

AGENDA
IRVINE RANCH WATER DISTRICT
ENGINEERING AND OPERATIONS COMMITTEE MEETING
TUESDAY, NOVEMBER 21, 2023

This meeting will be held in-person at the District’s headquarters located at 15600 Sand Canyon Avenue, Irvine, California. The meeting will also be broadcasted via Webex for those wanting to observe the meeting virtually.

To observe this meeting virtually, please join online using the link and information below:

Via Web: <https://irwd.webex.com/irwd/j.php?MTID=m79d84c43896c38b9bfdcaafcee230704>

Meeting Number (Access Code): 2483 578 3223

Meeting password: ziJ8V298ZQM

PLEASE NOTE: Webex observers of the meeting will be placed into the Webex lobby when the Board enters closed session. Participants who remain in the “lobby” will automatically be returned to the open session of the Board once the closed session has concluded. Observers joining the meeting while the Board is in closed session will receive a notice that the meeting has been locked. They will be able to observe the meeting once the closed session has concluded.

CALL TO ORDER 1:30 p.m.

ATTENDANCE Committee Chair: Doug Reinhart _____
 Committee Member: Karen McLaughlin _____

ALSO PRESENT Paul Cook _____ Kevin Burton _____ Wendy Chambers _____
 Neveen Adly _____ Paul Weghorst _____ Steve Choi _____
 Jim Colston _____ Eric Akiyoshi _____ Malcolm Cortez _____
 Rich Mori _____ Jacob Moeder _____ Harry Cho _____
 Alex Murphy _____ _____ _____ _____
 _____ _____ _____ _____ _____

PUBLIC COMMENT NOTICE

If you wish to address the Committee on any item, please submit a request to speak via the “chat” feature available when joining the meeting virtually. Remarks are limited to three minutes per speaker on each subject. Public comments are limited to three minutes per speaker on each subject. You may also submit a public comment in advance of the meeting by emailing comments@irwd.com before 9:00 a.m. on Tuesday, November 21, 2023.

COMMUNICATIONS

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 and determine which items may be approved without discussion.

INFORMATION

4. UPCOMING PROJECTS STATUS REPORT – AKIYOSHI / CORTEZ / MOEDER / MORI / BURTON

Recommendation: Receive and file.

5. BIOSOLIDS FOG RECEIVING PLAN UPDATE – ZEPEDA / CHAMBERS

Recommendation: Receive and file.

ACTION


6. REIMBURSEMENT AGREEMENT BETWEEN IRWD AND THE CITY OF IRVINE FOR THE IRVINE CENTER DRIVE STREET REHABILITATION PROJECT – RIOS / AKIYOSHI / BURTON

Recommendation: That the Board authorize the General Manager to execute the Reimbursement Agreement between IRWD and the City of Irvine for Adjustment of Street Utilities to Grade for the Irvine Center Drive Street Rehabilitation Project, subject to non-substantive changes.

OTHER BUSINESS

7. Directors' Comments
8. Adjournment

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 electronically via the Webex meeting noted. Upon request, the District will provide for written agenda materials in appropriate alternative formats, and reasonable disability-related modification or accommodation to enable individuals with disabilities to participate in and provide comments at public meetings. Please submit a request, including your name, phone number and/or email address, and a description of the modification, accommodation, or alternative format requested at least two days before the meeting. Requests should be emailed to comments@irwd.com. Requests made by mail must be received at least two days before the meeting. Requests will be granted whenever possible and resolved in favor of accessibility.

November 21, 2023
Prepared by: E. Akiyoshi / M. Cortez /
J. Moeder / 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 provided 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"
UPCOMING PROJECTS STATUS REPORT

| Project Name | Planning | Design | Construction | Construction |
|--|------------|------------|--------------|------------------|
| | | | | Final Acceptance |
| HVAC System Replacement at Sand Canyon HQ and Operations Center | In-Process | Jan-24 | Sep-24 | - |
| UCI Meter Vault Replacement | Completed | In-Process | Mar-24 | - |
| SR 133 - 36" Trunk Sewer Protection | Completed | Completed | Dec-23 | Jul-24 |
| Irvine Business Complex Appurtenance Relocations Phase 3 | Completed | In-Process | Feb-24 | - |
| Dyer Road Wellfield Facility Rehabilitation Group 1 | In-Process | Feb-24 | - | - |
| Park Place RW Pipeline to Cooling Tower | In-Process | Dec-23 | - | - |
| Coastal Z2 and Z4 Pump Stations Rehabilitation | Completed | In-Process | Mar-24 | - |
| Silverado Bridge 174 DW Improvements | Completed | In-Process | Dec-24 | - |
| Silverado Bridge 175 DW Improvements | Completed | In-Process | Aug-24 | - |
| Silverado Bridge 177 DW Improvements | Completed | In-Process | Jun-24 | - |
| Woodbridge RW Replacement | Completed | Completed | In-Process | Jan-24 |
| MWRP MPS-2 Pump Bases Replacement | Completed | Completed | Dec-23 | Mar-24 |
| MWRP Compressed Natural Gas and Diesel/Gasoline Fueling Station | Completed | Completed | In-Process | Feb-24 |
| MWRP Biosolids Lift Station and Sewer Improvement | Completed | In-Process | Jun-24 | - |
| Serrano Creek Raw Water Pipeline Replacement | Completed | Completed | In-Process | May-24 |
| Radio Tower Improvements | Completed | In-Process | May-24 | - |
| MWRP Solids Force Main Relocation | Completed | Completed | In-Process | Jan-24 |
| Lake Forest Woods Sewer Improvements | Completed | In-Process | May-24 | - |
| Santiago Canyon Pump Station Improvements | Completed | Completed | In-Process | Oct-24 |
| Turtle Rock Chloramine Booster Station | Completed | Completed | In-Process | Mar-24 |
| Operations Center Purchasing Warehouse | Completed | In-Process | Mar-24 | - |
| Wells 10 and 12, IDP Well ET1 Rehabilitation | Completed | Completed | In-Process | Jun-24 |
| Rehabilitation of Irvine Desalter Wells 76, 110, 115R and Destruction of Wells 72, 106 | Completed | In-Process | Mar-24 | - |
| Santiago Creek Dam Outlet Tower and Spillway Improvements | Completed | In-Process | Dec-24 | - |
| Rattlesnake Dam Risk Reduction Investigation | Completed | In-Process | - | - |
| Santiago Canyon Fleming Zone 8 Tank and Zone 8-9 BPS | Completed | Completed | In-Process | Jan-25 |
| Generator Fuel Storage Upgrades | Completed | In-Process | Feb-24 | - |
| Orange Heights Zone 6 Reservoir | Completed | On-Hold | - | - |
| Sand Canyon Dam Instrumentation | Completed | In-Process | Jul-24 | - |
| Lake Forest Zone B-C BPS | Completed | Completed | In-Process | Mar-24 |
| Lake Forest Zone 4 Tank Rehabilitations | In-Process | Feb-24 | - | - |
| Sewer Siphon Improvements Phase II | Completed | In-Process | May-24 | - |
| Wells 51 and 52 Wellhead Equipping and Offsite Pipelines | In-Process | - | - | - |
| San Joaquin Reservoir Filtration | Completed | Completed | In-Process | Mar-25 |
| Well OPA-1 PFAS Treatment | Completed | Completed | In-Process | Feb-24 |
| Well ET-1 and SGU PFAS Treatment | Completed | Completed | In-Process | Mar-24 |
| Zone A to Rattlesnake Reservoir BPS | Completed | Completed | In-Process | Apr-24 |
| Syphon Reservoir Intersection Improvements and Access Road | Completed | Completed | In-Process | Sep-24 |
| Orange Heights SAC/Baker Pipeline Relocation | Completed | Completed | On-Hold | - |

