ 12,500.00	\$ -	\$ -
73.	Pressure test per IRWD Standards and Specifications, Complete	LF	719	\$ 3.00	\$ 2,157.00	\$ 7.00	\$ 5,033.00	\$ 2.50	\$ 1,797.50	\$ 2.50	\$ 1,797.50	\$ 6.00	\$ 4,314.00	\$ -	\$ -
74.	Clear and Grub site in preparation of sewer trenching, including removal, hauling and disposal of all material cleared and grubbed off-site, application of construction water, and any other appurtenant work, complete.	LS	1	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 1,835.00	\$ 1,835.00	\$ 2,200.00	\$ 2,200.00	\$ 6,000.00	\$ 6,000.00	\$ -	\$ -
75.	Furnish 16" PVC purple C-900 (DR-18) pipe, per IRWD standard W-17, and any other appurtenant work, complete.	LF	719	\$ 50.00	\$ 35,950.00	\$ 45.00	\$ 32,355.00	\$ 50.00	\$ 35,950.00	\$ 40.00	\$ 28,760.00	\$ 50.00	\$ 35,950.00	\$ -	\$ -
76.	Install 16" PVC Purple C-900 (DR-18) Pipe 5.8' to 29.6', per IRWD standard S-6 including, trench excavation, backfill, fittings, removal of trench spoils to Owners stockpile within 2 miles, indicator tape, application of construction water, and any other appurtenant work, complete.	LF	469	\$ 200.00	\$ 93,800.00	\$ 65.00	\$ 30,485.00	\$ 225.00	\$ 105,525.00	\$ 188.00	\$ 88,172.00	\$ 200.00	\$ 93,800.00	\$ -	\$ -
77.	Install 16" PVC Purple C-900 (DR-18) Pipe, d=24.9' to 29.6', in Jack and Bored Steel Casing, per IRWD standard W-21, including stainless steel casing spacers, end seals and any other appurtenant work, complete.	LF	250	\$ 80.00	\$ 20,000.00	\$ 115.00	\$ 28,750.00	\$ 150.00	\$ 37,500.00	\$ 495.00	\$ 123,750.00	\$ 95.00	\$ 23,750.00	\$ -	\$ -
78.	Furnish and Install 24" ID Steel Casing, Minimum Thickness 0.375", per IRWD Standard W-21 by Jack and Bore method, d=24.9' to 29.6', including, removal of trench spoils to Owners stockpile within 2 miles, application of construction water, and any other appurtenant work, complete.	LF	250	\$ 600.00	\$ 150,000.00	\$ 325.00	\$ 81,250.00	\$ 850.00	\$ 212,500.00	\$ 45.00	\$ 11,250.00	\$ 520.00	\$ 130,000.00	\$ -	\$ -
79.	Construct Jacking and Receiving Pits for Jack and Bore of Recycled Water Casing per Details on Plans including, excavation of pit, shoring, backfilling, compaction, removal of spoils to Owners stockpile within 2 miles, temporary safety and security fence (for pit and work area), application of construction water, and any other appurtenant work, complete.	EA	2	\$ 40,000.00	\$ 80,000.00	\$ 30,000.00	\$ 60,000.00	\$ 45,000.00	\$ 90,000.00	\$ 45,000.00	\$ 90,000.00	\$ 85,000.00	\$ 170,000.00	\$ -	\$ -

80.	Furnish and Install Casing Test Station per IRWD standard CP-3 including trenching, backfill, frame and cover, concrete collar, wire, conduit, identification tape, application of construction water, and any other appurtenant work, complete.	EA	2	\$ 2,500.00	\$ 5,000.00	\$ 2,000.00	\$ 4,000.00	\$ 1,610.00	\$ 3,220.00	\$ 3,200.00	\$ 6,400.00	\$ 3,300.00	\$ 6,600.00	\$ -	\$ -
81.	Remove and Dispose of Temporary Flush Out and appurtenant material, as appropriate, Off-Site and Join Existing Recycled Water, including trenching, filling in trenching, compaction, application of construction water, and any other appurtenant work, complete.	EA	1	\$ 3,500.00	\$ 3,500.00	\$ 3,800.00	\$ 3,800.00	\$ 5,990.00	\$ 5,990.00	\$ 7,500.00	\$ 7,500.00	\$ 11,200.00	\$ 11,200.00	\$ -	\$ -
82.	Furnish and Install 2" Air Release and Vacuum Relief (Case 3) per IRWD Standard W-11, d=6.6', including trenching, backfill, fittings, vented cover, identification tape, application of construction water, and any other appurtenant work, complete.	EA	1	\$ 8,500.00	\$ 8,500.00	\$ 8,000.00	\$ 8,000.00	\$ 3,500.00	\$ 3,500.00	\$ 7,900.00	\$ 7,900.00	\$ 18,000.00	\$ 18,000.00	\$ -	\$ -
83.	Furnish and Install 4" Blow Off Assembly (Case 3) per IRWD Standard W-14, d=25.0', including trenching, backfilling trench, pipe, valve, fittings, manhole, manhole frame and cover, identification tape, application of construction water and any other appurtenant work, complete	EA	1	\$ 20,000.00	\$ 20,000.00	\$ 23,000.00	\$ 23,000.00	\$ 5,000.00	\$ 5,000.00	\$ 16,000.00	\$ 16,000.00	\$ 23,000.00	\$ 23,000.00	\$ -	\$ -
84.	Furnish and Install Temporary Flush Out Assembly per IRWD Standard W-12, d=29.6', including cap, saddle, thrust block, marker, fittings, identification tape, application of construction water, and any other appurtenant work, complete.	EA	1	\$ 3,500.00	\$ 3,500.00	\$ 6,300.00	\$ 6,300.00	\$ 4,250.00	\$ 4,250.00	\$ 3,200.00	\$ 3,200.00	\$ 12,500.00	\$ 12,500.00	\$ -	\$ -
85.	Raise Valve to Final Grade After Improvements are Complete or Requested by Owner including Extra Move-In, Complete	EA	2	\$ 800.00	\$ 1,600.00	\$ 385.00	\$ 770.00	\$ 400.00	\$ 800.00	\$ 550.00	\$ 1,100.00	\$ 1,600.00	\$ 3,200.00	\$ -	\$ -
86.	Raise Blow-off Manhole to Final Grade After Improvements are Complete or Requested by Owner including Extra Move-In, Complete	EA	1	\$ 800.00	\$ 800.00	\$ 385.00	\$ 385.00	\$ 400.00	\$ 400.00	\$ 650.00	\$ 650.00	\$ 2,500.00	\$ 2,500.00	\$ -	\$ -
<b>SUBTOTAL, CODE 7165, PR 10734 IRWD CAPITAL RW IMPROVEMENTS .....</b>				<b>\$462,757.00</b>		<b>\$309,378.00</b>		<b>\$528,859.15</b>		<b>\$419,729.50</b>		<b>\$579,314.00</b>		<b>\$0.00</b>	
<b>TOTAL, CODE 7165 PR 10574 AND 10734 IRWD CAPITAL IMPROVEMENTS .....</b>				<b>\$1,165,122.70</b>		<b>\$875,564.70</b>		<b>\$1,203,299.28</b>		<b>\$1,164,490.70</b>		<b>\$1,404,758.70</b>		<b>\$0.00</b>	

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# EXHIBIT "D"

Owner: Heritage Fields El Toro, LLC Project: District 6 - Reach B East Sewer Improvements Bid Date: September 6, 2018  
 CODE 7282

				<u>ENGINEER ESTIMATE</u>	<u>Leatherwood - LOW</u> <i>Attn: Bobby Kawai</i>  <i>Tel: 714.593.6575</i>				<u>FYDAQ</u> <i>Attn: Greg Huntley</i>  <i>Tel: 714.447.9760</i>				<u>L&amp;S</u> <i>Attn: Elton Welham</i>  <i>Tel: 714.528.3232</i>				<u>KEC</u> <i>Attn: James Elfring</i>  <i>Tel: 951.734.3010</i>				<u>Kennedy - No Bid</u> <i>Attn: Matt Trumble</i>  <i>Tel: 949.380.8363</i>			
				PRICE		AMOUNT		PRICE		AMOUNT		PRICE		AMOUNT		PRICE		AMOUNT		PRICE		AMOUNT		
<b>ITEM NO.</b>	<b>II. IRWD CODE 7282 CAPITAL SEWER</b>	<b>UNIT</b>	<b>QY</b>																					
1.	Mobilization (Maximum of 2% of Section B1 Amount)	LS	1	\$ 6,160.00	\$ 6,160.00	\$ 3,780.00	\$ 3,780.00	\$ 1,485.40	\$ 1,485.40	\$ 5,000.00	\$ 5,000.00	\$ 1,000.00	\$ 1,000.00	\$ -	\$ -									
2.	Performance, Labor & Payment Bond	LS	1	\$ 3,080.00	\$ 3,080.00	\$ 2,520.00	\$ 2,520.00	\$ 4,304.46	\$ 4,304.46	\$ 4,800.00	\$ 4,800.00	\$ 3,000.00	\$ 3,000.00	\$ -	\$ -									
3.	Erosion Control - SWPPP & BMP's	LS	1	\$ 4,928.00	\$ 4,928.00	\$ 1,365.00	\$ 1,365.00	\$ 7,000.00	\$ 7,000.00	\$ 1,500.00	\$ 1,500.00	\$ 3,000.00	\$ 3,000.00	\$ -	\$ -									
4.	Development and Application of Construction Water	LS	1	\$ 4,620.00	\$ 4,620.00	\$ 210.00	\$ 210.00	\$ 840.00	\$ 840.00	\$ 900.00	\$ 900.00	\$ 3,000.00	\$ 3,000.00	\$ -	\$ -									
5.	Traffic Control	LS	1	\$ 4,620.00	\$ 4,620.00	\$ 315.00	\$ 315.00	\$ 4,200.00	\$ 4,200.00	\$ 1,250.00	\$ 1,250.00	\$ 3,000.00	\$ 3,000.00	\$ -	\$ -									
6.	Air Test and Video Pipeline Per IRWD Standards & Specifications, Complete	LF	295	\$ 9.00	\$ 2,655.00	\$ 15.00	\$ 4,425.00	\$ 5.00	\$ 1,475.00	\$ 4.00	\$ 1,180.00	\$ 10.00	\$ 2,950.00	\$ -	\$ -									
7.	Clearing and Grubbing (All Vegetation Within the Project Site)	LS	1	\$ 2,800.00	\$ 2,800.00	\$ 5,250.00	\$ 5,250.00	\$ 5,600.00	\$ 5,600.00	\$ 2,500.00	\$ 2,500.00	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -									
8.	Furnish and Install 18" PVC (Green), C900, DR 18 Sewer, including Trenching, Bedding, Backfill & Compaction, Fittings, sewer indicator tape, and any other appurtenant work per IRWD Std. DWG. S-6, Depth = 25'-33', Complete	LF	207	\$ 720.00	\$ 149,040.00	\$ 600.00	\$ 124,200.00	\$ 595.00	\$ 123,165.00	\$ 725.00	\$ 150,075.00	\$ 835.00	\$ 172,845.00	\$ -	\$ -									
9.	Furnish and Install 12" PVC (Green), C900, DR 18 Sewer, including Trenching, Bedding, Backfill & Compaction, Fittings, sewer indicator tape, and any other appurtenant work per IRWD Std. DWG. S-6, Depth = 23'-27', Complete	LF	88	\$ 489.00	\$ 43,032.00	\$ 215.00	\$ 18,920.00	\$ 485.00	\$ 42,680.00	\$ 480.00	\$ 42,240.00	\$ 565.00	\$ 49,720.00	\$ -	\$ -									
10.	Remove and Dispose of Temporary 6" or 8" Terminal Cleanout & Join Existing Sewer	EA	1	\$ 1,941.89	\$ 1,941.89	\$ 15,000.00	\$ 15,000.00	\$ 4,000.00	\$ 4,000.00	\$ 4,975.00	\$ 4,975.00	\$ 12,500.00	\$ 12,500.00	\$ -	\$ -									
11.	Construct 72" DIA. Manhole w/ Modified Base per IRWD Std. DWG. S-1 and Detail on Plan, including excavation, backfill, concrete, reinforcement, finishing, manhole frame and cover, 1 Raise and any other appurtenant work, Depth = 26'-33', Complete	EA	2	\$ 21,721.23	\$ 43,442.46	\$ 21,000.00	\$ 42,000.00	\$ 32,800.00	\$ 65,600.00	\$ 23,500.00	\$ 47,000.00	\$ 37,000.00	\$ 74,000.00	\$ -	\$ -									
12.	Furnish & Install Temporary 6" or 8" Terminal Cleanout Per IRWD	EA	1	\$ 2,000.00	\$ 2,000.00	\$ 6,600.00	\$ 6,600.00	\$ 5,250.00	\$ 5,250.00	\$ 4,000.00	\$ 4,000.00	\$ 13,500.00	\$ 13,500.00	\$ -	\$ -									
13.	Raise Manhole to Final Grade After Improvements are Complete or	EA	2	\$ 401.76	\$ 803.52	\$ 625.00	\$ 1,250.00	\$ 500.00	\$ 1,000.00	\$ 650.00	\$ 1,300.00	\$ 2,000.00	\$ 4,000.00	\$ -	\$ -									
<b>SUBTOTAL, IRWD CAPITAL IMPROVEMENTS .....</b>				<b>\$269,122.87</b>		<b>\$225,835.00</b>		<b>\$266,599.86</b>		<b>\$266,720.00</b>		<b>\$344,515.00</b>		<b>\$0.00</b>										

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EXHIBIT "E"

CHANGE NO.: \_\_\_\_\_  
DATE: \_\_\_\_\_

POTENTIAL CHANGE OF WORK ACKNOWLEDGEMENT & VALUE  
(FOR IRWD CAPITAL IMPROVEMENTS)

The purpose of this form is to acknowledge a change in work for the intent of reimbursement of costs. Upon acceptance a change order will be issued.

