



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

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

**CALL TO ORDER**

**PUBLIC COMMENT**

Members of the public may address the Board on any item that is within the jurisdiction of the Board; however, no action may be taken on any item not appearing on the agenda unless the action is otherwise authorized by Subdivision (b) of Section 54954.2 of the Government Code. Those persons wishing to address the Board on any matter, whether 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 June 14, 2017 meeting.

**B. RATIFY PURCHASES FROM THE EXPIRED THATCHER COMPANY OF CALIFORNIA CONTRACT**

It is recommended that the Committee/Board ratify the purchases from the expired Thatcher Company of California Contract No. 4600001078 for aluminum sulfate in the amount of \$23,435.64.

**C. SAN BERNARDINO LIFT STATION CONSULTANT CONTRACT AWARD**

It is recommended that the Committee/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.

**D. RP-1 MIXED LIQUOR RETURN PUMPS CONSTRUCTION CHANGE ORDER**

It is recommended that the Committee/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.

**E. PUBLIC CONTRACT CODE SECTION 3400(c) – SOLE SOURCE REQUEST**

It is recommended that the Committee/Board authorize the General Manager, or his designee, to review and approve sole source requests for materials, products, things, or services per Public Contract Code Section 3400(c) consistent with the protocol defined herein.

**F. IEUA-POMONA-MVWD RW INTERIE PROJECT CONSULTANT CONTRACT AWARD**

It is recommended that the Committee/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.

**G. ENVIRONMENTAL SERVICES MASTER CONTRACT AMENDMENT NO. 2**

It is recommended that the Committee/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.

**H. IERCF SOLAR PHOTOVOLTAIC AND ENERGY STORAGE AGREEMENT AMENDMENT**

It is recommended that the Committee/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.

**I. FOUNDATION WINDPOWER DIRECT AGREEMENT**

It is recommended that the Committee/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.

**J. MEMORANDUM OF UNDERSTANDING FOR THE DEVELOPMENT OF A RENEWABLE NATURAL GAS PROJECT WITH ANAERGIA**

It is recommended that the Committee/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.

**K. AGENCY MEMBERSHIP IN THE CALIFORNIA DATA COLLABORATIVE**

It is recommended that the Committee/Board approve IEUA membership in the California Data Collaborative for FY 2017/18, in the amount of \$27,500.


**2. INFORMATION ITEM**

**A. RP-2 MICROTURBINE CONTRACT TERMINATION (WRITTEN)**

- B. 4TH QUARTER PLANNING & ENVIRONMENTAL RESOURCES UPDATE (POWERPOINT)
- C. CITY OF UPLAND SEWAGE BILLING ERROR REVIEW (WRITTEN)  
RECEIVE AND FILE INFORMATION ITEM
- D. 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: 

**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, July 6, 2017.

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



**ACTION  
ITEM  
1A**



## MINUTES

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

WEDNESDAY, JUNE 14, 2017  
9:45 A.M.

#### **COMMITTEE MEMBERS PRESENT**

Michael Camacho, Chair  
Kati Parker

#### **STAFF PRESENT**

Jasmin Hall, Director  
Chris Berch, Executive Manager of Engineering/AGM  
Michael Dias, Assistant Engineer  
Jason Gu, Grants Officer  
Joel Ignacio, Senior Engineer  
Chander Letulle, Manager of Operations and Maintenance  
Rick Mykitta, Manager of Operations and Maintenance  
Lisa Morgan-Perales, Senior Water Resources Analyst  
Jason Pivovarovoff, Senior Engineer  
Craig Proctor, Source Control/Environmental Resources Supervisor  
Shaun Stone, Manager of Engineering  
Teresa Velarde, Manager of Internal Audit  
Christina Valencia, Chief Financial Officer/AGM  
Al VanBreukelen, Deputy Manager of Maintenance  
April Woodruff, Board Secretary/Office Manager

#### **OTHERS PRESENT**

Ana Lopez, CivicSpark

The meeting was called to order at 9:42 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 May 10, 2017.
- ◆ Recommended that the Board:
  1. Award Contract No. 4600002329 to West Valley Mosquito and Vector Control District (WVMVCD) establishing a new contract through June 30, 2019, for midge fly treatment services at recharge basins for a not-

to-exceed amount of \$200,000; and

2. Authorize the General Manager to execute the contract;

as a Consent Calendar Item on the June 21, 2017 Board meeting agenda.

◆ Recommended that the Board:

1. Award a consulting engineering services contract for the Recharge Master Plan Update Basin Improvement Projects, Project Nos. RW15003 and RW15004, to Carollo Engineering, Inc. for the not-to-exceed amount of \$1,510,628; and
2. Authorize the General Manager to execute the contract subject to non-substantive changes;

as a Consent Calendar Item on the June 21, 2017 Board meeting agenda.

◆ Recommended that the Board:

1. Amend and increase the not-to-exceed amount of Contract No. 4600001864 to Vaughan's Industrial Repair, Inc. by \$300,000 to provide repair, rebuild, or refurbishment services of rotating machinery for a total aggregate not-to-exceed amount of \$690,000 over the existing three-year period with a one-year option to extend; and
2. Authorize the General Manager to negotiate and finalize the contract amendment;

as a Consent Calendar Item on the June 21, 2017 Board meeting agenda.

◆ Recommended that the Board:

1. Award a consulting engineering services contract for the RP-1 Digester Nos. 6 and 7 Roof Repairs, Project No. EN17042, to GHD, Inc., for the not-to-exceed amount of \$130,406; and
2. Authorize the General Manager to execute the contract subject to non-substantive changes;

as a Consent Calendar Item on the June 21, 2017 Board meeting agenda.

◆ Recommended that the Board:

1. Approve a task order to master services contract 4600002275 for consulting services related to the Chino Basin Water Bank Program, Project No. WR18028, to Arcadis U.S., Inc. for the not-to-exceed amount of \$472,687;
2. Amend the Cost Sharing Letter agreement with the Chino Basin Water Bank parties to increase the not-to-exceed cost sharing amount of \$150,000 per party; and

3. Authorize the General Manager to execute the task order and the cost sharing letter agreement amendment, subject to non-substantive changes;

as a Consent Calendar Item on the June 21, 2017 Board meeting agenda.

◆ Recommend that the Board:

1. Approve the SARCCUP Cost Sharing Letter Agreement for Conservation Measures for the not-to-exceed amount of \$165,200; and
2. Authorize the General Manager to execute the requisite document;

as a Consent Calendar Item on the June 21, 2017 Board meeting agenda.

**INFORMATION ITEMS**

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

- ◆ Engineering and Construction Management Project Updates

**GENERAL MANAGER'S COMMENTS**

Acting General Manager Chis Berch mentioned that he, Peter Kavounas of Chino Basin Watermaster, Curtis Paxton of Chino Basin Desalter Authority, and some IEUA staff members had met with the Regional Water Quality Control Board staff (Regional Board). Kurt Berchtold is retiring after 40 years with the Regional Board and Hope Smythe has been named as his replacement. It was a productive meeting covering the integration of the different agencies in the Chino Basin and its relation to the Regional Board.

**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 10:05 a.m.  
Respectfully submitted,

April Woodruff  
Board Secretary/Office Manager

\*A Municipal Water District


**APPROVED: JULY 12, 2017**

**ACTION  
ITEM  
1B**

Date: July 19, 2017

To: The Honorable Board of Directors

Through: Engineering, Operations, and Water Resources Committee (7/12/17)

From:  P. Joseph Grindstaff  
General Manager

Submitted by: Randy Lee *RL*  
Executive Manager of Operations/Assistant General Manager

Chander Letulle *RL for CL*  
Manager of Maintenance and Operations

Subject: Ratify Purchases from the Expired Thatcher Company of California Contract

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### **RECOMMENDATION**

It is recommended that the Board of Directors ratify the purchases from the expired Thatcher Company of California Contract No. 4600001078 for aluminum sulfate in the amount of \$23,435.64.

### **BACKGROUND**

The Agency's treatment plants use different chemicals to process water and wastewater in various unit processes. Aluminum sulfate is a chemical that is used in water recycling plants as a coagulant during tertiary process to meet Title 22 recycled water standards. The Board approved a new multi-year contract for aluminum sulfate in November 2016 with ChemTrade Chemical Corporation. However, a miscommunication occurred and staff continued to purchase aluminum sulfate from the previous supplier, Thatcher Company of California, totaling \$23,435.64 between November 2016 and May 2017. The Agency's contract for bulk supply of aluminum sulfate with Thatcher Company of California (Thatcher) expired on October 31, 2016. Operations should have used the current contract with ChemTrade Chemical Corporation, Contract No.4600002237, for purchasing this chemical during this period.

To alleviate future occurrences of purchases against expired contracts, Operations staff received training on June 7, 2017. The training covered periodic review of all contract expirations for chemicals, products, and services routinely required throughout all facilities, and stressed the need for communicating to the staff ordering supplies, pending contract expiration dates.

Ratify Purchases from Expired Thatcher Company of California Contract

July 19, 2017

Page 2 of 2

It is requested that the Board of Directors ratify purchases against the expired contract as these purchases support the Agency's primary objective of maintaining uninterrupted processing throughout all operating facilities.

**PRIOR BOARD ACTION**

None.

**IMPACT ON BUDGET**

Purchases for aluminum sulfate are funded from FY 2016/17 Regional Operations and Maintenance (RO) Fund, as part of the chemicals budget.


**ACTION  
ITEM  
1C**





Date: July 19, 2017

To: The Honorable Board of Directors

Through: Engineering, Operations, and Water Resources Committee (7/12/17)

From:  P. Joseph Grindstaff  
General Manager

Submitted by: Chris Berch   
Executive Manager of Engineering/Assistant General Manager

Shaun J. Stone   
Manager of Engineering

Subject: San Bernardino Lift Station Consultant Contract Award

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### **RECOMMENDATION**

It is recommended that the Board of Directors:

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.

### **BACKGROUND**

The San Bernardino Lift Station (SBLS) has been in service since 2007 and is located at the termination of the San Bernardino Avenue Trunk Sewer in the City of Fontana. The SBLS conveys wastewater to Regional Water Recycling Plant No. 4 (RP-4), where it is treated and pumped into the recycled water distribution system.

In 2007, prior to commissioning the SBLS, the design engineer, CDM Smith, developed a memorandum estimating the initial capital cost for an optional emergency gravity sewer overflow and automated upstream sewer diversion to be \$13,000,000 and \$2,800,000, respectively. Although neither option was pursued, IEUA ensured that equipment redundancy was well planned and a critical preventative maintenance program was implemented.

The SBLS is well maintained and has operational redundancy and backup power; however, there is still the potential of failure in which the lift station would stop operating. A failure could result in a

sanitary sewer overflow, permit non-compliance, unpredictable fines, cleanup expenses, and possibly loss of public confidence. If a complete failure were to occur during peak flow, a sanitary sewer overflow would be expected within 30 to 45 minutes.

Ten years have passed since drafting the 2007 memorandum, and many of the assumptions within the memorandum from CDM have not come to fruition, including the estimated sewer flows due to growth within the City of Fontana. IEUA has recorded a decrease in raw sewage flows since the construction of the lift station. Due to the original assumptions not being realized and after several discussions, staff has determined that a reevaluation of the 2007 memorandum is warranted to determine if a gravity sewer bypass is feasible under updated flow projections. A gravity sewer overflow would provide the most reliability to the station and effective means of preventing a sanitary sewer overflow due to a complete failure of the SBLS.

CDM Smith has substantial institutional and historical knowledge of the San Bernardino Lift Station, Sewer Force Main, and tributary area fed from the City of Fontana's sanitary sewer pipeline network systems due to their design of the SBLS and continuing work with the City of Fontana. CDM Smith is currently performing technical analysis of sewer systems on behalf of the City of Fontana. Based on CDM Smith's substantial institutional and historical knowledge, on April 4, 2017, IEUA staff requested a proposal for consulting engineering services from CDM Smith.

On April 18, 2017, IEUA received the proposal, which was reviewed by Engineering and Construction Management. Based on the project team qualifications and experience, understanding of the project scope, ability to meet the project schedule, and intrinsic knowledge of the SBLS being the original design consultant, Engineering and Construction Management Department is recommending that IEUA procure single source services from CDM Smith to predesign services for the subject project.

The following table is the anticipated project cost:

Description	Estimated Cost
<b>Design Services</b>	<b>\$ 2,221,520</b>
Predesign Consultant Contract (this action)	\$ 224,360
Design Consultant (10%)*	\$ 1,331,440
IEUA Design Services (2.5%)*	\$ 332,860
Project Development (2.5%)*	\$ 332,860
<b>Construction Services</b>	<b>\$ 2,074,446</b>
Design Consultant Construction Services (8%)*	\$ 1,065,152
IEUA Construction Services (4.5%)*	\$ 639,148
Construction Services Contingency (10%)*	\$ 370,146
<b>Construction</b>	<b>\$ 13,314,400</b>
Construction*	\$ 12,104,000
Contingency (10%)*	\$ 1,210,400
<b>Total Project Cost*</b>	<b>\$ 17,610,366</b>
<b>Total Project Budget</b>	<b>\$ 525,000</b>

\* To be determined based based on the results of the study. Additional funding will be requested as necessary if the project is deemed feasible.

The following is the project schedule:

<b>Project Milestone</b>	<b>Date</b>
<b>Design</b>	
Consultant Predesign Contract Award (this action)	July 2017
Predesign Completion	January 2018
Consultant Design Contract Award	August 2018
Detailed Design Completion	August 2019
<b>Construction</b>	
Construction Contract Award	December 2019
Construction Completion	December 2020

The San Bernardino Lift Station Project is consistent with the *IEUA's Business Goal of Wastewater Management* specifically the Water Quality objective that IEUA will ensure that systems are planned, constructed, and managed to protect public health, the environment, and meet anticipated regulatory requirements.

**PRIOR BOARD ACTION**

None.

**IMPACT ON BUDGET**

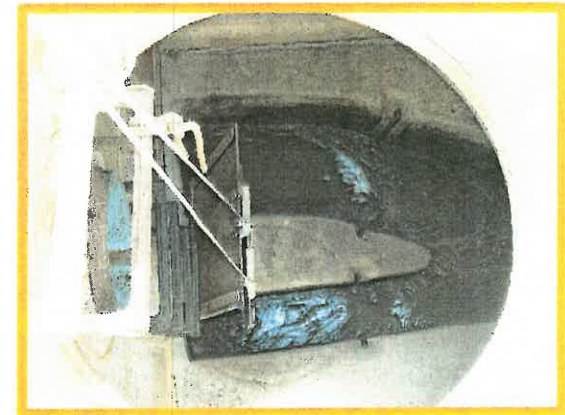
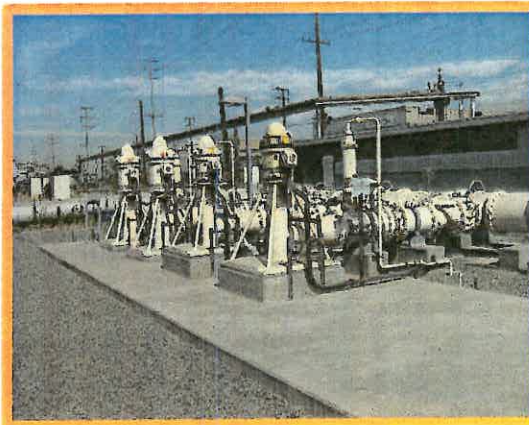
If approved, the consulting engineering services contract award for the San Bernardino Lift Station, Project No. EN17077, for the not-to-exceed amount of \$224,360 is within the total project budget of \$525,000 in the Regional Wastewater Capital (RC) Fund. The initial project budget was established to cover the cost of the reevaluation, and based on the results of the new study staff will request additional funding as necessary.

Attachment:  
Consultant contract

PJG:CB:SS:js

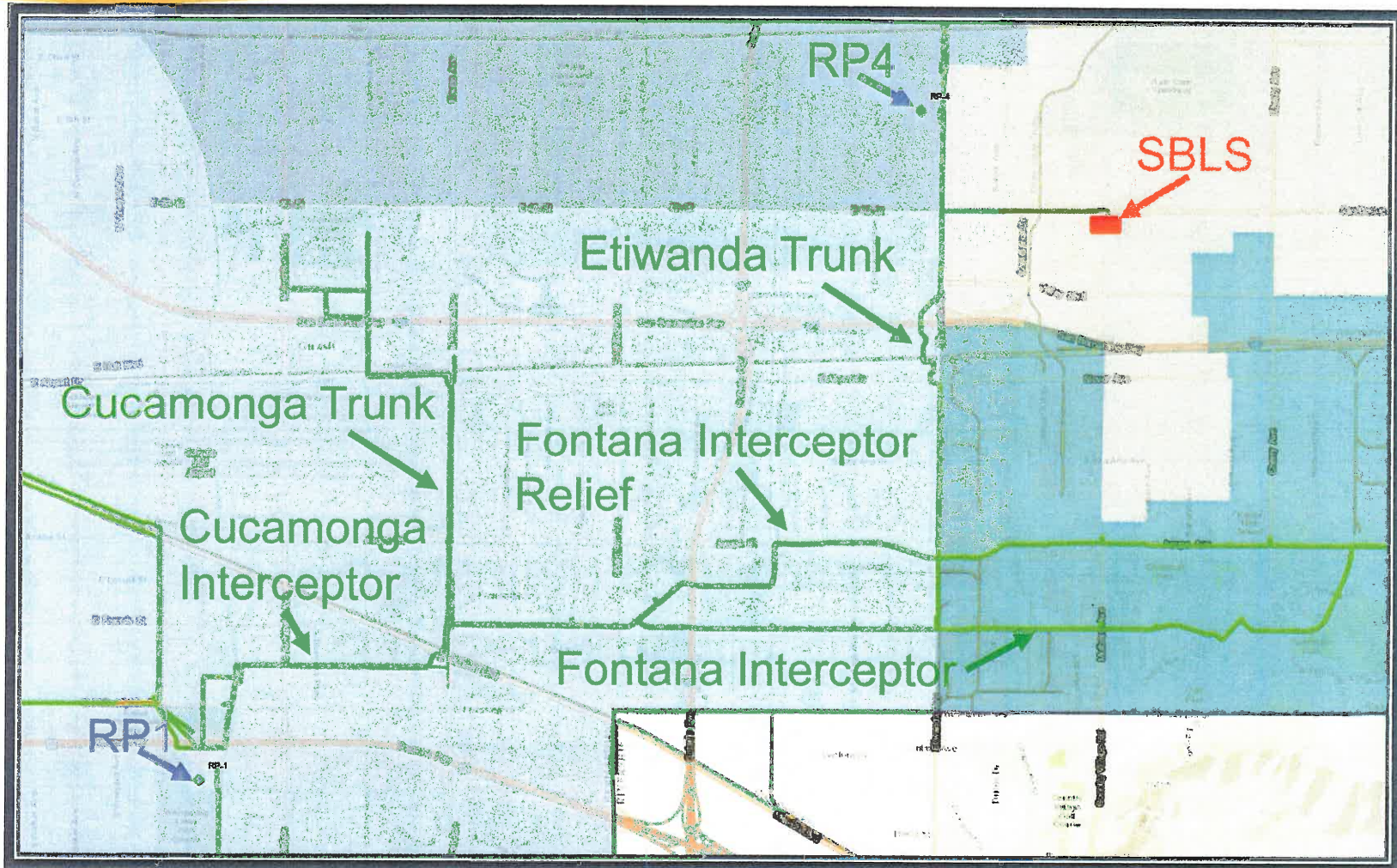
# San Bernardino Lift Station Consultant Contract Award Project No. EN17077