UPCOMING PROJECTS STATUS REPORT

| Project Name | Planning | Design | Construction | Construction |
|--|------------|------------|--------------|------------------|
| | | | | Final Acceptance |
| Syphon Reservoir Improvements | Completed | In-Process | Apr-25 | - |
| MWRP Tertiary Filter Rehabilitation | Completed | Completed | In-Process | Nov-25 |
| MWRP Phase 3 Expansion | In-Process | Mar-24 | - | - |
| Orange Heights Zn 5 to 6 and C+ to E Pump Stations | Completed | On-Hold | - | - |
| Enterprise RW Pipeline Replacement | Completed | Completed | In-Process | Jan-24 |
| PA 1, Jeffrey Road Extension RW and DW (RA w/CDC) | Completed | Completed | In-Process | Jan-24 |
| PA 51, District 5, F and N St DW, RW | Completed | Completed | In-Process | Jan-24 |
| PA 51, District 5, Astor DW, RW (RA w/Heritage Fields) | Completed | Completed | In-Process | Jan-24 |
| PA 51, Marine Way from Alton Pkwy to Bake Pkwy DW, RW (RA w/Heritage Fields) | Completed | Completed | In-Process | Dec-23 |
| PA 51, Marine Way at Bake Parkway DW (RA w/Heritage Fields) | Completed | Completed | In-Process | Dec-23 |
| PA 51, Serrano Creek Sewer Relocation | Completed | Completed | In-Process | Jan-24 |
| PA 51, District 5 South Harrier DW, SS, RW (RA with Heritage Fields) | Completed | Completed | In-Process | Dec-23 |
| PA 51, District 5 South Chinon DW, RW (RA with Heritage Fields) | Completed | Completed | Dec-23 | Jun-24 |
| PA 51 GP-5 from Skyhawk to Treble DW, SS, RW (RA with Heritage Fields) | Completed | Completed | In-Process | Dec-23 |
| PA 51, Marine Way from Skyhawk to Treble DW, RW (RA with Heritage Fields) | Completed | Completed | Dec-23 | Jun-24 |
| PA 51, Treble from GP5 to Marine Way DW, RW (RA with Heritage Fields) | Completed | Completed | Dec-23 | Jun-24 |
| PA 51 Lynx from Harrier to Marine Way DW, SS (RA with Heritage Fields) | Completed | Completed | Dec-23 | Jun-24 |
| PA 1, Orchard Hills Neighborhood 4 DW (RA with TIC) | Completed | Completed | In-Process | Jan-24 |
| PA 1, Orchard Hills Neighborhood 4 RW (RA with TIC) | Completed | Completed | In-Process | Jan-24 |
| East Orange, Orange Heights Tract 16199 SS, RW | Completed | In-Process | Sep-25 | - |
| East Orange, Orange Heights Tract 17995 DW, RW | Completed | In-Process | Sep-25 | - |
| East Orange, Orange Heights Jamboree and Chapman DW SS, RW | Completed | In-Process | Sep-25 | - |
| The Meadows, SS (RA w/Toll Brothers) | Completed | Completed | In-Process | Jan-24 |
| PA 51, Whatney SS (RA with Heritage Fields) | Completed | In-Process | In-Process | Jan-24 |
| CIP Asset Management Phase II - Linear Asset Prioritization | In-Process | - | - | - |
| Lead and Copper Rule Revision - Lead Pipe Inventory | In-Process | - | - | - |

November 21, 2023
Prepared by: J. Zepeda
Submitted by: W. Chambers
Approved by: Paul A. Cook 

ENGINEERING AND OPERATIONS COMMITTEE

BIOSOLIDS FOG RECEIVING PLAN UPDATE

SUMMARY:

For over two years IRWD’s Biosolids and Energy Recovery Facility has been in continuous operation, successfully and consistently dewatering biosolids from the Michelson Water Recycling Plant. The Facility has also been producing methane biogas which fuels the facility’s microturbines for electricity generation. The future addition of fats, oils, and grease (FOG) into the anaerobic digestion process can significantly increase biogas production. External sources of FOG should only be introduced to a digestion facility after a thorough evaluation of the capability and stability of existing operations. Staff is taking steps to develop a FOG Receiving Plan, and at the Committee meeting staff will outline these steps.

