AGENDA
ENGINEERING, OPERATIONS, AND WATER RESOURCES COMMITTEE MEETING OF THE BOARD OF DIRECTORS INLAND EMPIRE UTILITIES AGENCY*

WEDNESDAY, JULY 13, 2022
10:00 A.M.

AGENCY HEADQUARTERS
BOARD ROOM
6075 KIMBALL AVENUE, BUILDING A
CHINO, CALIFORNIA 91708
VIEW THE MEETING LIVE ONLINE AT IEUA.ORG
TELEPHONE ACCESS: (415) 856-9169 / Conf Code: 813 028 107#

PURSUANT TO AB361 AND RESOLUTION NO. 2022-7-2, ADOPTED BY THE IEUA BOARD OF DIRECTORS ON JULY 6, 2022, IEUA BOARD AND COMMITTEE MEETINGS WILL CONTINUE TO BE CONDUCTED THROUGH TELECONFERENCE. IN AN EFFORT TO PROTECT PUBLIC HEALTH AND PREVENT THE SPREAD OF COVID-19, THERE WILL BE NO PUBLIC LOCATION AVAILABLE FOR ATTENDING THE MEETING IN PERSON.

The public may participate and provide public comment during the meeting by dialing the number provided above. Comments may also be submitted by email to the Board Secretary/Office Manager Denise Garzaro at dgarzaro@ieua.org prior to the completion of the Public Comment section of the meeting. Comments will be distributed to the Board of Directors.

CALL TO ORDER

PUBLIC COMMENT

Members of the public may address the Board on any item that is within the jurisdiction of the Board; however, no action may be taken on any item not appearing on the agenda unless the action is otherwise authorized by Subdivision (b) of Section 54954.2 of the Government Code. Those persons wishing to address the Board on any matter, whether or not it appears on the agenda, are requested to email the Board Secretary/Office Manager prior to the public comment section or request to address the Board during the public comments section of the meeting. Comments will be limited to three minutes per speaker. Thank you.

ADDITIONS TO THE AGENDA

In accordance with Section 54954.2 of the Government Code (Brown Act), additions to the agenda require two-thirds vote of the legislative body, or, if less than two-thirds of the members are present, a unanimous vote of those members present, that there is a need to take immediate action and that the need for action came to the attention of the local agency subsequent to the agenda being posted.

*A Municipal Water District

1. CONSENT ITEMS

A. MINUTES

Approve Minutes of the June 8, 2022 Engineering, Operations, and Water Resources Committee meeting.

B. CONTRACT AWARD FOR BANANA BASIN INFILTRATION RESTORATION

Staff recommends that the Committee/Board:

1. Approve the award for the Banana Basin Infiltration Restoration Services, Contract No. 4600003154 to Jeremy Harris Construction, Inc. for a not-to-exceed amount of $127,068; and

2. Authorize the General Manager to execute the contract, subject to non-substantive changes.

C. CONTRACT AWARD FOR PLUMBING SERVICES

Staff recommends that the Committee/Board:

1. Approve the award to provide Plumbing Services, Contract No. 4600003151 to Pro-Craft Construction for a not-to-exceed amount of $300,000 over five years with a fixed price period of two years with three one-year options to extend with Consumer Price Index increases; and

2. Authorize the General Manager to execute the service contract.

D. COLLECTION SYSTEM CONDITION ASSESSMENT AND OPTIMIZATION SERVICE CONTRACT AMENDMENT AND PROJECT BUDGET AUGMENTATION

Staff recommends that the Committee/Board:

1. Approve an amendment to CDM Smith's engineering services contract in the amount of $669,325, a 23% increase, for a not-to-exceed amount of $3,626,734;

2. Approve a total project budget augmentation for the Regional System Asset Management Project, No. EN19024, in the amount of $329,000 in the RO Fund;

3. Approve a total project budget augmentation for the NRW Manhole and Pipeline Project, No. EN19028, in the amount of $341,000 in the NC Fund; and

4. Authorize the General Manager to execute the contract and budget augmentation, subject to non-substantive changes.

2. ACTION ITEMS

A. RP-1 SOLIDS THICKENING PROJECT DESIGN CONSULTANT CONTRACT AMENDMENT NO. 3

Staff recommends that the Committee/Board:

1. Approve a contract amendment for the Regional Plant No. 1 Solids Thickening Building, Project No. EN22044, to Carollo Engineering, Inc., for a not-to-exceed amount of $880,393 increasing the contract from $13,677,502 to $14,557,895 (6.0% increase); and

2. Authorize the General Manager to execute the contract, subject to non-substantive changes.

B. RECHARGE MASTER PLAN UPDATE PROJECT CONSTRUCTION CONTRACT CHANGE ORDER RATIFICATION

Staff recommends that the Committee/Board ratify the change order for the construction contract for the Wineville, Jurupa, Force Main, Project No. RW15003.06, to MNR Construction, Inc. in the amount of $188,188.27.

3. INFORMATION ITEMS

A. OPERATIONS & MAINTENANCE DEPARTMENT QUARTERLY UPDATE (POWERPOINT)

B. 4TH QUARTER PLANNING & RESOURCES UPDATES (POWERPOINT)

C. RP-5 EXPANSION PROJECT UPDATE (POWERPOINT)

RECEIVE AND FILE INFORMATION ITEMS

D. ENGINEERING AND CONSTRUCTION MANAGEMENT PROJECT UPDATES (POWERPOINT)

4. GENERAL MANAGER'S COMMENTS

5. COMMITTEE MEMBER COMMENTS

6. COMMITTEE MEMBER REQUESTED FUTURE AGENDA ITEMS

ADJOURN

DECLARATION OF POSTING

I, Denise Garzaro, CMC, Board Secretary/Office Manager of the Inland Empire Utilities Agency*, a Municipal Water District, hereby certify that, per Government Code Section 54954.2, a copy of this agenda has been posted at the Agency's main office, 6075 Kimball Avenue, Building A, Chino, CA and on the Agency's website at www.ieua.org at least seventy-two (72) hours prior to the meeting date and time above.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Board Secretary at (909) 993-1736 or dgarzaro@ieua.org, 48 hours prior to the scheduled meeting so that IEUA can make reasonable arrangements to ensure accessibility.

CONSENT ITEM 1A

MINUTES
ENGINEERING, OPERATIONS, AND WATER RESOURCES
COMMITTEE MEETING
INLAND EMPIRE UTILITIES AGENCY*
AGENCY HEADQUARTERS, CHINO, CA

WEDNESDAY, JUNE 8, 2022
10:00 A.M.

COMMITTEE MEMBER PRESENT via Video/Teleconference
Michael Camacho, Chair

COMMITTEE MEMBER PRESENT via Video/Teleconference
Marco Tule, Director

STAFF PRESENT
Shivaji Deshmukh, P.E., General Manager
Christiana Daisy, P.E., Deputy General Manager
Tony Arellano, Safety Officer
Stephen Brown, Network Administrator
Andy Campbell, Groundwater Recharge Supervisor
Lucia Diaz, Manager of Facilities & Water System Programs
Lisa Dye, Director of Human Resources
Chris Garcia, Environmental Resources Planner I
Denise Garzaro, Board Secretary/Office Manager
Brandon Gonzalez Contreras, Technology Specialist I
Joel Ignacio, Senior Engineer
Randy Lee, Director of Operations & Maintenance
Scott Lening, Manager of Operations
Jason Marseilles, Manager of Engineering
Stacey Scott, Engineering Services Analyst
Daniel Solorzano, Network Administrator
Travis Sprague, Principal Engineer
Wilson To, Technology Specialist II
Ryan Ward, Associate Engineer

STAFF PRESENT via Video/Teleconference
Javier Chagoyen-Lazaro, Acting Assistant General Manager
Kevin Asprer, Associate Engineer
Jerry Burke, Director of Engineering
Robert Delgado, Manager of Maintenance
Warren Green, Manager of Contracts & Procurement
Don Hamlett, Director of Information Technology
Jennifer Hy-Luk, Administrative Assistant II
Cathleen Pieroni, Senior Policy Advisor
Jesse Pompa, Manager of Grants
Sushmitha Reddy, Manager of Laboratories
Jeanina Romero, Executive Assistant

Teresa Velarde, Manager of Internal Audit
Brian Wilson, P.E., CCM, Senior Engineer

OTHERS PRESENT via Video/Teleconference

Maureen Erbeznik, Maureen Erbeznik and Associates

CALL TO ORDER

Committee Chair Michael Camacho called the meeting to order at 10:02 a.m. He gave the public the opportunity to comment and provided instructions for unmuting the conference line. There were no public comments received or additions to the agenda.

1A – 1C. CONSENT ITEMS

The Committee:

- Approved Minutes of the May 11, 2022 Engineering, Operations, and Water Resources Committee meeting.

- Recommended that the Board adopt Resolution No. 2022-6-9, establishing the fee for IEUA's services review of applications, plans and inspections for development connections;

- and

    1. Award a construction contract for the CCWRF 12kV Backup Generator Control Circuit Improvements, Project No. EN17006.01, to Southern Contracting Co., for the amount of $1,027,480; and

    2. Authorize the General Manager to execute the contract, subject to non-substantive changes;

    as Consent Calendar items on the June 15, 2022 Board meeting agenda.

2A – 2B. ACTION ITEMS

The Committee:

- Recommended that the Board:

    1. Authorize the procurement of a skid-mounted rotary drum thickener system as a single source according to the proposal dated May 6, 2022, in the amount of $712,932; and

    2. Authorize the General Manager to execute the contract, subject to non-substantive changes;

- and

    1. Approve contract amendments for the Project Control Master Services Contract to CAPO Projects Group and KRD Management Consulting, LLC for an aggregate amount of $1,750,000, increasing the contract from $1,250,000 to

$3,000,000 (140% increase) with a four-year term extension through June 2026; and

2. Authorize the General Manager to execute the contract, subject to non-substantive changes;

as Consent Calendar items on the June 15, 2022 Board meeting agenda.

3A – 3F. INFORMATION ITEMS
The following information items were presented or received and filed by the Committee:

- Recycled Water Groundwater Recharge Update
- SARS-CoV-2 Wastewater Sampling
- Regional Water Use Efficiency Business Plan Update
- Annual Report of the Prado Basin Habitat Sustainability Committee

3. GENERAL MANAGER'S COMMENTS
General Manager Shivaji Deshmukh stated that a new National Pollutant Discharge Elimination System (NPDES) Permit was adopted by the California Regional Water Quality Control Board, Santa Ana Region, on June 3. This is a permit renewal of an existing NPDES permit issued in 2015 that the Regional Board had administratively extended after it expired in October 2020. NPDES permit must be renewed every five years. Starting in 2009, IEUA consolidated all the regional water recycling facilities under a single permit to streamline the permit renewal process and reporting. The new permit includes new effluent permit limitations for several compounds and metals. Other significant changes include requirements for an Asset Management Plan; Climate Change Action Plan; effluent toxicity limit; effluent toxicity reporting using TST statistical method; and effluent PFAS, 1,2,3-Trichloropropane and primary maximum contaminant level (MCL) monitoring.

4. COMMITTEE MEMBER COMMENTS
There were no Committee member comments.

5. COMMITTEE MEMBER REQUESTED FUTURE AGENDA ITEMS
Director Tule requested to be notified when the Cal Fire crews will perform the next Basin cleanup.

ADJOURNMENT
With no further business, Committee Chair Camacho adjourned the meeting at 10:58 a.m.

Respectfully submitted,

Denise Garzaro
Board Secretary/Office Manager

*A Municipal Water District

APPROVED: JULY 13, 2022

CONSENT ITEM 1B

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: July 20, 2022

To: The Honorable Board of Directors **From:** Shivaji Deshmukh, General Manager

Committee: Engineering, Operations & Water Resources *07/13/22*

Staff Contact: Christiana Daisy, Deputy General Manager

Subject: Contract Award for Banana Basin Infiltration Restoration

Executive Summary:

Groundwater Recharge operations and maintenance requires periodic cleaning of basins to restore infiltration rates and optimize recharge. At this time, Banana Basin requires infiltration restoration to remove accumulated fine-grained storm sediments that have significantly reduced the site's recharge capacity. Restoration includes mechanical removal of these sediments. The Banana site was last restored in July 2019. A Request for Proposal (RFP-GD-22-007) was posted on PlanetBids on May 11, 2022. A non-mandatory job site walk was conducted on May 18, 2022 and was attended by one firm. One proposal was received from Jeremy Harris Construction with a proposed cost of $127,068.

The proposed cost to conduct the scope of work is within expectations considering increases in fuel prices. Therefore, Jeremy Harris Construction, Inc. is recommended to be awarded the Banana Basin Infiltration Restoration contract.

Staff's Recommendation:

It is recommended that the Board of Directors:

1. Approve the award for the Banana Basin Infiltration Restoration Services, Contract No. 4600003154 to Jeremy Harris Construction, Inc. for a not-to-exceed amount of $127,068.00; and

2. Authorize the General Manager to execute the contract, subject to non-substantive changes.

Budget Impact *Budgeted (Y/N):* Y *Amendment (Y/N):* N *Amount for Requested Approval:* $ 127,068

Account/Project Name:

Fiscal Impact (explain if not budgeted):

IEUA and Chino Basin Watermaster will cost share using their agreed upon pro rata cost-sharing methodology.

Full account coding (internal AP purposes only): 10300 - 161202 - 410000 - 521080 Project No.:
- - -

Prior Board Action:

None.

Environmental Determination:

Not Applicable

Earthwork services will comply with the State of California Department of Fish and Game, Notification No. 1600-2009-0072-R6 Revision 2, dated February 15, 2010, Long Term Routine Maintenance Streambed Alteration Agreement for Existing Facilities.

Business Goal:

The Basin Infiltration Restoration Contract is consistent with IEUA's Business Goal of Water Reliability to provide a reliable and cost-effective water supply and promoting sustainable water use throughout the region.

Attachments:

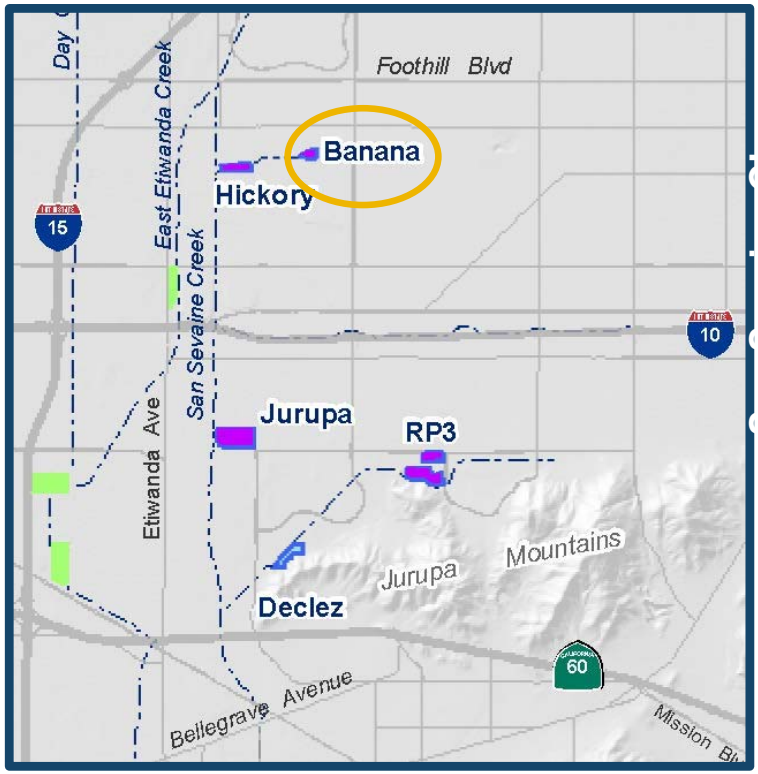
Attachment 1: PowerPoint Presentation
Attachment 2: Contract No. 4600003154 Linked

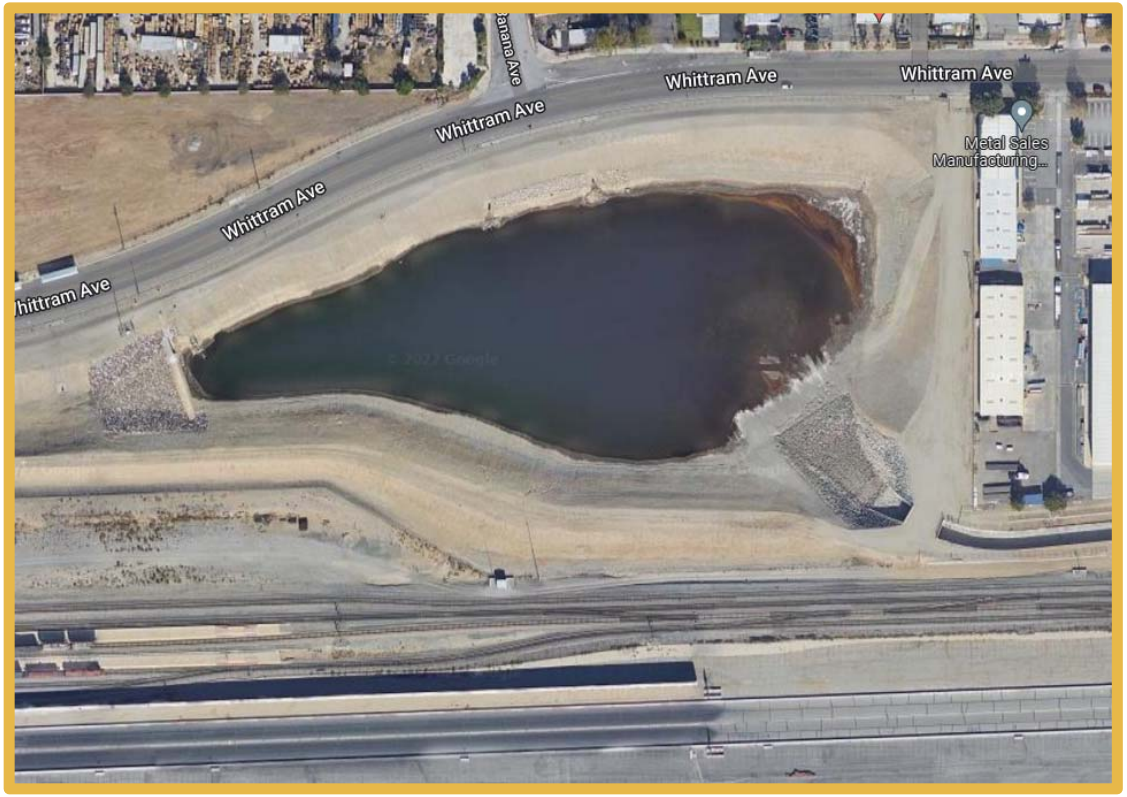
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Contract Award Banana Basin Infiltration Restoration

Brent Ritzinger
RW GWR O&M Specialist
July 20, 2022

Banana Basin Recharge Site





The Infiltration Restoration Process

- Drain to Hickory Basin
  - —First by gravity
  - —Second by Pumping (IEUA staff)
- Dry Out Floors (2 weeks)
- Work Process
  - —Scrape material from side slopes
  - —Scrape material from floors
  - —Haul away material
  - —Rip and smooth basin floors

Pumping Banana Basin

Track Walked Slopes

Contractor Selection

- Request for Proposal posted on May 11, 2022 and A non-mandatory site walk was conducted on May 18, 2022
- The site walk was attended by one firm
- One bid received on May 25, 2022

Bidder	Bid
Jeremy Harris Construction, Inc.	$127,068.00

- IEUA and CBWM will cost share the Banana Basin work using the basin's Pro Rata for Fiscal Year 2021/22 (IEUA 77% and CBWM 23%)

Recommendation

- Approve the award for the Banana Basin Infiltration Restoration Services, Contract No. 4600003154 to Jeremy Harris Construction, Inc. for a not-to-exceed amount of $127,068.00; and

- Authorize the General Manager to execute the contract, subject to non-substantive changes.

*The Infiltration Restoration Project is consistent with IEUA's business goal of **Water Reliability** to develop and implement an integrated water resource management plan.*

CONSENT ITEM 1C

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: July 20, 2022

To: The Honorable Board of Directors **From:** Shivaji Deshmukh, General Manager

Committee: Engineering, Operations & Water Resources *07/13/22*

Staff Contact: Christiana Daisy, Deputy General Manager

Subject: Contract Award for Plumbing Services

Executive Summary:

The Inland Empire Utilities Agency (Agency) has 31 buildings throughout Agency-owned facilities that require the occasional plumbing service. One of the responsibilities of Facilities Management Unit is to make sure all restrooms are suitable for staff and visitors to use. To consistently meet this task, the Agency contracts with a plumbing service provider to perform the needed services such as hydro jetting, snake draining, leak repairs, fixture replacements, and even restroom restoration.