## Board Meeting





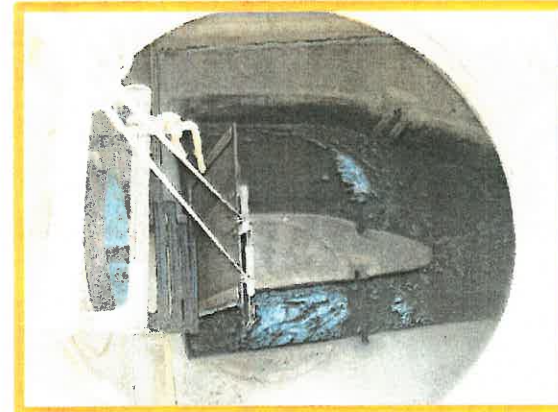
# Fontana and Ontario Tributary Area Hydraulic Analysis



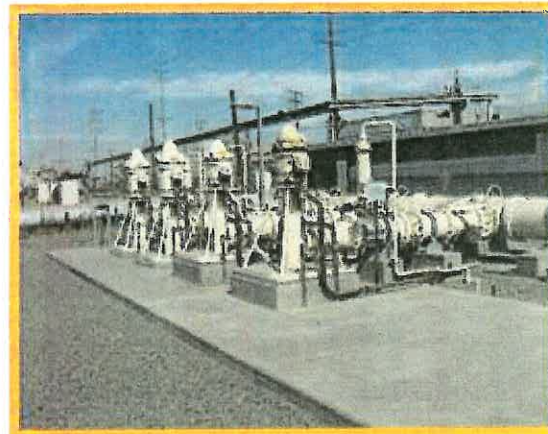


# Project Background

- San Bernardino Lift Station
  - Constructed in 2007
  - Upstream manual flow diversion
  - No automated or passive diversion
- Complete station failure may result in sanitary sewer overflow
- Diversion desired to provide additional station reliability
  - Gravity sewer overflow
  - Upstream automated diversion gates



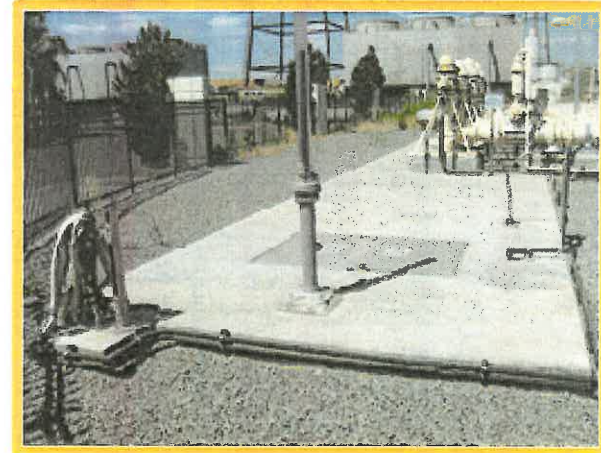
Manual Upstream Diversion Gate



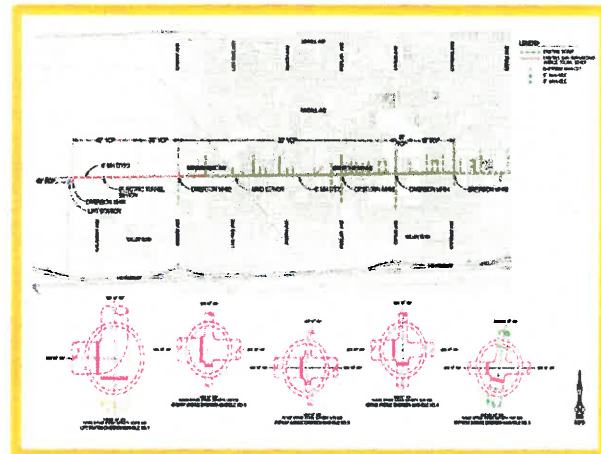
Lift Station Ancillary Equipment

# Project Scope

- Evaluate the feasibility of diversion from SBLS
- Perform hydraulic analysis and modeling of Fontana and Ontario tributary area
- Develop technical memorandum
  - Cost Analysis and Assumptions
  - Operational strategies and capital improvements
  - Recommendations



SBLS Influent Wet Well



Existing Manual Diversion Manholes



# Consultant Selection

- Evaluation and selection committee
  - Engineering and Construction Management Department
- Proposal received on April 18, 2017

Proposal Received

CDM Smith

- Justification for single source selection of CDM Smith, Inc.
  - Design engineering consultant for SBLS
  - Developed 2007 hydraulic analysis and diversion technical memorandum
  - Currently performing technical analysis on behalf of City of Fontana
  - Success in similar past projects
  - Comprehensive understanding of project scope and expectation



# Project Budget and Schedule

Description	Estimated Cost
<b>Design Services</b>	<b>\$ 2,221,520</b>
Consultant Predesign Contract (this action)	\$ 224,360
Design Consultant (10%)*	\$ 1,331,440
IEUA Design Services (2.5%)*	\$ 332,860
Project Development (2.5%)*	\$ 332,860
<b>Construction Services</b>	<b>\$ 2,074,446</b>
Design Consultant Construction Services (8%)*	\$ 1,065,152
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Construction Services Contingency (10%)*	\$ 370,146
<b>Construction</b>	<b>\$ 13,314,400</b>
Construction*	\$ 12,104,000
Contingency (10%)*	\$ 1,210,400
<b>Total Project Cost:*</b>	<b>\$ 17,386,006</b>
<b>Total Project Budget:</b>	<b>\$ 525,000</b>

Project Milestone	Date
<b>Design</b>	
Consultant Predesign Contract (this action)	July 2017
Predesign Completion	January 2018
Consultant Design Contract Award	August 2018
Detailed Design Completion	August 2019
<b>Construction</b>	
Construction Contract Award	December 2019
Construction Completion	December 2020

\* To be determined based on the results of the study. Additional funding will be requested as necessary if the project is deemed feasible.

# Recommendation

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


The San Bernardino Lift Station Project is consistent with the *IEUA's Business Goal of Wastewater Management* specifically the Water Quality objective that IEUA will ensure that systems are planned, constructed, and managed to protect public health, the environment, and meet anticipated regulatory requirements.


**ACTION  
ITEM  
1D**


Date: July 19, 2017

To: The Honorable Board of Directors

Through: Engineering, Operations, and Water Resources Committee (7/12/17)

From:  P. Joseph Grindstaff  
General Manager

Submitted by: Chris Berch   
Executive Manager of Engineering/Assistant General Manager

Shaun J. Stone   
Manager of Engineering

Subject: RP-1 Mixed Liquor Return Pumps Construction Change Order

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### **RECOMMENDATION**

It is recommended that the Board of Directors:

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.

### **BACKGROUND**

The secondary treatment system at Regional Water Recycling Plant No. 1 (RP-1) has three aeration basin systems with two trains each. In 2015, the RP-1 Mixed Liquor Return Pumps project was created to add new mixed liquor return pumps and baffle walls to each of the aeration basin systems to enhance the removal of total inorganic nitrogen (TIN) and to comply with the National Pollutant Discharge Elimination System (NPDES) and groundwater recharge program permit conditions.

A construction contract was awarded to J.F. Shea on September 21, 2016. On March 21, 2017, the contractor drained aeration train no. 2 and discovered multiple signs of failure of the existing submerged baffle wall. Staff retained the services of RMS Engineering & Design, Inc. (RMS), who designed the new baffle wall system, to investigate the failure of the existing baffle walls and

potential impacts on subsequent construction activities. Based on the investigation performed, modifications to the design of new baffle walls as well as repair of the existing baffle walls were recommended.

Following an extensive review and negotiation, J.F. Shea provided a proposed change order in the amount of \$194,173 (inclusive of all material, labor, and equipment costs) to upgrade all new baffle walls. To avoid construction delays, a change order of \$42,005 has been processed to make the proposed upgrades and repairs to aeration train no. 2 while it is offline. The total proposed change order of \$152,168 is for the remaining five trains. The upgrades to the new baffle walls will not impact the project schedule. It is expected that all construction activities will be completed by January 2018, as originally planned and within the approved project contingency.

The RP-1 Mixed Liquor Return Pumps Project is consistent with the *Agency's Business Goal of Wastewater Management*, specifically the Water Quality Objective where IEUA will ensure that Agency systems are planned, constructed, and managed to protect public health, the environment, and meet anticipated regulatory requirements.

### **PRIOR BOARD ACTION**

On September 21, 2016, the Board of Directors awarded a construction contract for the RP-1 Mixed Liquor Return Pumps, Project No. EN16024, in the amount of \$4,888,000 and RP-1 Aeration Basin Panel Repairs, Project No. EN17040, to J.F. Shea Construction, Inc., in the amount of \$1,745,000 for a total contract amount of \$6,633,000, engineering services during construction contract amendment to RMC Water and Environment for the not-to-exceed amount of \$203,000, and approved a total project budget amendment in the amount of \$371,000.

On November 18, 2015, the Board of Directors approved an engineering services contract for the RP-1 Mixed Liquor Return Pumps, Project No. EN16024, for the not-to-exceed amount of \$424,198.

### **IMPACT ON BUDGET**

If approved, the total construction contract change order for the RP-1 Mixed Liquor Return Pumps, Project No. EN16024, for a not-to-exceed cost of \$152,168 is within the total project budget of \$6,636,000 within the Regional Wastewater Capital (RC) Fund.

Attachment:  
Change Order

PJG:CB:SS:nm



# RP-1 Mixed Liquor Return Pumps Construction Contract Change Order Project No. EN16024



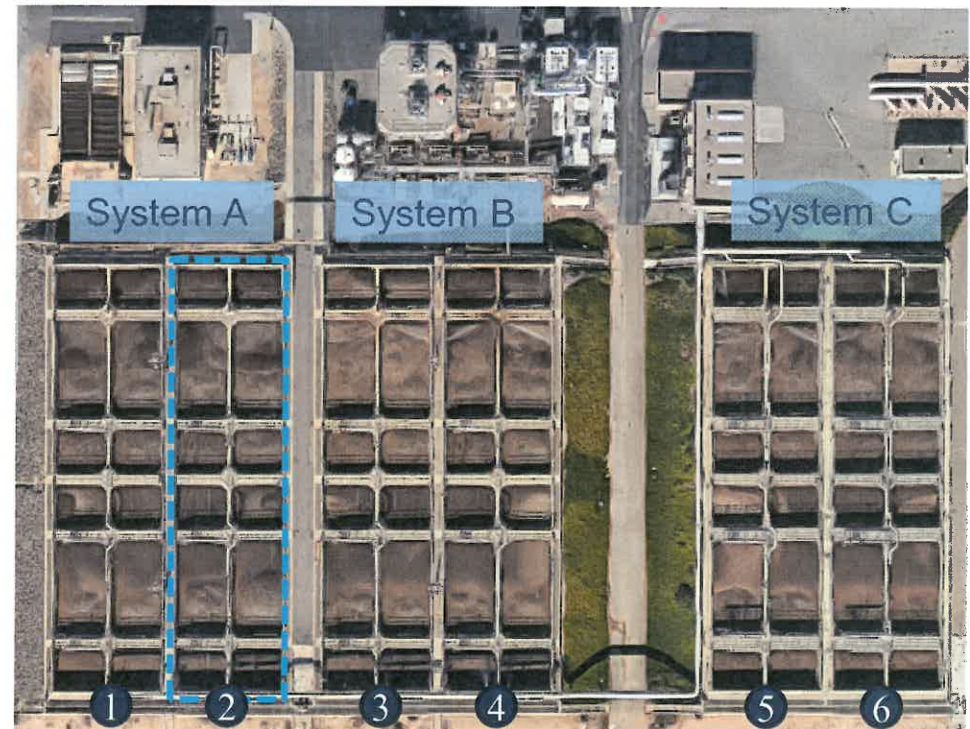
# Project Location





# Project Background

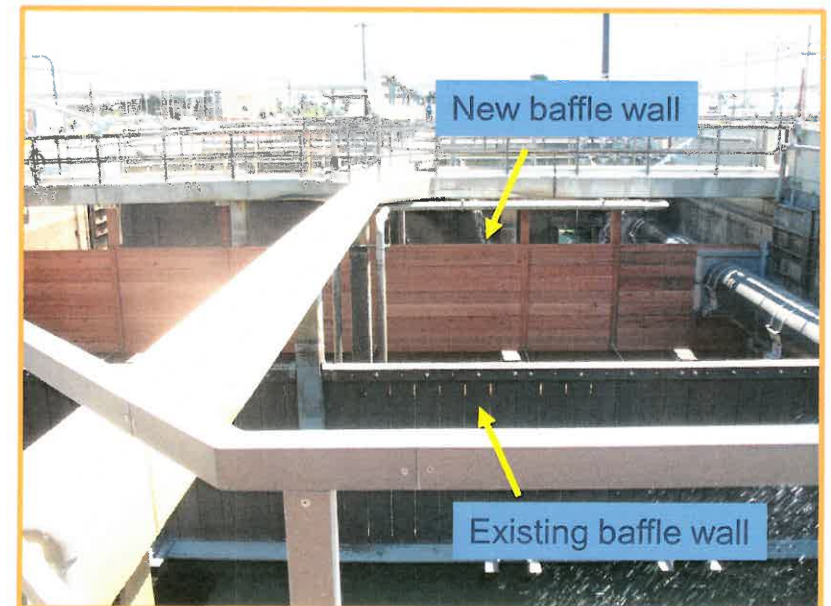
- Construction Contract Award on September 2016
  - Contractor: J.F. Shea Construction
  - Contract Value: \$4,888,000
- Train No. 2 drained in March 2017
  - Hardware failure of existing baffle wall
  - Portions of the wall deformed by failure
- New swing zone baffle walls
  - Following inspection, design was modified to account for potential additional forces





# Change Order Request

- Modifications to the new swing zone baffle walls
  - Upgrade the connection hardware
  - Install new rod support braces
- New baffle wall for Train No. 2 was upgraded:
  - A Change Order of \$42,005 was processed to avoid construction delays
- Total Change Order amount to upgrade the remaining new baffle walls: \$152,168



New and Existing Baffle Walls in Aeration Train No. 2

# Recommendation

- 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
- Authorize the General Manager to execute the construction contract change order.

The RP-1 Mixed Liquor Return Pumps Project is consistent with the **Agency's Business Goal of Wastewater Management** specifically the Water Quality Objective where IEUA will ensure that Agency systems are planned, constructed, and managed to protect public health, the environment, and meet anticipated regulatory requirements.



Purchase Requisition No. \_\_\_\_\_

Contract No. 46EN16024

Purchase Order No. 45EN16024

### CONSTRUCTION CONTRACT CHANGE ORDER

**Project Title:** Mixed Liquor Return Pumps  
**Contractor Name:** J F Shea  
**Subject:** Proposed Baffle Wall Upgrades  
**Location:** RP-1 Aeration trains  
**Change Order type:** Lump Sum

**Project No.:** EN16024  
**Change Order No.:** 0014  
**RFD No.:** N/A  
**RFI No.:** N/A  
**Classification Code:** 200

**Original Condition:**  
 During construction, Aeration Train No. 2 was drained and the existing submerged baffle wall indicated signs of movement and possible failure. Staff retained RMS Engineering & Design, Inc. (RMS), who designed the proposed baffle wall, to investigate the failure of the existing baffle walls and potential impacts on the proposed baffle wall design.

**Change Condition/Justification:**

RMS performed an inspection of the existing baffle wall and recommended upgrades to strengthen the proposed baffle walls due to forces unknown to him at design, those changes needed to upgrade the connection hardware of the proposed baffle walls with new vibration-resistant hardware, anchor bolts and installation of removable rod braces to the proposed wall.

J.F. Shea (Contractor) provided a proposed change order in the amount of \$194,173 (inclusive of all material, labor, and equipment costs) to upgrade all new swing zone baffle walls. The proposed cost was reviewed by staff and determined to be fair & equitable. To prevent potential construction delays, a change order for \$42,005 was approved and processed to make the proposed upgrades to the baffle wall in Train No.2 (RFD No. 18), which was out of service at the time. The total proposed change order is \$152,168 for the remaining five swing zone baffle walls. The upgrades to the new baffle walls will not impact the project schedule. It is expected that all construction activities will be completed by January 2018, as originally planned. This change order is a result of the additional costs incurred by the Contractor to accomplish the aforementioned task.

Time Change: 0.0 Calendar Days

Total Change Order Amount: \$152,168.00

*We the undersigned contractor, have given careful consideration to the change proposed and hereby agree, if this proposal is approved, that we will provide all labor, equipment, furnish all materials, except as may otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefore the prices shown above. The compensation offered herein represents full and final compensation for all direct and indirect costs arising from this change.*

Contractors Acceptance: \_\_\_\_\_ Date: \_\_\_\_\_

**IEUA Owner's Approval**

**Approval Recommended** \_\_\_\_\_ Date: \_\_\_\_\_  
 Construction Project Coordinator

**Approval Recommended** \_\_\_\_\_ Date: \_\_\_\_\_  
 Construction Project Manager

**Approval Recommended** \_\_\_\_\_ Date: \_\_\_\_\_  
 Department Deputy Manager

**Owner Authorization** \_\_\_\_\_ Date: \_\_\_\_\_  
 Manager of Engineering

**CONSTRUCTION CONTRACT CHANGE ORDER**

**Project No.:** EN16024

**Change Order No.:** 0014

**Change Order Details:**

- Exhibit A: Exhibit A - Contractor's Invoice (9 Pages) (2).pdf
- Exhibit B: Exhibit B - Cost Analysis (6 Pages).pdf
- Exhibit C: Exhibit C - Management Approval (xxxx Pages).pdf

# EXHIBIT - A

Contractor's Invoice

9 Pages







14280 Euclid Ave  
Chino, CA 91710  
1-888-90-BELOW

\*\*Fee Proposal

Code	Service	Cost
<b>Ground Penetrating Radar</b>		
351	Supervising Technician   Concrete / Masonry - Location of reinforcing steel, conduit .....	\$ 175.00 per hour
352	Travel Time   Per Man.....	\$ 110.00 per hour
<b>Utility Locating - Electromagnetic Locator</b>		
374	Supervising Technician   Locate Electrical, Comm., Water, Power, Gas, Sewer & Storm ..	\$ 175.00 per hour
375	Locating Technician   See terms and conditions for requirements.....	\$ 130.00 per hour
376	Travel Time   Per Crew .....	\$ 195.00 per hour
<b>Mapping</b>		
382	Mapping Party.....	\$ 215.00 per hour
383	AutoCAD drawings   Utilities .....	\$ 85.00 per hour
384	Travel Time   Per Man.....	\$ 110.00 per hour
<b>CCTV Pipe Inspection</b>		
385	Video Pipe Inspection .....	\$ 310.00 per hour
386	High Pressure Hydro-Jetting.....	\$ 300.00 per hour
387	Travel Time   CCTV Crew .....	\$ 225.00 per hour
388	Travel Time   Water Jetting Crew.....	\$ 225.00 per hour
<b>Potholing</b>		
600	Standard Pothole 1' x 1' x 5' .....	\$ 550.00 per hole
601	Pothole 1' x 1' x 5'-10' deep .....	\$ 600.00 per hole
602	Pothole 1' x 1' x 10'-15' deep .....	\$ 650.00 per hole
603	Pothole 1' x 1' x 15'-20' deep .....	\$ 850.00 per hole
604	Traffic Control - price subject to change without notice .....	\$ 800.00 per day
605	Traffic Control Plans .....	\$ 500.00 per page
606	Potholing Hourly.....	\$ 475.00 per hour
607	Travel Time   Per Crew .....	\$ 225.00 per hour
<b>Additional Fees</b>		
389	Administration / Project Coordination.....	\$ 95.00 per hour
390	Per Diem   Per technician .....	\$ 150.00 per day

C Below terms & Conditions apply to all services.

