



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

**WEDNESDAY, AUGUST 9, 2017  
9:45 A.M.**

***Or immediately following the  
Community & Legislative Affairs  
Committee Meeting***

**CALL TO ORDER**

**PUBLIC COMMENT**

Members of the public may address the Board on any item that is within the jurisdiction of the Board; however, no action may be taken on any item not appearing on the agenda unless the action is otherwise authorized by Subdivision (b) of Section 54954.2 of the Government Code. Those persons wishing to address the Board on any matter, whether or not it appears on the agenda, are requested to 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 five 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 from the July 12, 2017 meeting.

**B. SCADA ENTERPRISE SYSTEM DESIGN-BUILD CONTRACT AWARD**

Staff recommends that the Committee/Board:

1. Award a design-build contract for the SCADA Enterprise System Migration (RP-4 and RP-5), Project Nos. EN13016.03 and EN13016.04, to CDM Smith for the not-to-exceed amount of \$5,277,527; and
2. Authorize the General Manager to execute the design-build contract subject to non-substantive changes.

**C. UPPER SANTA ANA RIVER INTEGRATED MODEL COST SHARING LETTER AGREEMENT**

Staff recommends that the Committee/Board:

1. Approve the Upper Santa Ana River Integrated Model Cost Sharing Letter Agreement for the not-to-exceed amount of \$326,700; and
2. Authorize the General Manager to execute the letter agreement, subject to non-substantive changes.

**D. DECLAZ MONITORING WELL CONSTRUCTION CONTRACT AWARD**

Staff recommends that the Committee/Board:

1. Award a construction contract for the Declaz Monitoring Well, Project No. EN17067, to Yellow Jacket Drilling, in the amount of \$243,239; and
2. Authorize the General Manager to execute the construction contract.

**E. CONTRACT AWARD FOR PROCESS PAINTING**

Staff recommends that the Committee/Board:

1. Award a service contract for the RP-5 Process Painting, Project No. PA16002, PA17002, and PA18002, to Tony Painting, in the amount of \$293,000; and
2. Authorize the General Manager to execute the service contract.

**2. INFORMATION ITEM**

**A. 2016 ANNUAL REPORT OF THE PRADO BASIN HABITAT SUSTAINABILITY COMMITTEE (WRITTEN)**

**B. LABORATORY SEMI-ANNUAL UPDATE (POWERPOINT)**

**RECEIVE AND FILE INFORMATION ITEM**

**C. 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 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 3, 2017.

  
\_\_\_\_\_  
April Woodruff

**ACTION  
ITEM  
1A**



## MINUTES

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

WEDNESDAY, JULY 12, 2017  
9:45 A.M.

#### **COMMITTEE MEMBERS PRESENT**

Michael Camacho, Chair  
Kati Parker

#### **STAFF PRESENT**

P. Joseph Grindstaff, General Manager  
Joshua Aguilar, Senior Engineer  
Chris Berch, Executive Manager of Engineering/AGM  
Kathy Besser, Executive Manager of External Affairs & Policy Development/AGM  
Pietro Cambiaso, Supervisor – Environmental Compliance & Energy  
Michael Dias, Assistant Engineer  
Gary Dix, Construction Project Manager  
Jason Gu, Grants Officer  
Randy Lee, Executive Manager of Operations/AGM  
Sally Lee, Executive Assistant  
Sylvie Lee, Manager of Planning & Environmental Compliance  
Chander Letulle, Manager of Operations and Maintenance  
Nasrin Maleki, Senior Engineer  
Jesse Pompa, Senior Engineer  
John Scherck, Senior Project Manager  
Travis Sprague, Senior Associate Engineer  
Shaun Stone, Manager of Engineering  
Christina Valencia, Chief Financial Officer/AGM  
Teresa Velarde, Manager of Internal Audit  
April Woodruff, Board Secretary/Office Manager

#### **OTHERS PRESENT**

None

The meeting was called to order at 9:45 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 14, 2017.

- ◆ Recommended that the Board ratify the purchases from the expired Thatcher Company of California Contract No. 4600001078 for aluminum sulfate in the amount of \$23,435.64; as a Consent Calendar Item on the July 19, 2017 Board meeting agenda.

- ◆ Recommended that the Board:

1. Award a consulting engineering services contract for the San Bernardino Lift Station, Project No. EN17077, to CDM Smith, Inc., for the not-to-exceed amount of \$224,360; and
2. Authorize the General Manager to execute the contract subject to non-substantive changes;

as a Consent Calendar Item on the July 19, 2017 Board meeting agenda.

- ◆ Recommended that the Board:

1. Approve a construction contract change order with J.F. Shea for the RP-1 Mixed Liquor Return Pumps, Project No. EN16024, for the not-to-exceed amount of \$152,168; and
2. Authorize the General Manager to execute the construction contract change order;

as a Consent Calendar Item on the July 19, 2017 Board meeting agenda.

- ◆ Recommended that the Board authorize the General Manager, or his designee, to review and approve sole source request for materials, products, things, or services per Public Contract Code Section 3400(c) consistent with the protocol defined herein;

as a Consent Calendar Item on the July 19, 2017 Board meeting agenda.

- ◆ Recommended that the Board:

1. Award the consulting engineering services contract for Phase 2 of the Feasibility Study for the Recycled Water Intertie Project No. EN16060, to Carollo Engineers for the not-to-exceed amount of \$119,900; and
2. Authorize the General Manager to execute the agreement, subject to non-substantive changes;

as a Consent Calendar Item on the July 19, 2017 Board meeting agenda.

- ◆ Recommend that the Board:

1. Approve the contract amendment 4600001385 -002 with Tom Dodson and Associates (TDA), for an on-call environmental services contract, for an additional amount of \$300,000; and
2. Authorize the General Manager, or in his absence, his designee to execute the contract amendment, subject to non-substantive changes;

as a Consent Calendar Item on the July 19, 2017 Board meeting agenda.

◆ Recommend that the Board:

1. Approve the amendment to the Energy Management Services Agreement between Inland Empire Utilities Agency and Advanced Microgrid Solutions, Inc. (AMS);
2. Authorize the General Manager to finalize and execute the agreement amendment subject to non-substantive changes; and
3. Authorize the General Manager to negotiate and execute the agreement between Inland Empire Regional Composting Authority (IERCA) and IEUA for the installation of a solar photovoltaic power plant, subject to engineering evaluation;

as a Consent Calendar Item on the July 19, 2017 Board meeting agenda.

◆ Recommend that the Board:

1. Approve the Direct Agreement between Inland Empire Utilities Agency and Foundation HA Energy Generation, LLC for the benefit of ZB, N.A. dba National Bank of Arizona; and
2. Authorize the General Manager to execute the Direct Agreement;

as a Consent Calendar Item on the July 19, 2017 Board meeting agenda.

◆ Recommend that the Board:

1. Approve the Memorandum of Understanding (MOU) between IEUA and Anaergia for the Development of a Renewable Natural Gas Project at RP-1; and
2. Authorize the General Manager to execute the MOU with Anaergia;

as a Consent Calendar Item on the July 19, 2017 Board meeting agenda.

◆ Recommend that the Board approve IEUA membership in the California Data Collaborative for FY 2017/18, in the amount of \$27,500;

as a Consent Calendar Item on the July 19, 2017 Board meeting agenda.

### **INFORMATION ITEMS**

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

- ◆ RP-2 Microturbine Contract Termination
- ◆ 4<sup>th</sup> Quarter Planning & Environmental Resources Update
- ◆ City of Upland Sewage Billing Error Review
- ◆ Engineering and Construction Management Project Updates

**GENERAL MANAGER'S COMMENTS**

General Manager Joseph Grindstaff had no comments.

**COMMITTEE MEMBER COMMENTS**

There were no Committee Member comments.

**COMMITTEE MEMBER REQUESTED FUTURE AGENDA ITEMS**

There were no Committee Member requested future agenda items.

With no further business, Director Camacho adjourned the meeting at 10:55 a.m.

Respectfully submitted,

April Woodruff  
Board Secretary/Office Manager

\*A Municipal Water District

**APPROVED: AUGUST 9, 2017**



**ACTION  
ITEM  
1B**



**Date:** August 16, 2017

**To:** The Honorable Board of Directors

**From:** P. Joseph Grindstaff, General Manager

**Committee:** Engineering, Operations & Water Resources Committee

08/09/17

Finance & Administration

08/09/17

**Executive Contact:** Chris Berch, Executive Manager of Engineering/AGM

**Subject:** SCADA Enterprise System (RP-4 and RP-5) Design-Build Contract Award

**Executive Summary:**

Consistent with IEUA's Supervisory Control and Data Acquisition (SCADA) Master Plan, the control systems at IEUA's treatment plants will be migrated to a standardized software platform in three phases. The second phase comprises the migration of control systems at RP-4 and RP-5 and will follow a design-build delivery method. The project scope of work includes the design and construction of new control panel upgrades, development of transition plans to minimize impact to operations, installation of new hardware, and programming to facilitate a migration to the new controls platform.

Three pre-qualified contractors responded to the project solicitation and were evaluated to determine which proposal offered the best value to IEUA. A selection committee determined that CDM Smith provided the technical expertise and strategic work plan to make the project a success. CDM Smith's cost proposal was the lowest of the responsive bidders, is within the project budget, and below the engineer's estimate.

**Staff's Recommendation:**

1. Award a design-build contract for the SCADA Enterprise System Migration (RP-4 and RP-5), Project Nos. EN13016.03 and EN13016.04, to CDM Smith for the not-to-exceed amount of \$5,277,527; and
2. Authorize the General Manager to execute the design-build contract subject to non-substantive changes.

**Budget Impact:** N    *Budgeted (Y/N):* Y    *Amendment (Y/N):* N    *Requested Amount:* \$ 5,277,527

**Account/Project Name:**

SCADA Enterprise System (Regional Plant No. 4), SCADA Enterprise System (Regional Plant No. 5)

**Fiscal Impact (explain if not budgeted):**

N/A

**Prior Board Action:**

On July 18, 2012, the Board of Directors adopted the SCADA Master Plans.  
On May 15, 2013, the Board of Directors approved the Consulting Engineering Services Contract Award for the SCADA Enterprise System to Westin, Engineering, Inc.  
On May 17, 2017, the Board of Directors amended the Consulting Engineering Services Contract Award for the SCADA Enterprise System, Project No. EN13016, to Westin, Engineering, Inc.

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**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 2 as defined in Section 15302(c) of the State CEQA Guidelines.

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**Business Goal:**

The SCADA Enterprise System Project is consistent with IEUA's Business Goal of Business Practices that strives to apply best industry practices in all processes to maintain or improve the quality and value of the services we provide to our member agencies and the public.

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**Attachments:**

- Attachment 1 - Background
- Attachment 2 - PowerPoint
- Attachment 3 - Design-Build Contract

## Background

Subject: SCADA Enterprise System (RP-4 and RP-5) Design-Build Contract Award

IEUA's existing Supervisory Control and Data Acquisition (SCADA) System is comprised of a wide variety of equipment located at various facilities throughout the Agency's service area. The Agency has separate control systems for wastewater treatment facilities, recycled water, and the groundwater recharge system. The facilities' control system is approximately a 60/40 mix of Foxboro's Distributed Control System (DCS) and Rockwell Automation's SCADA system, respectively. The DCS has been in service for more than 20 years and has reached its end-of-life. The Facilities, Recycled Water, and Groundwater Recharge SCADA Master Plans, adopted by the Agency's Board of Directors in 2012, established the need for a migration from the existing Invensys Foxboro DCS to Rockwell Automation's PlantPax SCADA Enterprise System.

Carbon Canyon Water Recycling Facility (CCWRF) was the first facility to be migrated to the PlantPax system. In May of 2013, the consultant contract was awarded to the engineering consultant team of Westin Engineering Inc. (Westin), Rockwell Automation, and Parsons to perform design services for all facilities to be migrated. In December 2014, Technical Systems, Inc. was awarded the construction contract to integrate the PlantPax system into CCWRF's controls strategy. The CCWRF migration was completed in March 2016.

The second phase of the SCADA migration focuses on the migration of Regional Plant Nos. 4 (RP-4) and 5 (RP-5). Beginning in June 2016, Westin performed pre-design work for the RP-4 and RP-5 migrations to develop a scope of work for a Design-Build Request for Proposals (RFP).

On March 27, 2017, IEUA advertised on *PlanetBids* the RFP to three pre-qualified contractors in compliance with Senate Bill (SB) 785, which allows public agencies to select design-build contractors based on the best value to the Agency rather than lowest cost. This project delivery method was preferred due to the sensitivity of the controls systems and the significant impact that quality experience can have on the success of this project. All three contractors participated in the job walk on April 17, 2017.

On July 12, 2017, the following best and final proposals were received:

Contractor's Name	Total Price
Tesco Controls	Non-Responsive
CDM Smith	\$5,277,527
Technical Systems, Inc.	\$5,590,000
<b>Engineer's Estimate</b>	<b>\$5,900,000</b>

The proposal from Tesco Controls was determined to be non-responsive due to non-compliance with State Revolving Fund (SRF) loan requirements. The State Water Resources Control Board issued a determination of non-compliance because the proposal did not demonstrate good faith efforts in soliciting the Disadvantaged Business Enterprise (DBE) program.

The proposals were reviewed by a selection committee consisting of the City of Chino Hills and IEUA staff from Engineering and Construction Management, Integrated Systems Services, Contracts and Procurement, and Grants. Pursuant to SB 785, the proposals were evaluated based on technical experience, capital and life-cycle costs, schedule, proposed work plan, and safety record. Based on these criteria, the committee determined that CDM Smith provided the best value to IEUA for this project. During the prequalification process, IEUA staff evaluated CDM Smith's financial statements and verified references. CDM Smith has the technical experience and responsiveness to make this project a success.

The following table is the anticipated project cost:

Description	Estimated Cost
<b>Design Services</b>	<b>\$3,130,686</b>
Consultant Predesign Contract	\$225,000
Detailed Design (this action)	\$2,565,686
IEUA Design Services	\$250,000
Project Development	\$90,000
<b>Construction Services</b>	<b>\$512,000</b>
Design Consultant Construction Services	\$215,000
IEUA Construction Services (10%)	\$270,000
Construction Services Contingency (10%)	\$27,000
<b>Construction</b>	<b>\$2,981,841</b>
Construction (this action)	\$2,711,841
Contingency (~10%)	\$270,000
<b>Total Project Cost (Phase II)</b>	<b>\$6,624,527</b>
<b>Total Project Budget (for all four treatment facilities)</b>	<b>\$15,803,331</b>
<b>Expended to Date (Phase I)</b>	<b>\$5,018,259</b>
<b>Remaining Budget</b>	<b>\$4,160,545</b>

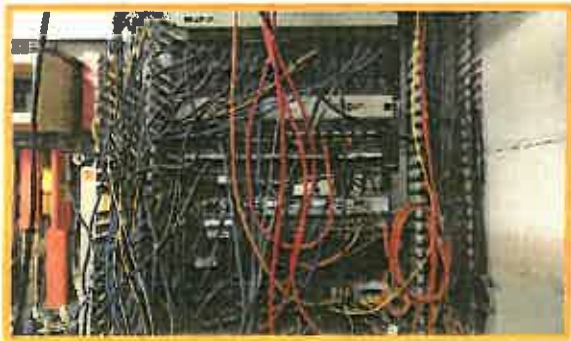
The following is the project schedule:

Project Milestone	Date
<b>Design-Build Contract Award</b>	August 2017
<b>Design</b>	
RP-5 Design Completion	February 2018
RP-4 Design Completion	May 2018
<b>Construction</b>	
RP-5 Construction Completion	September 2018
RP-4 Construction Completion	May 2019

Fiscal Impact:

If approved, the design build contract for the SCADA Project, Project No. EN13016, in the amount of \$5,277,527, will be within the total project budget of \$15,803,331 in the Regional Wastewater Operations and Maintenance (RO) Fund. An anticipated amount of \$1,680,000 will be spent in FY 2017/18, with the remaining contract value to be spent in FY 2018/19.

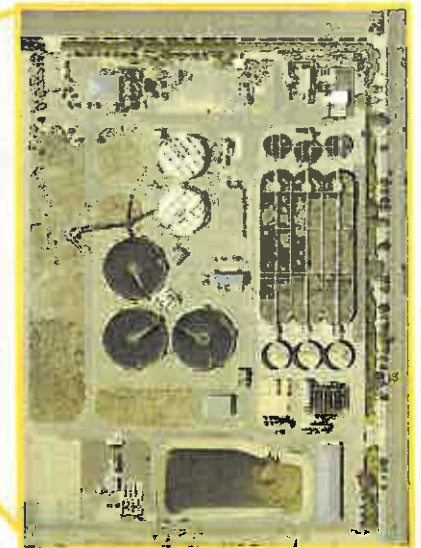
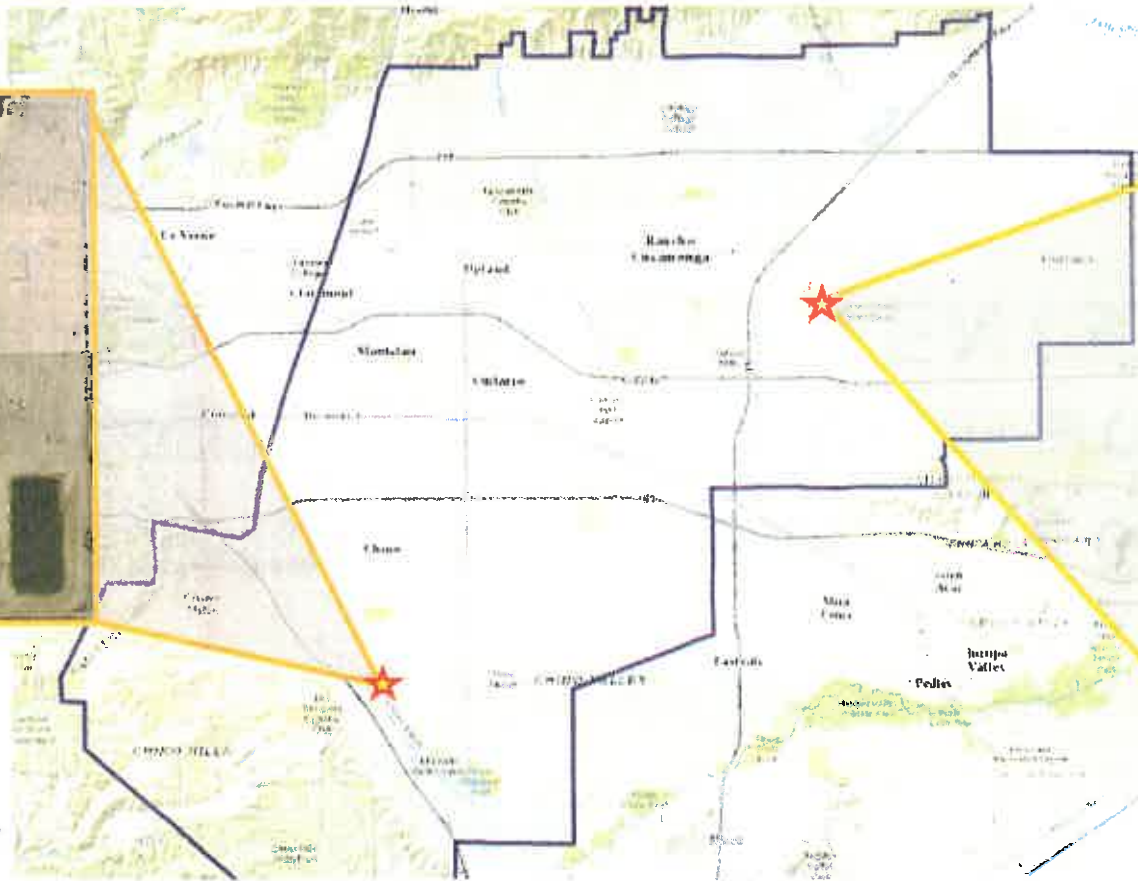
# SCADA Enterprise System (RP-4 & RP-5) Design-Build Contract Award Project Nos. EN13016.03 & EN13016.04



# Regional Water Recycling Plant Nos. 4 and 5 Project Location



RP-5



RP-4

# Project Background

- Standardize control systems at IEUA facilities
  - Migrate Foxboro DCS to Rockwell PlantPAx
- All process equipment to be reprogrammed to Rockwell standards
- Future integration of SAP business system
- Phase I (CCWRF) completed in March 2016
- Phase II (RP-4 and RP-5) to use best value design-build delivery method





# Project Scope

- Design panel upgrades for RP-4 and RP-5
- Develop transition plans with minimal Operations impact
- Provide necessary hardware and software to facilitate migration to PlantPAX
  - Control systems
  - Servers
  - Programming



RP-5 Servers



Typical Control Panel Interior

# Contractor Selection – Best Value

- Evaluation and Selection Committee
  - Engineering and Construction Management
  - Integrated Systems Services
  - Contracts and Procurement
  - City of Chino Hills
  - Grants
- Three Proposals Received on July 12, 2017
- Committee determined that CDM Smith offered the best value to IEUA
  - Lowest Responsive Cost
  - Quality Experience
  - Aggressive Work Plan

Selection Criteria	Points
Technical Design-Build Expertise	30
Design-Build Cost Proposal	30
Schedule	15
Life-Cycle Costs	10
Proposed Work Plan/Approach	10
Safety Record	5
<b>TOTAL</b>	<b>100</b>

Contractor	Design-Build Cost
Tesco Controls	Non-Responsive
<b>CDM Smith</b>	<b>\$5,277,527</b>
Technical Systems, Inc.	\$5,590,000
<b>Engineer's Estimate</b>	<b>\$5,900,000</b>

# Project Budget and Schedule

Description	Estimated Cost
<b>Design Services</b>	<b>\$3,130,686</b>
Consultant Predesign Contract	\$225,000
<b>Detailed Design</b>	<b>\$2,565,686</b>
IEUA Design Services	\$250,000
Project Development	\$90,000
<b>Construction Services</b>	<b>\$512,000</b>
Design Consultant Construction Services	\$215,000
IEUA Construction Services (10%)	\$270,000
Construction Services Contingency (10%)	\$27,000
<b>Construction</b>	<b>\$2,981,841</b>
<b>Construction</b>	<b>\$2,711,841</b>
Contingency (10%)	\$270,000
<b>Total Project Cost (Phase II):</b>	<b>\$6,624,527</b>
<b>Total Project Budget (for all four treatment facilities):</b>	<b>\$15,803,331</b>
<b>Expended to Date (Phase I):</b>	<b>\$5,018,259</b>
<b>Remaining Budget:</b>	<b>\$4,160,545</b>

Project Milestone	Date
<b>Consultant Contract Award</b>	<b>August 2017</b>
<b>Design</b>	
RP-5 Design Completion	February 2018
RP-4 Design Completion	May 2018
<b>Construction</b>	
RP-5 Completion	September 2018
RP-4 Completion	May 2019

# Recommendation

- Award a design-build contract for the SCADA Enterprise System Migration (RP-4 and RP-5), Project Nos. EN13016.03 and EN13016.04, to CDM Smith, for the not-to-exceed amount of \$5,277,527; and
- Authorize the General Manager to execute the contract subject to non-substantive changes.

The SCADA Enterprise System Project is consistent with the *IEUA's Business Goal of Business Practices* that strives to apply best industry practices in all processes to maintain or improve the quality and value of the services we provide to our member agencies and the public.



**CONTRACT NUMBER: 4600002383**

**FOR DESIGN-BUILD SERVICES**

**SCADA MIGRATION  
AT REGIONAL PLANT NO. 4 (RP-4) & REGIONAL PLANT NO. 5 (RP-5)  
PROJECT NOs. EN13016.03 & EN13016.04**

THIS CONTRACT (the "Contract"), is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 2017, 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 CDM Smith, Inc. with offices in Los Angeles, California (hereinafter referred to as "Contractor") for SCADA migration at RP-4 and RP-5.

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

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

Project Manager: Jesse Pompa, P.E.  
Senior Engineer  
Address: 6075 Kimball Avenue, Bldg "B"  
Chino, California 91708  
Telephone: (909) 993-1545  
Facsimile: (909) 993-9000  
Email: [jpompa@ieua.org](mailto:jpompa@ieua.org)  
Cell: (909) 217-9627

2. **CONTRACTOR ASSIGNMENT:** Special inquiries related to this Contract and the effects of this Contract shall be referred to the following:

Contractor: CDM Smith, Inc.  
David Jensen, P.E., BCEE, LEED AP  
Vice President  
Address: 600 Wilshire Blvd #750  
Los Angeles, CA 90017  
Telephone: (213) 457-2200  
Email: [jensendi@cdmsmith.com](mailto:jensendi@cdmsmith.com)

3. **ORDER OF PRECEDENCE:** The documents referenced below represent the Contract Documents. Where any conflicts exist between the General Terms and Conditions the governing order of precedence shall be as follows:
- A. Permits issued by the jurisdictional regulatory agencies;
  - B. Change Orders/Task Orders/Supplemental Agreements; whichever occurs last;
  - C. Amendments to Contract number 4600002383;
  - D. Contract number 4600002383 General Terms and Conditions;
  - E. Agency's Request for Proposals (RFP) number RFP-MB-17-028;
  - F. Contractor's proposal dated March 27, 2017 and the Best and Final Offer dated July 5, 2017;
  - G. Request for Deviation;
  - H. 2015 Edition of the Standard Specifications for Public Works Construction (SSPWC)-Green Book, or most recent addition;
  - I. Plans;
  - J. Standard Plans;
  - K. Reference Specifications;
  - L. Photos.
4. **SCOPE OF WORK AND SERVICES:** Contractor shall be responsible for design-build services and responsibilities which shall include and be in accordance with Contractor's Proposals, dated March 27, 2017 and the Best and Final Offer dated July 5, 2017, which are jointly attached hereto as **Exhibit A**, incorporated herein by reference, and made a part hereof. The Request For Proposals, Bid Forms, Performance Bond, Payment Bond, Specifications, Drawings, General Conditions and Special Conditions, and all addenda issued by the Agency with respect to the foregoing, are hereby incorporated in and made part of this Contract, as if fully set forth.

The scope of work and services shall include the following:

- A. **Design Services:** Contractor shall provide all Design Services required for the Project. Architectural and engineering services must be provided by licensed, independent Design Professionals retained by Contractor or by licensed employees of Contractor, or as permitted by the law of the State of California. Contractor may not engage the services of any Design Professional for this Project without obtaining the Agency's prior written approval, which approval will not be unreasonably withheld. Agency's approval will not be deemed to create any contractual relationship between Agency and any such Design Professional, except that the Agency must be considered a third-party beneficiary of such Design Professional's services for the Project. Contractor must bind its Design Professionals in the same manner as Contractor is bound to the Agency under this Contract, including, but not limited to, the insurance and indemnity requirements applicable to Design Professionals set forth herein. Agency will not issue the Notice to Proceed with Design Services until it has

received acceptable evidence that all Design Professionals are covered by insurance as specified in the Contract Documents.

- B. Construction Services: Contractor shall provide all labor, materials, equipment and services necessary to perform and timely complete the Construction Services in strict accordance with the Contract Documents, including, but not limited to, the Construction Documents, and in an economic and efficient manner in the best interests of Agency. Contractor shall not begin the Construction Services until Agency has received the required payment and performance bonds, evidence of the required insurance coverage, and has issued a Notice to Proceed with the Construction Services.

NOTE: Contractor shall advise Agency within two (2) weeks of any changes to the written Scope of Work/Schedule based upon discussions from any meetings. Any changes must be made in writing by an Amendment to the Contract. Work initiated without written approval, shall be at Contractor's own risk, and shall not be reimbursed by the Agency.

- C. Project Schedule: Within ten (10) days following full execution of the Contract, Contractor must prepare and submit for Agency's review and approval a preliminary Project Schedule showing the timing and sequencing of the Design-Build Services required to design and construct the Project. Unless otherwise specified by Agency, the preliminary Project Schedule should include the major phases for the Design Services and for the Construction Services, including, but not limited to, completion of Design Development Documents; Construction Documents; procurement of Subcontractors; construction; final close out; as well as any other milestones applicable to this Project. The Project Schedule shall be updated for Agency's review and approval upon completion of each milestone included in the Project Schedule.

D. Method of Inspection:

1. Work performed under this Contract may be required to undergo monthly, weekly, or daily inspections.
2. The Project Manager shall be responsible for performance of the inspections.
3. If Contractor fails an inspection, the Project Manager shall be responsible for providing a written notice to the Contractor explaining the error and a determination of the urgency for the correction of the error (herein referred to as a "Cure Notice").

E. Cure Procedure:

1. For a Cure Notice deemed by the Agency to be **urgent**, Contractor shall correct any error of the Work within 10 (ten) calendar days after Contractor's receipt of a Cure Notice, as directed by the Project Manager.
2. For a Cure Notice deemed by the Agency to be **important**, Contractor shall correct any error of the Work within 60 (sixty) calendar days after Contractor's receipt of a Cure Notice, as directed by the Project Manager.
3. If the Project Manager rejects all, or any part of, the Work as unacceptable and agreement to correct such Work cannot be reached without modification to the Contract, Contractor shall notify the Project Manager, in writing, detailing the dispute and the reason(s) for the Contractor's position. Any dispute that cannot be resolved between the Project Manager and Contractor shall be resolved in accordance with the provisions of this Contract.

F. The Agency may, at any time, make changes to this Contract's Scope of Work; including additions, reductions and other alterations to any or all of the work. However, such changes shall only be made via written amendment to this Contract. The Contract Price and Work Schedule shall be equitably adjusted, if required, to account for such changes and shall be set forth within the Contract Amendment.

5. **TERM:** The term of this Contract shall extend from the date of the Notice to Proceed, and terminate upon completion of the project unless agreed to by both parties, reduced to writing, and amended to this contract.

*Time is of the essence on this Contract.*

6. PAYMENT, INVOICING, AND COMPENSATION:

- A. The Agency will pay Contractor progress payments and the final payment, in accordance with the provisions of the contract documents, with warrants drawn on the appropriate fund or funds as required, at the prices bid in the Bidding and Contract Requirements, Section C - Bid Forms, and in accordance with Contractor's Fee Schedule, attached hereto and incorporated herein as **Exhibit B**, as accepted by the Agency, and set forth in this below.

**Total Bid Price: \$5,277,527.00 (Five Million Two Hundred Seventy-Seven Thousand Five Hundred Twenty-Seven Dollars and Zero Cents).**

If this is not a lump sum bid and the contract price is dependent upon the quantities constructed, the Agency will pay and said Contractor shall receive, in full compensation for the work the prices named in the Bidding and Contract Requirements, Section C - Bid Forms.



That the Contractor will pay, and will require subcontractors to pay, employees on the work a salary or wage at least equal to the prevailing salary or wage established for such work as set forth in the wage determinations and wage standards applicable to this work, contained in or referenced in the contract documents.

That, in accordance with Section 1775 of the California Labor Code, Contractor shall forfeit to the Agency, as a penalty, not more than Fifty (\$50.00) Dollars for each day, or portion thereof, for each worker paid, either by the Contractor or any subcontractor, less than the prevailing rates as determined by the Director of the California Department of Industrial Relations for the work.

- B. The Contractor may submit an invoice not more than once per month during the term of this Contract. Agency shall pay Contractor's properly executed invoice, approved by the Project Manager, within thirty (30) days following receipt of the invoice.
- C. Additionally, to qualify for payment, the Contractor shall prominently display, on the first page of the invoice, both:
  - 1. The Contract Number – 4600002383, and;
  - 2. The Contract Release Purchase Order Number – To be provided

If Contractor submits invoice by email, such invoice shall be submitted as follows:

[APGroup@ieua.org](mailto:APGroup@ieua.org)  
Scan the invoice as a PDF file.  
Attach the scanned file to an email.

If Contractor submits invoice by mail, such invoice shall be submitted as follows:

Inland Empire Utilities Agency  
Re: Contract Number: 4600002383  
P.O. Box 9020  
Chino Hills, CA 91709

- D. Concurrent with the submittal of the original invoice to the Agency's Accounts Payable Department, the Contractor shall forward (mail, fax, or email) a copy of said invoice to the designated Project Manager, identified in Section 1, on Page 1 of this Contract.
- E. No Additional Compensation: Nothing Set forth in this Contract shall be interpreted to require payment by Agency to Contractor of any compensation specifically for the assignments and assurances required by the Contract, other than the payment

of expenses as may be actually incurred by Contractor in complying with this Contract, as approved by the Project Manager.

- F. Allowance Items And Allowance Values: Any and all Allowance Items, as well as their corresponding Allowance Values, are set forth in the Request for Proposal dated March 27, 2017 and the Request for Best and Final Offer dated July 5, 2017. No work shall be performed on any Allowance Item without the Contractor first obtaining in writing advanced authorization to proceed from Owner. Owner agrees that if the Contractor is not provided written authorization to proceed on an Allowance Item by the date set forth in the Project schedule, due to no fault of the Contractor, the Contractor may be entitled to an adjustment of the Contract Time(s) and Contract Price.

The Allowance Value for an Allowance Item includes the direct cost of labor, materials, equipment, transportation, taxes and insurance associated with the applicable Allowance Item. All other costs, including design fees, project management and general condition costs, overhead and fee, are deemed to be included in the original Contract Price, and are not subject to adjustment, regardless of the actual amount of the Allowance Item.

Whenever the actual costs for an Allowance Item is more than or less than the stated Allowance Value, the Contract Price shall be adjusted accordingly by Change Order, per the Contract Documents. The amount of the Change Order shall reflect the difference between actual costs incurred by the Contractor for the particular Allowance Item and the Allowance Value.

- G. Contractor may request taking advantage of the Agency's practice of offering an expedited payment protocol to a Contractor who has proposed accepting an invoice amount reduction in exchange for early payment.
7. CONTROL OF THE WORK: Contractor shall perform the Work in compliance with the Schedule of Work and Services. If performance of the Work falls behind schedule, the Contractor shall accelerate the performance of the Work to comply with the work schedule as directed by the Project Manager. If the nature of the Work is such that Contractor is unable to accelerate the Work, Contractor shall promptly notify the Project Manager of the delay, the causes of the delay, and submit a proposed revised Work Schedule.
8. INSURANCE: During the term of this Contract, the Contractor shall maintain at Contractor's sole expense, the following insurance.
- A. Minimum Scope of Insurance: Coverage shall be at least as broad as:
1. Commercial General Liability ("CGL"): Insurance Services Office ("ISO") Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal &

advertising injury with limits no less than \$2,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

2. **Automobile Liability:** ISO Form Number CA 00 01 covering any auto (Code 1), or if Contractor has no owned autos, covering hired, (Code 8) and non-owned autos (Code 9), with limit no less than \$1,000,000 per accident for bodily injury and property damage.
  3. **Workers' Compensation and Employers Liability:** Workers' compensation limits as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease.
  4. **Professional Liability (Errors and Omissions):** Insurance appropriate to the Contractor's profession, with limit no less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate.
  5. **Builder's Risk:** Insurance utilizing an "All Risk" (Special Perils) coverage form, with limits equal to the completed value of the project and no coinsurance penalty provisions.
  6. **Payment Bond and Performance Bond:** Shall be in a sum equal to the contract price. If the Performance Bond provides for a one-year warranty a separate Maintenance Bond is not necessary. Bonds shall be duly executed by a responsible corporate surety, authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California.
- B. Deductibles and Self-Insured Retention:** Any deductibles or self-insured retention must be declared to and approved by the Agency. At the option of the Agency, either: the insurer shall reduce or eliminate such deductibles or self-insured retention as respects the Agency, its officers, officials, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claims administration and defense expenses.
- C. Other Insurance Provisions:** The insurance policies are to contain, or be endorsed to contain, the following provisions:
1. **Commercial General Liability and Automobile Liability Coverage**
    - a. **Additional Insured Status:** The Agency, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the Contractor including

materials, parts or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance (at least as broad as ISO Form CG 20 10 11 85 or by either CG 20 10, CG 20 26, CG 20 33, or CG 20 38; and CG 20 37 forms if later revisions used).

