



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

**WEDNESDAY, AUGUST 14, 2019
9:45 A.M.**

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 it appears on the agenda, are requested to complete and submit to the Board Secretary a "Request to Speak" form which is available on the table in the Board Room. 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.

1. ACTION ITEMS

A. MINUTES

The Committee will be asked to approve the Engineering, Operations, and Water Resources Committee meeting minutes of July 10, 2019.

**B. PROJECT MANAGEMENT AND ENGINEERING SUPPORT SERVICES
CONTRACT AGGREGATION**

Staff recommends that the Committee/Board:

1. Approve consultant services contract amendments for the following contracts for an aggregate amount of \$600,000; and

- 4600002051 Wallace & Associates Consulting, Inc.
- 4600002052 Carollo Engineers, Inc.
- 4600002152 MWH Constructors
- 4600002054 GK & Associates

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

C. RP-5 EXPANSION DESIGN CONTRACT AMENDMENT

Staff recommends that the Committee/Board:

1. Approve a consulting engineering services contract amendment for the RP-5 Expansion, Project No. EN19001 and EN19006 to Parsons Water and Infrastructure Inc., in the amount of \$517,494; and
2. Authorize the General Manager to execute the consulting engineering services contract amendment, subject to non-substantive changes.

D. RP-1 DIGESTER NO. 6 REPAIRS PROJECT CONSTRUCTION CHANGE ORDER

Staff recommends that the Committee/Board:

1. Approve a construction change order for the RP-1 Digester 6 Repairs, Project No. EN17042 to W.A. Rasic Construction Inc., for the not-to-exceed amount of \$160,000; and
2. Authorize the General Manager to execute the change order, subject to non-substantive changes.

E. RP-1 DIGESTER GAS REPAIRS EMERGENCY PROJECT

Staff recommends that the Committee/Board:

1. Ratify the emergency project approval for the RP-1 Digester Gas Repairs in the amount of \$111,600; and
2. Authorize the General Manager to approve the emergency task order, subject to non-substantive changes.

F. PAVEMENT MANAGEMENT MASTER SERVICES TASK ORDER

Staff recommends that the Committee/Board:

1. Award Task Order No. 001 to Bucknam Infrastructure Group for a not-to-exceed amount of \$101,394; and
2. Authorize the General Manager to execute the task order, subject to non-substantive changes.

G. RATIFICATION OF CONTRACT AMENDMENT FOR ELY BASIN INFILTRATION RESTORATION

Staff recommends that the Committee/Board:

1. Ratify Contract Amendment No. 4600002733-001 to Jeremy Harris Construction, Inc., for the Ely Basin Infiltration Restoration Services for \$280,500 and a not-to-exceed total contract value of \$529,050; and

2. Ratify a budget amendment for FY 2018/19 Groundwater Recharge professional fees budget in the amount of \$280,500 to support the proposed cost of the Ely Basin cleaning.

H. RATIFICATION OF CONTRACT AMENDMENT RP-3 BASIN INFILTRATION RESTORATION

Staff recommends that the Committee/Board:

1. Ratify Contract Amendment No. 4600002713-002 with Jeremy Harris Construction, Inc., in the amount of \$89,443.28 for the RP-3 Basin Infiltration Restoration Services; and
2. Authorize the General Manager to execute the amendment.

2. INFORMATION ITEM

A. PLANNING & ENVIRONMENTAL RESOURCES UPDATE (ORAL)

RECEIVE AND FILE INFORMATION ITEM

B. ENGINEERING AND CONSTRUCTION MANAGEMENT PROJECT UPDATES (POWERPOINT)

3. GENERAL MANAGER'S COMMENTS

4. COMMITTEE MEMBER COMMENTS

5. COMMITTEE MEMBER REQUESTED FUTURE AGENDA ITEMS

6. ADJOURN

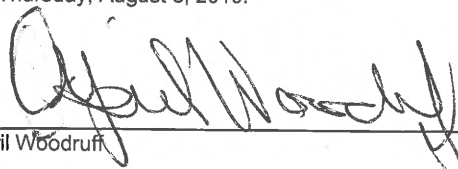
*A Municipal Water District

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Board Secretary (909-993-1736), 48 hours prior to the scheduled meeting so that the Agency can make reasonable arrangements.

Proofed by: jh

DECLARATION OF POSTING

I, April Woodruff, Board Secretary/Office Manager of the Inland Empire Utilities Agency, A Municipal Water District, hereby certify that a copy of the agenda has been posted by 5:30 p.m. in the foyer at the Agency's main office, 6075 Kimball Ave., Building A, Chino, CA on Thursday, August 8, 2019.



April Woodruff

**ACTION
ITEM
1A**



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

**WEDNESDAY, JULY 10, 2019
9:45 A.M.**

COMMITTEE MEMBERS PRESENT

Michael Camacho, Chair
Kati Parker

COMMITTEE MEMBERS ABSENT

None

STAFF PRESENT

Shivaji Deshmukh, General Manager
Kathy Besser, Executive Manager of External Affairs & Policy Development/AGM
Randy Lee, Executive Manager of Operations/AGM
Christina Valencia, Executive Manager of Finance & Administration/AGM
Adham Almasri, Senior Engineer
Jerry Burke, Deputy Manager of Engineering
Pietro Cambiaso, Deputy Manager of Planning & Environmental Resources
Sylvie Lee, Manager of Planning & Environmental Resources
Lisa Morgan-Perales, Senior Water Resources Analyst
Cathleen Pieroni, Manager of Government Relations
John Scherck, Senior Project Manager
Travis Sprague, Senior Associate Engineer
Wilson To, Technology Specialist II
April Woodruff, Board Secretary/Office Manager

OTHERS PRESENT

Jasmin Hall, IEUA

The meeting was called to order at 9:56 a.m. There were no public comments received or additions to the agenda.

ACTION ITEMS

The Committee:

- ◆ Approved the Engineering, Operations, and Water Resources Committee meeting minutes of June 12, 2019.

◆ Recommended that the Board:

1. Award a construction contract for the RP-1 Primary Effluent Conveyance Improvements Phase II, Project No. EN5012.01, to J.R. Filanc Construction, Inc., for the not-to-exceed amount of \$1,853,777; and
2. Authorize the General Manager to execute the contract, subject to non-substantive changes;

as a Consent Calendar Item on the July 17, 2019 Board meeting agenda.

◆ Recommended that the Board:

1. Execute the license agreement with BNSF Railway Company for a not-to-exceed amount of \$163,569; and
2. Authorize the General Manager to negotiate and execute the agreement, subject to non-substantive changes;

as a Consent Calendar Item on the July 17, 2019 Board meeting agenda.

INFORMATION ITEMS

The following information items were presented or received and filed by the Committee:

- ◆ 4th Quarter Planning & Environmental Resources Update
- ◆ Engineering and Construction Management Project Updates

GENERAL MANAGER'S COMMENTS

There were no General Manager comments.

COMMITTEE MEMBER COMMENTS

There were no Committee member comments.

COMMITTEE MEMBER REQUESTED FUTURE AGENDA ITEMS

There were no Committee member requests for future agenda items.

With no further business, Director Camacho adjourned the meeting at 10:13 a.m.

Respectfully submitted,

April Woodruff
Board Secretary/Office Manager

*A Municipal Water District

APPROVED: AUGUST 14, 2019

**ACTION
ITEM
1B**



Date: August 21, 2019

To: The Honorable Board of Directors

From: Shivaji Deshmukh, General Manager ASD

Committee: Engineering, Operations & Water Resources

08/14/19

Finance & Administration

08/14/19

Executive Contact: Shaun Stone, Acting Executive Manager of Engineering/AGM

Subject: Project Management and Engineering Support Services Contract Aggregation

Executive Summary:

In February 2016, the Board of Directors approved four master service contracts with Carollo Engineers, Inc., GK & Associates, MWH Constructors, and Wallace & Associates Consulting, Inc., for on-call “as needed” project management, engineering, administration, and construction inspection support services for a total aggregate amount of \$6,000,000.

The needs of the Ten-Year Capital Improvement Plan (TYCIP) have remained consistent since this action. To meet the demands of the TYCIP, IEUA plans to continue utilizing project management support for all phases of a project's life cycle. This program has been very effective, and as a result, staff will be preparing a Request for Proposal (RFP) to solicit consulting firms for continued support. Staff will be posting the RFP with a planned board award date of December 2019.

To maintain continuity during the RFP process process, staff recommends an aggregate contract amendment in the amount of \$600,000 for the additional three months of support services during the RFP process, increasing the aggregate from \$6,000,000 to \$6,600,000.

Staff's Recommendation:

1. Approve consultant services contract amendments for the following contracts for an aggregate amount of \$600,000; and

- 4600002051 Wallace & Associates Consulting, Inc.
- 4600002052 Carollo Engineers, Inc.
- 4600002152 MWH Constructors
- 4600002054 GK & Associates

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

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

Account/Project Name:

Multiple capital projects and department O&M budget under various program funds.

Fiscal Impact (explain if not budgeted):

As of June 2019, current expenditures on each contract are as follows:

Wallace & Associates Consulting, Inc. - \$1,007,990; Carollo Engineers, Inc. - \$1,295,093; MWH Constructors - \$594,259; GK & Associates - \$2,502,092; Total expenditures to date are \$5,400,000.

Full account coding (internal AP purposes only):

- - -
- - -

Project No.: Various

Prior Board Action:

On May 16, 2018, the Board of Directors approved the Project Management, Engineering, and Staff Augmentation Support Services Contract Aggregation.

On February 17, 2016, the Board of Directors awarded three-year contracts to Carollo Engineers, Inc., GK & Associates, MWH Constructors, and Wallace & Associates Consulting, Inc., for a not-to-exceed total amount of \$1,500,000 for each contract for a total of \$6,000,000.

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 will be subject to future environmental evaluation.

Business Goal:

The project management, engineering, and construction inspection staff augmentation master contract is part of IEUA's Wastewater Management Business Goal that IEUA is committed to meeting regional demands in an environmentally responsible and cost effective manner.

Attachments:

Attachment 1 - 4600002054 GK & Associates Contract Amendment

Attachment 2 - 4600002152 MWH Constructors Contract Amendment

Attachment 3 - 4600002052 Carollo Engineers, Inc., Contract Amendment

Attachment 4 - 4600002051 Wallace & Associates Consulting, Inc., Contract Amendment

Attachment 1



**MASTER SERVICES CONTRACT
AMENDMENT NUMBER: 4600002054-003**

FOR

CONSTRUCTION PROJECT MANAGEMENT SERVICES

THIS CONTRACT AMENDMENT THREE is made and entered into this ____ day of _____, 2019, by and between the Inland Empire Utilities Agency (hereinafter interchangeably "IEUA" and "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, and EC & AM Associates, Inc., dba GK and Associates with offices in Diamond Bar, California (hereinafter referred to as "Consultant"), for provision of project management, engineering and construction staff augmentation support services, and shall revise the Contract as herein amended:

SECTION F., PAYMENT, COMPENSATION, and INVOICING, IS REVISED TO REPLACE THE SECOND PARAGRAPH AS FOLLOWS: In compensation for the additional requisite work represented by this Contract Amendment, Agency shall pay Consultant a **NOT-TO-EXCEED maximum aggregate total of \$6,600,000.00** for all services provided. This represents a net increase of **\$600,000.00** to the aggregate total of four (4) similar Contracts of which this is one.

ALL OTHER PROVISIONS OF THIS CONTRACT REMAIN UNCHANGED.

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

**INLAND EMPIRE UTILITIES AGENCY:
(A Municipal Water District)**

**EC & AM ASSOCIATES, INC., DBA
GK AND ASSOCIATES:**

Shivaji Deshmukh
General Manager

(Date)

Ghazala Khan
President

(Date)

Attachment 2



**MASTER SERVICES CONTRACT
AMENDMENT NUMBER 4600002152-002
FOR
CONSTRUCTION PROJECT MANAGEMENT SERVICES**

THIS CONTRACT AMENDMENT TWO is made and entered into this _____ day of _____, 2019, 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 MWH Constructors, Inc., with offices in Pasadena, California and Broomfield, Colorado (hereinafter referred to as "Consultant"), for provision of project management, engineering and construction staff augmentation support services previously exercised on Master Services Contract 4600002053 and hereby assigned to Contract 4600002152 via Contract Amendment 4600002053-001, shall revise the Contract as herein amended:

SECTION F., PAYMENT, COMPENSATION, and INVOICING, IS REVISED TO ADD THE FOLLOWING PARAGRAPH: In compensation for the additional requisite work represented by this Contract Amendment, Agency shall pay Consultant a **NOT-TO-EXCEED maximum aggregate total of \$6,600,000.00** for all services provided. This represents a net increase of **\$600,000.00** to the aggregate total of four (4) similar Contracts of which this is one.

ALL OTHER PROVISIONS OF THIS CONTRACT REMAIN UNCHANGED.

AS WITNESS HEREOF, the parties hereto have caused the above Amendment item to be entered. as of the day and year written above.

**INLAND EMPIRE UTILITIES AGENCY:
(a Municipal Water District)**

MWH CONSTRUCTORS, INC:

Shivaji Deshmukh
General Manager

(Date)

Randy Lovan
Principal-In-Charge
Construction Management Services
Area Manager – Inland Empire

(Date)

Attachment 3



**MASTER SERVICES CONTRACT
AMENDMENT NUMBER 4600002052-002
FOR
CONSTRUCTION PROJECT MANAGEMENT SERVICES**

THIS CONTRACT AMENDMENT TWO is made and entered into this ____ day of _____, 2019, 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 as "Agency"), and Carollo Engineers, Inc., with offices in Walnut Creek, California (hereinafter referred to as "Consultant"), for provision of project management, engineering and construction staff augmentation support services, and shall revise the Contract as herein amended:

SECTION F., PAYMENT, COMPENSATION, and INVOICING, IS REVISED TO ADD THE FOLLOWING PARAGRAPH: In compensation for the additional requisite work represented by this Contract Amendment, Agency shall pay Consultant a **NOT-TO-EXCEED maximum aggregate total of \$6,600,000.00** for all services provided. This represents a net increase of **\$600,000.00** to the aggregate total of four (4) similar Contracts of which this is one.

ALL OTHER PROVISIONS OF THIS CONTRACT REMAIN UNCHANGED.

[Signature Page Immediately Follows]

AS WITNESS HEREOF, the parties hereto have caused the above Amendment item to be entered. as of the day and year written above.

INLAND EMPIRE UTILITIES AGENCY:

CAROLLO ENGINEERS, INC.:

Shivaji Deshmukh
General Manager

(Date)

Dr. Graham Juby, P.E.
Vice President/Principal-In-Charge

(Date)

Eric M. Mills, P.E.
Senior Vice President

(Date)

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Attachment 4



**MASTER SERVICES CONTRACT AMENDMENT NUMBER 4600002051-004
FOR
CONSTRUCTION PROJECT MANAGEMENT SERVICES**

THIS CONTRACT AMENDMENT FOUR is made and entered into this ____ day of _____, 2019, 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 "Agency" and "IEUA") and Wallace & Associates Consulting, Inc., with offices in Corona, California and Park City, Utah (hereinafter referred to as "Consultant"), for provision of project management, engineering and construction staff augmentation support services, and shall revise the contract as amended:

SECTION F., PAYMENT, COMPENSATION, and INVOICING, ADDS THE FOLLOWING

PARAGRAPH: In compensation for the additional requisite work represented by this Contract Amendment, Agency shall pay Consultant a **NOT-TO-EXCEED maximum aggregate total of \$6,600,000.00** for all services provided. This represents a net increase of **\$600,000.00** to the aggregate total of four (4) similar Contracts of which this is one. Current rate sheet is attached.

ALL OTHER PROVISIONS OF THIS CONTRACT REMAIN UNCHANGED.

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

**INLAND EMPIRE UTILITIES AGENCY:
(A Municipal Water District)**

**WALLACE & ASSOCIATES
CONSULTING, INC:**

Shivaji Deshmukh (Date)
General Manager

Heidi Nesper (Date)
Office Manager

Bryan Tuschhoff (Date)
Operations Manager

Wallace & Associates Consulting, Inc.

HOURLY FEE SCHEDULE

July 1, 2019 through June 30, 2020

Inland Empire Utility Agency

Fully Burdened Billing Rates

Position	Rate / Range
Project Principal/Project Manager	\$ 180.00 to \$ 200.00
<i>Carl Wallace, PE</i>	\$ 180.00
Project Managers / Construction Managers	\$ 148.00 to \$ 175.00
<i>Project Manager</i>	\$ 170.00
<i>Deputy Project Manager</i>	\$ 158.00
<i>Construction Manager</i>	\$ 165.00
<i>Deputy Construction Manager</i>	\$ 148.00
Project Engineer	\$ 106.00 to \$ 180.00
<i>Chief Engineer</i>	\$ 180.00
<i>Cost / Sched Engineer</i>	\$ 168.00
<i>Project Engineer</i>	\$ 132.00
<i>Office Engineer</i>	\$ 125.00
Senior Construction Inspector	Prevailing Wage & Off-Site
<i>CM/ Inspector</i> <i>Jin Chong</i>	\$ 140.00
<i>Supervising Inspector</i>	\$ 136.00
<i>Senior Inspector</i> <i>Rick Barajas</i>	\$ 128.00
<i>Senior Inspector</i> Late and night shift	\$ 142.00
<i>Senior Inspector</i> Overtime	\$ 176.00
<i>Senior Inspector</i> Doubletime	\$ 210.00
Labor Compliance Auditor Specialist	\$ 80.00 to \$ 110.00
<i>Labor Compliance Manager</i>	\$ 150.00
<i>Senior Labor Compliance Specialist</i>	\$ 100.00
<i>Labor Compliance Interviewer/Auditor</i>	\$ 84.00
Office Staff	\$ 80.00 to \$ 90.00
<i>Contract Administrator</i>	\$ 84.00
<i>Senior Project Administrator</i>	\$ 80.00
<i>Project Administrator</i> <i>Margie Saldibar</i>	\$ 52.00

NOTES:

Rates are inclusive - Rates include related costs: professional liability insurance, overhead, vehicle, vehicle insurance, fuel, vehicle maintenance, laptop computer, heat gun, probe, smart level, cell phone and calling plan, digital camera and standard tools and equipment. All other direct expenses (Plan Reproduction, Large Printing jobs and Delivery/ Mail) will be billed at cost plus 12%. W&A does not charge job mileage, drive time or mileage to work.

Premium Time for Inspectors - Swing or Night Shift will be charged at Shift Differential Rate. Overtime for inspection staff will be used for any Overtime and Saturdays and Double Time for holidays and Sundays. We have a four hour minimum for Inspection.

Construction Inspection Prevailing Wage - For Prevailing Wage (CIP and Off-Site Inspections) Supervising and Senior Construction Inspector Positions we increase rates at the time of new labor determinations for that labor class. These rate increases can occur (without advance notice) in January, April, July and October each year. We would include the DIR increase in our rates plus 100% of the total increase. Using this formula, if the DIR designates a \$1.00/hour increase, W&A would apply a \$2.00/hour increase to the established base rate. In this example, our current rate of \$126.00/hour for the Senior Inspector would increase to \$128.00/hour and the Supervising Inspector rate would increase to \$138.

Subconsultant rates will be marked up by 10%.

**ACTION
ITEM
1C**



Date: August 21, 2019

To: The Honorable Board of Directors

From: Shivaji Deshmukh, General Manager JSD

Committee: Engineering, Operations & Water Resources

08/14/19

Finance & Administration

08/14/19

Executive Contact: Shaun Stone, Acting Executive Manager of Engineering/AGM

Subject: RP-5 Expansion Design Contract Amendment

Executive Summary:

In June 2017, the design of the Regional Water Recycling Plant No. 5 Expansion (RP-5) began. To date, the project design team has completed the 90 percent design.