Contract No.: Various/71151701 Owner: Heritage Fields El Toro, LLC  
Sewer  Contractor: FYDAQ, Engeo,  
Domestic Water  and Michael Baker  
Reclaim Water  Design Engineer: \_\_\_\_\_  
Other  IRWD Mgr. Kelly Lew

Project Description: Improvements between OCTA railway right of way and "LV" Street. Additional scope of work including IRWD Code No.5758 Capital Sewer, geotechnical observation/testing and field coordination, survey and staking.

PART A - POTENTIAL CHANGE OF WORK:

Plan Revision Required:  YES  NO Estimated Cost: 163,839.00

Change Initiated By: \_\_\_\_\_

Work Description: Delta 11


- 1. Submitted by: [Signature]  
Owner Representative / Date
- 2a. In IRWD's opinion the aforementioned work does  does not   
qualify as a potential change in work.
- 2b. IRWD comments (required if representative does not concur with the potential change):  
\_\_\_\_\_
- 2c. Reviewed by: [Signature] 11/12/19  
IRWD Representative / Date
- 3. Received and Recorded by: \_\_\_\_\_  
Owner Representative / Date

PART B - CHANGE OF WORK VALUE: \$ 163,839.00

Detailed Backup Attached

- 1. Submitted by: [Signature]  
Owner Representative / Date
- 2. Recommended by: \_\_\_\_\_  
IRWD Representative / Date

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November 19, 2019  
Prepared by: B. Rios / K. Lew  
Submitted by: K. Burton  
Approved by: Paul A. Cook 

## ENGINEERING AND OPERATIONS COMMITTEE

### PLANNING AREA 12 INNOVATION PARK CAPITAL FACILITIES

#### SUMMARY:

Irvine Community Development Company, LLC (ICDC) is proceeding with development of Planning Area (PA) 12 Innovation Park, which includes the construction of streets, storm drains, domestic water, sewer, and recycled water improvements. As part of the development, ICDC will construct IRWD capital facilities under a proposed Supplemental Reimbursement Agreement (SRA). Staff recommends that the Board:

- Authorize the addition of the PA 12 Innovation Park Capital Domestic Water Improvements project in the amount of \$410,000 to the FY 2019-20 Capital Budget;
- Authorize the General Manager to execute a Supplemental Reimbursement Agreement with ICDC for Planning Area 12, Innovation Park, Domestic Water and Recycled Water Capital Improvements; and
- Authorize the General Manager to accept ICDC's construction contract with Paulus Engineering, Inc. in the amount of \$560,844 for the Innovation Park Domestic Water and Recycled Water Improvements.

#### BACKGROUND:

ICDC is moving forward with the first phase of commercial development of PA 12, Innovation Park. Innovation Park is bound by the I-5 freeway, Orange County Transportation Authority (OCTA) Railroad, Sand Canyon Avenue and Oak Creek Golf Course. The project location map is shown as Exhibit "A". As part of this development, ICDC will design and construct IRWD's domestic water and recycled water capital improvements. The required IRWD capital facilities are documented in the September 2019 PA 12 Sub-Area Master Plan Addendum and all subsequent addendums and updates prepared by Stantec Consulting Services, Inc.

The design and construction of the IRWD facilities will be performed under the terms of the Master Reimbursement Agreement between IRWD and ICDC approved by the Board in May 1997 and as further refined in the SRA. The SRA, which covers capital facilities within the Innovation Park development, is attached as Exhibit "B" and has been reviewed by IRWD's legal counsel.

The PA 12 Innovation Park Domestic Water and Recycled Water Improvements consist of installing approximately 675 feet of 12-inch domestic water pipeline, 1,400 feet of 10-inch recycled water pipeline, 1,400 feet of eight-inch recycled pipeline, and 1,900 feet of six-inch recycled pipeline. This includes 200 feet of domestic water bore and jack installation under the OCTA railroad to connect to an existing domestic water point of connection on the south side of the tracks. ICDC retained Stantec to prepare the plans and received bids from five contractors. ICDC recommends awarding the construction contract to the low bidder, Paulus Engineering, for

a bid amount of \$560,844 as shown in Exhibit “C”. In addition, ICDC has received consultant proposals for geotechnical observation and testing, surveying, construction support services, design and field archeological and paleontological monitoring. Staff has reviewed the consultant proposals and the construction bids and found the amounts to be acceptable. A summary of the PA 12 Innovation Park Domestic Water and Recycled Water Improvements costs is shown below.

Design (Stantec)	\$ 55,200.00
Construction (Paulus)	\$560,844.00
Geotechnical Services (NMG)	\$ 18,352.00
Construction Engineering (Stantec)	\$ 15,130.00
Survey and Staking (Adam Streeter)	\$ 15,630.00
Archeo/Paleo Monitoring (LSA)	\$ 4,350.00
ICDC Administration Fee (1%)	<u>\$ 5,608.44</u>
	\$675,114.44

**FISCAL IMPACTS:**

Project 03734 for the PA 12 Innovation Park Capital Recycled Water Improvements is included in the FY 2019-20 Capital Budget and has adequate budget. Staff requests the addition of the PA 12 Innovation Park Capital Domestic Water Improvements, Project 11395 in the amount of \$410,000 to the FY 2019-2020 Capital Budget as shown in the following table.

Project No.	Current Budget	Addition <Reduction>	Total Budget
11395	\$ -0-	\$ 410,000	\$ 410,000

**ENVIRONMENTAL COMPLIANCE:**

Construction of capital domestic and recycled water facilities for the PA 12 Innovation Park Development is subject to CEQA. In conformance with the California Code of Regulations Title 14, Chapter 3, Article 7 an Environmental Impact Report was certified by the City of Irvine, the lead agency on August 14, 2008 (SCH# 2000071014).

**RECOMMENDATION:**

That the Board authorize the addition of the Planning Area 12 Innovation Park Capital Domestic Water Improvements, Project 11395 in the amount of \$410,000 to the FY 2019-20 Capital Budget, authorize the General Manager to execute a Supplemental Reimbursement Agreement with Irvine Community Development Company for Planning Area 12, Innovation Park, Domestic Water and Recycled Water Capital Improvements, and authorize the General Manager to accept Irvine Community Development Company’s construction contract with Paulus Engineering, Inc. in the amount of \$560,844 for the Innovation Park Domestic Water and Recycled Water Improvements, Projects 11395 and 03734.

LIST OF EXHIBITS:

Exhibit "A" – Location Map

Exhibit "B" – Supplemental Reimbursement Agreement with ICDC for Planning Area 12,  
Innovation Park, Domestic Water and Recycled Water Capital Improvements

Exhibit "C" – Bid Summary, Planning Area 12, Innovation Park, Domestic Water and Recycled  
Water Capital Improvements

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EXHIBIT "A"

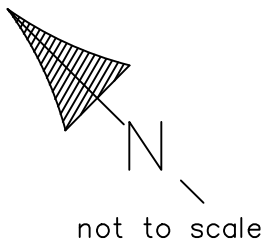
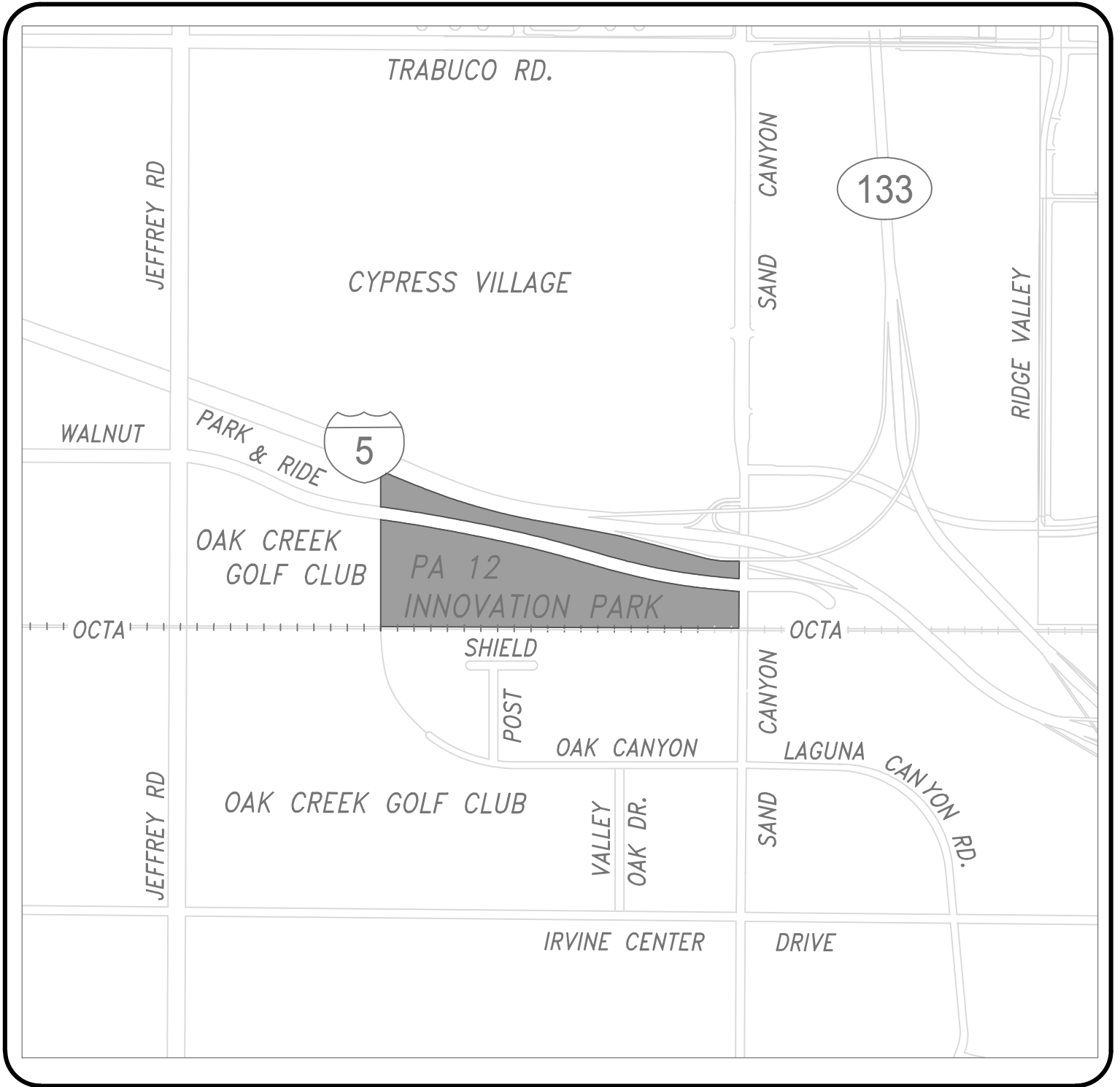


EXHIBIT "A"  
LOCATION MAP

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# EXHIBIT "B"

Exhibit "A"  
to  
Reimbursement Agreement

## SUPPLEMENTAL REIMBURSEMENT AGREEMENT

BY AND BETWEEN

IRVINE RANCH WATER DISTRICT

AND

IRVINE COMMUNITY DEVELOPMENT COMPANY

This SUPPLEMENTAL REIMBURSEMENT AGREEMENT ("Agreement") is entered into as of this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between Irvine Ranch Water District, a California water district formed and existing pursuant to the California Water District Law of the state of California ("IRWD"), and Irvine Community Development Company ("ICDC"). All capitalized terms used herein and not otherwise defined shall have the meanings given such terms in the Reimbursement Agreement.

WHEREAS, IRWD and ICDC have previously entered into that certain Reimbursement Agreement dated May 21, 1997 ("Reimbursement Agreement") respecting construction of Capital Facilities; and

WHEREAS, said Reimbursement Agreement made reference to the fact that certain supplemental agreements would be entered into by the parties regarding construction of Capital Facilities and reimbursement therefor consistent with the provisions of said Reimbursement Agreement; and

WHEREAS, the parties now wish to enter this Agreement regarding the construction of Capital Facilities described below, subject to all of the terms of the Reimbursement Agreement, except as provided herein.

NOW, THEREFORE, the parties hereto, in consideration of the mutual promises and covenants hereinafter set forth, do agree as follows:

1. Except as provided herein, the parties hereby incorporate by reference all of the terms and conditions of the Reimbursement Agreement into this Agreement.

2. The name of the Project to which this Agreement pertains is:  
PA 12 Innovation Park Capital Facilities.  
The Project is depicted on Exhibit 1 attached to this Agreement.

3. The Capital Facilities to be constructed pursuant to this Agreement are as follows: [describe type, diameter, approximate linear footage, etc; include any detailed drawing as Exhibit 3 if needed] Approximately 1,020 feet of 12-inch domestic water pipeline, 1,400 feet of 10-inch recycled water pipeline, 6,960 feet of 8-inch recycled water pipeline, and 3,675 feet of 6-inch recycled water pipeline. The Capital Facilities  **do** /  **do not** include any facilities that are a part of the Michelson/ Los Alisos Reclamation Plants Upgrades and Distribution System Expansion Project identified in the Agreement No. 61719 2003 LRP Local Resources Program Agreement, entered into as of June 13, 2005, by and between IRWD and the Metropolitan Water District of Southern California (the “MWD Local Project”).