- b. **Primary Coverage:** The Contractor's insurance coverage shall be primary insurance coverage at least as broad as ISO CG 20 01 04 13 as respects the Agency, its officer, officials, employees and volunteers. Any insurance or self-insurance maintained by the Agency, its officers, officials, employees, volunteers, property owners or engineers under contract with the Agency shall be excess of the Contractor's insurance and shall not contribute with it.
- c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Agency, its officers, officials, employees or volunteers.
- d. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
- e. The Contractor may satisfy the limit requirements in a single policy or multiple policies. Any such additional policies written as excess insurance shall not provide any less coverage than that provided by the first or primary policy.

## 2. Workers' Compensation and Employers Liability Coverage

The insurer hereby grants to Agency a waiver of any right to subrogation which any insurer of said Contractor may acquire against the Agency by virtue of the payment of any loss under such insurance. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the Agency has received a waiver of subrogation endorsement from the insurer.

## 3. All Coverages

Each insurance policy required by this contract shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the Agency.

- D. Acceptability of Insurers: All insurance is to be placed with insurers with a current A.M. Best's rating of no less than A minus:VII, and who are admitted insurers in the State of California.
- E. Verification of Coverage: Contractor shall provide the Agency with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the Agency before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them. The Agency reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.
- F. Submittal of Certificates: Contractor shall submit all required certificates and endorsements to the following:

Inland Empire Utilities Agency  
Attn: Angela Witte  
P.O. Box 9020  
Chino Hills, California 91709

9. FITNESS FOR DUTY:

- A. Fitness: Contractor and its Subcontractor personnel on the Jobsite:
1. Shall report for work in a manner fit to do their job;
  2. Shall not be under the influence of or in possession of any alcoholic beverages or of any controlled substance (except a controlled substance as prescribed by a physician so long as the performance or safety of the Work is not affected thereby); and
  3. Shall not have been convicted of any serious criminal offense which, by its nature, may have a discernible adverse impact on the business or reputation of Agency.
- B. Compliance: Contractor shall advise all personnel and associated third parties of the requirements of this Contract ("Fitness for Duty Requirements") before they enter on the Jobsite and shall immediately remove from the Jobsite any employee determined to be in violation of these requirements. Contractor shall impose these requirements on its Subcontractors. Agency may cancel the Contract if Contractor violates these Fitness for Duty Requirements.
- A. Design-Build Team and Subcontractors: All members of the Contractor's Design-Build Team ("DBT") must be bound to the terms of this Contract. All Work which is not performed by Contractor or DBT members with its own duly licensed forces

shall be performed by Subcontractors. Contractor must provide each Subcontractor with a complete set of the Construction Documents and any approved modifications thereto.

Contractor shall require every Subcontractor and material supplier to be bound to the provisions of the Contract Documents as they apply to the Subcontractor's or material supplier's portion(s) of the Work, and to likewise bind their Subcontractors or material suppliers. Agency reserves the right to reject any Subcontractor or material supplier based upon Agency's reasonable belief that the Subcontractor or material supplier is not adequately qualified, or whose performance is unacceptable to the Agency, or who has a history of unacceptable performance on other public works projects. Nothing in these Contract Documents creates a contractual relationship between a Subcontractor or material supplier and Agency, but Agency shall be deemed to be a third-party beneficiary of the contract between Contractor and each Subcontractor.

#### 10. LEGAL RELATIONS AND RESPONSIBILITIES

- A. Professional Responsibility: The Contractor shall be responsible, to the level of competency presently maintained by other practicing professionals performing the same or similar type of work.
- B. Status of Contractor: The Contractor is retained as an independent Contractor only, for the sole purpose of providing the services described herein, and is not an employee of the Agency.
- C. Observing Laws and Ordinances: The Contractor shall keep itself fully informed of all relevant existing state and federal laws and all relevant county and Agency ordinances and regulations which pertain to structural engineering services or tasks performed under this Contract, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. The Contractor shall at all times observe and comply with all such existing laws, ordinances, regulations, orders and decrees, and shall to the extent of Contractor's negligence, protect and indemnify, as required herein, the Agency, its officers, employees and agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by the Contractor or its employees.
- D. Work Safety: Contract work requiring confine space entry must follow CalOSHA Regulation 8 CCR, Sections 5157 – 5158. This regulation requires the following to be submitted to IEUA for approval prior to the Contractors mobilization to the work site:
  - 1. Proof of training on confined space procedures, as defined in Cal-OSHA Regulation 8 CCR, Section 5157; and, 2. A written plan that includes; identification of confined spaces within the work site, alternate procedures

where appropriate, Contractor provisions and specific procedures for permit-required and non-permit required spaces and a rescue plan.

- E. Subcontract Services: Any subcontracts for the performance of any services under this Contract shall be subject to the written approval of the Project Manager.
- F. Grant Funded Projects: **This is a grant funded project.** For grant-funded projects, the Contractor shall be responsible to comply with all grant requirements related to the Project. These may include, but shall not be limited to: Davis-Bacon Act, Endangered Species Act, Executive Order 11246 (Affirmative Action Requirements), Equal Opportunity, Competitive Solicitation, Record Retention and Public Access to Records, and Compliance Review.
- G. Hours of Labor: The Contractor shall comply with all applicable provisions of California Labor Code Sections 1810 to 1815 relating to working hours. The Contractor shall, as a penalty to the Agency, forfeit \$25.00 for each worker employed in the completion of the Contract by the Contractor or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of the Labor Code.
- H. Travel and Subsistence Pay: The Contractor shall make payment to each worker for travel and subsistence payments which are needed to complete the work and/or service, as such travel and subsistence payments are defined in an applicable collective bargaining agreements with the worker.
- I. Liens: Contractor shall pay all sums of money that become due from any labor, services, materials or equipment provided to Contractor on account of said services to be rendered or said materials to be provided under this Contract and that may be secured by any lien against the Agency. Contractor shall fully discharge each such lien at the time performance of the obligation secured matures and becomes due.
- J. Indemnification: Contractor shall indemnify the Agency, its directors, employees and assigns, and shall defend and hold them harmless from all liabilities, demands, actions, claims, losses and expenses, including reasonable attorneys' fees, which arise out of or are related to the negligence, recklessness or willful misconduct of the Contractor, its directors, employees, agents and assigns, in the performance of work under this contract.
- K. Indemnification: Design Professional (Contractor) agrees to indemnify, including the cost to defend, entity and its officers, officials, employees, and volunteers from and against any and all claims, demands, costs, or liability that arise out of, or pertain to, or relate to the negligence, recklessness, or willful misconduct of Design Professional (Contractor) and its employees or agents in the performance of services under this contract, but this indemnity does not apply to liability for

damages arising from the sole negligence, active negligence, or willful acts of the Agency; and does not apply to any passive negligence of the Agency unless caused at least in part by the Design Professional (Contractor).

- L. Conflict of Interest: No official of the Agency who is authorized in such capacity and on behalf of the Agency to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving this Contract, or any subcontract relating to services or tasks to be performed pursuant to this Contract, shall become directly or indirectly personally interested in this Contract.
- M. Equal Opportunity and Unlawful Discrimination: During the performance of this Contract, the Contractor shall not unlawfully discriminate against any employee or employment applicant because of race, color, religion, sex, age, marital status, ancestry, physical or mental disability, sexual orientation, veteran status or national origin. The Agency is committed to creating and maintaining an environment free from harassment and discrimination
- N. Non-Conforming Work and Warranty: Consistent with the standard of skill and care set forth in Section 10.A, Professional Responsibility, Contractor represents and warrants that the Work and Documentation shall be adequate to serve the purposes described in the Contract. If the Project Manager rejects all or any part of the Work or Documentation as unacceptable, and agreement to correct such Work or Documentation cannot be reached without modification to the Contract, Contractor shall notify the Project Manager, in writing, detailing the dispute and reason for Contractor's position. Any dispute that cannot be resolved between the Project Manager and the Contractor, shall be resolved in accordance with the Dispute Section of this Contract.
- O. Disputes:
  - 1. All disputes arising out of or in relation to this Contract shall be determined in accordance with this section. The Contractor shall pursue the work to completion in accordance with the instruction of the Agency's Project Manager notwithstanding the existence of dispute. By entering into this Contract, both parties are obligated, and hereby agree, to submit all disputes arising under or relating to the Contract, which remain unresolved after the exhaustion of the procedures provided herein, to independent arbitration. Except as otherwise provided herein, arbitration shall be conducted under California Code of Civil Procedure Sections 1280, et. seq, or their successor.
  - 2. Any and all disputes prior to the work starting shall be subject to resolution by the Agency Project Manager and the Contractor shall comply, pursuant to the Agency Project Manager instructions. If the Contractor is not satisfied with any such resolution by the Agency Project Manager, they may file a written protest with the Agency Project Manager within seven (7)



calendar days after receiving written notice of the Agency's decision. Failure by Contractor to file a written protest within seven (7) calendar days shall constitute waiver of protest, and acceptance of the Agency Project Manager's resolution. The Agency's Project Manager shall submit the Contractor's written protests to the General Manager, together with a copy of the Agency Project Manager's written decision, for his or her consideration within seven (7) calendar days after receipt of said protest(s). The General Manager shall make his or her determination with respect to each protest filed with the Agency Project Manager within ten (10) calendar days after receipt of said protest(s). If Contractor is not satisfied with any such resolution by the General Manager, they may file a written request for arbitration with the Project Manager within seven (7) calendar days after receiving written notice of the General Manager's decision.

3. In the event of arbitration, the parties to this Contract agree that there shall be a single neutral Arbitrator who shall be selected in the following manner:
  - a. The Demand for Arbitration shall include a list of five names of persons acceptable to the Contractor to be appointed as Arbitrator. The Agency shall determine if any of the names submitted by Contractor are acceptable and, if so, such person shall be designated as Arbitrator.
  - b. In the event that none of the names submitted by Contractor are acceptable to Agency, or if for any reason the Arbitrator selected in Step (a) is unable to serve, the Agency shall submit to Contractor a list of five names of persons acceptable to Agency for appointment as Arbitrator. The Contractor shall, in turn, have seven (7) calendar days in which to determine if one such person is acceptable.
  - c. If after Steps (a) and (b), the parties are unable to mutually agree upon a neutral Arbitrator, the matter of selection of an Arbitrator shall be submitted to the San Bernardino County Superior Court pursuant to Code of Civil Procedure Section 1281.6, or its successor. The costs of arbitration, including but not limited to reasonable attorneys' fees, shall be recoverable by the party prevailing in the arbitration. If this arbitration is appealed to a court pursuant to the procedure under California Code of Civil Procedure Section 1294, et. seq., or their successor, the costs of arbitration shall also include court costs associated with such appeals, including but not limited to reasonable attorneys' fees which shall be recoverable by the prevailing party.
4. Association in Mediation/Arbitration: The Agency may join the Contractor in mediation or arbitration commenced by a Contractor on the Project pursuant to Public Contracts Code Sections 20104 et seq. Such

association shall be initiated by written notice from the Agency's representative to the Contractor.

- P. **Workers' Legal Status:** For performance against this Contract, Contractor shall only utilize employees and/or subcontractors that are authorized to work in the United States pursuant to the Immigration Reform and Control Act of 1986.
- Q. **Prevailing Wage Requirements:** Pursuant to Section 1770 and following, of the California Labor Code, the Contractor shall not pay less than the general prevailing wage rates, as determined by the Director of the State of California Department of Industrial Relations for the locality in which the work is to be performed and for each craft or type of worker needed to execute the work contemplated under the Contract. The Contractor or any subcontractor performing part of said work shall strictly adhere to all provisions of the Labor Code, including, but not limited to, minimum wages, work days, nondiscrimination, apprentices, maintenance and availability of accurate payroll records and any other matters required under all Federal, State and local laws related to labor.

Contractor shall provide with their invoice certified payroll verifying that Contractor has paid prevailing wage requirements as stipulated in SB-854 (<http://www.dir.ca.gov/DIRNews/2014/2014-55.pdf>).

**SB854 Requirements:**

- No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].
  - No contractor or subcontractor may be awarded a contract for public work on a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.
  - This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.
11. **OWNERSHIP OF MATERIALS AND DOCUMENTS/CONFIDENTIALITY:** The Agency retains ownership of any and all partial or complete reports, drawings, plans, notes, computations, lists, and/or other materials, documents, information, or data prepared by the Contractor and/or the Contractor's subcontractor(s) pertaining to this Contract. Said materials and documents are confidential and shall be available to the Agency from the moment of their preparation, and the Contractor shall deliver same to the Agency whenever requested to do so by the Project Manager and/or Agency. The Contractor

agrees that same shall not be made available to any individual or organization, private or public, without the prior written consent of the Agency.

Said materials and documents shall not be changed or used for purposes other than those set forth in the Contract without the prior written approval of Contractor. If Agency reuses the materials and documents without Contractor's prior written consent, changes or uses the materials and documents other than as intended under this Contract, Agency shall do so at its sole risk and discretion, and Contractor shall not be liable for any claims and/or damages resulting from use or connected with the release of or any third party's use of the reused materials or documents.

12. TITLE AND RISK OF LOSS:

- A. Documentation: Title to the Documentation shall pass, subject to payment therefore, to Agency when prepared; however, a copy may be retained by Contractor for its records and internal use. Contractor shall retain such Documentation in a controlled access file, and shall not reveal, display or disclose the contents of the Documentation to others without the prior written authorization of Agency or for the performance of Work related to the project.
- B. Material: Title to all Material, field or research equipment, subject to payment therefore, and laboratory models, procured or fabricated under the Contract shall pass to Agency when procured or fabricated, and such title shall be free and clear of any and all encumbrances. Contractor shall have risk of loss of any Material or Agency-owned equipment of which it has custody.
- C. Disposition: Contractor shall dispose of items to which Agency has title as directed in writing by the Agreement Administrator and/or Agency.

13. PROPRIETARY RIGHTS:

- A. Rights and Ownership: Agency's rights to inventions, discoveries, trade secrets, patents, copyrights, and other intellectual property, including the Information and Documentation, and revisions thereto (hereinafter collectively referred to as "Proprietary Rights"), used or developed by Contractor in the performance of the Work, shall be governed by the following provisions:
  - 1. Proprietary Rights conceived, developed, or reduced to practice by Contractor in the performance of the Work shall be the property of Agency, and Contractor shall cooperate with all appropriate requests to assign and transfer same to Agency.
  - 2. If Proprietary Rights conceived, developed, or reduced to practice by Contractor prior to the performance of the Work are used in and become integral with the Work, or are necessary for Agency to have complete control of the Work, Contractor shall grant to Agency a non-exclusive, irrevocable, royalty-free license, as may be required by Agency for the complete control of the Work, including the right to reproduce, correct,

repair, replace, maintain, translate, publish, use, modify, copy or dispose of any or all of the Work and grant sublicenses to others with respect to the Work.

3. If the Work includes the Proprietary Rights of others, Contractor shall procure, at no additional cost to Agency, all necessary licenses regarding such Proprietary Rights so as to allow Agency the complete control of the Work, including the right to reproduce, correct, repair, replace, maintain, translate, publish, use, modify, copy or dispose of any or all of the Work and grant sublicenses to others with respect to the Work. All such licenses shall be in writing and shall be irrevocable and royalty-free to Agency.

14. **INFRINGEMENT:** Contractor represents and warrants that the Work and Documentation shall be free of any claim of trade secret, trade mark, trade name, copyright, or patent infringement or other violations of any Proprietary Rights of any person.

Contractor shall defend, indemnify and hold harmless, Agency, its officers, directors, agents, employees, successors, assigns, servants, and volunteers free and harmless from any and all liability, damages, losses, claims, demands, actions, causes of action, and costs including reasonable attorney's fees and expenses to the extent of Contractor's negligence for any claim that use of the Work or Documentation infringes upon any trade secret, trade mark, trade name, copyright, patent, or other Proprietary Rights.

Contractor shall, at its expense and at Agency's option, refund any amount paid by Agency under the Contract, or exert its best efforts to procure for Agency the right to use the Work and Documentation, to replace or modify the Work and Documentation as approved by Agency so as to obviate any such claim of infringement, or to put up a satisfactory bond to permit Agency's continued use of the Work and Documentation.

15. **NOTICES:** Any notice may be served upon either party by delivering it in person, or by depositing it in a United States Mail deposit box with the postage thereon fully prepaid, and addressed to the party at the address set forth below:

Agency: Warren T. Green  
Manager of Contracts and Procurement  
Inland Empire Utilities Agency  
P.O Box 9020  
Chino Hills, California 91709

Contractor: David Jensen, P.E., BCEE, LEED AP  
Vice President  
CDM Smith, Inc.  
Address: 600 Wilshire Blvd #750  
Los Angeles, CA 90017

Any notice given pursuant to this section shall be deemed effective in the case of personal delivery, upon receipt thereof, or, in the case of mailing, at the moment of deposit in the course of transmission with the United States Postal Service.

16. **SUCCESSORS AND ASSIGNS:** All of the terms, conditions and provisions of this Contract shall take effect to the benefit of and be binding upon the Agency, the Contractor, and their respective successors and assigns. No assignment of the duties or benefits of the Contractor under this Contract may be assigned, transferred or otherwise disposed of without the prior written consent of the Agency; and any such purported or attempted assignment, transfer or disposal without the prior written consent of the Agency shall be null, void and of no legal effect whatsoever.
17. **PUBLIC RECORDS POLICY:** Information made available to the Agency may be subject to the California Public Records Act (Government Code Section 6250 et seq.) The Agency's use and disclosure of its records are governed by this Act. The Agency shall use its best efforts to notify Contractor of any requests for disclosure of any documents pertaining to Contractor. In the event of litigation concerning disclosure of information Contractor considers exempt from disclosure; (e.g., Trade Secret, Confidential, or Proprietary) Agency shall act as a stakeholder only, holding the information until otherwise ordered by a court or other legal process. If Agency is required to defend an action arising out of a Public Records Act request for any of the information Contractor has marked "Confidential," "Proprietary," or "Trade Secret," Contractor shall defend and indemnify Agency from all liability, damages, costs, and expenses, including attorneys' fees, in any action or proceeding arising under the Public Records Act.
18. **RIGHT TO AUDIT:** The Agency reserves the right to review and/or audit all Contractors' records related to the Work. The option to review and/or audit may be exercised during the term of the Contract, upon termination, upon completion of the Contract, or at any time thereafter up to twelve (12) months after final payment has been made to Contractor. The Contractor shall make all records and related documentation available within three (3) working days after said records are requested by the Agency.
19. **INTEGRATION:** The Contract Documents represent the entire Contract made and entered into by and between the Agency and the Contractor as to those matters contained in this contract. No prior oral or written understanding shall be of any force or effect with respect to those matters covered by the Contract Documents. This Contract may not be modified, altered or amended except by written mutual agreement by the Agency and the Contractor.
20. **GOVERNING LAW:** This Contract is to be governed by and constructed in accordance with the laws of the State of California, in the County of San Bernardino.
21. **TERMINATION FOR CONVENIENCE:** The Agency reserves and has the right to immediately suspend, cancel or terminate this Contract at any time upon written notice to the Contractor. In the event of such termination, the Agency shall pay Contractor for

all authorized and Contractor-invoiced services up to the date of such termination, as approved by the Project Manager.

22. **FORCE MAJEURE**: Neither party shall hold the other responsible for the effects of acts occurring beyond their control; e.g., war, riots, strikes, natural disasters, etcetera.
23. **LIQUIDATED DAMAGES**: Liquidated Damages, in the amount of \$500 per day, may be assessed by the Agency for each calendar day that the Contractor fails to complete the services in accordance with the Work Schedule. Any and all Liquidated Damages assessed by the Agency will be taken as a direct credit against the Contractor's invoice for the missed services. The Contractor's acceptance of this contract, shall serve to indicate acceptance of this Liquidated Damages clause, and the daily assessment of damages expressed in this section.

In addition to the liquidated damages, which may be imposed if the Contractor fails to complete the work within the time agreed upon, the Agency may also deduct from any sums due or to become due the Contractor, liquidated damages in accordance with the Bidding and Contract Requirements, Section B - Instruction to Bidders, Part 5.0 "Liquidated Damages", for any violation of the General Conditions, Section D - Contractor's Responsibilities, Part 8, "Law and Regulations"; Bidding and Contract Requirements Contract Section D -Contract and Relevant Documents, Part 1.0, Paragraphs 9 through 11; General Conditions, Section D - Contractor's Responsibilities, Part 4.0, "Labor, Materials and Equipment"; General Conditions Section D - Contractor's Responsibilities, Part 12.0, "Safety and Protection" or General Conditions Section H - Legal Responsibilities, Part 8.0, "Disturbance of the Peace".

24. **NOTICE TO PROCEED**: No services shall be performed or provided under this Contract unless and until this document has been properly signed by all responsible parties and a Notice to Proceed order has been issued to the Contractor.
25. **AUTHORITY TO EXECUTE CONTRACT**: The Signatories, below, each represents, warrants, and covenants that they have the full authority and right to enter into this Contract on behalf of the separate entities shown below.
26. **DELIVERY OF DOCUMENTS**: The Parties to this Contract and the individuals named to facilitate the realization of its intent, with the execution of the Contract, authorize the delivery of documents via facsimile, via email, and via portable document format (PDF) and covenant agreement to be bound by such electronic versions.

[Signature Page To Follow]

The parties hereto have caused the Contract to be entered as of the day and year written above.

**INLAND EMPIRE UTILITIES AGENCY:**  
*\*A MUNICIPAL WATER DISTRICT*

**CDM SMITH, INC.:**

\_\_\_\_\_  
P. Joseph Grindstaff (Date)  
General Manager

\_\_\_\_\_  
David D. Jensen (Date)  
Vice President

[Remainder Of Page Intentionally Left Blank]

# EXHIBIT A





600 Wilshire Blvd, Suite 750  
Los Angeles, CA 90017  
tel: 213-457-2200

July 12, 2017

Mia Beltran  
Contracts Administrator II  
Inland Empire Utilities Agency  
6075 "A" Kimball Avenue  
Chino, CA 91708

*Submitted Via Email to: [mbeltran@ieua.org](mailto:mbeltran@ieua.org)*

**Subject: Request for Proposal (RFP-MB-17-028) to Provide Design-Build Services for the Regional Plant Nos. 4 and 5 SCADA Migration Project-Best and Final Offer**

Dear Ms. Beltran:

CDM Smith has received the Inland Empire Utilities Agency's July 5 2017 letter and is pleased to provide this Best and Final Offer (BAFO) for the RP-4 and RP-5 Design-Build SCADA Migration Project. With this BAFO submittal, our May 31, 2017 proposal is amended to include the following conditions and clarifications identified in your July 5<sup>th</sup> letter.

- 1. RP-4 and RP-5 Control Room Modifications.** We have included a \$300,000 allowance for architectural modifications, design, procurement and construction of the necessary equipment to facilitate the construction of new SCADA control consoles and associated equipment at the RP-4 and RP-5 plant control rooms in the revised cost summary provided at the end of this submittal. If selected for the project, we will work with IEUA to fully define the scope of this work, establish the appropriate cost, and adjust our budget accordingly.

As was referenced in our proposal, CDM Smith is an integrated design-build (DB) firm that has successfully delivered alternative delivery projects for over 20 years to water and wastewater clients throughout the United States, and abroad. During this time, we have completed over \$3.5 billion in treatment plant work and have completed DB projects in over 44 states and territories. Our experience includes a strong background in control room design and construction at both a national and local level with the recent successful completion of the Camp Pendleton North Regional Tertiary Treatment Plant, Advanced Water Treatment Plant and the US National Training Center Water Treatment Plant at Fort Irwin.





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July 12, 2017

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Please note that the schedule submitted with our original proposal did not consider the time for CDM Smith to perform this additional work. If selected for this project, we will work with IEUA to develop a revised schedule which includes this additional element. As the control room modifications and installation of new control consoles must be performed early in the schedule to install the new servers and hardware, we will prioritize the design and submittals for early IEUA review and approval.

2. **PlantPax Programming.** As specified by IEUA, all PlantPax programming will be performed by a contractor that is both Control and Process recognized by Rockwell Automation (RA). Our team member Advanced Telemetry Systems International, Inc. (ATSI) of Temecula, CA is an RA recognized integrator for both Control and Process disciplines. For this project, all PlantPax programming will be performed by ATSI.
3. **Oversees Outsourcing of Programming.** As specified by IEUA, all programming for this project will be performed within the state of California. No programming will be outsourced overseas.

The following discussion is provided to further clarify the roles of CDM Smith and ATSI for this project. As noted above, ATSI is an RA recognized integrator for both Control and Process disciplines. CDM Smith is an RA recognized integrator for Control and is currently completing the requirements to receive the Process recognition. We expect to obtain the Process recognition by year end. Given that the certification will not be complete by the start of this project, we teamed up with ATSI to perform the VantagePoint reporting programming with an option to perform the PlantPax programming. Given IEUA's clarification that the PlantPax programming be performed by a firm that is both Control and Process recognized by RA, we are committed to have ATSI lead this effort.

CDM Smith will provide PlantPax programming oversight to ATSI during the development, submittal and factory acceptance test phases and fill the lead position for the field implementation team. This will help provide a seamless transition from the programming lab to the fabrication shop to the field for the programming team. CDM Smith has recently completed a very successful PlantPax upgrade at the Fena Water Treatment Plant for NAVFAC-Mariana Islands in Guam. Our Senior Programmer, Mr. Tavita Solomona, who led the Guam effort, will also fill this key role in the RP-4 and RP-5 SCADA migration. In addition, key members of CDM Smith staff will complete RA's PlantPax System Design and Configuration certificate class during the execution of this project.



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CDM Smith understands that as the prime contractor for this project, we bear complete responsibility for meeting and exceeding not only the contractual requirements but earning and maintaining the trust of the IEUA plant operators, programmers, engineers and managers. While ATSI is assuming the lead in the PlantPax programming effort, Michael Graham of CDM Smith will continue as the Electrical/I&C Design and Automation Lead. His group will maintain responsibility for the overall system architecture, control narrative development, and generation of new P&ID's. While ATSI will perform both VantagePoint and PlantPax programming, CDM Smith will stand behind the work of its teaming partner to ensure that quality control standards and schedule milestones are met. Mr. Solomona and other key CDM Smith resources are based locally in our Rancho Cucamonga office and will be able to quickly respond to IEUA's requests and conditions in the field throughout the planning, design, construction, and warranty phases of the project.

We are looking forward to working with you on this exciting project and believe that the CDM Smith team provides the right combination of SCADA design and implementation expertise, wastewater treatment knowledge, and design-build experience to successfully migrate RP-4 and RP-5 to a PlantPax control system that provides IEUA with improved control, greater consistency, and reduced long-term costs.

With this BAFO, we are revising our proposed price for this project as indicated below:

Original Cost Proposal (base scope of work):	\$5,192,864
Revised Cost Proposal (base scope of work):	\$4,997,527
Control Room Modification Allowance:	\$300,000
<b>Best and Final Offer:</b>	<b>\$5,277,527</b>

This revised cost includes the \$300,000 allowance for the control room modification, the work described in our original May 31, 2017 proposal, and the clarifications noted in this submittal.



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Thank you for your consideration of our qualifications and experience and please contact me at (213) 457-2200 if you have any questions regarding our revised submittal.

Sincerely,

A handwritten signature in blue ink that reads "David Jensen". The signature is fluid and cursive, with a long horizontal stroke at the end.

David D. Jensen, P.E., BCEE, LEED, AP  
Vice President  
CDM Smith, Inc.



600 Wilshire Blvd, Suite 750  
Los Angeles, CA 90017  
tel: 213-457-2200

May 31, 2017

Jesse Pompa  
Inland Empire Utilities Agency  
6075 "A" Kimball Avenue  
Chino, California 91708

**Subject: Request for Proposal (RFP) to provide Design-Build Services for the Regional Plant Nos. 4 and 5 SCADA Migration Project**

Dear Mr. Pompa:

CDM Smith is pleased to submit our proposal for designing and implementing the migration of the SCADA systems at Regional Plants Nos 4 and 5 to the PlantPAx control system. In recognition of the importance of this project, we have assembled a team of our brightest and most senior professionals to lead and successfully deliver this project. Our integrated team provides the right combination of experience, technical expertise, and managerial skills necessary to develop control system improvements that provide the best value for Inland Empire Utilities Agency (IEUA) and will smoothly execute the SCADA migration process on schedule. In addition, our team provides IEUA with:



**An Integrated Design-Build Firm:** Our integrated team structure provides a single point of responsibility for all aspects of project delivery and our ability to self-perform the majority of the project allows us to provide better control over schedule, costs, quality, and safety. In addition, our unique ability to self-perform electrical and I&C work, as well as HMI and PLC programming, allows us to internally manage the technical aspects of the project.



**A Collaborative Approach to Achieve Best Value:** We recognized that IEUA is looking for more than just a design-builder who can implement the prescriptive elements of the RFP. Our approach is designed to create an open, collaborative process for decision making that provides the best value for IEUA by striking a balance between the needs of the users, the dynamics of the operations, and the capabilities of the SCADA system.



**A Local Partner:** This project will be managed out of CDM Smith's local design-build headquarters in Rancho Cucamonga, which is located less than 15 miles from IEUA headquarters. This office houses our UL 508A control panel fabrication facility which allows us to provide wholesale pricing for panels and greater control over delivery schedules and product quality. Our proximity to IEUA also will allow your staff to easily participated in factory tests.





Mr. Jesse Pompa  
May 31, 2017  
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As an authorized representative of CDM Smith, I am empowered to commit our firm and resources to the obligations in the RFP. Please feel free to contact me at (213) 457-2200 or [jensendj@cdmsmith.com](mailto:jensendj@cdmsmith.com) if you have any questions regarding our proposal, which will remain valid for a period of ninety (90) days.

Sincerely,

A handwritten signature in blue ink that reads "David Jensen". The signature is fluid and cursive, with a long horizontal stroke at the end.

David D. Jensen, P.E., BCEE, LEED® AP  
Vice President  
CDM Smith Inc

## SECTION A

# Project Understanding

The Inland Empire Utilities Agency (IEUA) operates five treatment facilities which provide sewage treatment, solids waste handling, and recycled water throughout the west end of San Bernardino County. These plants are operated using a variety of control systems. IEUA recognizes that continuing to support systems of varying ages and differing capabilities will result in greater operational issues, increased operator time at the plants, and greater operations and maintenance (O&M) and support costs.

To address this situation, IEUA has initiated a program to upgrade the control systems of its five operating plants using Rockwell Automation's PlantPAx as the preferred platform. By standardizing on PlantPAx, IEUA's updated control systems will achieve higher reliability through built-in redundancy; provide a consistent look and feel which will reduce training time and allow for greater operational flexibility; and better support future growth through a modular control system. Through this program, IEUA is able to negotiate long-term pricing for hardware, software, and technical support from Rockwell and achieve better consistency by using Rockwell's recognized system integrators.



To complete the next phase of its upgrade program, IEUA is seeking a highly-qualified design-builder to design and implement the migration of the SCADA systems for Regional Plant No. 4 (RP-4), located in Rancho Cucamonga, and Regional Plant No. 5 (RP-5), located in Chino, to the PlantPAx Control System. To successfully execute this project, the selected design-builder must:

- have the technical expertise to deliver a comprehensive system upgrade that improves and streamlines the operator interface
- work cooperatively with IEUA to provide the best value solution
- provide the management and technical expertise to complete the project within the agreed upon schedule and budget
- understand system migration and wastewater treatment plant operation to maintain plant operations during the project
- ensure a safe working environment

***CDM Smith provides the right combination of SCADA design and implementation expertise, wastewater treatment knowledge, and global design-build experience to successfully migrate RP-4 and RP-5 to a PlantPAx control system that provides IEUA with improved control, greater consistency, and reduced long-term costs.***



**An Integrated Design-Build Firm:** As an integrated design-build firm, our ability to self-perform 95% or more of this project allows us to: provide better control over schedule, costs,

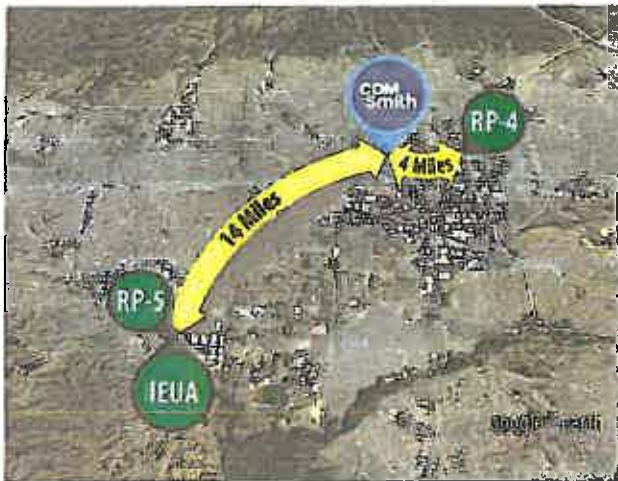
quality, and safety; reduce project risks; and balance the subcontracted work to provide the most competitive costs. Our unique ability to self-perform electrical and I&C work, as well as HMI and PLC programming, allows us to internally control and manage the technical aspects of the project.

Smith's Rancho Cucamonga office houses a UL 508A control panel fabrication facility. This facility allows us to provide whole sale pricing for panels and greater control over production/delivery schedules and product quality.



**Collaborative Approach to Achieve Best Value:** Essential to the success of this project is aligning the thoughts of the designer and IEUA's engineers, operators, and other system users

into a unified vision for the end product that will result in advocacy and ownership when the upgrades are completed. To achieve this, our overall approach is designed to create an open, collaborative process for decision-making that strikes a balance between the needs of the users, the needs of the process, and the capabilities of the technologies used to meet these needs. It is our goal to conduct a series of collaborative workshops to define key decisions early on to facilitate the smooth and timely completion of the SCADA migration.