BACKGROUND:

The Biosolids and Energy Recovery Facility is a complex facility that incorporates various solids treatment and dewatering processes along with energy generation facilities. Since the initial start-up of these facilities, each process has undergone commissioning and fine-tuning. The solids dewatering process has operated successfully and consistently since October 2021. The anaerobic digestion process, a critical component that breaks down the solids for subsequent dewatering, also produces methane biogas. This gas is subsequently stored, cleaned, and then sent to the Facility’s microturbines which generate electricity for use within the Biosolids Facility.

The Biosolids Facility was designed and constructed to accommodate the addition of FOG into the anaerobic digestion process. FOG is highly digestible, and adding FOG into the anaerobic digestion process can significantly increase biogas production. By increasing biogas production, the District’s microturbines can then produce more electricity. Before FOG is accepted into the digestion process, careful evaluation is necessary to ensure – with a high degree of certainty – that the facility can accommodate FOG. This certainty is required because the risk of “upsetting” the digestors or any other process dewatering and energy generation facilities must be minimized to the fullest extent possible. Staff has evaluated the possible approaches to adding FOG to the anaerobic digestion process by developing a FOG Receiving Plan.

The FOG Receiving Plan is based on a comprehensive review of baseline operational data, existing FOG receiving station design capacity, regulatory requirements, and other key factors. Once it is fully developed, the FOG Receiving Plan will be implemented in two phases. Phase One will outline the steps required to establish a FOG Receiving Program, while Phase Two will involve implementing these steps. At the Engineering and Operations Committee meeting, staff will update the Committee on the initial development of this Plan utilizing the powerpoint presentation provided as Exhibit “A”.

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Staff Presentation Draft

Exhibit "A"

MICHELSON WATER RECYCLING PLANT
BIOSOLIDS AND ENERGY RECOVERY FACILITIES

Operations Update: FOG Receiving Plan

Engineering and Operations Committee
November 21, 2023



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E&O COMMITTEE MEETING – PAST DISCUSSIONS

May 17, 2022 Update - **COMPLETE**

- Timeline of Start-up to Operations
- Process Updates
- Ongoing Challenges



June 21, 2022 Update - **COMPLETE**

- Pellet Marketing and Distribution
- Biosolids Pellets Production

November 21, 2023 Update

FOG Receiving Program Development

- Phase 1 – Outline the Steps to develop FOG Receiving Program – **IN PROGRESS**
- Phase 2 – Execute Steps Identified in Phase 1



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FOG RECEIVING PLAN PRIORITIES:

1. Safety
2. Regulatory Compliance
3. Operational Sustainability
4. Environmental Benefit
5. Customer Management



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TASKS

1. Baseline Operations Data - Review

- Historical data for biosolids treatment, digester gas production, and gas usage
- Plant-wide electrical configuration and demands
- Air permit requirements
- Flow and loading projections

2. Capacity and Condition Assessment

- Confirm capacity and identify any limitations on Biosolids and Gas Handling Systems
- **FOG Station Assessment and Operational Commissioning**
- Flow and loading projections
- Develop Energy Usage Balancing and Load Curtailment Plan (if needed)



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TASKS, continued

3. Pilot Local Feedstocks

- Develop feedstock specifications
- Initiate a pilot program with a local source
- Review and update procedures for safely operating of the FOG Receiving Station

4. FOG Program Administration

- Develop FOG contract approaches
- Develop Tipping Fees, Billings, and Revenue Collection System
- Develop Permitting Plan for FOG Haulers
- Develop Sampling Program
- Air permit requirements
- Assess staffing impacts and needs

5. Optional Future Evaluation

- Confirm capacity and identify any limitations on Biosolids and Gas Handling Systems



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FOG RECEIVING STATION

Equipment:

- Receiving System
 - Grinders (2) – 400 gpm each
 - Pumps (2) – 200 gpm each
- Storage Tanks
 - Insulated FRP (2) – 10,000 gallons each
- Mixing
 - Grinders (2) – 200 gpm each
 - Pumps (3) – 200 gpm each
- Heat Exchangers
 - Spiral Type (2)
 - FOG Flow Rate – 200 gpm
 - Heating Water Flow Rate – 80 gpm

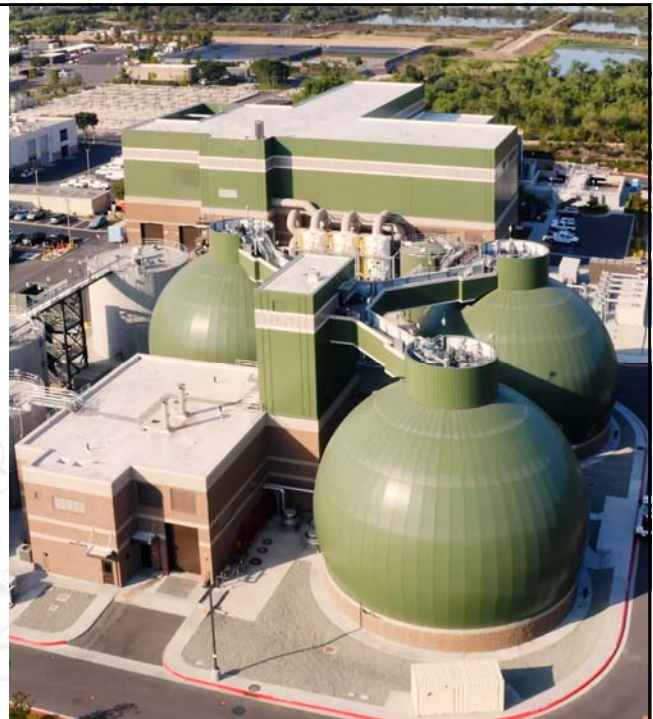


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DIGESTION

Equipment:

- Digesters
 - Acid Phase (3) – 146,000 gallons capacity each
 - Methane Egg Shaped (3) – capacity 1.5 million gallons each
- Acid Phase Digester Heat Exchangers
 - Tube-In-Tube (3)
 - Sludge Flow Rate - 720 gpm
 - Heating Water Flow – 300 gpm
- Methane Phase Digester Heat Exchangers
 - Spiral Type (3)



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BIOGAS PRETREATMENT

Equipment:

- Acid Phase Digester
 - Acid Gas Boosters (2)
- Pretreatment Gas Boosters (3)
- Hydrogen Sulfide Removal Tanks (2)
 - Iron Sponge Media
- Heat Exchangers



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BIOGAS FINAL TREATMENT

Equipment:

- Siloxane Removal Tanks (6)
 - Two Trains (lead / lag / polishing)
- Gas Blending System
- Gas Compressors
 - Rotary Screw Type (3) – 396 standard cubic feet per minute (scfm) each



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MICROTURBINES

Equipment:

- Microturbines (5)
 - 200 kW Generation Capacity
- Heat Recovery Units (5)
- Heat Recovery Pumps (2)
- Heat Recovery Exchanger (1)



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CRITICAL ONGOING PROJECTS

- Sludge Thickening
 - Centrifuge optimization
 - Thickened sludge feed piping and pumping
 - Grit Study
- Recycled Side Stream Flows
 - Resolving flow bottleneck
- Digester Gas System
 - Final gas treatment performance
 - Waste gas burner improvements
- Microturbines
 - Microturbine Performance
 - Drum alignment and roller wear
 - RTO refractory and instrumentation reliability
 - Improving manufacturer on-site tech support



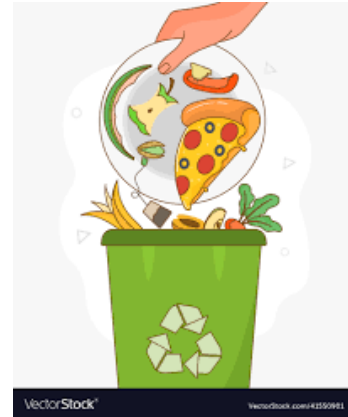
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FUTURE PROGRAM DEVELOPMENT


Food-Waste

- Receiving of food-waste will be considered once the FOG Receiving Program is established and stabilized.
- IRWD's existing FOG facilities can only accept a liquid form of food-waste with some limitations.



QUESTIONS?

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November 21, 2023
Prepared by: B. Rios / E. Akiyoshi
Submitted by: K. Burton
Approved by: Paul A. Cook 

ENGINEERING AND OPERATIONS COMMITTEE

REIMBURSEMENT AGREEMENT BETWEEN IRWD AND THE CITY OF IRVINE
FOR THE IRVINE CENTER DRIVE STREET REHABILITATION PROJECT

SUMMARY:

The City of Irvine is proceeding with its pavement rehabilitation of Irvine Center Drive. This project requires an individual Reimbursement Agreement (RA) because the estimated construction cost is over \$100,000. Staff recommends the Board authorize the General Manager to execute an RA with the City for the Irvine Center Drive Street Rehabilitation Project for estimated construction cost of \$342,100, subject to non-substantive changes.

BACKGROUND:

IRWD has had a RA in place with the City since 1995 for managing various street rehabilitation projects. Alternate bid items for raising existing IRWD sewer manhole covers, sewer cleanouts, and water valve frames and lids to the new pavement grade are typically included in the overall City's Capital Improvement Projects. Any project up to \$100,000 in reimbursable costs can be authorized by the General Manager as an addendum to this "umbrella" RA.

IRWD and the City have also agreed that any City street improvement project that involves the construction, modification, or relocation of IRWD facilities with an estimated construction cost over \$100,000 will be administered through a separate RA. The City's Irvine Center Drive Street Rehabilitation Project has an estimated construction cost of \$342,100. Therefore, this project requires a project-specific RA.

The City is moving forward with street rehabilitation of Irvine Center Drive from Pacifica to Lake Forest Drive within the Spectrum Center area. This project includes replacement and adjustment to grade of approximately 55 domestic water valve cans and lids, 30 recycled water valve cans and lids, one sanitary sewer cleanout can and lid, and adjustment to grade of approximately 32 sewer manholes. The estimated construction cost is \$342,100 plus a City administrative fee equal to four percent of the actual construction cost per the terms of the RA. An Engineer's Estimate is attached as Exhibit "A", a Location Map as Exhibit "B", and the RA as Exhibit "C". The RA has been reviewed by IRWD's legal counsel.

FISCAL IMPACTS:

Projects 11774, 11777, and 11780 are included in the FY 2023-24 Capital Budget and have adequate budgets to fund the project.

ENVIRONMENTAL COMPLIANCE:

This project is exempt from the California Environmental Quality Act (CEQA) as authorized under the California Code of Regulations, Title 14, Chapter 3, Section 15061 (b) (3). The activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

RECOMMENDATION:

That the Board authorize the General Manager to execute the Reimbursement Agreement between IRWD and the City of Irvine for Adjustment of Street Utilities to Grade for the Irvine Center Drive Street Rehabilitation Project, subject to non-substantive changes.