4. The total costs for the Capital Facilities shall include, but not be limited to, the actual costs for construction, surveying, compaction testing, permits, construction bonds, legal fees and an administration fee equal to one percent (1%) of the actual cost of construction (all such actual costs are collectively referred to as the “Costs”). The estimated amount of the Costs is \$2,500,000.

5. The following special terms apply to the construction of the Capital Facilities under this Agreement and supersede the provisions of the original Reimbursement Agreement referenced above:

“The “Costs” shall also include consultant design and consultant construction administration assistance.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_.

6. In accordance with Section 10 of the Reimbursement Agreement, ICDC is executing concurrently herewith an Assignment Agreement in the form of Exhibit 2, to be effective upon the Effective Date specified in the Assignment Agreement.

7. If the box in Section 3 above has been checked to indicate that any of the Capital Facilities are a part of the MWD Local Project, then ICDC shall include the following language in its agreements with any consultant or contractor retained by ICDC to work on the Capital Facilities:

“[Contractor / Consultant] agrees at its sole cost and expense to protect, indemnify, defend, and hold harmless Metropolitan Water District of Southern California, Municipal Water District of Orange County, and each of their respective Boards of Directors, officers, representatives, agents and employees from and against any and all claims and liability of any kind (including, but not limited to, any claims or liability for injury or death to any person, damage to property, natural resources or the environment, or water quality problems) that arise out of or relate to any act or omission of [Contractor / Consultant] in the performance of this agreement. Such indemnity shall include all damages and losses related to any claim made, whether or not a court action is filed, and shall include attorney fees, administrative and overhead costs, engineering and consulting fees and all other costs related to or arising out of such claim of liability.”

IN WITNESS WHEREOF, the parties have entered this Agreement as of the date set forth above.

IRVINE RANCH WATER DISTRICT

IRVINE COMMUNITY  
DEVELOPMENT COMPANY

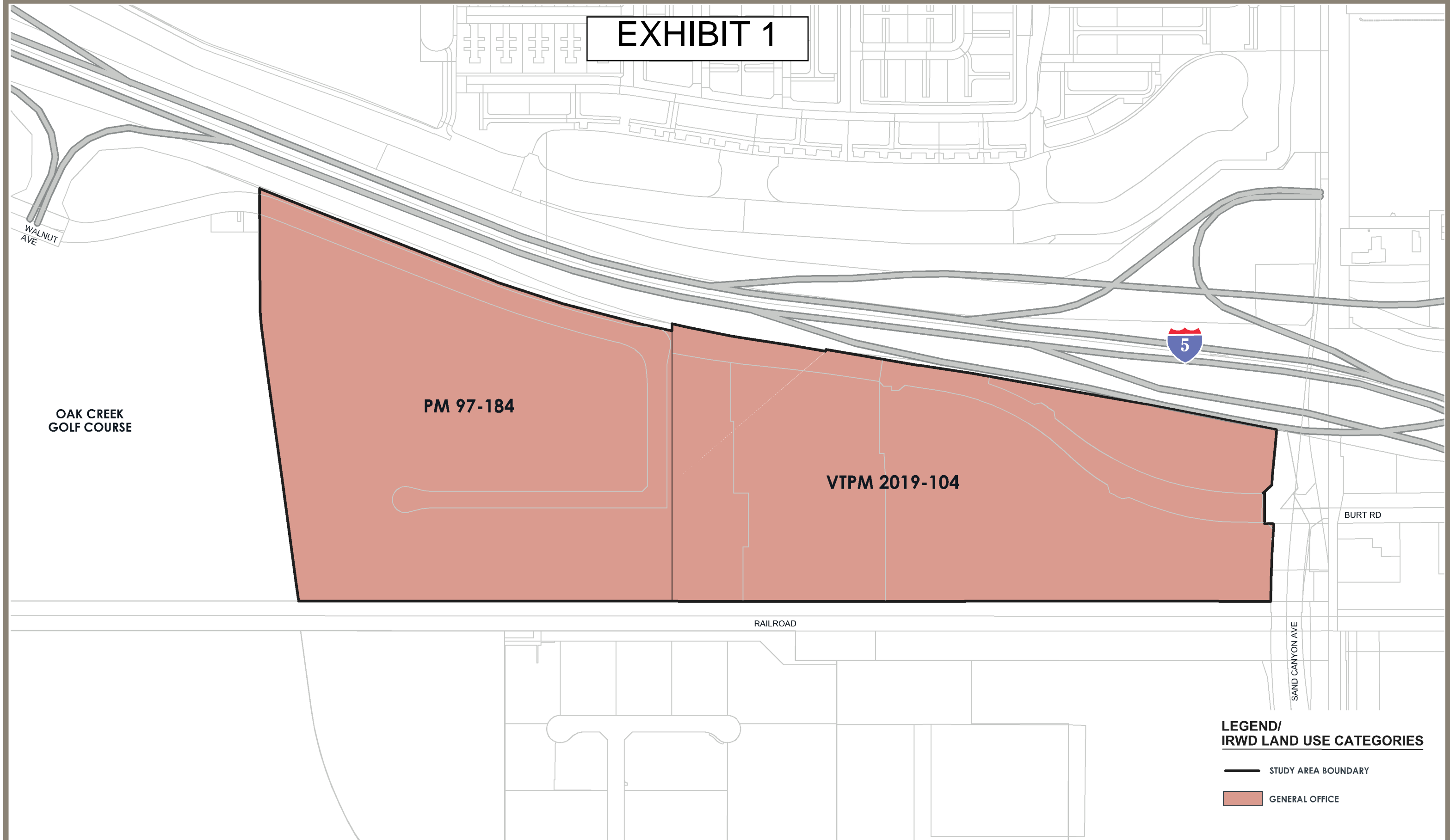
By: \_\_\_\_\_  
General Manager

By: \_\_\_\_\_  
Title: \_\_\_\_\_

By: \_\_\_\_\_  
Title: \_\_\_\_\_

Exhibit "1"  
to  
Supplemental Reimbursement Agreement

# EXHIBIT 1



### LEGEND/ IRWD LAND USE CATEGORIES

- STUDY AREA BOUNDARY
- GENERAL OFFICE

DRAWING: v:\2042\active\2042486920\design\analysis\samp addendum\cad\fig 2-1.dwg PLOTTED: 3/29/2019 10:44 AM BY: Lu, Michael (Irvine)

Exhibit "2"  
to  
Supplemental Reimbursement Agreement

Assignment Agreement

This ASSIGNMENT AGREEMENT is made as of \_\_\_\_\_, 20\_\_\_\_, by and between IRVINE COMMUNITY DEVELOPMENT COMPANY, LLC (“Assignor”), to IRVINE RANCH WATER DISTRICT, a California water district formed and existing pursuant to the California Water District Law of the State of California (“Assignee”) based upon the following recitals:

A. Assignor has previously (or will, prior to the Effective Date hereof, have) entered into that certain Construction Contract relating to the Project and Capital Facilities identified in Schedule A hereto (the “Construction Contract”).

B. Assignee desires to acquire (I) Assignor’s right, title and interest in and to the Capital Facilities constructed under the Construction Contract, and (II) the warranty rights of Assignor as to the Capital Facilities under the Construction Contract, and Assignor desires to assign such rights to Assignee.

NOW, THEREFORE, in consideration of the foregoing, the covenants and agreements contained herein and other valuable consideration, receipt of which is hereby acknowledged, the parties hereto agree as follows:

1. ASSIGNMENT. Effective upon the date specified in Section 2 hereof (the “Effective Date”), Assignor assigns and transfers to Assignee all of Assignor’s right, title, claim and interest in and to (a) the Capital Facilities constructed pursuant to the Construction Contract, and (b) the warranties and guarantees of contractor as to the Capital Facilities constructed pursuant to the Construction Contract. This Assignment is made by Assignor pursuant to the provisions of Section 10, entitled “Assignment of Interest”, contained in that certain Reimbursement Agreement between Assignor and Assignee dated as of May 21, 1997.

2. EFFECTIVE DATE. The Effective Date shall be the date of the filing of the Notice of Completion for the Construction Contract unless a different date is inserted in the following space: \_\_\_\_\_

3. TRANSFER OF DOCUMENTATION. On or prior to the Effective Date, Assignor shall provide Assignee with a copy of the Construction Contract.

IN WITNESS WHEREOF, Assignor has executed this Assignment Agreement as of the date first above written.

ASSIGNOR:

IRVINE COMMUNITY DEVELOPMENT  
COMPANY, LLC

By: \_\_\_\_\_

Title: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Schedule A  
to  
Assignment Agreement

This Schedule A to Assignment Agreement relates to the assignment of certain matters pursuant to the Supplemental Reimbursement Agreement between Assignor and Assignee dated \_\_\_\_\_ (“Supplemental Reimbursement Agreement”).

Agreement: Insert name of Project from Section 2 of Supplemental Reimbursement Agreement: PA 12 Innovation Park Capital Facilities  
\_\_\_\_\_  
\_\_\_\_\_

Insert description of Capital Facilities from Section 3 of Supplemental Reimbursement Agreement: Approximately 1,020 feet of 12-inch domestic water pipeline, 1,400 feet of 10-inch recycled water pipeline, 6,960 feet of 8-inch recycled water pipeline, and 3,675 feet of 6-inch recycled water pipeline.  
\_\_\_\_\_  
\_\_\_\_\_

Contractor’s Name: \_\_\_\_\_

License No. \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

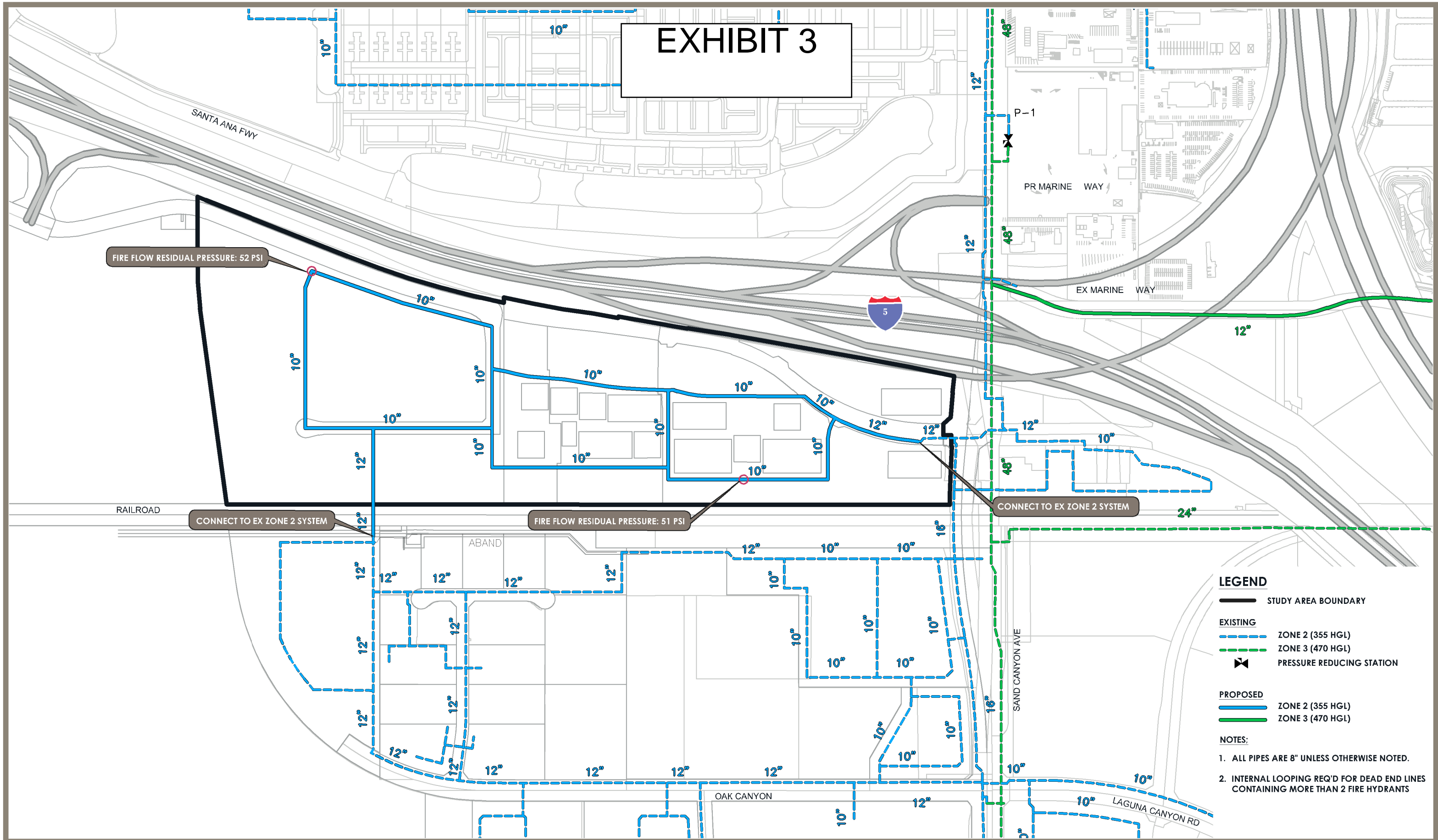
Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Exhibit "3"  
to  
Supplemental Reimbursement Agreement  
Domestic Water System Facilities