**A Local Partner:** This project will be managed out of CDM Smith's Rancho Cucamonga office, which is located less than 15 miles from IEUA headquarters. Our office is also located 4 miles from RP-4 and 14 miles from RP-5. Our proximity to IEUA headquarters and the plant sites allows CDM Smith to provide quick responses to project issues, better coordination with IEUA, and reduced travel costs. In addition, we will provide local factory tests which can be conveniently witnessed by IEUA staff. In addition to being our local design build headquarters, CDM



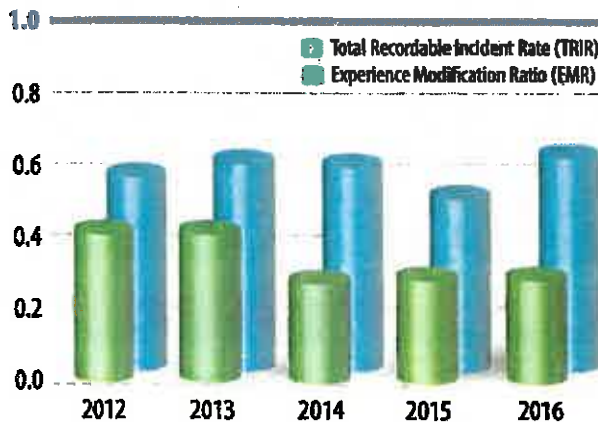




**Maintaining Plant Operations:** CDM Smith specializes in the design and construction for existing facilities. Whether we are retrofitting or rehabilitating a facility, we understand the importance of keeping an existing facility online and operational during our work. In particular, maintenance of flow and identification of unknown conditions are some of the challenges that we have faced on similar projects. Being able to leverage our wastewater facility experience to effectively address these issues differentiates CDM Smith from its competitors.

For the RP-4 and RP-5 SCADA migration, maintenance of plant operations is a primary requirement such that the SCADA improvements work does not interfere or reduce operating efficiency of the plants. To achieve this, we will employ a systematic approach to application program development and transitioning to the new system while portions of the existing system remain in operation. During transitioning, VPN operator access will be provided to both the existing system and the new PlantPAX system.

**A Comprehensive Safety Program:** CDM Constructors' health and safety program is based on the principles that people are our greatest asset, accidents and injuries are preventable, and everyone is responsible for safety. Because of this approach, CDM Constructors' safety performance record significantly outshines the industry averages, with a current (2017) EMR of 0.65 - far below the industry average.



CDM Constructors fosters a culture of safety in the office, in the field and on construction sites, and we will prepare a comprehensive Safety Program that complies with the requirements of Occupational Safety and Health (OSHA). During construction, our team will constantly monitor compliance and correct any deficiencies as needed.

**Over the past seven years, CDM Smith has received more than 50 awards for our safety performance.** Both the City of Stockton's Delta Water Supply Project Design-Build and the U.S. Marine Corp Base Camp Pendleton Design-Build-Operate-Maintain Phase II Program were recognized by the National Safety Council for exemplary safety performance with 2012 Occupational Excellence Achievement Awards.

*CDM Smith and IEUA will work in partnership to design and implement SCADA system improvements for RP-4 and RP-5 that provide consistency, higher reliability, and improved operational controls and reporting. CDM Smith provides the right combination of experience, technical expertise, and managerial skills necessary to develop control system improvements that provide the best value for IEUA and smoothly execute the SCADA migration process on schedule.*

## SECTION B

# Scope of Work

While the RFP is very prescriptive with respect to submittals, workshops, planning required prior to field work, and how the migration should take place, we understand that IEUA is looking to work in collaboration with the design builder to develop the best value solution for the new control system. The following sections describe our approach to the scope of work and illustrate areas where CDM Smith's approach and/or capabilities offer added value to IEUA. These sections address our overall approach to project management, development of the design and programming, and field implementation.

## Project Management

As a true design build firm, CDM Smith is unique in that it can offer an integrated approach to the design, programming, construction, and overall management of this very complex project. To properly define the project, our integrated team, many of whom have previously worked together on similar projects, will develop a detailed Master Submittal Register that includes a comprehensive list of all workshops, plans, and software and product submittals. This register will ensure both IEUA and CDM Smith staff are in agreement on project requirements and will help eliminate oversights that could disrupt work flow and delay the schedule.

Mark Martinez will serve as CDM Smith's project manager (PM) for the RP-4 and RP-5 SCADA Migration project. Mark will be supported by a Development Team (DT), led by Francisco Alcala, and a Field Implementation Team (FIT), led by Colin Millet. Our PM, DT, and FIT will apply a systematic delivery approach that incorporates Intelligent P&IDs and smart tagging, PAC programming standardization, code reuse, implementation of high performance HMI graphics, methodical test procedures, and proven design build delivery practices.

Our management philosophy on this project will be a "bottom-up" approach wherein the professionals that are closest to the work and thus most familiar with the challenges they face will have the authority to make decisions to resolve problems expeditiously and efficiently. A key ingredient for this process to work is to make sure key decision makers are kept abreast of issues in the field and that communication lines are open to other team members.

Our PM will remain in close contact with the DT's lead engineer and the FIT's lead programmer and field superintendent throughout the workshops and as submittals are prepared. Our management team will include a Project Controls Engineer who will update and maintain the project schedule on a monthly basis. During the implementation phase, our PM will be in daily communication with the on-site Electrical/I&C Superintendent who will have primary responsibility for the 3 week look ahead schedule. In addition, daily pre-work meetings will help insure that communication channels remain open and all team members including plant operations are abreast of planned work activities for the day.

The DT will be responsible for organization of standard programming and HMI templates; implementation of programming to fulfill the control narratives; HMI

Integration, database configuration and population; and integration with Factory Talk Historian, win911, and OSISoft PI. The DT will oversee and coordinate the work of our Rockwell Solutions Provider developing the VantagePoint reporting software, provide integration and support during construction, and perform training of IEUA maintenance and operation personnel. The tasks of the DT will also include installation and configuration of servers and network components in the development environment.

The FIT will be responsible for the control room modifications; panel design, construction, and installation; field investigation; hardware installation; wiring and field connections; migration of the hardware components; software application startup; network components and fiber optic cable installation and testing; cutover execution; I/O and logic testing commissioning; and operational performance testing. The development team will also support the Witness Factory Test, initial system testing, and software deployment.

The following steps define the core processes we will employ to successfully complete the DCS migration:

- Project Management Plan development, including a comprehensive submittal register that defines workshops, product data and panel submittals, programming, migration and test plans, and training outlines
- Field assessment and information collection
- System architecture, panel design, and P&ID development

- Equipment and software procurement
- Control narrative review and update
- Programming and HMI standard definition, development and testing
- Panel design, construction and bench and factory testing
- Field wiring identification and labeling
- Control room modification
- SCADA equipment's installation and setup for I/O and control migration.
- Cutover execution, I/O and control migration and field demonstration test (Software Acceptance Test).
- Operation performance test
- Operator and maintenance Training

The Project Execution Flow Chart shown below provides a graphic presentation of the migration process described above.

## Design, Programming, and Preconstruction Activities

### Field Assessment Approach

The quality and completeness of the field assessment will be a key factor in developing the overall design and transition plans. The objective of the field assessment is to obtain all relevant

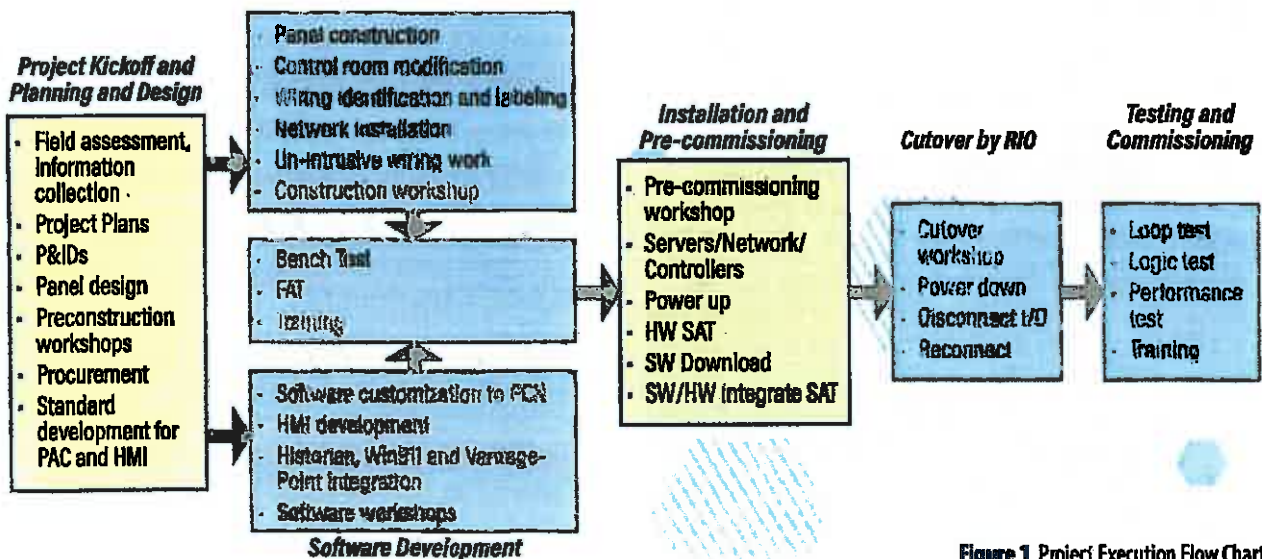


Figure 1 Project Execution Flow Chart

information required to successfully complete the migration of both plants to the Rockwell PlantPAX platform in a timely manner. During the assessment, the FIT will focus on collecting key information about the hardware conditions, control room layout and modification requirements, panel locations, I/O verification, conduit and wiring conditions, fiber optic and copper networks, process diagrams, existing control architecture, application and HMI screens, and other condition information. Concurrently, the team will interview operation and maintenance personnel to identify non-documented factors and challenges that may affect to the migration process. All the information collect during the field assessment will be organized to support the development of the new control system design and programming.

### Design Approach

CDM Smith will use SmartPlant Piping & Instrumentation Diagrams (P&ID's) to customize IEUA's tagging standards and produce a common database that will be used during the migration and can be used for future modifications of IEUA systems. Smart P&ID's are based on the 2D process diagrams typically produced with an associated database. The "intelligence" is driven by associating the database with objects and tags within the drawings. Beginning with the creation of intelligent P&ID's, the design process utilizes this "single source" of data to drive the creation and updating of the control system design. The common database will also be used as input for panel design, bill of material, population of test forms and I/O check. The design will be implemented in a 70% and 100% delivery in synchronization with the workshop and submittal schedule.

### Software Development and Implementation

CDM Smith will follow IEUA, PAC programming standards, SCADA development and testing guidelines, and high performance HMI programming standards as the basis for software development. The software development begins with establishing a thorough understanding of system and control architecture, process control diagrams, process control narratives, IEUA's standards for PAC programming, and high performance HMI requirements. Definition of the standard AOI and HMI template and standard faceplates will be complemented by a set of programming notes procedures that will guide the customization of the process control narrative into the PlantPAX development. These technical notes will include procedures for configuration and setup of the PlantPAX logic, FactoryTalk HMI, FactoryTalk Historian, Win911, VantagePoint, and Enterprise

Historian. Each technical note will include test procedures for the bench, factory, and commissioning test.

CDM Smith has developed a set of custom tools specifically for database conversions using Rockwell products which we will use during the RP-4 and RP-5 migrations. The use of these customized data conversion tools will allow the rapid integration of the legacy database into the new system and facilitate the overall transition process.

The network, servers, software configuration, and programming will be executed with special attention to applying cybersecurity best practices following the manufacturer, IEUA, and CDM Smith cybersecurity guidelines. The CDM Smith Automation Discipline Cyber Security Guidelines are based on ASCE/AWWA/WEF, Interim Voluntary Security Guidance for Wastewater/Stormwater Utilities and NIST 800-82: Guide to Industrial Control Systems (ICS) Security. Please see **Attachment A** for the CDM Smith Automation Discipline Cyber Security Guidelines.

The software development and implementation process is outline below:

- Review of existing information, including P&ID, control narratives, panel drawings and I/O list, client standards and all information relating to the software scope
- Field review to gather information to develop and complete P&IDs and I/O lists, and gather data needed to perform work
- Field site assessment for the control rooms modifications, panel modifications, conduit routing for fiber optic and copper cabling
- Panel design and fabrication (performed at the CDM Smith UL 508A certified shop in Rancho Cucamonga)
- Workshops to organize and verify all the hardware and software standards, components, and licensing.
- Implement the system architecture, P&ID development and control narratives. A proposed Network Architecture is included as **Attachment B**
- Development and installation of VantagePoint and integration with the FactoryTalk PlantPAX system
- Development of testing plans, Software Transition Plan, Training Plan, Software and I/O and device testing forms

- Completion of project workshops:
  - Overall System workshop
  - Electrical I&C and Mechanical workshop (if required)
  - SCADA System programming and standards workshops
  - Process and control narrative review workshops
  - Monthly progress workshop
  - 70% Project update workshop
  - Submittal preparation and review workshop
  - Testing, Training, Startup and Commissioning workshop
  - Hardware, Software and Network components installation and configuration
- Definition and collection of standard libraries; data conversion; development of display templates, HMI objects, and standards faceplates
- RP-5 Software development
- RP-4 Software development
- Integration of FactoryTalk and Enterprise Historian, VantagePoint, and Win911 OSISoft
- Bench and Factory Demonstration Tests
- RPS software implementation, testing, and commissioning
- RP4 software implementation, testing, and commissioning
- Commissioning, deployment, and testing of FactoryTalk and Enterprise Historian and Win911 OSISoft
- Development of as built documentation
- Operator and maintenance staff training
- Warranty period support

## Implementation Phase

### Panel Design and Fabrication

CDM Smith has an in-house UL508A panel shop which will manufacture the new control panels and back panels with new hardware for existing panel enclosures. In addition, we are a licensed electrical contractor with a combination of certified IBEW journeyman electricians many of whom have been with CDM Smith for over 10 years. Personnel in our panel fabrication

facility design, fabricate, install, and commission custom-made instrumentation and control panels to match each project's unique requirements for size, mounting, environment, materials, accessories, and rating. Having our own panel shop allows us to self-perform over 90% of the instrumentation and control work on the project, which provide us with better control over the quality and schedule of the work. All work performed by our panel shop follows CDM Smith's rigorous Quality Management System which requires multiple checks of drawings, fabrication, and construction to minimize rework and maximize client value and satisfaction.

Due to our close proximity to the plant sites and IEUA headquarters, IEUA has the benefit of visiting our facility to confirm that the new control panels and back panels meet their requirements prior to seeing them installed in the field. Both unwitnessed and witnessed Factory Acceptance Tests will be standard protocol on all hardware and software systems for this project.

Using our design build implementation approach, the panel shop will directly interface and coordinate with disciplines groups within CDM Smith. This creates a more cohesive and expeditious delivery process, allows us to react quickly to design changes, and reduces time and effort required for all parties to address issues during the execution of the project. In addition, this synergy between engineering disciplines, field technicians, and programmers allows for a more cohesive and seamless start-up and commissioning process.



## Testing and Commissioning

The test approach begins with the development of a comprehensive test plan that covers all hardware components and software. Our plan will follow IEUA SCADA development and testing guidelines for software testing and will include the development of test forms for I/O, devices, and logic. The use of Intelligent P&IDs will allow us to use a common database specifically oriented to link the tag list to the test forms. The testing plan will be executed following CDM Smith's rigorous quality assurance procedures for all test procedures.



## DCS Migration and Transition Planning

Based on our experience with similar projects, we will develop detailed migration plans that are customized for each plant. The DCS migration process will be performed in two phases as described below.

**Phase I:** In this phase a new redundant server's infrastructure, new RI/Os, or non-intrusive changes on existing panels will be set in place including installation of all the new SCADA software. An interface to existing clients will be put in operation through a Foxboro gateway (RP-5), a virtual thin client connection or a remote desktop session, along with dual monitors which allow the visualization of both systems throughout the migration process. Meanwhile the new clients will be readied for operation. Data will be converted to Logix native tags utilizing the database

conversion tool, making the data accessible throughout the new architecture. At the same time, Ethernet/IP can be deployed redundantly in self-sealing topologies. Additional steps were previously taken to mitigate risk by deploying of the factory tested faceplates and graphics which the operators are already trained and accustomed to, so that the new HMI is adopted very rapidly.

**Phase II:** The cutover plan will be adapted to the necessities and requirement of each plant and will be delineated as one of the key milestone on the transition plan. The emphasis of the cutover plan will be the documentation and preparation of the execution process to minimize the risk, reduce the time of the necessary shutdown and mitigation activities, and to ensure the continuous operation allowing the visualization on the new and old system in concurrent mode. A coordination and cross check plan between the field technician, system integrators, operator and supervisor will allow a smooth cutover process. A custom cable solution will be installed where it is required to provide a new path of communication from the existing ControlLogix I/O terminal points to the new RI/Os. Communication gateway to vendors PLCs will be configured and mapped to the register database will be set as well.

The cutover and loop testing will be executed according to a well-planned, detailed schedule that has been validated by the plant operation and maintenance representatives. I/O and logic testing will be performed with the clear focus on each new I/O and services operating condition per schedule. FactoryTalk and Enterprise Historian, VantagePoint, Win911 OSISoft integration will be included as an integral part of the testing.

## Training

CDM Smith will provide training to IEUA staff, including several off-site, specific vendor training sessions related to maintenance and technical support of the new platform. For the training to be provided by CDM Smith on site, The primary objective of on-site training provided by CDM Smith will be to ensure that operations staff are familiar with the new SCADA system and know how to maneuver within the system, call up displays, acknowledge alarms, and perform other control functions. The secondary objective of this training is get operators familiar with the details of company-specific configuration including the graphics they will be controlling from, how the specific faceplates look, and how alarms are configured.

Our goal is to provide a comprehensive operator training program with the active participation of IEUA's operations and maintenance staff during the development workshops, system testing, and training sessions. During this process, we see ourselves as coaches who are there to assist IEUA's staff. For the maintenance staff, training will focus on maximizing knowledge transfer about the details of the hardware and software components.



Our specialists can **prepare, implement and perform comprehensive staff training programs** specifically geared to plant and personnel needs.

### Field Implementation

The following sections define the sequence of work for the migration for each plant site.

#### RP-5 Migration

Prior to the start of construction work, CDM Smith will mobilize to the RP-5 plant with an office trailer and temporary facilities at a location directed by IEUA. Electrical and broadband internet service will be installed to the office trailer. Fulltime personnel assigned to the site will vary by workload but is anticipated to be an Electrical and Instrumentation Superintendent, journeyman electrician(s), senior programmer and junior programmer(s). The field team will be supported by the Project Manager and Construction Manager as well as additional programmers, SCADA technicians and engineers from the Rancho Cucamonga office as needed.

The proposed schedule shows the sequence of work for both plants and adheres to the desired sequence in the RFP. If

needed, the order of system migration will be refined after the workshops with Plant Operations. After the Factory Acceptance Test (FAT) of all servers and work stations, the DCP and servers will be installed at the RP-5 Server Room. This will involve consolidation of servers into spare spaces in existing server cabinets, removal of one of the server cabinets and the existing Foxboro DCS cabinet after migration of the data concentrator and ancillary equipment to the new DCP. There will be additional work performed including the reconfiguration of loads to UPS panels and possible upgrading of UPS units as well as patching the new server into the DLR ring.

After completion of network equipment, the focus will shift to the migration of I/O at the individual Power Centers. CDM Smith's management philosophy at this phase of the project is to take a "contingency approach" to scheduling. We will schedule a daily pre-work meeting between our key personnel on site and the plant operators to review the systems that are planned for migration for that day as well as any issues that may have arisen during Operational Performance Testing (OPT) of prior systems that have been migrated. During this informal morning meeting, we will also discuss any lessons learned from the prior day's migration that will help subsequent transitions go more smoothly. We will employ a 3-week look-ahead schedule that will be updated daily so that Plant Operations knows exactly what the planned sequence of equipment migration is. This allows both our programmers and electricians and Plant Operations to adjust the schedule when unexpected process flow or equipment conditions arise.

As required in the RFP, the first system to migrate will be the Plant Influent Process ("Pilot Plant"). Preceding this and all migrations will be Process Control Narrative (PCN) and Transition Plan workshops. There are constraints regarding the number of allowed workshops per week and time limits to submit a draft transition plan and develop the software and schedule control panel testing after the workshop that will be part of a detailed submittal register and detailed CPM schedule that will be developed.

The migration of I/O at each Power Center DCS (re-designated RTU cabinet) will essentially follow the Migration Plan in the RFP with some variation that we believe will improve the process. We will move the existing Rittal PC enclosure off the cover of the cable trench (we believe cables are long enough to allow this) and install the new Rittal HMI cabinet in its place. See Attachment C for a preliminary layout of this cabinet. The

new cabinet will have the HMI on the front door and the rear section will house the I/O modules. The plan is to replace one Foxboro FBM module at a time in the existing DCS cabinet with the Rockwell IFM module. The DCS cabinets have spare channel to mount the initial IFM's and then as migration progresses, the Foxboro FBM's will be removed to free up channel space. The IFM will have a premanufactured Cablefast cord that will be routed in the cable trench to the new Rittal HMI enclosure and to the appropriate new I/O module.

Our three-week look ahead schedule will detail PCN and Transition Plan workshops as well as which equipment or process system will be migrated on each day. For example, Influent Pump Station (IPS) Pump #1 including the VFD, pressure switch, and other equipment associated with this pump would be scheduled to be migrated to the new system on a Monday afternoon when flows are lower. In coordination with Operations and our electrician, lock-out/tag-out would be implemented to disconnect all power to the affected control conductors. The CDM electrician would then transfer all wiring associated with this load utilizing a termination or "laydown" sheet that lists the number of the field conductor and the corresponding terminal point on the IFM module. After completion of the physical wiring move, the CDM on-site programming team with an electrician will begin to check-out that all points are visible on the PlantPax system and will perform the logic loop checks in insure that they conform to the PCN. The team will then be ready to re-energize the IPS #1 system and perform the Software Site Acceptance Test (SAT). A binder will be kept with all necessary check-off forms for use by our team and IEUA personnel as the system is operated on the PlantPax platform.

After the SAT is accepted, the OPT period will begin and a log will be kept by Plant Operations to document any irregularities with the system. During this period, the IPS #1 system can be operated by both the PlantPax software as well as the current Foxboro DCS system by use of the new redundant server's infrastructure, new RIOs or non-intrusive changes on existing panels which will be set in place including installation of all the new SCADA software. An interface to the existing clients DCS will be put in operation through a Foxboro gateway, a virtual thin client connection or a remote desktop session, along with dual monitors which will allow the visualization of both systems throughout the migration process. Meanwhile the new client's workstation will be ready for operation. Data can be converted to Logix native tags utilizing the database conversion tool, making the data accessible throughout the new architecture.

At the same time, Ethernet/IP can be deployed redundantly in self-sealing topologies. After completion of the transition, our team will confirm the Historian is correctly recording data from the system, VantagePoint reports are correctly generated and confirm that alarms are working on both the PlantPax as well as the Raco and WIN-911 system as applicable. As the number of systems that are transitioned grows, it is our intent to add an additional programmer to the onsite team to deal promptly with OPT issues that may arise. This will allow the core team to continue to progress with transitioning new systems and maintain the schedule.

As the completion of the system transitions at RP-5 approaches, CDM Smith will complete as-built documentation. As-built documentation will be transmitted after completion of each RTU that is transitioned to minimize the time required at the end of the RP-5 migration activities. The team will move to the RP-4 site while maintaining a presence at RP-5 to resolve any OPT issues. As those issues are resolved, we will demobilize our site office and service any OPT and warranty issues on an on-call basis.

#### **RP-4 Migration**

The migration of RP-4 systems will follow the same general sequence used at RP-5 and will be facilitated due to the plant already having a legacy Rockwell SCADA platform in place. Work will commence in the Server and Control rooms and interior remodeling will be done as described in the preferred options. Transfer of the data concentrator, RACO pager Contrologix I/O modules from the existing RTU-4 to the new DCP will be performed. In addition, new fiber optic cable will be installed to achieve the desired DLR topology.

Of particular challenge at RP-4 is the relocation of the network equipment in the existing electrical/switch room (aka "garage") to the existing and new server racks in the Server Room. Our approach to this seeming conundrum will be to assign a SCADA technician and electrician to tag and as-build the destination of every cable that terminates in the rack using whatever plant documentation is available. After this information is tabulated and analyzed, we will design an overhead cable tray system to route the cables to the new location. Conductors that are too short to reach will be extended via a fiber optic or ethernet patch panel to be located preferably at an accessible location in conditioned space. Until it has been determined which cables are too short, it will not be possible to size the rack required and determine space constraints. The actual movement of cables



to new patch panels will require close coordination with plant operations.

The server racks will be populated with new network equipment comparable to the existing and then each cable which has been identified with the system it serves will be moved to the new switch or patch panel. It may be required to do this work during off-hours to minimize disruption to plant operations as well as expedite cable installation in the plenum above the ceiling. Performing this work during off hours would also provide a safer work environment for both CDM Smith and Plant Operations employees due to the close quarters in the Administration Building. Our approach is premised on performing this work during off-hours and with Operator support as communications cables are migrated to new network equipment in the Server Room.

Once work is complete in the Administration Building and the servers, PLC processors and fiber optic backbone have been installed and tested, the team will proceed to the MCC-1 Building and RTU-1. The plan at this RTU is to install a pre-fabricated backboard with new I/O and IFM modules at the space available at the lower left side of the cabinet. Premanufactured cords will be installed to the existing IFM's to eliminate having to transfer



field wiring. New PLC processors will be installed at available spare spaces on the existing channel at the top of the cabinet. We will again follow the protocol established at RP-5 and begin to transfer individual systems and sub-systems based on a schedule that has been developed in close coordination with the Plant Operators. After successful completion of the SAT for each system, the OPT will begin and the team will move onto the next system. Again, an atmosphere of "contingency planning" will prevail as the team will be prepared to move to alternate systems in the event there are unexpected changes in process flow or equipment availability that make last minute changes necessary. With the legacy Rockwell PLC equipment and new PlantPax platform in place, operators will be able to see control systems concurrently through new redundant server's infrastructure, new RIOs or non-intrusive changes on existing panels which will be set in place including installation of all the new SCADA software. An interface to the existing clients will be put in operation through a virtual thin client connection, along with dual monitors which will allow the visualization of both systems throughout the migration process.

Both RTU-1A and RTU-1B will essentially become junction boxes as all I/O will be moved to RTU-1. In the case of RTU-1A which is contiguous with RTU-1, conduit will be installed between the two cabinets and field wiring will be extended into the IFM's in RTU-1. RTU-1B which resides in the primary clarifier area will have field wiring extended to RTU-1 via a spare fiber optic conduit. No physical work is required in RTU-1C; however, I/O and loop logic checks will need to be made when the systems are transferred to the PlantPax platform. RTU-1D is the IPS Pump Control panel. We will relocate the local selector switches and pilot lights to MCC-1, rewire the starter buckets and unless spare conduits are located, provide conduit and wire from MCC-1 to RTU-1 for the relocated I/O. This work will require coordinated outages with Plant Operations to allow our electricians to work safely during conduit, wiring pulling and termination activities. In addition, new emergency stop pushbuttons will be installed at the pump station for each of the IPS pumps. This will require new conduit and wire back to RTU-1D and then use of spare conductors to the MCC. New Intermediate terminal strips will be installed as required.

Work in RTU-2 and RTU-2A in the MCC-2 Building essentially follows the same scenario as RTU-1 but without any significant field work. A prefabricated backplate with new I/O modules will be installed in the existing RTU-2 cabinet with prefabricated cords to existing IFM modules to eliminate transfer of field

wiring where possible. Field wiring will need to be extended from RTU-2A to RTU-2.

Work associated with RTU-3 in the MCC-3 Building will involve adding conduit and wire on the Aeration Basins. Fiber optic cables will be added from RTU-3 to a new fiber optic switch cabinet at the Basin. Ethernet cables in new conduit will be extended to each of six existing Flex I/O panels on the Basins. For the most part, conduit can be installed along the handrails on existing supports. However, new diamond plate steel walkway bridges will need to be installed to allow the conduit to pass across the walkways. Once all cable is installed and tested, migration of the valves and instruments on the basins can begin. To enhance the schedule, our approach will be to accomplish the conduit and wiring work well ahead of the planned system migration dates.

Work associated with RTU-5 in the MCC-5 Building and RTU-5B in the MCC-5B Building also follows similar sequences as previously described. I/O for the reclaimed water system at RTU-5 will be transferred to RTU-5B as RIO. This will involve installation of an ethernet cable through existing conduit between the two cabinets. The PLC processor at RTU-5C which resides at the Reservoir will be upgraded to a CompactLogix PLC. RTU-6 in the MCC-4 Building will have all I/O reconfigured as RIO which will require a new ethernet switch.

On both RP-4 and RP-5, there are many vendor equipment packages which are controlled by their own factory provided PLC's and I/O modules that reside in a skid or remotely mounted local control panel. The IO from these panels is listed as soft

IO in the RFP. Vendor PLC integration will require that each Vendor supply a list of tag arrays for CDM Smith to be used in the interface programming portion of the PACs and PAX. This information should be made available to CDM Smith as soon as possible after contract award. The Vendor must be available during the preliminary testing of each soft I/O from Vendor PLC into the PACs and PAX. This will assure communications from Vendor PLC is established as well as functional monitoring and controls to the PACs and PAX. For purposes of this proposal, we have assumed that all the data and logic from these panels is reporting and operating satisfactorily and optimally. Thus, we will check that all IO points are reporting into the PlantPax platform but have not included time to perform logic loop checks on these systems. If there are logic or performance issues with these vendor supplied packages after migration, we must assume that it was a preexisting condition that will need to be resolved by the Vendor. We will certainly help in any integration into the new SCADA platform that the vendor may require.

After completion of RP-5 migrations, the team will complete all as-built documentation and provide support for any OPT Issues that arise. Contract close-out will commence.

As specified in the Summary of Work section of the RFP (p. A-11), Rockwell Automation Services will determine the useful life of their equipment and third party equipment in panels and develop a recommendation for the number of spares needed. In addition, Rockwell will update the Installed Base Evaluation database to account for the new equipment for each plant. Rockwell has provided a detailed scope of services which is included in this proposal as Attachment D.



# ***Attachment A***

## ***CDM Smith Automation Discipline***

### ***Cyber Security Additions to***

### ***Design Guidelines***

#### **PART 1 INTRODUCTION**

##### **1. PURPOSE AND SCOPE**

The primary intent of these guidelines are to standardize our approach to incorporating cyber security into our current design process to enhance the quality and consistency of Automation Engineering work performed at CDM Smith. These guidelines are a supplement to the Automation Design guidelines.

--- No further additions in Part 1 ---

#### **PART 2 DESIGN PROCESS**

- 1. ASSIGNMENT OF PROJECTS OR TASKS**
- 2. BUDGET TRACKING**
- 3. PROJECT PLANNING**
- 4. DETERMINING THE TECHNICAL DESIGN REQUIREMENTS**
  - a. Internal Coordination**
  - b. Design Checklist**

##### **Relevant cyber security guidelines**

- **ASCE/AWWA/WEF, Interim Voluntary Security Guidance for Wastewater/Stormwater Utilities, 2004 (especially Section 5 - Cyber Security).** The primary purpose of this document is to provide considerations for the design of wastewater and stormwater systems that can help to reduce the risks posed by malevolent threats. The document is intended to be used by wastewater and stormwater professionals who have completed a vulnerability assessment and are looking for ways to improve the security of their system through utility management, facility operations, and infrastructure design. [www.wef.org/WorkArea/DownloadAsset.aspx?id=3605](http://www.wef.org/WorkArea/DownloadAsset.aspx?id=3605)
- **ASCE/AWWA/WEF, Interim Voluntary Security Guidance for Water Utilities, 2004.** The purpose of this guidance is to provide a centralized starting point for utilities as they incorporate modern security practices into the construction or retrofit of their water systems. The guidance focuses on these four common principles: Maintaining decision-making about security at the local utility level

- •Developing a balanced approach to security by applying design, management, and operations strategies
- •Developing cost-effective solutions
- •Successfully introducing security into the culture of water utilities.  
[www.awwa.org/awwa/science/wise/report/cover.pdf](http://www.awwa.org/awwa/science/wise/report/cover.pdf)
- **NIST 800-82: Guide to Industrial Control Systems (ICS) Security.** As part of the continuing effort to provide effective security standards and guidance to federal agencies and their contractors in support of the Federal Information Security Management Act and as part of the effort to protect the nation's critical infrastructure, NIST continues to work with public and private sector entities on sector-specific security issues. 800-82 is a guide to Industrial Control Systems Security.  
<http://csrc.nist.gov/publications/nistpubs/800-82/SP800-82-final.pdf>
- **ANSI/ASCE/EWRI 56-10, Guidelines for the Physical Security of Water Utilities** (also 57-10 wastewater/stormwater). Available through InfoCenter on Techstreet
- **ANSI/ASCE/EWRI 57-10, Guidelines for the Physical Security of Wastewater/Stormwater Utilities.** Available through InfoCenter on Techstreet
- **ANSI/AWWA G430-09, Security Practices for Operation and Management.** This has received Safety Act designation in 2012 and provides immunity from lawsuits if the standard is followed. Available through InfoCenter on Techstreet
- **ANSI/ASME-ITI/AWWA J100-10, Security Practices for Operation and Management.** This has received Safety Act designation in 2012 and provides immunity from lawsuits if the standard is followed. Available through InfoCenter on Techstreet
- **AWWA & Department of Homeland Security (DHS), Roadmap to Secure Control Systems in the Water Sector,** [www.awwa.org/files/GovtPublicAffairs/PDF/WaterSecurityRoadmap031008.pdf](http://www.awwa.org/files/GovtPublicAffairs/PDF/WaterSecurityRoadmap031008.pdf)

Other cyber security resources:

- ICS-CERT, [www.us-cert.gov/control\\_systems/](http://www.us-cert.gov/control_systems/)
- Automation Standards Compliance Institute (ASCI), ISA Security Compliance Institute (ISCI), [www.isasecure.org/](http://www.isasecure.org/)
- DHS, US-CERT Tool, [www.us-cert.gov/control\\_systems/satool.html](http://www.us-cert.gov/control_systems/satool.html)
- ODVA. ODVA is an organization that supports network technologies built on the Common Industrial Protocol (CIP™) — DeviceNet™, EtherNet/IP™, CompoNet™, and ControlNet™. The following link is a great reference to a PDF that explains the basics of Securing EtherNet/IP networks  
[www.odva.org/Portals/0/Library/Publications Numbered/PUB00269Ro\\_ODVA\\_Securing\\_EtherNet IP\\_Networks.pdf](http://www.odva.org/Portals/0/Library/Publications%20Numbered/PUB00269Ro_ODVA_Securing_EtherNet_IP_Networks.pdf)

### c. Communication with Client

Discuss the following cyber security items with the client when discussing the technical approach:

- Check if a Vulnerability Assessment that has a Cyber Security component is available. (IVSG-WW 5.3)
- Coordinate (and partner) with utility IT department (IVSG-WW 5.4)
- Use third party to evaluate firewall and IDS effectiveness (IVSG-WW 5.4.1.2, IVSG-W 5.6.1)

- Ask about the availability of VPN connections for outside users (IVSG-WW 5.4.1.2)
- Ask about versions in use and check Operation System, Anti-virus, applications are up to date with current patches
- Identify and characterize (to port level) all connections between business and control networks (IVSG-W 5.6.1)

## 5. INFORMATION AUTOMATION NEEDS TO COMPLETE THEIR WORK

The following table illustrates many of the cyber security items that need coordination with other disciplines.