\*\*Potholes / Trenching deeper than 20 feet must call for additional pricing

\*15% Overtime charges applies to all services for Saturday work

\*20% Overtime charges applies to all services for Sunday work





BRANCH 513  
16190 VALLEY BLVD  
FONTANA CA 92335-7828  
909-829-4881  
909-356-7716 FAX

RECEIVED

4 WEEK BILLING  
INVOICE

# 145417590-003

Job Site

2662 WALNUT - 580  
2662 WALNUT STREET J F SHEA CONSTRUCTION  
x:ARCHABALD@WALNUT WALNUT, CA  
ONTARIO CA 91710  
Office: 909-444-4234 Cell: 909-349-1428

Customer # : 868343  
Invoice Date : 04/15/17  
Date Out : 03/31/17 04:00 PM  
Billed Through : 04/28/17 00:00  
UR Job Loc : 2662 WALNUT STREET,  
UR Job # : 43  
Customer Job ID:  
P.O. # : 596-235708  
Ordered By : ANDY THOMPSON  
Written By : CHRISTOPHER GILLESPI  
Salesperson : FILIBERTO CANCINO

3.1.890 1MB 0.420 33751S21.p01 245646 1-1 0



J F SHEA CONSTRUCTION INC  
PO BOX 489  
WALNUT CA 91788-0489

Invoice Amount: \$1,539.02

Terms: Due Upon Receipt  
Payment options: Contact our credit office 704-916-2482  
REMIT TO: UNITED RENTALS (NORTH AMERICA), INC.  
FILE 51122  
LOS ANGELES CA 90074-1122

RENTAL ITEMS:		Minimum	Day	Week	4 Week	Amount
Qty	Equipment	Description				
1	10361830	SCISSOR LIFT 19' ELECTRIC Make: SKYJACK Model: SJIII3219 Serial: 22077401 Meter out: 40.00 Meter in: .00	171.00	171.00	313.00	705.00
1	10569459	SCISSOR LIFT 19' ELECTRIC Make: SKYJACK Model: SJIII3219 Serial: 22108188 Meter out: 2.00 Meter in: .00	171.00	171.00	313.00	705.00
Rental Subtotal:						1,410.00
SALES/MISCELLANEOUS ITEMS:		Price	Unit of Measure	Extended Amt.		
Qty	Item					
1	ENVIRONMENTAL CHARGE	[ENV/MCI] 18.320	EACH	18.32		
Sales/Misc Subtotal:				18.32		
Agreement Subtotal:				1,428.32		
Tax:				110.70		
Total:				1,539.02		

COMMENTS/NOTES:

CURRENT CONTACT:  
ANDY THOMPSON 909-821-9083  
DELIVERY INSTRUCTIONS:  
CALL EN ROUTE

BILLED FOR FOUR WEEKS 3/31/17 THRU 4/28/17 04:00 PM

TO SCHEDULE EQUIPMENT FOR PICKUP, CALL 800-UR-RENTS (800-877-3687)  
WE ARE AVAILABLE 24/7 TO SUPPLY YOU WITH A CONFIRMATION #  
IN ORDER TO CLOSE THIS CONTRACT

THIS 4 WEEK BILLING INVOICE IS ISSUED SUBJECT TO THE TERMS AND CONDITIONS OF THE RENTAL AGREEMENT, WHICH ARE INCORPORATED HEREIN BY REFERENCE.  
A COPY OF THE RENTAL AGREEMENT IS AVAILABLE UPON REQUEST.

ORIGINAL INVOICE



INVOICE NUMBER: 4609384774  
 INVOICE DATE: 04/14/2017  
 CUSTOMER P.O. NUMBER:  
 596-235718  
 CUSTOMER ACCT: 10770200

DUNS: 00-117-3525  
 FEDERAL ID: 06-0732334

Delivery Address:

SHEA CONSTR INC\* J F  
 PO BOX 489  
 WALNUT CA 91788-0489

SHEA CONSTR INC\* J F  
 1950 S GROVE AVE  
 ONTARIO CA 91761-5693  
 ATTN: ANDY THOMPSON  
 909-594-9500

HILTI SALES REP: DORIT GALLAGHER, TUS0871108	ORDER NUMBER: 518107694
PAYMENT TERMS: 30 DAYS NET	LOCATION ID: 24165613
INVOICE DUE DATE: 05/14/2017	
SHIPMENT NUMBER APPEARS ON PACKING SLIP(S). USE TO MATCH ALL DOCUMENTS AND CONFIRM RECEIPT.	

Material Number	Material Description	Quantity Invoiced	Quantity Shipped	Sell Price	Amount Due	*
332087	SHIPMENT NUMBER: 311824055 STOP DRILL BIT TE-Y-HDA-B 30 X 190	1 EA	1 EA	329.91	329.91	A
331848	SETTING TOOL HDA M16 WTE-Y CONNECTION SHIPMENT NUMBER: 311827499	1 EA	1 EA	119.43	119.43	A
338350	UNDERCUT ANCHOR HDA-PR M16 X 190/60 FREIGHT	10 BOX	10 BOX of 4 EA = 40 EA	571.99	5,719.92 30.00	A

Taxes: State: CA 6.00 % \$ 370.16 County: 1.25 % \$ 77.11 City: 0.00 % \$ 0.00 Spcl County: 0.50 % \$ 30.85

\* A - Taxable B - Non-Taxable C - Limited Shelf Life D - Non-Domestic Source E - Non-Domestic Source NATO Exception

<b>SUB TOTAL</b>	<b>TOTAL TAX</b>	<b>TOTAL AMOUNT (USD)</b>
\$6,199.26	\$478.12	\$6,677.38

Product Sales: 800-879-8000 Website: www.us.hilti.com Hilti Credit Dept: 800-850-6195 Hilti Credit Fax: 818-282-9810 Mail all written inquiries to Hilti PO Box 21148 Tulsa, OK 74121-1148 SDS available at: www.us.hilti.com Hilti Tax Fax: 800-879-5905 Fax certificate to Tax Dept or mail with payment to remit to address

CUSTOMER ACCOUNT	INVOICE	INVOICE DATE	PREPAYMENT	AMOUNT DUE (USD)	PAYMENT ENCLOSED
10770200	4609384774	04/14/2017		\$6,677.38	

BILL TO: SHEA CONSTR INC\* J F  
 PO BOX 489  
 WALNUT CA 91788-0489

Delivery Address: SHEA CONSTR INC\* J F  
 1950 S GROVE AVE  
 ONTARIO CA 91761-5693  
 ATTN: ANDY THOMPSON  
 909-594-9500

Please make checks payable to Hilti and remit in USD. A fee of \$ 25.00 is assessed for return checks. Material returns after 90 days are subject to a \$ 125 restocking fee. Chemicals returnable within 14 days by the case only. Standard Hilti terms and conditions apply. Visit www.us.hilti.com/terms for full terms.

REMIT TO

HILTI INC.  
 PO BOX 382002  
 PITTSBURGH PA 15250-8002



I 10770200 4609384774 04142017 0000667738

# INVOICE

TRIPAC MARKETING INC.  
 Branch: 01 TRIPAC FASTENERS  
 475 KLUG CIRCLE  
 CORONA, CA 92880  
 USA

951-280-4488

**Bill To:**  
 J.F. SHEA  
 667 BREA CANYON RD  
 SUITE 30  
 WALNUT, CA 91789  
 USA

**Ship To:**  
 J.F. SHEA  
 2662 E. WALNUT  
 ONTARIO, CA 91761  
 USA

Ordered By: Mr. ANDY THOMPSON

Customer ID: 1014

INVOICE	
5710307	
Invoice Date	Page
4/25/2017 11:33:00	1 of 2
ORDER NUMBER	
1334344	

PO Number		Term Description	Net Due Date	Disc Due Date	Discount Amount	
235726-JOB596		3% 10 NET 30	5/25/2017	5/5/2017	34.60	
Order Date	Pick Ticket No	Primary Salesrep Name		Taker		
4/20/2017 13:22:30	1237532	TRIPAC PRODUCTS		JD		
Quantities			Item ID	Pricing UOM	Unit Price	Extended Price
Ordered	Shipped	Remaining	Item Description	Unit Size		

**Order Note:** FILLED BY DANNY 1BOX 2BDLS SIGNED BY ARMANDO CASTRO 4/24

**Delivery Instructions:** DELIVER 4/21 OR 4/24 TRIPAC TRUCK B-4 3PM

**Carrier:** TRIPAC TRUCK

**Tracking #:** SIGNED BY ARMANDO CASTRO 4/24

1	1	0 EA	1.0	RETURN POLICY: ALL RETURNS MUST BE AUTHORIZED BY TRIPAC. ALL RETURNS ARE SUBJECT TO A 25% RESTOCKING FEE AND MUST BE RETURNED WITHIN 30 DAYS OF SHIPMENT AND BE IN ORIGINAL TRIPAC BOXES. ALL FABRICATED ITEMS & SPECIAL ORDER/NON-STOCK ITEMS ARE FINAL.	EA	1.0	0.0000	0.00
10	10	0 EA	1.0	75C14400RAT6 3/4-10 X 12 FT ALL THREAD ROD T316	EA	1.0	82.0000	820.00
<b>Lot Number:</b> 342052				<b>Qty:</b> 10 EA				
200	200	0 EA	1.0	75CNFH6 3/4-10 FINISH HEX NUT T316	EA	1.0	1.0900	218.00
<b>Lot Number:</b> 341370				<b>Qty:</b> 200 EA				
160	160	0 EA	1.0	75R150WSF6 3/4 X 1 1/2" FLAT WASHER T316	EA	1.0	0.7200	115.20
<b>Lot Number:</b> 321318				<b>Qty:</b> 160 EA				

ORIGINAL





# Quotation

Date	Estimate #
4/12/2017	44774

**DRILLCO NATIONAL GROUP, Inc.**  
 24-32 44th Street  
 Long Island City, NY 11103  
 800-391-0052

Bill To
J.F SHEA CONSTRUCTION

Ship To

Terms	Rep	FOB	Project
CREDIT CARD	H	Origin	

Item	Description	Qty	Unit Price	Total
SAMB-750-9 1/2-7 1/2	DRILLCO 3/4" ASTM A193 GR.B8 STAINLESS STEEL MAXI BOLT TYPE 316, 9 1/2" O.L 7 1/2 EMB	20	70.00	1,400.00
SAMB-750-8-6	DRILLCO 3/4" ASTM A193 GR.B8 STAINLESS STEEL MAXI BOLT TYPE 316, 8" O.L 6" EMB	20	66.00	1,320.00
MB-750-KIT-A	3/4 " MAXI BOLT TOOL KIT A CONSIST OF THE FOLLOWING:  (2) MBTA-750-7 1/2-WC UNDERCUTTING TOOL 7 1/2" EMB (2) MBTA-750-6-WC UNDERCUTTING TOOL 6" EMB (3) XMBID-750 DIAMOND INSERT BLADES (2) MBT-750-10 U.C. TOOL CAM PIN (2) MBT-750-11 U.C. TOOL PIVOT PIN (2) MBT-750-12 U.C. TOOL INDICATOR PIN (1) MBT-PC-750 U.C TOOL PUNCH (1) DBGNG-750 GO/NO GO GAUGE (DRILL BIT) (1) UTGNG-750 GO/NO GO GAUGE (UND.TOOL) (1) HBS-750 HAND BOLT SETTER (2) MCB-750-12-SDS MAX CARBIDE HAMMER BIT (1) BRUSH-750 BRUSH FOR MAXI BOLT (1) 5426-21 MILWAUKKE 14AMP ROTARY HAMMER (1) D-125-CD-17 HIGH SPEED HAND HELD (5/8-11)  FREIGHT PREPAID AND ADD OR COLLECT, WILL SHIP 3 WEEKS ARO	1	5,518.40	5,518.40
			<b>Total</b>	\$8,238.40

# INVOICE

TRIPAC MARKETING INC.

Branch: 01 TRIPAC FASTENERS

475 KLUG CIRCLE  
CORONA, CA 92880  
USA

951-280-4488

INVOICE	
5710307	
Invoice Date	Page
4/25/2017 11:33:00	2 of 2
ORDER NUMBER	
1334344	

<i>Quantities</i>					<i>Item ID</i>	<i>Pricing UOM</i>	<i>Unit Price</i>	<i>Extended Price</i>
<i>Ordered</i>	<i>Shipped</i>	<i>Remaining</i>	<i>UOM Unit Size</i>	<i>Item Description</i>				

Total Lines: 4


**SUB-TOTAL:** 1,153.20  
**SAN BERNARDINO COUNTY:** 89.38  
**AMOUNT DUE:** 1,242.58

ORIGINAL

# QUOTATION

No. 905353

PG 1 OF 2

 <b>Phillips Steel Company</b> 1368 W Anaheim Street Long Beach, CA 90813 TEL: (562) 435-7571 FAX: (562) 437-1072 Web: www.phillipssteel.com	PURCHASE ORDER #	BUYER ANDY THOMPSON	QUOTE DATE 04/20/2017
	JOB NAME BAFFLE WALL ASSEMBLIES	Tel (909) 595-4397 Ext. 0 Fax (909) 444-4268	EXPIRES 04/25/2017
QUOTED TO JF SHEA CONSTRUCTION INC P O. BOX 489 WALNUT, CA 91788	RESALE #	SALES REP GEOFF LARSON	SHIP VIA WILL CALL
	SHIP TO Will Call	CUST ID J9909	PROCESS#
		JOBNAME BAFFLE WAL	FAB CODE TO FABSHOP
		TERMS 1% 10 DAYS/NET 30	

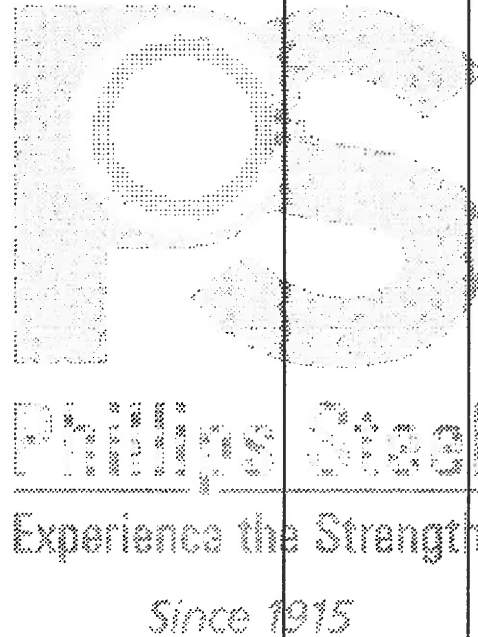
LINE	QUANTITY	DESCRIPTION	WIDTH	LENGTH	WEIGHT	UNIT PRICE	TOTAL
1	10 60 PCS	S0 3/4" CAST TURNBUCKLE 316SS BOSUN SUPPLIES COMPANY			7.2	98.97/PC	5,938.20
2	15 90 PCS	SRB34T316 ROUND STAINLESS BAR 3/4" TYPE 316 CUT TO SIZE & THREAD ENDS IN FIELD Need 3/4" 316 Threaded Rod		12'	1.620	43.43/PC	3,908.70
3	60 360 PCS	S0 3/4" HEAVY HEX NUTS 316LSS			43.2	0.99/PC	356.40
4	60 360 PCS	S0 3/4" FLAT WASHERS 316LSS			43.2	0.38/PC	136.80
5	10 60 PCS	SSP14T316 PLATE STAINLESS 1/4" TYPE 316 PUNCH (1) 13/16" HOLE ON CENTER	3"	3"	41.858	5.18/PC	310.80
6	60 PCS 10 Assemblies	SSP34T316 PLATE STAINLESS 3/4" TYPE 316 PLASMA CUT W/ (1) 13/16" HOLE	7"	8"	713.999	27.48/PC	1,648.80
Please release the quantities in RED			Andy Thompson 4/25/2017			Job 596 PO 235732	

# QUOTATION

No. 905353

PG 2 OF 2

LINE	QUANTITY	DESCRIPTION	WIDTH	LENGTH	WEIGHT	UNIT PRICE	TOTAL
7	60 PCS	SSP34T316 PLATE STAINLESS 3/4" TYPE 316 PLASMA CUT W/ (4) 11/16" HOLES	8"	13"	1,325.999	48.41/PC	2,904.60
8	30 PCS	SSP12T316 PLATE STAINLESS 1/2" TYPE 316 SHEAR DIAGONALLY TO MAKE (60) GUSSETS	7"	7"	221.142	31.96/PC	958.80
9	1 PCS	SOTT FABRICATE (60) CONNECTION PLATES W/ STIFFNER				2,750.00/PC	2,750.00
<b>TOTAL WT</b>		<b>SUBTOTAL</b>	<b>CUTTING</b>	<b>LA TAX</b>	<b>LBTX</b>		<b>TOTAL</b>
4,016 LBS		\$18,913.10	\$0.00	\$1,654.90	\$189.13		\$20,757.13



# EXHIBIT - B

Cost Analysis

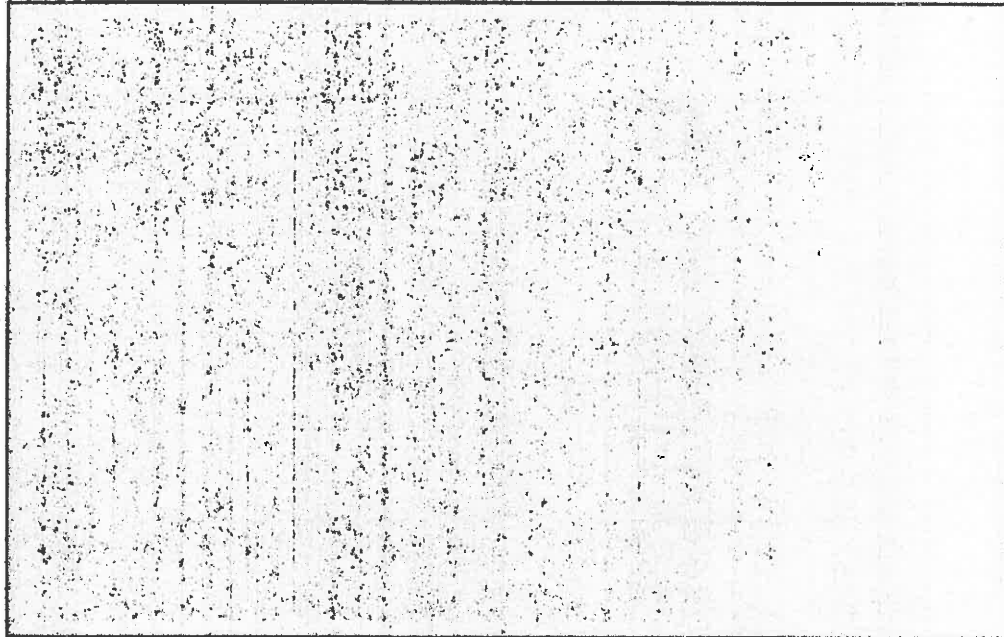
5 Pages

**COST ESTIMATE**

CONTRACTOR NAME:	J.F. SHEA CONSTRUCTION	RFD NO:	0016
PROJECT :	EN16024 MIXED LIQUOR RETURN PUMPS	DATE OF INPUT:	5/22/2017
DESCRIPTION OF WORK:	AERATION SYSTEM A OVERALL BAFFLE WALL UPGRADES		

**TOTAL COST SUMMARY, STANDARD MARK-UPS & SUBCONTRACTOR MARK-UPS**

Labor Costs (on sheet 2a, 2b, 2c)	\$	44,520.96
15% Mark-up	\$	6,678.14
TOTAL LABOR COST	\$	51,199.10
Equipment Costs (on Sheet 3a, 3b, 3c)	\$	14,880.00
5% Mark-up	\$	744.00
TOTAL EQUIPMENT COST	\$	15,624.00
Material Costs (on Sheet 4a, 4b, 4c)	\$	72,300.00
15% Mark-up	\$	10,845.00
TOTAL MATERIAL COST	\$	83,145.00
Subcontractor Costs (on Sheet 5)	\$	3,800.00
10% First \$2000.00 Mark-up	\$	200.00
5% Thereafter Mark-up	\$	90.00
TOTAL SUBCONTRACTOR COST	\$	4,090.00
TOTAL	\$	154,058.10
1% BOND	\$	1,540.58
GRAND TOTAL	\$	155,598.69
CONTRACTOR'S ACTUAL COST	\$	152,168.00
VARIENCE	\$	3,430.69