Due to recent events at IEUA, modifications to the project are needed. This amendment includes two main scope items: Renewable Energy and Efficiency Project (REEP) Incorporation into the project and Instrumentation Modifications. Details of the amendment including discussions on impacts to design, construction, cost, and schedule are provided in Attachment 1 - Background.

The Board of Directors previously approved an amendment for \$495,979 in March 2019. If approved, the additional design fee in the amount of \$517,494 will increase Parsons design contract amount from \$18,551,210 to \$19,068,704 resulting in a total amendment ratio of 5.97 percent. There is no change to the project schedule as a result of this amendment; however, the REEP Incorporation changes will be issued as an addendum during bidding as to not affect the project schedule.

Staff's Recommendation:

1. Approve a consulting engineering services contract amendment for the RP-5 Expansion, Project Nos. EN19001 and EN19006, to Parsons Water and Infrastructure Inc., in the amount of \$517,494; and
2. Authorize the General Manager to execute the consulting engineering services contract amendment, subject to non-substantive changes.

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

Account/Project Name:

EN19001/RP-5 Liquids Treatment Expansion
EN19006/RP-5 Solids Treatment Facility

Fiscal Impact (explain if not budgeted):

None.

Prior Board Action:

On March 20, 2019, the Board of Directors approved a contract amendment for \$495,979.

On May 17, 2017, the Board of Directors approved a contract amendment for the design to Parsons Water & Infrastructure, Inc., for the not-to-exceed amount of \$17,993,680.

On March 15, 2017, the Board of Directors adopted the RP-1 and RP-5 Expansion Preliminary Design Report.

Environmental Determination:

Program Environmental Impact Report (Finding of Consistency)

Staff is currently completing a Finding of Consistency with IEUA's Program Environmental Impact Report and has completed CEQA Plus evaluation for potential SRF Loan Funding.

Business Goal:

The RP-5 Liquids Treatment Expansion Project is consistent with the Agency's Business Goal of Wastewater Management specifically the Water Quality objective that IEUA will ensure that Agency systems are planned, constructed, and managed to protect public health, the environment, and meet anticipated regulatory requirements.

Attachments:

Attachment 1 - Background

Attachment 2 - PowerPoint

Attachment 3 - Design Amendment

Attachment 1

Background

Subject: RP-5 Expansion Design Contract Amendment

In March 2017, the IEUA Board of Directors approved the findings of the Regional Water Recycling Plant No. 1 (RP-1) and Regional Water Recycling Plant No. 5 (RP-5) Expansion Preliminary Design Report (PDR). The PDR outlined a process of pre-selecting major pieces of equipment to ensure these met specific qualifications required by IEUA and outlined the progression of the design. In May 2017, the IEUA Board of Directors approved the consulting engineering services contract amendment for the RP-5 Expansion Design to Parsons Water & Infrastructure Inc., (Parsons). In June 2017, the project design team began work on the project and to date has completed the 30 percent design, 50 percent design, and provided 90 percent design. The project team is finalizing the design and has identified potential modifications to the design that will result in reduced construction cost, improved operations, or reliable maintenance of RP-5. The amendment includes two tasks:

1. REEP Incorporation
2. Instrumentation Modifications.

Details of these scope items including discussions on impacts to design, construction, cost, and schedule are provided below.

REEP INCORPORATION

Design Scope of Work: Task 1 – SCADA Migration: As-Built Existing Facility Control System
Task 2 – SCADA Migration: Create PCN's and P&ID's
Task 3 – SCADA Migration: Migrate Control System to PlantPax
Task 4 – Piping Modifications: Modifying Engine Exhaust Piping
Task 5 – Piping Modifications: Modify Jacket Water Pump Piping

Justification: SCADA Migration: The REEP facility was not upgraded during the RP-5 SCADA Migration Project due to the facility being operated by a third party. With the termination of the operation agreement in 2019, the REEP control system needs to be upgraded to meet IEUA's SCADA Standards and incorporation into the RP-5 Expansion. This includes programming the system in PlantPax, updating hardware components such as controllers and communication modules, and modifying the network architecture to Parallel Redundant Processing (PRP).

Piping Modifications: The Engine No. 1 exhaust piping was modified during third party operation to allow for an installation of a Selective Catalytic Reduction (SCR) System to meet exhaust emission standards requiring removal of the exhaust heat exchanger. A new roof penetration will be added to shorten the length of the exhaust piping and allow for reinstallation of exhaust heat exchanger. In addition, the jacket water pumps will be modified to allow for heat recovery for the RP-5 Solids Treatment Facility's hot water loop, increasing the efficiency of the facility. Similar Modifications are included for Engine No. 2 as well.

Design Amendment Value: \$354,821

INSTRUMENTATION MODIFICATIONS

Design Scope of Work: Task 1 – Provide Hardwire Controls for Equipment Reset and Bypasses
Task 2 – Provide Monitoring Signal for All Motorized Valves Indicating When in "Local"

Justification: As part of the IEUA SCADA standards, more instrumentation has been designed to be controlled through ethernet versus hardwire. This allows for an overall simplification of the control system and a reduction of cost. However, it is slightly less reliable due to the addition of one additional communication switch that has the potential to fail. Therefore, the IEUA SCADA standards have been revised to hardwire resets and bypass switches for equipment that impacts safety or compliance of IEUA facilities (i.e. sewer pumps, gas flare systems, etc.). This amendment is to allow for modification to the RP-5 Expansion Project contract documents to incorporate this change.

As part of the IEUA SCADA standards, all valves LOR switches are monitored by SCADA when in "Local". This provides clear indication that the valve operation status of "Local", or "Off", or "Remote". The "Remote" status signal is included in the design already, and "Off" signal is inferred. This amendment is to allow for modification to the RP-5 Expansion Project contract documents to incorporate this change.

Design Amendment Value: \$162,673

SCHEDULE

There is no change to the project schedule as result of this amendment, however REEP Incorporation changes will be issued as an addendum during bidding as to not affect the project schedule. The project schedule is below:

RP-5 Expansion Project Schedule	Date
RP-5 Expansion Final Design	September 2019
RP-5 Expansion Construction Bid	October 2019
RP-5 Expansion Board Award	March 2020
RP-5 Solids Treatment Facility Construction Completion	March 2023
RP-5 Liquids Treatment Expansion Construction Completion	December 2024

FISCAL IMPACT

The total value of this amendment is \$517,530, with the task breakdown shown in the table below:

Amendment	Value
REEP SCADA Migration and Piping Modifications	\$354,821
Instrumentation Modifications	\$162,673
TOTAL	\$517,494

The amendment will increase Parsons' design contract amount from \$18,551,210 to \$19,068,704, resulting in a total amendment ratio of 5.97 percent. The amendment value is within the budgeted design contingency.

Attachment 2

RP-5 Expansion Project Design Contract Amendment

Project Nos. EN19001/EN19006



Shaun J. Stone, P.E.
August 2019

Design Contract Amendments Overview

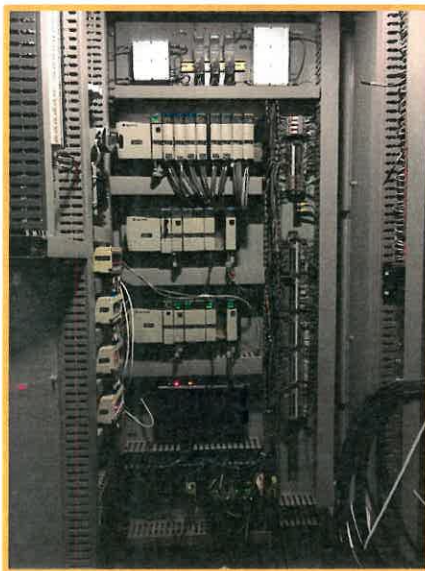
Amendments to reduce construction cost, improve operations, and/or provide reliable maintenance:

Amendment	Amount
REEP Incorporation: SCADA Migration and Piping Improvements	\$354,821
Instrumentation Modifications	\$162,673
Total	\$517,494

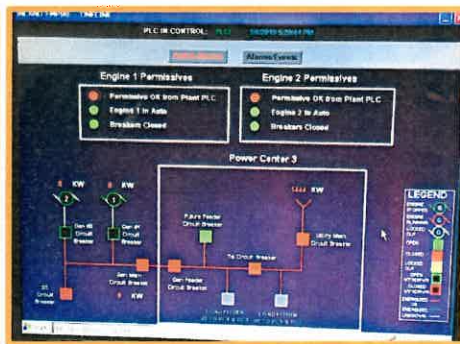


RP-5 Site

REEP Incorporation: SCADA Migration and Piping Modifications



REEP Control Cabinet



REEP Control Screen



REEP Exhaust Piping

- Scope:
 - Update control hardware and software to PlantPax system
 - Modify engine exhaust piping and heat recovery systems to meet emissions
- Justification: Due to third party operation until 2019, REEP was not modified under prior projects
- Amendment Amount: \$354,821

Instrumentation Modifications



Influent Pump Control Center

- Scope:
 - Provide hard-wired equipment remote resets and bypass switches
 - Provide monitoring signal for all motorized valves indicating when in “Local”
- Justification: Provides increased operational reliability of systems during remote operation an accurate statuses.
- Amendment Amount: \$162,673

RP-5 Expansion Project Budget and Schedule

Description	Estimated Cost
Design Services	\$26,642,725
Consultant Design Contract	\$19,068,704
Design Amendment Cost	\$517,494
Other Design Services (3%)	\$7,574,021
Construction Services	\$24,210,000
Engineering Services During Construction (3%)	\$8,070,000
Other Construction Services (6%)	\$16,140,000
Construction	\$309,845,000
Construction (estimate)	\$281,845,000
Contingency (~10%)	\$28,000,000
Total Project Cost:	\$360,697,725
Total Project Budget:	\$325,000,000

Project Milestone	Date
Design	
✔ Consultant Design Contract Award	May 2017
✔ 30% Design Completion	December 2017
✔ 50% Design Completion	July 2018
✔ 90% Design Completion	June 2019
Final Design Completion	September 2019
Construction	
Construction Bid Phase	October 2019
Construction Contract Award	March 2020
Solids Facility Completion	March 2023
Liquids Construction Completion	December 2024

Recommendation

- Approve a consulting engineering services contract amendment for the RP-5 Expansion, Project Nos. EN19001 and EN19006, to Parsons Water and Infrastructure Inc., in the amount of \$517,494; and
- Authorize the General Manager to execute the consulting engineering services contract amendment, subject to non-substantive changes.

The RP-5 Liquids Treatment Expansion Project is consistent with **IEUA's Business Goal of Wastewater Management** specifically the Water Quality objective that IEUA will ensure that systems are planned, constructed, and managed to protect public health, the environment, and meet anticipated regulatory requirements.

Attachment 3



Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

CONTRACT AMENDMENT NUMBER: 4600002042-007
CONSULTING ENGINEERING SERVICES
FOR
RP-5 LIQUIDS TREATMENT SYSTEM EXPANSION,
AND RP-5 SOLIDS TREATMENT FACILITY SERVICES

THIS CONTRACT AMENDMENT SEVEN is made and entered into this _____ day of _____, 2019, 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 Parsons Water & Infrastructure Inc. with offices located in Pasadena, California (hereinafter referred to as "Consultant") to provide professional design engineering services in support of Projects EN19001 and EN19006 (previously EN16025 and EN16028), and shall revise the Contract as herein amended:

SECTION 4, SCOPE OF WORK AND SERVICES, IS HEREBY AMENDED TO ADD THE FOLLOWING: Additional Consultant services and responsibilities shall include and be in accordance with **Exhibit A-007** referenced herein, attached hereto, and made a part hereof.

SECTION 6., PAYMENT, INVOICING AND COMPENSATION, IS HEREBY AMENDED TO ADD THE FOLLOWING: Contract value is increased by \$517,494.00, increasing the Contract's total **NOT-TO-EXCEED** maximum amount to **\$19,068,704.00**.

ALL OTHER PROVISIONS OF THIS CONTRACT REMAIN UNCHANGED.

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)

PARSONS WATER & INFRASTRUCTURE INC.:

Shivaji Deshmukh
General Manager

(Date)

Satish Kamath, P.E., BCEE
Vice President, Program Director

(Date)

EXHIBIT A-007

April 26, 2019

Jason Marseilles, P.E.
Senior Engineer
Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

Subject: Change Order Proposal for Design Services for a Modification to the Exhaust Piping and Jacket Water System at the Renewable Energy Efficiency Project (REEP) Facility

Dear Mr. Marseilles:

Parsons is pleased to present this change order letter proposal for design services for modifications to the exhaust piping and jacket water system at REEP. Included in the letter proposal is the scope of services, level of effort and fee.

Scope of Work

Scope of work is as follows:

- Modify exhaust piping from Engine #1.
 - Remove piping that was installed by Burrtec and install a new 30" exhaust pipe, routed through a new penetration in the roof.
 - The new penetration would be closer to Engine #1 than either of the existing roof penetrations.
- Modify jacket water pumps as needed to add a heat exchanger to send hot water to the main RP-5 hot water loop.
 - This may mean replacing the existing pumps or modifying the existing pumps to handle the added pressure drop from the heat exchanger.
 - Hours have been included to perform the evaluation and design the modifications as needed.

Level of Effort and Fee

Total of 316 hours of engineering/designer/management time is required to complete the effort and the total fee to complete the above tasks is \$57,222. A detailed breakdown of this fee is included in Attachment A.

We thank IEUA for the opportunity to present this proposal. If you have any further questions or comments, please contact me at 626 440 3355 or satish.kamath@parsons.com.

Sincerely,



Satish Kamath, P.E., BCEE
Vice President

Attachment A
Estimated Level of Effort and Fee

Estimated Level of Effort and Fee

TASK	DESCRIPTION	A	B	C	D	E	F	G	H	I	J	K	L	M	TOTAL HOUR	LABOR FEE	SUBCONSULTANT				TOTAL FEE											
																	Brown and Caldwell	Geotech	TOTAL SUB w/ 4.8% MARKUP	Major Printing												
																						ODCs	ODCs									
																#0%	#0%															
1. Additional Design Work for REEP																																
4.1	Project Management	0	16	0	0	0	0	0	0	0	0	0	0	0	16	\$4,240	\$0	\$85	\$0	\$0	\$4,325											
4.2	General	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0											
4.3	Civil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0											
4.4	Architectural	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0											
4.5	Process Mechanical	0	0	0	0	40	0	0	0	0	0	80	0	0	120	\$19,800	\$0	\$306	\$0	\$0	\$20,106											
4.6	Building mechanical	0	0	0	0	100	0	0	0	0	60	20	0	0	180	\$32,020	\$0	\$641	\$0	\$0	\$32,701											
4.8	Electrical and Controls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0											
4.9	QA/QC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0											
4.10	Cost Estimating	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0											
Subtotal Task 4		0	16	0	0	140	0	0	0	0	140	20	0	0	316	\$66,100	\$0	\$0	\$0	\$1,122	\$0	\$67,222										
Total Tasks 1 through 4		0	16	0	0	140	0	0	0	0	140	20	0	0	316	\$66,100	\$0	\$0	\$0	\$1,122	\$0	\$67,222										
Additional Task																																
																0	\$0	\$0	\$0	\$0	\$0											
																0	\$0	\$0	\$0	\$0	\$0											
Grand Total			16	0	0					0	0			0	316	\$66,100	\$0	\$0	\$0	\$1,122	\$0	\$67,222										

A = Principal-In-Charge	F = Supervising Engineer	K = Designer
B = Project Manager	G = Senior Engineer	L = Cost Estimator/Scheduler/Project Controls
C = Technical Advisor	H = Staff Engineer	M = Administrative Support Staff/Word Processor
D = Principal Engineer	I = Associate Engineer	
E = Project Engineer	J = Senior Designer	

June 28, 2019

Jason Marseilles, P.E.
Senior Engineer
Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

Subject: Proposal for Incorporation of Motor Control Input/Output Change at RP-5

Dear Mr. Marseilles:

Parsons is pleased to present this letter proposal for design services to incorporate motor control input/output into the anaerobic digester design for the RP-5 Expansion and Upgrade project. Included in the letter proposal is the project background, basis for scope, scope of services, schedule, level of effort and fee.

Background

The Inland Empire Utilities Agency's (IEUA) Regional Plant (RP)-5 expansion/upgrades project is at 90% design completion stage. Prior to submittal of the 90% design package IEUA requested control system changes. These changes relate to changing some points from networked input/output (I/O) to hard-wired I/O. Because of the high level of detail on the drawings approaching 90 percent, the change effects many aspects of the design (i.e., most process and instrumentation diagram drawings, most electrical control schematics and conduit schedules to increase the wire counts.

Basis for Scope

Prior to this most recent requested change, the design team had incorporated a number of control systems changes from IEUA through the design process, with no changes in project design budget. Previous changes incorporated include:

- Changes from original written direction from IEUA on October 18, 2017 to use all networked I/O for non-variable frequency drive starters (direction was later given to use a combination of hard-wired and networked I/O).
- Iterative process from IEUA with changes in what I/O is considered "critical" and therefore needs to be hard-wired vs networked.
- Changes to incorporate equipment tagging system direction received after the 60 percent deliverable.
- Changes resulting from process control narrative workshops with IEUA occurring late in the design process (well after the 60 percent deliverable and in some cases still occurring after the 90 percent deliverable).

Jason Marseilles, P.E.
Senior Engineer
Inland Empire Utilities Agency
June 28, 2019

For this proposal the following general assumptions were made:

- Parsons will provide sample P&IDs and control schematics for both variable frequency drive (VFD) and non-VFD type motor controllers to IEUA for review before the design team proceeds with implementing these changes.
- The changes will then be incorporated into the 100 percent documents (bid set) without interim reviews by IEUA (in the interest of time).
- Parsons team will perform an internal QC of these specific changes before delivering them with the 100 percent documents (bid set).
- Parsons to update the cost estimate resulting from any design changes.

Scope of Work

Detailed scope of work for is as follows:

1. Parsons will update the control schematics
2. Power center plan drawings will be updated
3. Conduit and cable schedules will be updated
4. Process and P&ID's will be updated
5. I/O list will be updated
6. Process control narratives will be updated
7. QA/QC activities will be performed
8. Project Management activities will be conducted.

Schedule

It is anticipated this activity will last 5 weeks. Incorporation of this scope of work will be conducted concurrently with the RP5 100% design activities. All efforts will be made to complete this work along with 100% design completion. However, due to level of effort involved in this scope of work we anticipate a 2 – 3 week schedule extension may be required.

Level of Effort and Fee

The level of effort and fee to complete this work is presented as Attachment 1 to this proposal. The fee required to complete this work is \$ 100,725. We have also attached our team member Brown and Caldwell proposal for reference as Attachment 2.

Jason Marseilles, P.E.
Senior Engineer
Inland Empire Utilities Agency
June 28, 2019

We thank IEUA for the opportunity to present this proposal. If you have any further questions or comments, please contact me at 626 440 3355 or satish.kamath@parsons.com.

Sincerely,

A handwritten signature in blue ink that reads "Satish Kamath". The signature is fluid and cursive, with a prominent initial "S" and a trailing flourish.