# EXHIBIT 3



- LEGEND**
- STUDY AREA BOUNDARY
  - EXISTING**
    - - - ZONE 2 (355 HGL)
    - - - ZONE 3 (470 HGL)
    - ⌵ PRESSURE REDUCING STATION
  - PROPOSED**
    - ZONE 2 (355 HGL)
    - ZONE 3 (470 HGL)

- NOTES:**
1. ALL PIPES ARE 8" UNLESS OTHERWISE NOTED.
  2. INTERNAL LOOPING REQ'D FOR DEAD END LINES CONTAINING MORE THAN 2 FIRE HYDRANTS

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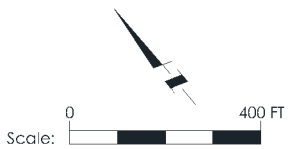
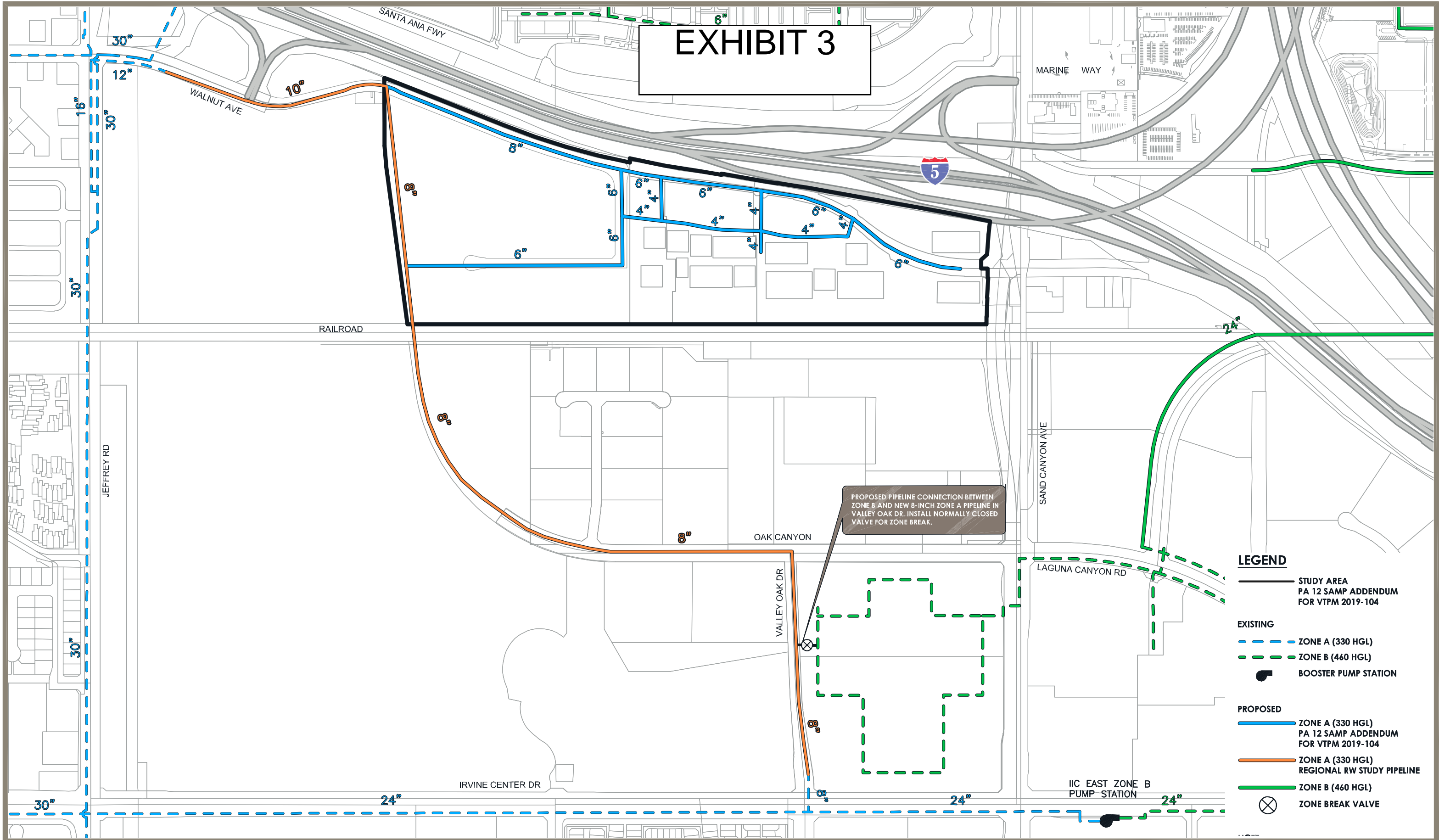


Exhibit "3"  
to  
Supplemental Reimbursement Agreement  
Recycled Water Facilities

# EXHIBIT 3



- LEGEND**
- STUDY AREA  
PA 12 SAMP ADDENDUM  
FOR VTPM 2019-104
  - EXISTING
    - - - ZONE A (330 HGL)
    - - - ZONE B (460 HGL)
    - ⊕ BOOSTER PUMP STATION
  - PROPOSED
    - ZONE A (330 HGL)  
PA 12 SAMP ADDENDUM  
FOR VTPM 2019-104
    - ZONE A (330 HGL)  
REGIONAL RW STUDY PIPELINE
    - ZONE B (460 HGL)
    - ⊗ ZONE BREAK VALVE

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Exhibits to Supplemental Reimbursement Agreement:

Exhibit 1 - Depiction of Project

Exhibit 2 - Assignment Agreement

Exhibit 3 - Description of Capital Facilities (as needed)

# EXHIBIT C

c: Dave Conley  
 Mike Morse  
 Jamie Yoshida  
 File with Bid Key Map  
 Mary Oshima - Cost Matrix

PRE-BID MEETING DATE: August 29, 2019  
 BID OPENING DATE: September 24, 2019 & 9/27/19 IRWD Cap  
 WITNESSED BY: M Oshima  
 E Marioneaux

DECLINED AFTER TO PRE-BID: Sukut Construction  
 NO SHOW AT PREBID: N/A  
 DID NOT SUBMIT: N/A

**BID SUMMARY**  
**INNOVATION PARK (SPECTRUM 7)**  
**VTPM 2019-104 & PM 97-184**  
**CONTRACT "B1" - WET UTILITIES (PREVAILING WAGE)**  
**NON-ASSESSMENT DISTRICT AND IRWD CAPITAL IMPROVEMENTS**  
**BID PACKAGE B00419**  
 Approximately 4,200 Linear Feet  
 TASK/PC ID NO. LD-5070.ST.01.cn01

ENGINEER'S ESTIMATE STANTEC CONSULTING	LOW BIDDER PAULUS ENGINEERING	2ND BIDDER LEATHERWOOD CONSTRUCTION	3RD BIDDER L&S CONSTRUCTION	4TH BIDDER SHOFFEITT PIPELINE	5TH BIDDER KEC ENGINEERING
---	----------------------------------	--	--------------------------------	----------------------------------	-------------------------------

**CHECK LIST**  
 Required items to be included in bid package:

- Signed Addendum Nos. 1-4 and 6 (Bid Addendum 5 was only applicable to C & D Contracts)
- Corporate Seal (if applicable)
- Correct Signatures (Page V-3)
- Bid Totals Correctly
- List of SubContractors
- Equipment/Material Source Information
- Contractors Rates/Reviewed
- 10% Bid Bond
- Construction Schedule
- Non-Collusion Certificate
- Contractor Prequalified