CRAFT ID	NAME		REGULAR HOURS				PREMIUM HOURS (OT or Multishift)					
	LAST	FIRST	HOURS	RATE	*SURCH ARGE	COST	HOURS	RATE	*SURCH ARGE	COST		
1	FOREMAN		64	\$ 72.42		\$ 4,634.88				\$ -		
2	LABORER		160	\$ 55.08		\$ 8,812.80				\$ -		
3	LABORER		160	\$ 55.08		\$ 8,812.80				\$ -		
4	LABORER		160	\$ 55.08		\$ 8,812.80				\$ -		
5	LABORER		160	\$ 55.08		\$ 8,812.80				\$ -		
6	OPERATOR		64	\$ 72.42		\$ 4,634.88				\$ -		
7						\$ -				\$ -		
8						\$ -				\$ -		
9						\$ -				\$ -		
10						\$ -				\$ -		
			TOTAL				\$ 44,520.96	TOTAL				\$ -

CRAFT ID	NAME		REGULAR HOURS				PREMIUM HOURS (OT or Multishift)					
	LAST	FIRST	HOURS	RATE	*SURCH ARGE	COST	HOURS	RATE	*SURCH ARGE	COST		
1						\$ -				\$ -		
2						\$ -				\$ -		
3						\$ -				\$ -		
4						\$ -				\$ -		
5						\$ -				\$ -		
6						\$ -				\$ -		
7						\$ -				\$ -		
8						\$ -				\$ -		
9						\$ -				\$ -		
10						\$ -				\$ -		
			TOTAL				\$ -	TOTAL				\$ -

CRAFT ID	NAME		REGULAR HOURS				PREMIUM HOURS (OT or Multishift)					
	LAST	FIRST	HOURS	RATE	*SURCH ARGE	COST	HOURS	RATE	*SURCH ARGE	COST		
1						\$ -				\$ -		
2						\$ -				\$ -		
3						\$ -				\$ -		
4						\$ -				\$ -		
5						\$ -				\$ -		
6						\$ -				\$ -		
7						\$ -				\$ -		
8						\$ -				\$ -		
9						\$ -				\$ -		
10						\$ -				\$ -		
			TOTAL				\$ -	TOTAL				\$ -

TOTAL LABOR COSTS #####

ADDITIONAL COMMENTS/NOTES

**EQUIPMENT SHEET**

EQUIPMENT ID NUMBER	EQUIPMENT DESCRIPTION				REGULAR HOURS			OVERTIME HOURS				
	CLASS	MAKE	CODE	ATTACH	HOURS	RATE	COST	OT FACTOR	HOURS	RATE	COST	
1					64	\$35.00	\$ 2,240.00			\$ -	\$ -	
2					64	\$35.00	\$ 2,240.00			\$ -	\$ -	
3					40	\$ 160.00	\$ 6,400.00			\$ -	\$ -	
4					80	\$ 50.00	\$ 4,000.00			\$ -	\$ -	
5							\$ -			\$ -	\$ -	
6							\$ -			\$ -	\$ -	
7							\$ -			\$ -	\$ -	
8							\$ -			\$ -	\$ -	
9							\$ -			\$ -	\$ -	
10							\$ -			\$ -	\$ -	
<b>TOTAL</b>							\$ 14,880.00		<b>TOTAL</b>			\$ -

EQUIPMENT ID NUMBER	EQUIPMENT DESCRIPTION				REGULAR HOURS			OVERTIME HOURS				
	CLASS	MAKE	CODE	ATTACH	HOURS	RATE	COST	OT FACTOR	HOURS	RATE	COST	
1							\$ -			\$ -	\$ -	
2							\$ -			\$ -	\$ -	
3							\$ -			\$ -	\$ -	
4							\$ -			\$ -	\$ -	
5							\$ -			\$ -	\$ -	
6							\$ -			\$ -	\$ -	
7							\$ -			\$ -	\$ -	
8							\$ -			\$ -	\$ -	
9							\$ -			\$ -	\$ -	
10							\$ -			\$ -	\$ -	
<b>TOTAL</b>							\$ -		<b>TOTAL</b>			\$ -

EQUIPMENT ID NUMBER	EQUIPMENT DESCRIPTION				REGULAR HOURS			OVERTIME HOURS				
	CLASS	MAKE	CODE	ATTACH	HOURS	RATE	COST	OT FACTOR	HOURS	RATE	COST	
1							\$ -			\$ -	\$ -	
2							\$ -			\$ -	\$ -	
3							\$ -			\$ -	\$ -	
4							\$ -			\$ -	\$ -	
5							\$ -			\$ -	\$ -	
6							\$ -			\$ -	\$ -	
7							\$ -			\$ -	\$ -	
8							\$ -			\$ -	\$ -	
9							\$ -			\$ -	\$ -	
10							\$ -			\$ -	\$ -	
<b>TOTAL</b>							\$ -		<b>TOTAL</b>			\$ -

TOTAL EQUIPMENT COSTS \$ 14,880.00

ADDITIONAL COMMENTS/NOTES

**MATERIALS**

0

DATE OF INVOICE		INV #	
VENDOR NAME		UNITS/LS	200
INVOICE DESCRIPTION	HILTI UNDERCUT ANCHORS 5/8"	UNIT COST	\$ 160.00
		<b>INVOICE TOTAL</b>	<b>\$ 32,000.00</b>

DATE OF INVOICE		INV #	
VENDOR NAME		UNITS/LS	1
INVOICE DESCRIPTION	316 SS ANGLE /FRAMES/PLATES	UNIT COST	\$ 16,500.00
		<b>INVOICE TOTAL</b>	<b>\$ 16,500.00</b>

DATE OF INVOICE		INV #	
VENDOR NAME		UNITS/LS	1
INVOICE DESCRIPTION	DRILLCO SETTING TOOL W/BITS	UNIT COST	\$ 6,000.00
		<b>INVOICE TOTAL</b>	<b>\$ 6,000.00</b>

DATE OF INVOICE		INV #	
VENDOR NAME		UNITS/LS	1
INVOICE DESCRIPTION	HILTI SETTING TOOL W/ BITS	UNIT COST	\$ 1,800.00
		<b>INVOICE TOTAL</b>	<b>\$ 1,800.00</b>

DATE OF INVOICE		INV #	
VENDOR NAME		UNITS/LS	1
INVOICE DESCRIPTION	MISC MATERIAL	UNIT COST	\$ 1,000.00
		<b>INVOICE TOTAL</b>	<b>\$ 1,000.00</b>

DATE OF INVOICE		INV #	
VENDOR NAME		UNITS/EA	200
INVOICE DESCRIPTION	DRILLCO UNDERCUT ANCHORS 3/4"	UNIT COST	\$ 75.00
		<b>INVOICE TOTAL</b>	<b>\$ 15,000.00</b>

DATE OF INVOICE		INV #	
VENDOR NAME		UNITS/LS	
INVOICE DESCRIPTION		UNIT COST	
		<b>INVOICE TOTAL</b>	<b>\$</b>

**TOTAL MATERIAL/SERVICES COST \$ 72,300.00**

**ADDITIONAL COMMENTS/NOTES**

**SUBCONTRACTOR SHEET**

0

DATE OF INVOICE		INV #	
SUBCONTRACTOR		UNITS/LS	1
SUB WORK	SCAN FOR EXISTING REBAR	UNIT COST	\$ 3,800.00
		<b>INVOICE TOTAL</b>	\$ 3,800.00

DATE OF INVOICE		INV #	
SUBCONTRACTOR		UNITS/LS	
SUB WORK		UNIT COST	
		<b>INVOICE TOTAL</b>	\$ -

DATE OF INVOICE		INV #	
SUBCONTRACTOR		UNITS	1
SUB WORK		UNIT COST	
		<b>INVOICE TOTAL</b>	\$ -

DATE OF INVOICE		INV #	
SUBCONTRACTOR		UNITS	1
SUB WORK		UNIT COST	
		<b>INVOICE TOTAL</b>	\$ -

DATE OF INVOICE		INV #	
SUBCONTRACTOR		UNITS	1
SUB WORK		UNIT COST	
		<b>INVOICE TOTAL</b>	\$ -

DATE OF INVOICE		INV #	
SUBCONTRACTOR		UNITS	1
SUB WORK		UNIT COST	
		<b>INVOICE TOTAL</b>	\$ -

DATE OF INVOICE		INV #	
SUBCONTRACTOR		UNITS	1
SUB WORK		UNIT COST	
		<b>INVOICE TOTAL</b>	\$ -

**TOTAL MATERIAL/SERVICES COST \$ 3,800.00**

**ADDITIONAL COMMENTS/NOTES**

# EXHIBIT - C

Management Approval

Board Approval to Follow


**ACTION  
ITEM  
1E**





Date: July 19, 2017

To: The Honorable Board of Directors

Through: Engineering, Operations, and Water Resources Committee (7/12/17)  
Finance and Administration Committee (7/12/17)

From:  P. Joseph Grindstaff  
General Manager

Submitted by: Chris Berch   
Executive Manager of Engineering/Assistant General Manager

Shaun J. Stone   
Manager of Engineering

Subject: Public Contract Code Section 3400(c) - Sole Source Requests

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### **RECOMMENDATION**

It is recommended that the Board of Directors authorize the General Manager, or his designee, to review and approve sole source requests for materials, products, things, or services per Public Contract Code Section 3400(c) consistent with the protocol defined herein.

### **BACKGROUND**

Existing law prohibits, except in specific circumstances, a public agency responsible for letting a public works contract from drafting bid specifications for that contract in a manner that limits the bidding to any one product, unless the specification is followed by the words “or equal” allowing bidders to furnish any equal material, product, things, or services. The law requires that these bid specifications provide time to allow the contractor to submit data that demonstrates that the material, product, things, or services to be provided under the contract is equal to the material, product, things, or services identified in the bid specification.

Public Contract Code 3400(c) allows for exceptions to the “or equal” requirements specifically related to system standardization, sole availability, and emergencies. In a very limited amount of cases, a single source product or service is needed to provide IEUA with the ability to effectively complete a project design acceptable to operations, maintenance, and system standardization requirements.

To legally meet this need, Section 3400(c) states that the awarding authority, in this case the IEUA Board of Directors, must “describe” the finding of a need to specify a single source for a material, product, thing, or service and the contracting agency will thoroughly consider and document the decision before invoking an exception in section 3400(c). The method of documentation would be an evaluation memo analyzing the circumstances surrounding the single source selection. Typically, this exception will be used for system standardization to match equipment within the IEUA system facilitating simpler maintenance and operation.

In consultation with IEUA legal counsel, this authority can be delegated by the Board of Directors to another party within the organization. Approval for single source request for materials, products, things, or services in accordance with Public Contract Code Section 3400(c), shall require the review and approval from the following Agency employees:

- Manager of Engineering, or designee (initial approval)
- Manager of Contracts and Facilities Services, or designee (initial approval)
- The General Manager, or designee (final approval)

In addition to the above approvals, during the construction award, staff will indicate within the staff report to the Board that a Section 3400 exception was used and for what items within the project.

The Sole Source Authorization is consistent with *IEUA's Business Goal of Business Practices* that IEUA will be ethical, cost-effective, and apply environmentally sustainable regional planning principles in all aspects of business and public service.

#### **PRIOR BOARD ACTION**

None.

#### **IMPACT ON BUDGET**

None.


PJG:CB:SS:dm

**ACTION  
ITEM  
1F**





Date: July 19, 2017

To: The Honorable Board of Directors

Through:  Engineering, Operations, and Water Resources Committee (7/12/17)

From: P. Joseph Grindstaff  
General Manager

Submitted by: Chris Berch   
Executive Manager of Engineering/Assistant General Manager

Sylvie Lee   
Manager of Planning & Environmental Resources

Subject: IEUA-Pomona-MVWD RW Intertie Project Consultant Contract Award

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### **RECOMMENDATION**

It is recommended that the Board of Directors:

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.

### **BACKGROUND**

The City of Pomona (Pomona), Monte Vista Water District (MVWD), and IEUA have collaboratively initiated a Recycled Water Feasibility Study (Study) to evaluate future opportunities to increase the water supply within the region. In the Integrated Water Resources Plan (IRP), the interagency connection was identified as a potential additional water supply. The Study is evaluating the viability of potential supply sources and interconnections to convey treated recycled water and Spadra Basin groundwater to direct use recycled water customers, groundwater recharge basins, and aquifer storage and recovery wells.

Phase 1 of the Study developed analysis of various recycled water intertie opportunities was completed by the consulting team of Carollo Engineers and Thomas Harder & Company (TH&Co) in June 2016. The team was selected through a competitive solicitation process. The highest-ranking

alternative from the Phase 1 Study included recycled water supply from the Pomona Water Reclamation Plant (PWRP) and groundwater from Pomona's Spadra Well 19, a 3.1 MGD advanced water treatment facility, a booster station, pipeline conveyance, and recharge in the Montclair Basins. The project would provide a new water source to the region, increase groundwater recharge, improve groundwater quality, alleviate existing and potential future subsidence, and allow for expansion to include aquifer storage and recovery injection wells. Variations of this project are included in the Phase 1 alternative analysis.

Pomona, MVWD and IEUA have requested a follow-up study to further analyze the top-ranking project alternatives and determine the most beneficial and cost effective interagency project. Phase 2 will include the feasibility of recycled water recharge in the Montclair Basins and potential injection wells in the western portion of the Chino Basin. The analysis will expand the technical evaluation and prepare in-depth groundwater modeling to determine the most beneficial project siting, long-term benefits, and project costs. The Carollo and TH&Co team is the most qualified in expanding their Phase 1 evaluation and preliminary modeling efforts. The consultant team has provided a proposal for a not-to-exceed amount of \$119,900 to perform the follow-up evaluation. A planning grant of \$75,000 has been awarded and will reduce the net costs for this effort. As with the first phase, the three parties are jointly preparing the study and will equally share the cost.

IEUA's recycled water and groundwater recharge programs are a critical component of the water resources management strategy for the region and the Chino Basin. This project will continue to expand these programs to plan for growth, supply management, and expandability through interties with neighboring agencies to maximize the beneficial use of available recycled water. The IEUA-Pomona-MVWD Recycled Water Intertie Project is consistent with IEUA's Business Goals of *Water Reliability* by providing new water supplies and maximizing the beneficial reuse of recycled water through the enhancement of groundwater recharge.

### **PRIOR BOARD ACTION**

On July 20, 2016, the Board adopted the CEQA for the IEUA-Pomona-MVWD Intertie Project.

On September 16, 2015, the Board adopted Resolution No. 2015-09-11 to sign and file a grant application to the State Water Resources Control Board for the development of the Feasibility Study.

On July 15, 2015, the Board approved the Memorandum of Understanding for the Recycled Water Intertie with Monte Vista Water District and City of Pomona.

### **IMPACT ON BUDGET**

If approved, the consulting engineering services contract for the Recycled Water Intertie Phase 2 Study, Project No. EN16060, for the not-to-exceed amount of \$119,900 is within the total project budget of \$10,000,000 in the Recycled Water (WC) Fund. The awarded Proposition 13 grant of \$75,000 requires a 50 percent match share that will be shared equally by IEUA, Pomona, and MVWD.

Attachments: Consultant Contract

# IEUA-Pomona-MVWD Recycled Water Intertie Consultant Contract Award



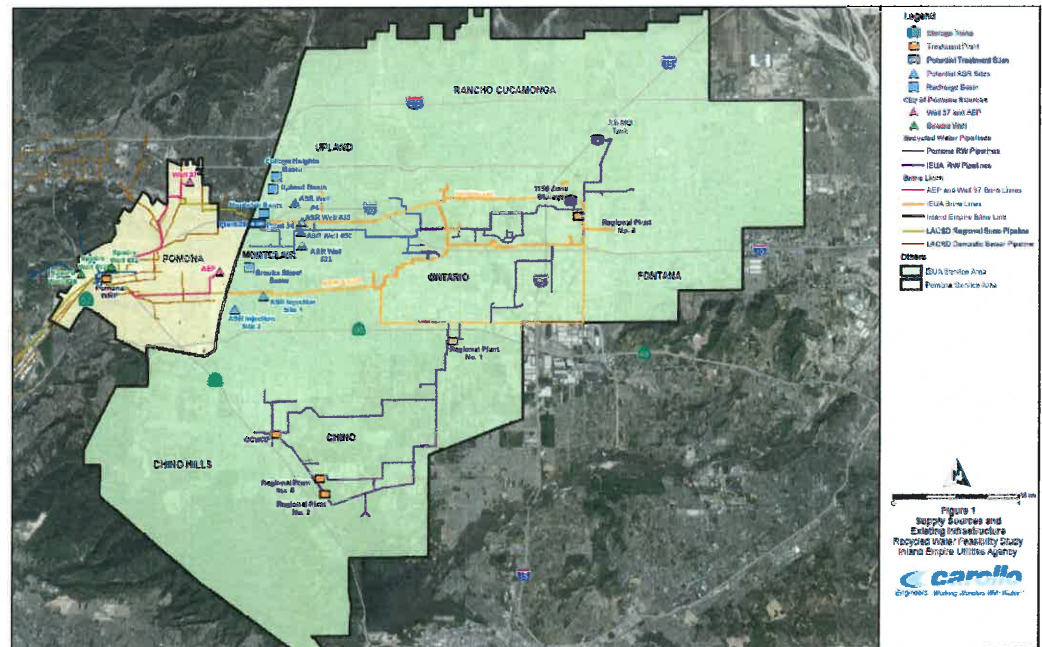
# Recycled Water Intertie

- Collaboration between Pomona, MVWD and IEUA
  - Memorandum of Understanding/Equal Cost Share (July 2015)
- Completed Phase 1 Feasibility Study for a potential RW intertie
- Long-term water supply options for the service area
- Maximize the beneficial use of recycled water
- Address potential land subsidence in Management Zone 1
- Consistent with the objectives of:
  - 2015 Integrated Water Resources Plan
  - 2015 Recycled Water Program Strategy



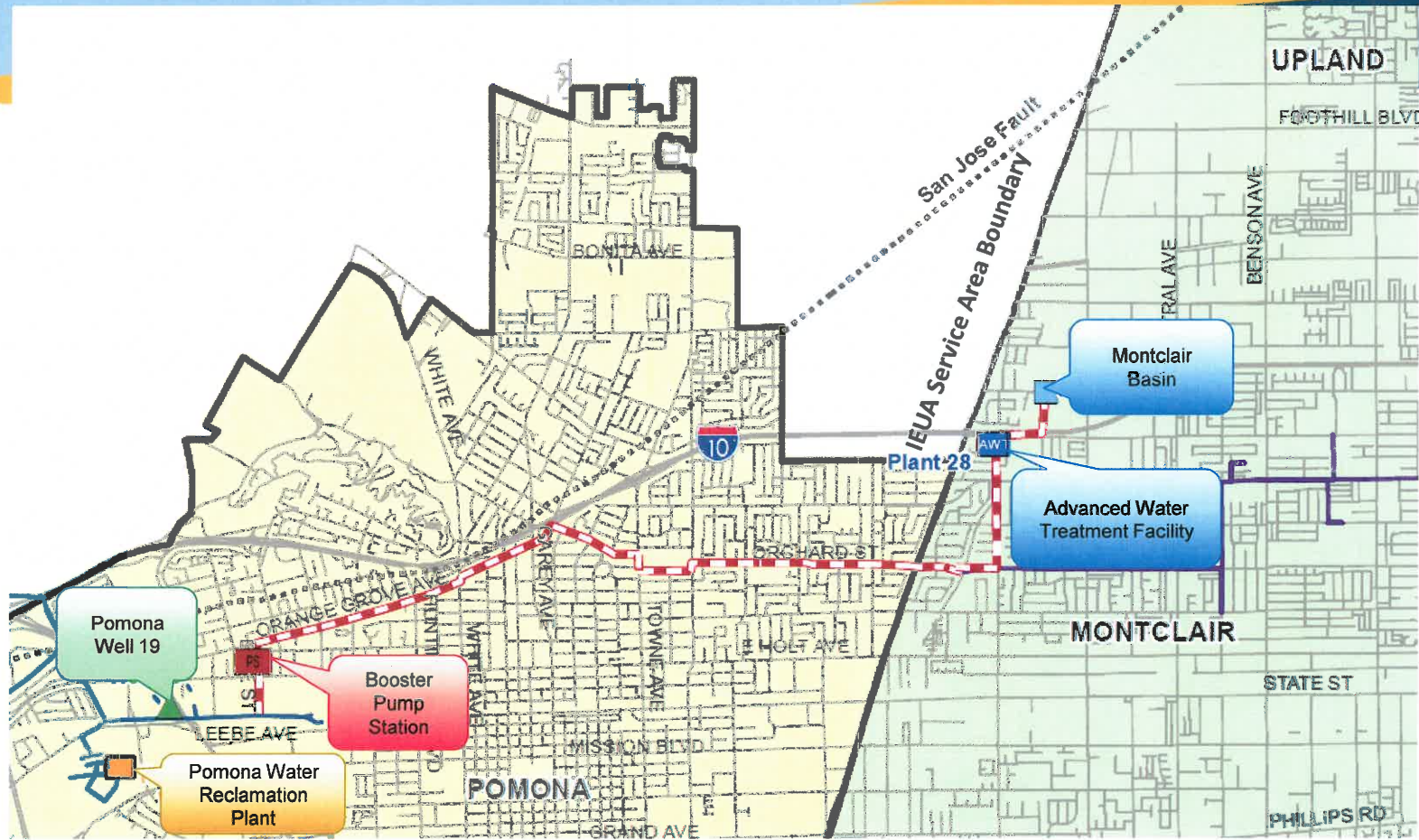
# Feasibility Study Phase 1

- Supply sources evaluated
  - RW from Pomona Water Reclamation Plant
  - Groundwater from Spadra Well 19
  - Non-Reclaimable Wastewater (NRW)
- Water quality considerations
- Regulatory impacts
- Land subsidence improvements
- Facilities required



Phase 1: Supply Sources & Existing Infrastructure Map

# Top-Ranked Alternative



# Feasibility Study Phase 2

- In-depth technical evaluation of top-ranked alternatives
  - Consider use of existing pipelines
  - Siting for advanced water treatment facility
  - Siting for injection wells
  - Potential layout schematic
  - Cost estimates
- Groundwater modeling
  - Land subsidence improvements
  - Time to nearest well
  - Water quality impacts
- Awarded planning grant of \$75,000



# Recommendation

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

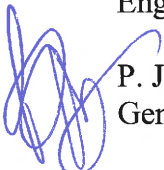
The IEUA-Pomona-MVWD Recycled Water Intertie Project is consistent with **IEUA's Business Goals of Water Reliability** by providing new water supplies and maximizing the beneficial reuse of recycled water through the enhancement of groundwater recharge.