Discipline to Coordinate With	Automation Discipline Coordination Item(s)
Process Mechanical	▪ Nothing additional to normal design guidelines.
Electrical	▪ Uninterruptible Power Supply sizes ▪ Security Systems
Site/Civil	▪ Nothing additional to normal design guidelines.
HVAC/Plumbing	▪ Nothing additional to normal design guidelines.
Structural	▪ Nothing additional to normal design guidelines.
Architectural	▪ Control room and server closet design incorporating Cyber security features

## 6. RECOMMEND CYBER SECURITY DELIVERABLES AT DESIGN MILESTONES

- 10 Percent Design deliverable (Internal)
- 30 Percent Design deliverable
- 60 Percent Design deliverable
- 90 Percent Design deliverable

--- No further additions in Part 2 ---

## PART 3 EXPLANATION OF DESIGN DELIVERABLES

--- No further additions in Part 3 ---

## PART 4 TECHNICAL CONSIDERATIONS DURING DESIGN

### 1. INTRODUCTION

When referencing a guideline, the following abbreviations are used:

IVSG-WW	Interim Voluntary Security Guidance for Wastewater/Stormwater Utilities (ASCE/AWWA/WEF)
IVSG-W	Interim Voluntary Security Guidance for Water Utilities (ASCE/AWWA/WEF)
NIST 800-82	NIST 800-82: Guide to Industrial Control Systems (ICS) Security.
GPSWU	Guidelines for the Physical Security of Water (Wastewater/Stormwater) Utilities (ANSI/ASCE/EWRI 56-10 (57-10))

### 2. DRAWINGS

#### a. Control System / Network Architecture Drawings

The following cyber security items should be addressed on these drawings.

- Segment business and control networks using Air Gap, Dual-homed Servers, Routers, and Firewalls. (IVSG-WW 5.4.1.2, IVSG-W 5.6.1). Air Gap is not recommended in CDM Smith.
- Implement Firewalls in a layered approach (IVSG-W 5.6.2)
- Segment business and control networks using dual firewalls with middle DMZ (NIST 800-82 5.3.6)
- Review Router ACL policy configuration (IVSG-W 5.6.1)
- If public or business networks are used for control data, consider using VPN connections (IVSG-WW 5.4.1.2, Use third party to evaluate firewall and IDS effectiveness (IVSG-WW 5.4.1.2, IVSG-W 5.6.2)
- If dial-up telephone modems are needed Use design tips in 5.4.2 (IVSG-WW 5.4.2, IVSG-W 5.6.3). Telephone modems pose unique security risks, so avoid using them if at all possible.
- Consider encrypting devices or spread spectrum radios for RTU commands (IVSG-WW 5.4.2, IVSG-W 5.6.4)
- Consider encrypting radio traffic. Using Spread spectrum radios is suggested. (IVSG-WW 5.4.3)
- Use redundant SCADA servers (IVSG-WW 5.5, IVSG-W 5.6.1)
- Use an IDS at the internet gateway (IVSG-WW 5.4.1.2, IVSG-W 5.6.2)
- Consider a backup method to collect remote data if primary communications fails (i.e. backup communications or procedure) (IVSG-W 5.6.1)
- Provide redundant communication paths for Saboteur/Insider threats (GPSWU)

#### b. Control Room Drawings

This likely appears on an Architectural drawing. The following cyber security items should be addressed on these drawings.

- Restrict access to control rooms with tracking locks.(IVSG-WW 5.4.5)
- Harden control room doors, windows, walls.(IVSG-WW 5.4.5)
- Implement restricted access to SCADA control room (IVSG-W 5.6.1)

#### c. Server Closet Drawings

This likely appears on an Architectural drawing. The following cyber security items should be addressed on these drawings.

- Put SCADA servers in lockable, climate controlled area (IVSG-WW 5.4.5)
- Provide climate controlled locked enclosure for SCADA servers and networking components (IVSG-W 5.6.1)
- Restrict access to the network server room with tracking locks (IVSG-WW 5.4.5)
- Backup power (4 hr minimum) including UPSs and possibly generator for network equipment (IVSG-WW 5.5)

#### d. Electrical Plan Drawings

The following cyber security items should be addressed on these drawings.

- If WiFi is used, locate the access points to minimize broadcast area to within the needed areas. Avoid placing so that coverage extends over the fence line. (IVSG-WW 5.4.3, IVSG-W 5.6.4)

### 3. SPECIFICATIONS

#### a. Testing

#### b. 13303 (40 9030) – Training

The following cyber security items should be addressed in this specification.

- Cyber security training including training for password creation & use, Rouge networks, Off site computers, system log out rules. (IVSG-WW 5.2, 5.6)
- Routinely back up all SCADA programs for PLCs, RTUs, SCADA servers and other programmable devices for recovery. Store offsite. (IVSG-W 5.6.1)
- Contract of periodic evaluation using a third party to evaluate firewall and IDS effectiveness (IVSG-WW 5.4.1.2, IVSG-W 5.6.2)

#### c. 13306 (40 9635) – Application Engineering Services

The following cyber security items should be addressed in this specification.

- Computer/Network - Verify current anti-virus, application security patches, change default passwords (IVSG-WW 5.4.1.2)
- HMI - Configure Individual logon credentials to access SCADA (IVSG-WW 5.4.4)
- HMI - Configure SCADA privileges to match responsibility level (IVSG-WW 5.4.4)
- HMI/OS - Configure log files track operator actions (IVSG-WW 5.4.4)
- General - Use appropriate password strength rules (IVSG-WW 5.4.4)
- HMI - Configure timeout to protect against empty control room (IVSG-WW 5.4.4)
- PLC/HMI - Limit set point ranges to safe values (IVSG-WW 5.4.4)
- HMI - Use version tracking for SCADA system changes (IVSG-WW 5.4.5)
- Computers - Backup SCADA servers and programming workstations nightly. (IVSG-WW 5.4.5)
- Computers - Verify that server and workstation backup system works. Provide a copy for offsite storage (IVSG-W 5.6.1)
- Computers - Install anti-virus software with daily updates (IVSG-WW 5.4.5, IVSG-W 5.6.1)
- HMI/OS - Change all OS and HMI passwords from default (IVSG-WW 5.4.5, IVSG-W 5.6.1)

- HMI - Set passwords to auto expire (IVSG-WW 5.4.5)
- HMI - Use (configure) redundant SCADA servers (IVSG-WW 5.5, IVSG-W 5.6.1)
- PLC - Require password for program changes to controllers (i.e. PLCs) (IVSG-WW 5.4.4)
- Radio/PLC - Provide loss of communication alarms for Radios (IVSG-WW 5.4.3, IVSG-W 5.6.4). Also provide for PLCs (BI).
- Computers - Consider "physical security measures" for general machines located in exposed locations such as on top of tables or under desks. Examples include USB Port Locks, Removing / Disabling USB/CD/DVD disk drives, etc. These features could be disabled through software as well (Internal)
- Computers - Disable auto-play on all USB and CD/DVD (Internal)
- Make sure HMI software security is enabled and graphics and database actually are configured to require a security group membership to write commands (Internal)
- Do not run HMI software in default Windows administrator account (internal)
- Do not run HMI software services in default Windows system account
- Document Disaster recovery. Can we rebuild the system if it is destroyed, including historical data for EPA driven reports?
- If using WiFi, configure encryption at an appropriate security level, turn off beaconing (IVSG-W 5.6.4)

**d. 13307 (40 9052) – Support of Application Engineering Services**

The same items as 13306 (40 9635) – Application Engineering Services.

**e. 13310 (40 9413) – Computer System Hardware**

The following cyber security items should be addressed in this specification.

- Provide anti-virus software (IVSG-WW 5.4.5, IVSG-W 5.6.1)

**f. 13311 (40 9443) – PLC Hardware and Software**

The following cyber security items should be addressed in this specification.

- Include ability to require password to make programming changes (IVSG-WW 5.4.4)

**g. 13315 (40 9443) – HMI System Software**

The following cyber security items should be addressed in this specification.

- Supports Individual logon credentials to access SCADA (IVSG-WW 5.4.4)
- Supports SCADA privileges to match responsibility level (i.e. Groups) (IVSG-WW 5.4.4)
- Supports log files track operator actions (IVSG-WW 5.4.4)
- Supports automatic password timeout to protect against empty control room (IVSG-WW 5.4.4)
- Supports Limiting set point ranges to safe values (IVSG-WW 5.4.4)
- Supports version tracking for SCADA system changes (IVSG-WW 5.4.5)
- Supports passwords auto expiration (IVSG-WW 5.4.5)
- Supports redundant SCADA servers (IVSG-WW 5.5, IVSG-W 5.6.1)
- Supports security at the graphics and database level to require a security group membership to write commands (Internal)



#### h. 13320 (40 9510) – Control and Data Networking Equipment

The following cyber security items should be addressed in this specification.

- If used, specify routers, firewalls (IVSG-WW 5.4.1.2)
- Firewalls should be stateful packet inspection or proxy served (IVSG-WW 5.4.1.2, IVSG-W 5.6.2)
- Specify an IDS if needed
- If using WiFi, require encryption at an appropriate security level (IVSG-W 5.6.4)

#### i. 13330 (40 9513) – Control Panels and Panel Mounted Equipment

The following cyber security items should be addressed in this specification.

- Specify lockable PLC cabinets (IVSG-WW 5.4.5, IVSG-W 5.6.1, GPSWU A 12.1)
- Specify lockable Radio cabinets (IVSG-W 5.6.4, GPSWU A 12.1)
- Specify an intruder switch on control panels (IVSG-W 5.6.1, GPSWU A 12.1)
- Provide radio cabinets tamper alarms (IVSG-WW 5.4.3, IVSG-W 5.6.4)

#### j. 13335 (40 9514) – Uninterruptible Power Supply (Single Phase)

The following cyber security items should be addressed in this specification.

- Specify UPS for servers, network equipment, and vital workstations. (IVSG-WW 5.5, IVSG-W 5.6.1)
- Specify 4 hr minimum of backup power for SCADA servers, workstations, and network equipment. If using a generator, the UPS only has to supply enough power to provide time for the generator to start (30 minutes). (GPSWU A.12.0)

#### k. Radio Specification

The following cyber security items should be addressed in this specification.

- Spread spectrum radios are preferred (IVSG-WW 5.4.3, IVSG-W 5.6.4)

--- No further additions in Part 4 ---

## Attachment D

### 1 Rockwell Automation Statement of Work

A Rockwell Automation Installed Base Evaluation is designed to support the decision making process on where to initiate improvements and how to implement an effective maintenance strategy. Establishing a baseline of your manufacturing environment can be done effectively through on-site evaluations of key areas, spanning from the installed base to the storeroom inventory. After performing a customized Installed Base Evaluation, Rockwell Automation will make solution recommendations based on biggest challenges or most important priorities. The evaluations help bridge the gap between current state and end goals.

#### An Installed Base Evaluation can support the following goals:

- Managing asset lifecycle, spare parts & inventory reduction – keeping inventory down, maintaining high quality and production on plan while understanding the lifecycle status of your automation assets
- Resolving on-site skills shortages – developing a workforce to have the knowledge to support new, obsolete or legacy equipment
- Maximizing your asset performance – utilizing resources to the fullest potential while keeping maintenance costs down
- Enabling IT & plant floor convergence – having the capability and expertise to develop secure architectures and support plans
- Reducing energy consumption – proactively develop a sustainable energy plan
- Ensuring systems are up-to-date on global and industry standards for safety, arc flash and regulatory compliance
- Reducing production downtime – minimizing the environmental impact and time to recover.
- Reducing sunk costs that are associated with the cost of capital, taxes, insurance, obsolescence, space equipment, people, systems, etc.

#### Managing Change

An effective Installed Base Evaluation is not a one-time snapshot. On a regular basis your plant environment changes – new technology is added, safety and energy targets become more stringent, people's skills fluctuate, etc., and data from last year or even the last six months may be outdated. Therefore, we recommend establishing a regular cadence to refresh your data. Our Installed Base Evaluation is structured to securely manage and update information in your plant on an annual basis, making it an integral part of your maintenance planning process.

#### 1.1 Basis for Statement of Work

This proposal is based on a request for an Installed Base Evaluation. This Installed Base Evaluation includes the following services:

##### 1.1.1 Hardware IBE Scope

**IBE Service: Level 2**

**Description: All repairable equipment (RA and 3rd party)**

**Number of Panels:50**

**Include Storeroom: Yes**

**Include Annual Refresh: Yes (1 refreshes)**

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## 1.1.2 Hierarchy

Rockwell will develop a hierarchy with the following information as defined by CDM while onsite.

### CDM Hierarchy

- Facility (Facility Name).
  - Area (Packaging, Manufacturing, Preparation, etc.)
    - Location (Line #2, Line #3, etc.)
      - Machine – System Name (ie. Wrapper #2D, Hopper #1A, etc.)
        - Asset – Panel #

## 1.2 Solution Description

### 1.2.1 Installed Base Evaluation Process

An Installed Base Evaluation (IBE) will begin with Rockwell Automation collecting and documenting details regarding installed equipment inventory, storeroom inventory and condition, panel condition, environmental condition, and wiring / grounding condition and ventilation condition. The Installed Base Evaluation begins by developing a plant hierarchical model to define the functional location of the installed parts and will include the following data collection:

- Installed equipment
- Spares and stash inventory
- Plant operating hours
- Environmental conditions: grounding, wiring, ventilation, and possible corrosive conditions, etc.

This report is based only on a visual inspection of equipment in the operating state and the physical location that existed at the time of inspection. Neither the part inspected nor the surrounding equipment was moved, taken apart or otherwise investigated. Thus, the content provided in this report is based only on information that is readily discernible by visual observation.

### 1.2.2 Installed Base Evaluation Deliverables

Rockwell Automation will provide an executive summary that will include ranking and prioritization of tasks from all evaluations, with more detailed rankings within each individual evaluation report. This report will be presented to the customer with one review cycle.

The Installed Base Evaluation provides the following:

- Review and categorization of inventory focusing on quantifying four major categories of inventory:
  - Active: Necessary to support installed process equipment
  - Inactive: "Obsolete" inventory not required to support process
  - Excess Active: Active, but over stocked inventory
  - Stash: Valuable inventory throughout the plant that is not recorded or visible to the inventory system
- Review and categorization of the lifecycle to provide the information, analysis, and recommendations needed to mitigate the risk of aging assets and protect the investments made in the automation infrastructure:
  - Active (Green): Most current offering within a product category.
  - Active Mature (Light Green): Product is fully supported, but a newer products exists. Gain value by migrating.
  - End of Life (Yellow): Discontinued date announced; actively execute migrations and last time buys.
- Discontinued (Red): New product no longer manufactured/procured; repair/exchange services may be available.
- Environmental conditions: grounding, wiring, possible corrosive conditions, ventilation, etc.
- Recommended Spares Report using product Mean time between failure (MTBF) and operating hours.
- Rockwell Automation Inventory analysis to provide a snapshot view of current inventory levels in storeroom and stash compared to recommended spares. This analysis also identifies insufficient inventory, excess inventory and lifecycle status of installed base.
- Non-Rockwell Automation Installed Base (If Applicable) to provide listing of installed non-Rockwell Automation products.
- Detailed Installed Base to provide a detailed installed by location which includes part number and quantity in each location.

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- Products by Location to allow customer to search by part number to find all areas that the part is installed.

No remediation is provided as part of this service, as the nature of findings is indeterminate at study commissioning. This service may result in additional performance evaluation services, immediate service calls to remediate the risks, additional work to identify and resolve design or implementation issues or additional work to enable energy savings identified.

### 1.2.3 **Installed Base Evaluation (IBE) Scope of Services**

#### 1.2.3.1 **Definition**

Within this Scope of Services description, "Rockwell Automation" shall mean Rockwell Automation's team, "Customer" shall mean the client using and benefiting from the proposed services or products. Installed Base Evaluation services include assessment, development, implementation, audit and management services.

#### 1.2.3.2 **Rockwell Automation's Responsibilities**

The following is included in the Rockwell Automation's scope of work:

- Perform work and provide products in accordance with the written Rockwell Automation proposal and any other specifications, which are agreed upon in writing.
- Provide documentation noting recommended corrective actions and or documentation noted as a deliverable.
- Work with Customer to develop a Project Schedule that will include services for all systems outlined in the Rockwell Automation proposal and a formal written report for each network.

#### 1.2.3.3 **Customer's Responsibilities**

The following is not included in Rockwell Automation's scope of work and will be provided by the Customer or its designated representative:

- Designate a representative authorized to act in the Customer's behalf with respect to this project to schedule activities as requested, provide documents and have questions answered in a timely manner. This representative should have a working knowledge of the equipment or process and shall schedule knowledgeable customer representatives from multiple disciplines as necessary to provide access to the system and participate in the evaluation (when applicable) for the duration of the onsite portion of the service.
- Make the equipment or process available to Rockwell Automation's engineers during the mutually agreed upon schedule. Ensure Rockwell Automation has unencumbered access to all of the machinery. Standby-time or idle time waiting for access to the machinery or customer personnel is not required
- Customer retains all liability with respect to their interpretation and implementation based on the assessment.
- The assessment services will apply to the system in its current state at the time the work commences.
- Rockwell Automation will be able to take digital pictures of the equipment for use in the assessment documentation (as appropriate)
- Customer to identify any special requirements for access to the machine prior to Rockwell providing a proposal (Gowning, Clearance Requirements, Photo Restrictions, hours of operation of the equipment, access to customer representatives for asking questions about the equipment, Non-Disclosure requirements, etc.)
- If available, customer to provide top view drawings to Rockwell Automation prior to the site visit
- Supply all necessary components for any changes to the system recommended during the evaluation process. Rockwell Automation can supply the necessary components and assistance for the recommended corrective actions at an additional cost. Additional components and work will be invoiced separately at the standard rates
- Customer to provide identification badges, access permissions, and escorts to permit the performance of any task required on-site.
- Customer to provide contact information, including telephone numbers, for the following services nearest the work site: doctor, hospital, medical burn center, ambulance, fire department, and police department.
- Customer to provide adequate facilities, equipment, and support for training their personnel and adequate workspace while on-site to review drawings and documents to perform services.

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**Rockwell  
Automation**

- Customer to supply all lifts, ladders or equipment necessary to approach locations that are overhead or difficult to access; except as otherwise specifically agreed upon prior to the commencement date.
- Customer escort is to open all panels and provide location hierarchy terminology as they lead the Rockwell Automation IBE collector through the facility.

#### 1.2.3.4 Remediation

Remediation is not included in the scope of supply unless specifically quoted as part of a custom offering, Time and Materials (T&M) offering, or troubleshooting and repair T&M offering. The Customer may or may not choose to follow through with the recommended corrective actions and/or re-testing. Depending on the type and severity of a recommended action, remediation scheduling could be integrated into the process. This may impact scheduling and completion of the required tasks. If the Customer requests remediation and/or re-testing, this time will be invoiced separately at additional charge.

#### 1.2.3.5 Standard Working Hours

Rockwell Automation's standard working hours are Monday through Friday, 8:00 a.m. to 5:00 p.m. at the standard current rate. Rockwell Automation's overtime working hours are Monday through Friday, 5:00 p.m. to 8:00 a.m. and Saturdays. This rate is 1.5 times the standard current rate. Rockwell Automation's double-time working hours are Sundays and holidays. This rate is 2.0 times the standard current rate.

#### 1.2.3.6 Delivery

Estimated delivery of the completed study is within four weeks after the final data is collected.

## SECTION C

# Added-Value Items and Recommendations

CDM Smith understands that IEUA is looking for more than just a design-builder who can implement the prescriptive elements of the RFP. IEUA values consultants and contractors who work collaboratively with them to develop creative alternatives and provide clear recommendations based on a systematic business case evaluation. Our design recommendations will be developed based upon our understanding of your needs and expectations, our experience with the design and implementation of SCADA systems, and our design-build expertise. In addition, our approach to this project will include the input we receive from IEUA staff during our collaborative design workshops. Beyond our qualifications and comprehensive approach to the SCADA migration, we have developed several alternative approaches that we believe provide added value to IEUA and improve the resulting control systems at RP-4 and RP-5. We believe that structure of our company and our local presence also provides added benefits. Our bright ideas and discriminators are discussed in the following sections.

### Streamlined RP-5 Migration

The RFP is prescriptive with respect to the physical wiring required to migrate I/O from the Foxboro DCS system to the new PlantPAX system in RP-5. The RFP describes building a temporary rack, placed outside the existing DCS cabinets, and moving the existing Foxboro components to the temporary rack. The new Rockwell components would be mounted on a shop-assembled backboard and then installed in the existing DCS cabinet. The existing, individual I/O wires would be moved for each system. During the job walk, we observed that a number of the conductors emerging from the cable trench are under stress and are concerned about moving these to a temporary rack outside the cabinet or on the door of the cabinet.

We believe there is a better way to accomplish this part of the migration. As described in our Scope of Work in Section B (Attachment B), we will mount the Rockwell I/O modules in the new HMI cabinet and use premanufactured cablefast cords from the I/O module to the IFM module, which will be installed on the racking in the existing DCS cabinet. We believe this process eliminates the need for the temporary rack and will be less disruptive to the existing wiring, reduce the potential for unplanned outages and alarms during operations, and speed the process of migrating the systems.

### Lessons Learned Workshop

Our overall approach is based on creating an open, collaborative process for designing and implementing the SCADA migration. We will achieve this through a series of collaborative workshops designed to define the key decisions and facilitate the smooth and timely completion of the SCADA migration. We believe can further enhance the successful delivery of this project by incorporating a lessons learned workshop.



After completion of the RP-5 migration process, the CDM Smith team will hold a lessons learned workshop with IEUA staff. The purpose of this workshop will be to have a candid discussion with all parties of what went well and what did not during the first phase of the migration. Suggestions from all participants for improving the migration process will be discussed and the resulting actions will be assigned to individuals for implementation during the migration of the RP-4 control system.

## Life-Cycle Cost Considerations

**One of IEUA goals for upgrading its SCADA systems is to reduce its capital and operating costs. This can be accomplished by standardizing the software and equipment and entering into a long-term service agreement with Rockwell Automation.**

As previously noted, we understand that IEUA is looking for more than just a design-builder. You are looking for clear recommendations, based on a thorough understanding of the requirements and a systematic evaluation of alternatives, that provide the best value to IEUA and help reduce overall life-cycle costs. CDM Smith will support this effort through:

- Applying our design expertise to incorporate innovative features that improve reliability;
- Incorporating the input we receive during our collaborative work shops to make design decisions that provide the best overall value; and
- Incorporating the other value added items and recommendations described in this section such as streamlining the RP-5 migration.

## Smart Programming

By leveraging our extensive SCADA design and implementation experience, CDM Smith is able to provide IEUA with smart programming features that will enhance the migration process and resulting SCADA systems.

### Intelligent P&IDs

CDM Smith will utilize intelligent Piping & Instrumentation Diagrams (P&IDs) to generate IEUA's tagging standards. Using this approach, the "intelligence" is driven by developing a database that is associated with objects and tags within the drawing

package. We will develop P&IDs, and in the same process, include tagging standards that will follow the project through to completion using the information entered into the common database during design. This common database provides a single source of data that drives the creation and maintenance of all of the tags in the project. This common database will also be used during panel design, development of the bill of materials, and population of test forms and I/O check forms. By using this approach, we will save time during design and development and thus reduce costs. In addition, this database will be turned over to IEUA to use on future projects or system modifications.

### Standardized Programming Notes

CDM Smith has developed a customized application that we call "Programming Note Procedure" (PNP) that helps convert a control narrative template into a PlantPAx development environment. Our PNP includes procedures to configure and setup PlantPAx logic, FactoryTalk HMI, FactoryTalk Historian, Win911, VantagePoint, and Enterprise Historian functionalities. Each technical note will include a test procedure to be used during the bench/prototype test, factory testing, and commissioning. Using this tool will ensure that the final logic is constructed according to the control narratives developed, certifying quality and accuracy. We will utilize your custom/standardized templates for all control narratives, apply our tool, and create customized logic for each application. We will leave this tool with your staff to utilize on future projects.

### Customized Data Conversion Tools

CDM Smith has developed a set of custom tools specifically for database conversions using Rockwell products which we will use during the RP-4 and RP-5 migrations. The use of these customized data conversion tools will allow the rapid integration of the legacy database into the new system and facilitate the overall transition process.

### High performance HMI

We will use a high performance HMI architecture, as well as incorporating IEUA's standards, to leverage the full capabilities of the diagnostic object in PlantPAx. This will allow us to develop a comprehensive set of KPIs, diagnostic screens, and alarm management dashboards that greatly enhance the operator's capabilities during troubleshooting and maintenance activities.

## Ignition Historian

The software requirements of Specification Section 17300 state the OSIsoft Pi software will be used. CDM Smith recommends that IEUA consider using Ignition Software (Ignition) instead of OSIsoft Pi. We make this recommendation because, Ignition achieves the intent of specification requirements at substantial upfront cost savings and low maintenance annual fees. Ignition is an effective interface software package that automatically collects data from various sources and seamlessly delivers it to the users and systems who need it. It runs on Windows, Linux, or Mac OS, with mobile options for smart phones and tablets and is scalable up to 100,000 tags/points.

## Integrated Design-Build Firm

While our key personnel are based out of our local Rancho Cucamonga office, we see our team's advantage much greater than just close proximity. We believe our firm's values of excellence, initiative, shared commitment, integrity and teamwork are closely aligned with IEUA's values, making us the perfect partner in the evolution of your SCADA system to a more streamlined and cost effective enterprise-wide solution.

**CDM Smith is a leader in instrumentation, control and SCADA design, implementation and installation because our integrated design team brings I&C specialists into the process from the beginning of design, so that we truly understand our client's needs and can effectively incorporate I&C concepts into the overall design.**

Our team possesses exceptional expertise and experience encompassing electrical and instrumentation control systems for all service sectors, including water and wastewater treatment plants, manufacturing facilities, commercial facilities and transportation operations.

As an integrated firm, we provide a direct interface and will efficiently coordinate with discipline groups within CDM Smith. This creates a more cohesive and expeditious process which allows us to react quickly to design and scope changes. This team structure also reduces time and effort for all parties in addressing and expediting issues in both the engineering and construction phases. A positive synergy with engineering disciplines, field electricians, technicians and programmers allows for a cohesive and seamless start-up and commissioning process.



## Self-Performance

Because CDM Smith employs construction managers, superintendents, cost estimators, schedulers, carpenters, electricians, pipe fitters, construction labor/trades, and O&M specialists, we are able to self-perform a wide range of work including concrete, yard piping, and mechanical installation. For this project, we will self-perform over 95% of the work which allows us to provide better control over schedule, costs, quality and safety. Of particular value to IEUA is our unique ability to self-perform electrical and I&C work, as well as HMI & PLC programming, which allows us to internally control and manage the technical aspects of this project. Our self-performance capability also allows us to balance our self-performance work and provide the most competitive costs and least amount of risk for IEUA.

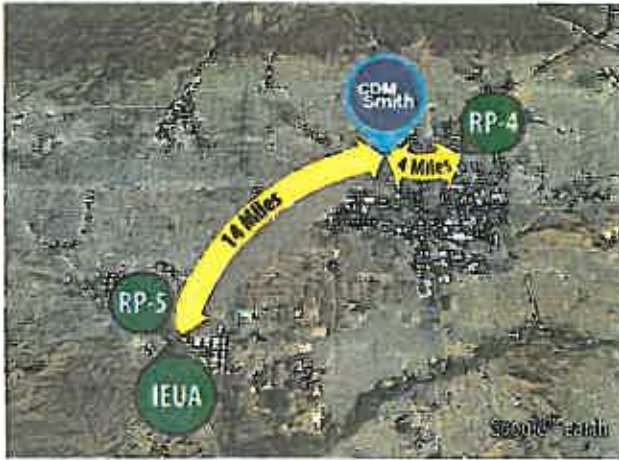
## In-House UL508A Panel Shop

In addition to being our design collaboration center, our Rancho Cucamonga office features an in-house UL508A panel shop. Our local UL508A control panel fabrication facility enables us to provide custom-made I&C panels to match each project's unique requirements for size, mounting, environment, materials, accessories, and rating. This allows flexibility of design, efficient scope changes, and adherence to project schedule and, more importantly for IEUA, allows for cost and quality control, as well as reduced exposure to project schedule impacts. Our fabrication shop provides value because it allows us to access wholesale pricing for panels that will help increase our cost competitiveness. Our clients value our fabrication shop because it delivers a better product at a lower cost.



## Local Proximity

CDM Smith routinely installs new systems and upgrades existing systems and we particularly pride ourselves on providing exceptional response to emergency repair calls, systemwide troubleshooting tasks, and ongoing maintenance to keep existing systems in good order. This project will be managed out of CDM Smith's Rancho Cucamonga office, which is only a short 5-minute drive from RP-4 and less than 20 minutes to both RP-5 and IEUA's headquarters. In addition, this office is our local design collaboration center and is staffed with the architectural, engineering, system integrators, programmers, and construction staff and state-of-the-art technology to cost effectively produce our project designs. With many of our key staff located in Rancho Cucamonga, (including Mark Martinez, Steve Kurtz, Colin Millet, Chris Avina, Reno Rendon, Tavita Solomona, Selayman Sales, Richard Chon, and Phisal Ly), we will be able to provide quick responses to project issues; better communication and coordination with IEUA; and reduced travel costs.



## Local Factory Test

All RTU panel and backpanel design and fabrication work will be performed at CDM Smith's UL508A certified panel shop located in our Rancho Cucamonga office. Having our own panel shop allows our staff greater control over quality as we implement stringent quality control measures to meet all customer specifications, industry standards, NEC and UL compliance. Once fabrication and programming is completed, unwitnessed and customer witnessed factory acceptance tests will be performed. All documentation for these tests, including test forms and as-built drawings, will be provided as part of the O&M manuals, which is part of the final close-out package. Given the close proximity of our office to both plants and IEUA's headquarters, IEUA staff can conveniently witness the factory tests which will give it great confidence in the quality of CDM Smith's workmanship.

## Royal Industrial Solutions

CDM Smith has a well-established relationship with Royal Electric, which is the local representative for Rockwell's PlantPAx software. In addition, their office is located within two miles of our Rancho Cucamonga office. Royal Industrial Solutions will supply the Rockwell software and hardware components, as well as act as the distributor for Rockwell Automation Services for the Installed Base Evaluation.

## SECTION F

# JV and/or Subcontract Arrangements

CDM Smith Inc. is a full-service consulting, engineering, construction, and operations firm delivering exceptional service to public and private clients. Founded in 1947, our complete suite of services spans from SCADA/automation system configuration and implementation, design-build, water/wastewater treatment, and construction management, to geotechnical engineering, management consulting, and operations.

CDM Constructors Inc., a wholly owned subsidiary of CDM Smith, is a leader in instrumentation, control and SCADA design, implementation and installation because our integrated design team brings I&C specialists into the process from the beginning of design, so that we truly understand our client's needs and can effectively incorporate I&C concepts into the overall design. CDM Constructors Inc. will serve as the prime contractor, and staff from CDM Smith will lead the design effort and will serve as the engineer of record. With more than 5,000 employees worldwide, and nearly 350 staff in California, CDM Smith offers a tremendous depth of resources to support IEUA.

In addition to the highly qualified personnel proposed, we welcome two exceptionally qualified subcontractors. The first is Royal Industrial Solutions, who will supply the Rockwell software and hardware components, as well as act as the distributor for Rockwell Automation Services for the Installed Base Evaluation. The second firm is ATSI, Inc., who will provide Vantage Point programming, and is a Rockwell automation recognized system integrator for control and process.



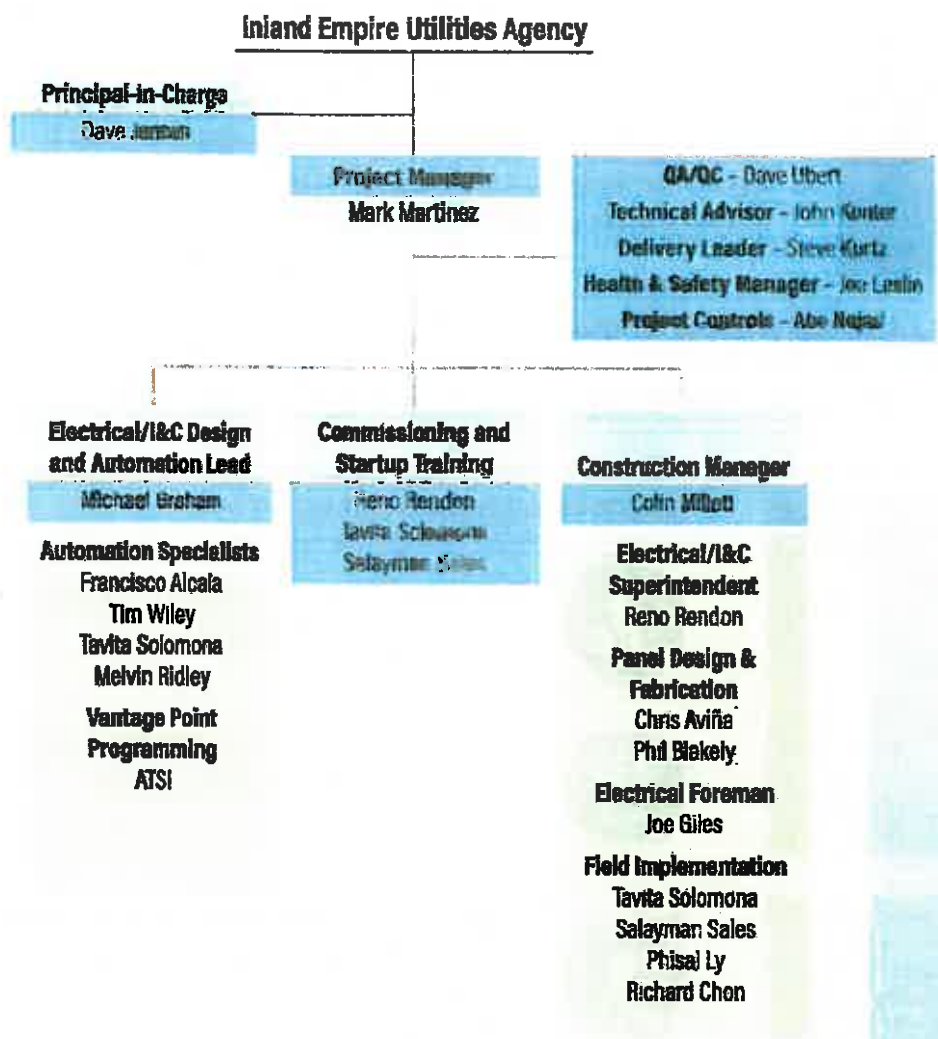
### Design-Build Entity CDM Smith Inc.



# SECTION G

## Proposed Team

In recognition of the complexity and criticality of this project, CDM Constructors Inc. has assembled a balanced team of our brightest and most experienced professionals to lead this effort and guide its successful execution. Our key staff have engineered dozens of electrical and SCADA systems and will utilize this experience, lessons learned and our knowledge of industry best practices to help IEUA implement cost-effective and reliable strategies to achieve its overall SCADA vision.