LIST OF EXHIBITS:

Exhibit "A" – Irvine Center Drive Street Rehabilitation Project Engineer's Estimate

Exhibit "B" – Irvine Center Drive Street Rehabilitation Project Vicinity Map

Exhibit "C" – Irvine Center Drive Street Rehabilitation Project Reimbursement Agreement

ENGINEER'S ESTIMATE



1ST SUBMITTAL - ENGINEERS OPINION OF PROBABLE COST
IRVINE CENTER DRIVE PAVEMENT REHABILITATION
FROM PACIFICA TO LAKE FOREST DRIVE

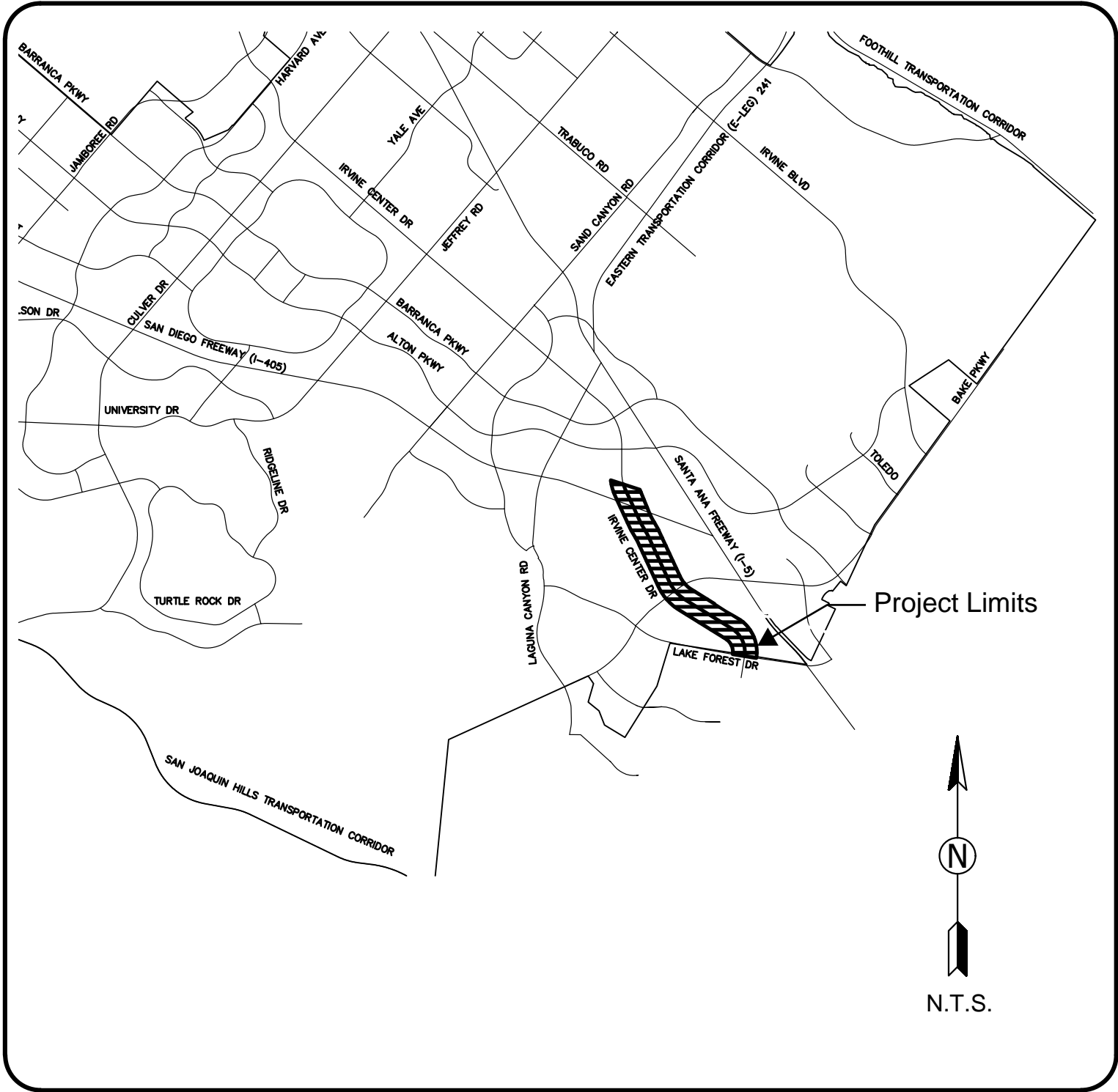
DATE: 10/3/2023
 PREPARED BY: MA
 REVIEWED BY: DS

| ITEM # | DESCRIPTION | QUANTITY | UNIT | UNIT PRICE | TOTAL |
|---|---|----------|------|------------------------|------------------|
| <u>ALTERNATE BID SCHEDULE A - ADDITIVE ALTERNATE BID (NON-PARTICIPATING ITEMS)</u> | | | | | |
| <u>A-1</u> | ADJUST IRWD SEWER MANHOLE FRAME AND COVER TO GRADE | 32 | EA | \$3,000.00 | \$96,000 |
| <u>A-2</u> | REMOVE EXISTING AND INSTALL NEW IRWD DOMESTIC WATER VALVE FRAME AND COVER TO GRADE | 55 | EA | \$2,500.00 | \$137,500 |
| <u>A-3</u> | REMOVE EXISTING AND INSTALL NEW IRWD RECLAIMED WATER VALVE FRAME AND COVER TO GRADE | 30 | EA | \$2,500.00 | \$75,000 |
| <u>A-4</u> | REMOVE EXISTING AND INSTALL NEW SEWER CLEANOUT FRAME AND COVER TO GRADE | 1 | EA | \$2,500.00 | \$2,500 |
| SUBTOTAL ALTERNATE BID | | | | | \$311,000 |
| | | | | CONTINGENCY 10% | \$31,100 |
| GRAND TOTAL ALTERNATE BID | | | | | \$342,100 |

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Exhibit "B"

LOCATION MAP



IRVINE CENTER DRIVE STREET REHABILITATION

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REIMBURSEMENT AGREEMENT BETWEEN

IRVINE RANCH WATER DISTRICT

AND THE CITY OF IRVINE

FOR

INSTALLATION AND ADJUSTMENT OF STREET UTILITIES TO GRADE FOR

THE IRVINE CENTER DRIVE STREET REHABILITATION PROJECT

CIP 312301

This Agreement is made and entered into as of this ____ day of _____, 2023, by and between IRVINE RANCH WATER DISTRICT, a California water district formed and existing pursuant to the California Water District Law, hereinafter referred to as "DISTRICT," and the CITY OF IRVINE, a municipal corporation, hereinafter referred to as "CITY."