**ACTION  
ITEM  
1G**


Date: July 19, 2017

To: The Honorable Board of Directors

Through: Engineering, Operations, and Water Resources Committee (7/12/17)

From:  P. Joseph Grindstaff  
General Manager

Submitted by: Chris Berch   
Executive Manager of Engineering/Assistant General Manager

 Sylvie Lee  
Manager of Planning and Environmental Resources

Subject: Environmental Services Master Contract Amendment No. 2

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### **RECOMMENDATION**

It is recommended that the Board of Directors:

1. Approve 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.

### **BACKGROUND**

On February 20, 2013, IEUA awarded an on-call environmental consulting service contract to TDA for a not-to-exceed amount of \$500,000, through a competitive solicitation process. Services requested through this solicitation were to support all capital and ongoing operations and maintenance programs for a period of five years, with the possibility for two, one-year extensions.

On February 17, 2015, the Agency approved an amendment to the on-call environmental service contract with TDA for \$200,000 with a not-to-exceed maximum total of \$700,000, primarily to support projects such as long term environmental permitting, Recharge Master Plan Update (RMPU) implementation, and South Archibald Plume.

At the end of the fourth quarter of FY 2016-17, the current Master Contract has an unspent balance of approximately \$30,000. Based on the Agency's current capital improvement projects, asset

management needs, and anticipated grant opportunities, staff is recommending an amendment to the TDA contract for an additional amount of \$300,000. The additional amount will amend the TDA contract not-to-exceed amount from \$700,000 to \$1,000,000. This is anticipated to meet the Agency's environmental consulting service needs from TDA for the remainder of the contract term through June 30, 2018.

TDA has delivered outstanding service to IEUA since 2000, providing various environmental permitting necessary for the capital improvements, Proposition 1 funding, grant applications, as well as field environment/habitat monitoring and reporting needed to comply with existing permit requirements.

Task Orders will be issued as specific projects or permitting needs require. All expenditures will be appropriately charged to the corresponding project.

The proposed TDA master contract amendment is consistent with the *Agency's Business Goal of Environmental Stewardship and Regulatory Compliance*, as approved by the Board of Directors in December 2016.

#### **PRIOR BOARD ACTION**

On February 17, 2015, the IEUA Board of Directors approved an amendment to the on-call environmental service contract with TDA for \$200,000, with a not-to-exceed maximum total of \$700,000.

On February 20, 2013, the IEUA Board of Directors approved an Environmental Services Consultant Contract with TDA for a not-to-exceed fee of \$500,000.

#### **IMPACT ON BUDGET**

The action has no immediate budget impact, as this is an amendment to the Master Contract for On-Call Services and the actual costs will be based on Task Orders developed for each task and charged to specific projects. The project budgets in the Agency's Adopted Budget include specific funding for environmental permitting.



# Environmental Services Master Contract Amendment No. 2



# Background

- Tom Dodson & Associates (TDA) has been providing environmental services to IEUA since 2000
- Master Contract – 2013 thru 2018
  - Master Contract - \$500,000
  - Amendment No. 1 in 2015 added \$200,000 → \$700,000 total

# Proposed Contract Amendment No. 2

- Additional \$300,000, not to exceed \$1,000,000 total contract

Project Type	Estimated FY 17/18 Services
Conveyance	\$20,000
Facilities	\$60,000
Groundwater Recharge	\$145,000
Laboratory	\$25,000
Planning	\$50,000
<b>TOTAL</b>	<b>\$300,000</b>

## Recommendation

- 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
- Authorize the General Manager, or in his absence, his designee to execute the contract amendment, subject to non-substantive changes.

The project meets IEUA's adopted ***Business Goals of Environmental Stewardship and Regulatory Compliance***, as approved by the Board of Directors in December 2016.



**CONTRACT AMENDMENT NUMBER: 4600001385-002**  
**FOR**  
**ON-CALL ENVIRONMENTAL CONSULTING SERVICES**

THIS AMENDMENT TWO 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 Tom Dodson and Associates, with offices located in San Bernardino, California (hereinafter referred to as "Consultant"), and shall revise the Contract as amended:

**SECTION 3, TERM, IS HEREBY AMENDED TO READ AS FOLLOWS:**

The term of this Contract shall extend from the date of the Notice to Proceed and terminate on June 30, 2019 unless agreed to by both parties, reduced to writing, and amended to this Contract.

**SECTION 6, COMPENSATION AND CHANGES, IS HEREBY AMENDED TO ADD THE FOLLOWING:**

The total NOT-TO-EXCEED amount of the Contract, inclusive of this Amendment No. 2, is \$1,000,000, a net increase of \$300,000, for all services provided throughout the term of this Contract. The Consultant shall not be paid for any amount exceeding the NOT-TO-EXCEED amount, nor for work completed beyond the termination date without an Amendment to the Contract.

**ALL OTHER PROVISIONS OF THIS CONTRACT REMAIN UNCHANGED.**

[Signature Page To Follow]



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

INLAND EMPIRE UTILITIES AGENCY:  
(A MUNICIPAL WATER DISTRICT)

TOM DODSON AND ASSOCIATES:

\_\_\_\_\_  
P. Joseph Grindstaff  
General Manager

(Date)

Tom Dodson  
Tom Dodson  
President

6/29/17  
(Date)

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**ACTION  
ITEM  
1H**

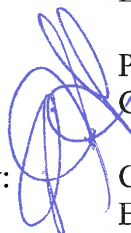



Date: July 19, 2017

To: The Honorable Board of Directors

Through: Engineering, Operations, and Water Resources Committee (7/12/17)

From: P. Joseph Grindstaff  
General Manager

Submitted by: Chris Berch   
Executive Manager of Engineering/Assistant General Manager

Sylvie Lee   
Manager of Planning and Environmental Resources

Subject: IERCF Solar Photovoltaic and Energy Storage Agreement Amendment

---

### **RECOMMENDATION**

It is recommended that the Board of Directors:

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.

### **BACKGROUND**

Inland Empire Regional Composting Facility (IERCF) and Inland Empire Utilities Agency (IEUA) Regional Water Recycling Plant No.4 (RP-4) share the same electricity utility meter. The IERCF/RP-4 electricity portfolio currently includes 1 Mega-Watt (MW) solar photovoltaic system Power Purchase Agreement (PPA), 1 MW wind turbine PPA, and electricity purchased from the grid.

Approximately 90% of the electricity usage at IERCF/RP-4 is purchased from the grid through Southern California Edison (SCE). More on-site renewable generation may be added to reduce the dependence from SCE, hedge against increasing energy costs, and promote environmental

stewardship. However, a behind the meter energy storage system is required to prevent electricity export to the grid when on-site generation exceeds IERCF/RP-4 electrical load, and to provide the highest financial returns.

On October 14, 2015, IEUA entered into a 10-year agreement with Advanced Microgrid Solutions, Inc. (AMS) for the installation, operation, and maintenance of 3.65 Mega Watts (MW) of energy storage at several IEUA treatment plants at AMS's sole cost and expense. The battery will efficiently integrate renewable generation facilities, improve energy load management, and provide cost savings by shifting electricity use away from expensive peak hours. Pending IEUA Board approval, the agreement between IEUA and AMS would be amended to increase the energy storage capacity up to 4.0 MW and to include a 1.5 MW solar photovoltaic power plant. The energy storage and solar photovoltaic power plant will be owned, operated and maintained by AMS; in exchange, IERCA and IEUA will provide AMS monthly payments for the energy management services. Since the estimated savings is expected to be greater than the monthly payments for the proposed amendment, AMS provided a minimum net savings assurance to IERCA and IEUA combined of approximately \$178,000 per year for 20 years as shown in the table below.

Item	Existing Agreement	Proposed Amendment
<b>Portfolio Size</b>	3.65 MW (Battery) -	4.0 MW (Battery) 1.5 MW (Solar)
<b>Guaranteed Energy Cost Savings</b>	\$292,000/Yr	\$700,000/Yr
<b>AMS Energy Management Fee</b>	\$237,000/Yr	\$522,000/Yr
<b>Net Guaranteed Savings</b>	\$55,000/Yr	\$178,000/Yr

The installation of the 1.5 MW solar photovoltaic power project was approved by the IERCA Board on May 1, 2017. Subsequent to further engineering evaluation of the roof structure and IEUA Board approval, IEUA General Manager will then negotiate and execute the agreement between IERCA and IEUA to authorize AMS to install the 1.5 MW solar photovoltaic power plant, and to establish an approved energy management fee and cost savings allocation method between IERCA and IEUA.

IEUA's General Counsel and Financial Consultant, Public Financial Management, Inc., reviewed the proposed agreement and provided comments that were incorporated into the final agreement amendment language.

The project meets IEUA's adopted Business goals for *Wastewater Management* by optimizing renewable resources, containing future energy costs, and progressing toward peak power independence with the proposed Energy Management strategy.

**PRIOR BOARD ACTION**

On March 15, 2017, the Board of Directors approved the amendment to the Energy Storage Services Agreement between IEUA and AMS.

On October 14, 2015, the Board of Directors approved the Energy Storage Services Agreement between IEUA and AMS.

On August 19, 2015, the Board of Directors approved a revised MOU between IEUA and AMS for a Master Lease and Energy Services Agreement.

On February 18, 2015, the Board of Directors approved a Memorandum of Understanding (MOU) between IEUA and AMS for a Master Lease and Energy Services Agreement.

**IMPACT ON BUDGET**

If approved, IEUA and IERCA will realize a minimum savings of \$178,000 per year for 20 years from AMS for energy load management through the batteries and for the electricity generated by the solar photovoltaic power plant.

Attachment: Second Amendment to Energy Management Services Agreement

# IERCF Solar Photovoltaic and Energy Storage Agreement Amendment



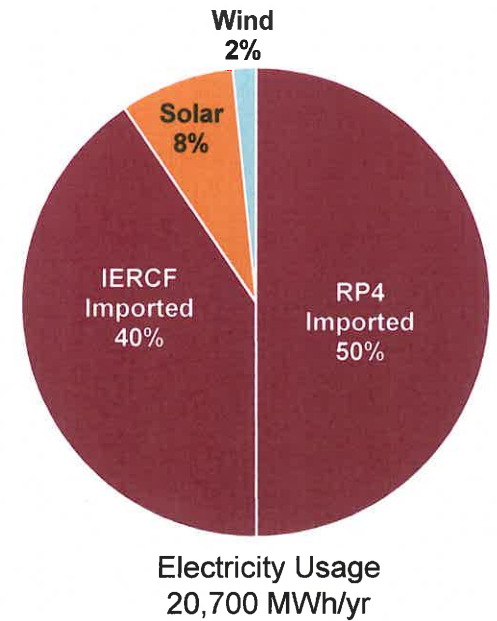
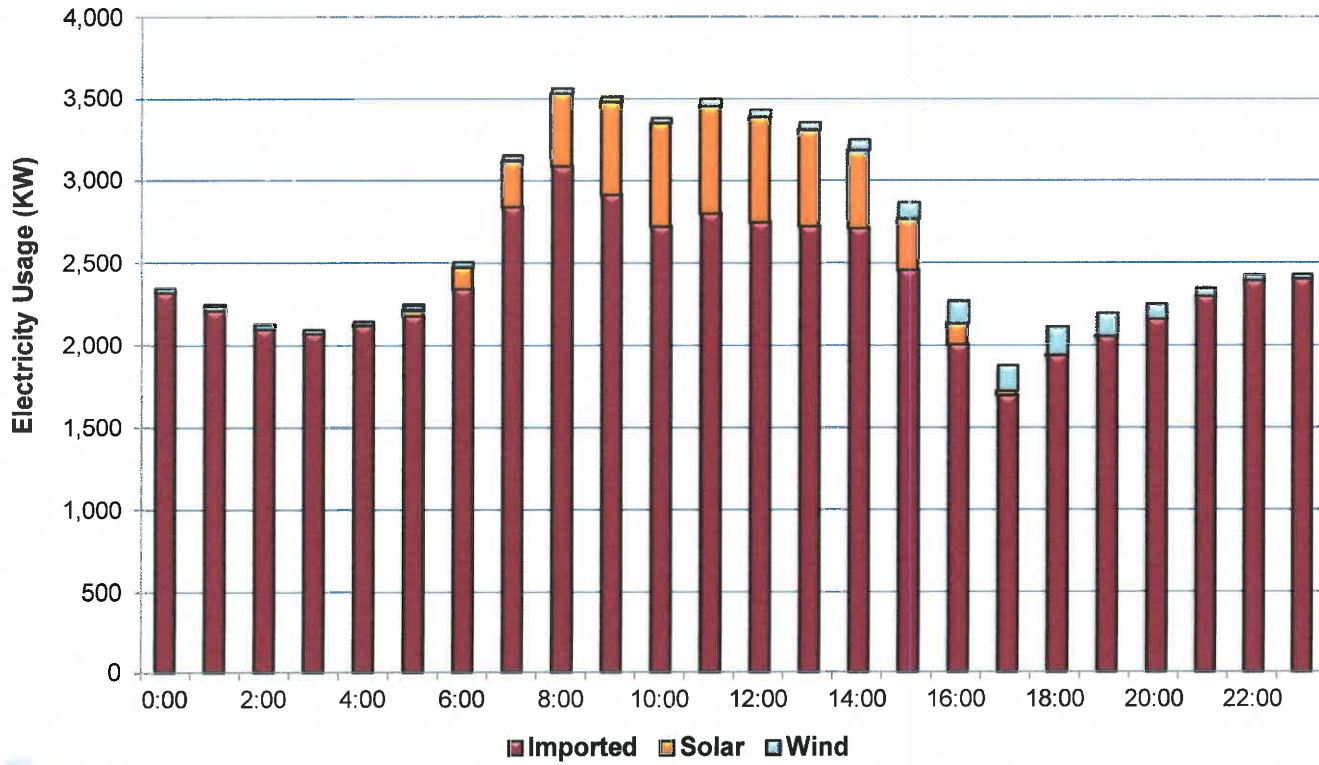
Pietro Cambiaso  
July 2017

# Background

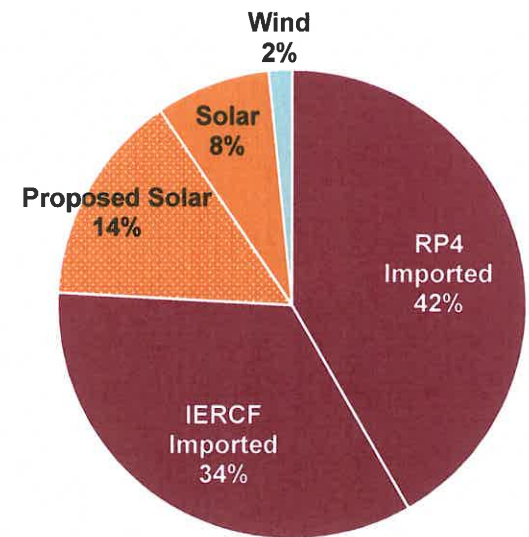
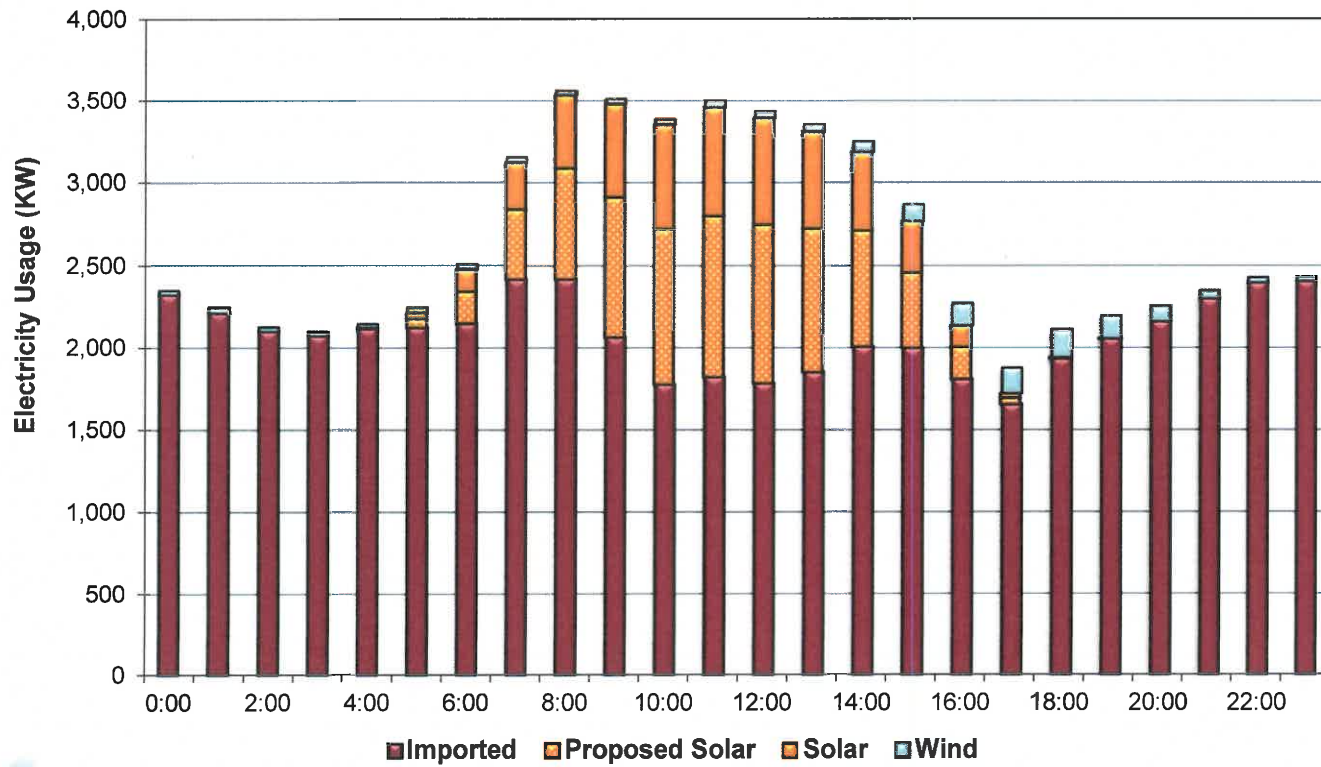
- Grid electricity from a single meter for IERCF/RP-4
- Existing solar (Phase I) at IERCF
  - 1 MW Power Purchase Agreement (2008–2027)
- Existing wind turbine at RP-4
  - 1 MW Power Purchase Agreement (2012–2031)
- IEUA-Advanced Microgrid Solutions (AMS) agreement
  - 1.25 MW RP-4 energy storage (2016–2027)