## A CHAMPION FOR PROJECT SUCCESS



### Mark Martinez, Project Manager

Mr. Martinez will be responsible for the management of the project to include client communications and collaboration; contract, financial, schedule, and resource allocation and management; scope changes; SCADA migration; start-up and commissioning; and project close-out documentation. Mark has 35 years of experience in electrical and I&C construction, the majority of which has been in heavy infrastructure for water/wastewater projects. He served as On-Site Electrical/I&C Project Manager for both the design-build expansion of the South Regional Tertiary Treatment Plant (SRTTP) and the design-build of a new 8-mgd Northern Regional Tertiary Treatment Plant (NRTTP) at Camp Pendleton. Mark has also managed the electrical/I&C work for the City of Carlsbad Water Recycling Facility Phase 3 Expansion and the Joint Base Lewis-McChord WWTP for the USACE Seattle District, both design-build projects.

**"I am personally excited and committed to leading our integrated automation design and construction team to help you achieve your goals and vision for facilities that carry you 20 years into the future... and beyond. In fact, from start-to-finish, you can be assured that this project will remain my #1 priority." - Mark Martinez**



IEUA can be confident that Mark has the:



**Skills, integrity, and commitment to manage and drive this large, multi-disciplinary team**



**Knowledge of and experience with best practices to facilitate collaboration between team members and with IEUA**



**Ability to rapidly and continuously distill the key program objectives to make cost-effective, high-quality, and timely decisions**

## Key Project Staff Qualifications

The following features our key project staff and core leadership team's qualifications. Detailed resumes for key and support staff are provided at the end of this section.

### Michael Graham, Electrical/I&C Design and Automation Lead



Mr. Graham has 23 years of national experience as a control systems engineer. He is a registered PE with expertise in design, specification, and implementation of PLCs, process control systems, programming, and instrumentation. His experience includes

CAD-generated P&IDs, electrical, site layout, and computer configuration drawings for water/wastewater treatment facilities. He has served as the lead instrumentation/applications engineer on many similar efforts, such as the City of Dallas' SCADA System Upgrade, the Metropolitan Council Environmental Services WWTP Process Control System Project – Phase 3, Puerto Rico Aqueduct and Sewer Authority's island-wide Automation Program, and multiple projects for Miami-Dade County's WWTPs.

### Colin Millett, Construction Manager



Mr. Millett will be responsible for construction activity oversight to include monitoring of all construction activities, enforcement of health & safety, quality control, and management of site labor resources. He will work closely with Mr. Rendon in the coordination and collaboration of all site construction and SCADA system migration. As a member of the International Brotherhood of Electrical Workers, Colin brings 26 years of electrical construction experience, with special expertise in design-build projects. He served as field electrical superintendent for several regional DB projects, including the City of Pomona's SCADA System Upgrade, City of Carlsbad's Water Recycling Facility Expansion, the Cambria Emergency Water Supply Project, and multiple projects under Camp Pendleton's Design-Build-Operate-Maintain (DBOM) I Contract (including SRTTP and NRTTP).

As a member of the International Brotherhood of Electrical Workers, Colin brings 26 years of electrical construction experience, with special expertise in design-build projects. He served as field electrical superintendent for several regional DB projects, including the City of Pomona's SCADA System Upgrade, City of Carlsbad's Water Recycling Facility Expansion, the Cambria Emergency Water Supply Project, and multiple projects under Camp Pendleton's Design-Build-Operate-Maintain (DBOM) I Contract (including SRTTP and NRTTP).

### Esteban (Reno) Rendon, Electrical/I&C Superintendent, Commissioning & Startup Training



Mr. Rendon will be responsible for all site construction activity to include day to day coordination with IEUA staff, site schedule implementation, three week look ahead schedules, weekly progress meetings, site

safety, management of site construction labor resources and activities, commodity material procurement, and start-up and commissioning in support of the SCADA migration and completion. Mr. Rendon has 14 years of experience in the electrical construction industry as a journeyman, foreman, general foreman, superintendent, instrument technician and a UL508A panel builder. He has worked on complex and large-scale projects in California, Arizona, Guam, and Florida. He has served as Construction Superintendent / General Foreman for several similar projects, including the City of Pomona Design-Build SCADA Upgrade, Design-Build for the Guam Apra Harbor WWTP Upgrades and Repairs, and the USACE Ft. Irwin Design-Build WTP.

### David Jensen, Principal-in-Charge



Mr. Jensen has the authority to commit firm resources as necessary for the successful delivery of the project. He will serve as a secondary contact for IEUA and will work with our management staff to see that our team meets your expectations. Mr. Jensen has more than 28 years of experience in project and program management of large, multi-discipline programs involving design, construction and operation and maintenance; property redevelopment; environmental compliance; sustainability; and health and safety oversight. Mr. Jensen is currently serving in the same role for a recently awarded project with IEUA for an Asset Management and Improvements project at the Carbon Canyon WRF.

### David Ubert, Quality Control/Quality Assurance



Mr. Ubert is an instrumentation specialist and automation team leader with 25 years of experience in process control and SCADA in the water and wastewater industry. His telemetry experience includes communication systems using fiber optics, licensed/unlicensed radio, cellular, satellite, and phone line. He has extensive knowledge working with various protocols including Ethernet (various types), DF1, DNP3, BSAP, and Modbus protocols – as well as designing and implementing proprietary protocols for specialized communication systems. His PLC experience includes Allen-Bradley's RSLogix 500 and 5000, Modicon's ProWORX NxT, Siemens Step 7, ProWORX32 and Concept. His SCADA/HMI programming experience consists of iFix, Citect, FactoryTalk, VTScada, and Wonderware, as well as several other small human machine interface (HMI) applications, including Panelbuilder, RSVIEW/RSVIEW Studio, and Vijeo-Designer.

**John Kontor, Technical Advisor**



Mr. Kontor is an automation specialist with 30 years of experience in managing large and complex, state-of-the-art technology based projects. His engineering experience has encompassed study, design, evaluation, project management, and implementation of monitoring and control systems for water and wastewater transmission and treatment facilities. Mr. Kontor has played an integral role on the recently completed SCADA Master Plan for the City and County of Honolulu Board of Water Supply, as well as the turnkey SCADA system upgrade for the City of Pomona and the Puerto Rico Aqueduct & Sewer Authority's island-wide Automation Program.

**Steve Kurtz, Delivery Leader**



As the internal manager of CDM Constructors Inc.'s Electrical / I&C division, Mr. Kurtz will provide overall management and oversight for the project. His responsibilities will include management of client expectations; oversight of contract, financial, and schedule management; resource allocation and management; scope changes; SCADA migration; start-up; commissioning; through project close-out. Mr. Kurtz brings 35 years of construction experience in electrical systems procurement, installations, testing, and startup, and has managed dozens of electrical installations for water/wastewater treatment facilities. He was the delivery leader for the \$3 million installation of electrical systems for electrical components for the City of Pomona's SCADA upgrade of 60 sites, and he served as overall electrical/I&C manager for the design-build water and wastewater infrastructure programs at Camp Pendleton.

**Joe Leslie, Health & Safety Manager**



Mr. Leslie has 20 years of safety, health and hazardous material handling oversight experience. He has served as a safety and HAZMAT non-commissioned officer (U.S. Marine Corps), and a health and safety manager on complex wastewater construction projects. Mr. Leslie has experience on similar projects as Health & Safety Manager, including with the City of Stockton on the award-winning progressive design-build Delta Water Supply Project, the Petaluma WWTF design-build, USACE Ft. Irwin WTP design-build, and the Camp Pendleton SRTTP project. He is skilled in managing a high volume of subcontractors working in various trades, as well as managing all aspects of subcontractor safety compliance, from design through facility commissioning.

**Abe Nejad, Project Controls**



Mr. Nejad brings hands-on, field supervision, project engineering and controls, and project management experience in leading medium to large scale horizontal and vertical construction projects for water and wastewater treatment plants, pipeline distribution, wells, and pump stations, as well as commercial, retail, residential, and educational facilities and sites. He has served in the same role for similar projects, such as the City of Pomona's Design-Build Water SCADA System Upgrade, the Clean Harbors Hazardous Waste Incinerator Plant in Arkansas, for multiple projects under the Design-Build-Operate Maintain II contract for Wastewater Systems at Marine Corps Base Camp Pendleton, and for multiple DB projects with Coachella Valley Water District.

## SECTION H

# Time Schedule and Completion

The attached schedule builds on the one provided in our pre-qualification submittal and provides further details of the execution of the project. It takes into consideration all the major workshops required in the RFP and sequences them to provide a smooth flow of work. The primary objective of the schedule is to place the Field Implementation team on site as soon as possible. As seen in the schedule, we prioritize building the DCP and Plant Influent Headworks HMI/RTU cabinet for RP-5, factory test, and ship to the field so that work can begin in March 2018. The other two HMI/RTU cabinets will follow shortly thereafter. This allows us to get on site six months after NTP and begin the migration effort, which we consider the most time critical activity for the success of the project.

Based on an NTP of September 14, 2017, our schedule shows RP-5 design, transition, and migration workshops continuing through February 2018. Programming efforts for the Headworks section of the plant is completed in March. Onsite work at RP-5 will begin in early March with transfer of existing equipment in the Server Room and then installation of the new DCP. Field work will continue through the end of July 2018.

Work on RP-4 will begin in early July 2018 to get the architectural remodeling complete ahead of shipping the DCP and server rack to the site. A substantial amount of work is associated with transferring the network equipment out of the "garage" to the Server room as well as completing the fiber DLR ring on the site. This work needs to be accomplished ahead of field migration work so that existing plant processes are proven. Migration work at RP-4 will start in September and be complete in February 2019. The project will be complete and close out in April 2019, after all as-built documentation is submitted and accepted.

Our schedule accounts for non-working adverse weather days, the Christmas week holiday, and other traditional holidays when Plant Operations are minimally staffed. As part of the project kick off, we will work with iEUA to refine and further detailed the schedule, particularly with respect to the multiple transition workshops required for each plant. As discussed in the Scope of Work section of this proposal, the CPM schedule will provide an excellent roadmap for monthly assessments of our progress and we will use a detailed, regularly updated three week look-ahead schedule to coordinate the on-site work with Plant Operations.





Client: Inland Empire Utilities Agency  
 Project: SCADA Upgrades and Improvements

Group Leaders Responsible: Dave Ubert, Steve Kurtz								
HOURS								
EN-8	PMD	EN-6/5	EN-4/3	EN-2/1	DN-6/5	DN-4/3	QA/QC	
Support for Factory Demonstration Test		8	56	56				
CCI: Factory Demonstration Test								
Software Applications Operation and Maintenance Manual - CCI to assemble and provide			40					
Logic Implementation and commissioning Training to CCI								
RP-5								
RP-5 PAC Development		80	370	370				
Prado Regional PLC Update Development			32	32				
Recycled Water PS development (PAC/HMI)			40	40				
HMI Development		80	280	24				
Prado Regional HMI Update Development			24	80				
Documentation			80	8				
Network Configuration			16	18				
Server Configuration			40	40				
WorkStation Configuration			40	40				
FactoryTalk (FT) historian : Development		8	80	80				
Enterprise historian OSIsoft PI : Development		8	160	160				
PAC and RIO configuration		8	40	40				
Win911: Development		2	80	40				
VantagePoint Engineering: Coordination with subcontractor		8	80					
VantagePoint Reports: Coordination with subcontractor		8	80					
VantagePoint Dashboard: Coordination with subcontractor		8	80					
Support for Unwitness Factory Test (Bench Test)		8	56					
Support for Factory Demonstration Test		8	50	50				
Software Applications Operation and Maintenance Manual - CCI to assemble and provide								
Workshops								
Testing Workshop		8	24					
Training Workshop		8	24					
Startup Workshop		8	24					
Hardware and Software submittal Review		8	80					
Software Submittal Preparation		8	24					
RP-4								
Hardware, Network, and Software Site Setting		8	16					
Support during Commissioning		16	160	40				
Enterprise SCADA performance Test		8	40					
As build software documentation		8	32	32				
As build control narrative		8	24	24				
As build Operation and Maintenance Manual update - CCI to assemble and provide				16				
RP-5								
Hardware, Network, and Software Site Setting		8	40					
Support during Commissioning		16	120					
Enterprise SCADA performance Test		8	40					
As build software documentation		8	32	32				
As build control narrative		8	24	24				
As build Operation and Maintenance Manual - CCI to assemble and provide				16				
SCADA Maintenance training (2D, 4A)		8	24	40				
SCADA Operation training (3S, 5A)		8	24	24				
Software Maintenance training (5D, 4A)		8	56	50				
Control Strategy Application training (4D, 6A)		16	24	40				
<b>Total Design and Programming Hours</b>	<b>40</b>	<b>1,080</b>	<b>6,087</b>	<b>4,331</b>	<b>120</b>	<b>528</b>	<b>400</b>	<b>50</b>



Client: Inland Empire Utilities Agency  
 Project: SCADA Upgrades and Improvements

Group Leaders Responsible: Dave Ubert, Steve Kurtz							
HOURS							
EN-8	PMD	EN-6/5	EN-4/3	EN-2/1	DN-6/5	DN-4/3	QA/QC

CONSTRUCTION	FM	JW	SR PROG	JR PROG	GF	QA/QC	TOTAL
Relocate HOA and Pilot Lights from RTU-1D to MCC-3 & Wire		16	24				8 48
Install Conduit and Wire from MCC-3 to RTU-1		16	22				8 46
Install E-Stop Push Buttons/Conduit/Wire from (5) IPS Pumps to RTU-1D		41	40				8 89
Migration of I/O Points from Legacy Rockwell to PlantPax at RTU-1D to RTU-1		16	22	21	30	16	105
Clean up RTU-1D and Turn Over Components to Owner		8	4		8		20
RTU- 1 Punchlist and Final Cleanup		8	8		24		40
Install Rockwell I/O and IFM Modules on Rack in RTU-2 Cabinet			4	16	8	8	36
Field I/O Check & Logic Loop Test for RTU-2			5	5	5		15
Install Field Terminal Strips, Conduit and Wire from RTU-2 to adjacent RTU-2A		13	21	16	21	8	79
Migration of I/O Points from Legacy Rockwell to PlantPax at RTU-2A to RTU-2		6	17	17	24	16	80
30 days Operations Performance Test (OPT) of RTU-2 & Training		16			208		224
Clean up RTU-2A and Turn Over Components to Owner		8	4		8		20
Field I/O Check & Logic Loop Test for RTU-2B			15	12	16	8	52
RTU- 2 Punchlist and Final Cleanup		8	6		8		22
Install New Ethernet Switch, Remove Existing PLC Equip, & Provide Ethernet Jumpers from Existing Ethernet Modules RTU-3			6	16	8	8	38
Install New Fiber Optic Switch Panel at Aeration Basins		4	4	16	8	16	48
30 days Operations Performance Test (OPT) of RTU-3 & Training					208		208
Install Conduits at Aeration Basins for Fiber Optic and Ethernet Cables		78	78			16	172
Install, Terminate and Test Fiber Optic and Ethernet Cables at Aeration Basins				16		8	24
Field I/O Check & Logic Loop Test for Aeration Basins at RTU-3		12	20	24	24	16	96
RTU- 3 Punchlist and Final Cleanup			4			8	12
Install Rockwell I/O and IFM Modules on Rack in RTU-5 Cabinet		8	6		8	8	30
Field I/O Check & Logic Loop Test for RTU-5			6	5	8	8	27
Install/Terminate/Test Ethernet through Existing Conduit from RTU-5 to RTU-5B		1	2		4		7
Migration of I/O Points from Legacy Rockwell to PlantPax at RTU-5B to RTU-5		8	24	16	32	16	96
30 days Operations Performance Test (OPT) of RTU-5 & Training						208	208
Upgrade Micrologics PLC to CompectLogics at RTU-5C			1	1	8		10
Field I/O Check & Logic Loop Test for RTU-5C			18	18	16	8	60
RTU- 5 Punchlist and Final Cleanup		8	6		16		30
Install New Ethernet Switch, Remove Existing PLC Equip, & Provide Ethernet Jumpers from Existing Ethernet Modules RTU-6			5	2	4	6	15
Field I/O Check & Logic Loop Test for RTU-6			24	16	24	16	80
30 days Operations Performance Test (OPT) of RTU-6 & Training					208		208
RTU- 6 Punchlist and Final Cleanup		8	8	16	16		48
Prepare As-Built Documentation for RP-4					24	8	32
Submit As-Built Documentation for RP-4						80	104
Demobilization							16
Final Project Closeout						40	56
Project Completion							0
<b>Construction - Total Hours</b>		<b>1957</b>	<b>2189</b>	<b>1098</b>	<b>9114</b>	<b>759</b>	<b>8425</b>

**ABBREVIATIONS**

- PMD - Project Manager for Design
- EN 6/5 - Engineer Level 6/5
- EN 4/3
- EN 2/1
- DN 6/5 - Designer/Drafter Level 6/5
- DN 4/3
- DN 2/1
- FM - Foreman
- JW - Journeyman Wireman Electrician
- SR PROG - Senior Programmer
- JR PROG - Junior Programmer
- GF - General Foreman Electrical/I&C (aka Field Superintendent)

# EXHIBIT B

# SECTION J

## Fee Schedule

ACTIVITY DESCRIPTION	FEE
<b>Preconstruction</b>	
Kickoff Meeting/Site V-A7:A87isit/General Condition Workshops	\$3,215
Review Existing P&ID Drawing	\$15,248
Review Existing PLC/HMI documentation	\$13,458
Review Process Control Narrative (RFP 4: 60, RP-5: 57)	\$22,764
Standards Programming Method and HP HMI Review	\$601,559
Overall System Workshop - Support Only	\$7,760
<b>Workshops</b>	
Design Workshop (Internal)	\$8,791
Vendors Workshops	\$8,791
AT: Setting of client smart tags for Smart P&IDs development	\$2,320
<b>RP-4</b>	
Control Network Architecture (4)	\$20,800
P&IDs (24)	\$64,072
Update Control Narratives (60)	\$21,699
<b>RP-5</b>	
Control Network Architecture (4)	\$17,951
P&IDs (24)	\$56,949
Update Control Narratives (57)	\$21,699
<b>Documents</b>	
VantagePoint Report and Dashboard Performance Specification	\$23,430
Testing Plan, Test Forms	\$11,668
Software Transition Plan	\$30,458
Software Training Plan	\$4,274
Software Logic Testing forms (100)	\$5,970
<b>Workshops</b>	
Submittal Workshops	\$3,744
Scada System Workshop	\$6,064
Project Update 70% workshop	\$4,639
Headwork Pilot SCADA Software design Review	\$2,320
Headwork Pilot Review meeting	\$2,320
Process Area Workshops (12)	\$19,597
<b>Standard Library</b>	
Standards Programming Method and HP HMI Review	\$15,248
Standard Library (AOIs), Screens and Faceplate development	\$48,909
<b>RP-4</b>	
RP-4 PAC Development, including	\$222,470

ACTIVITY DESCRIPTION	FEE
San Bernardino Lift Station development	\$23,336
NRG Facility Upgrade to PAC development	\$7,001
Recycled Water PS development (PAC/HMI)	\$11,668
RP-4 HMI Development	\$98,498
HMI San Bernardino Lift Station development	\$23,336
HMI-NRG Facility Upgrade	\$11,668
Documentation	\$17,502
Network Configuration	\$4,667
Server Configuration	\$11,668
WorkStation Configuration	\$11,668
FactoryTalk (FT) historian: Development	\$25,126
Enterprise historian OSIsoft PI: Development	\$48,462
PAC and RIO configuration	\$13,458
Win911: Development	\$12,115
VantagePoint Engineering: Coordination with subcontractor	\$35,144
VantagePoint Reports: Coordination with subcontractor	\$35,144
VantagePoint Dashboard: Coordination with subcontractor	\$46,859
Support for Unwitness Factory Test (Bench Test)	\$13,458
Unwitness Factory Test (Bench Test)	\$2,500
Support for Factory Demonstration Test	\$13,458
Factory Demonstration Test	\$2,500
Software Applications Operation and Maintenance Manual	\$3,561
Logic Implementation and commissioning Training	\$2,500
<b>RP-5</b>	
RP-5 PAC Development	\$123,821
Prado Regional PLC Update Development	\$9,334
Recycled Water PS development (PAC/HMI)	\$11,668
HMI Development	\$61,920
Prado Regional HMI Update Development	\$13,364
Documentation	\$11,668
Network Configuration	\$4,667
Server Configuration	\$11,668
WorkStation Configuration	\$11,668
FactoryTalk (FT) historian: Development	\$25,126
Enterprise historian OSIsoft PI: Development	\$48,462
PAC and RIO configuration	\$13,458
Win911: Development	\$19,238
VantagePoint Engineering: Coordination with subcontractor	\$35,144
VantagePoint Reports: Coordination with subcontractor	\$35,144

Section J Fee Schedule

ACTIVITY DESCRIPTION	FEE
VantagePoint Dashboard: Coordination with subcontractor	\$46,859
Support for Unwitness Factory Test (Bench Test)	\$8,913
Support for Factory Demonstration Test	\$13,458
Software Applications Operation and Maintenance Manual	\$2,500
<b>Workshops</b>	
Testing Workshop	\$6,064
Training Workshop	\$6,064
Startup Workshop	\$6,064
Hardware and Software submittal Review	\$16,035
Software Submittal Preparation	\$6,064
<b>RP-4</b>	
Hardware, Network, and Software Site Setting	\$4,639
Support during Commissioning	\$36,616
Enterprise SCADA performance Test	\$8,913
As build software documentation	\$11,124
As build control narrative	\$8,791
As build Operation and Maintenance Manual update - CCI to assemble and provide	\$1,818
<b>RP-5</b>	
Hardware, Network, and Software Site Setting	\$8,913
Support during Commissioning	\$24,948
Enterprise SCADA performance Test	\$8,913
As build software documentation	\$11,124
As build control narrative	\$8,791
AS build Operation and Maintenance Manual - CCI to assemble and provide	\$1,818
SCADA Maintenance training (2D, 4A)	\$7,123
SCADA Operation training (3S, 5A)	\$4,274
Software Maintenance training (5D, 4A)	\$14,245
Control Strategy Application training (4D, 6A)	\$7,123
<b>CONSTRUCTION</b>	
<b>RP-5</b>	
Mobilization to RP-5 Site	\$37,672
Remove East Most Server Rack & Relocate Component to Existing Server Rack	\$32,749
Install New DCP Panel & Server Rack	\$275,996
Relocate RACO Pager, Data Concentrator, Filter Control Logic PLC and Energy Management PLC to DCP	\$43,129
Install PlantPAx Control System Hardware	\$2,174
Tie-in Existing Fiber Optic Network & Connect DCP to UPS	\$9,876

ACTIVITY DESCRIPTION	FEE
Modify the Existing DCS-1 (Remove Existing Foxboro Devices)	\$8,622
Install IFM Modules on Backpanel in RTU-1 Cabinet	\$10,444
Migration of I/O Points from Foxboro DCS to Rockwell PlantPAx	\$55,115
30 days Operations Performance Test (OPT) of RTU-1 & Training	\$25,454
Remove and Replace PC Console with New RTU-1 PC Console	\$108,680
Remove and Turn Over Existing Foxboro DCS Equip and Control Logic Gateway for RTU-1	\$4,311
RTU- 1 Punchlist and Final Cleanup	\$4,311
Modify the Existing DCS-2 (Remove Existing Foxboro Devices)	\$13,871
Install IFM Modules on Backpanel in RTU-2 Cabinet	\$14,059
Migration of I/O Points from Foxboro DCS to Rockwell PlantPAx	\$50,390
30 days Operations Performance Test (OPT) of RTU-2 & Training	\$25,454
Remove and Replace PC Console with New RTU-2 PC Console	\$117,164
Remove and Turn Over Existing Foxboro DCS Equip and Control Logic Gateway for RTU-2	\$4,311
RTU- 2 Punchlist and Final Cleanup	\$4,311
Modify the Existing DCS-3 (Remove Existing Foxboro Devices)	\$11,037
Install IFM Modules on Backpanel in RTU-3 Cabinet	\$15,693
Migration of I/O Points from Foxboro DCS to Rockwell PlantPAx	\$61,690
30 days Operations Performance Test (OPT) of RTU-3 & Training	\$25,454
Remove and Replace PC Console with New RTU-3 PC Console	\$124,404
Remove and Turn Over Existing Foxboro DCS Equip and Control Logic Gateway for RTU-3	\$4,311
RTU- 3 Punchlist and Final Cleanup	\$4,311
Upgrade Prado Panel HMI, Update PLC and HMI Code	\$6,291
Prepare As-Built Documentation for RP-5	\$12,216
Submit As-Built Documentation for RP-5	\$1,041
<b>RP-4</b>	
Mobilization to RP-4 Site	\$35,424
Field Investigation-RP-4	\$43,421
Interior Remodeling of Printer Room & Control Room	\$20,411
Install New DCP Panel and Server Rack	\$305,390
Relocate RACO Pager, Data Concentrator, Control Logic PLC and Energy Management PLC from RTU-4 to DCP	\$44,249

ACTIVITY DESCRIPTION	FEE
Install Fiber Optic Cabling Plant-Wide to complete DLR Ring	\$93,598
Tie-in Existing Fiber Optic Network & Connect DCP to UPS	\$10,326
Retest Functionality of Relocated RTU-4 Components	\$6,092
Remove RTU-4 & SCE Panel and Turn Over to Owner	\$6,336
As-Built Documentation of Existing Cabling at Network Equipment Rack in Electrical/Switch Room	\$24,356
Build Cable Tray System in Plenum Space for relocation of Existing Cables to New Rack	\$40,481
Install New Network Equipment in New Server Room	\$36,303
Install New Fiber Optic and Ethernet Patch Panels (As required)	\$9,135
Transfer Cables from Existing Network Equipment Rack to New Network Equipment Rack in Server Room	\$45,981
Install Rockwell I/O and IFM Modules on Rack in RTU-1 Cabinet	\$57,047
Field I/O Check & Logic Loop Test for RTU-1	\$7,674
Install Field Terminal Strips, Conduit and Wire from RTU-1 to adjacent RTU-1A	\$9,908
Migration of I/O Points from Legacy Rockwell to PlantPax at RTU-1A to RTU-1	\$25,113
30 days Operations Performance Test (OPT) of RTU-1 & Training	\$30,007
Clean up RTU-1A and Turn Over Components to Owner	\$3,178
Install Field Terminal Strip, Conduit and Wire from RTU-1B to RTU-1	\$69,270
Migration of I/O Points from Legacy Rockwell to PlantPax at RTU-1B to RTU-1	\$14,969
Clean up RTU-1B and Turn Over Components to Owner	\$2,501
Field I/O Check & Logic Loop Test for RTU-1C	\$6,457
Relocate HOA and Pilot Lights from RTU-1D to MCC-3 & Wire	\$9,134
Install Conduit and Wire from MCC-3 to RTU-1	\$8,871
Install E-Stop Push Buttons/Conduit/Wire from (5) IPS Pumps to RTU-1D	\$21,407
Migration of I/O Points from Legacy Rockwell to PlantPax at RTU-1D to RTU-1	\$18,635
Clean up RTU-1D and Turn Over Components to Owner	\$3,199
RTU- 1 Punchlist and Final Cleanup	\$5,967
Install Rockwell I/O and IFM Modules on Rack in RTU-2 Cabinet	\$48,511
Field I/O Check & Logic Loop Test for RTU-2	\$2,638
Install Field Terminal Strips, Conduit and Wire from RTU-2 to adjacent RTU-2A	\$14,348
Migration of I/O Points from Legacy Rockwell to PlantPax at RTU-2A to RTU-2	\$14,252

ACTIVITY DESCRIPTION	FEE
30 days Operations Performance Test (OPT) of RTU-2 & Training	\$30,007
Clean up RTU-2A and Turn Over Components to Owner	\$3,199
Field I/O Check & Logic Loop Test for RTU-2B	\$9,172
RTU- 2 Punchlist and Final Cleanup	\$3,542
Install New Ethernet Switch, Remove Existing PLC Equip, & Provide Ethernet Jumpers from Existing Ethernet Modules RTU-3	\$24,267
Install New Fiber Optic Switch Panel at Aeration Basins	\$98,826
30 days Operations Performance Test (OPT) of RTU-3 & Training	\$27,063
Install Conduits at Aeration Basins for Fiber Optic and Ethernet Cables	\$38,738
Install, Terminate and Test Fiber Optic and Ethernet Cables at Aeration Basins	\$5,250
Field I/O Check & Logic Loop Test for Aeration Basins at RTU-3	\$17,453
RTU- 3 Punchlist and Final Cleanup	\$1,727
Install Rockwell I/O and IFM Modules on Rack in RTU-5 Cabinet	\$44,435
Field I/O Check & Logic Loop Test for RTU-5	\$4,834
Install/Terminate/Test Ethernet through Existing Conduit from RTU-5 to RTU-5B	\$1,088
Migration of I/O Points from Legacy Rockwell to PlantPax at RTU-5B to RTU-5	\$16,636
30 days Operations Performance Test (OPT) of RTU-5 & Training	\$27,063
Upgrade Micrologics PLC to CompactLogics at RTU-5C	\$23,435
Field I/O Check & Logic Loop Test for RTU-5C	\$10,870
RTU- 5 Punchlist and Final Cleanup	\$4,583
Install New Ethernet Switch, Remove Existing PLC Equip, & Provide Ethernet Jumpers from Existing Ethernet Modules RTU-6	\$16,245
Field I/O Check & Logic Loop Test for RTU-6	\$14,123
30 days Operations Performance Test (OPT) of RTU-6 & Training	\$27,063
RTU- 6 Punchlist and Final Cleanup	\$8,541
Rockwell Automation Installed Base Evaluation Survey	\$12,738
Prepare As-Built Documentation for RP-4	\$4,757
Submit As-Built Documentation for RP-4	\$15,313
Demobilization	\$3,269
Final Project Closeout	\$8,474
Project Completion	\$-
<b>TOTAL</b>	<b>\$5,192,864</b>

**ACTION  
ITEM  
1C**





Date: August 16, 2017

To: The Honorable Board of Directors

From: P. Joseph Grindstaff, General Manager

Committee: Engineering, Operations & Water Resources Committee

08/09/17

Executive Contact: Chris Berch, Executive Manager of Engineering/AGM

Subject: Upper Santa Ana River Integrated Model Cost Sharing Letter Agreement

**Executive Summary:**

The Upper Santa Ana River Integrated Model is a project led by the San Bernardino Valley Municipal Water District (Valley District) that will integrate surface flow and groundwater models along the Santa Ana River from Yucaipa to the Prado Dam. The project was developed in response to concerns from multiple agencies and stakeholders regarding the potential loss or degradation of habitat in the Santa Ana River resulting from decreased surface flows and/or groundwater levels. This project is an extension of the Upper Santa Ana River Habitat Conservation Plan (HCP) and will help determine what factors may be contributing to the decline in flows in the Santa Ana River, and provide a solid foundation for the biological effects analysis of HCP Covered Activities including the groundwater recharge projects listed in the 2013 Recharge Master Plan Update.

Partners for the development of the model include IEUA, San Bernardino Valley Municipal Water District, Orange County Water District, and Western Municipal Water District. Total project costs for modeling work and peer review are \$1,306,495. All costs of this project will be split equally by the funding agencies, for a 25% cost share not to exceed \$326,700 each.

**Staff's Recommendation:**

1. Approve the Upper Santa Ana River Integrated Model Cost Sharing Letter Agreement for the not-to-exceed amount of \$326,700; and
2. Authorize the General Manager to execute the letter agreement, subject to non-substantive changes.

**Budget Impact:** N *Budgeted (Y/N):* Y *Amendment (Y/N):* N *Requested Amount:* \$ 326,700

**Account/Project Name:**

Project will be split 50/50 between the Recycled Water (WC) Planning Documents Project No. EN16035 in the WC Fund and Water Resources (WW) Planning Documents Project No. WR16025 in WW Fund, and will be spread over FY 2017/18 and FY 2018/19.

**Fiscal Impact (explain if not budgeted):**

Project cost is within the annual budget and the total project budgets of WC Planning Documents Project No. EN16035 (\$500,000) in the WC Fund and WW Planning Documents Project No. WR16025 (\$750,000) in WW Fund, and will be spread over FY 2017/18 and FY 2018/19.

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**Prior Board Action:**

None.

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**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. This effort will help provide the data required to complete future environmental documentation needed for the Habitat Conservation Plan.

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**Business Goal:**

The agreement is consistent with the Agency's Business Goal of increasing Water Reliability by meeting the region's need to develop reliable, drought-proof and diverse local water resources in order to reduce dependence on imported water supplies.

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**Attachments:**

- Attachment 1 - Background
- Attachment 2 - PowerPoint Presentation
- Attachment 3 - Cost Sharing Letter Agreement

**Links:**

1. Geoscience Contract with San Bernardino Valley Water District, available here:  
<https://us3.hostedftp.com/CCEuxBV5OF08K3pI4xUTFYm1m>
2. USGS Proposed Scope of Work Letter, available here:  
<https://us3.hostedftp.com/C1PciDQJSZ0A7xOExfzEN7GGk>
3. ICF Proposed Scope of Work Letter, available here:  
<https://us3.hostedftp.com/CiAOfdT5xItAJOTNX6QmmKRV>
4. Balleau Groundwater, Inc. Proposed Scope of Work Letter, available here:  
<https://us3.hostedftp.com/C7GXTI0OSNX0H2zszVGW918ei>

# Background

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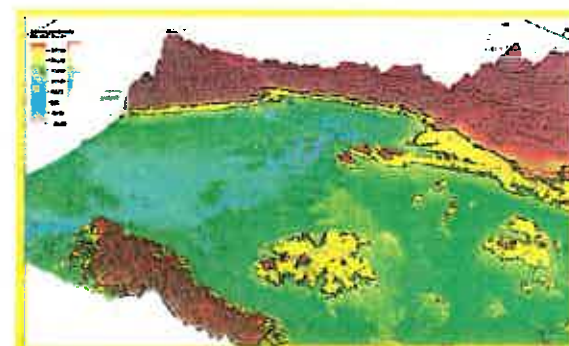
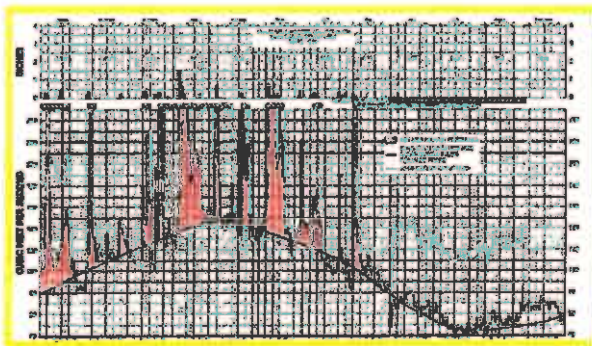
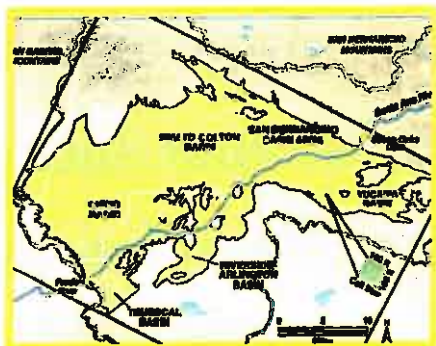
**Subject: Upper Santa Ana River Integrated Model Cost Sharing Letter Agreement**

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This project consists of four consultants: Geoscience, United States Geological Survey (USGS), Balleau Groundwater (BGW), and Inner City Fund International (ICF). Geoscience, the lead consultant, will integrate their existing hydraulic model with Wildermuth's WLAM model. USGS and BGW will peer review Geoscience's work. ICF, the lead consultant on the Upper Santa Ana River Habitat Conservation Plan (SAR HCP), will integrate results with the SAR HCP and ensure that the model assumptions are consistent between the two efforts. Total project costs are shown in the table below.