Satish Kamath, P.E., BCEE
Vice President

Level of Effort and Fee
Attachment 1

TASK	DESCRIPTION	A	B	C	D	E	F	G	H	I	J	K	L	M	TOTAL HOUR	LABOR FEE	SUBCONSULTANT					
																	Brown and Caldwell	Geotech.	TOTAL SUB w/ 4.8% MARKUP	ODCs	Major Printing	TOTAL FEE
		\$275/hr	\$285/hr	\$250/hr	\$235/hr	\$215/hr	\$205/hr	\$170/hr	\$125/hr	\$112/hr	\$140/hr	\$108/hr	\$170/hr	\$55/hr				4.8%	7.00%			
Ethernet Vs Hardwire of Controls (All Control Schematics to be modified)																						
1	Control Schematics (25 drawings)					36	36				28				100	\$17,400	\$12,325	\$12,017	\$348		\$30,695	
2	Power Center Plan Drawings (7 drawings)					40	80				40				140	\$24,000		\$0	\$480		\$24,480	
3	Conduit and Cable Schedule (10 drawings)					4	8				8				20	\$3,300	\$3,106	\$3,256	\$66		\$6,811	
4	Update P&IDs (35 drawings)														0	\$0	\$15,673	\$16,425	\$0		\$16,425	
5	Update I/O List														0	\$0	\$2,871	\$2,799	\$0		\$2,799	
6	Update Process Control Narratives														0	\$0	\$4,788	\$4,955	\$0		\$4,955	
7	ODCs				16	28									42	\$9,350		\$0	\$187		\$9,537	
8	Project Management		10										10	8	28	\$5,110		\$0	\$102		\$5,212	
	Subtotal		0	10	0	16	28	80	104	0	0	78	0	18	8	330	\$69,180	\$38,813	\$0	\$48,367	\$1,184	\$109,728
	Total Ethernet Vs Hardwire of Controls		0	10	0	16	28	80	104	0	0	78	0	18	8	330	\$69,180	\$38,813	\$0	\$48,367	\$1,184	\$109,728

A =	Principal-In-Charge	F =	Supervising Engineer	K =	Designer
B =	Project Manager	G =	Senior Engineer	L =	Cost Estimator/Scheduler/Project Controls
C =	Technical Advisor	H =	Staff Engineer	M =	Administrative Support Staff/Word Processor
D =	Principal Engineer	I =	Associate Engineer		
E =	Project Engineer	J =	Senior Designer		

Brown & Caldwell Proposal
Attachment 2

18500 Von Karman Avenue, Suite 1100
Irvine, California 92612

T: 714.730.7600
F: 714.734.0940



June 27, 2019

Mr. Satish Kamath, P.E.
Vice President, Program Director
Parsons
100 W. Walnut Street
Pasadena, California 91124

150907.010

Subject: Inland Empire Utilities Agency RP-5 Liquids Treatment System Expansion and RP-5 Solids Treatment Facility Design – Incorporation of Motor Control Input/Output Change Requested by IEUA

Dear Mr. Kamath:

Thank you for the opportunity to team with Parsons on the Inland Empire Utilities Agency (IEUA) RP-5 Liquids Treatment System Expansion and RP-5 Solids Treatment Facility Design (Project). Brown and Caldwell (BC) is committed to partnering with you to support the development of the Project documents using both local experienced staff and our nationally-recognized process design experts.

As requested, we have developed a scope to incorporate control system changes requested by IEUA shortly before the 90-percent quality control set deadline. These changes relate to changing some points from networked input/output (I/O) to hard-wired I/O. Because of the high level of detail on the drawings approaching 90 percent, this change affects many aspects of the design (i.e., most process and instrumentation diagram drawings, most electrical control schematics, and conduit schedules to increase the wire counts). As noted in email correspondence between BC and Parsons on April 29, 2019, we held on incorporating these late changes until they could be discussed with IEUA, so that we could focus on completing the rest of the 90-percent design on schedule while the impacts of this requested change were reviewed with IEUA.

Prior to this most recent requested change, the design team had incorporated a number of control systems changes from IEUA through the design process, with no change in project design budget. Previous changes incorporated include:

- Changes from original written direction from IEUA on October 18, 2017, to use all networked I/O for non-variable frequency drive starters (direction was later given to use a combination of hard-wired and networked I/O).
- Iterative process from IEUA with changes in what I/O is considered “critical” and therefore needs to be hard-wired vs. networked.
- Changes to incorporate equipment tagging system direction received after the 60 percent deliverable.
- Changes resulting from process control narrative workshops with IEUA occurring very late in the design process (well after the 60 percent deliverable and in some cases still occurring after the 90 percent deliverable).

Mr. Satish Kamath
Parsons
June 27, 2019
Page 2

The following attachments are provided:

- A. Scope of Work, Fee Summary, and Schedule
- B. Level of Effort and Fee (BC only)

The proposed fee to complete the items described in the attached Scope of Work is \$38,512. We have based our fee on the assumptions described in the attachments, which were developed from our collective communications since request of these services from IEUA.

We look forward to continuing our work with you on this important project.

Very truly yours,

Brown and Caldwell

A handwritten signature in black ink, appearing to read "Mike Puccio". The signature is fluid and cursive, with the first name "Mike" and last name "Puccio" clearly distinguishable.

Mike Puccio, P.E.,
Vice President

AL:MP:re

Attachment A: Scope of Work, Fee Summary, and Schedule

Scope of Work, Fee Summary, and Schedule

Attachment A

Introduction

On April 25, 2019, and shortly before the 90-percent quality control (QC) set was compiled, Inland Empire Utilities Agency (IEUA) issued new direction on control systems design. Specifically, direction was provided to change from networked to hard-wired input/output (I/O) for specific points (alarm RESET). These changes relate to changing some points from networked I/O to hard-wired I/O. As noted in email correspondence between Brown and Caldwell (BC) and Parsons on April 29, 2019, we held on incorporating these late changes until they could be discussed with IEUA, so that we could focus on completing the rest of the 90 percent design on schedule while the impacts of this requested change were reviewed with IEUA.

Because of the high level of detail on the drawings approaching 90 percent, this change affects many aspects of the design (i.e., most process and instrumentation diagram [P&ID] drawings, most electrical control schematics, and conduit schedules to increase the wire counts). As noted in Parsons' email correspondence on April 29, 2019, BC held on incorporating these late changes until they could be discussed with IEUA, so that we could focus on completing the rest of the 90 percent design on schedule. This scope of work includes design services required to modify the contract documents to provide additional digester capacity for food waste co-digestion. A summary of the scope of work is provided below.

Assumptions

The following general assumptions were made in preparation of this proposal:

- Parsons will provide sample P&IDs and control schematics for both variable frequency drive (VFD) and non-VFD type motor controllers to IEUA for review before the design team proceeds with implementing these changes.
- The changes will then be incorporated into the 100 percent documents (bid set) without any further interim reviews by IEUA.
- BC will perform an internal QC of these specific changes before delivering them with the 100 percent documents (bid set).
- Parsons to update the 100 percent cost estimate with any resulting design changes.

1.0 Scope of Work

BC Scope and Assumptions

The BC-specific scope of work is based on the assumptions listed below.

1. Update P&IDs to change from networked reset to hard-wired reset for motor-driven equipment (primarily pumps and fans).



2. Update I/O list to incorporate additional points at each remote I/O module for hard-wired resets.
3. Update process control narratives to reflect hard-wired reset.
4. Update control schematics to change from networked reset to hard-wired reset for all motor-driven equipment.
5. Update conduit schedules to incorporate additional wiring required for additional I/O points to each starter.
6. Perform quality assurance (QA)/QC on design changes in accordance with project QA/QC plan.

2.0 Fee Summary

The level of effort was estimated using a total sheet count of 54 drawings impacted by the changes. The estimated fee to complete the amendment scope of work is \$38,512. A detailed level of effort and fee estimate is provided in Attachment B.

3.0 Schedule

If the proposal is accepted and pending the date of authorization, extension of the current schedule may be required to accommodate the effort associated with these changes. The schedule for incorporation of these changes will be coordinated with Parsons and the overall project schedule. We anticipate that a schedule extension of 2 to 3 weeks would be required to incorporate these changes.

Attachment B: Level of Effort and Fee



INLAND EMPIRE UTILITIES AGENCY
RP-5 EXPANSION AND SOLIDS TREATMENT FACILITY

Motor Control I/O Change - BC Level of Effort and Fee

	Role	Project	Design	QA/QC	Lead I&C	I&C	Lead Elec	Elec	Total	Total	Total
Task description	Contract bill rate	Manager	Manager	Lead	Engineer	Designer	Engineer	Designer	Hours	Labor	Cost
		\$242.31	\$212.04	\$211.62	\$204.00	\$150.00	\$204.00	\$150.00			
1 - Update P&IDs (~35 drawings)		1	2	4	40	40	0	0	87	\$15,673	\$15,673
2 - Update I/O List		0	2	2	6	4	0	0	14	\$2,671	\$2,671
3 - Update Process Control Narratives		1	2	2	12	8	0	0	25	\$4,738	\$4,738
4 - Update Control Schematics (~19 drawings)		1	2	10	0	0	12	48	73	\$12,325	\$12,325
5 - Update Conduit Schedules		1	2	2	0	0	4	8	17	\$3,106	\$3,106
TOTAL		4	10	20	58	52	16	56	216	38,512	\$38,512

July 26, 2019

Jason Marseilles, P.E.
Senior Engineer
Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

Subject: Proposal for Incorporation of Motorized Valves LOR Monitoring at RP-5

Dear Mr. Marseilles:

Parsons is pleased to present this letter proposal for design services to incorporate motorized valves LOR monitoring change request for the RP-5 Expansion and Upgrade project. Included in the letter proposal is the project background, basis for scope, scope of services, schedule, level of effort and fee.

Background

The Inland Empire Utilities Agency's (IEUA) Regional Plant (RP)-5 expansion/upgrades project is past 90% design completion stage. The current design provides for monitoring of motorized valves LOR in remote position. During one of Process Control Narrative (PCN) workshops, IEUA requested addition of LOR In Local signal to all motorized valves.

Basis for Scope

For this proposal the following general assumptions were made:

- No alarming is added for LOR In Local condition.
- The addition of LOR In Local signals to all motorized valves will be incorporated into the 100 percent documents (bid set) without any further interim reviews by IEUA.
- Parsons' team will perform an internal QC of these specific changes before delivering them with the 100 percent documents (bid set).
- Parsons will update the 100 percent cost estimate with any resulting design changes.

Scope of Work

Detailed scope of work is as follows:

1. Update P&IDs to add LOR In Local signal to all motorized valves.
2. Update I/O list to incorporate additional points at each remote I/O module, as needed.
3. Update PCNs to reflect additional signals.
4. Instrument Plan: Provide call out of conduit and wire call-outs along the conduit/wire route from field valves to I/O rack in PC.

Jason Marseilles, P.E.
Senior Engineer
Inland Empire Utilities Agency
July 26, 2019

5. Power Center Plan Drawings: Perform cable tray fill calculation and sizing. Size conduits between incoming conduits below grade and cable tray above.
6. Site Plan: Verify conduit fill, duct bank sizing and changes as required.
7. Update conduit schedules to incorporate additional wiring required for additional I/O points to each motorized valve.
8. Perform QA/QC on design changes in accordance with project QA/QC plan.

Schedule

Incorporation of this scope of work will be conducted concurrently with the RP5 100% design activities. All efforts will be made to complete this work along with 100% design completion and therefore, no schedule extension will be required.

Level of Effort and Fee

The level of effort and fee to complete this work is presented as Attachment 1 to this proposal. The fee required to complete this work is \$61,948. We have also attached our team member Brown and Caldwell proposal for reference as Attachment 2.

We thank IEUA for the opportunity to present this proposal. If you have any further questions or comments, please contact me at 626 440 3355 or satish.kamath@parsons.com.

Sincerely,



Satish Kamath, P.E., BCEE
Vice President

Level of Effort and Fee
Attachment 1

TASK	DESCRIPTION														TOTAL HOUR	LABOR FEE	SUBCONSULTANT					TOTAL FEE
		A	B	C	D	E	F	G	H	I	J	K	L	M			Brown and Caldwell	Geotech.	TOTAL SUB w/ 4.8% MARKUP	ODCs	Major Printing	
		\$275/hr	\$265/hr	\$250/hr	\$235/hr	\$215/hr	\$205/hr	\$170/hr	\$125/hr	\$112/hr	\$140/hr	\$108/hr	\$170/hr	\$95/hr			4.8%	2.00%				
LOR Monitoring																						
1	Update P&IDs (34 drawings)						6	32							38	\$6,670	\$8,272	\$8,069	\$133		\$16,472	
2	Update I/O List						2	2							4	\$750	\$3,263	\$3,420	\$16		\$4,189	
3	Update PCN						4	16							20	\$3,640	\$3,481	\$3,648	\$71		\$7,250	
4	Update Instrument Plans (16 drawings)						15	38			22				75	\$12,615		\$0	\$252		\$12,867	
5	Update Power Center Plans (7 drawings)						7	18			10				35	\$5,895		\$0	\$118		\$6,013	
6	Update Site Plans (7 drawings)						7	18			10				35	\$5,895		\$0	\$118		\$6,013	
7	Update Conduit and Cable Schedules (18 drawings)						4	10			6				20	\$3,390	\$3,494	\$3,662	\$67		\$7,089	
8	Project Management		6											6	4	18	\$2,950		\$0	\$60		\$3,050
	Subtotal	0	6	0	0	0	46	134	0	0	48	0	6	4	243	\$41,715	\$18,510	\$0	\$19,398	\$834	\$61,948	
LOR Monitoring		0	6	0	0	0	46	134	0	0	48	0	6	4	243	\$41,715	\$18,510	\$0	\$19,398	\$834	\$61,948	

A = Principal-in-Charge	F = Supervising Engineer	K = Designer
B = Project Manager	G = Senior Engineer	L = Cost Estimator/Scheduler/Project Controls
C = Technical Advisor	H = Staff Engineer	M = Administrative Support Staff/Word Processor
D = Principal Engineer	I = Associate Engineer	
E = Project Engineer	J = Senior Designer	

Brown & Caldwell Proposal
Attachment 2

18500 Von Karman Avenue, Suite 1100
Irvine, California 92612

T: 714.730.7600

F: 714.734.0940



July 22, 2019

Mr. Satish Kamath, P.E.
Vice President, Program Director
Parsons
100 W. Walnut Street
Pasadena, California 91124

150907.010

Subject: Inland Empire Utilities Agency RP-5 Liquids Treatment System Expansion and RP-5 Solids Treatment Facility Design – Incorporation of Motorized Valves LOR Monitoring Change Requested by IEUA

Dear Mr. Kamath:

Thank you for the opportunity to team with Parsons on the Inland Empire Utilities Agency (IEUA) RP-5 Liquids Treatment System Expansion and RP-5 Solids Treatment Facility Design (Project). Brown and Caldwell (BC) is committed to partnering with you to support the development of the Project documents using both local experienced staff and our nationally-recognized process design experts.

As requested, we have developed a scope to incorporate control system changes requested by IEUA during the Process Control Narrative (PCN) workshops. These changes relate to the addition of monitoring LOR In Local for all motorized valves. Because of the high level of detail on the drawings approaching 100 percent, this change affects many aspects of the design (i.e., several process and instrumentation diagram drawings, I/O list, PCNs, and conduit schedules to increase the wire counts).

The following attachments are provided:

- A. Scope of Work, Fee Summary, and Schedule
- B. Level of Effort and Fee (BC only)

The proposed fee to complete the items described in the attached Scope of Work is \$18,510. We have based our fee on the assumptions described in the attachments, which were developed from our collective communications since request of these services from IEUA.

We look forward to continuing our work with you on this important project.

Very truly yours,

Brown and Caldwell

A handwritten signature in black ink, appearing to read "Mike Puccio".

Mike Puccio, P.E.,
Vice President

Attachment A: Scope of Work, Fee Summary, and Schedule



Scope of Work, Fee Summary, and Schedule

Attachment A

Introduction

On July 3, 2019, during one of the Process Control Narrative (PCN) workshops, Inland Empire Utilities Agency (IEUA) issued new direction on control systems design. Specifically, direction was provided to add an additional signal for all motorized valves (LOR In Local). This requirement was not previously known, and most of the existing equipment at RP5 does not monitor LOR in local.

Because of the high level of detail on the drawings approaching 100 percent, this change affects many aspects of the design (i.e., many process and instrumentation diagram [P&ID] drawings, I/O list, PCNs, and conduit schedules to increase the wire counts).

Assumptions

The following general assumptions were made in preparation of this proposal:

- The addition of LOR In Local signals to all motorized valves will be incorporated into the 100 percent documents (bid set) without any further interim reviews by IEUA.
- BC will perform an internal QC of these specific changes before delivering them with the 100 percent documents (bid set).
- Parsons to update the 100 percent cost estimate with any resulting design changes.

1.0 Scope of Work

BC Scope and Assumptions

The BC-specific scope of work is based on the assumptions listed below.

1. Update P&IDs to add LOR In Local signal to all motorized valves.
2. Update I/O list to incorporate additional points at each remote I/O module, as needed.
3. Update process control narratives to reflect additional signals.
4. Update conduit schedules to incorporate additional wiring required for additional I/O points to each motorized valve.
5. Perform quality assurance (QA)/QC on design changes in accordance with project QA/QC plan.

2.0 Fee Summary

The level of effort was estimated using a total sheet count of 23 drawings impacted by the changes. The estimated fee to complete the amendment scope of work is \$18,510. A detailed level of effort and fee estimate is provided in Attachment B.



3.0 Schedule

The schedule for incorporation of these changes will be coordinated with Parsons and the overall project schedule. No schedule extension would be required to incorporate these changes.