To maintain the appropriate level of service for the Agency, a Request for Proposal (RFP) RFP-GD-22-005 was posted publicly on PlanetBids on April 12, 2022, for a new Plumbing Service contract. Out of five potential contractors who participated in the mandatory job-walk, three submitted proposals. The evaluation team scored Pro-Craft Construction the highest due to submitting the most comprehensive proposal, demonstrating that they understood the scope of work, and continues to meet all Agency expectations. Pro-Craft Construction had the lowest proposed cost and highest overall score. Based on the committee evaluation, it is recommended that Pro-Craft Construction, Incorporated be awarded the Plumbing Services Contract.

Staff's Recommendation:

1. Approve the award to provide Plumbing Services, Contract No. 4600003151 to Pro-Craft Construction for a not-to-exceed amount of $300,000 over five years with a fixed price period of two years with three one-year options to extend with CPI increases; and

2. Authorize the General Manager to execute the service contract.

Budget Impact *Budgeted (Y/N):* Y *Amendment (Y/N):* N *Amount for Requested Approval:*

Account/Project Name:

Regional Operations and Maintenance (RO) Fund, Professional Fees and Services

Fiscal Impact (explain if not budgeted):

None

Full account coding (internal AP purposes only): 10800 - 116100 - 501000 - 521110 Project No.: N/A
10200 - 116100 - 100000 - 521110

Prior Board Action:

None

Environmental Determination:

Not Applicable

Business Goal:

The Agency's Plumbing Service Contract is consistent with the IEUA's Business Goal of Business Practices specifically the Efficiency & Effectiveness objective that IEUA will apply best industry practices in all processes to maintain or improve the quality and value of the services we provide to our member agencies and the public.

Attachments:

Attachment 1 - PowerPoint Presentation
Attachment 2 - Services Contract 4600003151 Linked

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Plumbing Services Contract

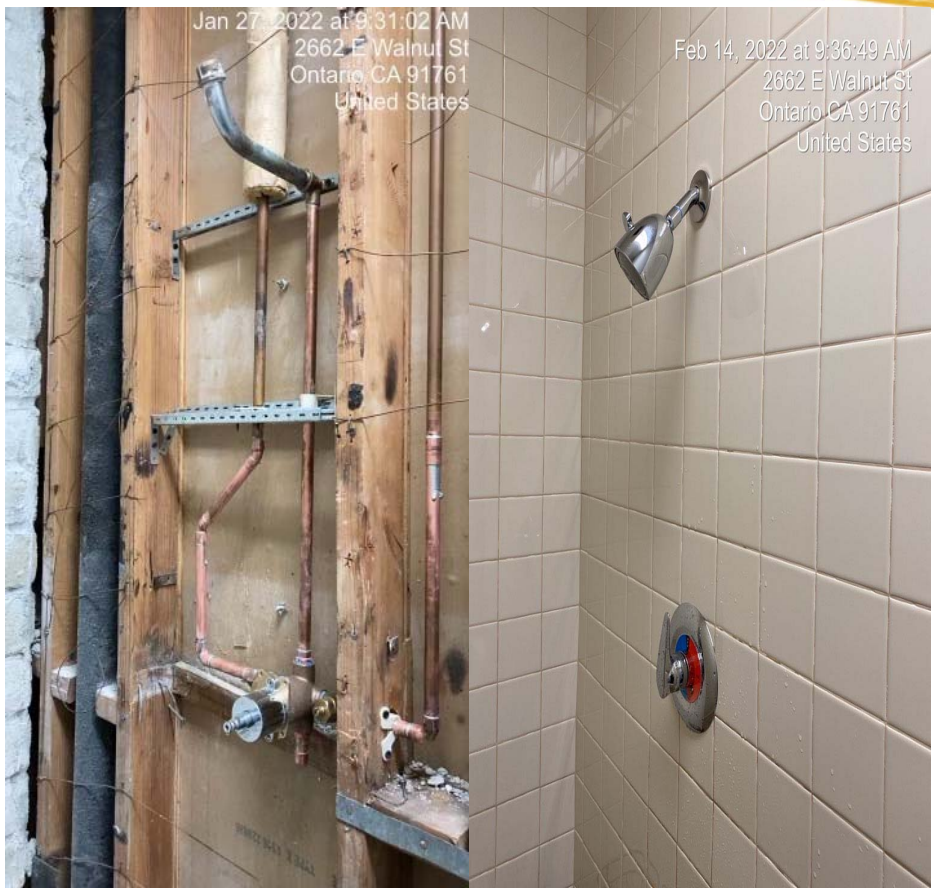
Frank Sotomayor

Facilities Program Supervisor

July 2022

Plumbing Services

- Plumbing services are occasionally needed to ensure a safe and clean environment for Agency staff to carry out essential Agency-related business.
- Contracted Services Include:
  - Hydro jetting
  - Snake draining
  - Leak repairs
  - Fixture replacements
  - Restroom restoration



Proposal Evaluation

Three proposals were received on May 2, 2022, and were scored based on predetermined weighted criteria.

Selection Criteria
• Experience and knowledge of personnel (Individual or Company)
• Record of performance (work history)
• References
• Cost Rate Sheet
• Exceptions taken to the specifications

Proposers Ranked using Selection Criteria
1. Pro-Craft Construction Inc
2. SoCal Sewer Construction Inc
3. GM Plumbing Corporation

Proposal Evaluation Results

The evaluation of the three proposals received concludes that Pro-Craft Construction, Inc would provide best value to the Agency.

- Best Value
  - Past performance, cost, experience, references, and competitive pricing
- Contract term: 5 years
  - Two years with fixed price
  - Three one-year options to extend with Consumer Price Index increases
- Experience with IEUA
  - Current service provider
  - Staff is satisfied with their services
  - Provided additional plumbing renovation projects

Recommendation

- Approve the award to provide Plumbing Services, Contract No. 4600003151 to Pro-Craft Construction for a not-to-exceed amount of $300,000 over five years with a fixed price period of two years with three one-year options to extend with CPI increases; and

- Authorize the General Manager to execute the service contract.

*The Agency Janitorial Services Contract, is consistent with the IEUA's **Business Goal of Business Practices** specifically the Efficiency & Effectiveness objective that IEUA will apply best industry practices in all processes to maintain or improve the quality and value of the services we provide to our member agencies and the public.*

CONSENT ITEM 1D

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: July 20, 2022

To: The Honorable Board of Directors **From:** Shivaji Deshmukh, General Manager

Committee: Engineering, Operations & Water Resources *07/13/22*

Finance & Administration *07/13/22*

Staff Contact: Christiana Daisy, Deputy General Manager

Subject: Collection System Condition Assessment and Optimization Service Contract Amendment & Projects' Budget Augmentation

Executive Summary:

In late 2020, CDM Smith was awarded a consulting service contract to conduct the condition assessment on 41 sewer siphons as part of the Collection System Condition Assessment and Optimization project. This initial effort will lead towards CDM Smith's development of a comprehensive sewer system maintenance optimization program which will enhance Inland Empire Utilities Agency's (IEUA) planning and maintenance of the collection assets. To-date, CDM Smith gathered condition data on 39 siphons.

The current contract amount to complete the assessment of the last two siphons will not be adequate due to the significant bypass efforts needed, larger volume for debris removal, and extensive traffic control at each site. Staff is recommending an amendment to CDM Smith's contract for a not-to-exceed amount of $669,325 to complete the two remaining assessments. This will increase the contract from $2,967,409 to $3,636,734 (23% increase). The proposed contract amendment will support the development of a comprehensive sewer system maintenance optimization program.
Staff is also recommending a total project budget augmentation to support the amended services requested in the amount of $329,000 for EN19024 and $341,000 for EN19028.

Staff's Recommendation:

1. Approve an amendment to CDM Smith's engineering services contract in the amount of $669,325, a 23% increase, for a not-to-exceed amount of $3,626,734;
2. Approve a total project budget augmentation for the Regional System Asset Management Project, No. EN19024, in the amount of $329,000 in the RO Fund;
3. Approve a total project budget augmentation for the NRW Manhole and Pipeline Project, No. EN19028, in the amount of $341,000 in the NC Fund; and
4. Authorize the General Manager to execute the contract and budget augmentation, subject to non-substantive changes.

Budget Impact *Budgeted (Y/N):* N *Amendment (Y/N):* Y *Amount for Requested Approval:* $ 670,000

Account/Project Name:
EN19024/Regional System Asset Management
EN19028/NRW Manhole and Pipeline

Fiscal Impact (explain if not budgeted):
If approved, the total project budget for Project EN19024 will increase from $3,590,419 to $3,919,419 (9% increase) in the RO Fund and for Project No. EN19028, the project budget will increase from $915,000 to $1,256,000 (37% increase) in the NC Fund.

Full account coding (internal AP purposes only): 1000 - 10800 - 501000 - 127100 Project No.: EN19024/EN19028
1000 - 10500 - 160000 - 127100

Prior Board Action:

On October 20, 2021, IEUA's Board of Directors approved the award of a construction contract to Tharsos, Inc. in the amount of $168,540 for the Glen Meade Trunk Critical Repair Project, No. EN19024.
On September 16, 2020, IEUA's Board of Directors approved the service contract with CDM Smith for a not-to-exceed amount of $2,910,909 for the Condition Assessment and Optimization of the Collection System, Project Nos. EN19024 & EN19028.

Environmental Determination:

Statutory Exemption

CEQA exempts a variety of projects from compliance with the statute. This project qualifies for a Statutory Exemption as defined in Section 15262 of the State CEQA Guidelines. When the project will be implemented, it will be subject to future environmental evaluation.

Business Goal:

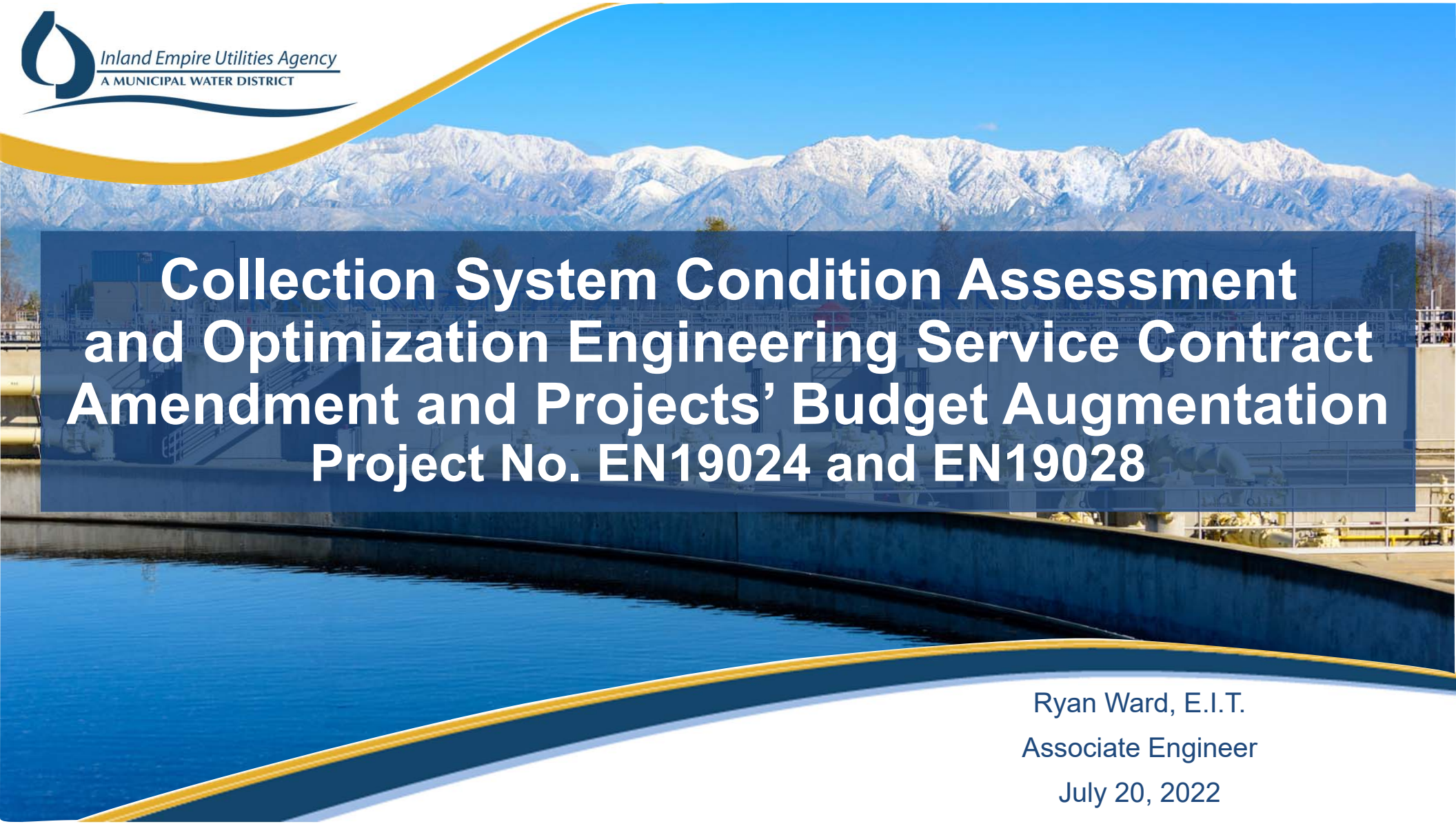
The Collection System Condition Assessment and Optimization Service Contract award is consistent with the IEUA's Business Goal of Wastewater Management, specifically the Asset Management and Water Quality objectives, that IEUA will ensure that systems are well maintained, upgraded to meet evolving requirements, sustainably managed, and accommodate changes in regional water use to protect public health, the environment, and meet anticipated regulatory requirements.

Attachments:

Attachment 1- PowerPoint
Attachment 2 - Service Contract

Attachment 1

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

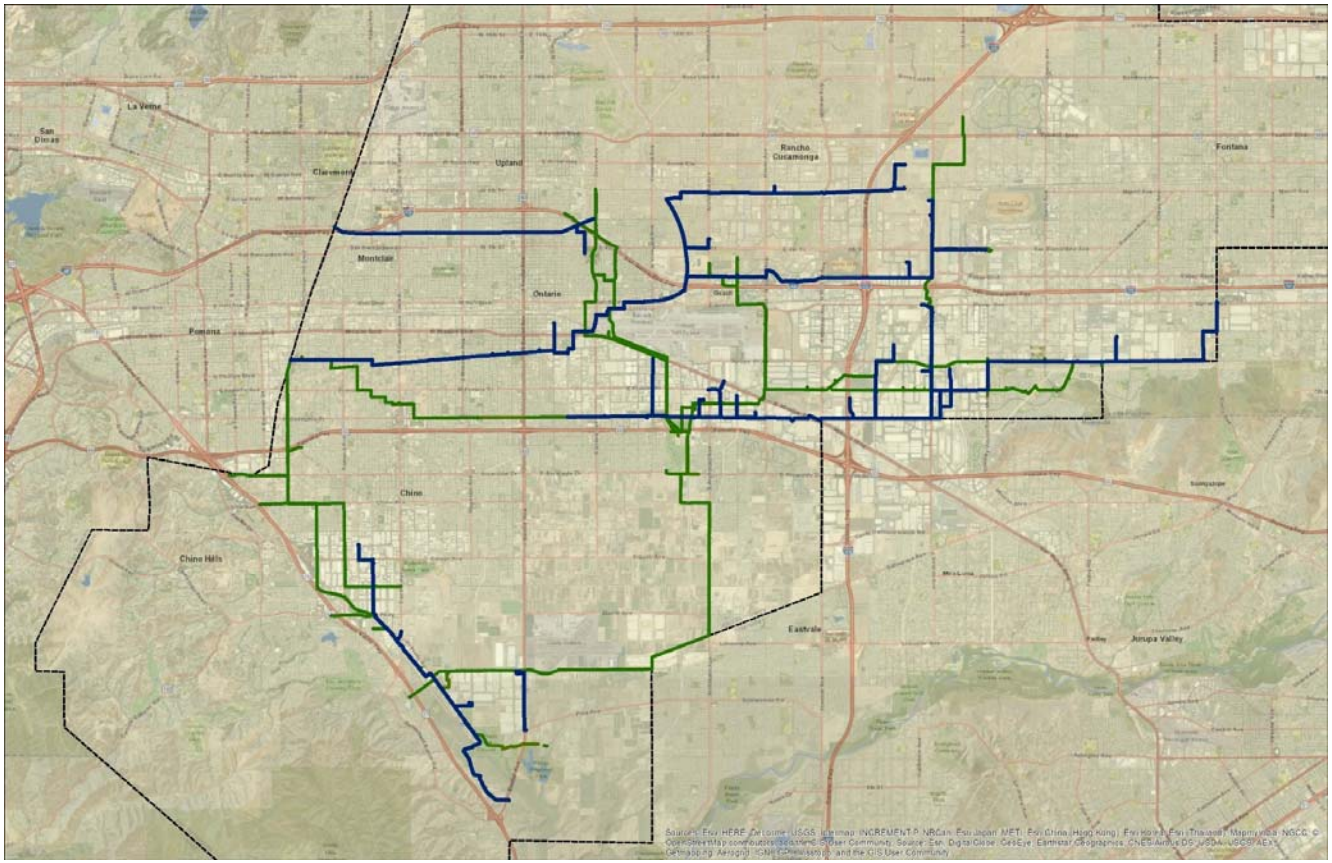


Collection System Condition Assessment and Optimization Engineering Service Contract Amendment and Projects' Budget Augmentation

Project No. EN19024 and EN19028

Ryan Ward, E.I.T.
Associate Engineer
July 20, 2022

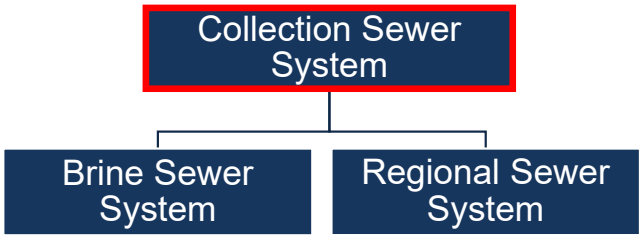
Project Overview/Location



Collection Sewer System – 157 miles

Brine Sewer System (BSS)

Regional Sewer System (RSS)



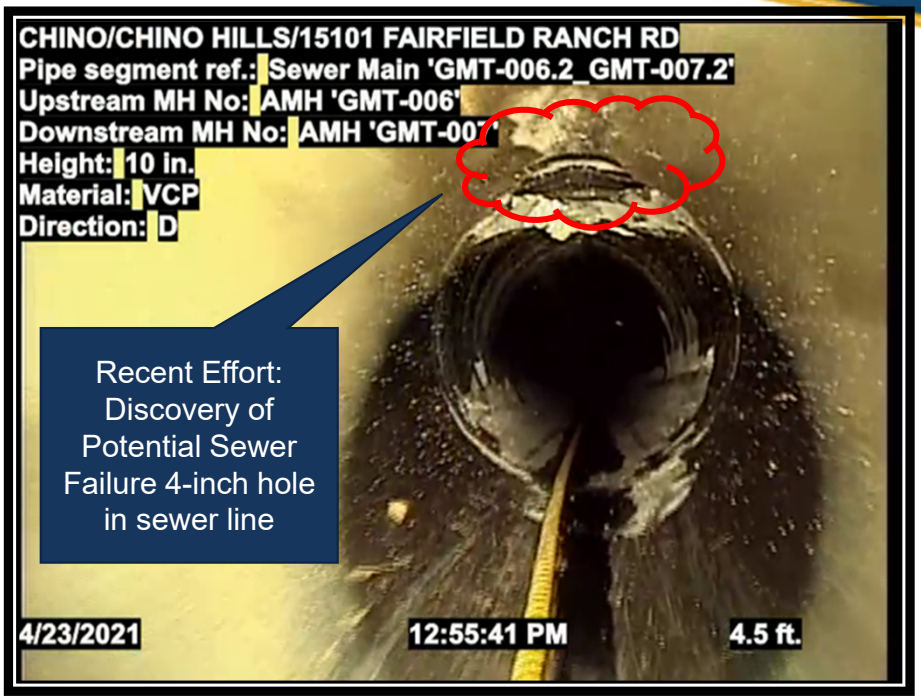
Collection Sewer System

- Two independent sewer systems
- Regional Sewer System
- Brine Sewer System

City	BSS – Siphons	RSS – Siphons
Rancho Cucamonga	4	-
Ontario	5	10
Fontana	3	4
Chino	1	14
Chino Hills	-	-
Claremont	-	-
Total Assets	***13***	***28***
Total Length of Assets	***4,745 feet***	***9,601 feet***

Project Goals/Objectives

- Goals
  - Enhance asset data
  - Develop risk management framework
  - Support asset management best practices
- Objectives
  - Conduct assessment, inspection and cleaning
  - Develop maintenance optimization plan