Consultant	Total Cost
Geoscience	\$980,011
USGS	\$73,200
Balleau Groundwater	\$209,406
ICF	\$43,878
<b>Total</b>	<b>\$1,306,495</b>

# Santa Ana River Integrated Model Cost Sharing Letter Agreement



# Santa Ana River Integrated Model

Develop an Integrated Santa Ana River (SAR) Model to:

- Integrate various hydraulic models along the river
- Predict the SAR flow (groundwater and surface water interaction)
- Provide biological analysis on cumulative long term effects
  - Habitat Conservation Plan Covered Activities and
  - Proposed new projects
- Capability to analyze any future projects not currently in the HCP

# Santa Ana River Integrated Model

- **Lead Agency:**
  - San Bernardino Valley Municipal Water District
- **Consultant Lead:**
  - Geoscience
- **Peer review of modeling:**
  - USGS
  - Balleau Groundwater Inc.
- **Other:**
  - Integration into the Upper SAR Habitat Conservation Plan

	Total Cost	Cost per Agency
Geoscience	\$980,011	\$245,003
USGS	\$73,200	\$18,300
Balleau Groundwater	\$209,406	\$52,351
ICF	\$43,878	\$10,970
<b>TOTALS</b>	<b>\$1,306,495</b>	<b>\$326,624</b>

# Santa Ana River Integrated Model Schedule

Task	Description	2017						2018								
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
1	Model Integration															
2	Flow Model Calibration															
3	Develop and Run Predictive Scenarios															
4	Prepare Draft and Final Report															
5	Project Management, Peer Review and Meetings															
6	Database Development															

# Santa Ana River Integrated Model Cost Sharing Letter Agreement

- Total local cost share requirement
  - Total cost of project: \$1.3M
  - Study cost to be shared equally by participants:
    - Inland Empire Utilities Agency
    - Orange County Water District
    - San Bernardino Valley Municipal Water District
    - Western Municipal Water District
  - IEUA share: \$326,700



## Recommendation

- Approve the Upper Santa Ana River Integrated Model Cost Sharing Letter Agreement for the not-to-exceed amount of \$326,700; and
- Authorize the General Manager to execute the letter agreement, subject to non-substantive changes.

The Santa Ana River Integrated Cost Sharing Agreement is consistent with **Agency's Business Goal of Increasing Water Reliability** by promoting water use efficiency and education to enhance water supplies within the region; and meeting the region's need to develop reliable and diverse local water resources in order to reduce dependence on imported water supplies.

Joe Grindstaff  
Inland Empire Utility Agency  
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Mike Markus  
Orange County Water District  
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Fountain Valley, CA 92728-8300

Doug Headrick  
San Bernardino Valley Municipal Water District  
380 East Vanderbilt Way  
San Bernardino, CA 92408

John V. Rossi  
Western Municipal Water District  
14205 Meridian Parkway  
Riverside, CA 92518

**Re: Cost Sharing Letter Agreement for an Upper Santa Ana River Integrated Model**

The Inland Empire Utilities Agency (IEUA), Orange County Water District (OCWD) San Bernardino Valley Municipal Water District (Valley District) and Western Municipal Water District (Western), or Funding Agencies, have agreed to develop an Upper Santa Ana River Integrated Model (Integrated Model). The Funding Agencies have agreed to equally cost-share in the development of the Integrated Model. Other agencies that are interested in this project are Riverside Public Utilities (RPU), the Chino Basin Watermaster (CBWM), the U.S. Geological Survey (USGS), the California Department of Fish and Wildlife (CDFW), and the U.S. Fish and Wildlife Service (USFWS).

This Cost Sharing Letter Agreement ("Agreement") sets forth the understanding between the Funding Agencies regarding the sharing of costs for the Integrated Model. The Funding Agencies hereby agree to equally share the cost of the Integrated Model according to the provisions set forth below.

**1. Scope of the Project - Professional Services for Model Development and Review**

**(a) Geoscience Support Services (Geoscience)**

Geoscience will serve as the lead consultant tasked with development of the Integrated Model, which will integrate the existing models in the upper SAR watershed. The final product will be a calibrated surface water and groundwater flow

model that can be used as a regional management tool. The total fee for Geoscience shall not exceed \$980,011.

(b) United States Geological Survey (USGS)

The USGS will provide technical input on the development of the Integrated Model. The technical support will include response to inquiries by consultant(s) and other interested parties, attendance of model development meetings, and review of the technical memoranda(s) and final report. The total fee for USGS shall not exceed \$73,200.

(c) Balleau Groundwater (BGW)

BGW will provide third-party review for key phases of model development and for the final Integrated Model. Third-party review increases transparency and stakeholder confidence in the final product. The total fee for BGW shall not exceed \$209,406.

(d) ICF Jones & Stokes (ICF)

ICF will integrate the results of the new modeling into the Upper Santa Ana River Habitat Conservation Plan (HCP). ICF will ensure that the HCP Covered Activities<sup>1</sup> are accurately accounted for and are consistent with ICF's knowledge of how the Covered Activities may alter hydrology. ICF will also incorporate the new modeling work into the HCP documents as the best available data. The total fee for ICF shall not exceed \$43,878.

## 2. Cost Sharing

(a) Cost of Project

Valley District has entered into agreements with the entities listed in the Scope of Project section above for the amounts indicated.

(b) Cost Sharing Between the Undersigned Parties

The Funding Agencies shall each be responsible for reimbursement to Valley District in an amount not to exceed twenty-five percent (25%) of the agreement amounts which shall not exceed \$326,623.75 (Table 1).

(i) The Funding Agencies shall be responsible for payment of an equal share of the amount due and owing to be billed quarterly. None of the Funding Agencies shall be responsible for payment of any amounts in excess of its share as set forth herein, without the prior written consent of the Funding Agency being requested to pay such additional amount.

(ii) Valley District shall provide a copy of each invoice to each Funding Agency along with the calculation of the share due and owing by each Funding Agency.

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<sup>1</sup> HCP Covered Activities are the individual projects proposed by each funding agency that will be permitted for incidental take of state and/or federally listed species through the Upper Santa Ana River Habitat Conservation Plan.

Within thirty (30) days of the date of each invoice, each Funding Agency shall submit payment to Valley District for its share as set forth in this Agreement.

(c) Section 6 Grant Proposal

On February 7, 2017, the Valley District submitted a proposal to the California Department of Fish and Wildlife (CDFW), on behalf of the Funding Agencies, requesting \$1,425,000 of Section 6 Planning Grant funds from the USFWS to help fund this project. The grant requires a 31% local matching funds. Table 1 below shows the cost share breakdown with and without the Funding Agencies being awarded the grant.

Consultants	Section 6 Grant Proposal	Actual Costs	Grant Share (69%)	Local Share (31%)	Without Grant Funding (25% each)	With Grant Funding (25% each)
Geoscience	\$ 1,000,000	\$ 980,011	\$ 676,208	\$ 303,803	\$ 245,003	\$ 75,951
USGS	\$ 100,000	\$ 73,200	\$ 50,508	\$ 22,692	\$ 18,300	\$ 5,673
BGW	\$ 250,000	\$ 209,406	\$ 144,490	\$ 64,916	\$ 52,352	\$ 16,229
ICF	\$ 75,000	\$ 43,878	\$ 30,276	\$ 13,602	\$ 10,970	\$ 3,401
<b>TOTALS</b>	<b>\$ 1,425,000</b>	<b>\$ 1,306,495</b>	<b>\$ 901,482</b>	<b>\$ 405,013</b>	<b>\$ 326,624</b>	<b>\$ 101,253</b>

3. Effective Date and Term

This Agreement shall be effective on the date of full execution of this Agreement by all of the Funding Agencies (“Effective Date”). The term of this Agreement shall be from the Effective Date to the date of completion of performance of the Scope.

4. General Provisions

(a) Indemnification

Each Party (“Indemnitors”) hereby agrees to defend, indemnify and hold free and harmless the other Parties (“Indemnitees”) from and against any and all liability, expense, including defense costs and legal fees, and claims for damages of any nature whatsoever, arising from or connected with Indemnitors’ activities under this Agreement

(b) Notices

Correspondence to be given to any Party may be sent by first-class mail, addressed and delivered as set forth below in the signature blocks for each Party.

(c) Representation of Authority

Each Party represents to the other that it has the authority to enter into this Agreement and that the individual signing this Agreement on behalf of their respective Parties has the authority to execute this Agreement and to bind their respective Parties to the terms and conditions of this Agreement.

(d) Counterparts

This Agreement may be executed in several counterparts, all or any of which shall be

regarded for all purposes as one original and shall constitute and be but one and the same instrument.

(e) Governing Law

This Agreement shall be governed by and construed in accordance with the laws of the State of California.

(f) Cooperation

The Parties acknowledge that they are entering into an Agreement in which the cooperation of all Parties will be required, including the execution of necessary further documents. The Parties agree to cooperate in good faith with each other and submit timely documents for the benefit of the SAR Integrated Model.

BY SIGNING BELOW, THE PARTIES AGREE TO BE BOUND BY THE PROVISIONS OF THIS AGREEMENT.

ORANGE COUNTY WATER DISTRICT

By: \_\_\_\_\_  
Michael Markus, General Manager

Dated: \_\_\_\_\_

P.O. BOX 8300  
FOUNTAIN VALLEY, CA 92728-8300

INLAND EMPIRE UTILITY AGENCY

By: \_\_\_\_\_  
Joseph Grindstaff, General Manager

Dated: \_\_\_\_\_

P.O Box 9020  
Chino Hills, CA 91709

**SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT**

**By:** \_\_\_\_\_  
Douglas Headrick, General Manager

**Dated:** \_\_\_\_\_

**380 East Vanderbilt Way  
San Bernardino, CA 92408**



WESTERN MUNICIPAL WATER DISTRICT

By: \_\_\_\_\_  
John V. Rossi, General Manager

Dated: \_\_\_\_\_

14205 Meridian Parkway  
Riverside, CA 92518

**ACTION  
ITEM  
1D**



**Date:** August 16, 2017

**To:** The Honorable Board of Directors

**From:** P. Joseph Grindstaff, General Manager

**Committee:** Engineering, Operations & Water Resources Committee

08/09/17

**Executive Contact:** Chris Berch, Executive Manager of Engineering/AGM

**Subject:** Declez Monitoring Well Construction Contract Award

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**Executive Summary:**

The Declez Monitoring Well Project will construct a groundwater monitoring well down gradient of the Declez Basin for compliance with the Regional Water Quality Control Board Order No. R8-2007-0039 for the groundwater recharge of recycled water. The new monitoring well will be installed within the right-of-way of Riverside County Flood Control District in Jurupa Valley, California.

On June 21, 2017, IEUA posted an invitation for bids through PlanetBids. On July 11, 2017, IEUA received four bids from drilling companies. Yellow Jacket Drilling was determined the lowest responsive and responsible bidder in the amount of \$243,239.

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**Staff's Recommendation:**

1. Award a construction contract for the Declez Monitoring Well, Project No. EN17067, to Yellow Jacket Drilling, in the amount of \$243,239; and
2. Authorize the General Manager to execute the construction contract.

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**Budget Impact:** N    *Budgeted (Y/N):* Y    *Amendment (Y/N):* N    *Requested Amount:* \$ 243,239

**Account/Project Name:**

Declez Monitoring Well Project

**Fiscal Impact** (explain if not budgeted):

N/A

**Prior Board Action:**

None

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**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 6 as defined in Section 15306 of the State CEQA Guidelines.

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**Business Goal:**

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

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**Attachments:**

Attachment 1 - Background

Attachment 2 - PowerPoint

Attachment 3 - Construction Contract



## Background

**Subject: Declez Monitoring Well Construction Contract Award**

The Declez Monitoring Well Project will construct a groundwater monitoring well down gradient of the Declez Basin for compliance with the Regional Water Quality Control Board Order for the groundwater recharge of recycled water. The new monitoring well will be installed within the right-of-way of Riverside County Flood Control District in Jurupa Valley, California. The well will be sited along a channel in an industrial area, will be flush with the ground, and constructed at a depth of 365-feet. Thomas Harder and Company prepared the construction plans and will provide full inspection during construction to ensure compliance with the design.

On June 21, 2017, IEUA posted an invitation for bids to drilling contractors in PlanetBids. On June 28, 2017, five contractors participated in the job walk. On July 11, 2017, the following bids were received:

Bidder's Name	Total Price
Yellow Jacket Drilling	\$ 243,239
Cascade Drilling	\$ 254,930
Bakersfield Well & Pump	\$ 271,327
Layne Christensen Company	\$ 321,646
<b>Engineer's Estimate</b>	<b>\$250,000</b>

Yellow Jacket Drilling was the lowest responsive and responsible bidder with a bid price of \$243,239. Yellow Jacket has performed similar projects with other utilities and cities with good workmanship and responsiveness.

The following table is the anticipated project cost:

Description	Estimated Cost
<b>Design Services</b>	<b>\$ 66,720</b>
Design Contract (actual cost)	\$ 46,720
IEUA Design Services	\$ 20,000
<b>Construction Services</b>	<b>\$ 38,041</b>
Design Consultant Construction Services	\$ 30,000
IEUA Construction Services	\$ 8,041
<b>Construction</b>	<b>\$ 255,239</b>
Construction Contract	\$ 243,239
Contingency (~5%)	\$ 12,000
<b>Total Project Cost:</b>	<b>\$360,000</b>
<b>Total Project Budget:</b>	<b>\$360,000</b>

The following is the project schedule:

<b>Project Milestone</b>	<b>Date</b>
Construction Contract Award	August 2017
Construction Completion	December 2017

**Fiscal Impact:**

If approved, the construction contract for the Declez Monitoring Well, Project No. EN17067, in the amount of \$243,239, will be within the total project budget of \$360,000 in the Recycled Water (WC) Fund.

# Declez Monitoring Well Construction Contract Award Project No. EN17067



# Project Location





# Project Background

- Continue to comply with regulatory requirements of recharging recycled water:
  - Santa Ana Regional Water Quality Control Board
  - State Department of Public Health



Past Construction of a Monitoring Well for San Sevaine Basin

# Project Scope

- Construct additional Monitoring Well
  - Downgradient of the Declez Groundwater Recharge Basin



Declez Monitoring Well Project Location

# Contractor Selection

- Four bids received on July 11, 2017:

## Proposals Received

Bidder's Name	Total
Yellow Jacket Drilling	\$243,239
Cascade Drilling	\$254,930
Bakersfield Well and Pump	\$271,327
Layne Christensen Company	\$321,646
Engineer's Estimate	\$250,000

# Project Budget and Schedule

Description	Estimated Cost	Project Milestone	Date
<b>Design Services</b>	<b>\$ 66,720</b>	<b>Construction Contract Award</b>	<b>August 2017</b>
Design Contract (actual cost)	\$ 46,720	<b>Construction Completion</b>	<b>December 2017</b>
IEUA Design Services	\$ 20,000		
<b>Construction Services</b>	<b>\$ 38,041</b>		
Design Consultant Construction Services	\$ 30,000		
IEUA Construction Services	\$ 8,041		
<b>Construction</b>	<b>\$ 255,239</b>		
Construction Contract	\$ 243,239		
Contingency (5%)	\$ 12,000		
<b>Total Project Cost</b>	<b>\$ 360,000</b>		
<b>Total Project Budget</b>	<b>\$ 360,000</b>		

## Recommendation

- Award a construction contract for the Declez Monitoring Well, Project No. EN17067, to Yellow Jacket Drilling, in the amount of \$243,239; and
- Authorize the General Manager to execute the construction contract.

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

**CONTRACT FOR EN17067 DECLEZ MONITORING WELL**

THIS CONTRACT, made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between Yellow Jacket Drilling, hereinafter referred to as "Contractor," and The Inland Empire Utilities Agency, a Municipal Water District, located in San Bernardino County, California, hereinafter referred to as "Agency".

**WITNESSETH:**

That for and in consideration of the promises and agreements hereinafter made and exchanged, the Agency and the Contractor agree as follows:

1. Contractor agrees to perform and complete in a workmanlike manner, all work required under the bidding schedule of said Agency's specifications entitled **SPECIFICATIONS FOR Declez Monitoring Well Project No.17067** in accordance with the specifications and drawings, and to furnish at their own expense, all labor, materials, equipment, tools, and services necessary, except such materials, equipment, and services as may be stipulated in said specifications to be furnished by said Agency, and to do everything required by this Contract and the said specifications and drawings.
2. For furnishing all said labor, materials, equipment, tools, and services, furnishing and removing all plant, temporary structures, tools and equipment, and doing everything required by this Contract and said specifications and drawings; also for all loss and damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen difficulties which may arise during the prosecution of the work until its acceptance by said Agency, and for all risks of every description connected with the work; also for all expenses resulting from the suspension or discontinuance of work, except as in the said specifications are expressly stipulated to be borne by said Agency; and for completing the work in accordance with the requirements of said specifications and drawings, said Agency will pay and said Contractor shall receive, in full compensation therefore, the price(s) set forth in this Contract.
3. That the Agency will pay the Contractor progress payments and the final payment, in accordance with the provisions of the contract documents, with warrants drawn on the appropriate fund or funds as required, at the prices bid in the Bidding and Contract Requirements, Section C - Bid Forms and accepted by the Agency, and set forth in this below.

Total Bid Price \$ 243,239.00 Dollars

Total Bid Price \$ Two Hundred Forty-three Thousand Thirty-nine Dollars  
and Zero Cents.

If this is not a lump sum bid and the contract price is dependent upon the quantities constructed, the Agency will pay and said Contractor shall receive, in full compensation for the work the prices named in the Bidding and Contract Requirements, Section C – Bid Forms.

4. The Agency hereby employs the Contractor to perform the work according to the terms of this Contract for the above-mentioned price(s), and agrees to pay the same at the time, in the manner, and upon the conditions stipulated in the said specifications; and the said parties for themselves, their heirs, executors, administrators, successors, and assigns, do hereby agree to the full performance of the covenants herein contained.
5. The Notice Inviting Bids, Instructions to Bidders, Bid Forms, Information Required of Bidder, Performance Bond, Payment Bond, Contractors License Declaration, Specifications, Drawings, all General Conditions and all Special Conditions, and all addenda issued by the Agency with respect to the foregoing prior to the opening of bids, are hereby incorporated in and made part of this Contract, as if fully set forth.
6. The Contractor agrees to commence work under this Contract on or before the date to be specified in a written "Notice To Proceed" and to complete said work to the satisfaction of the Agency seventy seven (77) calendar days after award of the Contract. All work shall be completed before final payment is made.
7. Time is of the essence on this Contract.
8. Contractor agrees that in case the work is not completed before or upon the expiration of the contract time, damage will be sustained by the Agency, and that it is and will be impracticable to determine the actual damage which the Agency will sustain in the event and by reason of such delay, and it is therefore agreed that the Contractor shall pay to the Agency the amount of two thousand two-hundred eighty (\$2,280) dollars for each day of delay, which shall be the period between the expiration of the contract time and the date of final acceptance by the Agency, as liquidated damages and not as a penalty. It is further agreed that the amount stipulated for liquidated damages per day of delay is a reasonable estimate of the damages that would be sustained by the Agency, and the Contractor agrees to pay such liquidated damages as herein provided. In case the liquidated damages are not paid, the Contractor agrees that the Agency may deduct the amount thereof from any money due or that may become due to the Contractor by progress payments or

otherwise under the Contract, or if said amount is not sufficient, recover the total amount.

In addition to the liquidated damages, which may be imposed if the Contractor fails to complete the work within the time agreed upon, the Agency may also deduct from any sums due or to become due the Contractor, liquidated damages in accordance with the Bidding and Contract Requirements, Section B - Instruction to Bidders, Part 5.0 "Liquidated Damages", for any violation of the General Conditions, Section D - Contractor's Responsibilities, Part 8, "Law and Regulations"; Bidding and Contract Requirements Contract Section D -Contract and Relevant Documents, Part 1.0, Paragraphs 9 through 11; General Conditions , Section D - Contractor's Responsibilities, Part 4.0, "Labor, Materials and Equipment"; General Conditions Section D - Contractor's Responsibilities, Part 12.0, "Safety and Protection" or General Conditions Section H - Legal Responsibilities, Part 8.0, "Disturbance of the Peace".

9. That the Contractor will pay, and will require subcontractors to pay, employees on the work a salary or wage at least equal to the prevailing salary or wage established for such work as set forth in the wage determinations and wage standards applicable to this work, contained in or referenced in the contract documents.
10. That, in accordance with Section 1775 of the California Labor Code, Contractor shall forfeit to the Agency, as a penalty, not more than Fifty (\$50.00) Dollars for each day, or portion thereof, for each worker paid, either by the Contractor or any subcontractor, less than the prevailing rates as determined by the Director of the California Department of Industrial Relations for the work.
11. That, except as provided in Section 1815 of the California Labor Code, in the performance of the work not more than eight (8) hours shall constitute a day's work, and not more than forty (40) hours shall constitute a week's work; that the Contractor shall not require more than eight (8) hours of labor in a day nor more than forty hours of labor in a week from any person employed by the Contractor or any subcontractor; that the Contractor shall conform to Division 2, Part 7, Chapter 1, Article 3 (Section 1810, et seq.) of the California Labor Code; and that the Contractor shall forfeit to the Agency, as a penalty, the sum of Twenty-Five (\$25.00) Dollars for each worker employed in the execution of the work by Contractor or any subcontractor for each day during which any worker is required or permitted to labor more than eight (8) hours in violation of said Article 3.
12. That the Contractor shall carry Workers' Compensation Insurance and require all subcontractors to carry Workers' Compensation Insurance as required by the California Labor Code.



13. That the Contractor shall have furnished, prior to execution of the Contract, two bonds approved by the Agency, one in the amount of one hundred (100) percent of the contract price, to guarantee the faithful performance of the work, and one in the amount of one hundred (100) percent of the contract price to guarantee payment of all claims for labor and materials furnished.
14. The Contractor hereby agrees to protect, defend, indemnify and hold the Agency and its employees, agents, officers, directors, servants and volunteers free and harmless from any and all liability, claims, judgments, costs and demands, including demands arising from injuries or death of persons (including employees of the Agency and the Contractor) and damage to property, arising directly or indirectly out of the obligation herein undertaken or out of the operations conducted by the Contractor, its employees agents, representatives or subcontractors under or in connection with this Contract.

The Contractor further agrees to investigate, handle, respond to, provide defense for and defend any such claims, demands or suit at the sole expense of the Contractor.

IN WITNESS WHEREOF, The Contractor and the General Manager of Inland Empire Utilities Agency\*, thereunto duly authorized, have caused the names of said parties to be affixed hereto, each in duplicate, the day and year first above written.

Inland Empire Utilities Agency,\*  
San Bernardino County, California.

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

Contractor  
Yellow Jacket Drilling  
By \_\_\_\_\_ John Truax  
Title: General Manager

\*Municipal Water District

**ACTION  
ITEM  
1E**



Date: August 16, 2017

To: The Honorable Board of Directors

From: P. Joseph Grindstaff, General Manager

Committee: Engineering, Operations & Water Resources Committee

08/09/17

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

Subject: Contract Award for Process Painting

**Executive Summary:**

On June 21, 2017, a competitive Request for Proposal (RFP IFB-SM-17-0028) to provide industrial coatings to necessary pipes, equipment, and tanks throughout the Regional Water Recycling Plant No. 5 (RP-5) was issued to 29 prospective contractors through the PlanetBids Network. Out of ten potential contractors who participated in the mandatory job-walk, only four submitted proposals. The most comprehensive proposal and determined to be the best value for the Agency was submitted by Tony Painting. Tony Painting had the most responsive proposal and will provide the best value to the Agency, as reflected through their understanding of the scope of work and their experience. The RP-5 Process Painting Services Contract Number 4600002387 to Tony Painting will be for a not-to-exceed amount of \$293,000. The apparent lowest proposal did not meet the RFP requirements. The Agency requested additional information and the contractor's response contradicted their original proposal.

**Staff's Recommendation:**

1. Award a service contract for the RP-5 Process Painting, Project No. PA16002, PA17002, and PA18002, to Tony Painting, in the amount of \$293,000; and
2. Authorize the General Manager to execute the service contract.

**Budget Impact:** Y    *Budgeted (Y/N):* Y    *Amendment (Y/N):* N    *Requested Amount:* \$ 293,000

**Account/Project Name:**

PA16002 Agency Wide Coatings & Paintings, PA17002 Agency Wide Coatings & Paintings, and PA18002 Agency Wide Coatings & Paintings.

**Fiscal Impact (explain if not budgeted):**

**Prior Board Action:**

June 21, 2017 - Adoption of the Agency's Biennial Budget for FYs 2017/18 and 2018/19, and FYs 2018-2027 Ten Year Capital Improvement Plan

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**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 of the State CEQA Guidelines.

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**Business Goal:**

Asset Management - IEUA 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.

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**Attachments:**

Attachment 1 - Service Contract No. 4600002387

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**CONTRACT NUMBER: 4600002387**

**FOR CONTRACTOR SERVICES**

**RP5 Painting**

THIS CONTRACT (the "Contract"), is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 2017, 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" or "IEUA"), and Tony Painting Inc., located in Garden Grove, CA (hereinafter referred to as "Contractor"), for RP5 Painting Project.

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

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

Project Manager: Lucia Diaz

Address: 6075 Kimball Ave  
CHINO, CA 92880)

Telephone: (909) 993-1631  
Facsimile: (909) 993-1987  
Email: ldiaz@ieua.org

2. **CONTRACTOR ASSIGNMENT:** Special inquiries related to this Contract and the effects of this Contract shall be referred to the following:

Contractor: Tony Painting Inc.

Address: 7291 Garden Grove Blvd Suite A.  
Garden Grove, CA 92841

Telephone: (714) 899-5303  
Facsimile: (714) 899-5305  
Email: tonyspaintingsb@yahoo.com

3. **ORDER OF PRECEDENCE:** The documents referenced below represent the Contract Documents. Where any conflicts exist between the General Terms and Conditions the governing order of precedence shall be as follows:

1. Amendments to Contract Number 4600002387
2. Contract Number 4600002387 General Terms and Conditions.
3. Agency Invitation for Bid IFB-SM-17-028
4. Contractor's Bid dated July 14, 2017, Exhibit A

4. **SCOPE OF WORK AND SERVICES:** Contractor services and responsibilities shall include and be in accordance with the following:

A. The Scope of Work and Technical Specifications in accordance with Exhibit A.

B. Contractor shall provide Agency with a Schedule of Work and Services, documenting the anticipated completion of the work within the time-frame set forth in Subsection 4.A., above. The Schedule of Work and Services will be prepared and submitted, to the Project Manager, for review and approval.

C. Method of Inspection:

1. Work performed under this Contract may be required to undergo inspections.
2. The Project Manager will be responsible for performance of the inspections.
3. If Contractor fails an inspection, the Project Manager will be responsible for providing a written notice to the Contractor explaining the error and a determination of the urgency for the correction of the error (herein referred to as a "Cure Notice").

D. Cure Procedure:

1. For a Cure Notice deemed by the Agency to be **urgent**, Contractor shall correct any error of the Work within 3 calendar days after Contractor's receipt of a Cure Notice, as directed by the Project Manager.
2. For a Cure Notice deemed by the Agency to be **important**, Contractor shall correct any error of the Work within 10 calendar days after Contractor's receipt of a Cure Notice, as directed by the Project Manager.
3. If the Project Manager rejects all, or any part of, the Work as unacceptable and agreement to correct such Work cannot be reached without modification to the Contract, Contractor shall notify

the Project Manager, in writing, detailing the dispute and the reason(s) for the Contractor's position. Any dispute that cannot be resolved between the Project Manager and Contractor shall be resolved in accordance with the provisions of this Contract.

- E. The Agency may, at any time, make changes to this Contract's Scope of Work; including additions, reductions, and other alterations to any or all of the Work. However, such changes shall only be made via written amendment to this Contract. The Contract compensation and Schedule of Work and Services shall be equitably adjusted, if required, to account for such changes and shall be set forth within the mutually approved Contract Amendment.
5. **TERM:** The term of this Contract shall extend from date of Notice to Proceed, and terminate 10/31/2017 or until services are complete, whichever occurs first, unless agreed upon by both parties, reduced to writing, and amended to this Contract.
6. **PAYMENT, INVOICING, AND COMPENSATION:**
- A. The Contractor may submit an invoice not more than once per month during the term of this Contract to the Agency's Accounts Payable Department. Agency shall pay Contractor's properly executed invoice, approved by the Project Manager, within thirty (30) days following receipt of the invoice.
- B. As compensation for the Work performed under this Contract, Agency shall pay Contractor's monthly invoice, for a total contract price NOT-TO-EXCEED \$293,000.00 for all services satisfactorily provided during the term of this Contract.
- C. Additionally, to qualify for payment, the Contractor shall prominently display, on the first page of the invoice, both:
1. The Contract Number – 4600002387, and;
  2. The Contract Release Purchase Order Number – 4500028047

If Contractor submits invoice by email, such invoice shall be submitted as follows:

[APGroup@ieua.org](mailto:APGroup@ieua.org)

Scan the invoice as a PDF file.

Attach the scanned file to an email.

If Contractor submits invoice by mail, such invoice shall be submitted as follows:

Inland Empire Utilities Agency  
Re: Contract Number: 4600002367  
P.O. Box 9020  
Chino Hills, CA 91709

- D. Concurrent with the submittal of the original invoice to the Agency's Accounts Payable Department, the Contractor shall forward (mail, fax, or email) a copy of the invoice to the designated Project Manager, identified in Section 1, on Page 1 of this Contract.
  - E. **No Additional Compensation:** Nothing set forth in this Contract shall be interpreted to require payment by Agency to Contractor of any compensation specifically for the assignments and assurances required by the Contract, other than the payment of expenses as may be actually incurred by Contractor in complying with this Contract, as approved by the Project Manager.
  - F. Contractor may request taking advantage of the Agency's practice of offering an expedited payment protocol to a Contractor who has proposed accepting an invoice amount reduction in exchange for early payment; (CONTRACTOR) has proposed, and the Agency has accepted, applying a (1%, 2%, or 5%) discount (invoice amount reduction) to monthly invoices in exchange for payment of all invoices within (20, 15, or 10) days, respectively, of the date the invoice is received at the Agency's [APGroup@ieua.org](mailto:APGroup@ieua.org) email address.
7. **CONTROL OF THE WORK:** The Contractor shall perform the Work in compliance with the Schedule of Work and Services. If performance of the Work falls behind schedule, the Contractor shall accelerate the performance of the Work to comply with the Schedule of Work and Services as directed by the Project Manager. If the nature of the Work is such that Contractor is unable to accelerate the Work, Contractor shall promptly notify the Project Manager of the delay, the causes of the delay, and submit a proposed revised Schedule of Work and Services.
8. **INSURANCE:** During the term of this Contract, the Contractor shall maintain, at Contractor's sole expense, the following insurance.
- A. **Minimum Scope of Insurance:** Coverage shall be at least as broad as:
    - 1. **Commercial General Liability ("CGL"):** Insurance Services Office ("ISO") Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than \$1,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to



this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

2. **Automobile Liability:** ISO Form Number CA 00 01 covering any auto (Code 1), or if Contractor has no owned autos, covering hired, (Code 8) and non-owned autos (Code 9), with limit no less than \$1,000,000 per accident for bodily injury and property damage.
  3. **Workers' Compensation and Employers Liability:** Workers' compensation limits as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease.
  4. **Payment Bond and Performance Bond:** If Applicable, Shall be in a sum equal to the contract price. If the Performance Bond provides for a one-year warranty a separate Maintenance Bond is not necessary. Bonds shall be duly executed by a responsible corporate surety, authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California.
- B. **Deductibles and Self-Insured Retention:** Any deductibles or self-insured retention must be declared to and approved by the Agency. At the option of the Agency, either: the insurer shall reduce or eliminate such deductibles or self-insured retention as respects the Agency, its officers, officials, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.
- C. **Other Insurance Provisions:** The insurance policies are to contain, or be endorsed to contain, the following provisions:
1. **Commercial General Liability and Automobile Liability Coverage**
    - a. **Additional Insured Status:** The Agency, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts or equipment supplied in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance (at least as broad as ISO Form CG 20 10 11 85; or **by either** CG 20 10, CG 20 26, CG 20 33, or CG 20 38 **and** CG 20 37 forms if later revisions are used).
    - b. **Primary Coverage:** The Contractor's insurance coverage shall be primary insurance coverage at least as broad as ISO CG

20 01 04 13 as respects the Agency, its officer, officials, employees and volunteers. Any insurance or self-insurance maintained by the Agency, its officers, officials, employees, volunteers, property owners or engineers under contract with the Agency shall be excess of the Contractor's insurance and shall not contribute with it.

- c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Agency, its officers, officials, employees or volunteers.
- d. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
- e. The Contractor may satisfy the limit requirements in a single policy or multiple policies. Any additional policies written as excess insurance shall not provide any less coverage than that provided by the first or primary policy.

2. **Workers' Compensation and Employers Liability Coverage**

Contractor hereby grants to Agency a waiver of any right to subrogation which any insurer of the Contractor may acquire against the Agency by virtue of the payment of any loss under such insurance. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the Agency has received a waiver of subrogation endorsement from the insurer.

3. **All Coverages**

Each insurance policy required by this Contract shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, or reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the Agency pursuant to Section 14, page 12 of this Contract.

- D. Acceptability of Insurers: Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A minus:VII, and who are admitted insurers in the State of California.
- E. Verification of Coverage: Contractor shall provide the Agency with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the Agency before work

commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them. The Agency reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

- F. Submittal of Certificates: Contractor shall submit all required certificates and endorsements to the following:

Inland Empire Utilities Agency  
Attn: Angela Witte  
P.O. Box 9020  
Chino Hills, CA 91709

9. FITNESS FOR DUTY:

- A. Fitness: Contractor and its Subcontractor personnel on the Jobsite:

1. Shall report to work in a manner fit to do their job;
2. Shall not be under the influence of or in possession of any alcoholic beverages or of any controlled substance (except a controlled substance as prescribed by a physician so long as the performance or safety of the Work is not affected thereby); and
3. Shall not have been convicted of any serious criminal offense which, by its nature, may have a discernible adverse impact on the business or reputation of the Agency.

- B. Compliance: Contractor shall advise all personnel and associated third parties of the requirements of this Contract ("Fitness for Duty Requirements") before they enter on the Jobsite and shall immediately remove from the Jobsite any employee determined to be in violation of these requirements. Contractor shall impose these requirements on its Subcontractors. Agency may cancel the Contract if Contractor violates these Fitness for Duty Requirements.