W I T N E S S E T H:

WHEREAS, CITY proposes to construct street and utility improvements within the area of the Irvine Center Drive Street Rehabilitation Project, CIP 312101 (the "Project"), within the jurisdictional boundaries of DISTRICT and the City of Irvine; and

WHEREAS, such construction will necessitate the following construction work on DISTRICT facilities: replacement and adjustment to grade of approximately 55 Domestic Water Valve cans and lids, replacement and adjustment to grade of approximately 30 Recycled Water Valve cans and lids, replacement and adjustment to grade of approximately 1 Sanitary Sewer Cleanout can and lid, and adjustment to grade of approximately 32 Sanitary Sewer Manholes, all as described on Exhibit "A" attached hereto and incorporated by reference (the infrastructure above collectively referred to as the "IRWD FACILITIES" and the construction work related to them is the "Work"); and

WHEREAS, the parties have determined that it would be more expedient for CITY to perform the IRWD FACILITIES Work rather than for DISTRICT to do so; and

WHEREAS, DISTRICT is amenable to the CITY performing the IRWD FACILITIES Work with the CITY agreeing to advance the costs; and

WHEREAS, DISTRICT intends to fully reimburse the CITY through payments billed by the CITY and approved by DISTRICT for the entire cost of the IRWD FACILITIES Work; and

WHEREAS, except as otherwise provided herein, upon the completion of the IRWD FACILITIES Work, the parties intend that any newly-installed IRWD FACILITIES shall become the property of DISTRICT in accordance with the terms and conditions hereinafter set forth.

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

SECTION 1. IRWD FACILITIES. In conjunction with the Project, CITY agrees to initiate and pursue to completion the design and construction of the IRWD FACILITIES Work pursuant to this Agreement.

SECTION 2. PLANS. CITY agrees that the IRWD FACILITIES Work shall be completed pursuant to project plans and specifications (the “Plans and Specifications”) approved by DISTRICT. Prior to commencement of preparation of the Plans and Specifications, CITY shall submit its design engineer’s proposed improvement plans for the IRWD FACILITIES to DISTRICT. DISTRICT will have a period of five (5) calendar days from its receipt of such design proposal to review and either indicate its approval or request changes. CITY shall cause its design engineer to review and respond to any requested changes. The Plans and Specifications must incorporate (directly or by reference) the applicable portions of DISTRICT’s latest edition of *Construction Manual for the Construction of Water, Sewer, and Recycled Water Facilities* (the “Construction Manual”). CITY shall let the contract for the performance of the IRWD FACILITIES Work (together with non-reimbursable work to be completed by CITY within the Project) pursuant to the approved plans prepared by CITY’s design engineer.

SECTION 3. BIDDING AND AWARD.

3.1 The parties agree that the performance of the IRWD FACILITIES Work shall be included in CITY’s contract(s) awarded for the Project and that the IRWD FACILITIES Work shall be bid as a separate item or items that can be deleted. During the bidding process, CITY shall deliver to IRWD one (1) complete set of the bid documents that include the IRWD FACILITIES Work, including all related addenda concurrently with the distribution thereof to prospective bidders. Upon opening of bids by CITY, CITY will submit the bids or a spread sheet summary of the bids to DISTRICT. DISTRICT will have a period of ten (10) calendar days from its receipt of the bid results for review and approval of the IRWD FACILITIES Work bid item(s) submitted by the bidder identified to DISTRICT by CITY as CITY’s proposed successful bidder. CITY agrees that bids received for the construction of the IRWD FACILITIES bid item(s) shall be subject to the approval of DISTRICT prior to award of the Project construction contract(s) that include the IRWD FACILITIES. If DISTRICT does not approve such bids, then either party may terminate this Agreement upon 24 hours’ prior written notice, in which event CITY shall have no further obligation to perform the IRWD FACILITIES Work, and DISTRICT may elect to perform the IRWD FACILITIES Work with its own contractor. If DISTRICT approves of the IRWD FACILITIES bid item(s) of CITY’s successful bidder, then CITY shall cause the IRWD FACILITIES Work to be performed as part of the contract awarded to such bidder.

3.2 Estimated Costs. The total estimated construction cost for the IRWD FACILITIES Work is \$342,100 but the amount to be reimbursed by DISTRICT will be based on the actual costs of construction plus an administration fee as set forth in further detail in Section 5.

3.3 Contract Documents. Upon award of the construction contract, CITY shall provide DISTRICT with one original copy of the fully-executed contract documents and one copy of the bid package relating to the IRWD FACILITIES received from the successful bidder.

SECTION 4. DESIGN REVISIONS AND CHANGE ORDERS.

4.1 DISTRICT agrees to reimburse CITY for any change order(s) for revision(s) requested by DISTRICT or otherwise required to perform the IRWD FACILITIES Work. CITY shall promptly furnish DISTRICT with copies of any proposed change order(s) to such contract within five (5) working days of the initiation of the changed conditions to such contract, which change orders will be subject to DISTRICT approval if and to the extent the IRWD FACILITIES are affected.

4.2 DISTRICT shall promptly review proposed change order(s) and provide CITY with a response within five (5) working days or sooner of receiving proposed change order(s) information from CITY. DISTRICT agrees not to unreasonably cause delay(s) to the construction schedule of the Project in reviewing proposed change order(s) for the IRWD FACILITIES Work. Notwithstanding any other provision herein, any approval required to be given by the DISTRICT under this Section 4 will be deemed given if no response to the CITY's request for such approval is received by the CITY within eight (8) working days following the written request for such approval, unless the parties agree otherwise in a writing executed by both parties.