Coordination
Development of Condition Assessment Implementation Plan

→

Implementation
Condition Assessments, Inspections, and Cleaning

→

Evaluation
Available Data and Information

→

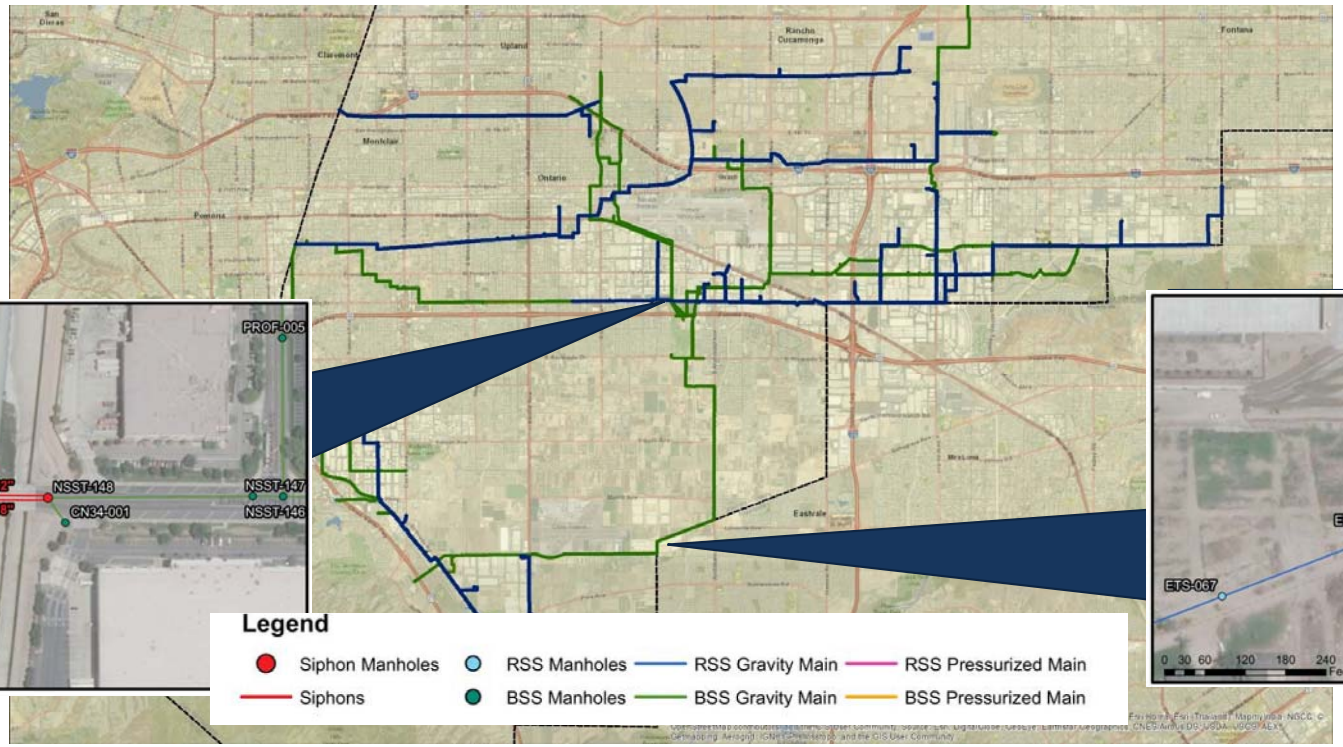
Optimization
Collection System Enhanced Management Program

Path to Meeting Goals & Objectives

Project Status

- Status on Assessment, Inspection, and Cleaning/Optimization Program
  - Substantially Completed 39 Siphons (out of 41)
  - Cost to date: $1,945,008
  - 2 remaining siphons requires additional funds to assess due to higher cost on traffic control/bypass/cleaning

NSST Siphon (RSS): Challenges - traffic/bypass/



ETS Siphon (BSS): Challenges - bypass/cleaning/access

Project Budget and Schedule

Description	Cost
Asset Management/Inspection Support (actuals/projected)	***$1,463,685***
Asset Management	$471,687
Inspection Support	$991,998
Other Engineering Consulting Support (actuals/projected)	***$75,000***
Engineering Consultant (GHD Contract)	$75,000
CDM Smith's Service Contract (actuals/projected)	***$3,636,734***
CDM Smith's Service Contract	$2,967,409
Amendment to CDM Smith's Contract (this action)	$669,325
Required Total Project Budget:	***$5,175,419***
Total EN19024's Budget for RSS Assets	$1,256,000
Total EN19028's Budget for BSS Assets	$3,919,419
EN19028 Current Total Project Budget (NC Fund):	***$915,000***
EN19024 Current Total Project Budget (RO Fund):	***$3,590,419***
Requested Budget Augmentation to EN19024 (this action)	$341,000
Requested Budget Augmentation to EN19028 (this action)	$329,000
EN19028 Total Project Budget (revised):	***$1,256,000***
EN19024 Total Project Budget (revised):	***$3,919,419***

Contract Milestone	Date
Complete Condition Assessment	Aug. 2022
Complete Planning/Optimization	Dec. 2022

Recommendation

- Approve an amendment to CDM Smith s engineering services contract in the amount of $669,325, a 23% increase, for a not-to-exceed amount of $3,636,734;
- Approve a total project budget augmentation for the Regional System Asset Management Project, No. EN19024, in the amount of $329,000 in the RO Fund;
- Approve a total project budget augmentation for the NRW Manhole and Pipeline Project, No. EN19028, in the amount of $341,000 in the NC Fund; and
- Authorize the General Manager to execute the amendment to the contract, and budget augmentation subject to non-substantive changes.

This project is consistent with ***IEUA's Business Goal of Wastewater Management***, specifically the Asset Management objective that IEUA will ensure the Collection s System is well maintained, upgraded to meet evolving requirements, sustainably managed, and can accommodate changes in regional water use to protect public health, the environment, and meet anticipated regulatory requirements.

Attachment 2

CONTRACT AMENDMENT NUMBER: 4600002916-004

FOR

THE CONDITION ASSESSMENT & MAINTENANCE OPTIMIZATION

OF THE COLLECTION SYSTEM ASSETS

THIS CONTRACT AMENDMENT FOUR is made and entered into this _____ day of _____, 2022, by and between the Inland Empire Utilities Agency, a Municipal Water District, organized and existing in the County of San Bernardino under and by virtue of the laws of the State of California (hereinafter interchangeably referred to as "IEUA" and "Agency") and CDM Smith Inc. with offices located in Rancho Cucamonga, California and Boston, Massachusetts (hereinafter referred to as "Consultant"), for professional design services in support of Projects EN19024.00 and EN19028.00 and shall revise the Contract as herein amended:

SECTION FOUR, SCOPE OF WORK AND SERVICES, ADDS THE FOLLOWING PARAGRAPH: Consultant and/or subconsultant/subcontractor services shall be revised in accordance with **Exhibit 6**, which is attached hereto, made a part hereof, and incorporated herein by this reference.

SECTION SIX, COMPENSATION, SECOND PARAGRAPH, IS REVISED TO READ: In compensation for the additional Work represented by this Contract Amendment, Agency shall pay Consultant a **NOT-TO-EXCEED maximum total of $3,636,734.00** for all services provided in accordance with **Exhibit 6,** referenced herein, attached hereto, and made a part hereof. **This represents an increase of $669,325.00 to the Contract.**

Balance of Contract Remains Unchanged.

WITNESSETH, that the parties hereto have mutually covenanted and agreed as per the above Amendment Number Four items, and in doing so have caused this document to become incorporated into the Contract documents.

INLAND EMPIRE UTILITIES AGENCY: (A Municipal Water District)		**CDM SMITH INC.:**	
_____	_____	DocuSigned by: Thomas Falk _____	6/27/2022 _____
Shivaji Deshmukh	(Date)	Thomas C. Falk, P.E.	(Date)
General Manager		Project Manager / Client Service Leader	

Exhibit 6

1808 Aston Avenue, Suite 240
Carlsbad, CA 92008

May 4, 2022 (Rev. 1)

Mr. Joel S. Ignacio, P.E.
Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

Subject: **Amendment to Condition Assessment and Maintenance Optimization of the Collection System Assets (EN19024.00) for Siphon Cleaning and Inspection**

Dear Mr. Ignacio:

CDM Smith was retained in September 2020 by the Inland Empire Utilities Agency (IEUA) to clean and conduct inspections of 72 siphon barrels within IEUA's regional sewer system (RSS) and brine sewer system (BSS). To date, a total of 65 barrels have been cleaned and inspected, with two additional barrels (Cucamonga Interceptor Relief Sewer CUIR_067-068 and CUIR_065-066) scheduled for repairs and cleaning and inspection in late-May/June. Upon completion of these two barrels, approximately 93% of the originally scoped siphon barrels will have been cleaned and inspected within the established contract budget for field work.

Based on progress to date and modified field work plans described below, the cost to complete the remaining four sites consisting of five not-yet-inspected siphon barrels will exceed the remaining project budget due to site conditions that differ significantly from what assumed during scoping and initial field work planning. Generally, at the four remaining sites, the following conditions necessitate a greater level of planning, engineering, onsite coordination, and work to complete the cleaning and CCTV inspections:

- **Higher than Anticipated Flows.** During field reconnaissance and in preparation of the Condition Assessment Implementation Plan (CAIP), it was determined that flow monitoring was necessary to verify sewer flow rates and patterns at certain sites in order to properly design bypass pumping systems. Flow monitoring, authorized through a scope amendment and funded through the contract contingency was conducted in September 2021. This flow monitoring confirmed higher than anticipated flow rates for thirteen siphons. The higher flow rates required CDM Smith's team to re-design and rent larger, more expensive bypass pumping systems to safely divert flow while the siphons are cleaned and inspected.

- **Sonar Pre-Inspection**. The base scope assumes CCTV inspection for all siphons in accordance with NASSCO-PACP protocols, allowing for sonar inspections where CCTV inspections is infeasible. During the field work planning, sonar pre-inspections were employed on several siphons to gauge debris volumes, providing important data that allowed us to refine field work plans and work durations prior to mobilization.

- **Higher than Anticipated Debris.** Siphon dewatering and cleaning, a critical initial step in preparing the barrels for a CCTV inspection, can vary significantly from site to site, depending on

the volume and characteristics of the accumulated debris encountered – conditions that cannot be accurately predicted until the cleaning commences (in some cases pre-sonar inspections were conducted to assess volumes prior to mobilization). Several siphons contained substantially more debris than was initially assumed. As an example, the most severe debris accumulation was encountered on the Eastern Trunk Sewer (ETS_022-023; Project Subtask 2.2.26), which required 17 back-to-back shifts in January 2022 to clean and inspect. This operation ultimately produced 36 cubic yards (CY) of material (25% more than anticipated), and the characteristics and siphon geometry (length and depth) resulted in cleaning and bypassing effort that doubled the original estimate. Consistent with predefined field work strategy and following protocols established in the CAIP, IEUA authorized the CDM Smith Team to proceed with additional labor, bypass and traffic control costs to complete the work on Subtask 2.2.26 including successful CCTV inspection. This debris accumulation example is of particular interest with respect to Eastern Trunk Sewer (ETS_065-066, Project Subtask 2.2.25) that still needs to be completed, as described below.

- **Stuck Stop Plates Prohibiting Multi-Barrel Sequencing.** As a basis for scoping, it was assumed that dual-barrel sites would allow for sequencing of work by manipulating stop plates to divert flow and avoiding bypass pumping. During field reconnaissance and development of the CAIP, a number of stop plates were found to be frozen in their frames, due to either damaged plates or deteriorated guide rails. The inability to rely on these stop plates to sequence the work necessitates revisions to field work planning to include aboveground, pumped bypass systems or installation of flow-through plugs to isolate barrels. The cost for unanticipated pumps and plugs exceeds the original budget for these siphons. In the case of two siphon sites on the Cucamonga Interceptor Relief (CIR_067-068, Subtask 2.2.19 and CIR_065-066, Subtask 2.2.20), project budget will be repurposed to a special field operation to remove, rehabilitate and re-install stop plates in order to facilitate cleaning and inspection under this contract and to restore functionality for IEUA's collections maintenance department.

Summary of Additional Effort to Complete Field Work

CDM Smith is requesting additional budget to complete field work as proposed below. We have organized the proposed additional work to prioritize siphon sites 2.1.10 (NSST, two barrels) and 2.2.25 (EST, single barrel) for which no inspection work has been completed so far under this contract. Sites 2.2.17 (GAO) and 2.2.22 (FIR), are double barrel siphons on which condition assessment (cleaned and fully inspected with CCTV) has been completed on one barrel of each siphon. Completing the parallel barrel at these two remaining sites could be accomplished under this contract with additional funding or deferred to a future project at IEUA's option. As summarized in the table below, additional funding is requested to complete cleaning and inspection work. Descriptions for each line item follow the table, and a cost breakdown for each siphon location is included in attachments.

Description	Basis for Additional Effort	Est. Cost
Base Amendment Scope		
North System South Trunk (NSST_149-150, Subtask 2.1.10)	Bypass pumping and atypical traffic control to accommodate heavy truck traffic along Philadelphia Street	$ 330,666
Easter Trunk Sewer (ETS_065-066, Subtask 2.2.25)	Higher than anticipated debris condition resulting in extended work duration, traffic control, and bypassing	$ 318,659
Engineering / Management	Additional investigation, engineering, and coordination associated with base amendment field work.	$ 20,000
	Base Amendment Subtotal	*$ 669,325*
Supplemental Amendment Scope		
Grove Avenue Outfall (GAO_065-066, Subtask 2.2.17)	Inability to divert flow to parallel barrel necessitating aboveground pumped bypass system	$ 122,199
Fontana Interceptor Relief (FIR_064-065, Subtask 2.2.22)	Inability to divert flow to parallel barrel necessitating aboveground pumped bypass system	$ 236,501
Engineering/ Management	Additional investigation, engineering, and coordination associated with field work	$ 12,500
	Supplemental Amendment Subtotal	*$ 371,200*
	Base and Supplemental Amendment Total	**$ 1,040,525**

- **North System South Trunk (NSST_149-150, Subtask 2.1.10) – *Base Amendment Scope*.** Siphon Subtask 2.1.10 is a dual-barrel (197 LF each, 12-in and 18-in diameter, CIP) siphon system. The original scope/budget for this site assumed that the parallel barrels could be isolated to sequence cleaning and construction without a bypass. Due to higher-than-expected flowrates that cannot be reduced, an aboveground bypass is necessary to allow safe access to the upstream and downstream manholes and to complete the cleaning and inspection of both barrels. This site is particularly complicated for bypass pumping, requiring the use of "ramp-overs" for multiple crossings of the heavily truck-trafficked Philadelphia Street and a buried portion of bypass pipe to accommodate access to the Ontario Soccer Park. In consultation with the City of Ontario, the use of "ramp-overs" on this busy street will necessitate more substantial traffic control including continuous flaggers to regulate the speed and truck access to industrial driveways within the work area. The additional costs for planning, bypass pumping, and traffic control as required by work permits are included in the above estimate to complete. Based on siphon configuration and debris volumes encountered on similar brine sewer system siphons, six days of cleaning and inspection are projected for this site. The base proposal scope assumes that Philadelphia Street will need to remain open and that cleaning/inspection shifts will be staged at night outside of typical truck traffic, resulting in six working days, stretching across two calendar weeks (bypass would remain in place through weekend, although not operated) in order to complete the work. Ongoing discussions with City of Ontario may allow for a partial or full street closure that would allow for simplified bypass pumping and double-shifting of cleaning/inspection work which

would significantly reduce the costs associated with bypass pumping and traffic control at this site.

- **Eastern Trunk (ETS_065-066, Subtask 2.2.25) – *Base Amendment Scope*.** Siphon Subtask 2.2.25 is a long, single-barrel (433-LF, 42-in diameter, PVC Lined RCP) siphon. This siphon is located downstream of Eastern Trunk (ETS_022-023, Subtask 2.2.26), which as noted above exhibited significantly higher debris volume accumulation when cleaned in January 2022 than the other siphons cleaned under this contract. Based on the CDM Smith Team's recent experience at the similar upstream siphon on the same trunk sewer system, we have revised our work plan and estimate to complete to allow for extended work duration and associated field logistics. The additional costs associated with higher than anticipated debris removal, extended work duration, bypass pump rental setup and operation, and traffic control as required by work permits are included in the above estimate to complete. Based on our recent experience at upstream site ETS_022-023, we anticipate up to sixteen shifts of cleaning and inspection for this site. The City of Ontario has confirmed that a full street closure can be accommodated for this site, simplifying the bypass pumping and traffic control. We have assumed double-shifting of the cleaning and inspection work, spanning continuous calendar days over an approximate 10-day period.

- **Grove Avenue Outfall (GAO_065-066, Subtask 2.2.17) – *Supplemental Amendment Scope*.** Siphon Subtask 2.2.17 is a dual-barrel (133 LF each, 33-in and 36-in diameter, VCP) siphon system. Barrel 1 (33-in), isolated behind existing stop plates was dewatered, cleaned, and inspected under the original contract on November 22, 2021. The original scope/budget for this site assumed flow in this parallel siphon system would be controlled through the use of flow-through plugs, allowing passive siphon diversion without the need for bypass pumping. However, as a result of a flow study early in the project and review of system hydraulics, it was determined that flow-through plugs would present an unsafe surcharge condition and an aboveground pumped system would be necessary to divert flow while the siphons were cleaned and inspected. The additional costs to rent and set up an aboveground pumped system and traffic control as required by work permits are included in the above estimate to complete. Based on siphon configuration and debris volumes encountered on similar regional sewer system siphons, three days of cleaning and inspection are projected for this site.

- **Fontana Interceptor Relief (FIR_064-065, Subtask 2.2.22) – *Supplemental Amendment Scope*.** Siphon Subtask 2.2.22 is a dual-barrel (196 LF each, 27-in and 48-in diameter, RCP) siphon system. Barrel 1 (66-in) isolated behind existing stop plates was dewatered, cleaned, and inspected under the original contract on September 1, 2021. The original scope/budget assumed that flow in this parallel siphon system would be controlled using flow-through plugs or stop plates installed in the upstream and downstream siphon structures, allowing passive siphon diversion without the need for bypass pumping. During field investigation, it was discovered that the stop plates were frozen, making the use of flow-through plugs infeasible. Field reconnaissance determined that fixing the stop plates to restore functionality would be capital-intensive and is not included in the current work plan or estimate to complete. Since the immovable stop plates obstruct the use of flow-through plugs, an aboveground pumped system was determined to be necessary to divert flow while the siphons are cleaned and inspected. The

additional costs to rent and set up an aboveground pumped system and traffic control as required by permit is included in the above estimate to complete. Based on siphon configuration and debris volumes encountered on similar regional sewer system siphons, four days of cleaning and inspection are projected for this site.

- **Engineering/Management.** As described above, the field work associated with identifying and resolving field work logistics, as well as coordinating the implementation of solutions, has resulted in additional engineering and management costs above the current scope and budget. This time has been split between the base and supplemental scopes itemized above to provide flexibility to IEUA in authorizing additional field work.

Should you have any questions regarding CDM Smith's submittal, please contact Tom Falk at (760) 415-4338 or via email at falktc@cdmsmith.com.

Sincerely,

Thomas C. Falk, P.E.
Client Service Leader / Project Manager
CDM Smith Inc.

Cc: *Ryan Ward (IEUA); Jon Ganz, Michael Higuchi, Doug Youngblood (CDM Smith)*

Attachments: *Additional Field Work Estimates*

Condition Assessment and Maintenance Optimization
Estimate to Complete - Siphon 2.1.10 (North System South Trunk)
May 2022

No.	Item	Qty.	Unit	Unit Cost	Total Cost
1	**Bypass Pumping**				
2	Mobilization / Demobilization	1	ls	$9,850	$9,850
3	Setup	1	ls	$47,462	$47,462
4	Disassembly	1	ls	$37,367	$37,367
5	Pump Rental	2	wk	$23,719	$47,438
6	Pump Watch and Fuel	9	d	$5,209	$46,881
7					
8	*Bypass Pumping Subtotal*				$188,999
9					
10	**Traffic Control**				
11	Traffic Controls	9	d	$5,775	$51,975
11	Misc. Allowance for Controls	1	ls	$10,000	$10,000
12					
13	*Traffic Control Subtotal*				$61,975
14					
15	**Structural Modifications**				
16	No structural modifications required	0	ls	$0	$0
17					
18	*Structural Modifications Subtotal*				$0
19					
20	**Cleaning and Inspection**				
21	Cleaning and Inspection	6	shifts	$8,272	$49,632
22					
23	*Cleaning and Inspection*				$49,632
24					
25	Subtotal				$300,606
26	Contingency	10%			$30,061
27					
28					
29	**TOTAL**				**$330,666**

Assumptions

A) Cleaning and inspection will occur over 6 days with single shifts each day.
B) Pump rental / traffic controls - Assume 6 work days + 2 weekend days + 1 setup day
C) Setup costs assume $30K for burying bypass pipe at entrance to Ontario SoccerPark.
D) Traffic control assumes no road closure.