10. LEGAL RELATIONS AND RESPONSIBILITIES:

- A. Professional Responsibility: The Contractor shall be responsible, to the level of competency presently maintained by other practicing professionals performing the same or similar type of work.
- B. Status of Contractor: The Contractor is retained as an independent Contractor only, for the sole purpose of providing the services described herein, and is not an employee of the Agency.

- C. Observing Laws and Ordinances: The Contractor shall keep itself fully informed of all existing and future state and federal laws and all county and city ordinances and regulations which in any manner affect the conduct of any services or tasks performed under this Contract, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. The Contractor shall at all times observe and comply with all such existing and future laws, ordinances, regulations, orders and decrees, and shall protect and indemnify, as required herein, the Agency, its officers, employees and agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by the Contractor, its employees, or subcontractors.
- D. Subcontract Services: Any subcontracts for the performance of any services under this Contract shall be subject to the written approval of the Project Manager and shall comply with State of California, Department of Industrial Relations, SB 854 requirements.
- E. Hours of Labor: The Contractor shall comply with all applicable provisions of California Labor Code Sections 1810 to 1815 relating to working hours. The Contractor shall, as a penalty to the Agency, forfeit \$25.00 for each worker employed in the completion of the Contract by the Contractor or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of the Labor Code.
- F. Travel and Subsistence Pay: The Contractor shall make payment to each worker for travel and subsistence payments which are needed to complete the work and/or service, as such travel and subsistence payments are defined in an applicable collective bargaining agreements with the worker.
- G. Liens: Contractor shall pay all sums of money that become due from any labor, services, materials or equipment provided to Contractor on account of said services to be rendered or said materials to be provided under this Contract and that may be secured by any lien against the Agency. Contractor shall fully discharge each such lien at the time performance of the obligation secured matures and becomes due.
- H. Indemnification: Contractor shall indemnify the Agency, its directors, employees, and assigns, and shall defend and hold them harmless from all liabilities, demands, actions, claims, losses and expenses, including reasonable attorneys' fees, which arise out of, or are related to, the negligence, recklessness or willful misconduct of the Contractor, its directors, employees, agents, and assigns, in the performance of work under this contract.

- I. **Conflict of Interest:** No official of the Agency, who is authorized in such capacity and on behalf of the Agency to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving this Contract, or any subcontract relating to services or tasks to be performed pursuant to this Contract, shall become directly or indirectly personally interested in this Contract.
- J. **Equal Opportunity:** During the performance of this Contract, the Contractor shall not unlawfully discriminate against any employee or employment applicant because of race, color, religion, sex, age, marital status, ancestry, physical or mental disability, sexual orientation, veteran status or national origin. The Agency is committed to creating and maintaining an environment free from harassment and discrimination.
- K. **Disputes:**
1. All disputes arising out of or in relation to this Contract shall be resolved in accordance with this section. The Contractor shall pursue the work to completion in accordance with the instruction of the Agency's Project Manager notwithstanding the existence of a dispute. By entering into this Contract, both parties are obligated, and hereby agree, to submit all disputes arising under or relating to the Contract which remain unresolved after the exhaustion of the procedures provided herein, to independent arbitration. Except as otherwise provided herein, arbitration shall be conducted under California Code of Civil Procedure Sections 1280, et seq., or their successor.
  2. Any and all disputes prior to the work starting shall be subject to resolution by the Agency's Project Manager; and the Contractor shall comply, with the Agency Project Manager instructions. If the Contractor is not satisfied with the resolution directed by the Agency Project Manager, they may file a written protest with the Agency Project Manager within seven (7) calendar days after receiving written directive of the Project Manager's decision. Failure by Contractor to file a written protest within seven (7) calendar days shall constitute waiver of protest, and acceptance of the Project Manager's resolution. The Project Manager shall submit the Contractor's written protests to the General Manager, together with a copy of the Project Manager's written decision, for his or her consideration within seven (7) calendar days after receipt of the protest-related documents. The General Manager shall make his or her determination with respect to each protest filed with the Project Manager within ten (10) calendar days after receipt of the protest-related documents. If Contractor is not satisfied with any such resolution by the General Manager, they may file a written request for arbitration with the Project Manager within seven (7) calendar days after receiving written notice of the General Manager's decision.

3. In the event of arbitration, the parties to this contract agree that there shall be a single neutral Arbitrator who shall be selected in the following manner:
  - a. The Demand for Arbitration shall include a list of five names of persons acceptable to the Contractor to be appointed as Arbitrator. The Agency shall determine if any of the names submitted by Contractor are acceptable and, if so, such person will be designated as Arbitrator.
  - b. In the event that none of the names submitted by Contractor are acceptable to Agency, or if for any reason the Arbitrator selected in Step (a) is unable to serve, the Agency shall submit to Contractor a list of five names of persons acceptable to Agency for appointment as Arbitrator. The Contractor shall, in turn, have seven (7) calendar days in which to determine if one such person is acceptable.
  - c. If after Steps (a) and (b), the parties are unable to mutually agree upon a neutral Arbitrator, the matter of selection of an Arbitrator shall be submitted to the San Bernardino County Superior Court pursuant to Code of Civil Procedure Section 1281.6, or its successor. The costs of arbitration, including but not limited to reasonable attorneys' fees, shall be recoverable by the party prevailing in the arbitration. If this arbitration is appealed to a court pursuant to the procedure under California Code of Civil Procedure Section 1294, et seq., or their successor, the costs of arbitration shall also include court costs associated with such appeals, including but not limited to reasonable attorneys' fees which shall be recoverable by the prevailing party.
4. Association in Mediation/Arbitration: The Agency may join the Contractor in mediation or arbitration commenced by a contractor on the Project pursuant to Public Contracts Code Sections 20104 et seq. Such association shall be initiated by written notice from the Agency's representative to the Contractor.
- L. Workers' Legal Status: For performance against this Contract, Contractor shall only utilize employees and/or subcontractors that are authorized to work in the United States pursuant to the Immigration Reform and Control Act of 1986.
- M. Prevailing Wage Requirements: Pursuant to Section 1770 and following, of the California Labor Code, the Contractor shall not pay less than the general prevailing wage rates, as determined by the Director of the State

of California Department of Industrial Relations for the locality in which the work is to be performed and for each craft or type of worker needed to execute the work contemplated under the Contract. The Contractor or any subcontractor performing part of said work shall strictly adhere to all provisions of the Labor Code, including, but not limited to, minimum wages, work days, nondiscrimination, apprentices, maintenance and availability of accurate payroll records and any other matters required under all Federal, State and local laws related to labor.

N. Contractor shall provide with their invoice certified payroll verifying that Contractor has paid prevailing wage requirements as stipulated in SB-854 (<http://www.dir.ca.gov/DIRNews/2014/2014-55.pdf>).

11. OWNERSHIP OF MATERIALS AND DOCUMENTS/CONFIDENTIALITY: The Agency retains ownership of any, and all, partial or complete reports, drawings, plans, notes, computations, lists, and/or other materials, documents, information, or data prepared by the Contractor and/or the Contractor's subcontractor(s) pertaining to this Contract. Said materials and documents are confidential and shall be available to the Agency from the moment of their preparation, and the Contractor shall deliver them to the Agency whenever requested to do so by the Project Manager and/or Agency representative. The Contractor agrees that all documents shall not be made available to any individual or organization, private or public, without the prior written consent of an Agency representative.

12. TITLE AND RISK OF LOSS:

A. Documentation: Title to the Documentation shall pass to the Agency when prepared; however, a copy may be retained by Contractor for its records and internal use. Contractor shall retain such Documentation in a controlled access file, and shall not reveal, display, or disclose the contents of the Documentation to others without the prior written authorization of the Agency or for the performance of Work related to the Scope of Work described in this Contract.

B. Material: Title to all Material, field or research equipment, and laboratory models, procured or fabricated under the Contract shall pass to the Agency when procured or fabricated, and such title shall be free and clear of any and all encumbrances. Contractor shall have risk of loss of any Material or Agency-owned equipment of which it has custody.

C. Disposition: Contractor shall dispose of items to which the Agency has title as directed, in writing, by the Project Manager and/or an Agency representative.

13. PROPRIETARY RIGHTS:

A. Rights and Ownership: Agency's rights to inventions, discoveries, trade secrets, patents, copyrights, and other intellectual property, including the Information and Documentation, and revisions thereto (hereinafter collectively referred to as "Proprietary Rights"), used or developed by Contractor in the performance of the Work, shall be governed by the following provisions:

1. Proprietary Rights conceived, developed, or reduced to practice by Contractor in the performance of the Work shall be the property of Agency, and Contractor shall cooperate with all appropriate requests to assign and transfer same to Agency.
2. If Proprietary Rights conceived, developed, or reduced to practice by Contractor prior to the performance of the Work are used in and become integral with the Work, or are necessary for Agency to have complete control of the Work, Contractor shall grant to Agency a non-exclusive, irrevocable, royalty-free license, as may be required by Agency for the complete control of the Work, including the right to reproduce, correct, repair, replace, maintain, translate, publish, use, modify, copy or dispose of any or all of the Work and grant sublicenses to others with respect to the Work.
3. If the Work includes the Proprietary Rights of others, Contractor shall procure, at no additional cost to Agency, all necessary licenses regarding such Proprietary Rights so as to allow Agency the complete control of the Work, including the right to reproduce, correct, repair, replace, maintain, translate, publish, use, modify, copy, or dispose of any or all of the Work; and to grant sublicenses to others with respect to the Work. All such licenses shall be in writing and shall be irrevocable and royalty-free to Agency.

14. NOTICES: Any notice may be served upon either party by delivering it in person, or by depositing it in a United States Mail deposit box with the postage thereon fully prepaid, and addressed to the party at the address set forth below:

Agency: Warren T. Green  
Manager of Contracts and Procurement  
Inland Empire Utilities Agency  
P.O. Box 9020  
Chino Hills, CA 91709

Contractor: Ante Marijanovic  
Tony Painting  
7291 Garden Grove Blvd  
Garden Grove, CA 92841



Any notice given pursuant to this section shall be deemed effective in the case of personal delivery, upon receipt thereof, or, in the case of mailing, at the moment of deposit in the course of transmission through the United States Postal Service.

15. **SUCCESSORS AND ASSIGNS:** All of the terms, conditions and provisions of this Contract shall take effect to the benefit of and be binding upon the Agency, the Contractor, and their respective successors and assigns. No assignment of the duties or benefits of the Contractor under this Contract may be assigned, transferred, or otherwise disposed of, without the prior written consent of the Agency; and any such purported or attempted assignment, transfer, or disposal without the prior written consent of the Agency shall be null, void, and of no legal effect whatsoever.
16. **PUBLIC RECORDS POLICY:** Information made available to the Agency may be subject to the California Public Records Act (Government Code Section 6250 et seq.) The Agency's use and disclosure of its records are governed by this Act. The Agency shall use its best efforts to notify Contractor of any requests for disclosure of any documents pertaining to this work. In the event of litigation concerning disclosure of information Contractor considers exempt from disclosure; (e.g., Trade Secret, Confidential, or Proprietary) Agency shall act as a stakeholder only, holding the information until otherwise ordered by a court or other legal process. If Agency is required to defend an action arising out of a Public Records Act request for any of the information Contractor has marked "Confidential," "Proprietary," or "Trade Secret," Contractor shall defend and indemnify Agency from all liability, damages, costs, and expenses, in any action or proceeding arising under the Public Records Act.
17. **RIGHT TO AUDIT:** The Agency reserves the right to review and/or audit all Contractor's records related to the Work. The option to review and/or audit may be exercised during the term of the Contract, upon termination, upon completion of the Contract, or at any time thereafter up to twelve (12) months after final payment has been made to the Contractor. The Contractor shall make all records and related documentation available within three (3) working days after said records are requested by the Agency.
18. **INTEGRATION:** The Contract Documents represent the entire Contract made and entered into by and between the Agency and the Contractor as to those matters contained in this contract. No prior oral or written understanding shall be of any force or effect with respect to those matters covered by the Contract Documents. This Contract may not be modified, altered, or amended except by written mutual agreement by the Agency and the Contractor.
19. **GOVERNING LAW:** This Contract is to be governed by and constructed in accordance with the laws of the State of California, in the County of San Bernardino.

- 20. **TERMINATION FOR CONVENIENCE:** The Agency reserves and has the right to immediately suspend, cancel or terminate this Contract at any time upon written notice to the Contractor. In the event of such termination, the Agency shall pay Contractor for all authorized and Contractor-invoiced services up to the date of such termination, as approved by the Project Manager.
- 21. **FORCE MAJEURE:** Neither party shall hold the other responsible for the effects of acts occurring beyond their control; e.g., war, riots, strikes, natural disasters, etcetera.
- 22. **NOTICE TO PROCEED:** No services shall be performed or provided under this Contract unless and until this document has been properly signed by all responsible parties and a notice to proceed has been issued to the Contractor by the Project Manager.
- 23. **AUTHORITY TO EXECUTE CONTRACT:** The Signatories, below, each represent, warrant, and covenant that they have the full authority and right to enter into this Contract on behalf of the separate entities shown below.
- 24. **DELIVERY OF DOCUMENTS:** The Parties to this Contract and the individuals named to facilitate the realization of its intent, with the execution of the Contract, authorize the delivery of documents via facsimile, via email, and via portable document format (PDF) and covenant agreement to be bound by such electronic versions.

The parties hereto have caused the Contract to be entered as of the day and year written above.

**INLAND EMPIRE UTILITIES AGENCY:**  
*\*A MUNICIPAL WATER DISTRICT*

**TONY PAINTING, INC:**

\_\_\_\_\_  
 P. Joesph Grindstaff  
 General Manager

(Date)

  
 Ante Marjanovic  
 President/CEO

7/31/17  
 (Date)

# EXHIBIT A

**SECTION 3 - FORMS  
SUMMARY FEE SCHEDULE "A"**

Each Offeror shall attach their fully completed fee schedule, identifying and including all worker crafts, classifications, as well as any associated administrative (office) fees. All proposed prices shall be stated in terms of a net price to the Agency.

A. **FEE INCLUSION STATEMENT:** Offerors shall fully complete this Fee Schedule and return it with their proposal. All proposed fees will be stated as a Firm Fixed Price (FFP), whereas the FFP Price shall represent the total and final cost to the Agency for providing professional quality services listed. The Firm Fixed Price shall include all proposed costs associated with all labor, equipment, transportation, overhead, profit, insurance, taxes, fees, incidentals, and any/all other related costs necessary to supply the services required.

B. **PROPOSED FEES FOR PAINTING PERSONNEL SERVICES:**

Labor: \$ 175,800 —

Materials: \$ 117,200 —

Total Firm Fixed Price: \$ 293,000 —

Total Firm Fixed Price (in Words): TWO HUNDRED NINETY THREE  
THOUSAND DOLLARS.

(This space intentionally left blank.)

*Jr,*

C. Each Offeror shall indicate the availability and the magnitude of any discount related to expedited payment of any or all invoices.


Expedited Payment Discount, if any (to be considered as part of this proposal):

- 1. i.e., if Net 20, then 0 % discount
- 2. i.e., if Net 15, then 0 % discount
- 3. i.e., if Net 10, then 0 % discount
- 4. i.e., if Net    , then 0 % discount

(This space intentionally left blank.)



D. **PROPOSAL SIGNATURE:** THE UNDERSIGNED AGREES, IF THIS PROPOSAL IS ACCEPTED BY THE AGENCY WITHIN 90 CALENDAR DAYS AFTER THE DATE OF THE PROPOSAL CLOSING, TO SUPPLY SERVICES AS SPECIFIED IN STRICT ACCORDANCE WITH THE REQUEST FOR PROPOSAL SPECIFICATIONS.

 _____ Signature	<u>TONY PAINTING</u> _____ Printed Company Name
<u>ANTE MARJANOVIC</u> _____ Printed Name	<u>7-14-17</u> _____ Date
<u>PRESIDENT-CEO</u> _____ Title	

(This space intentionally left blank.)



7291 Garden Grove Blvd. Ste. A  
Garden Grove, Ca. 92841  
E-mail: tonyspaintingsb@yahoo.com

License # 320164  
Phone: (714) 899-5303  
Fax: (714) 899-5305

July 20, 2017

Inland Empire Utilities Agency

ATTN: Shaneka Morris

**MATERIAL LINE ITEM BREAKDOWN:**

1. Fuel - \$ 2,200.00
2. High Solids Polyurethane Paint – \$ 52,000.00
3. Macropoxy Undercoat Primer - \$32,000.00
4. Rental Equipment - \$ 15,000.00
5. Sand Blast Materials - \$5,000.00
6. Sundries and Thinners - \$3,000.00
7. Regular Paints - \$4,000.00
8. Regular Primers - \$4,000.00

**Total: \$117,200.00**

Respectfully Submitted,

Ante I. Marijanovic  
Tony Painting

**TECHNICAL SPECIFICATIONS  
ATMOSPHERIC SERVICE PAINT REPAIRS  
REGIONAL WATER RECYCLING PLANT NO. 5 (RP5)  
INLAND EMPIRE UTILITIES AGENCY  
MAY 2017**

A handwritten signature in blue ink, consisting of a large, stylized initial 'D' followed by a smaller 'u' and a vertical line.



**TECHNICAL SPECIFICATIONS  
ATMOSPHERIC SERVICE PAINT REPAIRS  
REGIONAL WATER RECYCLING PLANT NO. 5 (RP5)  
INLAND EMPIRE UTILITIES AGENCY**

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**TECHNICAL SPECIFICATIONS  
ATMOSPHERIC SERVICE PAINT REPAIRS  
REGIONAL WATER RECYCLING PLANT NO. 5 (RP5)  
INLAND EMPIRE UTILITIES AGENCY**

**PART 1.0 - GENERAL**

**1.01 PURPOSE**

- A. The purpose of this specification is to establish the requirements for the paint repair of various exterior surfaces located with the Regional Water Recycling Plant No. 5 (RP5) of the Inland Empire Utilities Agency, CA.

**1.02 SCOPE OF WORK**

- A. Provide and pay for all labor, equipment, materials, machinery, facilities, and services necessary to complete the work in accordance with these specifications.
- B. The work includes the surface preparation and application of protective coatings to all specified surfaces of the RP5, including all attachments, appurtenances, and accessories. The work includes all costs for the proper removal and disposal of all waste generated on the project.
- C. The work to be accomplished includes the removal and replacement of the existing paint by abrasive blast cleanings on all valve covers, including above grade, exposed valve cover casings.
- D. The work to be accomplished includes the spot repair and overcoating of various surfaces throughout RP5. RP5 has different painted substrates that include steel, fiberglass, PVC, and ductile iron. The specific items to be painted are detailed in the document "RP5 Facility Wide Painting Project."
- E. The finish coat color of the newly painted items is a specific focus of this project. The finish coat colors shall match the Agency System Color Code, as defined herein.
- F. The work to be accomplished includes the removal and replacement of any stenciling or labels that may be noted on the various items to be painted.



### 1.03 BACKGROUND

- A. The Regional Water Recycling Plant No.5 (RP5) is located at 6063 Kimball Avenue Chino, CA 91708 and has been in operation since 2004. RP5 is divided into eight different zones. Some components within these zones are to be painted. The zones are defined as:
1. Zone 1 - HQ-B Parking Lot, RP5 East Gate Entrance, Power Center 1, Headworks, Bar Rake, Ferric station, Influent Pump Station, Bypass, Grit Removal, Grit Classifier, and Grit Pump Galley.
  2. Zone 2 - Primary Clarifiers, Sludge Pump Gallery, Biofilter Blowers, Splitter Box, and Scum Wet Well.
  3. Zone 3 - Aeration Basin, Biofilter, Power Station 2 (Includes 2 Compressors & 2 Blowers), and Storage Shed.
  4. Zone 4 - Secondary Clarifiers, RAS/WAS Pump Gallery, Chemical Storage & Pumps (SBS, CL2, & Alum), and Cooling Water For The Co-Gen.
  5. Zone 5 - Tertiary Filters, Contact Basin, Dechlor Building, Outfall Pipe Gallery, Power Station 3, Generator Building, and Chemical C Container.
  6. Zone 6 - Emergency Storage Basin, Emergency Storage Basin Discharge Pumps, and Water Canons.
  7. Zone 7 - REEP, Methane Tank, Chiller, Storage Area, and Boneyard.
  8. Zone 8 - Solar Panels and Solar Panel Power Cabinets.
- B. The specific items to be painted are depicted in "RP5 Facility Wide Painting Project." Generally, the items to be painted within the above zones include pumps, piping, piping components, pipe supports, electrical cabinets, bollards, sheds, hydrants, standpipes, filters, blowers, meters, meter covers, underground valve covers, tanks, mixers, hoists, water cannons and the East Clarifier and the West Clarifier.
- C. Generally speaking, the majority of the items to be painted generally have an existing paint system that is lightly chalked with localized spot defects. The conditions that are present range from poor and excellent with the



existing paints in the worst condition being the covers to underground valves.

- D. RP5 has been in operation since 2004. As a result, the paint systems have not been analyzed for heavy metals, and it is anticipated that the existing exterior paint systems have non-detectible to relatively low levels of heavy metals (e.g. lead, cadmium, and/or chromium). The contractor shall conduct his own tests to assure that all work to be performed will be in strict accordance with all local, state and federal health, safety and environmental regulations. The Contractor is responsible to conduct appropriate testing of their own and comply with local, state and federal health, safety and environmental regulations - including waste removal.

#### **1.04 REFERENCE SPECIFICATIONS AND STANDARDS**

- A. Without limiting the general aspects or other requirements of this specification, work and equipment shall conform to applicable requirements of municipal, state and federal codes, laws and ordinances governing the work, SSPC: The Society of Protective Coatings, and the manufacturer's printed instructions, subject to Engineer's approval.
- B. The Engineer's decision shall be final as to interpretation and/or conflict between any of the referenced codes, laws, ordinances, specifications and standards contained herein.
- C. The latest edition of standards and regulations herein form a part of this specification.
- D. American Society for Testing and Materials (ASTM)
  - 1. ASTM D4138, Standard Test Method for Measurement of Dry Paint Thickness of Protective Coating Systems by Destructive Means
  - 2. ASTM D4285, Standard Test Method for Indicating Oil or Water in Compressed Air
  - 3. ASTM D4414, Standard Practice for Measurement of Wet Film Thickness by Notch Gages
  - 4. ASTM D4417, Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
  - 5. ASTM D7091, Standard Test Method for Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals



6. **ASTM E337, Standard Test Method for Measuring Humidity with a Psychrometer**

**E. Code of Federal Regulations (CFR)**

1. **29 CFR 1910, Occupational Safety and Health Regulations for General Industry**
2. **29 CFR 1926, Occupational Safety and Health Regulations for the Construction Industry**
3. **Health and Safety Code, Div. 20, Chapter 6.5, 6.67, 6.7, 6.95, Hazardous Waste Control Law, Health and Safety Code**
4. **40 CFR 263, Standards Applicable to Transporters of Hazardous Waste**
5. **40 CFR 264, Standards for Agencies and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.**
6. **40 CFR 265, Interim Status Standards for Agencies and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.**
7. **40 CFR 268, Land Disposal Restrictions**
8. **40 CFR 302, Designation, Reportable Quantities and Notification**
9. **49 CFR 171-179, Hazardous Materials Regulations**

**F. International Standard Organization (ISO)**

1. **ISO 8502-3, Preparation of Steel Substrates before Application of Paints and Related Products**

**G. SSPC: Society for Protective Coatings (SSPC)**

1. **SSPC-AB1, Mineral and Slag Abrasive**
2. **SSPC-SP 1, Solvent Cleaning**
3. **SSPC-SP 2/3, Hand/Power Tool Cleaning**
4. **SSPC-SP 6, Commercial Blast Cleaning**
5. **SSPC-SP 15, Power Tool Cleaning to Commercial Grade**



**Cleanliness**

6. **Guide 6, Guide for Containing Debris Generated During Paint Removal Operations**
  7. **SSPC-PA 2, Measurement of Dry Film Thickness with Magnetic Gages**
  8. **SSPC-VIS 1, Visual Standard for Abrasive Blast Cleaned Steel**
  9. **SSPC-VIS 3, Visual Standard for Hand and Power Tool Cleaned Steel**
  10. **SSPC Publication No. 91-12, Coating and Lining Inspection Manual**
  11. **SSPC-SSPC Visual Comparison Manual**
- H. **California Code of Regulations (CCR)**
- I. **General Industry Safety Orders (GISO)**
- J. **Construction Safety Orders (CSO)**
- K. **EPA Methods**
1. **SW 846, Test Methods for Evaluating Solid Waste - Physical/Chemical Methods**
  2. **Method 1311, Toxicity Characteristic Leaching Procedure (TCLP)**
  3. **Method 3050, Acid Digestion of Sediment, Sludge, and Soils**
- L. **Equipment and Coating Manufacturers' Published Instructions.**

**1.05 SUBMITTALS**

- A. **The successful Contractor must submit the following plans and programs for Engineer review and acceptance a minimum of 14 days prior to project start-up, and 7 days prior to the Pre-Job Conference.**
1. **The Contractor shall submit Manufacturers' Product Data Sheets and Material Safety Data Sheets on all materials to be used including, but not limited to coatings, thinners, solvents, inhibitors, and abrasive media.**
- B. **Acceptance of the submittal does not relieve the Contractor from the**



responsibility to conduct the work in strict accordance with the requirements of this Specification, or to adequately protect the environment, health and safety of all workers involved in the project including any members of the public who may be affected by the project.

- C. Contractor shall maintain copies of submittal data at the jobsite at all times, and shall furnish a complete set of submittal data for use by the Inspector.

#### **1.06 CONTRACTOR**

- A. The contractor shall be a licensed Painting and Decorating Contractor in the State of California (C-33 Classification). They shall have a minimum of five (5) years practical experience and successful history in the application of specified products to surfaces within industrial facilities. Upon request, they shall substantiate this requirement by furnishing a written list of references.
- B. All coating and surface preparation work shall be performed by skilled personnel demonstrating experience, as listed above. Resumes of personnel shall be submitted to the Agency for approval, if requested. Continuity of personnel shall be maintained throughout the duration of the cleaning and coating work and any changes in key personnel shall be subject to the approval of the Agency.

#### **1.07 DEFINITIONS**

- A. "Paint" refers to protective materials used or applied on exterior surfaces. "Coating" refers to protective materials used or applied on exterior or interior surfaces, or any protective material in general.
- B. "Engineer" refers to the Agency or his designated representative.
- C. "Factory Finished" refers to metal surfaces on storage sheds, corrugated metals, or other surfaces that and do not have a conventional paint system.

#### **1.08 HOURS OF WORK**

- A. Work areas will be available for performance of the contract work between 6:00 A.M. and 4:30 P.M. excluding Saturdays, Sundays and holidays. No work shall be accomplished during hours or on days other than specified above, unless approved in advance by the Agency.
- B. Inspections requested by or made necessary as a result of actions of the Contractor on Saturdays, Sundays or holidays must be scheduled and



requirements set forth by regulatory agencies applicable to the construction industry and manufacturer's printed instructions and appropriate technical bulletins and manuals. The Contractor shall provide and require use of personal protective life saving equipment for all persons working in or about the project site.

- B. **Access Facilities:** all ladders, scaffolding and rigging shall be designed for their intended uses. Ladders and scaffolding shall be erected where requested by Engineer to facilitate inspection and be moved by the Contractor to locations requested by the Engineer.
- C. **Head and Face Protection and Respiratory Devices:** equipment shall include protective helmets, which shall be worn by all persons while in the vicinity of the work. During abrasive blasting operations, nozzle-men shall wear U.S. Bureau of Mines approved air-supplied helmets and all other persons who are exposed to blasting dust shall wear approved filter-type respirators and safety goggles. When coatings are applied in confined areas all persons exposed to toxic vapors shall wear approved respiratory protection.
- D. **Grounding:** blasting, spray and air hoses shall be grounded to prevent accumulation of charges of static electricity.
- G. **Toxicity and Explosiveness:** the solvents used with specified protective coatings are explosive at low concentrations and are highly toxic. The maximum allowable concentration of vapor shall be kept below the maximum safe concentration for eight-hour exposure, plus Lower Explosive Limit must be strictly adhered to. If paints contain lead or other hazardous materials, all regulations related to safety of personnel and handling of such materials shall be strictly adhered to.
- H. **Protective Clothing:** coating and paint materials may be irritating to the skin and eyes. When handling and mixing coatings and paints workmen shall wear appropriate covering gloves and eye shields.
- I. **Fire:** during mixing and application of coatings and paints, all flames, welding and smoking shall be prohibited in the vicinity. Appropriate type fire extinguishers shall be provided by Contractor and kept at the jobsite during all operations.
- J. **Sound Levels:** whenever the occupational noise exposure exceeds the maximum allowable sound levels, the Contractor shall provide and require the use of approved ear protective devices. General sound levels for project shall be those that will not affect routine facility or neighborhood activities. Whenever any levels are objectionable, they shall be adjusted as directed by the Engineer. Adjustments to noise levels required may include the relocation of equipment or the installation of a sound barrier,





as required by the Engineer.

- K. **Compliance with California Code of Regulations:** Contractor shall submit a notarized letter signed by a principal officer of the Corporation certifying the Contractor fully complies with California Code of Regulations pertaining to the work including, but not limited to, the following:

1.	Illness Injury Prevention Program	CSO/GISO	1508/3203
2.	Confined Space Plan	GISO	5156/5159
3.	Respiratory	CSO/GISO	1531/5144
4.	Hazard Communication	GISO	5194
5.	Rolling Scaffolds	CSO	1646
6.	Employee Safety Instruction	CSO	1510
7.	Emergency Medical Service	CSO	5112
8.	Dusts, Fumes, Mists, Vapors & Gases	CSO	1528

- L. **Protective Coverings and Containment:** the Contractor shall provide all protective coverings needed to protect those surfaces that are not designated to be prepared or painted.

#### 1.12 WARRANTY

- A. **Warranty Inspection:** warranty inspection shall be conducted between the eleventh and seventeenth months following acceptance of all painting work. All personnel present at the Pre-Job Conference should be present at this inspection. All defective work shall be repaired in strict accordance with this specification and to the satisfaction of the Engineer.

1. **Notification:** The Agency shall establish the date for the inspection and shall notify the Contractor at least 30 days in advance.
2. **Inspection:** all surfaces of the coating systems shall be visually inspected. All defective coatings, as well as damage or rusting spots, shall be satisfactorily repaired by and at the sole expense of the Contractor. Defective coating shall be any of those defined by SSPC's Visual Comparison Manual.
3. **Inspection Report:** the Engineer shall prepare and deliver to the Contractor an inspection report covering the warranty inspection. The report shall set forth the number and type of failures observed, the percentage of the surface area where failure has occurred, and the names of the persons making the inspection.
4. **Schedule:** upon completion of the inspection and receipt of Inspection Report as noted herein, Agency shall establish a date for Contractor to proceed with remedial work, if work is required. Any

delay on part of the Contractor to meet schedule established by Agency shall constitute breach of this Contract and Agency may proceed to have defects remedied through other means, and these costs may be charged to the Contractor.

5. Remedial Work: any location where new paint is defined as defective shall be considered to be a failure of the system at that location. The Contractor shall make repairs at all points where failures are observed by removing the deteriorated coating, cleaning the surface, and repainting with the same system specified herein. Any spot repairs to defective areas will require feathering at least 3 inches into sound adjacent coating. If an area of failure exceeds 25 percent of a specific coated surface, the entire coating system from that specific item may be required to be removed and recoated in accordance with the original specification.

## **2.0 MATERIALS**

### **2.01 GENERAL**

- A. Materials specified are those which have been evaluated for the specific service. Products are listed to establish a standard of quality. Standard products of manufacturers other than those specified will be accepted when proven to the satisfaction of the Engineer they are equal in composition, durability, usefulness and convenience for the purpose intended. Substitutions will be considered provided the following minimum conditions are met:
  1. The proposed paint system shall have a dry film thickness equal to or greater than that of the specified system.
  2. The proposed paint system shall employ an equal or greater number of separate coats.
  3. The proposed paint system shall employ coatings or paints of the same generic type.
  4. All requests for substitution shall carry full descriptive literature and directions for application, along with complete information on generic type, non-volatile content by volume and a list of 10 similar projects, all at least three years old, where the coatings or paints have been applied to similar exposure. Substitutions shall be endorsed in writing from the materials manufacturer that these substituted materials will provide equivalent performance as those specified.



5. If the above mentioned data appears to be in order, the Engineer may require that the Contractor provide certified laboratory data sheets showing the results of complete spectrographic and durability tests accomplished on the proposed substitute. An independent testing laboratory satisfactory to the Engineer shall accomplish tests and all costs incurred in the testing program shall be borne by the Contractor. In any case, the Engineer shall be sole and final judge of the acceptability of any proposed substitution. Requests for substitution must be approved in writing.
- B. All materials shall be brought to the jobsite in the original sealed containers. They shall not be opened or used until Engineer has physically inspected contents and obtained necessary data from Information printed on containers or labels. Materials exceeding storage life recommended by the manufacturer shall be rejected.
- C. Flammability, toxicity, allergenic properties, and any other characteristic requiring field precautions shall be identified and specific safety practices shall be stipulated.
- D. All paint materials shall be stored in enclosed structures to protect them from weather and excessive heat or cold. Flammable paints must be stored to conform with local, county, state and federal safety codes for flammable coating and paint materials. At all time coatings and paint shall be protected from freezing.
- E. Contractor shall use products of the same manufacturer for all coats.

## **2.02 PAINT MATERIALS**

- A. **Metal Substrates:** Paint materials shall consist of an epoxy/urethane system and conform to the regulations and applicable requirements of applicable local, state and federal air pollution regulatory agencies.
- B. **Factory-Finished Metals, Polyvinyl Chloride (PVC), or Fiberglass:** Paint materials shall consist of an acrylic emulsion primer and an acrylic or urethane finish coat system and conform to the regulations and applicable requirements of applicable local, state and federal air pollution regulatory agencies.



### **3.0 EXECUTION**

#### **3.01 GENERAL**

- A. All surface preparation, coating and paint application shall conform to applicable standards of SSPC and the manufacturer's printed instructions. Material applied prior to approval of the surface by the Engineer shall be removed and reapplied to the satisfaction of the Engineer at the expense of the Contractor.
- B. All work shall be performed by skilled craftsmen qualified to accomplish the required work in a manner comparable with the best standards of practice. Continuity of personnel shall be maintained and transfer of key personnel shall be coordinated with the Engineer.
- C. The Contractor shall provide a supervisor to be at the work site during cleaning, application and disinfection operations. The supervisor shall have the authority to sign any change orders, coordinate work and make other decisions pertaining to the fulfillment of their contract.
- D. Contractor shall provide approved sanitary facilities for all project personnel, as no existing facilities will be available to the Contractor. Facilities shall be maintained during the project to complete standards established by Agency, and shall be removed prior to Contractor's departure from the site at completion of the project.
- E. The Agency shall designate a defined location on the site for the contractor's staging and storage activities. All equipment and supplies shall be stored at this location when not being used.
- F. Dust, dirt, oil, grease or any foreign matter which will affect the adhesion or durability of the finish must be removed by washing with clean rags dipped in an approved commercial cleaning solvent, rinsed with clean water and wiped dry with clean rags.
- G. The Contractor's painting equipment shall be designed for application of materials specified and shall be maintained in first class working condition. Compressors shall have suitable traps and filters to remove water and oils from the air. Blotter test shall be accomplished at each start-up period and as deemed necessary by the Engineer. Contractor's equipment shall be subject to approval of the Engineer.
  - 1. Cleanliness of compressed air that will be affect the quality of the paint or prepared surfaces shall be verified daily, and as deemed necessary by Engineer, by directing a stream of air, without abrasive, from the blast nozzle onto a white blotter or cloth for



twenty seconds in accordance with ASTM D4285. If air contamination is evident, change filters, clean traps, add moisture separators or filters, or make adjustments as necessary to achieve clean, dry air.