SECTION 5. REIMBURSEMENT.

5.1 Costs. CITY shall keep a separate accounting of all costs incurred by CITY in relation to the IRWD FACILITIES Work. DISTRICT shall reimburse CITY for the following costs (collectively, the "**Costs**"):

(1) Actual Costs: the actual costs of design, construction, permits, bonds, and legal fees (excluding the costs of preparation of this Agreement) incurred by CITY in connection with the design and construction of the IRWD FACILITIES;

plus

(2) Administration Fee: an administration fee which shall be equal to four percent (4%) of the actual cost of construction (costs paid directly to CITY's contractor for construction only, excluding any cost for design, surveying, geotechnical or other work) of the IRWD FACILITIES Work. This amount is deemed to cover all costs of project administration, including, but not limited to, accounting, inspection, surveying, compaction testing, geotechnical services and engineering.

5.2 Invoicing & Payment. Within sixty (60) days of DISTRICT's acceptance of the installed, relocated, or adjusted IRWD FACILITIES as provided in Section 8, a final accounting of the Costs shall be made by CITY and submitted to DISTRICT along with an invoice for the Costs and any supporting documentation necessary to show the amounts which represent Costs of performing the IRWD FACILITIES Work. Amounts paid pursuant to progress payment invoices shall be subject to adjustment in the final accounting. Within 30 days after the DISTRICT's receipt of the final accounting, DISTRICT agrees to pay to CITY the total amount of the Costs.

SECTION 6. LAWS, ORDINANCES, RULES AND REGULATIONS. CITY shall require in its contract for the construction of the IRWD FACILITIES that its contractor be fully informed of and comply with all laws, ordinances, rules and regulations, including, but not limited to, all applicable requirements of the California Labor Code, prevailing wage laws, the Construction Manual, and the Rules and Regulations of DISTRICT, in connection with performing the IRWD FACILITIES Work.

SECTION 7. INSPECTION. DISTRICT shall have sole and absolute discretion as to all aspects of design and construction of the IRWD FACILITIES, and DISTRICT shall be entitled to inspect the construction of IRWD FACILITIES Work as it deems necessary to assure compliance with the Plans and Specifications, including shop drawing review and material inspection thereof. DISTRICT shall have access to all phases of the Project work to be performed by CITY for the purpose of such inspection; provided, however, all questions regarding the work being performed will be directed to CITY's resident engineer. DISTRICT will promptly notify CITY of any portion of the Work on the IRWD FACILITIES which appears not to conform to the Plans and Specifications. The determination of DISTRICT as to conformity of the IRWD FACILITIES Work with the Plans and Specifications shall be made in DISTRICT's sole and absolute discretion. DISTRICT shall not unreasonably withhold its approval as to such conformity of the IRWD FACILITIES Work with the Plans and Specifications. CITY shall require its contractor to construct the IRWD FACILITIES so that the IRWD FACILITIES conform to the Plans and Specifications. CITY shall assume full responsibility for certifying or obtaining certification of the compaction of backfill material over the IRWD FACILITIES.

SECTION 8. ACCEPTANCE.

8.1 Acceptance. DISTRICT shall accept the IRWD FACILITIES, as installed, relocated, or adjusted when the IRWD FACILITIES Work has been completed by CITY in accordance with all requirements of the Plans and Specifications, including any change orders approved by DISTRICT as provided in Section 4.

8.2 As-Builts. At the time of completion and acceptance of the IRWD FACILITIES, CITY shall furnish DISTRICT with one copy of the contractor's redlined set of blue-line "record" drawings (showing all revisions, manufacturer and type of valves, pipe and fittings as required by DISTRICT) and one copy of the compaction reports and certificate, survey notes, and cut sheets.

SECTION 9. OWNERSHIP. Notwithstanding the fact that CITY shall accomplish the construction of the IRWD FACILITIES subject to reimbursement, the IRWD FACILITIES to be completed hereunder, together with the necessary franchises, licenses, easements, rights-of-way, and other privileges, shall at all times be subject to the applicable rates, rules and regulations of DISTRICT, as modified or amended from time to time. CITY hereby disclaims any interest in the IRWD FACILITIES and hereby transfers and assigns to DISTRICT any and all right, title, and interest it may have in the IRWD FACILITIES upon their completion and acceptance. DISTRICT shall own, operate and maintain the IRWD FACILITIES following acceptance thereof.

SECTION 10. GUARANTEES. CITY will, pursuant to the requirement(s) of the Plans and Specifications, cause its contractor(s) for the IRWD FACILITIES to guarantee the IRWD FACILITIES against defects in workmanship and materials for a period of one (1) year from the date of acceptance by CITY, which acceptance shall be given only after acceptance by DISTRICT as provided in Section 8. It is further agreed that CITY shall cause the IRWD FACILITIES to be brought or restored to full compliance with the requirements of the Plans and Specifications, including any test requirements, for any portions of the IRWD FACILITIES which during said one (1) year period are found not to be in conformance with the provisions of the Plans and Specifications. This guarantee is in addition to any and all other warranties, express or implied, from CITY's contractors or material manufacturers, with respect to the IRWD FACILITIES. The guarantee and obligations under this section shall in no way be relieved by DISTRICT's inspection and/or acceptance of the IRWD FACILITIES. This section sets forth the entire guarantee and warranty of CITY with respect to the IRWD FACILITIES Work. The express or implied warranties of other persons with respect to IRWD FACILITIES shall in no way be limited by the guarantee and warranty of CITY contained in this section. If requested by DISTRICT, CITY agrees to assign to DISTRICT the contractor's guarantee and/or any other guarantees or warranties relating to the IRWD FACILITIES Work.