Inland Empire Utilities Agency
Condition Assessment and Maintenance Optimization
Estimate to Complete - Siphon 2.2.25 (Eastern Trunk)
May 2022

No.	Item	Qty.	Unit	Unit Cost	Total Cost
1	**Bypass Pumping**				
2	Mobilization / Demobilization	1	ls	$3,494	$3,494
3	Setup	1	ls	$10,403	$10,403
4	Disassembly	1	ls	$6,352	$6,352
5	Pump Rental	2	wk	$22,571	$45,142
6	Pump Watch and Fuel	12	d	$7,085	$85,017
7					
8	*Bypass Pumping Subtotal*				$150,408
9					
10	**Traffic Control**				
11	Traffic Controls	12	d	$578	$6,930
12					
13	*Traffic Control Subtotal*				$6,930
14					
15	**Structural Modifications**				
16	No structural modifications required	0	ls	$0	$0
17					
18	*Structural Modifications Subtotal*				$0
19					
20	**Cleaning and Inspection**				
21	Cleaning and Inspection (2x shifts/day)	16	shifts	$8,272	$132,352
22					
23	*Cleaning and Inspection*				$132,352
24					
25	Subtotal				$289,690
26	Contingency	10%			$28,969
27					
28					
29	**TOTAL**				**$318,659**

Assumptions

A) Cleaning and inspection will occur over 8 days with double shifts each day.

B) Pump rental / traffic controls - Assume 8 work days + 2 weekends + 2 setup day
Local connections are investigated and it is assumed surcharge 12.5 ft from invert is OK.

C) Traffic control assumes road closure.

Inland Empire Utilities Agency
Condition Assessment and Maintenance Optimization
Estimate to Complete - Siphon 2.2.17 (Grove Avenue Outfall)
May 2022

No.	Item	Qty.	Unit	Unit Cost	Total Cost
1	**Bypass Pumping**				
2	Mobilization / Demobilization	1	ls	$9,460	$9,460
3	Setup	1	ls	$16,556	$16,556
4	Disassembly	1	ls	$12,055	$12,055
5	Pump Rental	1	wk	$12,074	$12,074
6	Pump Watch and Fuel	3	d	$7,423	$22,269
7					
8	*Bypass Pumping Subtotal*				$72,414
9					
10	**Traffic Control**				
11	Traffic Controls	3	d	$4,620	$13,860
12					
13	*Traffic Control Subtotal*				$13,860
14					
15	**Structural Modifications**				
16	No structural modifications required	1	ls	$0	$0
17					
18	*Structural Modifications Subtotal*				$0
19					
20	**Cleaning and Inspection**				
21	Cleaning and Inspection	3	d	$8,272	$24,816
22					
23	*Cleaning and Inspection*				$24,816
24					
25	Subtotal				$111,090
26	Contingency	10%			$11,109
27					
28					
29	**TOTAL**				**$122,199**

Assumptions

A) Cleaning and inspection will occur over 3 days.
B) Bypass will be aligned through the adjacent culvert.

Inland Empire Utilities Agency
Condition Assessment and Maintenance Optimization
Estimate to Complete - Siphon 2.2.22 (Fontana Interceptor Relief)
May 2022

No.	Item	Qty.	Unit	Unit Cost	Total Cost
1	**Bypass Pumping**				
2	Mobilization / Demobilization	1	ls	$27,662	$27,662
3	Setup	1	ls	$34,229	$34,229
4	Disassembly	1	ls	$19,458	$19,458
5	Pump Rental	1	wk	$16,664	$16,664
6	Pump Watch and Fuel	4	d	$8,437	$33,749
7					
8	*Bypass Pumping Subtotal*				$131,763
9					
10	**Traffic Control**				
11	Traffic Controls	4	d	$1,500	$6,000
12					
13	*Traffic Control Subtotal*				$6,000
14					
15	**Structural Modifications**				
16	Remove Cone for Suction Manhole	1	ls	$44,150	$44,150
17					
18	*Structural Modifications Subtotal*				$44,150
19					
20	**Cleaning and Inspection**				
21	Cleaning and Inspection	4	d	$8,272	$33,088
22					
23	*Cleaning and Inspection*				$33,088
24					
25	Subtotal				$215,001
26	Contingency	10%			$21,500
27					
28					
29	**TOTAL**				**$236,501**

Assumptions

A) Cleaning and inspection will occur over 4 days.
B) Minimal traffic controls are required due to alignment.
C) Surcharge in the interceptor will not impact buildings upstream.

ACTION ITEM 2A

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: July 20, 2022

To: The Honorable Board of Directors **From:** Shivaji Deshmukh, General Manager

Committee: Engineering, Operations & Water Resources *07/13/22*

Executive Contact: Christiana Daisy, Deputy General Manager

Subject: RP-1 Solids Thickening Project Design Consultant Contract Amendment No. 3

Executive Summary:

The Regional Water Recycling Plant No.1 (RP-1) Solids Thickening Project will improve the processes upstream of the digesters and construct additional capacity to permit future improvements that would increase the overall treatment capacity. During the review of the Design Intent Memorandums, staff identified necessary modifications and additions to the scope of the existing design consultant contract with Carollo Engineering, Inc. The proposed amendment, No. 3, is intended to encapsulate these modifications in the design contract: (a) analyze the existing plant capacity at RP-1 to better plan future projects; (b) add an additional boiler to supply heat demand while maintaining redundancy; (c) re-evaluate a prior evaluation of beneficial use of digester gas; (d) rehabilitate Disolved Air Floatation Thickeners (DAFT) 1 & 2 to treat scum from the treatment processes; (e) remove items from the scope that were originally intended for demolition; (f) remove the planned 12 kV facility and associated appurtenances; (g) consolidate the SCADA controls for the digesters into a single location; (h) update the asset register to facilitate IEUA Asset Management processes; and (i) plan and provide an increased level of treatment of digester gas based on needs identified in the design process. The contract amendment to Carollo Engineering, Inc., for a not-to-exceed amount of $880,393, increases the maximum authorized contract from $13,677,502 to $14,557,895 (6.0% increase).

Staff's Recommendation:

1. Approve a contract amendment for the Regional Plant No.1 Solids Thickening Building, Project No. EN22044, to Carollo Engineering, Inc., for a not-to-exceed amount of $880,393 increasing the maximum authorized contract from $13,677,502 to $14,557,895 (6.0% increase); and

2. Authorize the General Manager to execute the contract, subject to non-substantive changes.

Budget Impact *Budgeted (Y/N):* Y *Amendment (Y/N):* N *Amount for Requested Approval:*

Account/Project Name:

EN22044/RP-1 Solids Thickening Project

Fiscal Impact (explain if not budgeted):

None.

Full account coding (internal AP purposes only): 1000 - 10900 - 595000 - 127151 Project No.: EN22044

Prior Board Action:

Awarded a consultant contract for the RP-1 Capacity Recovery, Project Nos. EN24001 and EN24002 to Carollo Engineers Inc., for the not-to-exceed amount of $13,637,633 on December 20, 2017.

Environmental Determination:

Project Environmental Impact Report

CEQA exempts a variety of projects from compliance with the statute. This project qualifies for the Common Sense Exemption as defined in Section 15061(b)(3) of the State CEQA Guidelines

Business Goal:

The RP-1 Solids Thickening Project is consistent with IEUA's Business Goal of Wastewater Management, specifically the Asset Management objective that IEUA will ensure the treatment facilities are well maintained, upgraded to meet evolving requirements, sustainability managed, and can accommodate changes in regional water use.

Attachments:

Attachment 1 - PowerPoint Presentation
Attachment 2 - Proposed Amendment No. 3 to Project EN22044

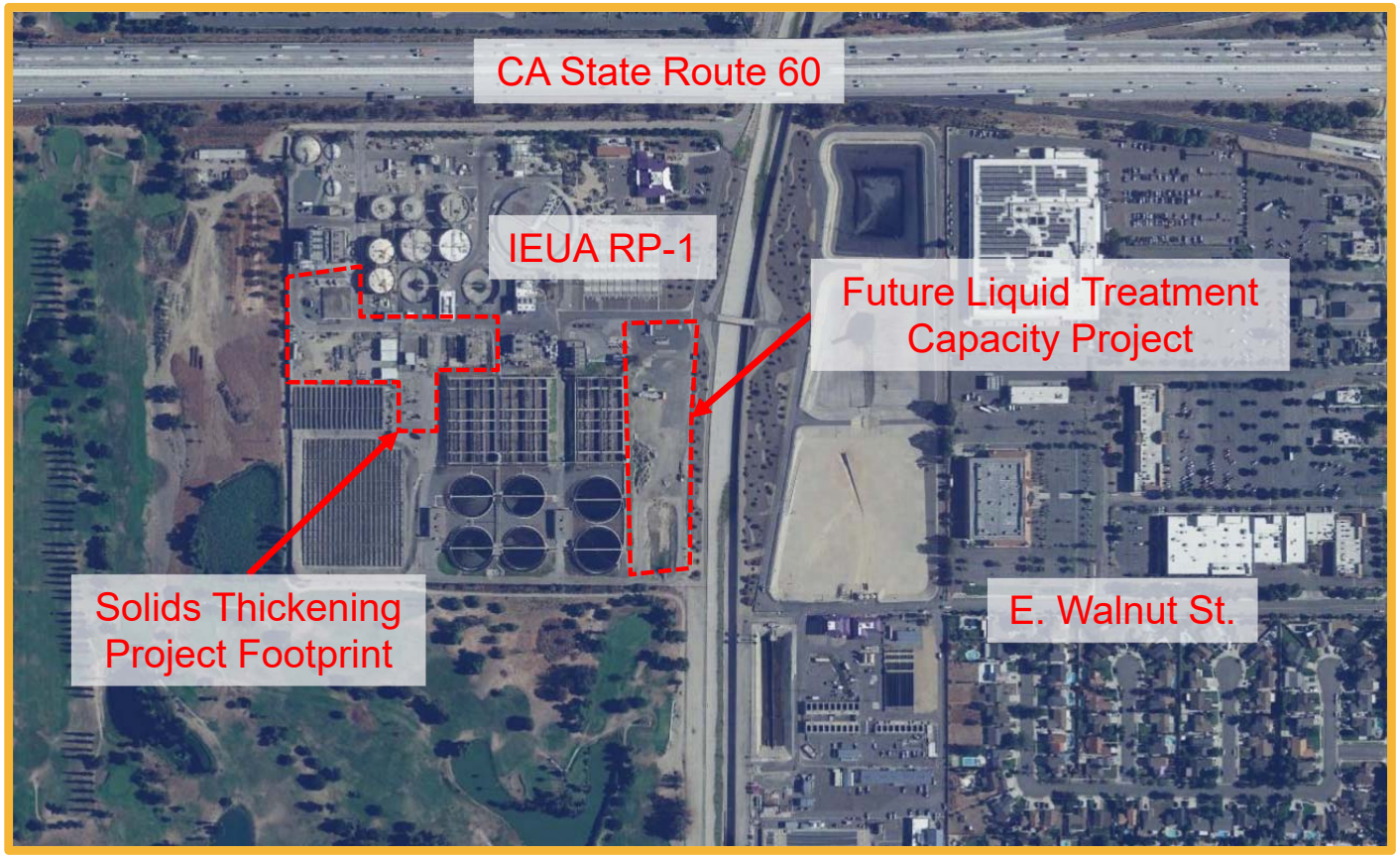
Attachment 1

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

RP-1 Solids Thickening Project
Design Consultant Amendment
Project No. EN22044

Travis Sprague, P.E.
Principal Engineer
July 2022

Project Location (City of Ontario)

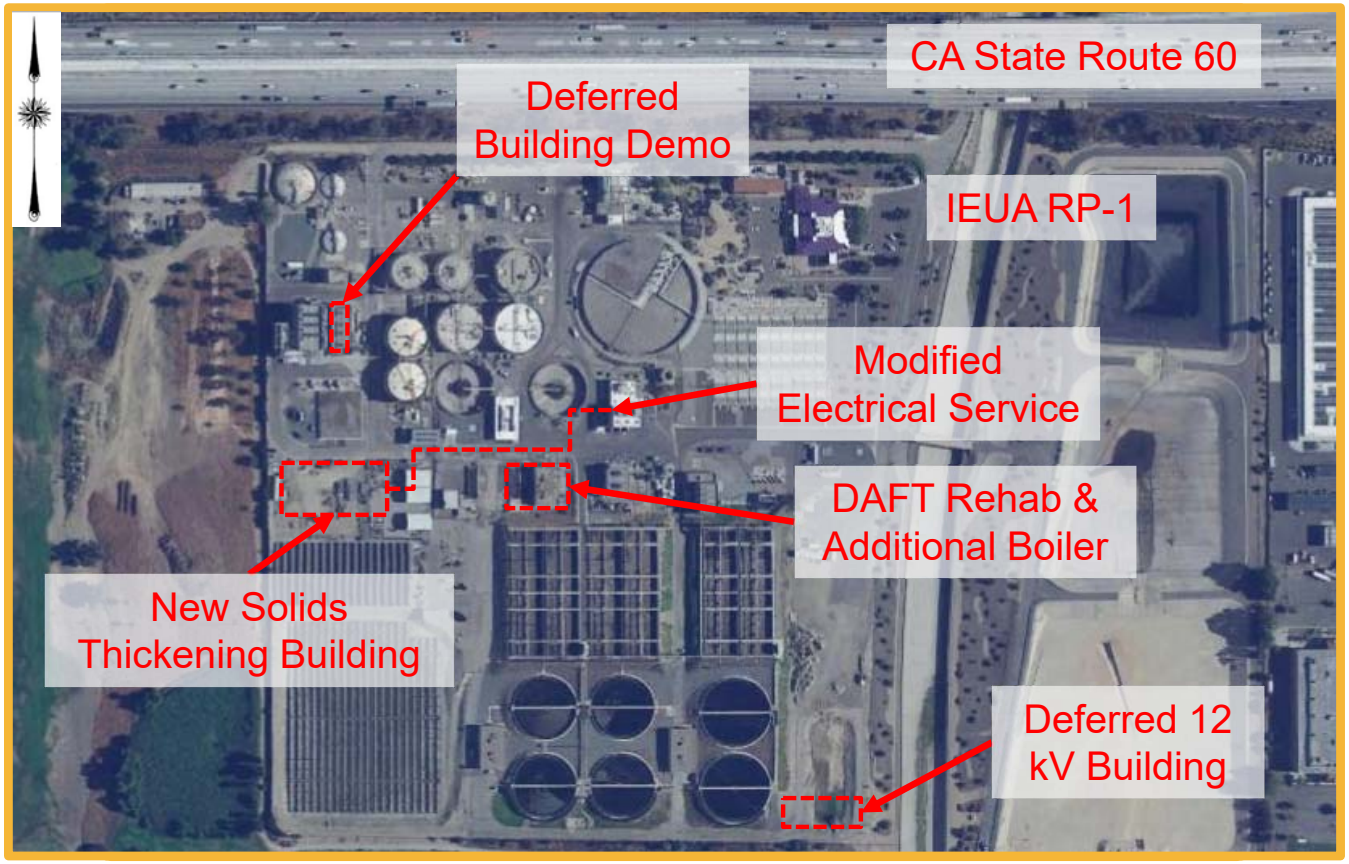


Purpose

- Staff identified scope items to be added or removed from the project
- Scope Changes incorporated in Amendment No. 3:

Added Scope	Removed
o Rehabilitation of Dissolved Air Floatation Thickeners (DAFT) 1 & 2 o New boiler and gas system improvements o Stress Test / Capacity Analysis o Updated *Digester Gas Beneficial Use Study* o Changes to SCADA control strategy o Increased level of treatment for digester gas o Modified electrical service to new facilities	o Demolition Items (Belt Press Building and Other System Appurtenances) o 12 kV Building (Deferred to Future Project) o New Southern California Edison (SCE) Service (Deferred to Future Project) o New Generators (Deferred to Future Project)

Major Amendment Items



Project Budget

Description	Estimated Cost
Design Services	***$10,142,949***
Design Review Services	$7,846,604
Amendment No. 3	*$880,393*
IEUA Design Support Services	$650,000
Skid-Mounted RDT Trailer	$765,952
Construction Services	***$10,000,000***
Engineering Services During Construction (5%)	$5,000,000
IEUA Construction Support Services (5%)	$5,000,000
Construction	***$110,000,000***
Construction Contract Estimate	$100,000,000
Contingency, 10%	$10,000,000
Total Project Cost:	**$130,142,949**
Total Project Budget*:	**$133,080,000**

Project Milestone	Date
Design Contract	
Final Design	June 2023
Bid + Award	Oct. 2023
Construction Contract	
Notice to Proceed	Oct. 2023
Close-out	Aug. 2026

Recommendation

- Approve a contract amendment for the Regional Plant No.1 Solids Thickening Building, Project No. EN22044, to Carollo Engineering, Inc., for a not-to-exceed amount of $880,393 increasing the contract from $13,677,502 to $14,557,895 (6.0% increase); and

- Authorize the General Manager to execute the contract amendment, subject to non-substantive changes.

The RP-1 Solids Thickening Project is consistent with **IEUA's Business Goal of Wastewater Management** specifically the Asset Management objective that IEUA will ensure the treatment facilities are well maintained, upgraded to meet evolving requirements, sustainability managed, and can accommodate changes in regional water use.

Attachment 2

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

CONTRACT AMENDMENT NUMBER: 4600002455-003

CONSULTING ENGINEERING SERVICES

FOR THE

RP-1 LIQUIDS & SOLIDS CAPACITY RECOVERY & THICKENING

PROJECT Nos. EN22044, EN24001, & EN24002

THIS CONTRACT AMENDMENT THREE is made and entered into this _____ day of _____, 2022, by and between the Inland Empire Utilities Agency, a Municipal Water District, organized and existing in the County of San Bernardino under and by virtue of the laws of the State of California (hereinafter referred to interchangeably as "IEUA" and "Agency") and Carollo Engineers, Inc. with offices located in Riverside, Irvine, Phoenix, and Los Angeles (hereinafter referred to as "Consultant"), for professional design services for the RP-1 Liquids & Solids Capacity Recovery & Thickening Projects EN22044, EN24001, and EN24002, and shall revise the Contract as herein amended:

SECTION FOUR, SCOPE OF WORK AND SERVICES, IS CHANGED TO READ: Consultant's services and responsibilities shall be in accordance with Consultant's Proposal of Amendment dated June 20, 2022, attached hereto, referenced herein, and made a part hereof as **Consultant Contract Attachment 6**.

SECTION SIX, COMPENSATION, IS REVISED TO ADD THE FOLLOWING:

In compensation for the work represented by this Contract Amendment Two, Agency shall pay Consultant **a NOT-TO-EXCEED maximum total of $14,557,895.00** for all additional services provided in accordance with **Attachment 6**, referenced herein, attached hereto, and made a part hereof. This represents an increase to the Contract of $880,393.00.

Balance of Contract remains unchanged.

Signature Page immediately follows.

Witnesseth, that the parties hereto have mutually covenanted and agreed as per the above amendment items, and in doing so have caused this document to become incorporated into the contract documents.

INLAND EMPIRE UTILITIES AGENCY:
(A Municipal Water District)

_____ _____
Shivaji Deshmukh (Date)
General Manager

CAROLLO ENGINEERS, INC.:

DocuSigned by:
_____ 6/29/2022
Graham J.G. Juby, Ph.D., P.E. (Date)
Vice President / Principal-in-Charge

DocuSigned by:
_____ 6/29/2022
Eric M. Mills, P.E. (Date)
Senior Vice President

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Consultant Contract Attachment 6

Engineers...Working Wonders With Water®

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June 20, 2022

Mr. Travis Sprague, P.E.
Principal Engineer
Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

Subject: RP-1 Solids Thickening Project (EN22044) – Amendment No. 3 (Updated)

Dear Mr. Sprague:

Presented herein is Amendment No. 3 for the Regional Plant 1 (RP-1) Solids Thickening Project (EN22044). This amendment is intended to address several changes to the scope of work at the request of Inland Empire Utilities Agency (IEUA) and to provide the anticipated level of effort needed for implementation. The following provides the basis for the amendment as well as descriptions for the work tasks required to allow the requested changes.

Basis for Amendment

Over the course of developing the project through the Design Information Memoranda (DIMs) preparation and 30 percent design stages, regular progress meetings and review workshops were conducted to allow IEUA the opportunity to provide feedback on the main elements of the design. Through this process, IEUA identified a number of items that they felt warranted further investigation/analysis, updated confirmation, or design changes. These items are as follows:

1. Stress test the secondary treatment process to confirm the current RP-1 capacity, and work with IEUA's Planning Group to determine timing for the conversion to a membrane bioreactor (MBR) system.
2. Addition of a new boiler to the RP-1 digester heating system.
3. Updating of DIM 14, Digester Gas Beneficial Use Study, based on recently received comments from IEUA.
4. Design for the rehabilitation and modification of dissolved air flotation thickeners (DAFTs) 1 and 2 for scum thickening.
5. Changes to the demolition drawings. This will include changes to the project demolition requirements and removal of demolition drawings that will not be developed beyond the 30 percent design stage.
6. Removal of the new 12 kilovolt (kV) electrical building from the design, as a new building will no longer be needed for the project.
7. Digestion Control Strategies – Review of the process control narrative (PCN) for the existing digester system developed as part of the SCADA Migration Project (EN13016.05) so that the RP-1 system can operate in either three-phase or single-phase digestion mode.
8. Updating the IEUA Asset Register with the new equipment and hardware to be added through this project.
9. Evaluation of alternatives for scrubbing digester gas from the acid digesters.