# Electricity Usage



# Electricity Usage



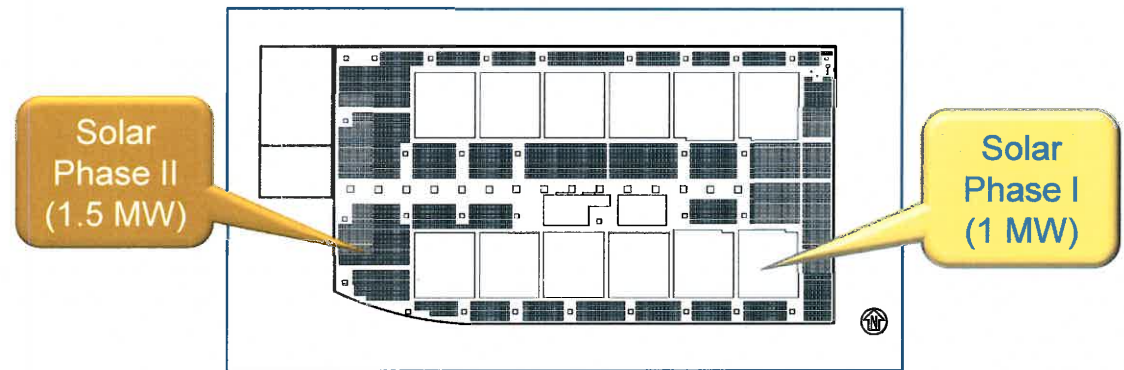
Electricity Usage  
20,700 MWh/yr

Proposed Solar  
3,000 MWh/yr



# Proposed Solar Phase II

- Turnkey battery storage & solar PV system
  - No capital cost to IERCA/IEUA
  - 20-Year AMS-IEUA agreement
- Solar Phase II system size: 1.5 MW (3,000 MWh/Yr)
- Battery energy storage: 1.5 MW
- Construction completion: December 2017



*IERCF Roof Top with Solar Phase 2*

# AMS Agreement Terms (Agency Wide)

Item	Existing Agreement	Proposed Amendment
<b>IEUA Portfolio Size</b>	3.65 MW Battery (RP-1 RP-4, RP-5, CCWRF) -	4.0 MW Battery (RP-1 RP-4, RP-5, CCWRF) 1.5 MW Solar (IERCF)
<b>Guaranteed Energy Cost Savings</b>	\$292,000/Yr	\$700,000/Yr
<b>AMS Energy Management Fee</b>	\$237,000/Yr	\$522,000/Yr
<b>Net Guaranteed Savings</b>	\$55,000/Yr	\$178,000/Yr

# Recommendation

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

*The project meets IEUA's adopted Business goals for Wastewater Management by optimizing renewable resources, containing future energy costs, and progressing toward peak power independence with the proposed Energy Management strategy.*

## SECOND AMENDMENT TO ENERGY MANAGEMENT SERVICES AGREEMENT

This SECOND AMENDMENT TO ENERGY MANAGEMENT SERVICES AGREEMENT (“Second Amendment”) is made as of this \_\_\_\_ day of \_\_\_\_\_, 2017 (“Effective Date”), by and between ADVANCED MICROGRID SOLUTIONS, INC., a Delaware corporation (“Provider”), and INLAND EMPIRE UTILITIES AGENCY, a municipal water district (“Host Customer”), with reference to the following facts:

### RECITALS

A. Host Customer and Provider are parties to those certain Special Terms and Conditions of the Energy Management Services Agreement, dated October 14, 2015 (“Original Special Conditions”), which incorporate by reference those certain General Terms and Conditions of the Energy Management Services Agreement, dated October 14, 2015 (the “Original General Conditions” and together with the other schedules and exhibits attached thereto and to the Original Special Conditions, and as amended by that certain First Amendment to Energy Management Services Agreement (the “First Amendment”), dated March 23, 2017, the “Original Agreement,” and as amended by this Second Amendment, the “Agreement”). Capitalized terms used in this Second Amendment, and not otherwise defined herein, shall have the meanings ascribed to them in the Original Agreement.

B. Pursuant to Section 18.3 of the Original General Conditions, Host Customer and Provider agree to amend the Original Agreement pursuant and subject to the terms and conditions contained herein.

### AGREEMENT

NOW THEREFORE, in consideration of the mutual covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Host Customer and Provider hereby amend the Original Agreement as follows:

1. Solar Photovoltaic Generating Systems.

1.1. Additional Energy Management Services. The Parties desire to include the generation of electricity from a solar photovoltaic generating facility as part of the Energy Management Services. Accordingly, Schedule 1 attached to the Original Special Conditions is hereby amended by adding the following as Section 9 thereto:

*9. Generation of electricity from solar photovoltaic generating facilities (as contemplated and agreed to by the parties in Section 8 above) installed, operated, and/or located at any Project Site, which such generated electricity may be (a) utilized to charge, re-charge, operate, and monitor other components of the Energy Storage System, such as a battery or other technology system, (b) discharged to the Premises, and/or (c) exported to the Local Electric Utility grid.*

1.2. Energy Storage System. The Parties desire to expressly include solar photovoltaic generating systems within the definition of Energy Storage System. Accordingly, Section 1.1 of the Original General Conditions is amended by adding the following sentence to the end of the defined term “Energy Storage System”:

*For purposes of clarity, an Energy Storage System may include a solar photovoltaic generating facility, with the electricity generated therefrom being (a) utilized to charge, re-charge, operate, and monitor other components of the Energy Storage System, such as*

*a battery or other technology system, (b) discharged to the Premises, and/or (c) exported to the Local Electric Utility grid.*

1.3. Governmental Approval. The Parties desire to include interconnection agreements and other permits that might be required for a solar photovoltaic generating system into the definition of Governmental Approvals. Accordingly, Section 1.1 of the Original General Conditions is hereby amended by deleting in its entirety the defined term “Governmental Approval” and replacing it with the following:

*“Governmental Approval” means any approval, consent, franchise, permit, certificate, resolution, concession, license, or authorization issued by or on behalf of any applicable Governmental Authority, including any such approval, consent, order or binding agreements with or involving a Governmental Authority under Environmental Laws, and any study, permit, license, authorization, right, or agreement issued, granted, or entered into by a Local Electric Utility, Control Area Operator, or other Person with respect to the interconnection of the Energy Storage System to the electric utility grid serving a Premises.*

1.4. Governmental Authority. The Parties desire to include the California Public Utilities Commission and the California Independent System Operator in the definition of Governmental Authority. Accordingly, Section 1.1 of the Original General Conditions is hereby amended by deleting in its entirety the defined term “Governmental Authority” and replacing it with the following:

*“Governmental Authority” means any federal, state, regional, county, town, city, or municipal government, whether domestic or foreign, or any department, agency, bureau, or other administrative, regulatory or judicial body of any such government. Governmental Authority includes the Local Electric Utility, Control Area Operator, California Public Utilities Commission, and California Independent System Operator.*

1.5. Conditions of the Agreement Prior to Installation. The Parties desire to add the following to the end of 2.3(iv) of the Original General Conditions:

*or otherwise determines that it is not feasible to install an Energy Storage System due to economic, technical or other considerations*

1.6. Discharging of Energy Storage System. The Parties desire to clarify that an Energy Storage System may be charged from a solar photovoltaic generating system. Accordingly:

1.6.1 The second sentence of Section 3.1 of the Original General Conditions is hereby deleted in its entirety and replaced with the following:

*The Energy Storage Systems will be integrated with the Premises’ electrical systems, and subject to applicable codes and utility tariffs, shall be capable of charging from grid supplied energy (or from a solar photovoltaic generating system or other generator) and shall be capable of discharging to the Premises and/or exporting to the Local Electric Utility grid, with the understanding that components of the Energy Storage System (such as a solar photovoltaic generating facility) may also discharge into other components of the Energy Storage System (such as the battery).*

1.6.2 The second to last sentence of Section 4.1 of the Original General Conditions is hereby deleted in its entirety and replaced with the following:

*The Energy Storage Systems (other than the solar photovoltaic generating systems, i.e., a battery system ) shall, in the normal course, charge from the grid or from solar or other onsite generation, as applicable, and discharge to the Premises such that the Energy Storage Systems (other than the solar photovoltaic generating systems) are capable of delivering the Energy Management Services. Generation from any solar photovoltaic generating facility may be (a) utilized to charge, re-charge, operate, and monitor other components of the Energy Storage System, such as a battery or other technology system, (b) discharged to the Premises, and/or (c) exported to the Local Electric Utility grid*

1.7. Insolation. The Parties desire to ensure that any solar photovoltaic generating system installed on the Property by Provider has unobstructed access to sunlight. Accordingly, clause (y) of Section 4.3(b) of the Original General Conditions is hereby deleted in its entirety and replaced with the following:

*(y) any act or omission of Host Customer or Host Customer's employees, Affiliates, agents or subcontractors (collectively, a "Host Customer Act") results in a disruption or outage in Energy Storage System production, or causes or permits any interference with the unobstructed access to sunlight to any portion of any solar photovoltaic generating system owned or operated by Provider, including, without limitation, the failure to clear and remove brush, trees, and other improvements causing any obstruction,*

1.8. Roof Maintenance. If Provider, in the course of installing, maintaining, and/or removing a solar photovoltaic generating facility from the roof of any building at any Premises penetrates such roof, Provider shall repair (by flashing or patching) the roof to be as leak proof as it was prior to the installation, maintenance, and/or removal of such solar photovoltaic generating facility.

1.9. Incentives. The Parties desire to include investment tax credits, depreciation, and other benefits made available to owners of solar photovoltaic generating systems in the definition of Incentives. Accordingly:

1.9.1 Section 1.1 of the Original General Conditions is hereby amended by deleting in its entirety the defined term "Incentives" and replacing it with the following:

*"Incentives" means any accelerated or bonus depreciation, installation or production-based incentives, investment tax credits, ancillary services or capacity products and subsidies including, but not limited to, the subsidies in Schedule 6 of the Special Conditions, and all other storage or energy subsidies, incentives, tax credits, grants, accelerated rights and benefits under Applicable Law related to the construction, ownership, generation, storage, capacity, or production of energy or other ancillary services or benefits from any Energy Storage System, performance of the Energy Management Services, and providing Cost Savings.*

1.9.2 Tax Indemnity. The following provision is added as Section 16.3 of the Original General Terms.

*16.3 Tax Indemnity. Host Customer hereby acknowledges that Provider may intend that some or all of the Energy Storage Systems qualify for certain investment tax credits, production tax credits, or similar tax credits or grants under federal, state or local law (generally, the "Tax Credits"), and effective as of the Completion Date of each Energy Storage System and continuing through the remainder of the Services Term, Host Customer represents and warrants that it will not take or omit to take any action*



*constituting a breach under this Agreement resulting in the disqualification of any Energy Storage System or disallowance or recapture of all or any portion of the Tax Credits. If as a result of a breach of any representation, warranty or covenant of Host Customer contained in this Agreement (a) any of the Tax Credits claimed, or to be claimed, by Provider (or any Financing Party) are not permitted, disallowed, or adjusted by any Governmental Authority, or (b) any Tax Credit is recalculated or recaptured (any determination, disallowance, adjustment, recalculation, or recapture being a "Tax Loss"), Host Customer shall pay to Provider (or any Financing Party) as an indemnity an amount that shall cause Provider's (or any Financing Party's) after-tax economic yield and cash flow to equal the after-tax economic return that would have been realized by Provider (or any Financing Party) if such Tax Loss had not occurred due to Host Customer's breach. Any Financing Party shall be an intended third party beneficiary of this Section 16.3.*

1.9.3 Regulatory Requirements. The Original General Conditions are amended by adding the following as Section 18.17 thereto:

*18.17 Regulatory Requirements. Neither Party shall assert that Provider is an electric utility or public service company or similar entity that has a duty to provide service, is subject to rate regulation, or is otherwise subject to regulation by any Governmental Authority as a result of Provider's obligations or performance under this Agreement. If at any time as a result of any change in Applicable Law, Provider would be subject to regulation as an electric utility or public service company (or its equivalent) by any Governmental Authority by virtue of this Agreement, the Parties will use best efforts to restructure this Agreement so that Provider will not be subject to such regulation (while preserving for both Parties the substantive economic benefits conferred hereunder). If Host Customer is a municipality or other governmental entity, (a) payments hereunder (including the Early Termination Fee) are not subject to appropriations, (b) in the event any payment hereunder (including the Early Termination Fee) is or becomes subject to any necessary appropriation, Host Customer shall use its best efforts to appropriate the funds necessary to satisfy such obligations, and shall not discriminate between such obligations and its other obligations with respect to payments for necessary services, (c) any failure of Host Customer to make payment as a result of any non-appropriation shall constitute a Host Customer Default, and (d) Host Customer has fully complied with all procurement, public bidding and municipal contracting requirements under Applicable Law. The Parties intend that this Agreement will be a "service contract" as defined in Section 7701(e)(3) of the Internal Revenue Code of 1986, as amended.*

1.10. Structural Calculations; Non-Interference. The Parties hereby amend the Original Special Conditions by adding the following as Section 9 thereto:

*9. Structural Calculations; Non-Interference. Unless otherwise agreed by the Parties, prior to the installation of the solar photovoltaic generating facility at the Project Site known as RP-4 / IERCF, (a) Provider will provide to Host for its review structural calculations demonstrating that the installation of such solar photovoltaic generating facility will not adversely affect the structural integrity of the building upon which the solar photovoltaic generating facility will be constructed, and (b) Provider and Host Customer shall take commercially-reasonable efforts to negotiate and enter into a commercially-reasonable agreement with SunPower Corporation ("SunPower"), whereby Provider and SunPower will each agree to take reasonable efforts to avoid interfering with the solar photovoltaic generating facilities owned and installed (or in the*



*case of Provider, will be installed) by Sunpower and Provider at the RP-4 / IERCF Project Site. In the event either (a) or (b) of this section does not occur, this Second Amendment shall be terminated in its entirety.*

2. Services Term. The Parties desire to extend the Services Term. Accordingly, Section 3 of the Original Special Conditions (Services Term) is hereby deleted in its entirety and replaced with the following:

*The Services Term of this Agreement shall commence on the Effective Date and shall continue for twenty (20) years from the first day of the Billing Period immediately following the Completion Date for the last Energy Storage System to be installed by Provider under this Agreement, or December 31, 2038, whichever is earlier (the "Term"), unless terminated earlier pursuant to the provisions of the Agreement. As used herein, the term "Term Year" shall mean the twelve (12) month period following the first day of the Billing Period immediately following each Completion Date; provided, however, that once the Completion Date occurs for the last Energy Storage System to be installed by Provider under this Agreement, the Term Years for all Energy Storage Systems theretofore installed by Provider under this Agreement shall end, with Provider adjusting and prorating all end of Term Year amounts to account for the partial year, and thereafter all Energy Storage Systems installed by Provider under this Agreement shall be on the same Term Year commencing on the first day of the Billing Period immediately following the Completion Date for the last Energy Storage System installed by Provider.*

3. Termination for Cause. The Parties desire to clarify the Termination for Cause provision. Accordingly, the last two sentences of Section 4 of the Original Special Conditions (Termination for Cause) are hereby deleted and replaced with the following:

*If Host Customer terminates this Agreement under clause (b) of this Section 4, Provider shall remove the Energy Storage Systems, and bear such costs, as provided in Section 2.2 of the General Conditions. If either Party terminates this Agreement under clause (a) of this Section 4, or if Provider terminates this Agreement under clause (c) of this Section 4, Host Customer shall pay to Provider an amount equal to the sum of the Early Termination Fee for all of the Premises, any amounts then due and owing under this Agreement and any costs incurred by Provider to remove the Energy Storage Systems and restore the Premises to their original conditions (except as provided in Section 2.2 of the General Conditions).*

4. Limitation of Damages. The Parties desire to clarify that the limitation of damages provision set forth in Section 6 of the Original Special Conditions shall not limit Host Customer's obligations to make required payments under the Agreement. Accordingly, the last sentence of Section 6 of the Original Special Conditions (Limitation of Damages) is hereby deleted in its entirety and replaced with the following:

*The foregoing limitation shall not apply in connection with: (i) the Early Termination Fee and other amounts owed by Host Customer to Provider under this Agreement, including the Management Services Payment in Schedule 2 attached to the Original Special Conditions; (ii) claims for indemnification as permitted under the Agreement; (iii) breach of confidentiality obligations; (iv) violation of a Party's ownership or proprietary rights; and (v) claims for which such limitation is not permitted by law.*

5. Purchase Option. The Original Special Conditions are hereby amended by adding the following as Section 9 thereto:

9. Purchase Option. Upon at least one (1) year prior written notice to Provider, Host Customer may purchase all (but not less than all) of the Energy Storage Systems at each of the Premises (the "Purchase Option") provided that Host Customer pays to Provider the applicable amount(s) set forth on Schedule 3b attached to the Original Special Conditions (the "Purchase Option Amounts"), and the Parties reach agreement as the appropriate reduction of the Minimum Guaranteed Savings, Performance Bonus Threshold, Monthly Shell Market Products Payment (as defined in the First Amendment), and Management Services Payment. Following Host Customer's exercise of the Purchase Option, and Provider's receipt of the applicable Purchase Option Amounts as payment therefor, title to the applicable Energy Storage System shall transfer to Host Customer pursuant to a written agreement, separate and apart from this Agreement, on an "as is, where is" basis. Upon the completion of any such purchase, (a) this Agreement shall terminate with respect to the applicable Premises and Energy Storage System purchased by Host Customer and neither Party shall have any further obligation under this Agreement with respect thereto, including, without limitation, any obligation by Provider to remove the Energy Storage System from the Premises, and (b) the Parties shall enter into an amendment to this Agreement to reflect the agreed to reduction in the Minimum Guaranteed Savings, Performance Bonus Threshold, Monthly Shell Market Products Payment, and Management Services Payment. Notwithstanding any provision herein to the contrary, Host Customer shall not have a Purchase Option with respect to any Energy Storage System that is or includes a solar photovoltaic generating facility owned or installed by Provider (including, without limitation the IERCF / RP4 location, as described in Schedule 6 attached hereto) until seven (7) years after the Completion Date for such Energy Storage System.

6. Periodic Review. The Original Special Conditions are hereby amended by adding the following as Section 10 thereto:

10. Periodic Review. At Host Customer's written request to Provider, no more frequently than once every five (5) years following the Completion Date for the last Energy Storage System to be installed by Provider under this Agreement, the Parties shall review the operation and performance of the Energy Storage Systems installed by Provider under this Agreement.