	Comments	Comments	Comments	Comments	Comments
X					
X					
X					
X					
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X					
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ITEM DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL
<b>II. IRWD CAPITAL - DELETABLE ITEMS</b>														
<b>J. GENERAL</b>														
115 MOBILIZATION (NOT TO EXCEED 2% OF CONTRACT PRICE) - ADJUSTED TO EXCLUDE ITEMS 142 TO 148	1	LS	\$10,000.00	\$10,000.00	\$3,847.00	\$3,847.00	\$9,500.00	\$9,500.00	\$8,000.00	\$8,000.00	\$12,000.00	\$12,000.00	\$6,800.00	\$6,800.00
116 DEVELOP CONSTRUCTION WATER	1	LS	\$1,500.00	\$1,500.00	\$2,404.00	\$2,404.00	\$4,000.00	\$4,000.00	\$3,000.00	\$3,000.00	\$3,500.00	\$3,500.00	\$5,000.00	\$5,000.00
117 PAYMENT AND PERFORMANCE BONDS - ADJUSTED TO EXCLUDE ITEMS 142 TO 148	1	LS	\$1,500.00	\$1,500.00	\$7,950.00	\$7,950.00	\$8,700.00	\$8,700.00	\$5,000.00	\$5,000.00	\$14,000.00	\$14,000.00	\$4,500.00	\$4,500.00
118 INTERIM EROSION AND SEDIMENT CONTROL	1	LS	\$1,500.00	\$1,500.00	\$1,924.00	\$1,924.00	\$2,000.00	\$2,000.00	\$5,000.00	\$5,000.00	\$2,500.00	\$2,500.00	\$13,000.00	\$13,000.00
119 TRAFFIC CONTROL	1	LS	\$10,000.00	\$10,000.00	\$4,809.00	\$4,809.00	\$9,000.00	\$9,000.00	\$2,500.00	\$2,500.00	\$7,500.00	\$7,500.00	\$17,000.00	\$17,000.00
<b>K. DOMESTIC WATER (IRWD CAPITAL PLANS)</b>														
<i>Note: All tees, bends, thrust blocks and other fittings are to be included in the pipe unit price.</i>														
120 FURNISH & INSTALL 12" C-900 (DR-14) PVC PIPE; TRENCH & BEDDING PER IRWD STD DWG W-17	465	LF	\$75.00	\$34,875.00	\$85.00	\$39,525.00	\$80.00	\$37,200.00	\$65.00	\$30,225.00	\$88.00	\$40,920.00	\$140.00	\$65,100.00
121 FURNISH & INSTALL 12" (BFV) BUTTERFLY VALVE (FE) AWWA C-509, CLASS 150 & THRUST BLOCK PER IRWD STD DWGS W-22 & W-16	4	EA	\$2,800.00	\$11,200.00	\$2,991.00	\$11,964.00	\$4,000.00	\$16,000.00	\$3,700.00	\$14,800.00	\$3,800.00	\$15,200.00	\$5,200.00	\$20,800.00
122 SAWCUT, REMOVE AND DISPOSE OF EXISTING AC PAVEMENT SECTION IN BURT ROAD FOR 12" CAPITAL DOMESTIC WATERLINE TRENCH	158	LF	\$20.00	\$3,160.00	\$48.00	\$7,584.00	\$14.00	\$2,212.00	\$9.00	\$1,422.00	\$19.00	\$3,002.00	\$59.00	\$9,322.00
123 BACKFILL TOP 1' OF 12" CAPITAL DOMESTIC WATERLINE TRENCH IN BURT ROAD WITH AGGREGATE BASE	158	LF	\$10.00	\$1,580.00	\$9.00	\$1,422.00	\$11.00	\$1,738.00	\$18.00	\$2,844.00	\$15.00	\$2,370.00	\$36.00	\$5,688.00
124 REMOVE AND DISPOSE OF EXISTING 6" THROUGH 12" THICK CONCRETE PAVEMENT - DOMESTIC WATERLINE TRENCH AT BURT ROAD	158	LF	\$10.00	\$1,580.00	\$46.00	\$7,268.00	\$33.00	\$5,214.00	\$9.00	\$1,422.00	\$45.00	\$7,110.00	\$91.00	\$14,378.00
125 ADJUST VALVE CAP TO BASE PAVE GRADE	4	EA	\$350.00	\$1,400.00	\$481.00	\$1,924.00	\$350.00	\$1,400.00	\$600.00	\$2,400.00	\$525.00	\$2,100.00	\$1,600.00	\$6,400.00
126 ADJUST VALVE CAP TO FINISH GRADE	4	EA	\$300.00	\$1,200.00	\$481.00	\$1,924.00	\$350.00	\$1,400.00	\$600.00	\$2,400.00	\$550.00	\$2,200.00	\$1,600.00	\$6,400.00
<b>L. DOMESTIC WATER RR CROSSING (IRWD CAPITAL IMPROVEMENTS)</b>														
<i>Note: All tees, bends, thrust blocks and other fittings are to be included in the pipe unit price.</i>														
127 REMOVE & REPLACE EXISTING BIKE TRAIL	1	LS	\$7,500.00	\$7,500.00	\$9,617.00	\$9,617.00	\$17,000.00	\$17,000.00	\$5,100.00	\$5,100.00	\$21,000.00	\$21,000.00	\$18,500.00	\$18,500.00
128 REMOVE & REPLACE EXISTING FENCE	1	LS	\$5,000.00	\$5,000.00	\$3,751.00	\$3,751.00	\$7,300.00	\$7,300.00	\$7,500.00	\$7,500.00	\$9,500.00	\$9,500.00	\$10,200.00	\$10,200.00
129 REMOVE EXISTING PLUG/CAP AND TEMPORARY BLOW OFF & CHLORINATION ASSEMBLY AND JOIN	1	EA	\$3,500.00	\$3,500.00	\$5,435.00	\$5,435.00	\$8,400.00	\$8,400.00	\$3,000.00	\$3,000.00	\$3,500.00	\$3,500.00	\$3,800.00	\$3,800.00
130 FURNISH & INSTALL 12" BUTTERFLY VALVE (FE) AWWA C-509, CLASS 150 & THRUST BLOCK PER IRWD STD DWGS W-22 & W-16	1	EA	\$2,800.00	\$2,800.00	\$3,391.00	\$3,391.00	\$4,600.00	\$4,600.00	\$4,100.00	\$4,100.00	\$3,900.00	\$3,900.00	\$5,600.00	\$5,600.00
131 CONSTRUCT 24" O.D. WITH 3/8" THICK STEEL CASING PER IRWD STD W-14	160	LF	\$1,000.00	\$160,000.00	\$788.00	\$126,080.00	\$600.00	\$96,000.00	\$890.00	\$142,400.00	\$725.00	\$116,000.00	\$970.00	\$155,200.00
132 FURNISH & INSTALL BLOWOFF ASSEMBLY PER IRWD STD W-14	1	EA	\$3,500.00	\$3,500.00	\$6,558.00	\$6,558.00	\$12,500.00	\$12,500.00	\$6,500.00	\$6,500.00	\$13,500.00	\$13,500.00	\$12,000.00	\$12,000.00
133 FURNISH & INSTALL 12" PVC C-900, DR-14 WATER MAIN PER IRWD STD. W-17	213	LF	\$75.00	\$15,975.00	\$95.00	\$20,235.00	\$235.00	\$50,055.00	\$82.00	\$17,466.00	\$255.00	\$54,315.00	\$105.00	\$22,365.00
134 FURNISH & INSTALL TEMPORARY END OF LINE FLUSH-OUT ASSEMBLY PER IRWD STD. W-12	1	EA	\$1,500.00	\$1,500.00	\$1,349.00	\$1,349.00	\$1,700.00	\$1,700.00	\$2,050.00	\$2,050.00	\$1,100.00	\$1,100.00	\$3,000.00	\$3,000.00
135 FURNISH & INSTALL 12" DIP SPOOL, TRENCH & BEDDING PER IRWD STD W-17	17	LF	\$100.00	\$1,700.00	\$166.00	\$2,822.00	\$425.00	\$7,225.00	\$185.00	\$3,145.00	\$450.00	\$7,650.00	\$695.00	\$11,815.00
136 FURNISH & INSTALL CATHODIC PROTECTION CASING TEST STATION PER IRWD STD. DWG CP-3 (50' EXTENSION COIL SLACK)	2	EA	\$3,500.00	\$7,000.00	\$1,575.00	\$3,150.00	\$1,300.00	\$2,600.00	\$4,400.00	\$8,800.00	\$1,500.00	\$3,000.00	\$4,100.00	\$8,200.00
137 SCRRA INSURANCE - JACK AND BORE	1	LS	\$1,500.00	\$1,500.00	\$4,809.00	\$4,809.00	\$1,700.00	\$1,700.00	\$3,600.00	\$3,600.00	\$2,500.00	\$2,500.00	\$28,400.00	\$28,400.00
138 SCRRA PERFORMANCE BOND - JACK AND BORE	1	LS	\$5,000.00	\$5,000.00	\$2,404.00	\$2,404.00	\$6,700.00	\$6,700.00	\$4,500.00	\$4,500.00	\$7,000.00	\$7,000.00	\$11,300.00	\$11,300.00
139 SCRRA SITE SPECIFIC WORK PLAN (SSWP) - JACK AND BORE	1	LS	\$2,500.00	\$2,500.00	\$2,404.00	\$2,404.00	\$550.00	\$550.00	\$900.00	\$900.00	\$1,250.00	\$1,250.00	\$22,300.00	\$22,300.00
140 SCRRA REQUIREMENTS (ALL ELSE) - JACK AND BORE	1	LS	\$2,500.00	\$2,500.00	\$6,924.00	\$6,924.00	\$550.00	\$550.00	\$18,000.00	\$18,000.00	\$1,250.00	\$1,250.00	\$1.00	\$1.00
141 SCRRA FLAGGING - JACK AND BORE	1	LS	\$5,000.00	\$5,000.00	\$10,098.00	\$10,098.00	\$10,000.00	\$10,000.00	\$18,000.00	\$18,000.00	\$11,000.00	\$11,000.00	\$5,000.00	\$5,000.00
142 SCRRA INSURANCE - CHAIN LINK FENCE AND ACCESS GATE														
143 SCRRA SITE SPECIFIC WORK PLAN (SSWP) - CHAIN LINK FENCE AND ACCESS GATE														
144 SCRRA REQUIREMENTS (ALL ELSE) - CHAIN LINK FENCE AND ACCESS GATE														
145 SCRRA FLAGGING - CHAIN LINK FENCE AND ACCESS GATE														
146 REMOVE EXISTING CHAIN LINK FENCE INCLUDING POST FOUNDATIONS														
147 FURNISH AND INSTALL PERMANENT CHAIN LINK FENCE PER METROLINK ENGINEERING STANDARD 5106														
148 FURNISH AND INSTALL 12' WIDE ACCESS GATE PER METROLINK ENGINEERING STANDARD 5106														
149 ADJUST VALVE CAP TO BASE PAVE GRADE	2	EA	\$350.00	\$700.00	\$481.00	\$962.00	\$350.00	\$700.00	\$600.00	\$1,200.00	\$525.00	\$1,050.00	\$1,400.00	\$2,800.00
150 ADJUST VALVE CAP TO FINISH GRADE	2	EA	\$300.00	\$600.00	\$481.00	\$962.00	\$350.00	\$700.00	\$600.00	\$1,200.00	\$550.00	\$1,100.00	\$1,400.00	\$2,800.00
<b>M. RECYCLED WATER (CAPITAL PLANS)</b>														
<i>Note: All tees, bends, thrust blocks and other fittings are to be included in the pipe unit price.</i>														
151 FURNISH & INSTALL 6" AWWA C-900 PVC PURPLE PIPE, (DR-14) & TRENCHING PER IRWD STD DWG W-17	1,910	LF	\$60.00	\$114,600.00	\$26.00	\$49,660.00	\$30.00	\$57,300.00	\$34.00	\$64,940.00	\$36.00	\$68,760.00	\$46.00	\$87,860.00
152 FURNISH & INSTALL 8" AWWA C-900 PVC PURPLE PIPE, (DR-14) & TRENCHING PER IRWD STD DWG W-17	1,382	LF	\$65.00	\$89,830.00	\$31.00	\$42,842.00	\$40.00	\$55,280.00	\$45.00	\$62,190.00	\$59.00	\$81,538.00	\$62.00	\$85,684.00

**BID SUMMARY  
 INNOVATION PARK (SPECTRUM 7)  
 VTPM 2019-104 & PM 97-184  
 CONTRACT "B1" - WET UTILITIES (PREVAILING WAGE)  
 NON-ASSESSMENT DISTRICT AND IRWD CAPITAL IMPROVEMENTS  
 BID PACKAGE B00419  
 Approximately 4,200 Linear Feet  
 TASK/PC ID NO. LD-5070.ST.01.cn01**

		ENGINEER'S ESTIMATE	LOW BIDDER	2ND BIDDER	3RD BIDDER	4TH BIDDER	5TH BIDDER
		STANTEC CONSULTING	PAULUS ENGINEERING	LEATHERWOOD CONSTRUCTION	L&S CONSTRUCTION	SHOFFEITT PIPELINE	KEC ENGINEERING
153	FURNISH & INSTALL 10" AWWA C-900 PVC PURPLE PIPE, (DR-14) & TRENCHING PER IRWD STD DWG W-17	1,348 LF \$70.00 \$94,360.00	\$45.00 \$60,660.00	\$90.00 \$121,320.00	\$102.00 \$137,496.00	\$77.00 \$103,796.00	\$69.00 \$93,012.00
154	FURNISH & INSTALL 6" (RWGV) RESILIENT WEDGE GATE VALVE (FE) AWWA C-509, CLASS 150 & THRUST BLOCK PER IRWD STD DWGS W-22 & W-16	2 EA \$1,700.00 \$3,400.00	\$1,631.00 \$3,262.00	\$1,300.00 \$2,600.00	\$1,100.00 \$2,200.00	\$1,300.00 \$2,600.00	\$3,200.00 \$6,400.00
155	UTILITY TRENCH REPAIR (WALNUT AVENUE)	600 LF \$70.00 \$42,000.00	\$120.00 \$72,000.00	\$120.00 \$72,000.00	\$13.00 \$7,800.00	\$115.00 \$69,000.00	\$115.00 \$69,000.00
156	REMOVE AND DISPOSE OF EXISTING 6" THROUGH 12" THICK CONCRETE PAVEMENT - RECYCLED WATERLINE TRENCH AT WALNUT AVENUE	600 LF \$15.00 \$9,000.00	\$45.00 \$27,000.00	\$30.00 \$18,000.00	\$34.00 \$20,400.00	\$45.00 \$27,000.00	\$38.00 \$22,800.00
157	ADJUST VALVE CAP TO BASE PAVE GRADE	2 EA \$350.00 \$700.00	\$481.00 \$962.00	\$350.00 \$700.00	\$600.00 \$1,200.00	\$525.00 \$1,050.00	\$1,600.00 \$3,200.00
158	ADJUST VALVE CAP TO FINISH GRADE	2 EA \$300.00 \$600.00	\$481.00 \$962.00	\$350.00 \$700.00	\$600.00 \$1,200.00	\$550.00 \$1,100.00	\$1,600.00 \$3,200.00
<b>TOTAL IRWD CAPITAL DELETABLE ITEMS BID PRICE (SECTIONS J-M)</b>		<b>\$660,260.00</b>	<b>\$560,844.00</b>	<b>\$654,544.00</b>	<b>\$623,900.00</b>	<b>\$725,861.00</b>	<b>\$868,825.00</b>

LINE ITEMS 142 TO 148 WERE INADVERTANTLY INCLUDED IN THE IRWD CAPITAL SECTION OF THE SCHEDULE OF VALUES V-4 PAGES AND SHOULD HAVE BEEN IN THE BASE CONTRACT. THESE ITEMS HAVE BEEN MOVED TO THE BASE CONTRACT SECTION OF THIS BID SUMMARY.  
 M. MORSE DISCUSSED THE ENGINEER'S CLERICAL ERROR WITH K. LEW AND REQUESTED IRWD'S CONCURRENCE TO REBID PER BID ADDENDUM 6.  
 K. LEW CONCURRED WITH THIS APPROACH.

November 19, 2019  
Prepared by: J. Corey / K. Welch  
Submitted by: F. Sanchez / P. Weghorst  
Approved by: Paul A. Cook



## ENGINEERING AND OPERATIONS COMMITTEE

### SYPHON RESERVOIR GEOTECHNICAL INVESTIGATIONS PROJECT PERMITTING SERVICES VARIANCE NO. 2

#### SUMMARY:

On August 31, 2018, IRWD executed a Professional Services Agreement with Environmental Science Associates (ESA) to assist with regulatory permitting tasks for the Syphon Reservoir Improvement Project and the associated Geotechnical Investigations Project. These projects have separate permitting requirements and the scope of work recognizes the need for extensive coordination with pertinent regulatory agencies. Additional permitting services are needed to facilitate compliance with the biological and cultural resources requirements of the Mitigation Monitoring and Reporting Program (MMRP) and Lake and Streambed Alteration Agreement (LSAA) for the Geotechnical Investigations Project. To facilitate this additional work, staff has negotiated a variance to the 2018 Professional Services Agreement with ESA. Staff recommends that the Board authorize the General Manager to execute Variance No. 2 in the amount of \$160,970 with ESA.

#### BACKGROUND:

Staff has been working with ESA to prepare the Environmental Impact Report (EIR) for the Syphon Reservoir Improvement Project, which would increase the recycled water storage capacity of the reservoir by approximately 4,100 acre-feet. IRWD proposes to increase the storage capacity of the reservoir by replacing the existing dam with a new engineered dam built to current standards. A location map of Syphon Reservoir is provided as Exhibit "A".

The preparation of the EIR was originally scoped to include the environmental review of additional geotechnical investigations needed to inform the project design. In July 2018, engineers at HDR recommended that the geotechnical investigations be completed as a separate phase of the project that would inform both the design of the dam and the environmental analyses to be included in the EIR. Implementation of HDR's recommendation required the development of a Mitigated Negative Declaration (MND) for the Geotechnical Investigations Project in parallel with the development of the project EIR. On June 24, 2019, the Board adopted the MND for Syphon Reservoir Geotechnical Investigations Project and approved the geotechnical investigation work.

#### Project Permitting Requirements:

There are specific regulatory permitting tasks associated with the Syphon Reservoir Geotechnical Investigations and Syphon Reservoir Improvement Projects. The projects involve the development and implementation of separate LSAA's under Section 1602 of the California Fish and Game Code, extensive consultation with United States Fish and Wildlife Services

(USFWS) and California Department of Fish & Wildlife (CDFW), compliance with the Endangered Species Act, and mitigation planning and required monitoring.

On August 31, 2018, an agreement was executed with ESA in the amount of \$93,384 to initiate permitting work for both the Syphon Reservoir Geotechnical Investigations and the Syphon Reservoir Improvement Projects. At the time the agreement was approved, the complete scope of what would be required to secure permits for the projects was not known. Of the contracted amount, \$50,026 was associated with the Geotechnical Investigations Project and the remaining funds were reserved for permitting work for the Syphon Reservoir Improvement Project.