The work needed to implement the above items is presented in the tasks below.

Task 1 – Stress Test Secondary Treatment Process to Confirm the Current RP-1 Capacity

IEUA wishes to confirm the current liquid phase capacity of the RP-1 secondary treatment process to better anticipate when the MBR expansion project is expected to be needed. As part of Amendment 1, Carollo Engineers, Inc. (Carollo) was tasked to review the plant data from the past three years and update the process model, developed as part of the 2019 Preliminary Design Report (PDR). Additionally, IEUA would also like to complete a stress test of the RP-1 secondary treatment processes. The test data will be reviewed and incorporated into the updated process model to determine the current RP-1 secondary treatment system capacity, as part of Addendum 2. In turn, this will be used with future flow projections for RP-1 and Regional Plant 4 (RP-4) to determine the timing for when conversion of the secondary treatment process to an MBR is needed. Specific work to be done under this task includes:

1. Develop Stress Test Plan including testing and sampling requirements to confirm the plant capacity.
2. Conduct a virtual coordination meeting (i.e., Microsoft® (MS) Teams call) with IEUA plant staff to review the test plan requirements and confirm staffing/staff responsibilities.
3. Visit the site periodically (up to three times) during the Stress Test to visually observe the testing and answer any questions regarding the Stress Test Plan and sampling requirements.
4. Obtain plant performance data from the stress testing from IEUA and incorporate into the BioWin process model to determine the RP-1 treatment capacity.
5. Coordinate with IEUA's Planning Group to obtain future flow projections to RP-1 and RP-4. Flow projections will be used together with current wastewater characteristics to determine the anticipated timing for conversion of the secondary treatment process to an MBR. It is our understanding that the flow projection analysis for both facilities being conducted by IEUA is still in progress and will not be completed until early 2023.
6. Prepare and submit Draft and Final report. Conduct a virtual meeting with IEUA to review comments on the Draft report. Incorporate IEUA's comments into the Final report.

Deliverables:

- *Draft and Final Stress Test Plan submitted in electronic format.*
- *Draft and Final report submitted in electronic format.*

Scope of Work Assumptions:

1. *IEUA plant staff will conduct the Stress Test per the Plan and collect samples as called for in the Plan. Analysis of samples will be performed at IEUA's laboratory facility. If samples require offsite laboratory analysis, IEUA will work directly with a contract laboratory to perform the requisite analyses.*
2. *IEUA's Planning Group will provide information regarding the anticipated future flow projections to RP-1 and RP-4 to assess the timing for the MBR expansion project. Our understanding is preliminary information from IEUA will only be available in early 2023. This will be documented in the report once it is available.*

Task 2 – Addition of New Boiler to RP-1 Digester Heating System

At the start of the project, IEUA indicated that the existing RP-1 boiler system had sufficient heat supply capacity available to support the addition of the Acid Phase Digester (APD) system. The existing plant boiler system consists of two boilers arranged in a duty/standby configuration. A preliminary analysis of the projected heating needs performed during development of the 30 percent design indicated that this was correct; however, doing so would require the operation of both boilers simultaneously during the winter months when heat demand is the highest. A more comprehensive analysis of the heating requirements and boiler system using current plant data was subsequently requested by IEUA, which confirmed the initial findings. IEUA noted that the risk of operating without a redundant backup boiler unit would not be acceptable. Therefore, IEUA requested that a new third boiler be added to the RP-1 boiler system as part of this project. In addition to adding the third boiler, IEUA also specified that the boiler system will need to operate as follows:

- All three of the boilers must have the ability to run on digester gas.
- During operation, the intent will be to run the two duty boilers solely on digester gas.
- Natural gas will be available to all three boilers as a backup in the event of an interruption to the digester gas supply.

This will require some modifications to the existing digester gas piping system to the boiler system. These changes will be included with the new boiler addition.

Specific work required for this task includes the following:

1. Perform a detailed analysis of the projected plant heat demand after addition of the APD system and compare it to the supply capacity of the existing boiler system factoring in the observed low water temperature for the most recent winter season as well as input from plant staff on actual heating demands observed for the existing digester system during the winter months. This analysis was performed following the DIM 9S, Anaerobic Digestion, workshop.
2. Review the existing gas system, hot water system, and Air Quality Management District (AQMD) requirements.
3. Obtain current digester gas data and coordinate with boiler vendors for suitable sizing. Digester gas data needs will include, but may not be limited to, major fixed gases (methane, carbon dioxide, oxygen, and nitrogen), British thermal unit content, and concentrations of sulfur compounds (including hydrogen sulfide), siloxanes and other volatile organic compound. These data will be used with vendor equipment information and the findings from the heat demand analysis to establish design criteria for the new boiler and required ancillary equipment.
4. Establish the site for the new boiler. This subtask will entail the following:
    a. Locate available areas and coordinate with IEUA to identify potential sites.
    b. Perform a site visit with IEUA staff to evaluate potential sites and land at a recommended location.
    c. Conduct a virtual follow up meeting (i.e., MS Teams call) with IEUA to review the site visit findings. Develop consensus for a recommended site to move forward with during design.

5. Evaluate the existing digester gas blower system to determine the modifications needed to accommodate the addition of the new boiler. This subtask will entail the following:
   a. Obtain information from IEUA on the existing digester gas blowers. This will include the blower design criteria, existing control systems, and current operating practices/procedures.
   b. Develop a process model for the digester gas system using the information obtained from IEUA. The model will assume the addition of a third digester gas blower will be needed to meet the gas supply requirements of the new boiler and provide the redundancy/reliability needed for the overall system. The model results will be used to recommend modifications to the blowers (e.g., upsizing, incorporation of variable frequency drives, etc. as appropriate) as well upsizing and/or modifications to the existing digester gas piping where needed.
   c. Conduct a virtual follow up meeting (i.e., MS Teams call) with IEUA to review the process model findings and recommendations. Develop consensus for modifications to the digester gas system to incorporate into the design.
6. Develop design drawings, specifications, and opinion of probable cost for the new boiler and digester gas system modifications. The anticipated drawings to add to the project drawing set are presented in Table 1, and total 24.

Table 1 Anticipated Drawings Required for New Boiler

Drawing No.	Title
60M01	HOT WATER SCHEMATIC
60M02	GAS SCHEMATIC
60M03	BOILER AREA PLAN
60M04	PUMP AREA PLAN
60M05	BOILER AREA SECTIONS
60M06	PUMP AREA SECTIONS
60S01	BUILDING MODIFICATIONS PLAN
60S02	BUILDING MODIFICATIONS SECTIONS
60S03	BOILER PAD AND PIPE SUPPORT DETAILS
60S04	PUMP PAD AND PIPE SUPPORT DETAILS
00E48	BOILER 480 VOLT (V) MOTOR CONTROL CENTER (MCC) SINGLE LINE DIAGRAM
00E74	BOILER 480V MCC ELEVATION
00E91	BOILER CONTROL SCHEMATIC DIAGRAM
00E102	PANEL SCHEDULES 3
00E115	CABLE & CONDUIT SCHEDULES 6

Drawing No.	Title
XXE01	BOILER ELECTRICAL ROOM POWER AND CONTROL PLAN
XXE02	BOILER ELECTRICAL POWER AND CONTROL PLAN
XXE03	BOILER ELECTRICAL GROUNDING PLAN
XXE04	BOILER ELECTRICAL LIGHTING AND RECEPTACLE PLAN
XXE05	GAS BLOWERS POWER PLAN
XXN01	PROCESS AND INSTRUMENTATION DIAGRAM (P&ID) - BOILER 3
XXN02	P&ID - MAIN HEAT LOOP PIPING
XXN03	P&ID - BOILER SUMP PUMPS
XXN04	P&ID – DIGESTER GAS BLOWERS

Drawings and specifications for a new boiler were not provided in the 30 percent submittal, as the initial effort for this task had just begun at that stage. However, a planning level cost was developed at 30 percent. The effort to develop the cost at the 30 percent stage as well as the effort going forward to develop the drawings, specifications, and costs for the 60 percent, 90 percent, and 100 percent deliverable milestones are included in this task.

7. Incorporate construction requirements for the new boiler into the final version of DIM 13S, Preliminary Work Restrictions and Construction Schedule.

Deliverables:

- *Drawings, specifications, and opinion of probable cost for the 60 percent, 90 percent, 100 percent design milestones. Drawings, specifications, and cost will be submittal in electronic format as part of the combined set.*
- *Incorporate selected boiler details and design criteria into the Final DIM 13S. The Final DIM 13S will be submitted in electronic format as per the original scope of work.*

Task 3 – Update DIM 14, Digester Gas Beneficial Use Study

DIM 14 was originally developed as part of the 2019 PDR for RP-1 Liquids & Solids Capacity Recovery Project (EN24001 & EN24002). Per IEUA, this DIM was not updated as part of the current scope of work. However, IEUA has since provided recent updated review comments that they would like to have incorporated into an updated version of this document. Work to be conducted in this task will include incorporating the updated review comments into DIM 14 and reissuing the revised document to IEUA as DIM 14S, Digester Gas Beneficial Use Study.

Deliverables:

- *Updated Final DIM 14S submitted in electronic format.*

Task 4 – DAFT Rehabilitation and Modifications

The original scope of work included routing of scum from the Plant 2 Primary Clarifiers, Plant 3 Primary Clarifiers, and Secondary Clarifiers along with waste streams from the centrifuge wash cycle and digester cleaning lagoons directly to the new APD system. DAFTs 1 and 2 would be decommissioned and abandoned in place or demolished, as they would no longer be needed at RP-1. However, further analysis and discussions with IEUA conducted after the start of the project showed that rehabilitation of DAFTs 1 and 2 and modifying them for scum thickening upstream of the APD system could provide significant benefits; thickening the scum stream would reduce the flow volume to the APD system, which would decrease the required size of the APD units and the associated heat energy needed for operation/heating. In addition, thickening of scum in the rotary drum thickener (RDTs) is not recommended, as discussed in DIM 8S. Based on these findings, IEUA requested that the rehabilitation and modification of DAFTs 1 and 2 to provide scum thickening upstream of the APD system be incorporated into the project. During the DIM and 30 percent design review, a suggestion was made to consider scum concentrators instead of DAFTs for handling the scum. Accordingly, an evaluation of this treatment approach was carried out, which determined that rehabilitation of DAFTs 1 and 2 was still the preferred approach. Specific work required for this task includes the following:

1. Review the as-built drawings for DAFTs 1 and 2 to determine mechanical components that may need rehabilitation and/or modifications.
2. Perform a condition assessment and operational review of the DAFTs:
    a. The initial direction from IEUA for rehabilitation of the DAFTs was to address the mechanical and structural components of the system and that the electrical and I&C (EI&C) elements would not need to be addressed. With this approach, a site visit was conducted on January 11, 2022, to determine the mechanical and structural rehabilitation/modifications needed to the extent possible while the DAFTs were in operation. Carollo personnel also coordinated with plant staff while onsite to identify additional mechanical changes that would improve operation of the system.
    b. The approach above was carried through the 30 percent design submittal, after which IEUA provided direction that rehabilitation of the DAFT EI&C elements would also be needed. The decision to expand the effort beyond mechanical/structural stemmed from IEUA feedback indicating that the electrical was in poorer condition than initially thought, and that instrumentation and controls (I&C) was operationally limiting. The subtasks below will determine the EI&C rehabilitation needs and improvements for the DAFTs:
        i. Site trip to perform the EI&C condition assessment and an operation review.
        ii. Develop summary of findings and recommendations.
        iii. Review meeting with IEUA staff to review finding/recommendations.

3. Develop DIM 17S – Dissolved Air Flotation Thickener System Rehabilitation:
    a. Through the 30 percent design submittal, design criteria and requirements for the mechanical and structural rehabilitation/modification of DAFTs 1 and 2 along with a preliminary opinion of probable cost were developed. This information was incorporated into DIM 9S. Rehabilitation will entail demolition of existing DAFT mechanical components; replacement of mechanical components in kind with new unless otherwise stated; and concrete repairs as needed. Modifications rather than in-kind replacement will be made where appropriate to improve DAFT system operation or longevity; such modifications will be based on input from IEUA staff and equipment manufacturer recommendations as the design if further developed.
    b. With the direction to add EI&C rehabilitation of the DAFTs, the decision was made to capture the DAFT rehabilitation requirements in a stand-alone DIM 17S document. The mechanical/structural findings and information developed as noted above will be migrated from DIM 9S to DIM 17S. Furthermore, DIM 17S will capture the following:
        i. Scum Thickening Alternatives Analysis – Following the 30 percent submittal review, IEUA requested an analysis of scum concentrators be performed as an option to the rehabilitation of the DAFTs. The findings indicated that rehabilitation of the DAFTs would still be the preferred option.
        ii. Develop of criteria and requirements for the EI&C elements of the DAFTs to allow rehabilitation and implementation of improvements, as appropriate.
        iii. Preliminary opinion of probable cost.
4. Regular communication with IEUA's SCADA Migration Project team so that monitoring and control upgrades are incorporated into the SCADA upgrades for the DAFTs.
5. Develop design drawings, specifications, and opinion of probable cost for the rehabilitation and modifications to DAFTs 1 and 2. The anticipated drawings to add to the project drawing set are presented in Table 2, and total 35. Some of the new drawings were prepared and incorporated into the 30 percent design set to keep the project moving. Table 2 indicates which drawings were included and which still need to be developed.

Table 2 Anticipated Drawings Required for Rehabilitation and Modification of DAFTs 1 and 2

Drawing No.	Title	Developed for 30 Percent Set
42D01	DAFT NO. 1 AND NO. 2 UPPER PLAN AND SECTION	Yes
42D02	DAFT NO. 1 AND NO. 2 LOWER PLAN AND SECTIONS	Yes
42D03	SOLIDS MANAGEMENT BUILDING PLANS AND SECTIONS	Yes
42S01	DAFT NO. 1 AND 2 PLAN	No
42S02	DAFT NO. 1 AND 2 SECTION	No
42S03	DAFT NO. 1 AND 2 SECTIONS AND DETAILS	No
42S04	DAFT NO. 1 AND 2 DETAILS	No
42S05	DAFT NO. 1 AND 2 DETAILS	No

Drawing No.	Title	Developed for 30 Percent Set
42M01	DAFT NO. 1 AND 2 UPPER PLAN AND SECTION	Yes
42M02	DAFT NO. 1 AND 2 LOWER PLAN AND SECTIONS	Yes
42M03	SOLIDS MANAGEMENT BUILDING PLAN AND SECTION	Yes
42M04	DAFT NO. 1 AND 2 SECTIONS	No
42M05	DAFT NO. 1 AND 2 SECTIONS AND DETAILS	No
42M06	DAFT NO. 1 AND 2 DETAILS	No
00D01	ELECTRICAL DEMO PLAN	No
42E01	DAFT AREA ELECTRICAL PLAN	No
42E02	EXISTING SMB BUILDING ELECTRICAL PLAN	No
00E02	PRB BUILDING ELECTRICAL ROOM PLAN	No
00E16	MASTER SINGLE LINE DIAGRAM – 1	Yes
42E03	EXISTING SWBD-M SINGLE LINE DIAGRAM	No
42E04	MCC-4M ELEVATION DRAWING AND LOAD SUMMARY	No
42E05	MCC-4M SINGLE LINE DRAWING	No
42E06	DAFT CONTROL SINGLE LINE DRAWING 1	No
42E07	DAFT CONTROL SINGLE LINE DRAWING 2	No
42E08	DAFT AREA SCHEMATICS 1	No
42E09	DAFT AREA SCHEMATICS 2	No
42E10	DAFT AREA SCHEMATICS 3	No
42E11	DAFT AREA SCHEMATICS 4	No
GN09	INSTRUMENTATION DETAILS	No
42N01	P&ID - DAFT POLYMER STORAGE AND BLENDERS	Yes
42N02	P&ID - DAFT UNIT 1	Yes
42N03	P&ID - DAFT UNIT 2	Yes
42N04	P&ID - THICKENING SCUM WELLS AND PUMPS	Yes
42N05	P&ID DAFT UNIT 1 SATURATION TANK AND RECYCLE PUMP	No
42N06	P&ID DAFT UNIT 2 SATURATION TANK AND RECYCLE PUMP	No

The work already done for this project element includes Task 4 Subtasks 1, 2a, and 3a as described above, and development of the drawings noted in Table 2 for the 30 percent submittal. This work, along with the remaining anticipated effort to continue development of this project element through the 60 percent, 90 percent, and 100 percent deliverable milestones, is included in this task.

Deliverables:

- *Draft and Final DIM 17S submitted in electronic format.*
- *Drawings, specifications, and opinion of probable cost for the 60 percent, 90 percent, 100 percent design milestones. PCNs will also be developed and added to the specifications to address modified operation of DAFTs 1 and 2. Deliverable documents will be submitted in electronic format.*

Scope of Work Assumptions:

1. *Field condition assessments will consist of visual observations only. No power meter data collection, testing, ground testing, or voltage/current measurements will be completed.*
2. *Energized equipment will not be opened as part of the condition assessment.*
3. *It is assumed by the design and evaluation team that sufficient existing standby power is provided to the electrical distribution system for the DAFTs 1 and 2. Standby power condition assessment and recommendations are not part of the EI&C assessment.*
4. *DAFTs 1 and 2 equipment will be replaced with like kind and size.*
5. *Electrical distribution system capacity increase design is not included as part of this work.*
6. *EI&C condition assessment does not include SCADA improvements, programming, or radio path survey evaluation.*
7. *Complete or partial SCADA system cybersecurity analysis, patching, verification, and validation will not be provided.*
8. *Security, fire alarm, lightning protection, lighting, and audio-visual systems are not included in the condition assessment.*
9. *PLC cabinet as built drawing development is not included in this scope of work.*
10. *Design will not include CATV internet service, telephone service or system; or cathodic protection systems, additions, or modifications.*
11. *Electrical and control circuit wiring, cables, and conduit to be shown on single-line and control single-line diagrams.*

Task 5 – Changes to Demolition Drawings

The original scope of work included evaluating the demolition of the Belt Press Building. However, IEUA noted at the start of the project that this item should be viewed as an optional element, as it could be removed depending on how its demolition might impact other ongoing plant projects and existing plant operations. As the design was carried through the 30 percent stage, it was determined that demolition of the Belt Press Building would be removed and deferred to a future project. As such, its corresponding demolition sheet will be removed from the drawing set; this is presented in Table 3.

Table 3 Demolition Drawings to be Removed From Project

Drawing No.	Title	Developed for 30 Percent Set
4DD02	BELT PRESS BUILDING DEMOLITION	Yes

A credit for this demolition sheet will be credited to the project, less the work already performed to develop it to the 30 percent design stage.

Task 6 – Removal of 12 kV Electrical Building

The original scope of work included providing new 12 kV electrical service and a new electrical building to supply power to the new facilities in this project. However, a review of the existing RP-1 electrical infrastructure conducted during development of DIM 11S, Electrical, Instrumentation and Control, showed that the existing Power Reliability Building (PRB) has sufficient available capacity to meet these needs. IEUA agreed that the available capacity and facilities at the PRB could be allocated to this project, eliminating the need for a new service and a new electrical building. Therefore, the scope of work will be modified to remove the electrical building from the design and a credit will be issued to the project to reflect the reduced level of effort. The drawings to remove from the project drawing set are presented in Table 4; a total of 18.