7. Clean-Up Revisions. The Parties desire to make the following clarifying revisions to the Agreement:

7.1. The words "Automated Demand Response" in the bulleted list in Section 1 of Schedule 1 of the Original Special Conditions are hereby deleted. For purposes of clarity, Automated Demand Response shall be an Incentive and/or Environmental Attribute, as such terms are defined in Section 1.1 of the Original General Conditions.

7.2. The word "either" in the second sentence of Section 5 of the Original Special Conditions (Termination for Convenience) is hereby deleted.

7.3. The phrase "Energy Management Services Fee" in Section 7 of the Special Conditions (Proposed Project Sites) is deleted and replaced with the phrase "Management Services Payment".

7.4. The phrase “*Performance Payment*” in Section 7 of the Special Conditions (Proposed Project Sites) is deleted and replaced with the phrase “*Performance Bonus Threshold*”.

7.5. For sake of clarity, Provider’s rights set forth in Section 7 of the Special Conditions (Proposed Project Sites) are in addition and without limitation to Provider’s rights set forth in Section 2.3 of the General Conditions (Conditions of the Agreement Prior to Installation).

7.6. Section 1.1 of the Original General Conditions is hereby amended by deleting in its entirety the defined term “Early Termination Fee” and replacing it with the following:

*“Early Termination Fee” means the fee payable by Host Customer to Provider under certain circumstances described herein in the amounts set forth on Schedule 3a attached to the Special Conditions. Except as expressly provided in this Agreement to the contrary, the term Early Termination Fee shall mean the aggregate sum of Early Termination Fee for all of the Premises in the amounts identified on Schedule 3a attached to the Special Conditions.*

7.7. For sake of clarity, if Host Customer does not provide a mutually agreeable substitute Premise in accordance with Section 4.3(a) of the Original General Conditions (Substitution of Premises), then Host Customer shall pay the Early Termination Fee applicable to the Premises where the affected Energy Storage System is located.

7.8. Section 4.3(c) of the Original General Conditions (Lost Revenue During Disruptions) is hereby deleted in its entirety and replaced with the following:

*4.3(c) Lost Revenue During Disruptions. During any time that an Energy Storage System has reduced or no operations due to a relocation or other disruption described in Section 4.3(a) or Section 4.3(b) (any such time, the “Disruption Period”), Host Customer shall reimburse Provider for any lost or reduced revenue or other benefits from Incentives, Environmental Attributes, or Market Products that are not delivered or received during the Disruption Period due to such reduced or non-operation; provided, however, that in advance of any relocation undertaken pursuant to Section 4.3(a), or any repairs undertaken by the owner or lessee of the Premises for any reason not directly related to damage caused by the Energy Storage System pursuant to Section 4.3(b), the Parties agree to work together reasonably and in good faith to determine the time period required for such relocation or repairs to be accomplished (subject to extensions thereto for Force Majeure Events and delays caused by Host Customer), and Host Customer’s obligation to reimburse Provider under this Section 4.3(c) shall be limited to such time period agreed to by the Parties.*

7.9. The Original General Conditions are amended by adding the following as Section 18.18 thereto:

*18.18 Contractors; Affiliates. Provider and Host Customer shall each be permitted to use one or more Affiliates, contractors, and/or subcontractors to perform any of its obligations under the Agreement; provided, however, each of Provider and Host Customer shall continue to be responsible for all of its obligations under the Agreement, and the quality of the work performed by its Affiliates, contractors, and subcontractors.*

8. Schedule 1 of Original Special Conditions. The first paragraph of Schedule 1 attached to the Original Special Conditions is hereby deleted in its entirety and replaced with the following:

**1. Peak Demand Reduction:** Provider will install and operate individual Energy Storage Systems consisting of approximately (a) 4,000 kW (dc) / 8,000 kWh of battery storage systems, and (b) a 1,781 kW (dc) solar photovoltaic generating system at the specified portions of the Premises (each a "Project Site") for purposes of reducing Host Customer's peak energy demand and providing optimal use of on-site energy resources. The actual capacity of each Energy Storage System will depend upon the actual Energy Storage System configurations and Project Sites agreed upon by Provider and Host Customer during the Energy Storage System design period.

9. Schedule 2 of Original Special Conditions. Schedule 2 attached to the Original Special Conditions is hereby deleted in its entirety and replaced with Schedule 2 attached to this Second Amendment.

10. Schedule 3 of Original Special Conditions. Schedule 3 attached to the Original Special Conditions is hereby deleted in its entirety and replaced with Schedule 3a attached to this Second Amendment. The Original Special Conditions are hereby amended by adding Schedule 3b attached to this Second Amendment thereto.

11. Schedule 4 of Original Special Conditions. Schedule 4 attached to the Original Special Conditions is hereby deleted in its entirety and replaced with Schedule 4 attached to this Second Amendment. Notwithstanding any provision of the Agreement to the contrary, all references to Minimum Guaranteed Demand Reduction (or MGDR) in the Original Agreement shall be deleted and replaced by the Minimum Guaranteed Cost Savings provided in Schedule 4 attached to this Second Amendment.

12. Schedule 6 of Original Special Conditions. Section (a) of Schedule 6 attached to the Original Special Conditions is hereby deleted in its entirety and replaced with Section (a) of Schedule 6 attached to this Second Amendment. Schedule 6 of the Original Special Conditions is hereby amended by adding Section (d) of Schedule 6 attached to this Second Amendment thereto.

13. Schedule 7 of Original Special Conditions. The first sentence of Schedule 7 of the Original Special Conditions is hereby deleted in its entirety and replaced with the following: "*The following information references the base year load, Utility Tariff and Rates of the Premises.*"

14. Schedule 8 of Original Special Conditions. Schedule 8 attached to the Original Special Conditions is hereby deleted in its entirety, and all references in the Agreement to Schedule 8 attached to the Original Special Conditions (including, without limitation, as set forth in Section 8 of the Original Special Conditions) are hereby deleted.

15. Miscellaneous. The terms of this Second Amendment shall supersede and control to the extent of any conflicts or inconsistencies with the Original Agreement. The recitals set forth in the beginning of this Second Amendment are incorporated herein as part of this Second Amendment for all purposes. This Second Amendment may be signed in one or more counterparts, each of which shall be considered an original and all of which taken together shall constitute one and the same instrument. This Second Amendment may be duly executed by a Party, and delivered to the other Party, by electronic delivery of a "pdf" counterpart to this Second Amendment.

[Signatures On Following Page]

IN WITNESS WHEREOF, Host Customer and Provider have caused this Second Amendment to be executed as of the date first above written.

**Provider:**

ADVANCED MICROGRID SOLUTIONS, INC.  
a Delaware corporation

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

**Host Customer:**

INLAND EMPIRE UTILITIES AGENCY,  
a municipal water district

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

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**II. Schedule 2 –Management Services Payment.**

The Management Services Payment is Forty-Three Thousand Five Hundred Forty-Two Dollars (\$43,542.00) per month plus any Performance Bonus Payment, paid annually, for providing total Cost Savings in excess of Performance Bonus Threshold (defined below) in any Term Year as set forth below. The Management Services Payment shall be paid in accordance with Section 6 of the General Conditions

Notwithstanding the foregoing, prior to the occurrence of the Completion Date for all Project Sites, Host Customer shall pay, on a monthly basis, the cumulative total of the amounts set forth in the following table for each Project Site where the Completion Date has in fact occurred, and once the Completion Date occurs for all Project Sites, the amounts set forth in the following table shall not be applicable for any purpose under this Agreement, and Host Customer shall pay the monthly Management Services Payment in accordance with the foregoing paragraph.

<b>MANAGEMENT SERVICES PAYMENT PRIOR TO FINAL COMPLETION DATE</b>	
<b>Project Site</b>	<b>Management Services Payment (\$ per month)</b>
RP-1	\$5,417.00
RP-4 / IERCF	\$30,000.00
RP-5	\$2,708.00
CCWRF – Carbon Canyon	\$5,417.00
<b>Total:</b>	<b>\$43,542.00</b>

Calculation of Performance Bonus Payment: If the Energy Storage Systems provide, on an aggregate basis across the Agreement and the Associated Agreements, total Cost Savings in excess of Seven Hundred Thousand Six Hundred Twenty-Five Dollars (\$700,625.00) in any Term Year (which amount shall be subject to Adjustment (as defined in Schedule 4), the “Performance Bonus Threshold”), Host Customer shall pay to Provider, within ninety (90) days after the end of such Term Year, an amount equal to fifty percent (50%) of Host Customer’s total Cost Savings in excess of the Performance Bonus Threshold.

Calculation of Cost Savings: On a monthly basis, Provider will calculate and provide to Host Customer the Cost Savings at the Project Sites where the Energy Storage Systems are installed and operating. Other than with respect to Provider’s obligations in connection with the Minimum Guaranteed Cost Savings (as provided in Schedule 4), Provider makes no guarantees that any specific Cost Savings will be realized by Host Customer. Host Customer shall, as requested by Provider provide (or reasonably cooperate with Provider to enable Provider to obtain) electrical energy use and cost information, demand charges, and all other information relevant to the calculation of Cost Savings and other amounts under this Agreement.

As used herein, “Cost Savings” means, for each Billing Period, the difference between (a) the imputed electrical energy costs, including demand charges, for each utility service account where the Energy Storage Systems are in operation, assuming that the Energy Storage Systems were *not* operating, and (b) the actual electrical energy costs, including demand charges, for each utility service account where the Energy Storage Systems are in operation net of any net metering or other similar credits or benefits accruing to Host Customer as a result of the operation of the Energy Storage Systems. Cost Savings shall be calculated by Provider using data from the meter installed in connection with the Energy Storage Systems, the utility meters at each Project Site, and/or the tariffed rates applicable to the Project Site.

As used herein, “Billing Period(s)” shall mean each of the consecutive time periods applicable to

Host Customer during which the Utility assesses and bills demand charges for the Project Sites.

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**IIIa. Schedule 3a – Early Termination Fee.** The Early Termination Fee for each of the Premises will be as set forth in the following table. Upon the expiration of the Services Term, the Early Termination Fee shall be zero.

Early Termination Occurs in Term Year:	Early Termination Fee (\$ / kW DC of Battery Storage installed on the Premises)*			
	RP-1	RP-4 / IERCF	RP-5	CCWRF – Carbon Canyon
Prior to Completion Date of the last Energy Storage System to be installed under this Agreement	\$1,983.62	\$6,694.70	\$1,807.06	\$1,610.48
1	\$1,983.62	\$6,694.70	\$1,807.06	\$1,610.48
2	\$1,090.64	\$4,838.64	\$959.38	\$899.02
3	\$858.40	\$3,707.70	\$718.33	\$693.50
4	\$720.50	\$2,855.35	\$713.01	\$585.26
5	\$567.68	\$2,191.15	\$531.97	\$465.36
6	\$399.62	\$1,735.52	\$505.47	\$333.19
7	\$219.83	\$1,516.81	\$480.37	\$193.89
8	\$195.34	\$1,421.51	\$280.60	\$170.65
9	\$168.48	\$1,316.96	\$233.46	\$145.19
10	\$139.04	\$1,202.20	\$181.03	\$117.28
11	\$154.33	\$1,328.43	\$437.85	\$130.18
12	\$143.65	\$1,243.90	\$486.02	\$120.95
13	\$132.17	\$1,151.31	\$473.29	\$111.07
14	\$119.82	\$1,049.82	\$459.41	\$100.50
15	\$106.50	\$938.53	\$444.40	\$89.16
16	\$92.12	\$816.42	\$428.13	\$76.97
17	\$76.56	\$682.36	\$235.74	\$63.85
18	\$59.71	\$535.13	\$197.35	\$49.70
19	\$41.44	\$373.36	\$155.17	\$34.42
20	\$21.59	\$195.54	\$108.79	\$17.90

\* For sake of clarity, the unit \$ / kW DC of Battery Storage Installed at the Premises shall mean and refer only to the kilowatt direct current size of the battery storage systems installed at the Premises, and shall not include any solar photovoltaic generating system installed at the Premises by Provider.

**IIIb. Schedule 3b – Purchase Option Amounts.** The Purchase Option Amount for each of the Premises will be as set forth in the following table. For sake of clarity, Host Customer shall not have a Purchase Option for RP-4 / IERCF until seven (7) years following the Completion Date of the last Energy Storage System to be installed under this Agreement.

Purchase Option Occurs in Term Year:	Purchase Option Amount (\$ / kW DC of Battery Storage installed on the Premises)*			
	RP-1	RP-4 / IERCF	RP-5	CCWRF – Carbon Canyon
Prior to Completion Date of the last Energy Storage System to be installed under this Agreement	\$1,983.62		\$1,807.06	\$1,610.48
1	\$1,983.62		\$1,807.06	\$1,610.48
2	\$1,090.64		\$959.38	\$899.02
3	\$858.40		\$718.33	\$693.50
4	\$720.50		\$713.01	\$585.26
5	\$567.68		\$531.97	\$465.36
6	\$399.62		\$505.47	\$333.19
7	\$219.83		\$480.37	\$193.89
8	\$195.34	\$1,421.51	\$280.60	\$170.65
9	\$168.48	\$1,316.96	\$233.46	\$145.19
10	\$139.04	\$1,202.20	\$181.03	\$117.28
11	\$154.33	\$1,328.43	\$437.85	\$130.18
12	\$143.65	\$1,243.90	\$486.02	\$120.95
13	\$132.17	\$1,151.31	\$473.29	\$111.07
14	\$119.82	\$1,049.82	\$459.41	\$100.50
15	\$106.50	\$938.53	\$444.40	\$89.16
16	\$92.12	\$816.42	\$428.13	\$76.97
17	\$76.56	\$682.36	\$235.74	\$63.85
18	\$59.71	\$535.13	\$197.35	\$49.70
19	\$41.44	\$373.36	\$155.17	\$34.42
20	\$21.59	\$195.54	\$108.79	\$17.90

\* For sake of clarity, the unit \$ / kW DC of Battery Storage Installed at the Premises shall mean and refer only to the kilowatt direct current size of the battery storage systems installed at the Premises, and shall not include any solar photovoltaic generating system installed at the Premises by Provider.

**IV. Schedule 4 – Performance Guarantee.**

1. **Minimum Guaranteed Cost Savings.** Subject to the following provisions of this Section 1, the “Minimum Guaranteed Cost Savings” shall mean the amount of Seven Hundred Thousand Six Hundred Twenty-Five Dollars (\$700,625.00) per Term Year, subject to any applicable Adjustments (defined below), exclusive of the Monthly Shell Market Products Payment (defined in the First Amendment) to be paid by Provider in accordance with the First Amendment.

Notwithstanding the foregoing, the Minimum Guaranteed Cost Savings prior to the occurrence of the Completion Date for all Project Sites shall be the cumulative total of the amounts set forth in the following table for each Project Site where the Completion Date has in fact occurred, and once the Completion Date occurs for all Project Sites, the amounts set forth in the following table shall not be applicable for any purpose under this Agreement, and Minimum Guaranteed Cost Savings shall be the amount set forth in the foregoing paragraph.

<b>MINIMUM GUARANTEED COST SAVINGS PRIOR TO FINAL COMPLETION DATE</b>	
<b>Project Site</b>	<b>Portion of Minimum Guaranteed Cost Savings (\$)</b>
RP-1	\$80,750.00
RP-4 / IERCF	\$498,750.00
RP-5	\$49,875.00
CCWRF – Carbon Canyon	\$71,250.00
<b>Total:</b>	<b>\$700,625.00</b>

Following the conclusion of each Term Year, Provider will calculate the Cost Savings for the prior Term Year. If Provider failed to provide Cost Savings equal to at least the Minimum Guaranteed Cost Savings for such Term Year, then within ninety (90) days following the expiration of such Term Year, Provider shall pay Host Customer the difference between the Minimum Guaranteed Cost Savings and the Cost Savings (the “Lost Savings”) for the prior Term Year. If the Agreement is terminated early, except due to a Provider Default, Provider’s obligations in this section will not apply to the Term Year in which the Agreement is terminated. Notwithstanding the forgoing, Provider shall have no obligation with respect to the Minimum Guaranteed Cost Savings (and shall not be entitled to any payment in connection with the Performance Bonus Threshold) until the first Term Year of the Term

2. **Adjustments.** To the extent Provider’s ability or cost to provide the Energy Management Services, achieve Cost Savings, or provide Market Products under the Shell Utility Services Agreement at one or more Project Sites is affected by any of the following (collectively, the “Adjustment Events”) during some or all of a Term Year, the Parties agree that Provider will reasonably reduce the Minimum Guaranteed Cost Savings, Performance Bonus Threshold, and Monthly Shell Market Products Payment (as defined in the First Amendment) (each an “Adjustment”) utilizing the most-recent twelve (12) months of applicable electrical energy use and costs, demand charges, Market Products, and other relevant data:

(a) One or more of the Energy Storage Systems have not been installed, have not commenced operations, and/or the operations thereof have been terminated, including but not limited to a proration based on the actual size (measured in kilowatts) of the Energy Storage Systems for which a Completion Date has not yet occurred.

(b) Any act or omission by Host Customer that affects any Energy Storage System to the extent due in part or entirely to Host Customer’s negligence, or due to any other act or omission of Host Customer that impairs any Energy Storage System’s ability to safely store and discharge energy or Provider’s ability to monitor or control the Energy Storage System.

(c) Theft, destruction or damage affects the Energy Storage System in any way that impairs its ability to safely store and discharge energy or Provider's ability to monitor or control the Energy Storage System, except to the extent caused by the manufacturer of the Energy Storage System, Provider or its Approved Service Providers.

(d) A Disruption Period occurs.

(e) A Host Customer Default, including Provider suspending the Energy Management Services as a result of a Host Customer Default.

(f) Host Customer fails to provide access to a Project Site or an Energy Storage System as required by Section 7.2(d) of the General Conditions.

(g) A Force Majeure Event.

(h) Host Customer elects to have the Local Electric Utility apply a different tariff or rate category to the Project Site, or any material change in the applicable tariff including but not limited to changes in the hours, rates, and calculation methodologies employed by the Local Electric Utility.

(i) Any material deviation in the characteristics of the electricity demands, or the electrical demand, at the Project Sites from actual Local Electric Utility provided demand data for the period between July 2013 and June 2014, not resulting from the Energy Management Services or Provider's acts or omissions, including, without limitation, as a result of any onsite generation at any Project Site, other than a solar photovoltaic generating facility installed by Provider at any Project Site. Material deviation shall include any deviation from the monthly historical baseline for each Project Site as described in Schedule 7.

(j) Relocation of any Energy Storage System or a reduction in the number of Energy Storage Systems installed pursuant to this Agreement.

In the event any proration, reduction, and/or adjustment to the Minimum Guaranteed Cost Savings, Performance Bonus Threshold, and Monthly Shell Market Products Payment is made pursuant to clause (a), (c), or (g) of this Section 2, in each case not as a result of an act or omission of Host Customer (each an "Uncontrolled Adjustment Event"), then Provider shall likewise prorate, reduce, and/or adjust, in Provider's reasonable discretion, the Management Services Payment (an "Management Services Payment Adjustment").

Provider will provide notice to Host Customer of any Adjustment Event, and on each invoice submitted by Provider to Host Customer following the end of each Term Year, Provider shall include a statement of the amount by which the Minimum Guaranteed Cost Savings Performance Bonus Threshold, Monthly Shell Market Products Payment (as defined in the First Amendment), and (if applicable) Management Services Payment will be reduced pursuant to this Section 2, including a detailed explanation of, and rationale for, its calculation methodology, annotated work papers and source data. If Host Customer does not dispute the amount of such reduction within sixty (60) days after its receipt of such invoice, Host Customer will be deemed to have accepted such reduction. For sake of clarity, any Adjustment pursuant to this Section 2 shall apply only to the Term Years in which such Adjustment Event is applicable.

Host Customer shall notify Provider no later than five (5) business days after the date that Host Customer received notice of, became aware of, knew or should have known of: (i) any plans to change the operations at the Project Sites that would materially impact the Energy Storage Systems; (ii) any change

in the Project Sites’ applicable utility tariffs or electricity prices; and (iii) any other changes at the Project Sites that could reasonably be expected to adversely affect the ability to use the Energy Storage Systems to generate Cost Savings.