*Habitat Restoration and Mitigation Plan:*

During the preparation of the MND, an MMRP was developed in coordination with USFWS and CDFW. The resource agencies also required the urgent development of a Habitat Restoration and Mitigation Plan (HRMP) for upland impacts. The final HRMP, which was approved by USFWS and CDFW, was incorporated into the LSAA for the Geotechnical Investigations Project. ESA's efforts related to the development and agency coordination of the HRMP were outside of the original scope of work.

Variance No. 2 to Professional Services Agreement:

ESA has submitted Variance No. 2, provided as Exhibit "B", that will cover the completion of permitting services for the Geotechnical Investigations Project. The scope of work to be completed under Variance No. 2 is associated largely with resource agency coordination and providing mitigation monitoring and compliance services in support of the Geotechnical Investigations Project. The level of effort required for agency coordination and meetings were significantly greater than previously envisioned to successfully complete the LSAA and the preparation of the HRMP. Additional efforts have been required as a result of the complexity of the biological resources and the existing mitigation lands at the site as well as the complex relationship of the Geotechnical Investigations Project to the Syphon Reservoir Improvement Project. These additional efforts have been incorporated into Variance No. 2.

Variance No. 2 also includes time and budget for the following tasks to comply with mitigation and regulatory permit requirements included in the MND and the LSAA for the Geotechnical Investigations Project:

- Biological compliance services including conducting pre-construction surveys, confirming project disturbance limits and monitoring construction activities;
- Quantification of the impacts and requisite restoration and enhancement areas as a result of the geotechnical investigations;
- Procurement of appropriate seed material for the areas disturbed by the geotechnical work outside of the future reservoir inundation limit; and
- Archaeological and paleontological monitoring.



Staff has negotiated the costs associated with ESA's request for Variance No. 2 and finds the variance to be fair and reasonable. Staff recommends that the Board authorize the General Manager to execute Variance No. 2 to the Professional Services Agreement with ESA in the amount of \$160,970 for the additional permitting assistance associated with the Geotechnical Investigations Project.

FISCAL IMPACTS:

Project 03808, Syphon Reservoir Improvement Project, is included in the FY 2019-20 Capital Budget as a flagged project. The cost for ESA to perform the additional work under Variance No. 2 is \$160,970. At this time, the existing budget and Expenditure Authorizations are sufficient to fund the work performed by ESA related to Variance No. 2.

ENVIRONMENTAL COMPLIANCE:

On June 24, 2019, the Board adopted an MND for the Syphon Reservoir Geotechnical Investigations Project. The Syphon Reservoir Geotechnical Investigations Project is subject to the California Environmental Quality Act (CEQA). IRWD is preparing an EIR in conformance with CEQA, California Code of Regulations Title 14, Chapter 3, Article 6, Section 15070.

RECOMMENDATION:

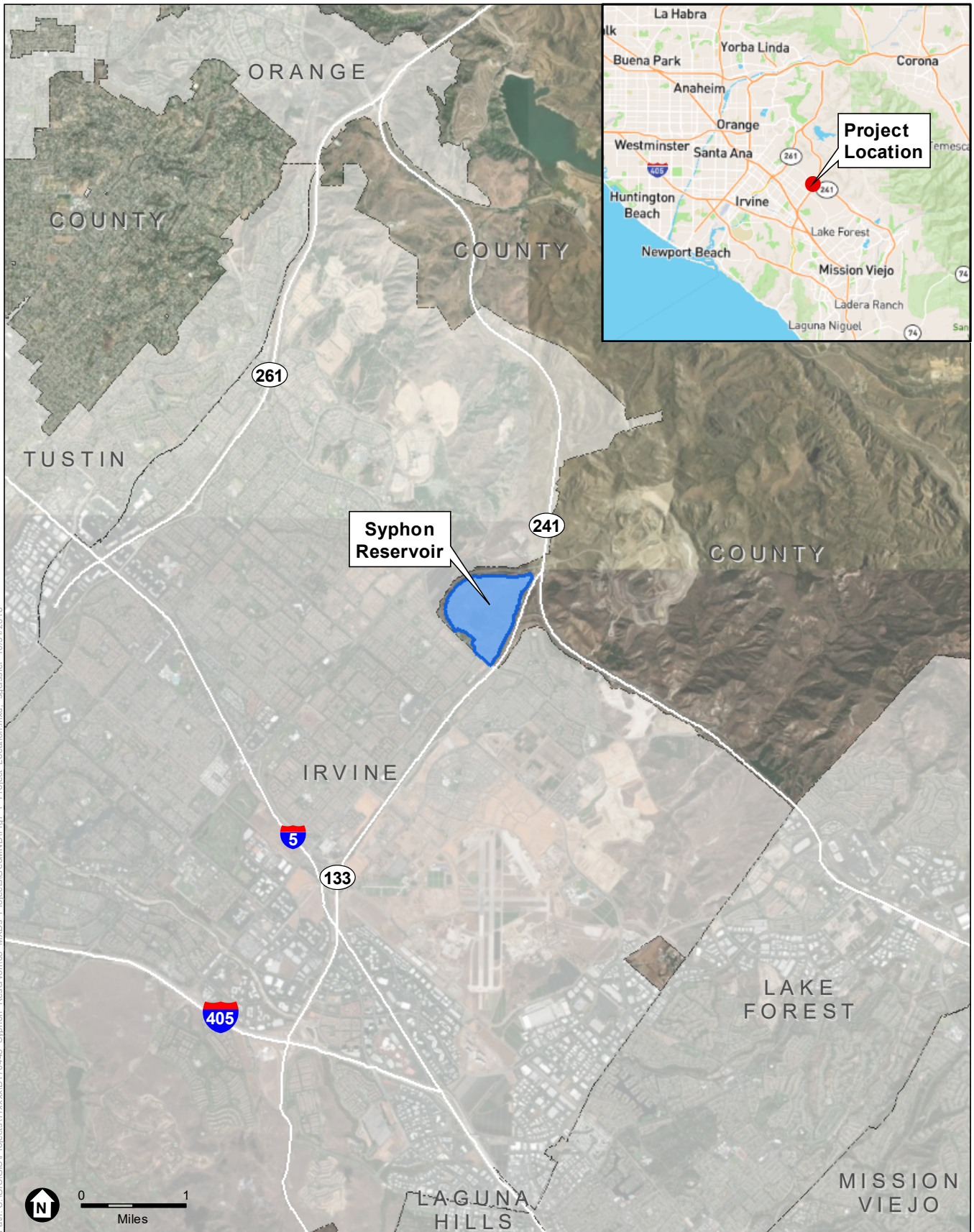
That the Board authorize the General Manager to execute Variance No. 2 in the amount of \$160,970 to the Professional Services Agreement with ESA for additional environmental permitting work associated with the Syphon Reservoir Geotechnical Investigations Project.

LIST OF EXHIBITS:

Exhibit "A" – Project Location Map: Syphon Reservoir  
Exhibit "B" – Variance No. 2 with ESA Scope of Work and Budget

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# EXHIBIT "A"



SOURCE: ESRI, 2016; OC LAFCO, 2018

IRWD Syphon Reservoir

**Figure 1-1**  
Project Location

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# EXHIBIT "B"

2121 Alton Parkway  
Suite 100  
Irvine, CA 92606  
949.753.7001 phone  
949.753.7002 fax

esassoc.com

November 6, 2019

Fiona M. Sanchez  
Director of Water Resources  
Irvine Ranch Water District  
15600 Sand Canyon Avenue  
Irvine, CA 92718

**Subject:** Professional Services Variance No. 2: Syphon Reservoir Geotechnical Investigations – Monitoring and Compliance Services

Dear Fiona:

ESA appreciates this opportunity to build on our previously-approved scope of work for the Syphon Reservoir Improvement Project Environmental Permitting Services, originally dated September 2018, and modified by Variance No. 1 in June 2019. ESA is submitting herein a second proposed modification to our scope of work to provide mitigation monitoring and compliance services in support of the Geotechnical Investigations Project. Per your request, we have prepared an itemized Scope of Work and Budget for the requisite tasks to facilitate compliance related to biological and cultural resources requirements of the Syphon Reservoir Geotechnical Investigations Project Mitigation Monitoring and Reporting Program (MMRP) mitigation measures (MMs), as well as the Lake and Streambed Alteration Agreement (LSAA) (Notification No. 1600-2019-0050-R5) issued by California Department of Fish and Wildlife (CDFW). All work will be performed by qualified ESA staff who have experience with the resources and regulations of the region. Our Scope of Work includes a new Task 5 for Biological Compliance Monitoring Services and Task 6 for Cultural Compliance Monitoring Services.

In addition, we have included as assessment of our existing tasks related to permitting for the Geotechnical Investigations Project, and as requested by IRWD, we have removed the scope and budget for Task 2, Syphon Reservoir EIR Permitting, from this contract. The Permitting Services for the Syphon Reservoir Improvement Project will be reestablished under a separate contract.

We look forward to continuing our work with IRWD on the Syphon Reservoir Improvement Project. If you would like to discuss any aspect of our proposed scope or budget, please contact Jennifer Jacobus at 213-599-4320 or [jjacobus@esassoc.com](mailto:jjacobus@esassoc.com), or Scott Holbrook at 949-870-1514 or [sholbrook@esassoc.com](mailto:sholbrook@esassoc.com).

Sincerely,

Tom Barnes  
Vice President  
Southern California Water Practice Group

Jennifer Jacobus, Ph.D.  
Senior Managing Associate  
Southern California Water Practice Group

## A. Scope of Work

### Task 1: Geotechnical Investigations MND Permitting

Under Task 1A, Agency Meetings and Coordination, ESA's previously-approved scope of work assumed limited effort to compile information, coordinate with IRWD, CDFW, the Regional Water Quality Control Board (RWQCB), and U.S. Fish and Wildlife Service (UFWS) to schedule and prepare for up to three (3) meetings, and to facilitate meetings at the site and/or at the IRWD offices. Up to three (3) ESA staff were assumed to attend each meeting. The level of effort required for agency coordination and meetings was greater than previously envisioned to successfully complete the LSAA on time, given the complexity of the biological resources and mitigation lands at the site and the relationship of the Geotechnical Investigations Project to the future Syphon Reservoir Improvements Project. Four ESA staff were involved in the permitting effort (Lau, Holbrook, Tanaka, Jacobus). ESA held two internal coordination calls, had two subsequent coordination calls with IRWD to prepare for meetings with CDFW, had three conference calls with CDFW; and one site visit with CDFW (held December 10, 2018). As such, we are requesting an additional \$3,000 to be added to the budget for Task 1A.

Under Task 1D, Notification of a LSAA, other out-of-scope activities included multiple conference calls with IRWD and CDFW regarding the three primary iterations of the Draft LSAA. After issuance of the Final LSAA, IRWD also requested for ESA to initiate consultation with CDFW regarding changes with the project design (relocating a trench), and a conference call was held between ESA and CDFW on October 2, 2019 to discuss any Fish and Game Code Section 1602 requirements associated with the possible trench relocation. Meeting notes were distributed to IRWD after the call. We are requesting that the remaining budget from Task 1C, Waste Discharge Requirement (WDR), be transferred to Task 1D since there are no WDRs required for the project. In addition, we are requesting an additional \$3,500 to be added to the budget for Task 1D.

### Task 3. Project Team Coordination

ESA's previously-approved scope of work included conference calls and up to two project team meetings with up to two ESA staff members and general coordination with IRWD staff or other project team members. Similar to the level of effort required for agency coordination, the level of effort required for internal and project team coordination and meetings was greater than previously envisioned to successfully complete the LSAA for the Geotechnical Investigations Project on time. As such, we request additional budget to support project team coordination for the ongoing and future compliance monitoring services described below for Tasks 5 and 6.

### Task 4. Project Management/Administration

Per ESA's previously-approved scope of work, this task involves administrative oversight, invoicing, and correspondence related to contract administration. ESA is requesting additional funds to cover project management activities given the additional compliance monitoring services included in this Variance No. 2 (see Tasks 5 and 5) and the overall increase in level of effort related to permitting and compliance for the Syphon Reservoir Geotechnical Investigations.

## Task 5: Biological Compliance Monitoring Services

### Phase I: Pre-Construction

#### **Task 5.1: Project Management/Coordination – Pre-Construction**

ESA staff will coordinate with our internal team, IRWD, project engineers and consultants, and regulatory agencies (i.e., U.S. Fish and Wildlife Service (USFWS) and CDFW), as needed to assist with compliance with requirements of the MMRP related to biological resources and the LSAA. This task includes creation of the updated project compliance matrix relevant to the LSAA and biological mitigation from the MND, review and discussion of the revised Geotechnical Investigations Work Plan (GIWP), discussion of helicopter operations and logistics to minimize biological impacts (staging, etc.), kick-off meetings and pre-activity coordination with the project team and the contractor. In particular, this task includes communication with CDFW regarding proposed use of areas within the existing reservoir (in CDFW jurisdiction) for staging equipment and for take-off and landing helicopters to pick up and drop off drilling equipment. This task also includes CDFW notifications prior to the start of work (LSAA Measure 1.5), preparation (tailoring) and submittal of resumes of all Designated Biologists that will be responsible for the monitoring of project activities (MMRP BIO-6, LSAA Measure 1.7), and submittal of 2019 least Bell's vireo (*Vireo bellii pusillus*) focused survey reports (LSAA Measure 2.15).