Table 4 Removal of 12 KV Electrical Building – Drawings to be Removed From the Project

Drawing No.	Title
60V01	ELECTRICAL BUILDING GENERATOR ROOM 3D PERSPECTIVE
60S01	ELECTRICAL BUILDING NO. 1 FOUNDATION PLAN
60S02	ELECTRICAL BUILDING NO. 1 ROOF FRAMING PLAN
60S03	ELECTRICAL BUILDING NO. 1 SECTION 1
60S04	ELECTRICAL BUILDING NO. 1 SECTION 2
60M01	ELECTRICAL BUILDING GENERATOR ROOM PLAN
60M02	ELECTRICAL BUILDING GENERATOR ROOM SECTION AND DETAILS - 1
60H01	ELECTRICAL BUILDING NO. 1 AIR FLOW DIAGRAM
60H02	ELECTRICAL BUILDING NO. 1 FLOOR PLAN
60H03	ELECTRICAL BUILDING HVAC
60H04	ELECTRICAL BUILDING HVAC
00E51	12 KV SECTIONALIZING SWITCHGEAR NEW ELEVATION
00E52	12 KV SWITCHGEAR (NEW) ELEVATION
60E02	MAIN ELECTRICAL BUILDING POWER AND CONTROL PLAN - 1
60E03	MAIN ELECTRICAL BUILDING LAYOUT POWER AND CONTROL PLAN - 2
60E04	MAIN ELECTRICAL BUILDING LAYOUT LIGHTING PLAN
60E05	MAIN ELECTRICAL BUILDING LAYOUT GROUNDING PLAN
60E06	MAIN ELECTRICAL BUILDING SPECIAL SYSTEMS PLAN

Removal of the electrical building from the project did not eliminate the new electrical hardware needed for the new RDT and APD systems; these would now be housed in their entirety in the new Thickener Building. This necessitated increasing the size of the electrical room in the Thickening Building as well as the building itself. The added electrical hardware and revised building size also increased the magnitude and complexity of the building cooling requirements. To adequately design for the expanded cooling needs of the Thickener Building, additional HVAC sheets will be needed for the project. These are presented in Table 5; a total of 8 drawings to be added.

Table 5 Additional HVAC Drawings Required for New Thickener Building

Drawing No.	Title
43H01	HVAC PLAN
43H02	HVAC ROOF PLAN
43H03	AIRFLOW DIAGRAMS
43H04	HVAC SECTIONS
43H05	HVAC DETAILS
43H06	HVAC SCHEDULES
43H07	HVAC CONTROLS
43N13	HVAC P&ID

Based on the 18 drawings to be removed from the drawing set for the 12 kV electrical building and the 8 HVAC drawings to be added for the new Thickener Building, a net credit will be provided to the project for 10 deleted drawings.

Task 7 – Digestion Control Strategies

The original scope of work calls for developing PCNs for the new systems in this project to integrate the three-phase digestion process into the overall RP-1 system. However, IEUA has stated that the digester system will also need to retain the capability to operate as a single-phase process. IEUA is also currently conducting the separate SCADA Migration Project, which could affect or change some of the existing digester system controls. To minimize potential control continuity issues between this project and the SCADA Migration Project, while providing the operating flexibility desired, IEUA has requested that Carollo revise the PCN for the existing digester system after the changes from the SCADA Migration Project are completed so that the plant has the capability to operate in either single-phase or three-phase digestion modes. To this end, the following will be performed in this task:

- Revise the PCN for the existing digester system, as needed, once the changes from the SCADA Migration Project are complete that will allow single-phase operation as an option to three-phase operation.
- Conduct up to six review meetings with IEUA to review and comment on the PCNs. The intent of these additional meetings is to coordinate with IEUA I&C and plant staff so that consensus can be developed on a uniform control strategy and methodology that can be implemented to allow plant operation in either three-phase or single-phase digestion mode.

Deliverables:

- *Revised PCN for the existing digester system will be included in the final design specifications.*

Scope of Work Assumptions:

1. *The PCN for the existing digester system will be revised, assuming that modifications to allow single-phase digestion operation can be implemented through programming or software control changes. Changes that require the modification of existing hardware/instrumentation or addition of new hardware/instrumentation are not included in this scope of work.*

Task 8 – Update IEUA Asset Register

The original scope of work did not include updating the IEUA Asset Register, as our understanding was that IEUA would perform this update internally once the design is complete. However, IEUA has since requested that this be added to the project. Items to incorporate into the asset register include new mechanical equipment (motorized, electrically, pneumatically, or manually operated), new electrical equipment (MCCs, switchgear, transformers) as well as new instrumentation and control hardware for the following systems:

- DAFTs 1 and 2 and related support systems.
- APD and related support systems.
- Acid gas scrubbing system.
- RDT system and related support systems.
- New Boiler Unit and related support systems.
- New Odor Control System.
- Digester No. 1 (for components affected by this project).
- Primary Clarifier 3 Sludge Pumps (for components affected by this project).
- Secondary Clarifier Scum and Waste Activated Sludge Pumps (for components affected by this project).

Deliverables:

- *Updated IEUA Asset Register for IEUA RP-1 facility in MS Excel format.*

Task 9 – Acid Digester Gas Scrubbing Evaluation

The original scope of work included the design of iron sponges to condition the digester gas generated from the new APD system so that that the conditioned gas could be conveyed to the existing RP-1 flare system. The initial work done for this project element consisted of an analysis of iron sponge media using hydrogen sulfide concentration data from RP-1 to confirm that the media life would be acceptable. However, the findings suggested a media life shorter than initially anticipated, with replacement at 85-day intervals potentially being needed. Subsequent discussions with IEUA lead to the recommendation to investigate other options including technology and configuration alternatives. The work done for this task includes the following:

- Coordination with equipment manufacturers to determine technology options.
- Develop preliminary configuration options suitable for RP-1 for media technologies (iron sponge in single and dual train configurations; PureAir media; SulfaTreat media) and biological treatment systems. Also develop preliminary capital and media replacement cost information for each alternative to allow comparison.

- Conduct a workshop with IEUA to review the findings and develop consensus on a recommended technology and configuration to move forward with in the project design.
- Prepare an Attachment to DIM 9S to document the comparison of acid digester gas technologies, selection of the preferred approach, and design criteria and budget cost estimate for the selected system.

Budget

The additional new facilities that are being added to the project described above, such as the new boiler system and rehabilitation of DAFTs 1 and 2, are expected to add approximately $10.6 million to the project construction cost.

We have estimated a fee of $880,393 to complete the associated work presented in the tasks described above. A summary of the budget by task is presented in Table 6, and a detailed breakdown of tasks with anticipated level of effort and cost is included in Exhibit A. Negative values shown in Table 6 indicate areas where scope was reduced.

Table 6 Amendment Budget Summary by Task

Task	Budget Amount
1 – Stress Test Secondary Treatment Process to Confirm Current RP-1 Capacity	$77,009
2 – New Boiler for Digester Heating System	$298,440
3 – Update DIM 14, Digester Gas Beneficial Use Study	$10,850
4 – DAFT Rehabilitation and Modifications	$473,271
5 – Changes to Demolition Drawings	$(8,467)
6 – Removal of 12-kV Electrical Building	$(76,036)
7 – Digestion Control Strategies	$58,575
8 – Update IEUA Asset Register	$13,899
9 – Acid Digester Gas Scrubbing Evaluation	$32,854
Total Amendment No. 3	**$880,393**

We appreciate the opportunity to be of further service to you and IEUA for this important project. Should you require any additional information or have any questions, please let us know.

Sincerely,

CAROLLO ENGINEERS, INC.

Graham J.G. Juby, Ph.D., P.E.
Principal-in-Charge

Rajesh Doppalapudi, P.E., BCEE
Project Manager

GJJ/RBD:blm

Enclosures: Exhibit A

EXHIBIT A
Fee Estimate - Amendment No. 3
Carollo Engineers, Inc.
17-Jun-22

Inland Empire Utilities Agency
RP-1 Solids Thickening Project EN22044

		Carollo											Brown and Caldwell										Other Subconsultants					
Task No.	Task Description	Proj Lead	Proj Man	Lead Eng	Staff Eng	Techs & Eng Aides	Sup Staff	Total	Labor Cost	PECE Charges	Expenses	Carollo Totals	Proj Lead	Proj Man	Lead Eng	Staff Eng	Techs & Eng Aides	Sup Staff	Total	Labor Cost	Expenses	BC Totals	B&C Markup	Survey/ Pothole	Geotech	Architect Model	Landscape	Fire Protection/ Traffic	Totals
	Rates	*$300*	*$276*	*$216*	*$177*	*$133*	*$117*			*$ 13.00*			*$306*	*$273*	*$215*	*$137*	*$138*	*$115*											
1	**Stress Test Sec. Trmt. Process to Confirm Current RP-1 Capacity**																											
1.1	Test Plan																											
	Draft	1	2	16	32	0	1	52	$10,102	$676	$ -	$10,778	0	0	0	0	0	0	0	$0	$0	$0	$0						**$10,778**
	Final	1	1	4	8	0	1	15	$2,976	$195	$ -	$3,171	0	0	0	0	0	0	0	$0	$0	$0	$0						**$3,171**
1.2	Pre-Test Coordination Meeting	2	2	2	2	0	0	8	$1,939	$104	$ -	$2,043	0	0	0	0	0	0	0	$0	$0	$0	$0						**$2,043**
1.3	Site Visits (3)	0	32	32	8	0	0	72	$17,184	$936	$ 600	$18,720	0	0	0	0	0	0	0	$0	$0	$0	$0						**$18,720**
1.4	Develop BioWin Model																											
	Analysis of Stress Test Data	0	2	4	16	0	0	22	$4,254	$286	$ -	$4,540	0	0	0	0	0	0	0	$0	$0	$0	$0						**$4,540**
	Model Calibration and Development	2	2	32	24	0	0	60	$12,327	$780	$ -	$13,107	0	0	0	0	0	0	0	$0	$0	$0	$0						**$13,107**
1.5	Estimate Timing for MBR Conversion Based on Model Results																											
	Determine RP-1 Treatment Capacity Based on Model	4	8	2	2	0	0	16	$4,197	$208	$ -	$4,405	0	0	0	0	0	0	0	$0	$0	$0	$0						**$4,405**
	Develop Timeline for MBR Design/Construction	2	4	4	0	0	0	10	$2,570	$130	$ -	$2,700	0	0	0	0	0	0	0	$0	$0	$0	$0						**$2,700**
1.6	Stress Test and RP-1 Capacity Report																											
	Draft	2	16	4	36	2	4	64	$13,002	$832	$ -	$13,834	0	0	0	0	0	0	0	$0	$0	$0	$0						**$13,834**
	Final	1	4	2	8	0	2	17	$3,490	$221	$ -	$3,711	0	0	0	0	0	0	0	$0	$0	$0	$0						**$3,711**
2	**New Boiler for Digester Heating System**																											
2.1	Detailed Analysis of Boiler System Using Updated Plant Data	0	2	8	8	0	0	18	$3,701	$234	$ -	$3,935	0	0	0	0	0	0	0	$0	$0	$0	$0						**$3,935**
2.2	Review (E) Gas and Hot Water Systems and AQMD Requirements	0	2	14	0	0	0	16	$3,581	$208	$ -	$3,789	0	0	0	0	0	0	0	$0	$0	$0	$0						**$3,789**
2.3	Obtain/Review Current Digester Gas Data and Vendor Coordination	0	0	8	0	0	0	8	$1,730	$104	$ -	$1,834	0	0	0	0	0	0	0	$0	$0	$0	$0						**$1,834**
2.4	(N) Boiler Siting																											
	Site Visit	0	0	16	0	0	0	16	$3,460	$208	$ 600	$4,268	0	0	0	0	0	0	0	$0	$0	$0	$0						**$4,268**
	Preliminary Layouts and Costs	0	8	44	0	0	0	52	$11,727	$676	$ -	$12,403	0	0	0	0	0	0	0	$0	$0	$0	$0						**$12,403**
	Coordination Meeting for Preferred Site	3	6	21	8	0	0	38	$8,517	$494	$ -	$9,011	0	0	0	0	0	0	0	$0	$0	$0	$0						**$9,011**
2.5	Evaluate (E) DG Blower System																											
	Obtain/Review Info for (E) DG Blowers	0	0	8	0	0	0	8	$1,730	$104	$ -	$1,834	0	0	0	0	0	0	0	$0	$0	$0	$0						**$1,834**
	Develop Process Model for DG System	2	4	16	24	0	0	46	$9,419	$598	$ -	$10,017	0	0	0	0	0	0	0	$0	$0	$0	$0						**$10,017**
	Review Meeting to Discuss Findings and Recommended Modifications	2	2	2	2	0	0	8	$1,939	$104	$ -	$2,043	0	0	0	0	0	0	0	$0	$0	$0	$0						**$2,043**
2.6	Drawings, Specifications, and Opinion of Cost																											
	Drawings																											
	Structural	8	16	32	64	80	12	212	$37,123	$2,756	$ -	$39,879	0	0	0	0	0	0	0	$0	$0	$0	$0						**$39,879**
	Mechanical	18	30	60	120	150	18	396	$69,978	$5,148	$ -	$75,126	0	0	0	0	0	0	0	$0	$0	$0	$0						**$75,126**
	Electrical	0	0	0	0	0	0	0	$0	$0	$ -	$0	0	15	50	120	131	0	316	$49,363	$0	$49,363	$2,468						**$51,831**
	Instrumentation and Controls	0	0	0	0	0	0	0	$0	$0	$ -	$0	0	0	62	0	131	0	193	$31,408	$0	$31,408	$1,570						**$32,978**
	Specifications	0	8	16	24	32	0	80	$14,179	$1,040	$ -	$15,219	0	0	0	0	0	0	0	$0	$0	$0	$0						**$15,219**
	Submittal Preparation																											
	60-Percent	0	0	0	0	0	8	8	$937	$104	$ -	$1,041	0	0	0	0	0	0	0	$0	$0	$0	$0						**$1,041**
	90-Percent	0	0	0	0	0	8	8	$937	$104	$ -	$1,041	0	0	0	0	0	0	0	$0	$0	$0	$0						**$1,041**
	100-Percent	0	0	0	0	0	8	8	$937	$104	$ -	$1,041	0	0	0	0	0	0	0	$0	$0	$0	$0						**$1,041**
	Bid Set	0	0	0	0	0	8	8	$937	$104	$ -	$1,041	0	0	0	0	0	0	0	$0	$0	$0	$0						**$1,041**
	Opinion of Cost (60%, 90%, 100%)	1	4	8	12	0	2	27	$5,497	$351	$ -	$5,848	0	0	15	0	0	0	15	$3,225	$0	$3,225	$161						**$9,234**
	QA/QC Check (for all Deliverables)	24	24	0	0	0	0	48	$13,825	$624	$ -	$14,449	20	0	0	0	0	0	20	$6,120	$0	$6,120	$306						**$20,875**
3	**Update DIM 14, Digester Gas Beneficial Use Study**																											
3.1	Update DIM 14, Digester Gas Beneficial Use Study	2	4	24	16	0	4	50	$10,200	$650	$ -	$10,850	0	0	0	0	0	0	0	$0	$0	$0	$0						**$10,850**

EXHIBIT A
Fee Estimate - Amendment No. 3
Carollo Engineers, Inc.
17-Jun-22

Inland Empire Utilities Agency
RP-1 Solids Thickening Project EN22044

		Carollo											Brown and Caldwell											Other Subconsultants					
Task No.	Task Description	Proj Lead	Proj Man	Lead Eng	Staff Eng	Techs & Eng Aides	Sup Staff	Total	Labor Cost	PECE Charges	Expenses	Carollo Totals	Proj Lead	Proj Man	Lead Eng	Staff Eng	Techs & Eng Aides	Sup Staff	Total	Labor Cost	Expenses	BC Totals	B&C Markup	Survey/ Pothole	Geotech	Architect Model	Landscape	Fire Protection/ Traffic	Totals
	Rates	*$300*	*$276*	*$216*	*$177*	*$133*	*$117*			*$ 13.00*			*$306*	*$273*	*$215*	*$137*	*$138*	*$115*											
4	**DAFT Rehabilitation and Modifications**																												
4.1	Review Record Drawings	0	0	16	6	0	0	22	$4,524	$286	$ -	$4,810	0	0	4	0	0	0	4	$860	$0	$860	$43						**$5,713**
4.2	Conduct Site Visit for Condition Assessment and Operational Review																												
	Site Visit and Coordination																												
	Mechanical and Structural	0	6	10	6	0	0	22	$4,885	$286	$ 600	$5,771	0	0	0	0	0	0	0	$0	$0	$0	$0						**$5,771**
	EI&C	0	8	8	0	0	0	16	$3,941	$208	$ 600	$4,749	0	0	16	0	0	0	16	$3,440	$1,500	$4,940	$247						**$9,936**
	Summary Documenting Findings and Recommendations	0	4	8	0	0	0	12	$2,836	$156	$ -	$2,992	0	0	16	0	0	0	16	$3,440	$0	$3,440	$172						**$6,604**
	Review Meeting for Findings and Recommendations	2	6	6	2	0	0	16	$3,910	$208	$ -	$4,118	0	0	8	0	0	0	8	$1,720	$0	$1,720	$86						**$5,924**
4.3	DIM 17S - DAFT Rehabilitation																												
	Scum Thickening Alternatives Analysis	0	8	20	0	0	0	28	$6,537	$364	$ -	$6,901	0	0	0	0	0	0	0	$0	$0	$0	$0						**$6,901**
	Develop Criteria and Requirements	0	6	8	4	0	0	18	$4,098	$234	$ -	$4,332	0	0	0	8	0	0	8	$1,096	$0	$1,096	$55						**$5,482**
	Opinion of Probable Cost	0	2	8	1	0	0	11	$2,460	$143	$ -	$2,603	0	0	0	8	0	0	8	$1,096	$0	$1,096	$55						**$3,754**
	Draft DIM	2	8	12	12	0	4	38	$8,001	$494	$ -	$8,495	0	0	0	24	0	0	24	$3,288	$0	$3,288	$164						**$11,948**
	Final DIM	2	4	8	2	0	2	18	$4,024	$234	$ -	$4,258	0	0	0	4	0	0	4	$548	$0	$548	$27						**$4,833**
4.4	Drawings, Specifications, and Opinion of Cost																												
	Drawings (30% Submittal)																												
	Demolition	0	0	12	0	8	0	20	$3,659	$260	$ -	$3,919	0	0	0	0	0	0	0	$0	$0	$0	$0						**$3,919**
	Structural	0	0	0	0	0	0	0	$0	$0	$ -	$0	0	0	0	0	0	0	0	$0	$0	$0	$0						**$0**
	Mechanical	0	2	34	0	20	0	56	$10,565	$728	$ -	$11,293	0	0	0	0	0	0	0	$0	$0	$0	$0						**$11,293**
	Instrumentation and Controls	0	2	16	0	0	0	18	$4,013	$234	$ -	$4,247	0	0	0	0	0	0	0	$0	$0	$0	$0						**$4,247**
	Drawings (Beyond 30%)																												
	Demolition	6	15	15	54	58	6	154	$27,172	$2,002	$ -	$29,174	0	0	0	0	0	0	0	$0	$0	$0	$0						**$29,174**
	Structural	0	0	80	80	120	0	280	$47,433	$3,640	$ -	$51,073	0	0	0	0	0	0	0	$0	$0	$0	$0						**$51,073**
	Mechanical	18	28	54	101	110	18	329	$59,443	$4,277	$ -	$63,720	0	0	0	0	0	0	0	$0	$0	$0	$0						**$63,720**
	Electrical	0	0	0	0	0	0	0	$0	$0	$ -	$0	20	20	135	156	125	8	464	$80,147	$750	$80,897	$4,045						**$84,942**
	Instrumentation and Controls	4	4	16	22	32	4	82	$14,386	$1,066	$ -	$15,452	0	0	140	0	125	10	275	$48,500	$750	$49,250	$2,463						**$67,164**
	Specifications	0	8	16	24	32	0	80	$14,179	$1,040	$ -	$15,219	0	0	56	0	0	0	56	$12,040	$0	$12,040	$602						**$27,861**
	Submittal Preparation																												
	60-Percent	0	0	0	0	0	8	8	$937	$104	$ -	$1,041	0	0	0	0	0	0	0	$0	$0	$0	$0						**$1,041**
	90-Percent	0	0	0	0	0	8	8	$937	$104	$ -	$1,041	0	0	0	0	0	0	0	$0	$0	$0	$0						**$1,041**
	100-Percent	0	0	0	0	0	8	8	$937	$104	$ -	$1,041	0	0	0	0	0	0	0	$0	$0	$0	$0						**$1,041**
	Bid Set	0	0	0	0	0	8	8	$937	$104	$ -	$1,041	0	0	0	0	0	0	0	$0	$0	$0	$0						**$1,041**
	Opinion of Cost (60%, 90%, 100%)	1	6	12	12	0	4	35	$7,149	$455	$ -	$7,604	0	0	0	40	0	0	40	$5,480	$0	$5,480	$274						**$13,358**
	QA/QC Check (for all Deliverables)	35	35	0	0	0	0	70	$20,161	$910	$ -	$21,071	76	0	0	0	0	0	76	$23,256	$0	$23,256	$1,163						**$45,490**
5	**Changes to Demolition Drawings**																												
5.1	Net Credit for Demo Drawings Removed From Project																												
	Demo Drawing Development through 30% Design	0	0	2	8	4	0	14	$2,382	$182	$ -	$2,564	0	0	0	0	0	0	0	$0	$0	$0	$0						**$2,564**
	Full Cost for Demo Drawings to Delete (Full Credit Amount)	-2	-5	-9	-18	-22	-2	-58	($10,277)	($754)	$ -	($11,031)	0	0	0	0	0	0	0	$0	$0	$0	$0						**($11,031)**
6	**Removal of 12 kV Electrical Building**																												
6.1	Credit for Drawings Removed From Project	0	0	0	0	0	0	0	$0	$0	$ -	$0	-25	-50	-150	-200	-250	-125	-800	($129,825)	($175)	($130,000)	($6,500)						**($136,500)**
6.1	Additional Sheets For More Complex RDT Building HVAC	0	0	0	0	0	0	0	$0	$0	$ -	$0	10	25	65	85	110	60	0	$57,585	$0	$57,585	$2,879						**$60,464**
7	**Digestion Control Strategies**																												
7.1	Revise PCN for Existing Digesters	8	24	28	40	24	0	124	$25,366	$1,612	$ -	$26,978	2	4	5	0	0	0	11	$2,779	$0	$2,779	$139						**$29,896**
7.2	Review Meetings (6 meetings)	12	24	42	24	0	0	102	$23,567	$1,326	$ -	$24,893	4	4	6	0	0	0	14	$3,606	$0	$3,606	$180						**$28,679**
8	**Update IEUA Asset Register**																												
8.1	Update Asset Register	0	2	16	48	0	4	70	$12,989	$910	$ -	$13,899	0	0	0	0	0	0	0	$0	$0	$0	$0						**$13,899**
9	**Acid Digester Gas Scrubbing Evaluation**																												
9.1	Coordinate with Equipment Manufacturers	0	4	8	24	0	0	36	$7,090	$468	$ -	$7,558	0	0	0	0	0	0	0	$0	$0	$0	$0						**$7,558**
9.2	Develop Technology Options	0	4	12	24	0	0	40	$7,955	$520	$ -	$8,475	0	0	0	0	0	0	0	$0	$0	$0	$0						**$8,475**
9.3	Conduct Workshop (incl. Prep and Follow up)	3	6	11	13	0	0	33	$7,240	$429	$ -	$7,669	0	0	0	0	0	0	0	$0	$0	$0	$0						**$7,669**
9.4	Prepare DIM 9S Attachment for Selected Technology and Approach	2	8	16	12	0	2	40	$8,632	$520	$ -	$9,152	0	0	0	0	0	0	0	$0	$0	$0	$0						**$9,152**
	Total	**168**	**402**	**864**	**915**	**650**	**150**	**3,149**	**$ 614,459**	**$ 40,937**	**$ 2,400**	**$ 657,796**	**107**	**18**	**428**	**245**	**372**	**-47**	**768**	**$ 209,172**	**$ 2,825**	**$ 211,997**	**$ 10,600**	**$0**	**$0**	**$0**	**$0**	**$0**	**$ 880,393**