SECTION 11. INDEMNIFICATION.

11.1 CITY shall indemnify, defend and hold DISTRICT, its officers, agents, employees, and engineers harmless from any expense, liability or claim for death, injury, loss, damage or expense to persons or property which may arise or is claimed to have arisen during construction of the IRWD FACILITIES as a result of any work or action performed by CITY or on behalf of CITY, save and except to the extent such expense, liability or claim is proximately caused in whole or in part by any act, omission, or negligence of DISTRICT, its officers, agents, employees or engineers or by any act or omission for which DISTRICT, its officers, agents, employees or engineers are liable without fault.

11.2 DISTRICT shall indemnify, defend and hold CITY, its officers, agents, and employees, harmless from any expense, liability or claim for death, injury, loss, damage or expense to persons or property which may arise or is claimed to have arisen either (i) as a result of any acts performed by DISTRICT, its officers, agents, or employees, with respect to the IRWD FACILITIES construction; or (ii) following DISTRICT acceptance of the IRWD FACILITIES, with respect to maintenance and operation of the IRWD FACILITIES, save and except to the extent such expense, liability or claim is proximately caused in whole or in part by

any negligence of CITY, its officers, agents, employees or engineers, or by any act or omission for which CITY, its officers, agents, employees or engineers are liable without fault.

SECTION 12. INSURANCE AND BONDING. CITY shall cause its contractor(s) to provide performance and payment bonds for the construction of the Project including the IRWD FACILITIES and to obtain insurance coverage sufficiently broad to insure the matters set forth in this Agreement and to include DISTRICT, its officers, agents, employees and engineers, as additional insureds on all insurance policies that CITY requires its contractor(s) to provide. As evidence of such insurance coverage, CITY shall, prior to commencement of performance of the IRWD FACILITIES Work, provide DISTRICT with certificates of insurance and insurance endorsements from CITY's contractor(s) in a form acceptable to DISTRICT.

SECTION 13. TERMINATION.

13.1 DISTRICT shall have the right to terminate this Agreement at any time, subject to the provisions of this section, by providing five (5) business days' prior written notice to CITY, except as provided in Section 3 with respect to unapproved bids. If at the request or direction of a party other than CITY, the performance of the IRWD FACILITIES Work is not accomplished or completed, DISTRICT shall remain obligated for the actual amount of the Costs incurred by CITY to the date of termination.

13.2 If CITY's Project is canceled or modified so as to eliminate the necessity of the construction of the IRWD Facilities, CITY shall have the right to terminate this Agreement and thereby terminate its obligation to perform the IRWD FACILITIES Work, by providing five (5) business days' prior written notice to DISTRICT. In such case, DISTRICT will not be obligated for any design or any other Costs incurred by CITY. If IRWD elects to perform the IRWD FACILITIES Work, DISTRICT may, but shall not be obligated to, acquire the design or other work from CITY by separate agreement.

SECTION 14. NOTICE. Any notice or other written instrument required or permitted by this Agreement to be given to either party shall be deemed received when personally served or twenty-four (24) hours after being deposited in the U.S. Mail, postage prepaid, registered or certified and addressed as follows:

| | |
|-----------|---|
| DISTRICT: | Irvine Ranch Water District 15600 Sand Canyon Avenue P.O. Box 57000 Irvine, CA 92619-7000 Attn: General Manager |
| CITY: | City of Irvine 1 Civic Center Irvine, CA 92606 Attn: Tim Callahan, Senior Civil Engineer |

SECTION 15. SUCCESSORS AND ASSIGNS; INTEGRATION; AMENDMENT. This Agreement shall be binding upon and inure to the benefit of the successor and assigns of CITY and DISTRICT. This Agreement constitutes the entire Agreement between CITY and DISTRICT and supersedes all prior understandings and agreements between the parties with respect to the subjects hereof. This Agreement may be modified only in writing signed by both parties hereto.

SECTION 16. LEGAL FEES. In the event of any declaratory or other legal or equitable action instituted between CITY and DISTRICT in connection with this Agreement, the prevailing party shall be entitled to recover from the losing party all of its costs and expenses, including court costs and reasonable attorneys' fees.

SECTION 17. DEEMED APPROVAL. Any approval required to be given by either party pursuant to this Agreement shall be deemed given if no response to the party's request for such approval is received by the requesting party within fifteen (15) days following the written request for such approval.

SECTION 18. SEVERABILITY. If any term, provision, covenant or condition of this Agreement is held to be invalid, void or otherwise unenforceable, to any extent, by any court of competent jurisdiction, the remainder of this Agreement shall not be affected thereby, and each term provision, covenant or condition of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

SECTION 19. APPLICABLE LAW. This Agreement shall be construed and enforced in accordance with the laws of the State of California.

SECTION 20. WAIVER. The waiver of any provision of this Agreement by either party shall not be deemed to be a waiver of any other provision or of any preceding or subsequent breach hereunder.

IN WITNESS WHEREOF, the parties to the Agreement have executed this Agreement on the date herein above written.

IRVINE RANCH WATER DISTRICT

By _____
Paul Cook, General Manager

Dated _____

ATTEST:

By _____
Secretary/Assistant Secretary

Dated _____

APPROVED AS TO FORM:

By _____
Legal Counsel, IRWD

Dated _____

CITY OF IRVINE
A Municipal Corporation

By _____
Farrah N. Khan
Mayor of the City of Irvine

Dated _____

By _____
Oliver C. Chi
City Manager of the City of Irvine

Dated _____

By _____
Sean Crumby
Director of Project Delivery & Sustainability

Dated _____

ATTEST:

By _____
Carl Petersen
City Clerk of the City of Irvine

Dated _____

APPROVED AS TO FORM:

By _____
Robert Owen, RUTAN & TUCKER, LLP
City Attorney of the City of Irvine

Dated _____

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