Attachment B: Level of Effort and Fee

INLAND EMPIRE UTILITIES AGENCY
RP-5 EXPANSION AND SOLIDS TREATMENT FACILITY

Motorized Valve LOR I/O Change - BC Level of Effort and Fee

	Role	Project	Design	Project	QA/QC	Lead I&C	I&C	Lead Elec	Elec	Total	Total	Total
		Manager	Manager	Admin	Lead	Engineer	Designer	Engineer	Designer	Hours	Labor	Cost
Task description	Contract bill rate	\$242.31	\$212.04	\$102.00	\$211.62	\$204.00	\$150.00	\$204.00	\$150.00			
1 - Update P&IDs (~15 drawings)		1	2	1	2	20	20	0	0	46	\$8,272	\$8,272
2 - Update I/O List		0	1	2	2	6	8	0	0	19	\$3,263	\$3,263
3 - Update Process Control Narratives		0	2	1	2	8	6	0	0	19	\$3,481	\$3,481
4 - Update Conduit Schedules (~8 drawings)		1	1	0	2	0	0	4	12	20	\$3,494	\$3,494
TOTAL		2	6	4	8	34	34	4	12	104	18,510	\$18,510

TASK	DESCRIPTION														TOTAL HOUR	LABOR FEE	SUBCONSULTANT					TOTAL FEE			
		A	B	C	D	E	F	G	H	I	J	K	L	M			Brown and Caldwell	Geotech	TOTAL SUB w 4 8% MARKUP	ODCs	Major Printing				
		\$275/hr	\$205/hr	\$250/hr	\$235/hr	\$215/hr	\$205/hr	\$170/hr	\$125/hr	\$112/hr	\$140/hr	\$108/hr	\$170/hr	\$95/hr											
1. Additional SCADA Design/Upgrade Work for RP-5 REEP																									
1	Main UPS Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0
1.1	Field Investigation and Review As-Built Documentation	0	0	0	0	8	0	0	0	0	0	4	0	0	12	\$2,312	\$0	\$46	\$2,358	\$0	\$0	\$0	\$0	\$0	\$2,358
1.2	UPS Evaluation and Design	0	0	0	48	0	0	0	0	0	0	20	0	0	68	\$19,440	\$0	\$269	\$19,709	\$0	\$0	\$0	\$0	\$0	\$19,709
2	Server Rack	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.1	Field Investigation and Demolition Details	0	0	0	16	0	0	0	0	0	0	12	0	0	28	\$5,056	\$0	\$101	\$5,157	\$0	\$0	\$0	\$0	\$0	\$5,157
3	Control Room Upgrade	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.1	Field Investigation and Review As-Built Documentation	0	0	0	8	0	0	0	0	0	0	0	0	0	8	\$1,880	\$0	\$38	\$1,918	\$0	\$0	\$0	\$0	\$0	\$1,918
3.2	Control Room General Arrangement Drawings	0	0	0	20	0	0	0	0	0	0	10	0	0	30	\$5,760	\$0	\$118	\$5,878	\$0	\$0	\$0	\$0	\$0	\$5,878
4	Control Cabinet PLC-1 Modifications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.1	Field Investigation and Review As-Built Documentation	0	0	0	32	0	0	0	0	0	0	0	0	0	32	\$7,520	\$0	\$150	\$7,670	\$0	\$0	\$0	\$0	\$0	\$7,670
4.2	Panel and Network Modification Drawings	0	0	0	48	0	0	0	0	0	0	28	0	0	76	\$14,304	\$0	\$269	\$14,573	\$0	\$0	\$0	\$0	\$0	\$14,573
5	Network Cabinet (next to PLC-1) and Network Design	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.1	Field Investigation and Review As-Built Documentation	0	0	0	24	0	0	0	0	0	0	0	0	0	24	\$5,640	\$0	\$113	\$5,753	\$0	\$0	\$0	\$0	\$0	\$5,753
5.2	Panel and Network Modification Drawings	0	0	0	56	0	0	0	0	0	0	24	0	0	80	\$15,752	\$0	\$315	\$16,067	\$0	\$0	\$0	\$0	\$0	\$16,067
6	CEMS and SCADA Interface	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.1	Field Investigation and Review As-Built Documentation	0	0	0	8	0	0	0	0	16	0	0	0	0	24	\$3,880	\$0	\$78	\$3,958	\$0	\$0	\$0	\$0	\$0	\$3,958
6.2	CEMS Modification Requirements	0	0	0	32	0	0	0	0	0	0	16	0	0	48	\$9,248	\$0	\$185	\$9,433	\$0	\$0	\$0	\$0	\$0	\$9,433
7	RIO Cabinet RIO-1 Modifications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.1	Field Investigation and Review As-Built Documentation	0	0	0	24	0	0	0	0	0	0	0	0	0	24	\$5,640	\$0	\$113	\$5,753	\$0	\$0	\$0	\$0	\$0	\$5,753
7.2	Panel and Network Modification Drawings	0	0	0	48	0	0	0	0	0	0	20	0	0	68	\$13,440	\$0	\$269	\$13,709	\$0	\$0	\$0	\$0	\$0	\$13,709
8	Moxa I/O Cabinet (No Scope of Work for Parsons)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	RIO Cabinet RIO-2 Modifications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9.1	Field Investigation and Review As-Built Documentation	0	0	0	32	0	0	0	0	0	0	0	0	0	32	\$7,520	\$0	\$150	\$7,670	\$0	\$0	\$0	\$0	\$0	\$7,670
9.2	Panel and Network Modification Drawings	0	0	0	56	0	0	0	0	0	0	24	0	0	80	\$15,752	\$0	\$315	\$16,067	\$0	\$0	\$0	\$0	\$0	\$16,067
10	RIO Cabinet RIO-3 Modifications	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10.1	Field Investigation and Review As-Built Documentation	0	0	0	24	0	0	0	0	0	0	0	0	0	24	\$5,640	\$0	\$113	\$5,753	\$0	\$0	\$0	\$0	\$0	\$5,753
10.2	Panel and Network Modification Drawings	0	0	0	48	0	0	0	0	0	0	20	0	0	68	\$13,440	\$0	\$269	\$13,709	\$0	\$0	\$0	\$0	\$0	\$13,709
11	Cold Fog System (No Scope of Work for Parsons)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Generator Controls in MCC (No Scope of Work for Parsons)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Incorporate REEP into IEUA Overall SCADA	0	0	0	40	0	0	0	0	0	0	0	0	0	40	\$9,400	\$0	\$188	\$9,588	\$0	\$0	\$0	\$0	\$0	\$9,588
14	Update REEP P&IDs	0	0	0	30	0	0	0	0	0	0	16	0	0	240	\$36,080	\$0	\$722	\$36,802	\$0	\$0	\$0	\$0	\$0	\$36,802
15	REEP PCNs based on IEUA Standards	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15.1	Develop REEP Facility PCNs	0	0	0	276	0	0	0	0	0	0	0	0	0	276	\$64,860	\$0	\$1,297	\$66,157	\$0	\$0	\$0	\$0	\$0	\$66,157
15.2	REEP PCN Workshops (7 workshops, 4 hours each)	0	0	0	28	0	0	0	0	0	0	0	0	0	28	\$6,580	\$0	\$138	\$6,718	\$0	\$0	\$0	\$0	\$0	\$6,718
16	Technical Specifications Modifications	0	0	0	32	0	0	0	0	0	0	0	0	0	32	\$7,520	\$0	\$150	\$7,670	\$0	\$0	\$0	\$0	\$0	\$7,670
17	Project Management	0	20	0	0	0	0	0	0	0	0	0	16	8	44	\$8,780	\$0	\$176	\$8,956	\$0	\$0	\$0	\$0	\$0	\$8,956
18	QA/QC	0	0	0	0	0	50	0	0	0	0	0	0	0	50	\$10,250	\$0	\$205	\$10,455	\$0	\$0	\$0	\$0	\$0	\$10,455
19	Cost Estimate Support	0	0	0	0	0	10	0	0	0	0	0	0	0	10	\$2,050	\$0	\$41	\$2,091	\$0	\$0	\$0	\$0	\$0	\$2,091
	Subtotal Task 1	0	20	0	988	0	60	0	16	0	0	338	16	8	1,488	\$291,764	\$0	\$0	\$291,764	\$0	\$0	\$0	\$5,835	\$0	\$297,599
	Total Task 1	0	20	0	988	0	60	0	16	0	0	338	16	8	1,488	\$291,764	\$0	\$0	\$291,764	\$0	\$0	\$0	\$5,835	\$0	\$297,599
Additional Task																									
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Grand Total	0	20	0	988	0	60	0	16	0	0	338	16	8	1,488	\$291,764	\$0	\$0	\$291,764	\$0	\$0	\$0	\$5,835	\$0	\$297,599

- A = Principal-in-Charge
- B = Project Manager
- C = Technical Advisor
- D = Principal Engineer
- E = Project Engineer
- F = Supervising Engineer
- G = Senior Engineer
- H = Staff Engineer
- I = Associate Engineer
- J = Senior Designer
- K = Designer
- L = Cost Estimator/Scheduler/Project Controls
- M = Administrative Support Staff/Word Processor

**ACTION
ITEM
1D**

Date: August 21, 2019

To: The Honorable Board of Directors

From: Shivaji Deshmukh, General Manager *SDM*

Committee: Engineering, Operations & Water Resources

08/14/19

Executive Contact: Shaun Stone, Acting Executive Manager of Engineering/AGM

Subject: RP-1 Digester No. 6 Repairs Project Construction Change Order

Executive Summary:

On November 21, 2018, the Board of Directors approved a construction contract to W.A. Rasic Construction Inc., to rehabilitate digester six, at Regional Water Recycling Plant No. 1 (RP-1), including re-coating and sealing the internal wall, ceiling, and roof. The work requires that the existing internal coating for the digester wall and ceiling be completely removed before the new coating system is applied to establish the desired bond with the concrete surface. The project design specified brush off blast cleaning for the removal of the existing internal coating.

During the course of removing of the internal coating, the contractor notified IEUA staff that the specified surface preparation method was not sufficient to achieve the desired surface profile and cleanliness. After thorough review, sand blasting cleaning method was recommended. This change order is the cost for equipment, labor, and materials associated with performing the required sand blasting cleaning method.

Staff request approval of this construction change order with W.A Rasic in the amount of \$160,000 (8.9% of contract value), increasing the contract from \$1,788,000 to \$1,948,000.

Staff's Recommendation:

1. Approve a construction change order for the RP-1 Digester 6 Repairs, Project No. EN17042, to W.A. Rasic Construction, Inc., for the not-to-exceed amount of \$160,000; and
2. Authorize the General Manager to execute the change order, subject to non-substantive changes.

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

Account/Project Name:

EN17042/RP-1 Digester No. 6 Repairs

Fiscal Impact (explain if not budgeted):

None.

Prior Board Action:

On November 21, 2018, the Board of Directors approved a construction contract to W.A. Rasic Construction Inc., in the amount of \$1,788,000 and approved a contract amendment for GHD Inc. for the not-to-exceed amount of \$69,627.

Environmental Determination:

Categorical Exemption

CEQA identifies certain categories of projects as exempt from more detailed environmental review because these categories have been deemed to have no potential for significant impact on the environment. This project qualifies for a Categorical Exemption Class 1 as defined in Section 15301(b) of the State CEQA Guidelines.

Business Goal:

The Digester 6 and 7 Roof Repairs Project is consistent with 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 can accommodate changes in regional water use to protect public health, the environment, and meet anticipated regulatory requirements.

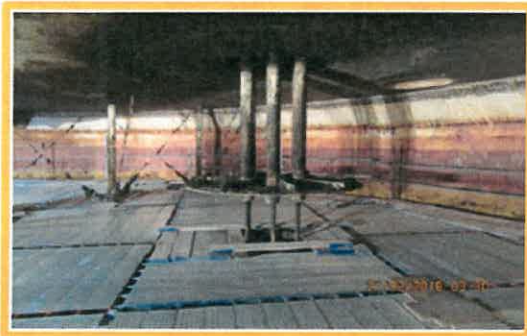
Attachments:

Attachment 1 - PowerPoint

Attachment 1

RP-1 Digester No. 6 Repairs Construction Change Order

Project No. EN17042



Regional Water Recycling Plant No. 1 Project Location



The Project

- Background
 - Digester was constructed in 1988
 - Multiple internal/external roof cracks
 - Failure of internal protective coating
 - W.A. Rasic awarded construction contract in November 2018
 - Construction contract value: \$1,788,000
- Contractor's Scope
 - Repair, recoat, and seal interior wall, ceiling, and roof
 - Replace sludge and gas piping, valves, and supports
 - Revamp all hatches and manways
 - Pressure test digester and piping



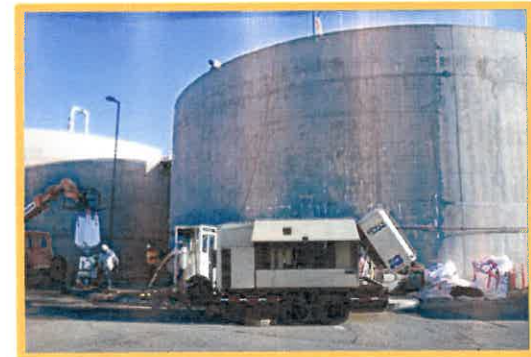
Digester No. 6 Partial Roof Cracks



Failed Internal Roof Coating

The Change Order

- Digester interior surface preparation – removal of existing coating prior to applying new coating system
- Specs calls for brushoff blast cleaning, which was not sufficient to remove heavily bonded coating areas
- Contractor notified IEUA of coating removal issue
- Sand blasting method is required to establish desired concrete profile surface
- Sand blasting involves additional labor, equipment and time



Sample Sand Blasting Equipment



Sample Roof Sand Blasted Area

Project Budget and Schedule

Description	Estimated Cost	Project Milestone	Date
Design Services	\$394,767	Digester 6	
Design Consultant (GHD)	\$186,767	Construction Completion	October 2019
IEUA Design Services – Digester 6	\$208,000		
Construction Services	\$387,667		
Design Consultant Construction Services (GHD)	\$137,667		
IEUA Construction Services	\$250,000		
Construction	\$3,213,000		
Digester 6 Cleaning/Services (Synagro/IEUA)	\$1,265,000		
Construction Bid – Digester 6	\$1,788,000		
Change Order (this action)	\$160,000		
Total Project Cost	\$3,995,434		
Total Project Budget	\$4,868,387		

Recommendation

- Approve a construction change order for the RP-1 Digester 6 Repairs, Project No. EN17042, to W.A. Rasic Construction, Inc., for the not-to-exceed amount of \$160,000; and
- Authorize the General Manager to execute the change order, subject to non-substantive changes.

The RP-1 Digester 6 Repairs Project 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 can accommodate changes in regional water use to protect public health, the environment, and meet anticipated regulatory requirements.

**ACTION
ITEM
1E**



Date: August 21, 2019

To: The Honorable Board of Directors

From: Shivaji Deshmukh, General Manager ASM

Committee: Engineering, Operations & Water Resources

08/14/19

Executive Contact: Shaun Stone, Acting Executive Manager of Engineering/AGM

Subject: RP-1 Digester Gas Repairs Emergency Project

Executive Summary:

At Regional Water Recycling Plant No. 1 (RP-1), a section of the underground digester gas line required repairs. Operations requested Engineering's assistance to resolve. Staff collaborated to prepare a bypass plan and perform the repairs. Three bids were solicited under a Level 3 Emergency call-out. The repairs involved the installation of new pipe and isolation valves.

On April 8, 2019, two bids were received with W.A. Rasic being the lowest responsive, responsible bidder at \$26,100. During the emergency repairs, the level of effort to purge/isolate the underground gas loop was significantly higher than anticipated. The work is complete, and the system is now in safe and secure, full operation. After multiple discussions with the contractor, staff was able to negotiate the final amount to be \$111,600.

Staff is requesting a ratification of a not-to-exceed task order for \$111,600.

Staff's Recommendation:

1. Ratify the emergency project approval for the RP-1 Digester Gas Repairs in the amount of \$111,600; and
2. Authorize the General Manager to approve the emergency task order, subject to non-substantive changes.

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

Account/Project Name:

EN19019/RP-1 Digester Gas Repairs

Fiscal Impact (explain if not budgeted):

None.

Prior Board Action:

None.

Environmental Determination:

Statutory Exemption

The emergency project is statutorily exempt based on Section 15269(b) of the State CEQA Guidelines.

Business Goal:

The RP-1 Digester Gas Repairs Project is consistent with IEUA's Business Goal of Work Environment and Wastewater Management, specifically the staff safety and asset management where IEUA will promote and ensure a safe and healthy work environment, exceeding industry best practices and will ensure the regional sewer system and treatment facilities are well maintained, upgraded to meet evolving requirements, sustainably managed, and can accommodate changes in regional water use.

Attachments:

Attachment 1 - Task Order ([Click to Download](#))

**ACTION
ITEM
1F**



Date: August 21, 2019

To: The Honorable Board of Directors

From: Shivaji Deshmukh, General Manager

Committee: Engineering, Operations & Water Resources

SD
08/14/19

Executive Contact: Shaun Stone, Acting Executive Manager of Engineering/AGM

Subject: Pavement Management Master Services Task Order

Executive Summary:

IEUA has approximately 30 acres of pavement at various facilities which require maintenance. To properly rehabilitate the existing pavement, Engineering is developing a multi-year Pavement Asset Management Program. To prioritize work and develop the most cost-effective repair alternatives, Bucknam Infrastructure Group will need to perform an evaluation of the current facilities and develop a replacement program.

This task order for \$101,394, will perform the initial assessment for FY 2019/20, identifying the first two years of recommended improvements and setting the framework for the planning going forward.

Staff's Recommendation:

1. Award Task Order No. 001 to Bucknam Infrastructure Group for a not-to-exceed amount of \$101,394; and
2. Authorize the General Manager to execute the Task Order, subject to non-substantive changes.

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

Account/Project Name:

EN20038/Agency Wide Pavement Management Study

Fiscal Impact (explain if not budgeted):

None.

Prior Board Action:

On June 19, 2019, the Board of Directors awarded a five-year master service contract, with the option for up to two, one-year time extensions, to the Bucknam Infrastructure Group, for a not-to-exceed amount of \$500,000.

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 will be subject to future environmental evaluation.

Business Goal:

The Pavement Management Master Service Contract is consistent with IEUA's Business Goal of Wastewater Management, specifically the Water Quality Objective that IEUA will ensure that Agency systems are planned, constructed and managed to protect public health, the environment, and meet anticipated regulatory requirements.

Attachments:

Attachment 1 - Task Order

Attachment 1



Date: August 01, 2019

Task Order Number: 4600002738-001
EN20038

Contractor: Bucknam Infrastructure Group, Inc.

Contract Number: 4600002738

Project / Task Description: Master Facilities Plan

I. RECITALS

Agency and Contractor previously entered into Master Contract No. 4600002738. Except as otherwise specified herein, the terms and conditions of that Agreement are incorporated into this Task Order via this reference.

II. TASK ORDER AGREEMENTS

1. Scope of Work: Contractor shall furnish the qualified personnel, equipment, materials, and supplies necessary to perform the work described in Harris proposal dated April 26, 2019.
2. Period of Performance: Date of Notice to Proceed until June 30, 2020.
3. Compensation: Authorized total payments to Contractor for performance of this Firm Fixed Price Task Order shall be a **not-to-exceed maximum of \$101,394.00** referenced herein and made part hereof as **Exhibit A**. (NOTE: Labor rates are based on submitted prevailing wage rates included in the Master contract. Invoices shall include a copy of the certified payroll in accordance with the requirements of SB 854.)
4. Assigned Personnel: The below-listed named personnel are assigned to direct the performance of this Task Order on behalf of the respective Parties.

PROJECT MANAGER ASSIGNMENT: All technical direction related to this Task Order shall come from the designated Project Manager. Details of Agency's assignment are listed below:

Project Manager: Matthew A. Poeske
Address: 6075 Kimball Ave, Bldg. B
Chino, California 91708

Telephone: (909) 993-1723
Facsimile: (909) 993-1982
Email: mposeske@ieua.org

CONTRACTOR ASSIGNMENT: Special inquiries related to this Agreement and the effects of this Agreement shall be referred to the following:

Contractor: Peter Bucknam
Address: 3548 Seagate Way, Suite 230
Oceanside, Ca 92056

Telephone: (760) 216-6529
Facsimile:
Email: steve@bucknam.net

5. Task Order Modifications: No communication, either written or oral, by other than written and bi-laterally executed change order shall be effective to modify or otherwise affect the provisions of this Task Order.

III. SIGNATURES

INLAND EMPIRE UTILITIES AGENCY:
(A Municipal Water District)

BUCKNAM INFRASTRUCTURE GROUP, LLC.:

Shivaji Deshmukh
General Manager

Peter Bucknam
President

Date: _____

Date: _____

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EXHIBIT A

We have defined detailed phases to the scope of work in accordance to the Agency's RFQ;

1. Project Implementation
2. Client Satisfaction
3. Scope of Work (Major Tasks / First Year Creation of Master Facilities Plan)
4. Project Schedule (See Section 5)

1) Project Implementation (Master Facilities Plan)

TASK 1.1: Project Kickoff

The first step in implementing a successful pavement management program truly resides in frequent communication and timely scheduled data updates. For the IEUA it will be essential to establish, up front, the Program Management, Engineering and GIS/IT pavement management priorities. Our team will set a Project Kickoff meeting with the Project Manager (Mr. Matthew Poeske) and the Deputy Manager of Engineering (Mr. Jerry Burke) to further discuss and review in detail the expectations of the project, technical approach, section ID / GIS management & surveys, zone/quadrant maintenance, software implementation & use, deliverables within the scope of work and the review of schedule.

This effort will build consensus between the all parties as well as build stronger preventative maintenance and CIP programs that establish a common-sense five-year schedule for program management, planning and scheduling.

The first key topics to be discussed will include the review and assessment of the existing pavement plan/data; its current and future use, survey areas based on recent maintenance work and schedules, new construction, data quality and condition, current pavement procedures, soil documentation, historical expenditure levels, software implementation and desired service levels.