ACTION ITEM 2B

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: July 20, 2022

To: The Honorable Board of Directors **From:** Shivaji Deshmukh, General Manager

Committee: Engineering, Operations & Water Resources *07/13/22*

Staff Contact: Christiana Daisy, Deputy General Manager

Subject: RMPU Project Construction Contract Change Order Ratification

Executive Summary:

On June 16, 2021, the Board of Directors awarded the construction contract for the Project No. RW15003.06 to MNR Construction, Inc. in the amount of $15,480,880 for the construction of the Wineville/Jurupa/Force Main groundwater recharge improvements. The project will yield approximately 2,921 acre-feet per year (AFY) of captured storm water and 2,905 AFY of recycled water for groundwater recharge. As part of the Recharge Master Plan Update (RMPU), Chino Basin Watermaster is fully funding the stormwater improvements with available SRF loans and nearly $9.0 million in grants. During construction, MNR potholed the path of the new 30-inch force main pipeline on Jurupa Road and identified buried utilities not shown on the construction plans. These additional utilities required revisions to the bid documents to avoid conflicts. The changes resulted in added cost of materials and labor above MNR's bid price. Inland Empire Utilities Agency (IEUA) is requesting ratification of the change order in the amount of $188,188.27 with MNR for the additional material cost for manufacturing the pipe to meet the revised alignment and avoid utility conflicts. Currently, IEUA is still in negotiation with MNR on the final price to implement the revised plans. Due to material availability concerns and to reduce delay on the project, IEUA is requesting ratification of the change order on just the 30-inch pipeline. This is a 1.2% increase to MNR's contract.

Staff's Recommendation:

1. Ratify the change order for the construction contract for the Wineville, Jurupa, Force Main, Project No. RW15003.06, to MNR Construction, Inc. in the amount of $188,188.27.

Budget Impact *Budgeted (Y/N):* Y *Amendment (Y/N):* N *Amount for Requested Approval:*

Account/Project Name:

RW15003.06/Wineville, Jurupa, Force Main

Fiscal Impact (explain if not budgeted):

None.

Full account coding (internal AP purposes only): 1000 - 10300 - 126100 - 4235000 Project No.: RW15003

Prior Board Action:

On June 16, 2021, the Board of Directors awarded the construction contract for the Project No. RW15003.06 to MNR Construction, Inc. in the amount of $15,480,880.

On June 21, 2017, the Board of Directors awarded consulting engineering services for all RMPU projects under RW15003.00, to Carollo Engineers, Inc. for the not-to-exceed amount of $1,510,628.

Environmental Determination:

Program Environmental Impact Report (Finding of Consistency)

The RMPU Project was under a comprehensive Program Environmental Impact Report which the Board adopted as complete on March 15, 2017. Within this report specific mitigation measures are a part of the Project that will be implemented under the attached Mitigation Measures and Reporting Program (MMRP).

Business Goal:

The RMPU Project is consistent with the IEUA's Business Goal of Water Reliability specifically the Groundwater Recharge objective that IEUA will maximize groundwater recharge projects in the region through strategic, cost-effective partnerships, and development.

Attachments:

Attachment 1 - PowerPoint Presentation

Attachment 1

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Recharge Master Plan Update Project Change Order Ratification

Joel Ignacio, PE
Senior Engineer
July 20, 2022

Project Location

Basin Projects	Additional Recharge Goal	
	Stormwater	Recycled Water
San Sevaine Basin	642	4,100
Lower Day Basin	993	-
Victoria Basin	75	120
Montclair Basins	96	-
Wineville, Jurupa, RP3 Basins	2,921	2,905
Total:	**4,727**	**7,125**

Project Background/Scope

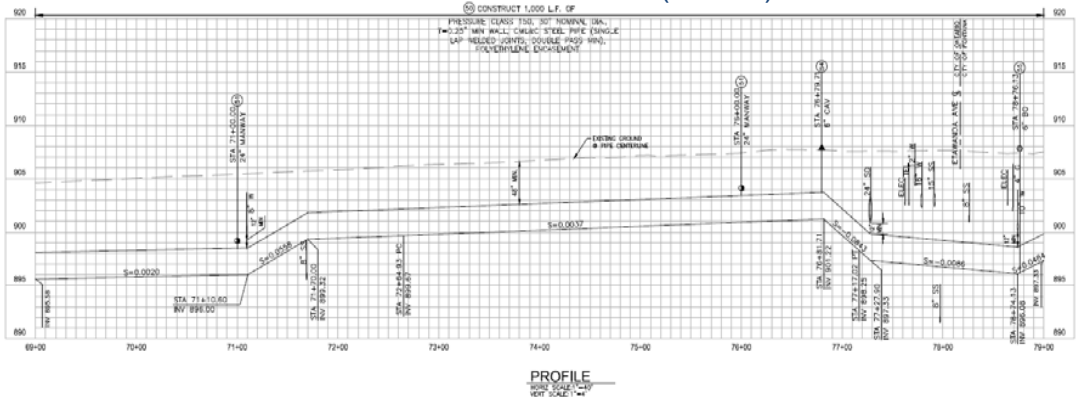
Project Benefit:

- Increase stormwater recharge to 2,921 acre-feet per year
- Increased recycled water 2,905 acre-feet per year (with RP-3)

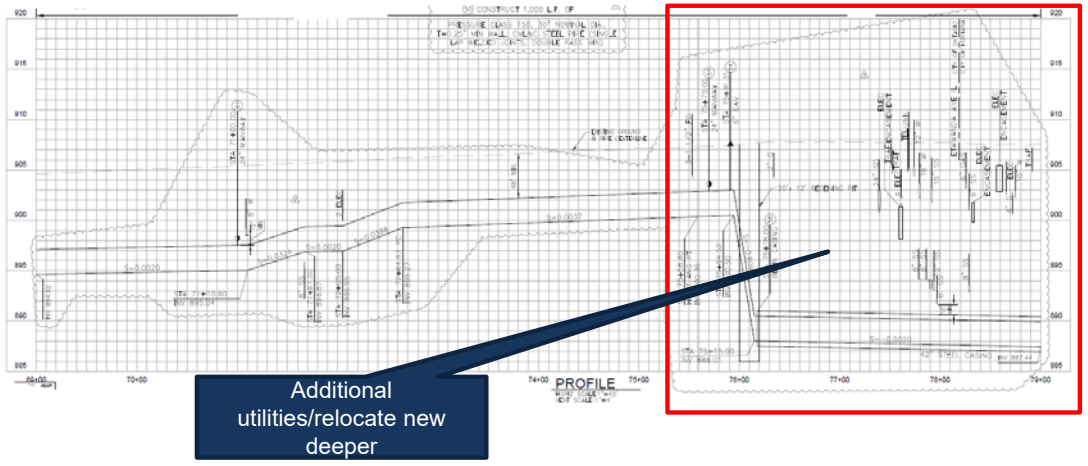
Change of Conditions

- Initial plans (Bid Documents)
  - Design documented approximately 44 buried utilities
- Constructor's field investigation
  - Identified 89 buried utilities
- Immediate changes made to bid sheets
  - Designer updated pipeline alignment
  - Revised 17 sheets of the construction plans
- Impacts
  - Additional material cost on manufacturing pipe (this action)
  - Changes in laying the pipe (pending negotiation on final cost $2.5M)

Initial Construction Plan (1 of 17)

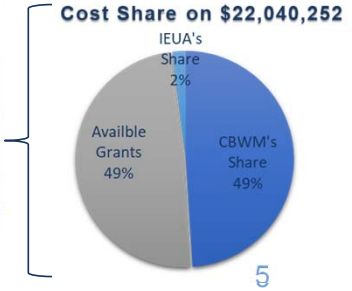


Revised Construction Plan (1 of 17)



Project Budget

Description	Cost
Design Services (Actuals)	**$1,960,940**
Preliminary Design Contract	$269,300
Design Contract	$1,500,000
Environmental/Permits/Bid/Admin	$191,640
Construction Services (Projected/actuals)	**$1,231,044**
Design Consultant Construction Services (projected/actual)	$397,977
IEUA Construction Services (projected)	$833,067
Construction (Projected/Actuals)	**$17,028,968**
Construction Contract (MNR's Contract)	$15,480,880
Ratification on Additional Pipe Material for Revised Pipe Alignment (this action)	$188,189
Remaining Contingencies	$1,359,900
Total Project Cost (for RW15003.06):	**$20,220,952**
Total Project Cost (for RW15003.05 & RW15003.06)	**$24,004,424**
Current Budget (for RW15003.00):	**$24,004,424**



Recommendations

- Ratify the change order for the construction contract for Project No. RW15003.06 to MNR Construction, Inc. in the amount of $188,188.27.

The RMPU Project is consistent with the ***IEUA's Business Goal of Water Reliability*** specifically the Groundwater Recharge objective that IEUA will maximize groundwater recharge projects in the region through strategic, cost-effective partnerships, and development.

Engineering, Operations, and Water Resources Committee

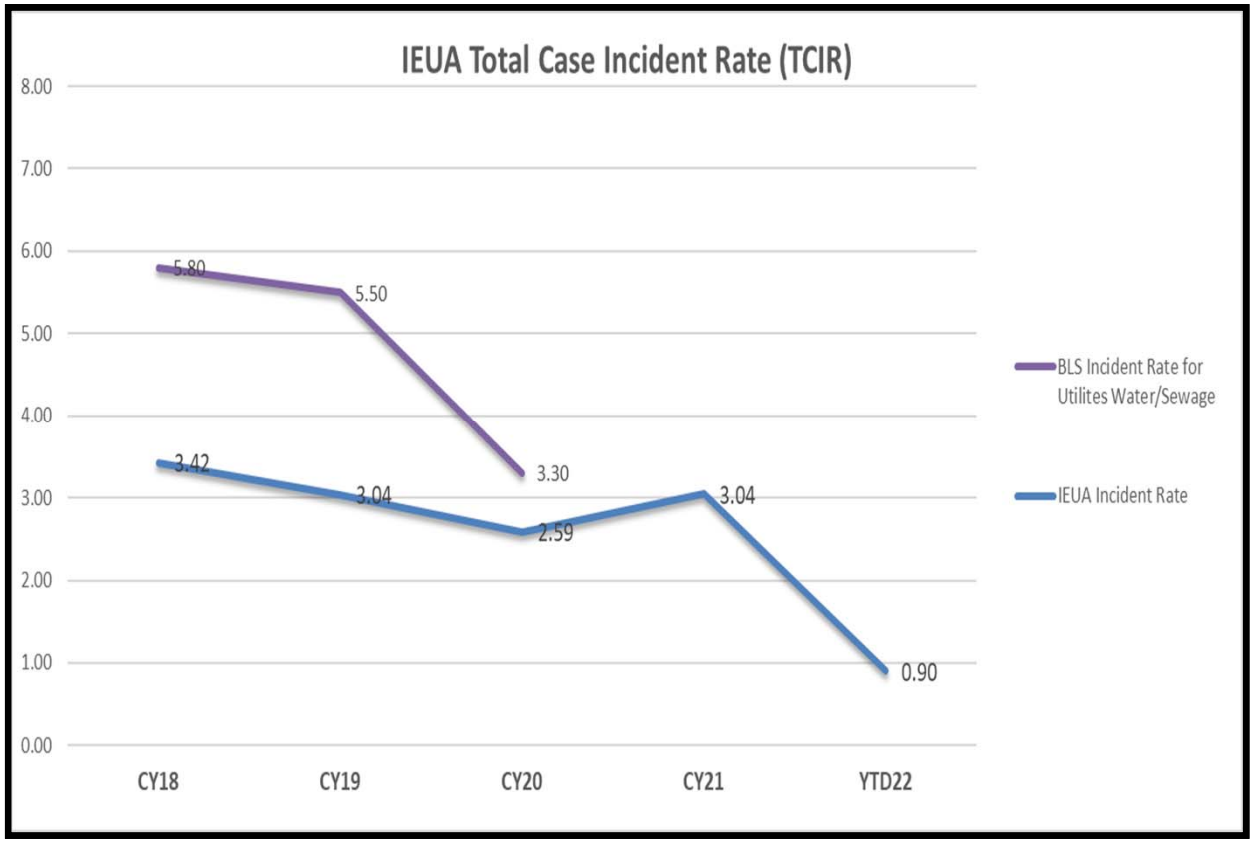
INFORMATION ITEM 3A

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Operations & Maintenance Department Quarterly Update

Lucia Fuertez Diaz
Manager of Facilities & Water System Programs
July 2022

Safety Statistics



A recordable injury is an injury that resulted in more than first aid treatment.

hours worked does not include June hours rate will be lower

As of 6/15/2022

Stretch Exercise Pilot Program

- Regional Plant No. 4
  - —Sewer Collections, Operations & Maintenance staff
- Team Feedback
  - —Enjoying the morning stretch
  - —Feel better throughout the work shift

Operations

- **Agency Wide**: NPDES permit is updated
- **RP-1 and RP-4**: Install of CL2 analyzers at RP-1 & RP-4
- **RP-5**: Title V AQMD permit
- **RP-1 and RP-5**: Annual Title V AQMD Inspections
- **Educational Outreach:** Facility tours and participated in several career fairs.

Mutual Aid Coordination

- Sewer Collections Team hosted the first ever Multi-Agency Sanitary Sewer Overflow Drill.
- Total of 6 Agencies/Cities
- Training consisted of multiple SSO simulations and bypass support.
- Hosted first meeting between member Agencies for the Sewer Collections and Environmental Compliance teams.

Operational Challenges

- RP-2 Stockpile at drying beds
- CCWRF ammonia due to local manufacture
- CCWRF foaming incident
- Increase in Fats, Oils, and Grease (FOG) & Ragging

IERCA Update

- Celebrate IERCA's milestones
  - —Selling 3 million cubic yards of compost
  - —US Composting Council Manufacturer of the Year Award
  - —California Water Environment Association Safety Plant of the Year Award

Hyperion Water Reclamation Plant Tour

- Members of Technical Resources Division leadership attended.
- Collaborations with other leaders.
- LA City Sanitation leaders provided a plant tour and overview of their incident.

Engineering, Operations, and Water Resources Committee

INFORMATION ITEM 3B

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

4th Quarter Planning & Resources Update

Pietro Cambiaso
Acting Director of Planning & Resources
July 2022

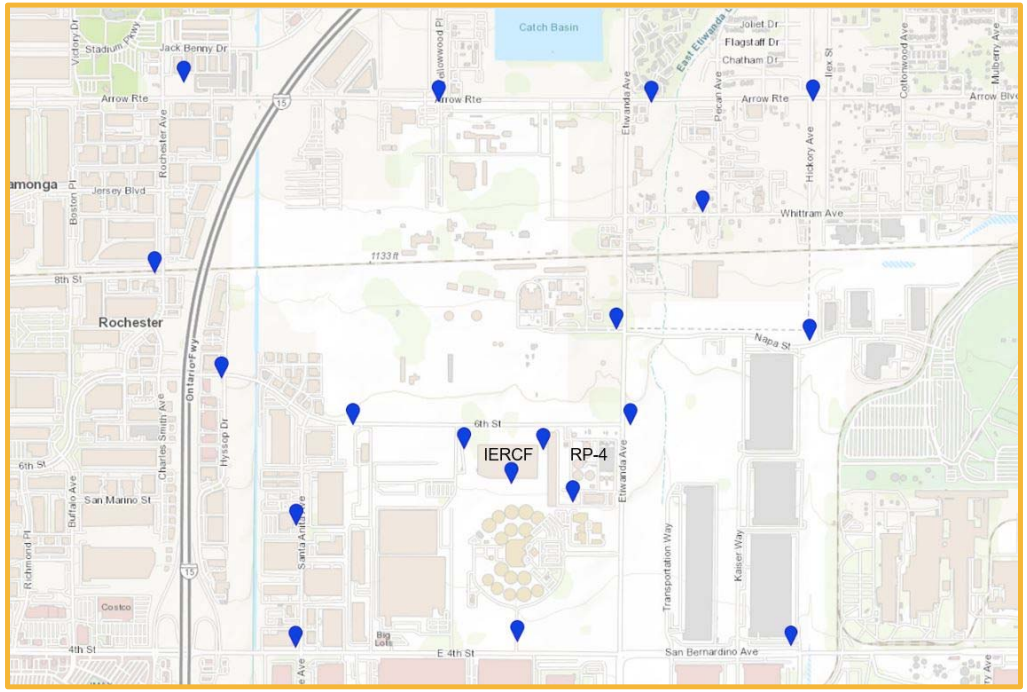
Topics

- Air Quality and Odor Survey
- Pretreatment and Source Control
- Wastewater & Recycled Water
- Groundwater Recharge
- IEUA Flow & Loading Study
- Dry Year Yield (DYY) Program
- Chino Basin Day

Air Quality and Odor Survey

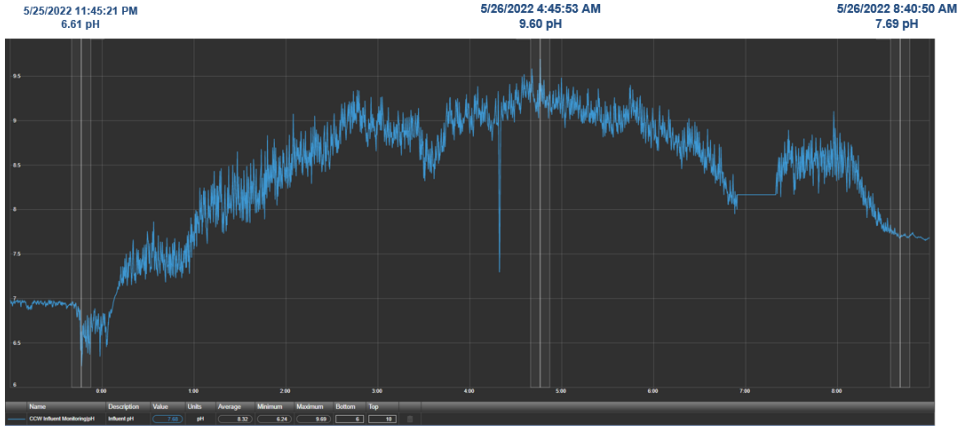
- South Coast Air Quality Management District
  - No compliance issues
  - RP-1 and RP-5 Title V inspection (4/7/2022)

- Quarterly Odor Survey
  - Voluntary not a compliance requirement
  - Pre-determined locations near the perimeter of each IEUA facility
  - Panelists from member agencies and IEUA staff
    - Intensity rating
    - Odor description