Up to 110 hours of project management and coordination with the project team and regulatory agencies prior to construction are assumed for this task. As in all instances, only hours worked will be billed.

#### **Task 5.2: Conduct General and California Gnatcatcher Pre-Construction Surveys**

ESA biologists will conduct a pre-construction survey for the presence of fish, wildlife, or plants, including species of special concern, within the project footprint and a 500-foot buffer with accessible suitable habitat and establish protective measures (as required by LSAA Measures 2.7 and 2.8). The pre-construction survey will be conducted no more than five days and no less than one day before proposed activities.

Concurrently, prior to disturbance of coastal sage scrub, ESA will conduct a pre-construction survey to locate any coastal California gnatcatcher (*Polioptila californica californica*) and coastal cactus wren (*Campylorhynchus brunneicapillus*) within 100 feet of the outer extent of project footprint. The locations of any coastal California gnatcatcher or coastal cactus wren shall be clearly marked and identified on a map.

ESA will prepare a brief memo summarizing the survey field notes and results, which shall be provided to IRWD and subsequently to CDFW prior to the start of work.

#### **Task 5.3: Confirm Demarcation of Disturbance Limits**

ESA biologists will coordinate with the project team to confirm that disturbance limits are appropriately demarcated in the field (e.g., with temporary fencing or other markers) prior to work commencing to prevent

Fiona M. Sanchez  
November 6, 2019  
Page 4

disturbance outside of the approved limits (as required by MMRP BIO-6, LSAA Measures 2.17 and 2.19). This will include all areas of coastal sage scrub habitat to be avoided under the provisions of the NCCP/HCP.

**Assumptions:**

- This task assumes ESA biologists will provide guidance and confirm limits are demarcated by IRWD or its contractor.
- ESA biologists do not have GPS equipment with survey-grade accuracy.

***Task 5.4: Develop Worker Environmental Awareness Program***

ESA will develop a Worker Environmental Awareness Program (WEAP), and prior to construction, ESA biologists will provide WEAP training to all construction crews and contractors to inform all workers on the project about the special-status species and their habitats, permit compliance requirements, and penalties for violations (as required by LSAA Condition 2.16). The WEAP training will also include information about invasive species on-site and that have the potential to invade the site, and best management practices (BMPs) to avoid dispersal into and out of the site. ESA will also prepare a brochure for workers. Interpretation shall be provided for non-English speaking workers. Any new crew will be trained on-site during morning safety tailgates. Upon completion of the WEAP training, workers will sign a form stating they attended and understand the protection measures, which will be filed on-site and be available to CDFW upon request.

**Assumptions:**

- This task assumes only one WEAP training prior to construction will be needed. New crew will be trained on-site during morning safety tailgates.
- This task assumes no additional annual WEAP trainings will be needed since the project will be completed within a year.

**Phase II: During Construction**

This scope of work presumes that geotechnical activities will take place outside of the nesting bird season identified in the MMRP (which defines nesting season as February 1 to September 1 for songbirds, and January 1 to August 31 for raptors) and LSAA (which defines nesting season as January 15 to August 31).

***Task 5.5: Project Management/Coordination – During Construction***

ESA staff will coordinate with IRWD, project engineers and consultants, construction supervisors and crews, and regulatory agencies (e.g., USFWS, CDFW) as needed to monitor compliance with permit conditions. In addition, ESA will set up a digital Survey 123 form to aid with daily biological monitoring reports and data collection in the field. This task includes call-in attendance at weekly project status update/progress meetings. An allowance of



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November 6, 2019  
Page 5

up to 100 hours of project management and coordination during construction is assumed for this task. Only hours worked will be billed.

### ***Task 5.6: Conduct Biological Monitoring***

ESA biologists will monitor project construction activities to assist with project compliance with the MMRP and regulatory permit requirements. Biological monitors acceptable to USFWS/CDFW will be on-site during any clearing of coastal sage scrub (as required by MMRP BIO-6) and during any removal or crushing of sensitive vegetation (as required by LSAA Measures 1.7, 1.8, and 2.3). Biological monitors will be on-site daily when protected species may be present to implement protection measures (as required by LSAA Measure 2.9). Biological monitors must concurrently notify IRWD and CDFW of any activity that is not in compliance with the LSAA, and/or recommend any reasonable measure to avoid or minimize impacts to fish and wildlife resources (LSAA Measure 1.8). Any dead or injured protected species found along roads or in project areas shall be reported to CDFW within 24 hours, including the location, cause of death, species found, and other relevant information (LSAA Measure 2.10).

#### **Assumptions:**

- This task assumes that full-time daily biological monitoring will be required in September and October 2019 and that half-time daily biological monitoring will be required in November and December 2019. Only hours worked will be billed.
- This scope of work presumes that geotechnical activities will take place outside of the nesting bird season identified in the MMRP (which defines nesting season as February 1 to September 1 for songbirds, and January 1 to August 31 for raptors) and LSAA (which defines nesting season as January 15 to August 31). The cost estimate for this task assumes the project will commence after the 2019 nesting season and be completed before the 2020 nesting season. In the event that geotechnical activities extend into the 2020 nesting season, nesting bird surveys and additional biological monitoring and reporting may be needed, and is not included within this task.
- It should be noted that if geotechnical activities continue into the nesting bird season in 2020 and active nests are found on-site, there may be associated avoidance buffers (e.g., up to 300-500 feet) where no work may occur until nesting is complete, which could significantly delay construction.
- Should additional biological monitoring services be needed (e.g., multiple monitors are needed on-site per day that cannot be accommodated within the scope/budget for this task, and/or additional monitoring is needed for a longer duration), a Professional Services Variance request would be submitted.

### ***Task 5.7: Notification of Special-Status Species and Invasive Species to CDFW***

If any special-status species are observed, ESA biologists will submit forms to the California Natural Diversity Database (CNDDB) within five days of the sighting (as required by LSAA Measure 2.12). This task includes

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filling out the online PDF form, providing the form to IRWD for review prior to submittal, and emailing the form to the CNDDDB.

If any new occurrences of invasive species are observed, ESA biologists will submit Suspect Invasive Species Report forms to CDFW (as required by LSAA Measure 2.41). ESA biologists will provide the form to IRWD for review prior to submittal to CDFW.

An allowance of up to 16 hours is assumed for this task for preparation and submittal of forms to CNDDDB and to CDFW. Only hours worked will be billed.

***Task 5.8: Assess Existing Native Plant Coverage, Quantify Actual Impacts, Implement Initial Re-seeding Treatment, and Prepare Documentation***

This task includes the steps required to quantify and tabulate the actual area affected by the geotechnical investigations; to characterize and determine the total area of supplemental mitigation required by the Habitat Restoration and Enhancement Plan (including both restoration of areas directly disturbed by geotechnical activities and enhancement of other areas to mitigate for temporal loss of habitat); and to implement initial seeding and soil amendments in the restoration and enhancement areas, respectively.

ESA proposes to assess native plant coverage and diversity in each area affected by the geotechnical investigation where there is at least 5% native plant cover observed during the on-site biological monitoring (as described in Task 5.6 above). As the effort will be performed simultaneously with on-site monitoring, there would be no additional charges for this coverage assessment within the geotechnical work areas. However, an additional effort is included under this task to determine the existing native coverage and diversity within the discrete patch areas identified for supplemental enhancement apart from the geotechnical work areas (i.e., the Habitat Restoration and Enhancement Plan enhancement areas). This task includes the pre-activity communications with USFWS and CDFW regarding the methods and timing for this assessment. A table of impacts will be prepared that quantifies the areas actually affected by the geotechnical work, categorized according to the native plant cover within various discrete work areas and along various access routes that were disturbed. Identifying the areas affected according to native plant cover and diversity will clarify which areas on-site must be treated to replace native cover where it is impacted outside the future reservoir impact limit and how much native cover would need to be restored to provide equivalent “restoration.” Tabulating the actual impacts will also provide the benchmark to be used to determine the total area of supplemental mitigation (enhancement) needed to compensate for the temporal loss of native cover in the geotechnical areas. The final tables of impacts and requisite mitigation will be presented in the final construction report prepared under Task 5.9 below.

In addition to quantifying the impacts and requisite restoration and enhancement areas, this task includes procuring materials and coordinating with the geotechnical contractor to assist with a simple post-activity soil amendment (i.e., mycorrhizal inoculum) to be performed in the affected upland areas beyond the future reservoir inundation limits. ESA would spread the amendment and document the amendment process. As discussed with

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IRWD, the amendment process would require a small excavator or backhoe to rip the soil to a depth of 4 to 6 inches after the amendment is spread. ESA will also procure appropriate seed and manually spread the seed material within all areas disturbed by geotechnical work outside the future reservoir inundation limit. Any leftover seed from this effort will be held for application in the designated enhancement areas next year. Separate from the construction report prepared under Task 5.9, below, ESA will also prepare a detailed memorandum describing the initial treatment (i.e., soils amendment and seeding) along with photosets comparing the pre-activity conditions within selected work areas and access routes with the post-activity conditions after seed has been spread.

**Assumptions:**

- This task excludes maintenance or monitoring/documentation of the seeded areas beyond the initial preparations and excludes any work in the enhancement areas beyond initial application of the soil amendment. A restoration contractor will need to be engaged to perform the necessary maintenance of the seeded areas that were disturbed by the geotechnical work and also to perform site preparations (i.e., initial weed treatment/removal and soil amendment), seeding, and maintenance within the designated enhancement areas. It will be appropriate to determine the scope of the enhancement effort once the actual impacts associated with geotechnical work are known. That will not be clear until most or all the geotechnical work is completed. A separate scope and cost estimate will be prepared and submitted to IRWD to cover such restoration and enhancement activities if requested by IRWD.
- The objectives of this task are limited to: 1) clearly identifying the existing native plant coverage within impacted areas and enhancement areas and quantifying the actual geotechnical work impacts in terms of area and native cover; 2) assuring that the areas disturbed by geotechnical investigations outside the future reservoir inundation limit are prepared and seeded prior to this year's winter rainy season; and 3) documenting the impacts and the initial preparations and seeding performed immediately after the geotechnical work is completed.
- This task includes an estimated allowance of \$1,200 for the cost of seed.

**Phase III: Post-Construction**

***Task 5.9: Prepare Final Construction Report***

Within two weeks of completion of the project, ESA will prepare a final construction report for submittal to CDFW (as required by LSAA Measure 4.3). The report will include biological monitoring notes, photographs before and after project-related activities, including the surrounding staging areas, as well as the total amount of area impacted post-project. ESA will provide a draft report to IRWD for review and comment and then will incorporate revisions and submit electronically to CDFW.

## Task 6. Cultural Compliance Monitoring Services

### ***Task 6.1 Conduct Archaeological and Paleontological Monitoring***

An ESA staff person cross trained in archaeology and paleontology will monitor project construction activities to assist with project compliance with the MMRP. The monitors will work under the direction of a Qualified Archaeologist and a Qualified Paleontologist. Per the MMRP, monitoring shall include the following: ensuring avoidance of the two historical resources on site (per MM CR-1); archaeological monitoring of any ground disturbing activities, including but not limited to brush clearance, vegetation removal, grubbing, grading, and excavation (per MM CR-2); and paleontological monitoring of ground-disturbing activities within geologic formations with a high sensitivity for paleontological resources (per MM GEO-3). As noted in GEO-3, boring or augering of cores shall only require paleontological spot checks. Per CR-2 and GEO-3, the frequency and duration of archaeological and paleontological monitoring can be reduced based on an assessment of resource sensitivity and the potential for project-related impacts. If work occurs in multiple locations, two or more monitors may be required. Archaeological/Paleontological monitors will notify IRWD of any archaeological or paleontological discoveries, and any activity that is not in compliance with the MMRP. Monitors will keep daily logs. ESA will provide IRWD with weekly summaries of monitoring activities.

#### **Assumptions:**

- This task assumes one monitor for a total of 15 full-time (8-hour) days during trenching or other excavation and 14 part-time (4-hour) days (for spot checks to be conducted every other day during boring), up to 184 hours total. Should ground disturbance requiring monitoring exceed the 184 total hours assumed in this scope of work or should additional monitors be needed (e.g., work occurs in multiple locations requiring more than one monitor), a Professional Services Variance request would be submitted.
- A 5-gallon soil sample will be collected from each of the remaining trenches and examined for the presence of micro-fossils (which are not visible to the naked eye and samples must be processed offsite). Costs assume that no more than five samples will be processed.
- Costs assume two half-day (4-hour) site visits for the Qualified Archaeologist and Qualified Paleontologist.
- This task assumes no archaeological or paleontological resources will be encountered or require treatment. If such discoveries are made, a Professional Services Variance request would be submitted for resource documentation and recovery.

### ***Task 6.2 Prepare Archaeological and Paleontological Resources Monitoring Reports***

Within six weeks of completion of the project, ESA will prepare final Archaeological and Paleontological Resources Monitoring Reports (one for each) for submittal to IRWD (per MM CR-3 and GEO-3). The Archaeological Resources Monitoring Report will also be submitted to the SCCIC and any Native American tribes that request a copy (per MM CR-3). The reports will summarize all monitoring activities, include photographs of project-related activities, including the surrounding staging areas, and document any encountered

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resources. ESA will provide draft electronic reports to IRWD for review and comment, and incorporate revisions into final electronic versions.

**Assumptions:**

- This task assumes negative findings reports will be prepared. If discoveries are made, a Professional Services Variance request would be submitted for additional reporting.
- This task assumes one round of revisions following submittal of the draft reports.