Deliverable: Meeting minutes, revised project schedule (if necessary)

TASK 1.2: Project Status Meetings - Quality Control Program

Status Meetings and Progress Reports

- Minimum of three meetings during the project (kickoff, field, and status meetings, presentations)
- Meetings will incorporate task driven agendas for discussion and meeting minute actions
- Field review meetings, Monthly progress status reports will be delivered to IEUA project manager showing (copies of written communication, invoices, budget tracking and % complete per task)

Scope of Work



- Bucknam will make provisions for addressing project issues that may impede scope, fee and/or schedule and will resolve any issues that arise as soon as possible

PMP/Hardscape Quality Control (QC)

We will use a statistical sampling approach for measuring the quality of our field technician's work. In this manner, 10 percent (3 acres out of 30.5 acres) of the original surveys will be re-surveyed by an independent survey crew, supervised by a field supervisor, and the results will be compared to the original surveys.

Our QC process involves checking the field crews' work in a "blind study" fashion. Quality control checks will be performed at the end of each survey week. This will ensure that all field personnel are properly collecting distresses and pavement/hardscape quantities for all AC/PCC pavement segments.

PCI variance reporting will be performed where previous inspection PCI data will be compared to QC survey data; if PCI's vary more than ten (10) points Bucknam staff will assess the potential cause through unrecorded work history, accelerated pavement deterioration and/or further field assessment, etc.

Since we are collecting distress information on our field Tablets with the IEUA PMP database live, our staff will perform several quality control tests within the pavement management software using a sample set of the IEUA street distress data. This will ensure that all system and analysis settings as well as Agency recommendations and standards are being followed.

Over the past year, Bucknam has submitted forty (40) compliant PMP reports for SoCal municipalities, they include:

Southern California PMP Clients		
Ontario	Alhambra	El Segundo
Pomona	Culver City	Lomita
RPV	Palmdale	South Gate
South Pasadena	La Habra Heights	Sierra Madre
Monterey Park	Hermosa Beach	South Pasadena
Compton	Lynwood	Norwalk
La Verne	Rosemead	Bellflower
Rancho Palos Verdes	Duarte	San Clemente
Brea	Irvine	RSM
Costa Mesa	Aliso Viejo	Tustin
Laguna Hills	Laguna Beach	Westminster
Fountain Valley	San Juan Capistrano	La Habra
Huntington Beach	Newport Beach	Fullerton
La Palma		

Scope of Work



Our field surveys follow the accepted ASTM D6433-16 walking requirements which are proven and continue to be utilized for our SoCal clients shown above. A copy of the QA/QC plan utilized by our staff during the project will be submitted along with the PMP certification documents.

Per the RFQ, IEUA requires “certified” PMP inspection staff, our staff attends the OCTA PMP Distress Training Classes held in each year, 2011 thru 2019. In **March 2019** our staff was acknowledged as “qualified ASTM D6433-16 inspectors and firm” to prepare Pavement Management Plans compliant with the OCTA Countywide Pavement Management Guidelines (this certification/compliance runs through June 2021).

Registered Engineer / Lead Engineer

Mr. Steve Bucknam, P.E. will supervise all operations, review all completed data and prepare and sign a final report incorporating the results of our pavement evaluation and conditions. We will provide engineered recommendations for pavement rehabilitation and replacement based upon field data and analysis.

Deliverable: Monthly Project Status reports, field review and project status meetings, QA/QC Plan

2) Client Satisfaction

TASK 2.1: Project Deliverables

Shown throughout our Scope of Work, each Task is summarized with project deliverables. Client satisfaction will derive from frequent communication with the IEUA Project Manager and key staff members from the Engineering, Maintenance and GIS/IT departments. Project success is created by delivering on three main factors;

- 1) Adherence to scope tasks and deliverables;
- 2) Performing to the standard set by the Project Schedule; and
- 3) Controlling costs.

Our Project Manager will follow each of these factors throughout the duration of the project.

Deliverable: Project Status Updates monthly, as stated in Task 1.2

3) Project Schedule

TASK 3.1: Work Flow / Project Schedule

Our project schedule shows each major task identified in our scope of work, as well as quality control milestones and meetings. Bucknam currently has ample staff to apply to this project in order to meet a proactive schedule (3 field technicians will drive the schedule). Bucknam will

Scope of Work



coordinate with the Agency’s CIPO to ensure data, documentation, submittals and scheduling is communicated properly and efficiently. With a completed survey, our team will work with you to establish a Master Facilities Plan that provides specific, manageable pavement segments, detailed maintenance schedules of needed repairs and cost conscious maintenance recommendations that will assist you in preparing budget estimates required to complete your scheduled work for fiscal year 2019-20 and beyond.

Per the request of the RFQ, we have included the Critical Path Method (CPM) Project Schedule within Section 5 of our proposal.

4) Scope of Work (Major Tasks)

TASK 4.1: Establishment of IEUA PMP Network/ Work History Update

Pavement Segmentation

Bucknam will establish an IEUA Pavement Management database by utilizing the Army Corps of Engineers MicroPAVER software. Bucknam’s will create all pavement /hardscape segmentation for the Agency’s PMP network. Our staff will define all pavement segments utilizing ASTM D6433 standards and will ensure that all IEUA maintain AC/PCC segments are within the database. The Agency will provide Bucknam with the previous PMP/GIS facility databases and maps initially created for this RFQ. This will be completed by establishing common-sense AC/PCC pavement segmentation for the following facilities below.

Segmentation will be based on creating logical from-to segments that match current IEUA asphalt application practices and management. Bucknam will provide Agency staff with an initial pavement segmentation / sample location map prior to survey and for your approval. The established segmentation will be the baseline document for eventual delivery of the Master Facility PMP / GIS Atlas. It will be essential to have all parties in agreeance with how the IEUA PMP network will be surveyed and managed.

Location	Approximate Year Installed	Total Area (Acres)	Approximate Pavement and Hardscape Area (Acres)	Address
RP-1	1978-1977	78	12.2	2882 E Walnut, Ontario, CA
RP-4	2000	28	5.9	32811 6th Street, Rancho Cucamonga, CA
CCWRF	1990	20	2.6	24950 Telephone Avenue, Chino, CA
RP-5	2005	92	5.9	6878 Kimbell Avenue, Bldg. A & B, Chino, CA
Main Headquarters	2008	12	3.4	6878 Kimbell Avenue, Bldg. A & B, Chino, CA
Philadelphis P.S.	1968	3.45	0.34	1818 E. Philadelphia Ave., Ontario, CA
Monclair P.S.	1975	0.32	0.06	901 W. Philadelphia Ave., Ontario, CA 91761
San Bernardino P.S.	2007	0.43	0.2	13707 San Bernardino Ave., Fontana, CA
Predo P.S.	1997	1.8	0.51	16894 Johnson Avenue, Chino, CA 91710
Total		188.5	36.53	
Average Hardscape (%)			38%	

Our centralized PMP / GIS database will establish the use of either MicroPAVER which can be easily linked to the IEUA geodatabase / GIS Enterprise. This will allow IEUA staff to immediately gain access to essential pavement, sidewalk, C&G, valve and parking stall data.

The selection of MicroPAVER will occur immediately following the project kickoff meeting where Bucknam will demonstrate the pros and cons of each software. Both software’s are established

using ASTM D6433 PMP standards for inspection, distress types, reporting and budget analysis; the primary variance between the two software's is cost and annual maintenance. Our Project Manager (Mr. Peter Bucknam) has utilized both software's for over 20 years and will match the IEUA PMP needs to the correct software.

Work History

The Agency will provide Bucknam a complete listing of all major work (overlay, slurry, etc.) in order to update specific section work histories and PCI ratings. Bucknam will review all maintenance and rehabilitation projects completed and/or scheduled by the Agency since the last known PMP update; this will include work history updates within all managed facilities. Additionally, original construction dates for AC/PCC sections will be essential to establishing proper life-cycle rates for all pavement sections, Bucknam will assess available construction dates as well. Hardscape safety railing will also be included in this assessment/data base.

Our staff will enter the necessary work history updates as mentioned above (i.e. data entry of maintenance / rehabilitation activities) into your MicroPAVER software. Once the project is completed, our staff will upload the necessary PMP/Hardscape database files at IEUA.

Deliverable: Update PMP/Hardscape data, Work History report

TASK 4.2: Pavement Condition Surveys

First and foremost, the assessment of the Agency's pavement segmentation is one of the key priorities for this project. With numerous years between major inspections it will be essential to verify that all IEUA facility segmentation is up-to-date and that section SF quantities are verified, accurate and reliable. As stated within Task 4.1 Bucknam will verify and gain approval of all pavement, sidewalk, C&G, parking lot and vault segmentation management.

Once the pavement segmentation has been assessed and verified, the necessary inspections will be performed. It is the Agency's desire to survey all pavement sections during the 2019-20 fiscal year.

Our survey methodology will include the following approach based on the ASTM D6433-16 guidelines:

Pavement Surveys

1. **Walking** - All sections are surveyed through walking methodologies. Distress types will be collected based upon actual surface conditions and physical characteristics of the segment. AC/PCC Sample locations, distress types, extents and severities will be collected based upon actual surface conditions and physical characteristics of the segment. Sample locations will be 2,500 SF +/- 1,000 SF. Surveying methods will be conducted by remaining consistent with ASTM D6433-16 sampling guidelines while being flexible to current Agency practices. Live GIS files will be used to enhance field survey locations, data access and quality control measures.

Scope of Work



All sample locations are observed through walking surveys; additional unique conditional factors such as unique distress areas found outside our sample areas will be recorded.

- The inspection of approximately 30.53 acres covering nine facilities will be performed;
- This equates to approximately 1,400,000 SF of total survey;
- On an annual basis, recent slurry seal and overlay maintenance will reduce the amount of necessary survey, Bucknam will coordinate SF reduction with the Agency prior to survey;
- IEUA has expressed the need for PMP/Hardscape survey updates in FY 2022-23 and FY 2024-25 (Bucknam has demonstrated these costs within our separate Proposal Fee; and

Location	Approximate Pavement and Hardscape Area (Acres)
RP-1	12.2
RP-4	5.3
CCWRF	2.6
RP-5	5.9
Main Headquarters	3.4
Philadelphia P.S.	0.34
Monclair P.S.	0.08
San Bernardino P.S.	0.2
Prado P.S.	0.51
Total	30.53

Our use of MicroPAVER Tablet units allows our staff to collect pavement data with the Agency’s PMP database live in the field. At the end of the day all electronic data is transferred to our office for quality control and management. Our Tablet methodology sets us apart from the competition since we are using a paper-less inventory process to enter data; this in turn generates cost savings to enhance other portions of the project such as CIP reporting, GIS implementation, PMP software training, and on-call services.

Roadway Verification Survey - A listing of the field attribute data that is updated/verified during the survey for the pavement management database is listed below:

1. Field Attribute Data (updated and/or verified)

- ❖ From/to, indicating the assigned limits of the section, sample test areas, street name, a street codification (i.e. truck route, maintenance zone)
- ❖ Street ranking indicating classification, # of lanes, surface type
- ❖ Street segmentation implemented continuously from west to east and south to north
- ❖ Historical PCI tracking from previous inspections and 2019 PCI inspections
- ❖ Segment quantities, indicating the length, width, and total true area of the section
- ❖ Structural sections (if available from previous reports or Agency documents)

2. Conditional data will be evaluated for all street segments and will include:

- ❖ 20 AC & 19 PCC distresses by type, severity and sample area
- ❖ PCI ratings (0-100), considering the surface condition, level of distress
 - PCI values will reflect “per segment and overall” results (not per direction of travel);
 - Reporting that indicates PCI current and future performance for the next five years based on performance prediction modeling and local conditions;
- ❖ Drainage Condition Rating (standing water, etc.)
- ❖ Traffic volumes (ADT, if available)

In developing the PMP and through our field surveys if our staff modifies or changes any street segment we will notify the Agency Project Manager and gain approval for such changes before any modifications are made.

We welcome staff members from IEUA to join our surveys.

All pavement/hardscape/valve/vault/safety-railing data collected under this project will be entered into the Bucknam’s MicroPAVER licensed software and/or GIS project files; no MicroPAVER license will be purchased for IEUA. All items listed above will be maintained by our staff for the duration of this project. Data management will be performed in-house at our Oceanside office. At the completion of the project, the PMP/Hardscape database will be placed within your internal IEUA network.

3. Section Distress and PCI Reporting

Once inspections are completed, we will generate a draft Pavement Condition Index (PCI) Report for Agency staff to review. The Agency and our staff will review these reports to ensure that all inventory data is correct and the project is running smoothly.

Our submittal will include:

1. PCI Variance report comparing initial 2019 PCI’s to future inspections (will be performed annually)
2. Street linear footage, width, and pavement area
 - a. Reported as an entire network
 - b. Reported by functional classification (collector, local)
3. Current street network Pavement Condition Index ratings
 - a. Report as an entire network
 - b. Reported by functional classification (collector, local)
4. Pavement segment tabular listing for the entire street network

Scope of Work



- a. PCI Report – sorted by PCI (worst to best)
 - b. PCI Report – sorted alphabetically
5. Creation of pavement performance curves and definitions for maintenance strategies, decision tree models and pavement life-cycle analysis
 6. PCI report will be signed and sealed by our registered engineer

Deliverable: Agency-wide PCI Reports (30%, 65% and 100% status PCI reports), PCI Variance report

TASK 4.3: Development of Sidewalk/Safety-Railing Maintenance Program Database

The Hardscape inventory (sidewalk, walkways, C&G, parking stalls & Safety-railing) will be surveyed utilizing the following methodology. Bucknam will use the established GIS polygon segmentation to logistically schedule and survey; the hardscape survey methodology below will be followed:

Over the past month, Bucknam has thoroughly assessed the Agency's nine (9) facility network as well as geographically approximated its total sidewalk SF through GIS. Currently the Agency has 30.53 acres of pavement and hardscape; approximately 16% to 20% of the 30.5 acres is hardscape or 280,000 SF. Hardscape is defined as sidewalk/walkways, curb & gutter, Safety-railing and parking stalls.

Our staff will utilize the Agency's available street segmentation data within the IEUA MicroPAVER PMP to establish the sidewalk segmentation, Unique sidewalk ID, survey and schedule. Our staff will utilize additional data such as the Agency's GIS centerline, facility GIS polygon, aerial imagery and other viable data that will assist our field operations.

In building the SMP database, all sidewalk inventory and distress data will be collected through the use of our hand-held GPS Tablet units. Through the use of our enhanced GPS tablets we utilize a data capture screen to record all inventory and inspection data defined by the scope of work.

Another essential item to establish prior to survey is what defines Priority maintenance and repair. The recording of Priorities 1, 2, 3 and 4 will be linked to each distress found in the field. These are shown in detail within Tasks 4.3 & 4.4.; as stated above, we will meet with Agency staff to define the final Priority definitions prior to survey.

Deliverable: Definition of IEUA Sidewalk Section network

Based on previous sidewalk management programs performed for various cities, we are providing a list of typical layers and attributes we collect during sidewalk inspections:

Sidewalk Data - Distress GIS Layer

- Facility ID Number – Asset number closest to distress, if applicable;
- Polygon representation of sidewalk, walkways;

Scope of Work



- Polyline representation of C&G;
- Street Name – Street Name;
- Surface Type – i.e. AC, Brick, Paver, PCC;
- Distress Type – i.e. Alligator Cracking, Block Cracking, Buckled Slab, etc.
- Distress GPS coordinates/location;
- Height of Lift (Distress Priority) – i.e. less than ¾", ¾" to 1 ¼", more than 1 ¼"
 - Priority/Severity – To be determined by Agency staff.
- Sensitive Location – Critical Facilities, etc. Locations to be determined by Agency Staff;
- Tree – If distress is caused by a tree;
- Utility Box – If utility box is affected by sidewalk distress;
- Utility Company or Type – Type/Company of the utility;
- Slope Over 5 to 1 – Yes/No for sidewalk locations over a 5:1 slope ratio;
- Length – Length of distress, if applicable;
- Width – Width of distress, if applicable;
- Area (Sq. Ft) – Area of distress, if applicable;
- Recommended Work – i.e. Grind, Replace, Fill, etc.;
- Cracks with ½" separation to be noted;
- Holes with ½" or greater in depth to be noted;
- Brick or concrete walkways and tree well installations that are not level;
- Construction Site – If distress is on a construction site;
- MicroPAVER ID – Unique ID that corresponds with PMP - GIS Layer;
- Damaged Curb and gutter to be noted;
- Damaged ADA Ramp to be noted;
- Any hazards or sidewalk damage that may not meet requirements of repair to be noted for future inspections;
- Field notes, pictures, inspection date and inspector tags associated with distress priority location;
- Comments – Field for any necessary comments about the distress.

Bucknam will work with Agency staff to further develop the sidewalk/walkway/ Safety Railing, C&G and parking stall GIS layers and database attributes. We will finalize each GIS layer's attributes with the Agency staff before beginning the survey process. Bucknam will deliver all GIS layers in the Agency's preferred GIS format (i.e. shapefile, AutoCAD 2018, file geodatabase, etc.) along with MXDs and MPKs.

Through our experience in working with sidewalk GIS datasets and PMP software's we are approaching the development and future management of the IEUA sidewalk inventory in the following manner:

- ❖ Perform all sidewalk data collection through the use of GPS handheld technologies and personal computers.
 - This creates a real-time, accurate GIS database for each distress location
- ❖ Import all sidewalk GIS data into the Agency's existing GIS Enterprise program for data analysis, reporting and management



Sample screenshot of GPS collected data imported into the City of Rancho Palos Verdes GIS

Rancho Palos Verde – Sidewalk Distresses																
Parcel ID	Street Name	Distress Type	Distress Code	Distress Severity	Distress Priority	Distress Status	Distress Date	Distress Length	Distress Width	Distress Area	Distress Volume	Distress Weight	Distress Height	Distress Depth	Distress Diameter	Distress Location
30540	Rue De La Pierre	Buckled Slab	2	N	7	N	Y	N	0	0	0	N	N	N	N	School
30523	Rue De La Pierre	Buckled Slab	2	N	7	N	N	Y	8	4	0	N	N	N	N	School
30553	Rue Valois	Buckled Slab	Y	Public	N	N	N	N	12	0	0	Y	N	N	R/R	TREE LIFTING SLABS
33	Sell View Ave	Faulting	6	Y	Private	N	Y	N	0	4	0	Y	N	N	GRND	None
10	Sell View Ave	Faulting	6	Y	Public	N	Y	N	0	4	0	Y	N	N	GRND	None
8	Sell View Ave	Faulting	6	Y	Public	N	Y	N	0	4	0	Y	N	N	GRND	None
6	Sell View Ave	Faulting	6	Y	Public	N	Y	N	0	4	0	Y	N	N	GRND	None
2	Sell View Ave	Faulting	6	Y	Public	N	Y	N	0	4	0	Y	N	N	GRND	None
61	Seaneze Av	Faulting	6	Y	Public	N	N	N	0	4	0	N	N	N	GRND	None
89215	Via Victoria	Bleeding	5	N	7	N	N	N	12	0	0	N	N	N	N	GRND W/H
26742	Genraldo Rd	Alligator Cracking	N	7	N	N	N	N	0	0	0	N	N	N	N	SLABS LIFTING
3518	Fincrest Dr	Alligator Cracking	N	7	N	N	N	N	0	4	0	N	N	N	N	REPLACE
5343	Bevridge Rd	Alligator Cracking	N	7	N	N	N	N	0	0	0	N	N	N	N	REPLACE
5345	Bevridge Rd	Alligator Cracking	N	7	N	N	N	N	0	5	0	N	N	N	N	REPLACE
5243	Bevridge Rd	Alligator Cracking	N	7	N	N	N	N	0	5	0	N	N	N	N	REPLACE
5213	Bevridge Rd	Alligator Cracking	N	7	N	N	N	N	0	7	0	N	N	N	N	REPLACE
30489	Genardo Dr	Corner Break	N	7	N	N	N	N	0	3	0	N	N	N	N	None
30519	Genardo Dr	Corner Break	N	7	N	N	N	N	0	0	0	N	N	N	N	None
3605	Greve Dr	Corner Break	N	7	N	N	N	N	0	0	0	N	N	N	N	None
30467	Genardo Dr	Corner Break	N	7	N	N	N	N	0	0	0	N	N	N	N	REPLACE
30555	Genardo Dr	Corner Break	N	7	N	N	N	N	0	0	0	N	N	N	N	REPLACE
3543	Bandigo Dr	Corner Break	N	7	N	N	N	N	0	4	0	N	N	N	N	None
2084	Mac Arthur St	Buckled Slab	N	7	N	N	N	N	0	4	0	N	N	N	N	None
2050	Mac Arthur St	Buckled Slab	N	7	N	N	N	N	0	4	0	N	N	N	N	None
6259	Peacock Ridge Rd	Buckled Slab	N	7	N	N	N	N	12	4	0	N	N	N	N	REPLACE
2117	Dorado Dr	Buckled Slab	N	7	N	N	N	N	0	4	0	N	N	N	N	None
29619	N Western Av	Buckled Slab	N	7	N	N	N	N	0	5	0	N	N	N	N	None
6020	Fleming Rd	Buckled Slab	N	7	N	N	N	N	0	4	0	N	N	N	N	None
6036	Fleming Rd	Buckled Slab	Y	Public	N	N	N	N	0	4	0	N	N	N	N	None

Deliverable: Defined Distress Priority Criteria, Defined Master GIS Project file (.mxd).