Pretreatment and Source Control

- CCWRF high pH Incident (5/26/2022)
  - Impact to Operations
    - Flow diversion to RP-1 and equalization basin
    - Increased chlorine demand
  - Source found from joint investigation
    - Collaboration with City of Chino
    - Ice manufacturer anhydrous ammonia leak
    - Enforcement and cost recovery pending



Sewerage System	Permits Issued	Inspections Completed	Notice of Violations Issued	Notice of Violations Resolved
Regional Sewerage System	4	6	4	1
Non-Reclaimable Wastewater System North (NRWS and Etiwanda Wastewater Line)	2	16	3	1
Non-Reclaimable Wastewater System South (Inland Empire Brine Line)	0	7	0	0

Wastewater & Recycled Water

- Compliance with National Pollutant Discharge Elimination System (NPDES) permit

- Waste discharge requirements, master recycling permit, and NPDES permit adoption (6/3/2022)
  - Effective 8/1/2022
    - Laboratory, operations and maintenance staff training
    - Implementation of new monitoring and reporting requirements
  - Significant Revisions
    - Asset management program
    - Climate change action plan
    - Toxicity requirements
    - 1,2,3-Trichloropropane (1,2,3-TCP) monitoring
    - PFAS monitoring

Groundwater Recharge

- 1,2,3-Trichloropropane (1,2,3-TCP) Maximum Contaminant Level (MCL) Exceedance
  - Accelerated weekly monitoring
  - Investigation and Mitigation Plan
    - Method assessment plan
    - Fate and transport

- PFOA Notification Level (NL) Exceedance
  - Accelerated weekly monitoring
  - Corrective action report (May 2022)
  - Collaboration with other Agencies and Associations

- Operation and Maintenance Streambed Alteration Agreement
  - Submitted amendment and extension application to California Department of Fish and Wildlife
  - Long-term maintenance agreement for groundwater recharge facilities

IEUA Flow & Loading Study

- Evaluate wastewater flow volumes and strength in various regional sewer trunkline locations
  - Assist with growth forecasting and IEUA treatment plant improvement projects
  - Validate sewer hydraulic model calibration
  - Support Expanded Return to Sewer Study team to improve study accuracy

- Approved project in the Fiscal Year 2022/23 - 2031/32 Ten-Year Capital Improvement Plan
  - Consultant will be hired through Planning Master Services Contract
  - Project start date July 2022
  - Project completion August 2023

Dry Year Yield (DYY) Program

- Groundwater Storage Program with Metropolitan Water District of Southern California (MWD), Inland Empire Utilities Agency (IEUA), Three Valleys Municipal Water District (TVMWD), and Chino Basin Watermaster (CBWM)

- Program provides up to 100,000 acre-feet (AF) of storage in a MWD storage account in the Chino Basin
  - MWD stored 63,324 AF (2017 – 2022)
  - 63,324 AF of withdrawals (2017 – 2022)
  - Account storage balance is currently at 0 AF

Chino Basin Day

- Annual meeting to provide updates on ongoing and future projects, and discuss coordination efforts with the Regional Water Quality Control Board

- Topics discussed:
  - Maximum benefit salt and nutrient management activities
  - Chino Desalter Authority operations
  - Status of compliance
  - Hydraulic control analysis
  - Chino Basin Program
  - Water supply and drought

Engineering, Operations, and Water Resources Committee

INFORMATION ITEM 3C

Inland Empire Utilities Agency
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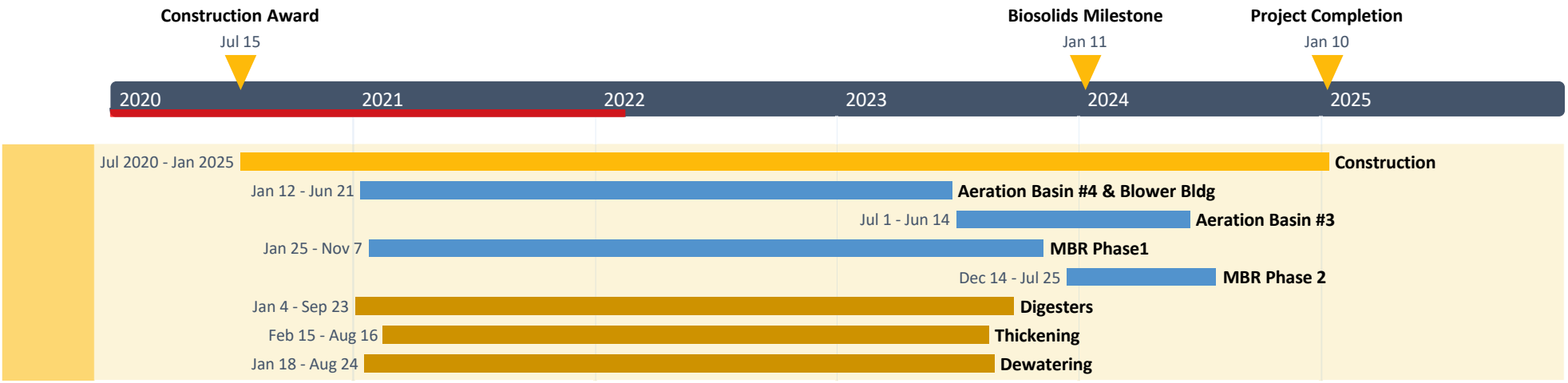
RP-5 Expansion Project Update:
July 2022
Project Nos. EN19001 and EN19006

Brian Wilson, P.E., CCM
Principal Engineer
July 2022

RP-5: Project Status

Day 715 of 1640 = 44%



Role	Firm	Contract	This Month's Payment	Total Paid	% Complete
Contractor	WM Lyles	$334,061,867	$8,106,356	$152,484,426	46%
Designer	Parsons	$33,670,711	$360,000	$30,935,537	92%
Construction Management	Arcadis	$21,125,523	$400,000	$8,467,536	40%

Data date: 6/30/2022

RP-5: Project Change Status

	Amount	Quantity
Original Contract	$329,982,900	
Change Order (CO)	$ 4,078,967	132
Request For Deviation (RFD)	$ 3,019,815	145
Changes Total (CO+RFD)	**$7,098,782**	**264**
% Change of Contract	2.2%	
% of Contingency Used	21.5%	

Change Type	Amount $ Millions	% Of Changes
Design Errors & Omissions	$ 3.1	44%
Agency Requested	$2.6	37%
Differing Site Conditions	$ 2.0	28%
Contractor Requested	$ -0.7	-10%

RP-5: Major Activity Areas

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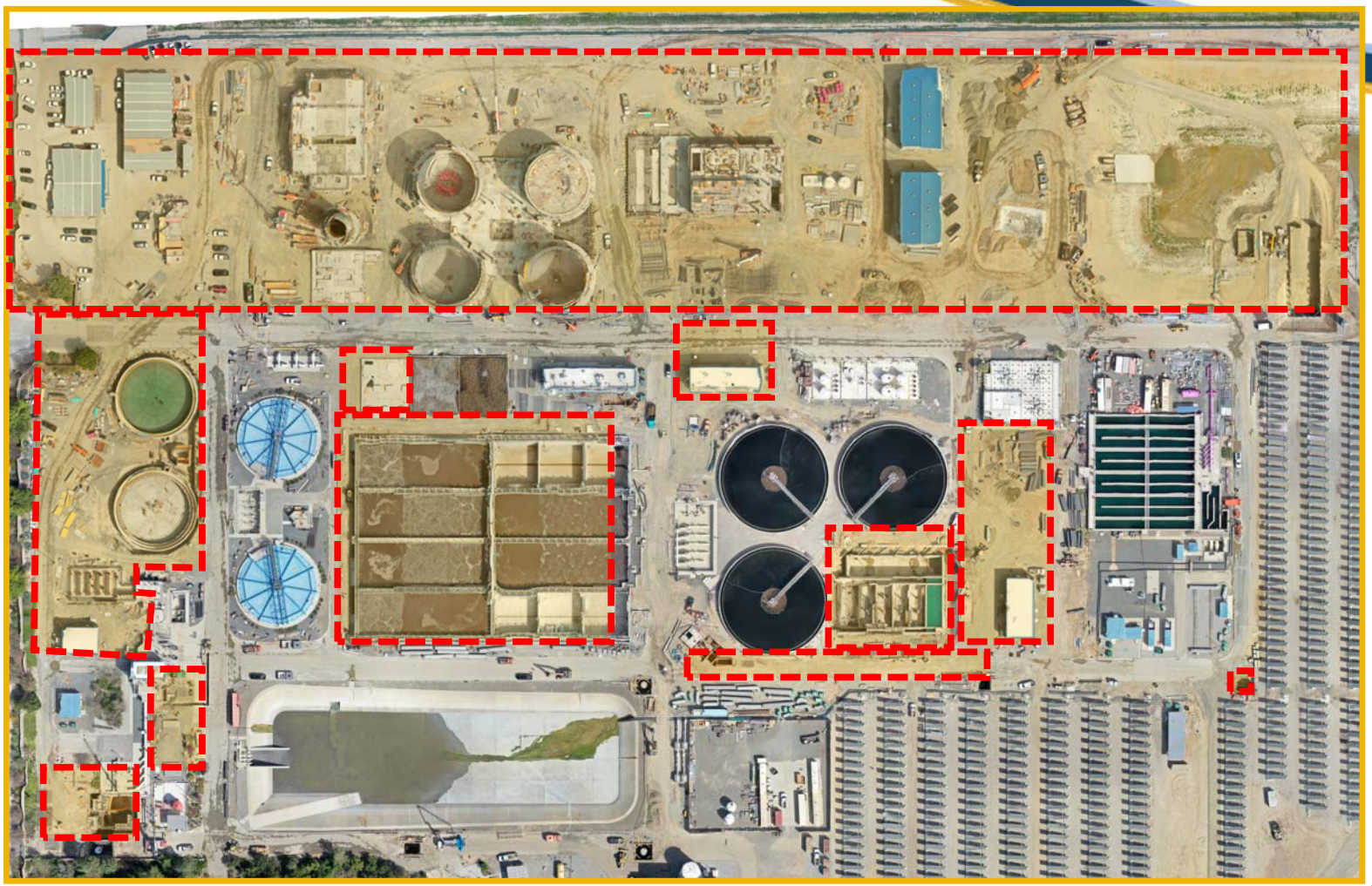
Construction Staff

- **WML Craft: 219**
- **WML Project: 34**
- **IEUA & CM: 17**
- **Total: 270**



RP-5: Major Activities

Influent Pump Station

RP-5: Major Activities

Fine Screens

RP-5: Major Activities

Primary Clarifiers

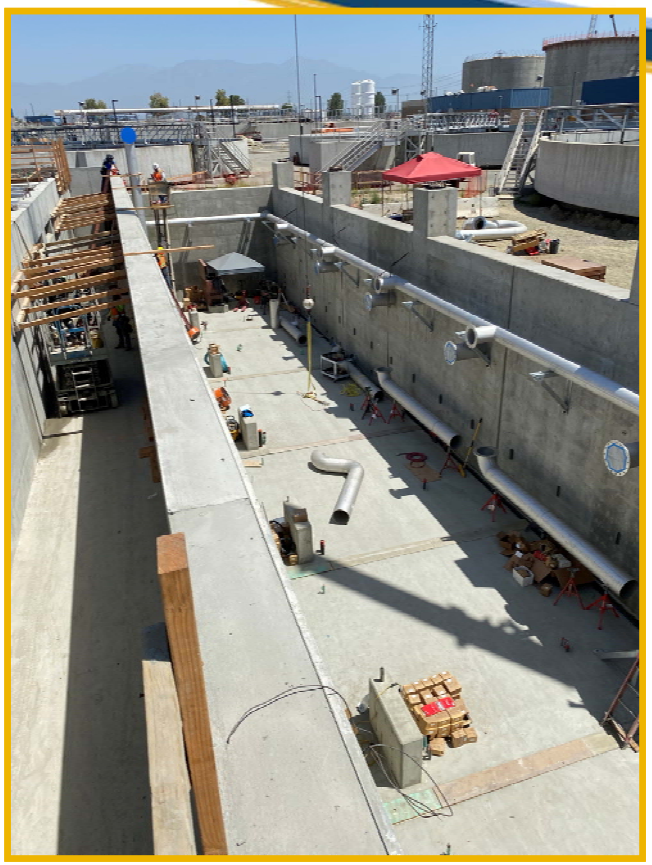
RP-5: Major Activities

Main Odor Control

RP-5: Major Activities

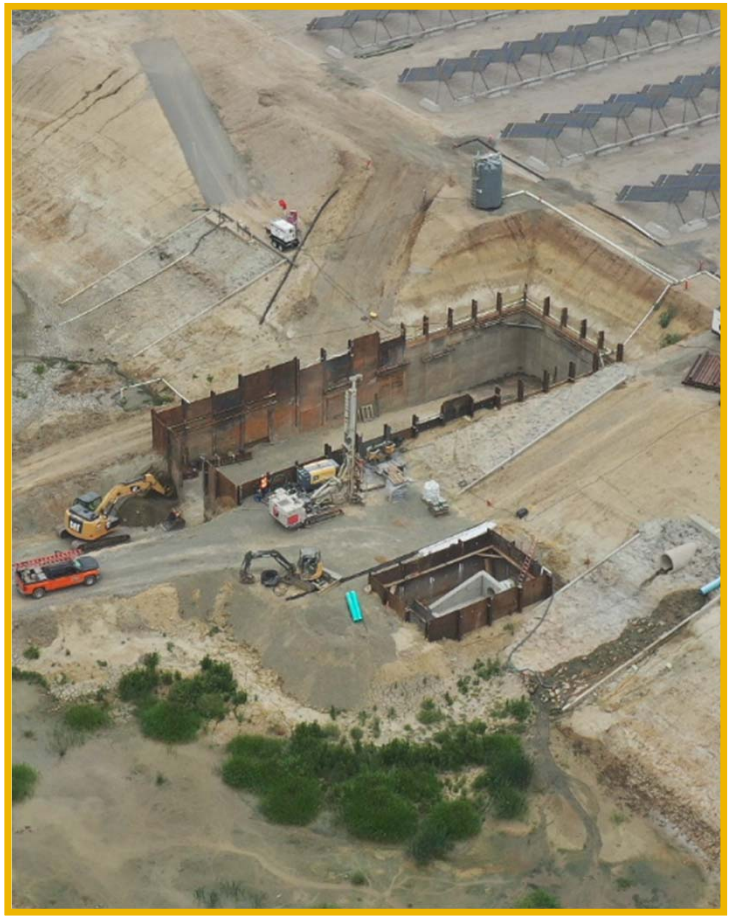
Blower Building #2

RP-5: Major Activities



MBR Phase 1 Pump Gallery & Basins

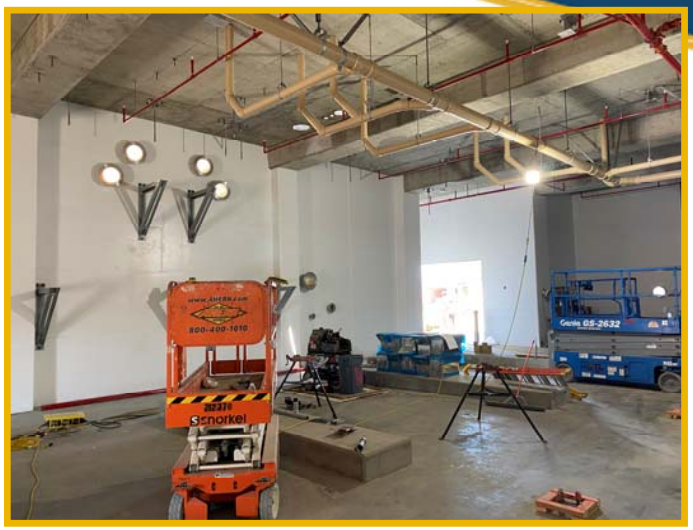
RP-5: Major Activities



Emergency Overflow Pond Pumps Station

RP-5: Major Activities

Exterior



Sludge Feed

Polymer Room

Thickening Building

RP-5: Major Activities

Interior

Exterior

Acid Phase Digester Building

RP-5: Major Activities

Interior

Exterior

Gas Phase Digester Building

RP-5: Major Activities

Interior

Exterior

Dewatering Building

RP-5: Major Activities

Boiler Building

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Questions?

INFORMATION ITEM 3D

Inland Empire Utilities Agency
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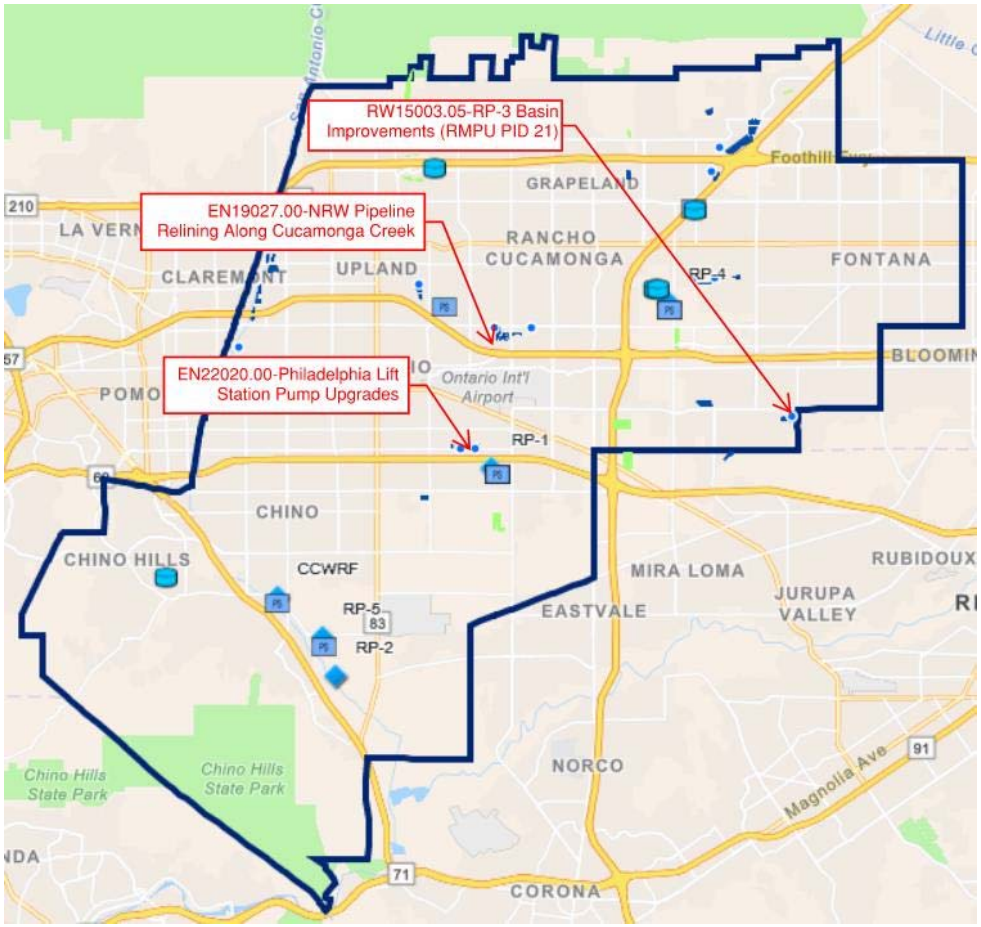
Engineering and Construction Management Project Updates

Jason Marseilles, PE

Manager of Engineering and Construction Management

July 2022



Project Location Map

Philadelphia Lift Station Pump Upgrades

Project Goal: Rehabilitate/Repair Existing Assets

Existing Generator

Total Project Budget: $2.5M
Project Completion: January 2025
Design Percent Complete: 10%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design (Current)	Stantec Consulting, Inc.	$287k	0%
Construction	TBD	$0	0%

Project Management Team	
Project Manager:	Biesiada, Josh
Assistant/Associate Engineer:	Trott, Megan
Administrative Assistant:	Wallace & Associates
Inspector:	TBD

RP-3 Basin Improvements

Project Goal: Increase Efficiency

Total Project Budget: $1.8M
Project Completion: July 2022
Construction Percent Complete: 75%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design	Carollo	$137k	21%
Construction (Current)	Metro Builders/James McMinn, Inc.	$705k	4%
Project Management Team			
Project Manager:	Ignacio, Joel		
Assistant/Associate Engineer:	Wood & Associates		
Administrative Assistant:	GK & Associates		
Inspector:	Jones, Nick		

Butterfly Valve

NRW Pipeline Relining Along Cucamonga Creek

Project Goal: Extend Asset Life

Total Project Budget: $2.3M
Project Completion: May 2022
Construction Percent Complete: 100%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design	Michael Baker International	$127k	305%
Construction (Current)	Charles King Company	$1.4M	-0.57%

Project Management Team	
Project Manager:	Zughbi, Jamal
Assistant/Associate Engineer:	Ferrer, Karen
Administrative Assistant:	Wood Consulting
Inspector:	GK & Associates