## Task 7. Additional Environmental Compliance Support

During the course of providing environmental permitting and compliance support under this contract, IRWD may identify additional tasks that require support from ESA due to unforeseen issues that arise during the construction implementation, permitting, and agency coordination process. Tasks performed under this Task 7 would be requested by IRWD. ESA would develop a scope of work for IRWD staff approval prior to conducting any work under this Task 7.

## B. Cost

Commensurate with the level of effort associated with the tasks described above, we are requesting a net budget amendment of **\$160,970**. This includes \$204,328 that corresponds to the level of effort associated with the above-described scope of work, plus a credit of \$43,358 for the remaining budget associated with Task 2, Syphon Reservoir EIR Permitting, that is being removed from the scope of work. The detailed budget calculations are shown in the attached **Table 1**.

## C. Professional Services Variance

ESA's Professional Services Variance (Exhibit C) is included at the end of this proposal.

**Table 1: Cost Proposal  
 ESA Labor Detail and Expense Summary - Syphon Reservoir Geotechnical Investigations, Environmental Permitting Services Variance No. 2**

		Employee Names											Labor Category			
				JACOBUS	RIOS	SAM										
				EHRINGER	STEWART	SPANO										
		KOUTNIK	BURNS	LAU	GEISSLER	CLARK										
		BARNES	BEVER	HOLBROOK	TANAKA	G-BLACKWOOD	Karla	Karl	Adrienne	KANESHIRO	GICK	M. LE				
		Sr Director II	Director II	Managing Associate III	Managing Associate I	Senior Associate II	Senior Associate I	Associate III	Associate II	Subtotal	Project Technician III	Project Technician II	Project Technician I	Subtotal	Total Hours	Labor Price
Task #	Task Name/Description	\$ 270	\$ 205	\$ 185	\$ 140	\$ 125	\$ 115	\$ 110	\$ 95		\$ 120	\$ 100	\$ 85			
1.0	<b>Syphon Geotechnical Investigations MND Permitting</b>															
	1A. Agency Meetings and Coordination			12	6					\$ 3,067				\$ -	18.00	\$ 3,067
	1C. Waste Discharge Requirement - Transfer to Task 1D			-16	-6	-4				\$ (4,288)				\$ -	(26.00)	\$ (4,288)
	1D. Notification of LSAA - Transfer from Task 1C			16	6	4				\$ 4,288				\$ -	26.00	\$ 4,288
	1D. Notification of LSAA - Additional Budget			12	4					\$ 2,786	8		\$ 800		24.00	\$ 3,586
3.0	<b>Project Team Coordination</b>	1		15	10					\$ 4,454				\$ -	26.00	\$ 4,454
4.0	<b>Project Management/Administration</b>	1		32						\$ 6,204				\$ -	33.00	\$ 6,204
5.0	<b>Biological Compliance Monitoring Services</b>									\$ -				\$ -	-	\$ -
	<i>Phase I: Pre-Construction</i>															
5.1	<b>Pre-Construction Project Management/Coordination</b>									\$ -				\$ -	-	\$ -
	Prepare/Update Compliance Matrix				6					\$ 842				\$ -	6.00	\$ 842
	Internal Team Coordination				40					\$ 5,611				\$ -	40.00	\$ 5,611
	IRWD/Project Team Coordination			16	24					\$ 6,334				\$ -	40.00	\$ 6,334
	Agency Coordination			16	14					\$ 4,931				\$ -	30.00	\$ 4,931
5.2	<b>Pre-Construction California Gnatcatcher Surveys</b>				16			16		\$ 4,005				\$ -	32.00	\$ 4,005
	Memo			4	8			8		\$ 2,744	2		\$ 200		22.00	\$ 2,944
5.3	<b>Confirm Demarcation of Disturbance Limits</b>			1	5			22		\$ 3,307				\$ -	28.00	\$ 3,307
5.4	<b>Develop Worker Environmental Awareness Program</b>			1	16					\$ 2,430	8		\$ 960		25.00	\$ 3,390
	<i>Phase II: During Construction</i>									\$ -				\$ -	-	\$ -
5.5	<b>Project Management/Coordination during Construction</b>									\$ -				\$ -	-	\$ -
	Update Compliance Matrix (4 hrs/month from Sep-Dec)				16					\$ 2,245				\$ -	16.00	\$ 2,245
	PM/Coordination				40					\$ 5,611				\$ -	40.00	\$ 5,611
	IRWD/Project Team Coordination			20	20					\$ 6,514				\$ -	40.00	\$ 6,514
	Agency Coordination			10	10					\$ 3,257				\$ -	20.00	\$ 3,257
5.6	<b>Conduct Biological Monitoring</b>									\$ -				\$ -	-	\$ -
	Sep - 1 month full-time			8	32	40		60		\$ 17,591				\$ -	140.00	\$ 17,591
	Oct - 1 month full-time			8	24	20	20	40		\$ 14,060				\$ -	112.00	\$ 14,060
	Nov - 1 month half-time			4	16	16	8	32		\$ 9,434				\$ -	76.00	\$ 9,434
	Dec - 1 month half-time			4	16	16	8	32		\$ 9,434				\$ -	76.00	\$ 9,434
5.7	<b>CNDDDB/Invasive Species Notifications</b>					8		8		\$ 1,884				\$ -	16.00	\$ 1,884
5.8	<b>Native Cover Impacts, Initial Treatment Documentation</b>									\$ -				\$ -	-	\$ -
	HREP areas - Native Cover Assessment			4		8		8		\$ 2,625				\$ -	20.00	\$ 2,625
	Initial Treatments (incl. coordination w/AECOM)			12		8		16		\$ 4,989				\$ -	36.00	\$ 4,989
	Memo Report (Prep & Seed Applied)			8		14				\$ 3,240	4		\$ 480		26.00	\$ 3,720
	<i>Phase III: Post-Construction</i>									\$ -				\$ -	-	\$ -
5.9	<b>Prepare Final Construction Report</b>			2	8	16		4		\$ 3,941				\$ -	30.00	\$ 3,941

		Employee Names														
				JACOBUS	RIOS	SAM										
				EHRINGER	STEWART	SPANO										
		KOUTNIK	BURNS	LAU	GEISSLER	CLARK										
Labor Category		BARNES	BEVER	HOLBROOK	TANAKA	G-BLACKWOOD	Karla	Karl	Adrienne		KANESHIRO	GICK	M. LE			
		Sr Director II	Director II	Managing Associate III	Managing Associate I	Senior Associate II	Senior Associate I	Associate III	Associate II	Subtotal	Project Technician III	Project Technician II	Project Technician I	Subtotal	Total Hours	Labor Price
Task #	Task Name/Description	\$ 270	\$ 205	\$ 185	\$ 140	\$ 125	\$ 115	\$ 110	\$ 95		\$ 120	\$ 100	\$ 85			
<b>6.0</b>	<b>Cultural Compliance Monitoring Services</b>															
6.1	Archaeological and Paleontological Monitoring			12	32	184				\$ 29,799				\$ -	228.00	\$ 29,799
	Coordination of Monitors/PM			40	8	8				\$ 9,543				\$ -	56.00	\$ 9,543
6.2	Prepare Archaeological and Paleontological Monitoring Reports			8	8	48				\$ 8,628		4		\$ 400	68.00	\$ 9,028
	GIS/Graphics time				8	8				\$ 2,126				\$ -	16.00	\$ 2,126
<b>7.0</b>	<b>Additional Environmental Compliance Support</b>	1	5	24	16	8	4	4	2	\$ 10,084				\$ -	64.00	\$ 10,084
										\$ -				\$ -	-	\$ -
Total Hours		3	5	273	403	402	40	250	2	1378	12	14	-	26	<b>1,404</b>	
<b>Total Labor Costs</b>		\$ 810	\$ 1,025	\$ 50,624	\$ 56,534	\$ 50,435	\$ 4,600	\$ 27,500	\$ 190	\$ 191,719	\$ 1,440	\$ 1,400	\$ -	\$ 2,840		<b>\$ 194,559</b>
Percent of Effort - Labor Hours Only		0.2%	0.4%	19.4%	28.7%	28.6%	2.8%	17.8%	0.1%	98.1%	0.9%	1.0%	0.0%	1.9%	100.0%	
Percent of Effort - Total Project Cost		0.4%	0.5%	24.8%	27.7%	24.7%	2.3%	13.5%	0.1%		0.7%	0.7%	0.0%			95.2%

<b>ESA Labor Cost</b>		<b>\$ 194,559</b>
<b>Labor Cost Communication Fee</b>	3%	<b>\$ 5,837</b>
<b>ESA Non-Labor Expenses</b>		
Reimbursable Expenses	(see Attachment A for detail)	\$ 3,597
ESA Equipment Usage	(see Attachment A for detail)	\$ 335
<b>Subtotal ESA Non-Labor Expenses</b>		<b>\$ 3,932</b>

<b>VARIANCE No. 2 TOTAL</b>	<b>\$ 204,328</b>
<b>CREDIT: Remove Task 2 EIR Permitting</b>	<b>\$ (43,358)</b>
<b>TOTAL BUDGET AMENDMENT</b>	<b>\$ 160,970</b>

## Attachment A

### Cost Proposal: ESA Non-Labor Expenses Summary

#### Reimbursable Expenses

Project Supplies	\$	1,200
Printing/Reproduction	\$	260
Document and Map Reproductions (CD + Digital Photo)	\$	-
Postage and Deliveries	\$	50
Mileage (Round Trip = 20 miles x \$0.58 = \$11.60 per trip)	\$	1,618
Vehicle Rental	\$	-
Lodging	\$	-
Airfare	\$	-
Other Travel Related	\$	-
-	\$	-
-	\$	-
-	\$	-
Subtotal Reimbursable Expenses	\$	3,128
15% Fee on Reimbursable Expenses	\$	469
<b>Total Reimbursable Expenses</b>	<b>\$</b>	<b>3,597</b>

#### ESA Equipment Usage

##### General Equipment:

Company Vehicle Usage	\$	-
HP Plotter	\$	-
Computer Time (GIS)	\$	-
Trimble GPS	\$	-
Tablet GPS	\$	335
Laser level	\$	-
Garmin GPS or equivalent	\$	-
Laptop Computers	\$	-
LCD Projector	\$	-
Noise Meter	\$	-
Electrofisher	\$	-
Sample Pump	\$	-
Surveying Kit	\$	-
Total Station Set	\$	-
Field Traps	\$	-
Digital Planimeter	\$	-
Cameras/Video/Cell Phone	\$	-
Miscellaneous Small Equipment	\$	-
Stilling Well/Coring Pipe (3 inch aluminum)	\$	-
<b>Total Equipment Usage Costs</b>	<b>\$</b>	<b>335</b>



# IRVINE RANCH WATER DISTRICT PROFESSIONAL SERVICES VARIANCE

Project Title: Syphon Reservoir Improvement Project, Environmental Permitting Services

Project No.: 03808 (Task 2 Environmental) Date: November 6, 2019  
 Purchase Order No.: 609141 Variance No.: 2

Originator:  IRWD  ENGINEER/CONSULTANT  Other (Explain) \_\_\_\_\_

**Description of Variance (attach any back-up material):**

Biological Compliance Monitoring and Cultural Compliance Monitoring during implementation of the Geotechnical Investigations Project. Remove Task 2, Syphon Reservoir EIR Permitting from the scope of work. (See attached letter proposal with scope of work.)

**Engineering & Management Cost Impact:**

Classification	Manhours	Billing Rate	Labor \$	Direct Costs	Subcon. \$	Total \$
Biological and Cultural Compliance Monitoring						\$204,328
Remove Task 2 Syphon Reservoir EIR Permitting						-\$43,358
<b>Total \$ =</b>						<b>\$160,970</b>

**Schedule Impact:**

Task No.	Task Description	Original Schedule	Schedule Variance	New Schedule

**Required Approval Determination:**

Total Original Contract	<u>\$93,384</u>	<input type="checkbox"/> Director: Cumulative total of Variances less than or equal to \$50,000.
Previous Variances	\$7,462	
This Variance	<u>\$160,970</u>	<input type="checkbox"/> Executive Director: Cumulative total of Variances less than or equal to \$75,000.
Total Sum of Variances	<u>\$168,432</u>	
New Contract Amount	<u>\$261,816</u>	<input type="checkbox"/> General Manager: Cumulative total of Variances less than or equal to \$100,000.
Percentage of Total Variances to Original Contract	180%	<input checked="" type="checkbox"/> Board: Cumulative total of Variances greater than \$100,000.

ENGINEER/CONSULTANT: Environmental Science Associates IRVINE RANCH WATER DISTRICT  
 Company Name

Jennifer Jacobson 11/06/19 \_\_\_\_\_  
 Project Engineer/Manager Date Department Director Date

[Signature] 11/06/19 \_\_\_\_\_  
 Engineer's/Consultant's Management Date General Manager/Board Date

# IRVINE RANCH WATER DISTRICT

## PROFESSIONAL SERVICES VARIANCE REGISTER

Project Title: Syphon Reservoir Improvement Project, Environmental Permitting Services

Project No.: 03808

Project Manager: Jo Ann Corey

Variance No.	Description	Dates		Variance Amount
		Initiated	Approved	
1	CDFW Permit Fee for LSAA	9/17/2018	June 2019	\$7,462
2	Biological and Cultural Compliance Monitoring for Syphon Geotechnical Investigations Project;  Remove Task 2, Syphon Reservoir EIR Permitting	11/06/2019		\$160,970