TASK 4.4: Sidewalk / C&G Data Collection

Hardscape Surveys

Once the street/pavement segmentation has been assessed and verified, the inspection of approximately 280,000 SF of sidewalk segments will be performed. Our survey methodology will include the following approach:

2. **Walking / GPS Handheld** - All sections will be surveyed utilizing a walking/GPS methodology. Distress locations and types will be collected based upon actual surface

conditions found and physical characteristics of the site. Surveying will identify distress locations of sidewalk by GPS coordinates.

Initial First Year SMP survey contract:

- **FY 2019 – IEUA sidewalk survey (approx. 280,000 SF);**

The Agency has identified specific Priority distress priority limits (repair criteria), which are demonstrated below; any recommended changes to the Priority limits will be discussed prior to survey:

- **Priority 1 – (Fair to Good)**, Locations that have a condition of Fair to Good or where the problem is not a safety hazard
 - Typically trip, separation, spalling, raised/depressed slab distress areas that are less than $\frac{3}{4}$ " in occurrence
 - Other obvious crushed or deteriorated locations shall be identified
- **Priority 2 – (Very Poor)**, Locations that have a condition of Very Poor or any location which the field technician considers to be an immediate serious safety concern
 - Typically trip, separation, spalling, raised/depressed slab distress areas that are $\frac{3}{4}$ " to 1 in occurrence
- **Priority 3 – (Poor to Fair)**, Locations that have a condition of Poor to Fair of where the field technician determines that a problem is not an immediate safety concern
 - Typically trip, separation, spalling, raised/depressed slab distress areas that are more than 1 in occurrence
- **Priority 4–** for "vicinity of a sensitive location" (i.e., agency facilities, hazmat locations, critical utilities, etc.) where pedestrian traffic is high and the Agency has a vested interest in lowering tripping hazards.
 - Rating can be given for any level of displacement; this places priority onto the location needing repair due to the pedestrian activity at the site.

Sidewalk Field Attribute Data Verification - A listing of the field attribute data that is verified for each distressed site is listed below:

1. Field Attribute Data

- ❖ Street Name, From/to, indicating the assigned limits of the section, street ID;
- ❖ Facility location;
- ❖ Surface type;
- ❖ Sidewalk length, width and area (identified through aerial imagery, if available), side of street;
- ❖ Distress location (GPS and address/ID identified) – ECR may be used if no address;
- ❖ Distress type (linear crack, spalling, etc.);

Scope of Work



- ❖ Distress Priority (1, 2, 3 or 4);
 - Cracks with ½" separation to be noted;
 - Holes with ½" or greater in depth to be noted;
 - Construction site notification;
 - Bricks or concrete walkways and tree well installations that are not level;
- ❖ Measurement (linear or area) of distress found;
- ❖ Utility box, utility company;
- ❖ Caused by tree / potential tree removal;
- ❖ Damaged C&G / damaged ADA ramps/Safety Railing to be noted;
- ❖ Field notes, pictures, inspection date and inspector tags associated with distress priority locations;
- ❖ Working GIS map indicating street inspections that have been completed (QC);
- ❖ Recommended repair based on Agency's maintenance criteria; and
- ❖ General comments of distress location (if necessary).

We welcome staff members from the IEUA to join our surveys. Data management will be performed in-house at our Oceanside office.

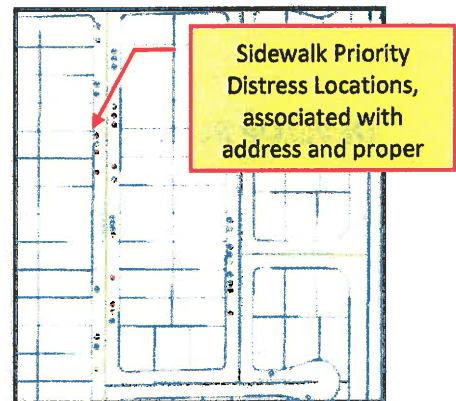
Our use of GPS Handheld/Tablet units allows our staff to collect sidewalk data with the Agency's database live in the field. At the end of the day all electronic data is transferred to our office for quality control and management. We can produce Sidewalk GIS Distress locations at any time during the survey for Agency QC and/or review.

Section Distress and Condition Reporting

Once inspections are completed, we will generate a draft Sidewalk Distress Reports for Agency staff to review. The Agency and our staff will review these reports to ensure that all inventory data is correct and the project is running smoothly.

Sidewalk, C&G, Safety Railing reports will include:

- Identification of all street segments in a continuous manner (W to E and S to N);
- Sidewalk locations identified within street segments;
- Distress categories will be uniquely mapped;
- GIS map identifying found sidewalk distress locations;
- Field notes, pictures associated with distress locations; and
- A Priority repair map will be produced, see GIS to the right);
- Forecasted Maintenance Report demonstrating recommended work (i.e. grind, ramp, replace).



Scope of Work



FID	Shape *	NAME	ID	SIZE	TREE	TYPE	ST SIDE	LENGTH FT	AREA SF	RECOMMEND	TR. FALL	COMMENTS
1323	Point	ESHELMAN AVE	132	Greater than 1 inch	Yes	Displaced Slab	East	4	0	Grind	High	
1324	Point	ESHELMAN AVE	132	Greater than 1 inch	No	Depressed Slab	East	0	226	Replace	High	
1325	Point	ESHELMAN AVE	132	Less than 1 inch	No	Linear Crack	East	4	0	N/A	N/A	
1326	Point	ESHELMAN AVE	132	Greater than 1 inch	Yes	Displaced Slab	East	4	0	Grind	High	
1327	Point	ESHELMAN AVE	132	Less than 1 inch	No	Depressed Slab	East	0	22	Replace	Low	
1328	Point	ESHELMAN AVE	132	Less than 1 inch	Yes	Linear Crack	East	5	0	Grind	Low	
1329	Point	ESHELMAN AVE	132	Less than 1 inch	No	Crushed Slab	East	0	15	Replace	N/A	
1330	Point	ESHELMAN AVE	133	Greater than 1 inch	No	Displaced Slab	East	4	0	Grind	High	
1331	Point	ESHELMAN AVE	133	Greater than 1 inch	No	Joint spalling	East	1	0	N/A	High	
1332	Point	ESHELMAN AVE	133	Greater than 1 inch	No	Displaced Slab	East	4	0	Grind	High	
1333	Point	ESHELMAN AVE	133	Less than 1 inch	No	Joint spalling	East	2	0	N/A	N/A	
1334	Point	ESHELMAN AVE	133	Greater than 1 inch	Yes	Displaced Slab	East	0	26	Replace	High	
1335	Point	ESHELMAN AVE	133	Less than 1 inch	No	Linear Crack	East	8	0	N/A	N/A	
1336	Point	ESHELMAN AVE	133	Less than 1 inch	Yes	Displaced Slab	East	4	0	Grind	Low	
1337	Point	ESHELMAN AVE	133	Greater than 1 inch	Yes	Displaced Slab	East	4	0	Grind	High	replace immediately

Sample screenshots of Sidewalk Inventory report and GIS output

Deliverable: Agency Sidewalk Distress Reports (30%, 65% and 100% status reports); GIS Distress Priority maps, Recommended Sidewalk/C&G maintenance.

Valve / Vault and Vault Lid Surveys

Per the request of the Agency, Bucknam will perform GPS Valve, and Vault Lid surveys to identify all known locations within the IEUA GIS Enterprise. Bucknam will initially assess all available as-builts, aerial imagery and CAD files. Bucknam staff will utilize our GPS mobile units to identify valve/vault coordinates and assign specific attributes to each asset (i.e. condition, type, etc.).

We will provide the Agency Valve/Vault GIS mapping and spreadsheet data that quantifies asset totals for each facility. With known locations combined with the PMP, Sidewalk C&G, Safety Railing maintenance strategies, IEUA staff will be able to enhance the accuracy of replacement / maintenance costs within the 5-Year projections provided by Bucknam (Task 4.5 / 4.6).

DEVELOP RECOMMENDED IMPROVEMENT PROGRAM

TASK 4.5: Maintenance and Rehabilitation, History and Decision Tree

In regard to the pavement maintenance that has been performed by in-house staff as well as through contractual maintenance, our staff will review all street activities that have been performed since the last major PMP update. All AC/PCC maintenance data will be entered into MicroPAVER to improve upon section deterioration projections that will in turn enhance the recommendations for the upcoming budgetary analysis and CIP reporting.

We will assist the Agency in developing the most cost-effective preventative maintenance, repair and rehabilitation strategies possible. This will be accomplished by meeting with the Agency to discuss and strategize maintenance activities/unit costs that are currently being used by the Agency. This effort is typically scheduled for when our pavement surveys reach 65% complete.

Based on the Agency's current available budget, AC & PCC applications/costs and other maintenance practices used we will conduct an historical and prospective analysis on the

Scope of Work



conditional and financial impact these practices have on the pavement network. The maintenance strategies that are typically reviewed are localized stop gap maintenance, slurry seals, rehabilitation and reconstruction (R&R), the expected improvement in pavement condition, the life-cycle extension that would result and the unit costs for maintenance.

Based on our fiscal and deterioration analysis, we will present our results and recommendations to Agency staff. This analysis will become an essential building block for the recommended 2019-2024 maintenance programs/scenarios. Bucknam will provide an engineering discussion that includes priority listings as well as several sets of priority / cost-benefit analysis scenarios.

We will establish a maintenance “decision tree” that will be used to generate pavement recommendations that match current 2019 maintenance approaches which integrate planned facility expansions in the future as well as possible abandonment of the CCWRF Facility. This will be accomplished by assessing/updating the unique and individual deterioration curves within the database based on functional class (collector, local) and age. Our staff will review the IEUA’s deterioration curves that have been developed based on historical pavement condition, inspection, surface type, and road class. The curves will be modified based on 2019 PCI’s.

All maintenance practices/unit costs will be integrated into the PMP database and will be derived from the most recent construction bids for pavement rehabilitation. We will account for annual inflation rates and PMP project contingencies when long-term revenues projections are made.

Our staff will also recommend updates to the Agency’s maintenance zone approach. We will focus on projecting budgets and maintenance recommendations for all streets within maintenance “zones”; this will allow us to proactively schedule maintenance efforts throughout the 5-year CIP as well as achieve the desired level of PCI across the Agency.

Our Project Manager and key staff will work closely with Agency in defining repair and rehabilitation strategies during each fiscal year and within each area defined by the Agency. Once the repair/rehabilitation strategies have been defined, the identification of a five-year Forecasted Maintenance schedule will be generated.

The recommended budget scenarios will be identified on the basis of several criteria:

- Assessing the Agency’s current PMP funding sources (i.e. General fund, O&M and Regional Capital , etc.);
- Present pavement conditions; Desired levels of service and available resources;
- Scheduling recommendations with the Agency’s priority projects and other capital projects (water, sewer, etc.);
- Recommendations for pavement / hardscape section design thickness;
- Accrued backlog levels and stabilization of maintenance backlog; and
- Future routine maintenance needs based on projected deterioration rates.

The primary emphasis of this task is to maximize the programming of street maintenance projects using the most cost-effective strategies available and taking into account a life-cycle cost analysis. A working “draft” Final Report will be generated for Agency staff to review. The Draft and Final PMP reports will include:

- Executive Summary / Findings and Recommendations;
- Purpose statement for PMP to establish goals and objectives;
- Assessment of current and projected pavement condition (condition analysis and prediction modeling);
- Pavement Condition Index (PCI) reports;
- Multiple CIP scenarios identifying facility maintenance/rehabilitation (per section & zone) recommendations (slurry, overlay, recon, etc.) associated with contingency costs; Agency will provide funding source budget allocations;
- Recommendations for maintenance in “groupings” or zones within facilities; and
- GIS mapping.

Deliverable: Hierarchy model of pavement maintenance decision tree, two (2) copies of the Draft Pavement Management Program Report

TASK 4.6: Budgetary Analysis and Final PMP Reporting

We will deliver the Final Report to the Agency which will be essential for staff use/reference and beneficial for elected officials/upper management. The report will be prepared in a format that uses the information delivered by PMP in conjunction with the information and analysis performed by our team. The report will provide the Agency with information on:

- Current inventory and pavement conditions indices (PCI) for all street classes;
- Projected annual rehabilitation programs for street maintenance for a 5-yr period (Facility Forecast Maintenance Reports) that show the largest return on investment and acceptable levels of service;
- Identification of pavement/hardscape maximization of life cycle, ROI, cost reduction within IUEA bidding process
- Modeling and comparison of budget scenarios typically include;
 - Current / Actual budget 5-year projection (agency-wide approach);
 - Identification of annual funding to maintain current PCI after 7-years;
 - Increase current PCI within 5 years;
 - Gradual, Frontloaded, Constrained and Unlimited funding analysis ;
- Strategies and recommendations for the Agency’s maintenance programs and procedures, including a preventative maintenance schedule;
- Preparation of generic specifications for all identified fiscal year projections/bid documents;
- Supporting documentation required by Agency; and

Scope of Work



- The PMP will be presented to the IEUA Board and/or upper management and we will support IEUA staff in the development of the presentation; **pro bono**

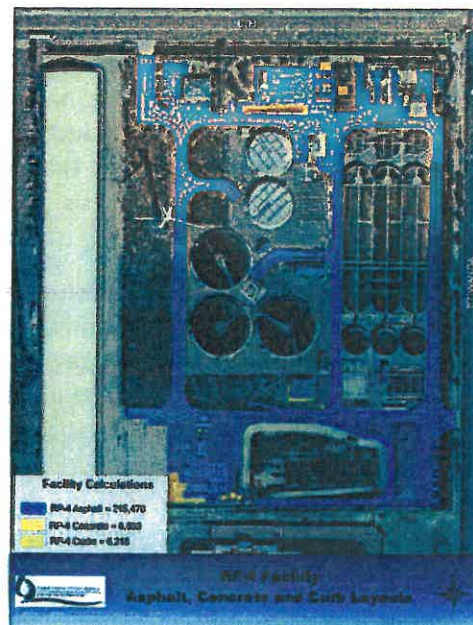
Registered Engineer - Mr. Steve Bucknam, P.E. will supervise all operations, review all completed data and prepare and sign a final report incorporating the results of our pavement evaluation and conditions. We will provide engineered recommendations for pavement rehabilitation and replacement design based upon field data and analysis. In summary, the final report will include:

Final Report Deliverables
Executive Summary outlining the complete project
Methodologies utilized for field survey and budget analysis
Work history of completed street maintenance, rehabilitation and reconstruction
Current PCI's by section
Condition distribution by functional classification
Projected annual road maintenance R&R programs for streets over 5 year period based on Task 4.6 scenarios
Projected annual road maintenance R&R programs for sidewalk/C&G over 5 year period based on Task 4.6 scenarios
Analysis that allows for the Agency to measure cost impact due to deferred maintenance
GIS map exhibits demonstrating PCI's, work history, project budget scenarios, etc.
Present and future PCI rating based on a five-year M&R
MicroPAVER or StreetSaver PMP database (integration within IEUA GIS Enterprise)
Sidewalk, C&G, value/vault GIS database (Integration within IEUA GIS Enterprise)

Deliverable: Upon final approval, three (3) bound copies of the Final Pavement PMP Report (plus one original signed by our Registered Engineer, CA No. 20903), in binder and electronic form (.pdf), will be sent to the Agency. Bucknam will provide one (1) DVD copy of the Final PMP database and will install it at the Agency.

TASK 4.7: PMP – GIS Link / Mapping

As an enhancement and proactive approach to this project, our staff will create and publish a Pavement-GIS link between PMP data and the Agency's GIS system. Bucknam will utilize the Agency's existing GIS facility centerline/polygon layer as a starting point for the development of the PMP-GIS integration. By using the unique ID's within the PMP and the Agency's ESRI street geodatabase ID's, we will create a one-to-one match for each pavement, sidewalk, C&G, and value asset/section in the IEUA ESRI GIS Enterprise. All pavement segmentation within the PMP database will be mirrored within the IEUA GIS layer which will allow all pavement data to be published on the GIS environment.



With a completed survey and once IEUA has approved the Pavement Condition Report, we will update the PMP-GIS layer with relevant PCI data.

The maps described below will be incorporated into the Agency's Final PMP report:

- Comprehensive/corrected Facility GIS Pavement / Hardscape layers;
- PCI values for every section;
- Work History identifications;
- 5-yr Rehabilitation and Slurry Seal Programs; and
- Sidewalk/walkway, C&G, Safety Railing, valve/vault location and condition assessment.

Our staff will coordinate all project deliveries with the Engineering and the GIS division to ensure that the most current and accurate PMP-GIS maps are represented within the Agency's GIS enterprise.

Additionally, Bucknam has found great success with implementing ESRI ArcGIS Online in association with pavement/hardscape short-term data implementation, long-term data management and accountability. This option is viable for this project.

Deliverable: Complete GIS files/project .mxd's based on list above.

TASK 4.8: PMP Training and Technical Support

With PMP software use being one of the key components to a successful PMP implementation, we will provide Agency staff with quality, certified training and the necessary skills needed to maintain the PMP. Bucknam will provide Agency staff with all collected pavement/GIS data, as well as updated operation manuals for both field data collection and software use. Based on the number of future users, our staff will deliver as many copies as needed by Agency staff to facilitate the program. Peter Bucknam and our Lead Field Technician, who are certified in the use of MicroPAVER, will conduct comprehensive multi-day training sessions covering implementation, interfacing with the system, PMP methodologies, field survey practices, PCI calculations, budget needs analysis and editing/updating the database. This is estimated to consist of a minimum of 8 hours of training.

Annual training typically involves one (1) day of training on the PMP software and GIS linkages. There is no minimum or maximum amount of people that can be trained under this methodology. We can train one key individual or an entire classroom using an Agency training facility pending on your needs; the intent of this training is to empower and allow Agency staff to continue updating the PMP database on their own after this project is completed.