- G. Application of the first coat shall follow immediately after surface preparation and cleaning within an eight-hour working day. Any cleaned areas not receiving first coat within an eight-hour period shall be recleaned prior to application of first coat.
- H. Because of the presence of moisture and possible contaminants in the working atmosphere, care shall be taken to ensure previously painted surfaces are protected or recleaned prior to application of subsequent coat(s). The Engineer shall approve methods of protection and recleaning.
  - 1. The project is subject to intermittent shutdown if, in the opinion of the Engineer, cleaning, coating and painting operations are creating a localized condition detrimental to ongoing facility activities, personnel, or adjacent property.
  - 2. In the event of emergency shutdown by the Engineer, Contractor shall immediately correct deficiencies. All additional costs created by shutdown shall be borne by Contractor.
- I. The Contractor shall provide, at his own expense, all necessary power for his operations under the contract.

### **3.02 SURFACE PREPARATION, GENERAL**

- A. The latest revision of the following surface preparation specifications of SSPC shall form a part of this specification. (Note: An element of surface area is defined as any given 9 square inches of surface).
  - 1. Solvent Cleaning (SSPC-SP1): Removal of oil, grease, soil and other contaminants by use of solvents, emulsions, cleaning compounds, steam cleaning or similar materials and methods, which involve a solvent or cleaning action.
  - 2. Commercial Blast Cleaning (SSPC-SP6): Blast cleaning to a commercial cleanliness, until at least sixty-six percent of each element of surface area is free of all visible residues.
  - 3. Powertool Cleaning to Commercial Grade Cleanliness (SSPC-SP15): Powertool cleaning to commercial cleanliness, until at least sixty-six percent of each element of surface area is free of all visible residues.



4. **Waterjet Cleaning of Metals (SSPC-SP-WJ4):** High pressure water cleaning (HPWC, 5000 psi) to produce a WJ-4 degree of cleaning - A WJ-4 surface shall be cleaned to a finish which, when viewed without magnification, is free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose coating. Any residual material shall be tightly adherent.
- B. Active exterior rust sites shall be powertool cleaned to commercial grade in accordance with SSPC-SP15 to provide a minimum surface profile of 1.5 mil (.0015"). All spot repair areas shall be feathered into sound coating a minimum of 3 inches in each direction so that no edges can be identified/probed with a dull putty knife.
- C. Active loose or flaky paint shall be hand or power tool cleaned in accordance with SSPC-SP2/SP3. All breaks in the paint system shall be feathered into sound coating a minimum of 3 inches in each direction so that no edges can be identified/probed with a dull putty knife.
- D. All valve covers, including exposed valve casings shall be abrasively blast cleaned to "Commercial Blast Cleaning" in conformance to SSPC's - Surface Preparation Specification No. 6 (SSPC-SP6) and surface profile or anchor pattern of 2 to 3 mils (.002" - .003").
- E. All factory finished surfaces, such as metal sheds or containers shall be pressure water cleaned in accordance with SSPC WJ-4, HPWC, (5000 psi). This work will include the scrubbing of all surfaces with a stiff bristle brush using a solution of trisodium phosphate (TSP). All surfaces shall be power sanded. All scrubbed surfaces shall then be fresh water rinsed. Special precautions and/or solvent wiping care shall be made around electrical equipment.
- F. All existing painted surfaces to be overcoated shall be scarified by sanding to roughen the existing finish coat prior to overcoating. All remaining residue shall be removed by wiping with clean rags.
- G. The surfaces of any bare non-carbon steel substrates, or specialty items (i.e. galvanized, anodized, etc.) shall be properly treated and prepared prior to any coating operations in accordance with the coating manufacturer's written recommendations, subject to approval of the engineer.

### 3.03 SURFACE PREPARATION, VALVE COVERS

- A. Abrasive blasting nozzles shall be equipped with "deadman" emergency shut-off nozzles. Blast nozzle pressure shall be a minimum of 95 P.S.I.



and shall be verified by using an approved nozzle pressure gage at each start-up period or as directed by the Engineer.

- B. All blast hose connections shall be connected with external couplings. These connections shall be taped with duct tape prior to pressurizing. All taped connections shall be visually inspected for leaks within five minutes after start of blast cleaning operations and at the end of blast cleaning operations. Leaking connections shall be immediately repaired to prevent further damage.
- C. Particle size of abrasives used in blast cleaning shall be that which will produce a surface profile or anchor pattern specified herein, or in accordance with recommendations of the manufacturer of the specified coating or paint system to be applied, subject to approval of Engineer.
- D. Abrasive used in blast cleaning operations shall be new, washed, graded and free of contaminants, which would interfere with adhesion of coatings and paints and shall not be reused unless specifically approved by the Engineer. Abrasives shall be certified for unconfined dry blasting pursuant to the California Administrative Code, Section 92520 of Subchapter 6, title 17, and shall appear on the current listing of approved abrasives.
- F. The Contractor shall keep the area of work in a clean condition and shall not permit blasting materials to accumulate as to constitute a nuisance or hazard to the prosecution of the work or the operation of the existing facilities. Spent abrasives and other debris shall be removed at the Contractor's expense as directed by the Engineer. If waste is determined to be hazardous, disposal by Contractor shall meet requirements of all regulatory agencies for handling such wastes.
- G. Blast cleaned surfaces shall be cleaned prior to the application of specified paints through a combination of blowing with clean dry air, brushing/brooming and/or vacuuming as directed by the Engineer. Air hose for blowing shall be at least 1/2" in diameter and shall be equipped with a shut-off device.

#### **3.04 APPLICATION, GENERAL**

- A. Paint application shall conform to the requirements of the SSPC's Paint Application Specification No. 1 (SSPC-PA1), latest revision, for "Shop, Field and Maintenance Painting," the manufacturer of the coating and paint materials printed literature, and as specified herein.
- B. Thinning shall only be permitted as recommended by the manufacturer and approved by the Engineer, and shall not exceed the limits set by applicable regulatory agencies.



1. If the Contractor applies any coatings which have been modified or thinned to such a degree as to cause them to exceed established maximum VOC levels, Contractor shall be responsible for any fines, costs, remedies, or legal action and costs which may result.
- C. Each application of paint shall be applied evenly with a uniform appearance. The system shall be free of brush marks, unfeathered edges, sags, runs, and evidence of poor workmanship, or any aesthetic defects, as defined by SSPC. Care should be exercised to avoid lapping on glass or hardware. Coating and paint shall be sharply cut to clean, defined lines. Finish surfaces shall be uniform in appearance and shall be free from defects or blemishes.
- D. Protective coverings or drop cloths shall be used to protect floors, concrete, fixtures, equipment, prepared surface and applied paints. Care shall be exercised to prevent paint from being spattered onto surfaces, which are not to be painted. Surfaces from which such material cannot be removed satisfactorily shall be replaced or repainted as required to produce a finish satisfactory to the Engineer.
- E. Coatings which has endured an excessive time element beyond manufacturer's recommended recoat cycle, shall be scarified using methods approved by the Engineer, prior to application of additional coating or paint. Scarified coating shall have sufficient depth to assure a mechanical bond of subsequent coat.
- F. All labels that are adhered to surfaces to be painted shall be removed prior to any paint application work. Following all paint work, new safety, warning, and/or operational labels shall be applied to the finished work. The Engineer shall determine, which labels require replacement.
- G. Unless otherwise directed by the Engineer, replace any stenciling that is coated over with newly applied paint. Use a black urethane coating and provide lettering of the same height as originally installed, or as approved by the Engineer.
- H. Existing label or stencil information may require new or different information. The Agency shall review and approve of all information on labeling or stenciling before their installation.
- I. All attachments, accessories, and appurtenances to be painted shall be prepared and finished in the same manner as specified for all surfaces.





### **3.05 APPLICATION, METAL SUBSTRATES (NON-FACTORY FINISHED)**

A. After completion of surface preparation as specified, all prepared surfaces shall receive the generic coatings specified under 2.02 "EXTERIOR PAINT MATERIALS." The systems shall include the following:

1. Tnemec Company
  - a. 2-4 mils Series L69 Epoxoline - Bare Metal Spot Prime Coat
  - b. 2-4 mils Series L69 Epoxoline - Full Prime Coat
  - c. 2-5 mils Endurashield Series 1095 - Finish coat
  - d. 7 mils (0.007") shall be the minimum dry film thickness of the completed new system on bare metal.
  
2. Sherwin-Williams Company
  - a. 2-4 mils Macropoxy 646 100 - Bare Metal Spot Prime Coat
  - b. 2-4 mils Macropoxy 5000 - Full Prime Coat
  - c. 2-5 mils Hi Solids Polyurethane - Finish Coat
  - d. 7 mils (0.007") shall be the nominal dry film thickness of the completed system on bare metal.

### **3.06 APPLICATION, PAINTED PVC OR FIBERGLASS**

A. After completion of surface preparation as specified, all prepared surfaces shall receive the generic coatings specified under 2.02 "EXTERIOR PAINT MATERIALS." The systems shall include one of the following:

1. Tnemec Company
  - a. 2-3 mils Series 1029 Enduratone - Full Prime Coat
  - b. 2-3 mils Series 1095 Enduratone - Finish Coat
  - c. 5 mils (0.005") shall be the minimum dry film thickness of the completed new system.
  
2. Sherwin-Williams Company
  - a. 2-4 mils DTM Bonding Primer - Full Prime Coat
  - b. 3-5 mils Hi Solids Polyurethane - Finish Coat
  - c. 6 mils (0.006") shall be the nominal dry film thickness of the completed system on bare metal.

### **3.07 APPLICATION, FACTORY FINISHED METAL**

A. After completion of surface preparation as specified, all prepared surfaces shall receive the generic coatings specified under 2.02 "EXTERIOR PAINT MATERIALS." The systems shall include one of the following:

1. Tnemec Company
  - a. 2-4 mils Series 115V Uni-Bond - Full Prime Coat



- b. 2-3 mils Series 1029 Enduratone - Intermediate Coat
  - c. 2-3 mils Series 1029 Enduratone - Finish Coat
  - d. 7 mils (0.007") shall be the minimum dry film thickness of the completed new system.
2. Sherwin-Williams Company
- d. 2-4 mils DTM Bonding Primer - Full Prime Coat
  - a. 2-4 mils Pro Industrial Acrolon 100
  - b. 2-4 mils Pro Industrial Acrolon 100
  - c. 7 mils (0.007") shall be the nominal dry film thickness of the completed system on bare metal.

### **3.08 FINISH COAT COLOR**

- A. **Color Scheme:** the Agency has selected finish coat color(s) for the project. The Contractor shall submit a current chart or draw-downs of the manufacturer's available colors to the Agency's representative ten days prior to start of painting operations. The finish coat colors for each item to be painted are detailed in the "RP5 Facility Wide Painting Project." This document utilizes Rust-Oleum color codes for reference. The color codes are summarized below:

- 1. Safety Green - Rust-Oleum 2133838
- 2. Equipment Yellow - Rust-Oleum 2148838
- 3. Safety Purple - Rust-Oleum 2167838
- 4. Safety Blue - Rust-Oleum 2124838
- 5. Light Blue - Rust-Oleum 2123838
- 6. Safety Orange - Rust-Oleum 2155838
- 7. Tan - Rust-Oleum 2171838
- 8. Fluorescent Red - Rust-Oleum 2264838
- 9. Fluorescent Orange - Rust-Oleum 2255838
- 10. Bright Red - Rust-Oleum 2164838
- 11. Light Machine Gray - Rust-Oleum 2183838

- B. It will be the responsibility of the Contractor to obtain the minimum thickness and visual uniformity of each part of the system(s) above. More than one coat of the primer or finish coat may be required if the total thickness specified for each coat is not achieved or undercoat shadowing is apparent within the finish coat.

### **3.09 QUALITY CONTROL**

- A. All coating components shall be mixed in exact proportions specified by the manufacturer. Care shall be exercised to insure all material is removed from containers during mixing and metering operations.



- B. All coatings shall be thoroughly mixed utilizing an approved slow-speed power mixer until all components are thoroughly combined and are of a smooth consistency. Catalyzed coatings shall not be applied beyond pot-life limits specified by manufacturer. Any required induction requirements shall be strictly followed.
- C. Thinners shall be added to coating materials only as required in accordance with manufacturer's printed literature and in the presence of the Engineer. Quantities of thinner shall not exceed limits set by applicable regulatory agencies.
- D. Application shall be by spray method except as otherwise specified, or approved by the Engineer. Drying time between coats shall be strictly observed as stated in the manufacturer's printed instructions.
- E. When two or more coats are specified, where possible, each coat shall be of contrasting color.
- F. Paint shall not be applied when wind speeds exceed fifteen miles per hour.
- G. Care shall be exercised during spray operations to hold the spray nozzle perpendicular and sufficiently close to surfaces being coated to avoid excessive evaporation of volatile constituents and loss of material into the air. All dryspray or overspray shall be removed as directed by Engineer and the area recoated.

### **3.10 CLEAN-UP**

- A. Upon completion of the work, all staging, scaffolding and containers shall be removed from the site or destroyed in a manner approved by the Engineer. Paint spots upon adjacent surfaces shall be removed and the entire jobsite cleaned. All damage to surfaces resulting from the work of this section shall be cleaned, repaired, or refinished to the complete satisfaction of the Engineer at no cost to the Agency.

### **3.11 OMISSIONS**

- A. Care has been taken to delineate herein those surfaces to be coated. However, if coating or painting requirements have been inadvertently omitted from this section or any other section of the specifications, it is intended that all metal surfaces, unless specifically exempted herein, shall receive a first-class protective coating or paint equal to that given the same type surface pursuant to these specifications.



**INFORMATION**  
**ITEM**  
**2A**



**Date:** August 16, 2017

**To:** The Honorable Board of Directors

**From:** P. Joseph Grindstaff, General Manager

**Committee:** Engineering, Operations & Water Resources Committee

08/09/17

**Executive Contact:** Chris Berch, Executive Manager of Engineering/AGM

**Subject:** 2016 Annual Report of the Prado Basin Habitat Sustainability Committee

**Executive Summary:**

Pursuant to the monitoring and mitigation requirements of the 2010 Peace II Subsequent Environmental Impact Report, in order to receive the benefits of Hydraulic Control and Basin Re-Operation, the Prado Basin Habitat Sustainability Committee (PBHSC) must prepare an Annual Report. The Committee presents its First Annual Report for Water Year 2015/2016.

The first annual report documented no indication of a trend in degradation of the extent or quality of the riparian habitat along Chino Creek, Mill Creek, or the Santa Ana River that is contemporaneous with implementation of the Peace II agreement. The PBHSC is not recommending any changes in the Adaptive Management Plan nor are any mitigation measures for Hydraulic Control or Basin Re-Operation necessary at this time.

The draft Annual Report for Water Year 2015/2016 was published and distributed on June 1, 2017. Watermaster and IEUA presented the draft report to members of the PBHSC at a meeting on June 6, 2017. A one-month comment period was provided and several agencies provided feedback. Watermaster Board approved the report at their July 27, 2017 Board meeting.

**Staff's Recommendation:**

The 2016 Annual Report is is an information item for the Board of Directors to receive and file.

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

**Account/Project Name:**

EN18021: Prado Basin HSP

**Fiscal Impact (explain if not budgeted):**

**Prior Board Action:**

On April 20, 2016, the Board of Directors approved the amendment to the reimbursement agreement with the Chino Basin Watermaster for the PBHSC.

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**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 15261 of the State CEQA Guidelines.

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**Business Goal:**

The PBHSC is consistent with the Agency's Business Goal of Environmental Stewardship by being committed to the responsible use and protection of the environment through conservation and sustainable practices.

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**Attachments:**

Attachment 1 - Background

Attachment 2 - 2016 Annual Report of the Prado Basin Habitat Sustainability Committee

## Background

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Subject: 2016 Annual Report of the Prado Basin Habitat Sustainability Committee

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The Prado Flood Control Basin (Prado Basin) is located in the southernmost, downgradient portion of the Chino Groundwater Basin (Chino Basin). Surface-water flow within the middle Santa Ana River (SAR) and its tributaries discharge into and through the Prado Basin behind Prado Dam, the main flood-control facility on the middle SAR. The US Army Corps of Engineers, in coordination with the Orange County Water District (OCWD), regulates releases from Prado Dam for the purposes of flood control and groundwater recharge in Orange County. The major components of discharge within the SAR and its tributaries are: runoff from precipitation, discharge of tertiary-treated effluent from wastewater treatment plants, rising groundwater, discharge of untreated imported water for groundwater recharge, and other dry-weather runoff. The SAR and its tributaries are unlined across the Prado Basin, which allows for groundwater/surface-water interaction. Groundwater in Chino Basin generally flows from the forebay regions in the north towards Prado Basin in the south. Depth to groundwater is relatively shallow in the Prado Basin area, where groundwater losses can occur via evapotranspiration by riparian vegetation and rising-groundwater outflow to the SAR and its tributaries.

The surface-water impoundments behind Prado Dam and the shallow groundwater have created within Prado Basin the largest riparian forest in Southern California. The riparian forest provides critical habitat for various threatened and endangered species including the Least Bell's Vireo, Southwestern Willow Flycatcher, Yellow-Billed Cuckoo, and the Santa Ana Sucker.

To further implement the goals and objectives of the Chino Basin Optimum Basin Management Program (OBMP), the Chino Basin Watermaster executed the Peace II Agreement in 2007. The primary features of the Peace II Agreement are to provide for Basin Re-operation and the attainment of Hydraulic Control of the Chino Basin. Hydraulic Control is defined as the elimination of groundwater discharge from the Chino-North Management Zone to the Prado Basin, or its reduction to *de minimis* quantities (i.e., less than 1,000 acre-feet per year [afy]). Hydraulic Control ensures that the water management activities in the Chino-North Management Zone will not impair the beneficial uses designated for water quality of the SAR downstream of Prado Dam. Basin Re-operation means the increase in controlled overdraft of the Chino Basin, as defined in the Judgment, from 200,000 acre-ft over the period of 1978 through 2017 to 600,000 acre-ft through 2030. Both desalter expansion in the southwestern portion of the Chino Basin and Re-operation (controlled overdraft over the whole of the Chino Basin) are required to achieve Hydraulic Control. Hydraulic Control was achieved in 2016, and will be maintained through expansion of the desalter program from its current approximate 30,000 afy of groundwater production to 40,000 afy, and the completion of Basin Re-operation.

One of the potential impacts of the Peace II Agreement activities described above is the lowering of groundwater levels (drawdown) in the Prado Basin area, which may impact the riparian habitat that is dependent upon groundwater. To address the potential drawdown and its impact on the riparian habitat, the monitoring and mitigation requirements in the Peace II Subsequent Environmental Impact Report (SEIR) calls for the development and implementation of an adaptive management program for the Prado Basin habitat:

***Biological Resources/Land Use & Planning—Section 4.4-3 of the Peace II SEIR***

*The Chino Basin Stakeholders are committed to ensuring that the Peace II Agreement actions will not significantly adversely impact the Prado Basin riparian habitat. This includes the riparian portions of Chino and Mill Creek's between the terminus of hard lined channels and Prado Basin proper.*

*The available modeling data in the SEIR indicates that Peace II Agreement implementation will not cause significant adverse effects on the Prado Basin riparian habitat. However, the following contingency measure will be implemented to ensure that the Prado Basin riparian habitat will not incur unforeseeable significant adverse effects, due to implementation of Peace II. IEUA, Watermaster, OCWD and individual stakeholders, that choose to participate, will jointly fund and develop an adaptive management program that will include, but not be limited to:*

- monitoring riparian habitat quality and extent;*
- investigating and identifying essential factors to long-term sustainability of Prado Basin riparian habitat;*
- identification of specific parameters that can be monitored to measure potential effects of Peace II Agreement implementation effects on Prado Basin; and*
- identification of water management options to minimize the Peace II Agreement effects on Prado Basin.*

*This adaptive management program will be prepared as a contingency to define available management actions by Prado Basin stakeholders to address unforeseeable significant adverse impacts, as well as to contribute to the long-term sustainability of the Prado Basin riparian habitat.*

*The above effort will be implemented under the supervision of a newly-formed Prado Basin Habitat Sustainability Committee. This Committee will include representatives from all interested parties and will be convened by the Watermaster and IEUA. Annual reports will be prepared and will include recommendations for ongoing monitoring and any adaptive management actions required to mitigate any measured loss or prospective loss of riparian habitat that may be attributable to the Peace II Agreement. As determined by Watermaster and IEUA, significant adverse impacts to riparian habitat that are attributable to the Peace II Agreement will be mitigated.*

Pursuant to these monitoring and mitigation requirements of the Peace II SEIR, the Inland Empire Utilities Agency (IEUA) and the Chino Basin Watermaster (Watermaster) convened the Prado Basin Habitat Sustainability Committee (PBHSC) to develop the Prado Basin Habitat Sustainability Program (PBHSP). The PBHSP is an adaptive management program to ensure that the riparian habitat in the Prado Basin will not incur unforeseeable significant adverse effects due to implementation of the Peace II Agreement.

The draft Annual Report for Water Year 2015/2016 was published and distributed on June 1, 2017. Watermaster and IEUA presented the draft report to members of the PBHSC at a meeting on June 6, 2017. A one-month comment period was provided and several agencies provided feedback.



## DISCUSSION

This Annual Report for Water Year 2015/16 is the first annual report prepared by Watermaster and IEUA for the PBHSC. It documents the collection, analysis, and interpretations of the data and information generated by the PSHSP through September 30, 2016 and includes the following sections:

- **Section 1 – Introduction.** This section describes the background and objectives of the PBHSP and the Annual Report.
- **Section 2 – Monitoring, Data Collection, and Methods.** This section describes the collection of historical information and the recent monitoring and groundwater-modeling activities performed during water year 2015/2016 for the PBHSP.
- **Section 3 – Results and Interpretations.** This section describes the interpretations and results of the information, data, and groundwater-modeling results.
- **Section 4 – Conclusions and Recommendations.** This section summarizes the main conclusions derived from the monitoring and modeling efforts through the prior water year and the recommended activities for the subsequent fiscal year, including a proposed scope-of-work, schedule, and budget.
- **Section 5 – References.** This section lists the publications cited in the report.

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## The Report's Main Findings and Recommendations:

The assessment of the riparian habitat in the Prado Basin, through the analysis of air photos, NDVI, and vegetation surveys, shows that the riparian habitat has increased in its extent and quality since the 1960s. There is no indication of a trend in degradation of the extent or quality of the riparian habitat along Chino Creek, Mill Creek, or the SAR that is contemporaneous with implementation of the Peace and Peace II agreements.

With two exceptions, groundwater levels across the Groundwater Monitoring Program (GMP) study area have remained stable since 1961 and appear to have been unaffected by the implementation of the Peace Agreements. The two exceptions are along the northern reaches of Mill Creek and the SAR, where groundwater levels have fluctuated by up to +/- 10 feet, apparently in response to decreased groundwater production from the GMP area in the 1990s and increased production after about 2000 with the commencement of CDA pumping. The quality of riparian habitat in these areas has shown no trend of degradation since the NDVI estimates became available in the early 1980s, and may have even improved slightly during the Peace Agreement period.

Watermaster's most recent predictive groundwater-modeling results indicate that future declines in groundwater levels in the Prado Basin will be monitored closely and are projected to be gradual, limited in their spatial extent, and relatively minor in magnitude, which provides time to develop appropriate monitoring and mitigation strategies for this area, if necessary. The PBHSP should continue the monitoring of groundwater levels and utilize updated groundwater model projections of groundwater levels to characterize areas of prospective loss of riparian habitat.

The extended dry period from 1999 to 2016 did not correlate with a declining trend in the quality of riparian habitat in Prado Basin, which suggests the availability of source waters for consumptive use by the riparian vegetation other than precipitation and runoff, such as base flow discharge and shallow groundwater.

Discharge in the SAR and its tributaries to Prado Dam has declined significantly since 2005. The declining trend in discharge is attributed to dry climatic conditions from 1999-2016 and the decreases in POTW effluent discharge because of increased recycled-water reuse and decreased wastewater discharge due to an economic recession that began in 2008 and the implementation of emergency water-conservation measures during the recent drought. The quality of riparian habitat in all areas of Prado Basin has shown no trend of degradation that coincides with the decline in stream discharge, and may have improved slightly during the Peace Agreement period along the northern reaches of Chino Creek, Mill Creek, and the SAR.

There are other factors that have had documented adverse impacts on the riparian habitat, including wildfire and pests, particularly, the Polyphagous Shot Hole Borer (PSHB) is a recently observed pest that is causing adverse impacts to trees in Prado Basin. The PSHB should be monitored for and documented in future field-based vegetation surveys.

A goal of the PBHSP is to discern impacts to the riparian habitat due to Peace II implementation versus impacts due to factors not related to Peace II implementation. The annual report primarily utilized visual comparison of time-series data of factors that could affect the riparian habitat to time-series data on the extent and quality of the riparian habitat, and was generally unable to

identify and characterize cause-and-effect relationships. Future efforts to identify and characterize cause-and-effect relationships should include research and application of other appropriate time-series analyses.

The annual report documented no indication of a trend in degradation of the extent or quality of the riparian habitat along Chino Creek, Mill Creek, or the SAR that is contemporaneous with implementation of the Peace II agreement. Hence, no mitigation measures are proposed at this time.

The annual report includes a recommended scope of work for monitoring and reporting for FY 2017/18 with an estimated cost of \$227,000, which is about 50% less cost compared to FY 2016/17. Watermaster and IEUA are cost-sharing partners for this program, and have approved the scope-of-work and budget recommendations in the annual report for FY 2016/17. The Orange County Water District will contribute \$10,000 for the acquisition of a high-resolution air photo of the Prado Basin in 2017.

At this time, the PBHSC is not recommending any changes in the Adaptive Management Plan or that any mitigation measures for Hydraulic Control or Basin Re-Operation are necessary at this time.

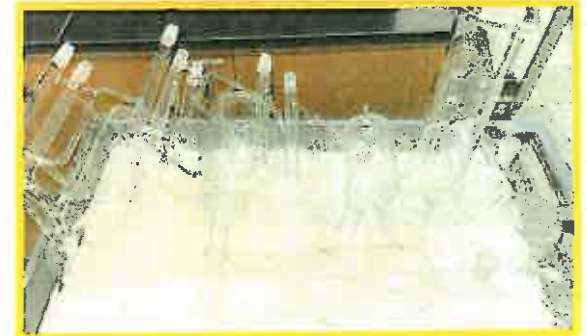
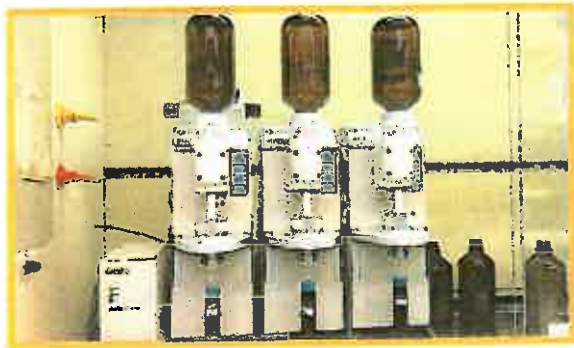
**Schedule and Milestones**  
**2016 Annual Report of the Prado Basin Habitat Sustainability Committee**

Date	Report Milestones	Meetings of the Prado Basin Habitat Sustainability Committee
November 2, 2016 (Wednesday at 2:30 pm)		Kick-off meeting for the Prado Basin Habitat Sustainability Program and the preparation of the <i>2016 Annual Report</i> . Meeting will be held at IEUA headquarters.
March 7, 2017	Watermaster Engineer submits a technical memorandum, <i>Recommended Scope and Budget of the Prado Basin Habitat Sustainability Program for FY 2017-18</i> , to the Committee for review and comment	
March 21, 2017		Watermaster Engineer presents the preliminary results of the Prado Basin Habitat Sustainability Program and the Recommended Scope and Budget of the Prado Basin Habitat Sustainability Program for FY 2017-18. Meeting will be held at IEUA headquarters.
April 7, 2017	Committee submits comments and suggested revisions on draft Recommended Scope and Budget of the Prado Basin Habitat Sustainability Program for FY 2017-18	
April 12, 2017	Watermaster Engineer submits draft <i>2016 Annual Report</i> to the Committee for review and comment.	
April 25, 2017 (Tuesday at 2:30 pm)		Watermaster Engineer presents the draft <i>2016 Annual Report</i> of the Prado Basin Habitat Sustainability Committee. Meeting will be held at IEUA headquarters.
April 28, 2017	Watermaster Engineer submits the final, Recommended Scope and Budget of the Prado Basin Habitat Sustainability Program for FY 2017-18 to Watermaster	
May 10, 2017	Committee submits comments and suggested revisions on the draft <i>2016 Annual Report</i> to Watermaster and IEUA.	
June 1, 2017	Watermaster Engineer issues final <i>2016 Annual Report</i> . The report is included in the agenda packet for June Watermaster meetings for approval.	



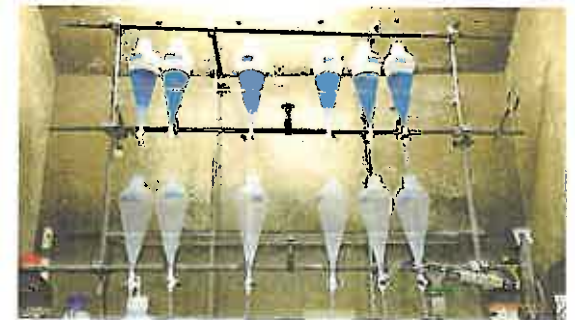
**INFORMATION**  
**ITEM**  
**2B**

# Laboratory Semi-Annual Update



# Laboratory Activities

- **FY 2017 Total Samples and Analyses**
  - Samples – 18,295
    - Compliance – 6,674
    - Discretionary – 11,621
  - Analyses – 60,970
    - Compliance – 31,297
    - Discretionary – 29,673
- **NPDES**
  - Providing analytical support for investigation of Bromide source contributing to Trihalomethane compounds exceedances at CCWRF
- **New Equipment**
  - TKN digestion block
  - Surfactants extraction apparatus
- **Succession Planning**
  - Laboratory Scientist I/II position to facilitate staff technical training
  - Data review process changes
  - Quality Assurance/Quality Control (QA/QC) training



# Laboratory Certification

- **Environmental Laboratory Accreditation Program (ELAP)**
  - Preliminary draft regulations outline released, July 2017
  - Draft regulations public workshop, August 1, 2017
  - Stakeholder Fees Workgroup
  - Proficiency Testing (PT) Workgroup
  - ELAP Assessor Training
- **IEUA Laboratory**
  - Wastewater PT samples, 100% acceptable, June 2017
  - Drinking water PT sample analyses due August 2017
  - Updating Laboratory analysis SOP format
  - Adding general and administrative laboratory SOPs



Environmental Laboratory Accreditation Program  
STATE WATER RESOURCES CONTROL BOARD



# Key Performance Indicators

- **Customer Service**
  - Met or exceeded expected sample turnaround times
  - Updating Laboratory Information Management System (LIMS) with site specific limits
  - Sample collection/documentation training
- **Safety**
  - Reviewing and updating Laboratory Chemical Hygiene Plan (CHP)

FY 2017

Performance Indicator	Goal	Actual
Sample Turnaround Time	18 days	17
Compliance	1 day	1
Process Control	99%	>99%
Meet sample holding times	<1%	<1%
Quality Control Failures	0	0
ELAP PE sample repeats	0	0
Lost time accidents	0	0

# Water Quality Laboratory (EN15008)

- Current Laboratory Staff Activities
  - Lab staff site visit
  - Review of current instrument requirements for move
- Schedule
  - Completion: August 2018



**INFORMATION**

**ITEM**

**2C**

# Engineering and Construction Management Project Updates



# EN22002 – East End Flow Meter

- Design Engineer: CIVILTEC
- Current Contract (Design): \$214 K
- Total Project Budget: \$1.9 M
- Project Completion: October 2019
- Percentage Complete: 10%
- Scope of Work:
  - Install new magnetic flow meter and vault structure
  - Install new automated sampling system
  - Upgrade electrical and instrumentation
- Current Activities:
  - Preliminary Design Report completed
- Focus Points:
  - LACSD review of Preliminary Design Report



Existing Flume Flow Meter



New Flow Meter Vault Location

# EN15012 – RP-1 Primary Effluent Conveyance Improvements

- Design Engineer: Stantec Consulting
- Current Contract (Design - PDR): \$461 K
- Total Project Budget: \$3 M
- Project Completion: May 2019
- Percentage Complete: 50%
- Scope of Work:
  - Rehabilitation primary effluent system
  - Corrosion protection
  - Wet well decommissioning pre-design
  - Analysis for improvement of foul air system
- Current Activities:
  - Finalize the Preliminary Design Report
  - Utility search/potholing and ground penetrating radar
- Focus Points:
  - Proceed with the 50% design



Exposed Rebar In Grating at Support Beam



IPS Wet Well Concrete Corrosion

# EN14018 – RP-4 Disinfection Facility Improvements

- Contractor: W. A. Rasic
- Current Contract (Construction): \$1.8 M
- Total Project Budget: \$2.7 M
- Project Completion: February 2018
- Percentage Complete: 40%
- Scope of Work:
  - Relocate the chemical disinfection facility
  - Install new chemical metering pumps, tanks, and pipelines
- Current Activities:
  - Install on-site chemical piping
  - Construction of the new facility
- Focus Points:
  - Order chemical storage tanks



New Chemical Area with Tank Pad



New Chemical Piping and Pull Box

# EN15013 – RP-1 TWAS and Primary Effluent

- Contractor: J.F. Shea Company Inc.
- Current Contract (Construction): \$243 K
- Total Project Budget: \$624 K
- Project Completion: December 2017
- Percentage Complete: 4%
- Scope of Work:
  - Install new sludge pipeline between DAFTs and digesters
  - Modify piping at digester area to eliminate bottleneck
  - Remove abandoned pipes and components
- Current Activities:
  - Review and approve shop drawings
- Focus Points:
  - Final review of components delivered to the site



Existing Line at RP-1



Above-Ground Connection at Digester 1



# EP17003 – RP-1 Training Room

- Design Engineer: RM Architecture
- Current Contract (Design): \$8 K
- Total Project Budget: \$425 K
- Project Completion: April 2018
- Percentage Complete: 85%
- Scope of Work:
  - Convert existing paint and maintenance supply room to a training room and computer lab space
- Current Activities:
  - Plans currently under review with the City of Ontario
  - Finalize front end specifications
- Focus Points:
  - Incorporate final review comments
  - Package for bid and award



Existing Paint Room



Disconnect to be Removed