The agreement will include the provision of onsite and telephone support for the Agency staff.

Deliverable: PMP software training, field and internal technical support

TASK 4.9: Master Specifications Preparation / Management

A. Task Order Master Template

Work efforts under this Task will entail the following:

1. Participation in a kickoff meeting with IEUA Design and Construction Management staff to clearly identify the specific format and content of the Task Order Master Template for Asphalt Concrete (AC) Pavement & Miscellaneous Portland Cement Concrete Repairs based upon the results on each of the Phased Pavement Management Program's findings & recommendations.
2. Prepare Draft & Final Versions of the Task Order Master Template Documents for various types of AC & PCC Repair projects under IEUA's Informal Contract parameters.
3. Provide consultation with the IEUA's Design & Construction Management staff and their Survey & Geotechnical Consultants, regarding the parameters for Survey requests or Geotechnical boring and analysis; to ascertain existing pavement sections and subgrade conditions.
4. Provide On-call Consultation to IEUA in respect to Task Orders; during Informal Contract negotiations and Consultation during construction; to clarify the scope of the repair contract.
5. Provide updates to the Task Order Master Template for subsequent PMP Report Recommendations to reflect any need modifications to the AC or PCC materials and methods requirements which may be made in the APWA Standard Specifications for Public Works Construction.

B. Technical Specifications Master Template

Work efforts under this Task will entail the following:

1. Participation in a kickoff meeting with IEUA Design and Construction Division staff to clearly identify the specific format and content of the Technical Specifications Master Template for Asphalt Concrete (AC) Pavement & Miscellaneous Portland Cement Concrete Repairs based upon the results on each of the Phased Pavement Management Program's findings & recommendations
2. Prepare Draft & Final Versions of the Technical Specifications Master Template Documents for various types of AC & PCC Repair projects under IEUA's Formal Contract parameters.
3. Provide consultation with the IEUA's Design & Construction Management staff and their Survey & Geotechnical Consultants, regarding the parameters for Survey requests or Geotechnical boring and analysis; to ascertain existing pavement sections and subgrade conditions.

4. Provide On-call Consultation in respect to the Technical Specifications; to IEUA during Formal Contract negotiations and Consultation during construction; to clarify the scope of the repair contract.
5. Provide updates to the Task Order Master Template for subsequent PMP Report Recommendations to reflect any need modifications to the AC or PCC materials and methods requirements which may be made in the APWA Standard Specifications for Public Works Construction.

OPTIONAL SERVICES

TASK 4.10: As-Needed PMP – GIS Services

Pavement Management Program Support

With the Agency implementing a multi-yr PMP management schedule Bucknam will provide annual PMP support that will cover data previously submitted by our staff. If additional services outside the identified scope of work above are requested Bucknam will provide timely and proactive services to the Agency. Additional As-Needed services typically include:

- Additional budget scenarios, general reporting, deterioration studies;
- Additional visual inspections above the SF amount indicated in Task 4.2;
- Additional PMP-Hardscape Task 1 updates in FY 2022-23 and FY 2024-25
- Additional pavement management – GIS mapping;
- Additional MicroPAVER training, operation use; and

If requested, Bucknam will assess and review the Agency's upcoming maintenance schedule for that fiscal year. The agreement will continue to include the provision of onsite and telephone support for the Agency staff.

GIS Management Program Support

Additionally, Bucknam will provide GIS Contract services through our GIS Manager and GIS Analyst staff. Our support will enhance and proactively complete the Agency's on-going GIS implementation, Engineering data development, survey and management.

- Implementation of Engineering GIS Enterprise solutions / Infrastructure Management GIS solutions
- GPS surveys, GIS layer development, GIS digitization



TASK 4.11: Presentation to the IEUA Board (Optional)

As a pro-bono effort, Bucknam will prepare and present the PMP to the Agency's Board and/or upper management. This effort will include the development and finalization of a PowerPoint presentation (approved by Agency staff); the report will reflect all data collected and reported on during the project.

Deliverable: Delivery of PowerPoint presentation, assistance with presentation to Agency Board

Bucknam Infrastructure Group - Detailed Labor and Fee Breakdown
Inland Empire Utilities Agency, CA
2019-2024 Pavement Management Services
Task Order 01 FY 2019-20 Update
SECTION 6 - COST PROPOSAL/PAYMENT FEE SCHEDULE

Bucknam Infrastructure Group - PROJECT COST BY TASK BY PERSONNEL		Discipline 1							Discipline 2			
Agency Requested Year 1, 3 and 5-Work Efforts / Base Contract with Optional AS-Needed, Totaling Five (5) Years												
Task Description	Burdened Hourly Rate	Project Principal-In-Charge	Project Manager	GIS Analyst	Field Technician	Field Technician	Field Technician	Clerical / Administrative	TOTAL HOURS Bucknam	TOTAL FEE Bucknam	TOTAL FEE Sub-Consultant	TOTAL PROJECT FEE
		\$ 275.00	\$ 185.00	\$ 145.00	\$ 91.00	\$ 91.00	\$ 91.00	\$ 80.00				
FISCAL YEAR 2018-20: PMP Services (Year 3)												
Task 1.1 Management and Administration - Project Kickoff			1	1	1				3	\$ 421.00	\$ -	\$ 421.00
Task 1.2 Project Status - Quality Control Program			3	3	14	14	4		38	\$ 3,902.00	\$ -	\$ 3,902.00
Task 2.1 Client Satisfaction - Project Deliverables	2		6	6	2	2		1	19	\$ 2,974.00	\$ -	\$ 2,974.00
Task 3.1 Work Flow / Project Schedule			3	3	3				9	\$ 1,263.00	\$ -	\$ 1,263.00
Task 4.1 Update Establishment of IEUA PMP Network/Work History												
- Assess existing IEUA Pavement/Hardscape data - Build Segmentation database			8	56	30	12	12		118	\$ 14,514.00	\$ -	\$ 14,514.00
Task 4.2 Pavement Condition Surveys - 30.53 Acres (approx. 1.4 million SF)			8	4	48	24	24		108	\$ 10,796.00	\$ -	\$ 10,796.00
- Safety Rating Assessment, Inspection, Mapping & Reporting	2		4	18	22	16			62	\$ 7,358.00	\$ -	\$ 7,358.00
Task 4.3 Development of Sidewalk Maintenance Program			3	2					5	\$ 845.00	\$ -	\$ 845.00
Task 4.4 Sidewalk / C&G Data Collection (SW, Walkways, C&G, parking stalls)			8	48	24	24	24		128	\$ 14,992.00	\$ -	\$ 14,992.00
Task 4.5 Maintenance and Rehabilitation, History and Decision Tree	2		6	2	2				12	\$ 2,132.00	\$ -	\$ 2,132.00
Task 4.6 Budgetary Analysis and Final PMP Reporting	8		48	16	2			1	75	\$ 13,662.00	\$ -	\$ 13,662.00
Task 4.7 PMP - GIS Link / Mapping			2	10	22				34	\$ 3,822.00	\$ -	\$ 3,822.00
Task 4.8 PMP Training and Technical Support			2		8				10	\$ 1,098.00	\$ -	\$ 1,098.00
Task 4.9 Master Specifications Preparation / Management	7		16	40	40	20	20	2	165	\$ 18,125.00	\$ -	\$ 18,125.00
Task 4.10 (Optional - See Below) - PMP Presentation to Board - pro bono									0	\$ -	\$ -	\$ -
All Tasks Reimbursable (mileage, materials, equipment)										\$ 5,490.00	\$ -	\$ 5,490.00
SUBTOTAL			21	118	209	218	112	84	766	\$ 101,394.00	\$ -	\$ 101,394.00
TOTAL LABOR			21	118	209	218	112	84	766			
TOTAL BASE FEE (Five-Yr No Software purchase)										\$ 101,394.00	\$ -	\$ 101,394.00
OPTIONAL ITEMS												
Task 4.10 (Optional - See Below) - PMP Presentation to Board - pro bono										\$ -	\$ -	\$ -

**ACTION
ITEM
1G**



Date: August 21, 2019

To: The Honorable Board of Directors

From: Shivaji Deshmukh, General Manager ASW

Committee: Engineering, Operations & Water Resources
Finance & Administration

08/14/19

08/14/19

Executive Contact: Randy Lee, Executive Manager of Operations/AGM

Subject: Ratification of Contract Amendment for Ely Basin Infiltration Restoration

Executive Summary:

The Agency's Board of Directors approved the Ely Basin Infiltration Restoration project in May 2019 for a not-to-exceed amount of \$248,550. The contractor started the basin cleaning work in July 2019. While surface debris and trash were expected and observed during the pre-bid job walk, the type and volume of trash discovered after the work started far exceeded a hand-picking operation. Examples of trash found include: shopping carts, mattresses, tents, sleeping bags, needles, and syringes. In addition, the soil with embedded trash could not be disposed at the intended disposal site due to the amount of trash found. Agency staff worked with the contractor to investigate alternative disposal options including on-site screening, landfills, and an alternative dump site. The alternative dump site was determined to be the most economical option but does require added trucking distance. The alternative resulted in a change order of \$280,500 for a total contract amount of \$529,050. The contractor, Jeremy Harris Construction, Inc. (JHC) has conducted several basin infiltration restoration contracts with the Agency and has performed reputably. Due to the timing of the project, the General Manager was consulted and approved the change order using his authority under Ordinance 101. Chino Basin Watermaster was also consulted and concurred with the need to proceed with the change order.

Staff's Recommendation:

1. Ratify Contract Amendment No. 4600002733-001 to Jeremy Harris Construction, Inc. for the Ely Basin Infiltration Restoration Services for \$280,500 and a not-to-exceed total contract value of \$529,050; and
2. Ratify a budget amendment for FY 2018/19 Groundwater Recharge professional fees budget in the amount of \$280,500 to support the proposed cost of the Ely Basin cleaning.

Budget Impact *Budgeted (Y/N):* N *Amendment (Y/N):* Y *Amount for Requested Approval:* \$ 280,500

Account/Project Name:

Ely Basin Infiltration Restoration Project

Fiscal Impact (explain if not budgeted):

Funding for this cost will come in part from reimbursements of up to \$148,550 from CBWCD, the remaining amount will be shared by IEUA and CBWM using its approved pro rata cost sharing.

Prior Board Action:

On May 15, 2019, the Board authorized the current Ely Basin cleaning contract.
On October 12, 2012, the Board authorized an Ely Basin cleaning contract.

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:

This contract amendment supports the Agency's business goal of Water Reliability to develop and implement an integrated water resource management plan.

Attachments:

Attachment 1 - Contract Amendment No. 4600002733-001 to Jeremy Harris Construction, Inc.
Attachment 2 - PowerPoint

Attachment 1



CONTRACT AMENDMENT NUMBER: 4600002733-001
FOR
EARTHWORK AND INFILTRATION RESTORATION SERVICES
WITHIN THE ELY (THREE) BASINS

THIS AMENDMENT NUMBER 1, to Contract Number 4600002733 between the Inland Empire Utilities Agency, and Jeremy Harris Construction, Inc., of Riverside, California, (Contractor) shall revise the Contract as follows:

REVISE SECTION 3, SCOPE OF WORK AND SERVICES, ADDING A PARAGRAPH "F" TO READ:

F. The Contractor shall provide additional services, at the Ely Basins site, consistent with the additional Scope of Work, as summarized below, see Exhibit C, attached, for additional detail.

1. **Task A: Cutting and Windrowing of Silt Material shall remain unchanged.**

Three Cells (9,000 cyd) Proposed Cost in Lump-Sum
Amount \$31,500

Secondary Bid Item: If the volume of silt materials to be cut and windrowed from within the Basin is more or less than the initially estimated amount, the contract cost will need to be amended accordingly. The price, per cubic yard, quoted below, will be used to adjust the contract cost up or down as needed (unchanged from the original proposal):

Credit/Debit for any differing amount of silt material: \$3.50 / cubic yard.

Part 2: Removal of Material from the Forebay of Ely 1, this proposed cost reflects the multiple impacts of the complications explained in Exhibit C.

Ely 1 Forebay (5,000 cyd) Proposed Cost in Lump-Sum
Amount \$160,000.00

Secondary Bid Item: If the volume of silt materials to be removed and disposed from within the Ely 1 Forebay is more or less than the initially estimated amount, the contract cost will need to be amended accordingly. The price, per cubic yard, quoted below will be used to adjust the contract cost up or down as needed:

Credit/Debit for differing amounts of silt material: \$32.00 / cubic yard.



2. **Task B: Loading, Transporting, and Disposing of Silt Materials, this proposed cost reflects the multiple impacts of the complications explained in Exhibit C.**

Three Basins (9,000 cyd) Proposed Cost in Lump-Sum,
Total Amount \$288,000.00

Secondary Bid Item: If the volume of silt materials to be loaded, transported, and disposed of from within the Ely Basins is more or less than the estimated amount, the contract cost will need to be amended accordingly. The price, per cubic yard, quoted below will be used to adjust the contract cost up or down as needed:

Credit/Debit for loading, hauling, and disposing of a differing amount of silt material: \$30.00 / cubic yard.

3. **Task C: Track-Walking Side Slopes and Ripping/Smoothing of Cell Floors shall remain unchanged.**

Three Basins (27 acres) Proposed Cost in Lump-Sum Amount \$49,000.00

Total Proposed Cost in Lump-Sum Amount: Not-to-Exceed \$529,050.

REVISE SECTION 5, COMPENSATION, ADDING A PARAGRAPH, TO READ:

As compensation for the additional services represented by this Contract Amendment 4600002733-001, Agency shall pay Contractor's properly executed invoice, approved by the Project Manager, within thirty (30) days following receipt of the invoice. Payment may be withheld for any service which does not meet the requirements of this Contract Amendment, until such service is revised, the invoice is resubmitted, and the invoice is accepted by the Project Manager. The value of this Contract Amendment and the services provided under it, shall not exceed a total of **\$280,500**.

Execution of Contract Amendment Number 4600002733-001 increases the Contract's total **Not-to-Exceed** value to **\$529,050**.

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ALL OTHER PROVISIONS OF THIS CONTRACT REMAIN UNCHANGED.

The parties hereto have mutually covenanted and agreed as per the above amendment item, and in doing so have caused this document to become incorporated into the Contract Documents.

INLAND EMPIRE UTILITIES AGENCY:
*(*A MUNICIPAL WATER DISTRICT)*

JEREMY HARRIS CONSTRUCTION, INC.:

Shivaji Deshmukh
General Manager

(Date)

Jeremy Harris

Jeremy Harris
President

7/30/19

(Date)

(This space has intentionally been left blank)

Exhibit C

During the initial earthwork at the Ely Basin site, the contractor started to uncover more water-borne and wind-borne material (trash and debris) than typically anticipated. As the initial scope of work progressed, the amount and diversity of the debris multiplied. More than 40 derelict shopping carts were uncovered; as well as countless plastic containers, all of which required individual attention. Ultimately, specialized, debris handling equipment was located (northern California) and brought to the site to facilitate mechanical efficiencies to complete the process. Truckloads (tons) of this debris and trash needed processing, loading onto trucks, transported to a landfill, and disposed of (via a tipping fee).

To further complicate the silt removal process, each of the sequential operations was continually interrupted because more and more trash and debris were uncovered with each “pass” of the earthmoving equipment. The multiple interruptions have significantly added to the commitment time of heavy equipment assigned to the project, the operators, as well as trucks, drivers and the mileage required.

In-the-field meetings were held, negotiations surrounding the modification to the Scope of Work led to an agreed-upon, fair and equitable, modification of the total project cost. The goal for this project remains the restoration of the basins (Ely #1, #2, and #3), totaling approximately 27 acres of recharge surface area, to their original operational condition. All of the negotiating parties concluded that the effects of the longer-than-normal cleaning interval were compounded by the amount and intensity of the rainfall during the past several storm seasons.

Attachment 2

Ratification of Contract Amendment for Ely Basin Infiltration Restoration



Andy Campbell, P.G.
August 2019

Original Bids

Awarded May 15, 2019

- 3 basins
- 30 acres to clean
- 14,000 cubic yards (CY) to remove

Bidder	Amount
Jeremy Harris Construction, Inc. (JHC)	\$248,550
JCE Equipment	\$536,400



JHC Discovers Significant Debris in Soil



Soil Stockpile with Trash

- Basin dewatered for prebid walk refilled with storm water and municipal discharges
- During excavation, JHC identified significant surface and embedded trash greater than in past basin cleaning projects
- Disposal site for excavated sediments no longer finds material acceptable
- JHC sought alternative disposal sites



Alternatives to Lost Disposal Site

- Lost Disposal Site: Canyon near Riverside, fill site of a new development
- Disposal Alternatives:
 - Dispose at a Landfill: \$991,200 to \$1,243,200
 - Provide On-Site Screening: \$556,112
 - New Dump Site: \$280,500



Recommendation

- Ratify Contract Amendment No. 4600002733-001 to Jeremy Harris Construction, Inc. for the Ely Basin Infiltration Restoration Services for \$280,500 and a not-to-exceed total contract value of \$529,050;
- Approve a budget amendment for FY 2019/20 Groundwater Recharge professional fees budget in the amount of \$280,500 to support the added cost of the Ely Basin cleaning.

*This contract amendment supports the Agency's business goal of **Water Reliability** to develop and implement an integrated water resource management plan.*

**ACTION
ITEM
1H**

Date: August 21, 2019

To: The Honorable Board of Directors

From: Shivaji Deshmukh, General Manager *SD*

Committee: Engineering, Operations & Water Resources

08/14/19

Executive Contact: Randy Lee, Executive Manager of Operations/AGM

Subject: Ratification of Contract Amendment for RP-3 Basin Infiltration Restoration

Executive Summary:

In June and July 2019, the RP-3 Basin infiltration rates were restored by Jeremy Harris Construction, Inc. following a competitive bidding process and the award of a \$136,106 contract. The project's contract award was approved by the Board of Directors on April 17, 2019. Pumping was performed following the bidding process when storage was available for recharge of the pumped water in the downstream Declez Basin. Following pumping, it was determined that the volume of storm sediments clogging the cell floors were greater than the estimated 5,510 cubic yards. An amendment was first made for cleaning Cell 1 for an additional 1,500 cubic yards (\$25,905). A second amendment is needed for cleaning Cells 3 and 4 for an additional 1,064 cubic yards (\$18,375.28). The second amendment will also include 210 additional cubic yards of cleaning the concrete-lined distribution channel (\$71,068). The channel cleaning was more costly than the basin cleaning due to the additional soil handling equipment and labor needed. The first and second amendments will bring the total change orders to \$115,348.28, 85, a 185% increase from the bid. As time was of the essence, the work was conducted, and the Board of Directors' ratification of the second amendment is required.

Staff's Recommendation:

1. Ratify Contract Amendment No. 4600002713-002 with Jeremy Harris Construction, Inc. in the amount of \$89,443.28 for the RP-3 Basin Infiltration Restoration Services; and
2. Authorize the General Manager to execute the amendment.

Budget Impact *Budgeted (Y/N): Y Amendment (Y/N): N Amount for Requested Approval: \$ 89,443*

Account/Project Name:

IEUA and Chino Basin Watermaster will cost share using its approved pro rata cost sharing methodology.

Fiscal Impact *(explain if not budgeted):*

Prior Board Action:

On April 17, 2019, the Board approved the contract award in the amount of \$136,106 to Jeremy Harris Construction, Inc.

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:

This contract amendment supports the Agency's business goal of Water Reliability to develop and implement an integrated water resource management plan.

Attachments:

Attachment 1 - Contract Amendment No. 4600002713-002 to Jeremy Harris Construction, Inc.
Attachment 2 - PowerPoint

Attachment 1



CONTRACT AMENDMENT NUMBER: 4600002713-002
FOR
EARTHWORK AND INFILTRATION RESTORATION SERVICES
WITHIN REGIONAL PLANT NUMBER THREE BASINS

THIS AMENDMENT NUMBER 2, to Contract Number 4600002713 between the Inland Empire Utilities Agency, and Jeremy Harris Construction, Inc., of Riverside, California, (Contractor) shall revise the Contract as follows:

REVISE SECTION 4, SCOPE OF WORK AND SERVICES, ADDING A PARAGRAPH "G" TO READ:

G. The Contractor shall provide additional services, at the RP-3 Basins, consistent with the additional Scope of Work (1,274 cubic yards), under "Task A - Cutting and Windrowing" and Task B – Loading, Transporting, and Disposing" shown in the attached Exhibit 1, attached hereto. Contractor shall carefully and cooperatively coordinate these tasks with the Project Manager, to ensure the work is completed in a timely manner.

REVISE SECTION 6, COMPENSATION, ADDING A PARAGRAPH, TO READ:

As compensation for the services represented by this Contract Amendment 4600002713-002, Agency shall pay Contractor's properly executed invoice, approved by the Project Manager, within thirty (30) days following receipt of the invoice. Payment may be withheld for any service which does not meet the requirements of this Contract Amendment, until such service is revised, the invoice is resubmitted, and the invoice is accepted by the Project Manager. The value of this Contract Amendment and the services provided under it, shall not exceed a total of **\$89,443.28**.

ALL OTHER PROVISIONS OF THIS CONTRACT REMAIN UNCHANGED.

The parties hereto have mutually covenanted and agreed as per the above amendment item, and in doing so have caused this document to become incorporated into the Contract Documents.

INLAND EMPIRE UTILITIES AGENCY:
(*A MUNICIPAL WATER DISTRICT)

JEREMY HARRIS CONSTRUCTION, INC.:

Shivaji Deshmukh
General Manager

(Date)

Jeremy Harris
President

(Date)

Jeremy Harris 7/30/19

Attachment 2

Ratification of Contract Amendment for RP-3 Basin Infiltration Restoration

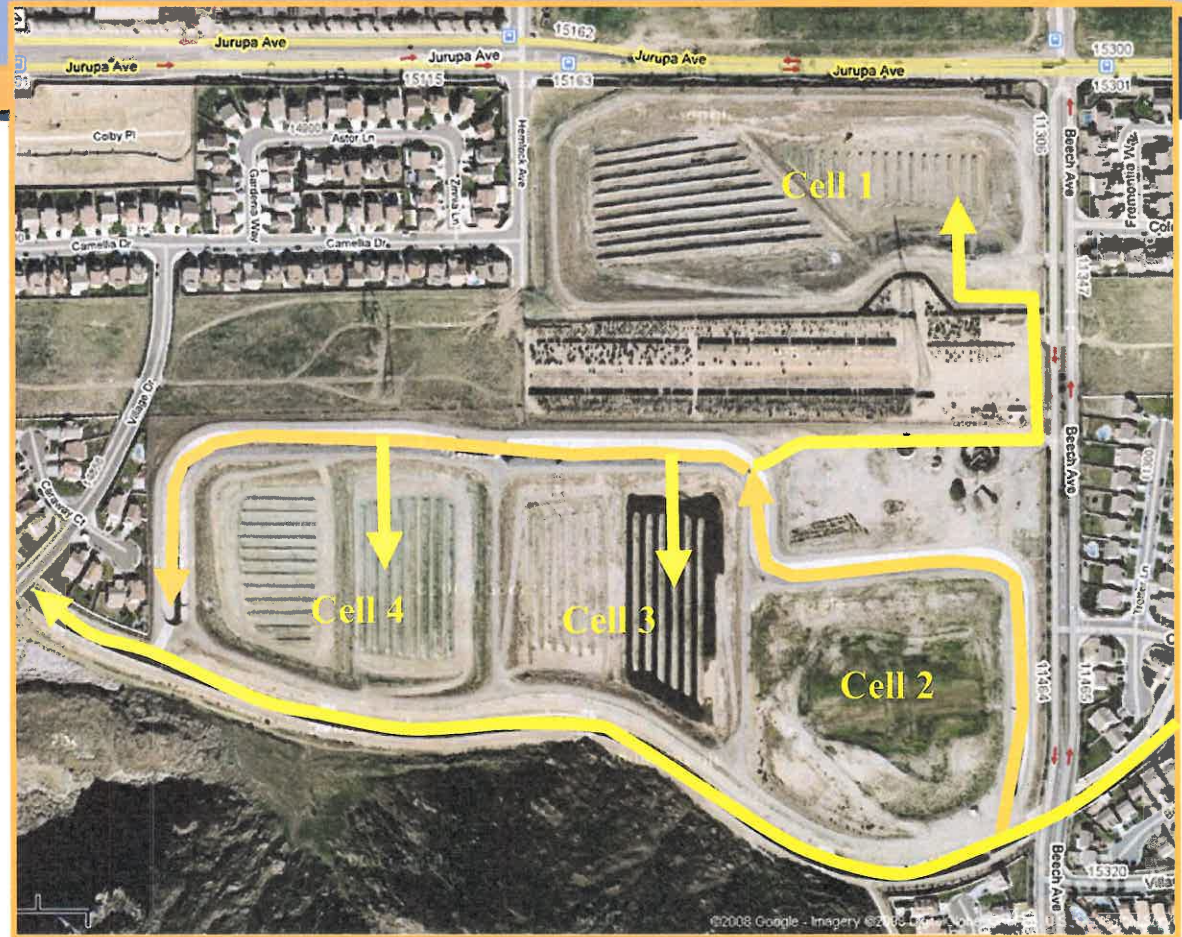


Andy Campbell, P.G.
August 2019

Scope of Work

Awarded April 17, 2019

- 3 Large Cells
- 1 Distribution Channel
- 23 acres to clean
- 5,510 cubic yards (CY) storm sediments removal

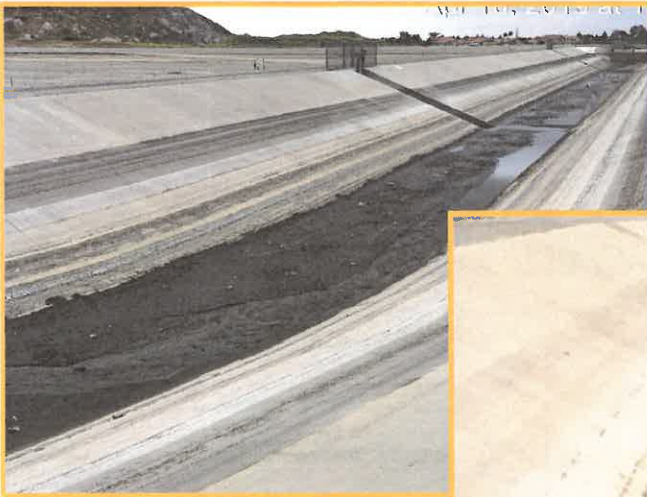


Additional Storm Sediment Removal

- During cleaning, identified the need to remove and dispose of additional storm sediments
- Amendment 1
 - \$25,905 (+1,500 CY) Cell 1
- Amendment 2
 - \$18,375 (+1,064 CY) Cell 3 and 4
 - \$71,068 (+ 210 CY) Distribution Channel
 - \$89,443.28 Total



Distribution Channel Cleaning



Recommendation

- Ratify Contract Amendment No. 4600002733-002 to Jeremy Harris Construction, Inc. for the RP-3 Basin Infiltration Restoration Services in the amount of \$89,443.28 for the RP-3 Basin Infiltration Restoration Services; and
- Authorize the General Manager to execute the amendment.

*This contract amendment supports the Agency's business goal of **Water Reliability** to develop and implement an integrated water resource management plan.*

INFORMATION

ITEM

2B

Engineering and Construction Management Project Updates



RP-1 12 kV Switchgear and Generator Control Upgrades

Project Goal: Increase Reliability



RP-1 Emergency Generators

Total Project Budget: \$5.8 M
Project Completion: January 2020
Construction Percent Complete: 10%

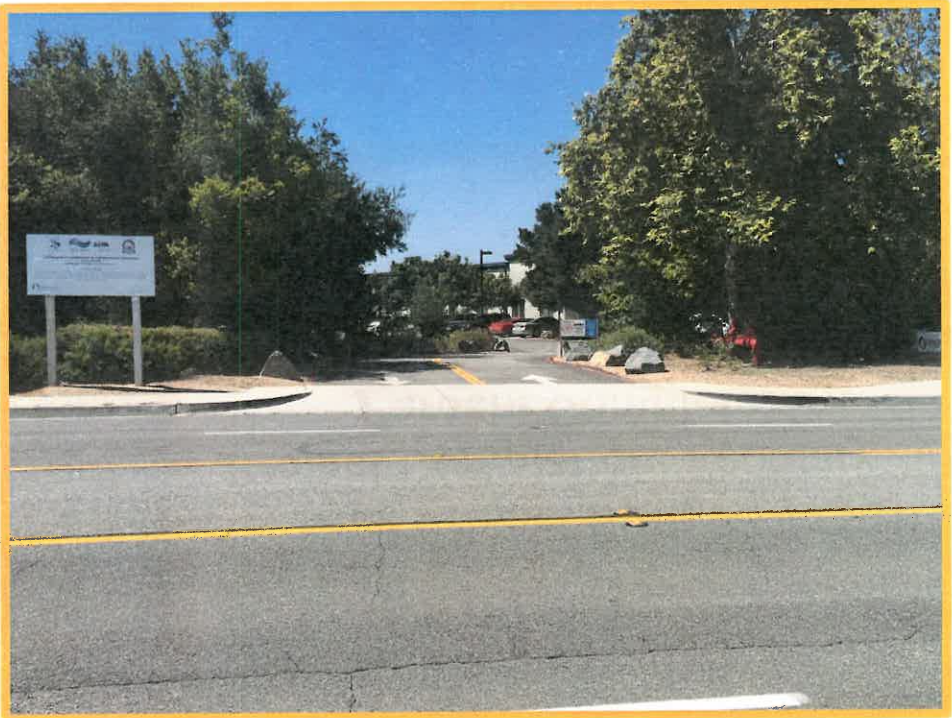
Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design	Black & Veatch	\$103 K	53%
Construction (Current)	Big Sky Electric (Design/Build)	\$4.4 M	0%

HQ Driveway Improvements

Project Goal: Improve Accessibility

Total Project Budget: \$400 K
Project Completion: August 2020
Percent Design Complete: 1%

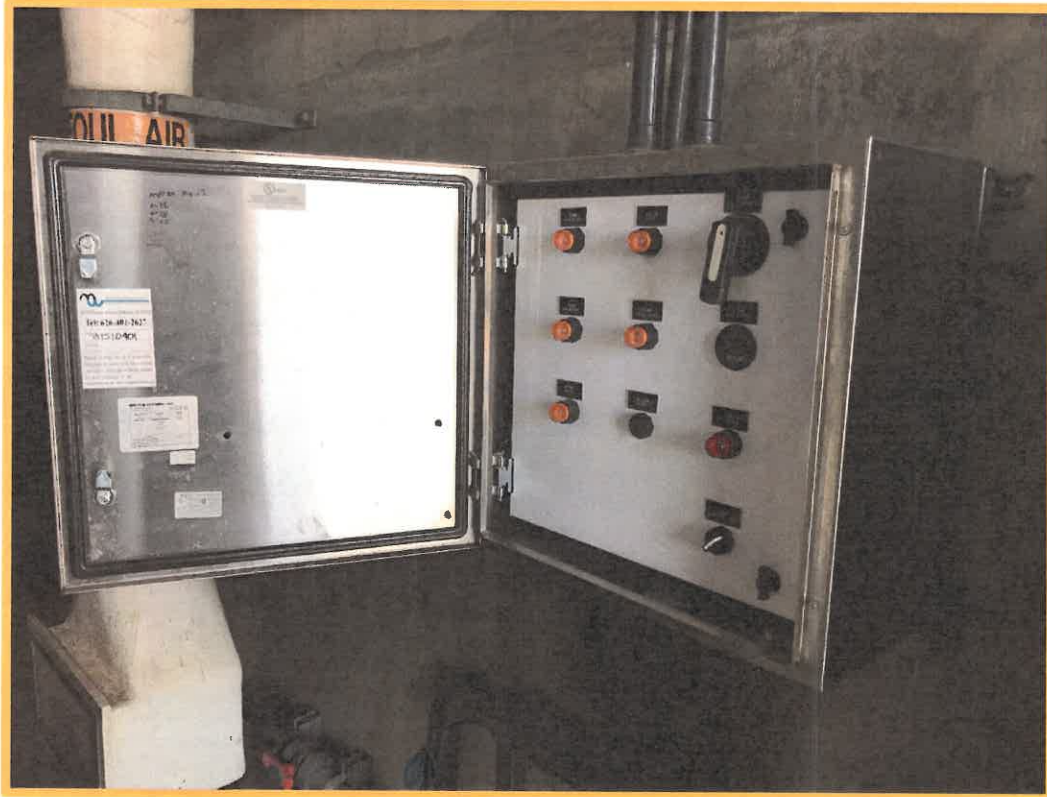
Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Project Development (Current)	TBD	\$0	0%
Construction	TBD	\$0	0%



Current East Entrance

RP-1 Headworks Sump Pump Redundancy

Project Goal: Improve efficiency and reliability



Total Project Budget: \$150 K
Project Completion: February 2020
Percent Complete: 0%

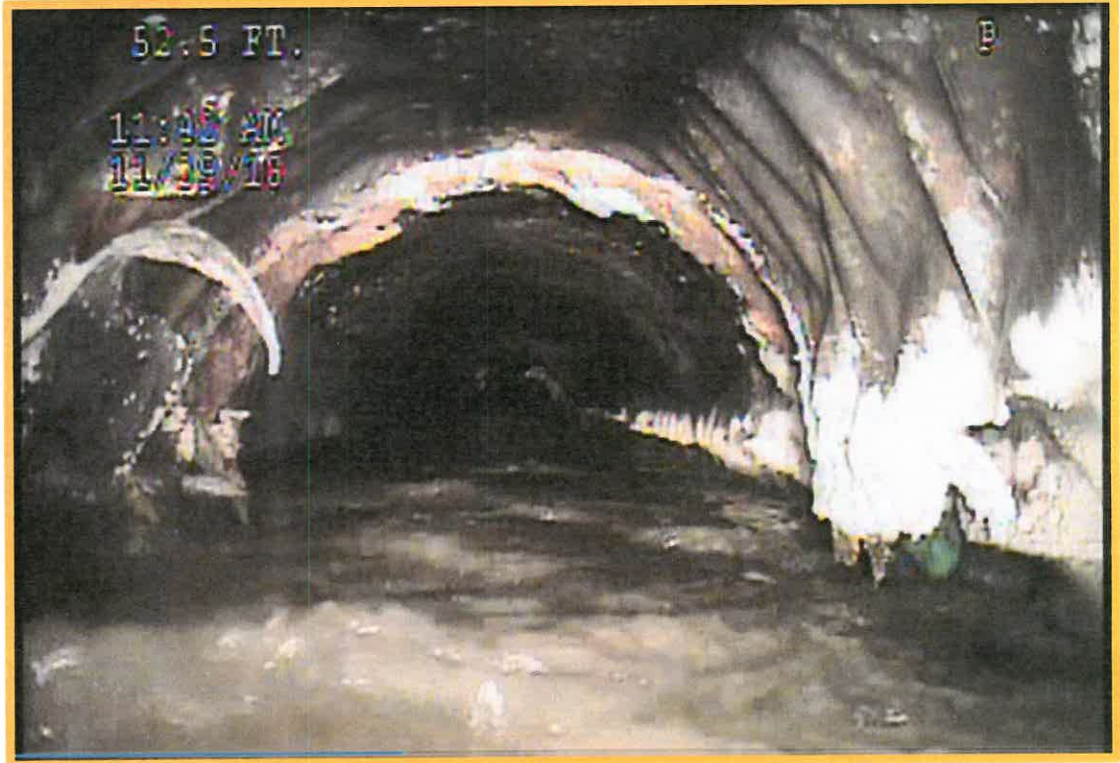
Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design	TBD	\$0	0%
Construction	TBD	\$0	0%

RSS Haven Avenue Repair and Replacement

Project Goal: Increase asset life

Total Project Budget: \$6 M
Project Completion: June 2021
Construction Percent Complete: 0%

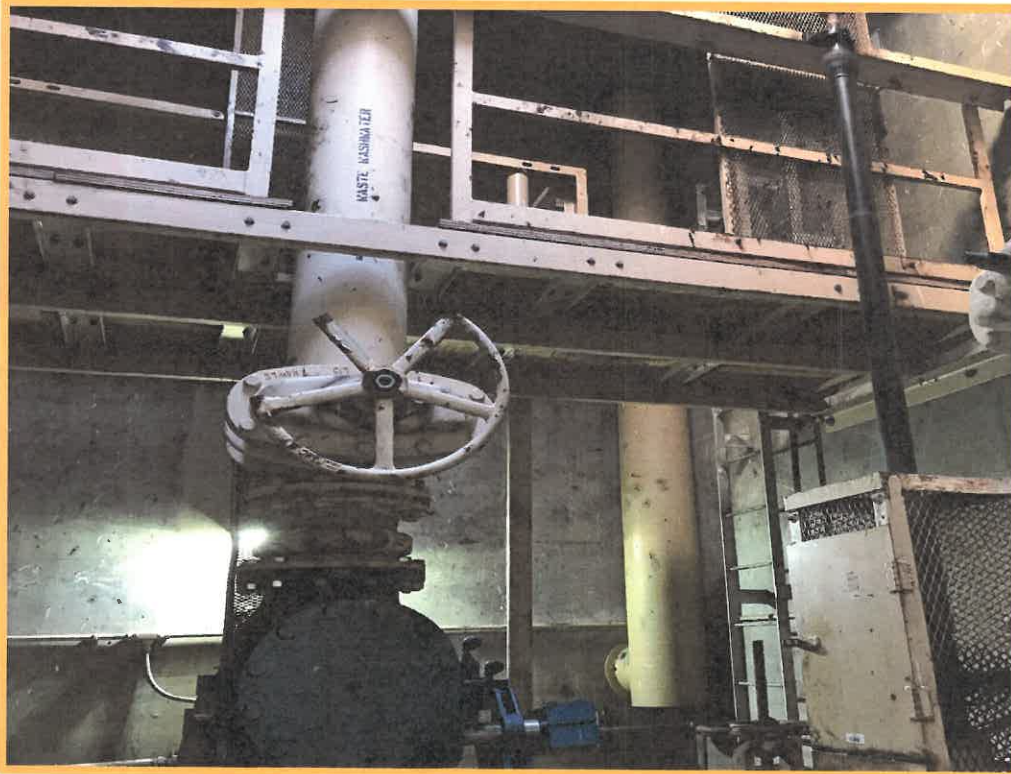
Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design	TBD	TBD	0%
Construction	TBD	TBD	0%



Pipeline Lining Deterioration

RP-1 TP-1 Waste Wash Water Basin Pumps Replacement

Project Goal: Increase operational efficiency



Pump Shaft and Discharge Valve

Total Project Budget: \$650 K
Project Completion: February 2020
Construction Percent Complete: 0%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design	TBD	\$0	0%
Construction	TBD	\$0	0%

1158 Reservoir Re-coating/Painting and Upgrades

Project Goal: Extend asset life

Total Project Budget: \$4.4 M
Project Completion: June 2020
Design Percent Complete: 10%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design (Current)	Harper & Associates Engineering	\$17K	0%
Construction	TBD	\$0	0%



West Reservoir Center Rafters