3. **Planned Maintenance.** Host Customer shall notify Provider two (2) business days in advance of the commencement of any maintenance that may have an impact on the Energy Storage System and/or the electrical demand (or the shape or characteristics of the electrical demand) at a specific Project Site (“**Planned Maintenance**”). The Planned Maintenance shall not reduce Providers obligation to provide Energy Management Services and shall not be considered a Disruption Period under Section 4.3(b) of the General Terms and Conditions. Should an emergency occur at one of the Project Sites that necessitates an energy shut down (“**Emergency Maintenance**”), Provider shall be notified as soon as reasonably possible, but in no event greater than forty-eight hours, with an estimate of when the Project Site shall be returned to normal operating conditions.

4. **Tariff Change.** If there is a change in the Local Electric Utility Tariff applicable to any Project Site that has a material impact on Provider’s ability to provide the Energy Management Services and Cost Savings, including a change in the applicable tariff including but not limited to changes in the hours, rates, and calculation methodologies employed by the Local Electric Utility, then upon written notice from Provider to Host Customer, the Parties shall negotiate in good faith to make the minimum changes to this Agreement necessary to preserve to the maximum extent possible the benefits, burdens and obligations set forth in this Agreement as of the Effective Date. Notwithstanding the foregoing, Provider shall continue to provide the Energy Management Services, and Host Customer shall continue to make the Management Services Payments, while the Parties negotiate the changes to the Agreement contemplated in this Section 4.

**VI. Schedule 6 – Site Specific Information and Requirements.**

a. **Project Sites and Service Accounts (Proposed)**

<b>Equipment Site Name</b>	<b>Address</b>	<b>SCE Host Customer Account(s)</b>	<b>Energy Storage System Size (Type)</b>
RP-1	2450 E Philadelphia St Ontario, CA	2-20-230-9647 2-19-984-8979 2-06-561-5429	1,000 kW (dc) / 2,000 kWh (battery storage system)
RP-4 / IERCF	12811 6th St Rancho Cucamonga, CA	2-19-908-7271 2-08-629-5938	1,500 kW (dc) / 3,000 kWh (battery storage system) <i>and</i> 1,781 kW (dc) <sup>1</sup> (solar pv system)
RP-5	6075 Kimball Ave Unit C Chino, CA	2-25-040-0645	500 kW (dc) / 1,000 kWh (battery storage system)
CCWRF – Carbon Canyon	14950 Telephone Ave Chino, CA	2-19-986-3986 2-22-473-1182	1,000 kW (dc) / 2,000 kWh (battery storage system)
		<b>Totals:</b>	4,000 kW (dc) / 8,000 kWh (battery storage system) <i>and</i> 1,781 kW (dc) <sup>1</sup> (solar pv system)

Note 1: subject to change based on final design of the solar photovoltaic generating system.

DRAFT



**VI. Schedule 6 – Site Specific Information and Requirements.**

d. Attached are the following:

- Scope of Work to include Design-Build-Operation of the Solar Photovoltaic Power Plants Phase II – Project Nos. RA17008 & PL17002, dated October 6, 2016
- Advanced Microgrid. Solutions response to IEUA and IERCA’s Scope of Work to include Design-Build-Operation of the Solar Photovoltaic Power Plants Phase II Project Nos. RA17007 & PL17002, dated February 23, 2017, including the proposed layout of solar photovoltaic system for the RP-4 / IERCF location.

DRAFT

**ACTION  
ITEM  
11**

Date: July 19, 2017

To: The Honorable Board of Directors

Through:  Engineering, Operations, and Water Resources Committee (7/12/17)

From:  P. Joseph Grindstaff  
General Manager

Submitted by: Chris Berch   
Executive Manager of Engineering/Assistant General Manager

 Sylvie Lee  
Manager of Planning and Environmental Resources

Subject: Foundation Windpower Direct Agreement

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### **RECOMMENDATION**

It is recommended that the Board of Directors:

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.

### **BACKGROUND**

In 2010, IEUA expanded its renewable energy portfolio by securing a Power Purchase Agreement (PPA) with Foundation HA Energy Generation, LLC (dba Foundation Windpower, LLC) for a one megawatt (MW) wind turbine located at the Regional Plant No. 4 (RP-4). In 2014, IEUA approved a new Direct Agreement (DA) between IEUA, Foundation Windpower, LLC, and Hat Obs Op A LLC, to enhance their project financing.

Foundation Windpower, LLC has since grown their operations and is seeking to refinance with commercial bank, ZB, N.A. (dba National Bank of Arizona), and, as such, is requesting assistance from IEUA in approving a new DA between IEUA, Foundation Windpower, LLC, and National Bank of Arizona. The attached DA authorizes a new Master Loan Agreement, and it acknowledges that Foundation Windpower, LLC is assigning security to National Bank of Arizona, the new lender for the project. Ownership of the RP-4 Wind Turbine, and all the terms of the PPA shall continue to remain unchanged.

This new DA will enable Foundation Windpower, LLC to improve their project financing terms, expand their capital base and their network of distributed wind turbines, and improve their operations and maintenance team. IEUA contracts and legal staff have reviewed the changes in detail and support the approval of the DA request.

The DA meets IEUA's adopted Business Goals for *Wastewater Management* by optimizing renewable resources, containing future energy costs, and progressing toward peak power independence.

### **PRIOR BOARD ACTION**

On March 17, 2010, the Board of Directors awarded the PPA contract for the RP-4 Wind Turbine to Foundation Wind Power, LLC.

On January 15, 2014, the Board of Directors approved the execution of a DA between IEUA, Foundation Windpower, LLC, and Hat Obs Op A LLC.

### **IMPACT ON BUDGET**

None.

Attachment: Direct Agreement

## DIRECT AGREEMENT

This **DIRECT AGREEMENT**, dated as of July \_\_, 2017 (as amended, supplemented or otherwise modified from time to time, this “Direct Agreement”) is entered into by **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 (“Contracting Party”), and **FOUNDATION HA ENERGY GENERATION, LLC**, a California limited liability company (“Project Owner”), for the benefit of **ZB, N.A. dba NATIONAL BANK OF ARIZONA** (“Lender”).

### RECITALS

WHEREAS, in connection with a wind-powered electric generating facility located in Rancho Cucamonga, California (the “Project”) Contracting Party and Project Owner are party to (a) that certain Wind Power Purchase Agreement, dated as of March 17, 2010 (as amended, the “PPA”), and (b) that certain Wind Site Lease and Easement dated March 17, 2010, whereby, *inter alia*, Lessor has leased to Tenant the leased premises (“Leased Premises”) more fully described in the Lease Agreement (defined below) and incorporated herein by this reference, which was evidenced by a Memorandum of Lease dated April 27, 2011 and recorded in the official records of San Bernardino, County on May 3, 2011 as Document No. 2011-0177651 (“Memorandum of Lease”) (as amended, modified or assigned, the “Lease Agreement”; the Lease Agreement and the Memorandum of Lease are hereinafter collectively referred to as the “Leasehold Documents”). The PPA and the Leasehold Documents are referred to herein collectively as the “Assigned Agreements”;

WHEREAS, Project Owner and Lender entered into that certain Master Loan Agreement, dated as of June \_\_, 2017 (as amended, the “Loan Agreement”), pursuant to which the Lender will make loans and other extensions of credit to Borrower; and

WHEREAS, Project Owner has entered into that certain Leasehold Deed of Trust, Assignment of Rents and Leases, Security Agreement and Fixture Filing and a Security Agreement (collectively, the “Security Agreement”) with the Lender, pursuant to which Project Owner has assigned all of its right, title and interest in, to and under, and granted a first priority security interest in, the Assigned Agreements.

### AGREEMENT

NOW, THEREFORE, in consideration of the foregoing, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, and intending to be legally bound, the parties hereto hereby agree, notwithstanding anything to the contrary in the Assigned Agreements, as follows:

#### ARTICLE 1. CONSENT TO ASSIGNMENT, ETC.

1.1 CONSENT TO ASSIGNMENT. Contracting Party (a) acknowledges that the Lender is entering into the Loan Agreement and related financing documents and making a loan to Project Owner in reliance upon the execution and delivery by Contracting Party of this Direct Agreement,

(b) consents to the collateral assignment under the Security Agreement of all of Project Owner's right, title and interest in, to and under the Assigned Agreements, including all of Project Owner's rights to receive payment under or with respect to the PPA and all payments due and to become due to Project Owner under or with respect to the Assigned Agreements, whether as contractual obligations, damages, indemnity payments or otherwise (collectively, the "Assigned Interests"), (c) acknowledges the right of the Lender or its designee or assignee, in the exercise of the Lender's rights and remedies under the Security Agreement, to make all demands, give all notices, take all actions and exercise all rights of Project Owner under the Assigned Agreements and (d) acknowledges and agrees that notwithstanding anything to the contrary contained in the Assigned Agreements, the Lender shall have the rights and benefits of (i) a "Lender" as defined in the PPA and (ii) a "Mortgagee" as defined in the Leasehold Documents.

## 1.2 SUBSEQUENT OWNER.

1.2.1 Contracting Party agrees that if the Lender notifies Contracting Party that an Event of Default has occurred and is continuing and that the Lender has elected to exercise the rights and remedies set forth in the Security Agreement, then (a) the Lender or a Permitted Transferee (Lender or such Permitted Transferee, the "Subsequent Owner") shall be substituted for Project Owner under the Assigned Agreements and (b) Contracting Party will recognize the Subsequent Owner as its counterparty under the Assigned Agreements and will continue to perform its obligations under the Assigned Agreements in favor of the Subsequent Owner (including its obligations under any warranties). For purposes of this Direct Agreement, "Permitted Transferee" means Lender's designee or assignee or any other purchaser or transferee of the Assigned Interests in a judicial or nonjudicial foreclosure sale or by a conveyance made in lieu of foreclosure, which designee, assignee, purchaser, or transferee (i) has elected in writing to assume all of Project Owner's or Lender's (as applicable) rights and obligations under the Assigned Agreements and (ii) is (either directly or indirectly through a third party operator or contractor) capable of assuming and performing all of Project Owner's or Lender's (as applicable) obligations under the Assigned Agreements.

1.2.2 Contracting Party acknowledges and agrees that, notwithstanding anything to the contrary in the Assigned Agreements, none of (a) the assignment of the Assigned Agreements pursuant to the Security Agreement, (b) the foreclosure or any other enforcement action (any such action an "Enforcement Action") undertaken by the Lender in respect of its rights under the Security Agreement or any other related pledge agreement or mortgage, (c) the acquisition of the rights of Project Owner under the Assigned Agreements as a consequence of any Enforcement Action by the Lender or any Permitted Transferee (or acceptance of an absolute assignment of the Assigned Agreements in lieu of an Enforcement Action) or (d) the assignment of the Assigned Agreements by the Lender to a Permitted Transferee following a purchase after an Enforcement Action or following an absolute assignment thereof in lieu of an Enforcement Action, shall constitute a default by Project Owner under the Assigned Agreements or shall result in termination thereof.

1.2.3 Notwithstanding anything to the contrary herein, the recourse of Contracting Party in seeking the enforcement of any obligations under this Direct Agreement, the Assigned Agreements or under any replacement agreement shall be limited to the same assets of Project Owner as would be available to Contracting Party in a claim against Project Owner as of

the date of this Direct Agreement. The liability of Subsequent Owner or its successor(s), permitted assignee(s), or designee(s) to Contracting Party under this Direct Agreement, any Assigned Agreement or any replacement agreement shall not extend beyond such assets. Upon any sale or transfer of its interest in the Project by Subsequent Owner and assumption of liability as of the date of acquisition by the purchaser thereof, Subsequent Owner shall have no further liability under the Assigned Agreements or this Direct Agreement after the effective date to the extent such liabilities have effectively been assumed by such purchaser."

1.3 RIGHT TO CURE. In the event of a default by Project Owner in the performance of any of its obligations under an Assigned Agreement, or upon the occurrence or non-occurrence of any event or condition under an Assigned Agreement which would immediately or with the passage of any applicable grace period or the giving of notice, or both, enable Contracting Party to terminate or suspend its performance under an Assigned Agreement (each hereinafter a "Default"), notwithstanding any notice period provided in such Assigned Agreement, Contracting Party shall not terminate or suspend its performance under such Assigned Agreement until it first gives prompt written notice of such Default to the Lender or its designee or assignee and affords each such party a period of thirty (30) days, provided that it promptly commences in good faith to cure the Default within such cure period, and it diligently and continuously pursues such cure, (or if such Default is a non-monetary Default, such longer period as is required to cure such default so long as any such party has commenced and is diligently pursuing appropriate action to cure such Default, but in no event longer than sixty (60) days) from receipt of such notice to cure such Default; provided, however, that (a) if possession of the Project is necessary to cure such Default and the Lender or its designee or assignee has commenced foreclosure proceedings, the Lender or its designee or assignee will be allowed a reasonable time to complete such proceedings, provided Lender or its designee or assignee is diligently pursuing possession of the Project, and (b) if the Lender or its designee or assignee is prohibited from curing any such Default by any process, stay or injunction issued by any governmental authority or pursuant to any bankruptcy or insolvency proceeding or other similar proceeding involving Project Owner, then the time periods specified herein for curing a Default shall be extended for the period of such prohibition.

1.4 REPLACEMENT AGREEMENT. In the event that an Assigned Agreement is terminated as a result of any bankruptcy, insolvency, reorganization or similar proceeding affecting Project Owner, and if, within sixty (60) days after such cancellation or termination, the Lender so requests, Contracting Party will enter into a new agreement with the Lender or its Permitted Transferee (i) having terms substantially the same as the terms of such Assigned Agreement, provided such terms are at least as favorable to Contracting Party as such Assigned Agreement, and (ii) producing the same economic effect and the same level of performance to Contracting Party as continuing such Assigned Agreement.

1.5 NO LIABILITY. Contracting Party acknowledges and agrees that neither the Lender nor its Permitted Transferee shall have any liability or obligation under the Assigned Agreements as a result of this Direct Agreement, the Security Agreement or otherwise, nor shall the Lender or its Permitted Transferee be obligated or required to perform any of Project Owner's obligations under the Assigned Agreements, except during any period in which the Lender (or its Permitted Transferee) is a Subsequent Owner pursuant to Section 1.2, in which case (i) the obligations of such Subsequent Owner shall be no more than that of Project Owner under the Assigned Agreements and (ii) such Subsequent Owner shall not be required to perform or be subject to any



defenses or offsets by reason of any of Project Owner's obligations under the Assigned Agreements that were unperformed at the time such Subsequent Owner became a Subsequent Owner (other than any defaults for failure to pay amounts owed under the Assigned Agreements).

1.6 TRANSFER. Provided Lender or its Permitted Transferee, as applicable, is not in default under the Assigned Agreements, he Lender shall have the right to assign the Assigned Agreements or a new agreement entered into pursuant to Section 1.4 to a person or entity to whom the Project is transferred, provided that such transferee is a Permitted Transferee. Upon such assignment, the Lender shall be released from any further liability under the Assigned Agreements or such new agreement to the extent of the interest assigned.

1.7 DELIVERY OF NOTICES AND NO AMENDMENT. Contracting Party shall deliver to the Lender and its Permitted Transferee, concurrently with the delivery thereof to Project Owner, a copy of each notice regarding defaults, suspensions, terminations, actual or threatened litigation or arbitration between Contracting Party and Project Owner, or material amendments given by Contracting Party to the Project Owner pursuant to the Assigned Agreements. Contracting Party acknowledges that Project Owner is not authorized, without the prior written consent of the Lender, to: (a) enter into any material supplement, restatement, extension, amendment or modification of the Assigned Agreements, (b) enter into any novation of the Assigned Agreements with any natural person, corporation, trust, business trust, joint venture, joint stock company, association, company, limited liability company, partnership, Governmental Entity or other entity, (c) consent to or accept any termination or suspension of Contracting Party's performance under the Assigned Agreements or (d) terminate or cancel the Assigned Agreements.

1.8 Entry on Leased Premises. Lessor agrees that upon and after any of (a) the assignment of the Leasehold Documents pursuant to the Security Agreement, (b) an Enforcement Action undertaken by the Lender in respect of its rights under the Security Agreement or any other related pledge agreement or mortgage, (c) the acquisition of the rights of Tenant under the Leasehold Documents as a consequence of any Enforcement Action by the Lender or any Permitted Transferee (or acceptance of an absolute assignment of the Leasehold Documents in lieu of an Enforcement Action) or (d) the assignment of the Leasehold Documents by the Lender to a Permitted Transferee following a purchase after an Enforcement Action or following an absolute assignment thereof in lieu of an Enforcement Action, Lender shall have the right to enter, possess and use the Leased Premises at such reasonable times and manner as are necessary or desirable to effectuate the remedies and enforce the rights of Lender under the Loan Agreement, Leasehold Deed of Trust and other security documents.

## **ARTICLE 2. PAYMENTS UNDER THE ASSIGNED AGREEMENT**

2.1 PAYMENTS. Contracting Party will pay all amounts payable by it under the PPA or in connection therewith in the manner and as and when required by the PPA pursuant to the wiring instructions provided in Schedule A, or to such other person or account as may be specified from time to time by the Lender to Contracting Party in writing. All payments required to be made by Contracting Party under the PPA or in connection therewith shall be made without any offset, recoupment, abatement, withholding, reduction or defense whatsoever, other than that expressly allowed by the terms of the PPA.

**ARTICLE 3.  
REPRESENTATIONS AND WARRANTIES OF CONTRACTING PARTY**

Contracting Party makes the following representations and warranties in favor of the Lender as of the date hereof.

3.1 AUTHORIZATION. The execution, delivery and performance by Contracting Party of this Direct Agreement and the Assigned Agreements have been duly authorized by all necessary corporate or other action on the part of Contracting Party and do not require any approvals except approvals which have previously been obtained and which are in full force and effect or which are routinely obtained during the ordinary course of business during the execution of the Project.

3.2 EXECUTION AND DELIVERY; BINDING AGREEMENTS. Each of this Direct Agreement and the Assigned Agreements has been duly executed and delivered on behalf of Contracting Party by the appropriate officers of Contracting Party and constitutes the legal, valid and binding obligation of Contracting Party, enforceable against Contracting Party in accordance with its terms, except as the enforceability thereof may be limited by (a) bankruptcy, insolvency, reorganization or other similar laws affecting the enforcement of creditors' rights generally and (b) general equitable principles (whether considered in a proceeding in equity or at law).

3.3 NO DEFAULT. Neither Contracting Party nor, to Contracting Party's knowledge, any other party to the Assigned Agreements is in default of any of its obligations thereunder, and as of the date hereof, to Contracting Party's knowledge, all payments that are required under the Assigned Agreements to have been made by any party thereto have been made. Contracting Party and, to Contracting Party's knowledge, each other party to the Assigned Agreements has complied with all conditions precedent to the respective obligations of such party to perform under the Assigned Agreements, except to the extent any such conditions precedent have been waived by the party or parties to the Assigned Agreements not obligated by such conditions precedent.

**ARTICLE 4.  
MISCELLANEOUS**

4.1 GOVERNING LAW. THIS DIRECT AGREEMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES HEREUNDER SHALL BE CONSTRUED IN ACCORDANCE WITH AND BE GOVERNED BY THE LAWS OF THE STATE OF CALIFORNIA.

4.2 SUCCESSORS AND ASSIGNS. This Direct Agreement shall be binding upon and shall inure to the benefit of the parties and their permitted successors and assigns.

4.3 FURTHER ASSURANCES. Each of the parties hereby agrees to execute and deliver all such instruments and take all such action as may be necessary to effectuate fully the purposes of this Direct Agreement.

4.4 ENTIRE AGREEMENT. This Direct Agreement and any agreement, document or instrument attached hereto or referred to herein integrate all the terms and conditions mentioned herein or incidental hereto and supersede all oral negotiations and prior writings in respect to the subject matter hereof. In the event of any conflict between the terms, conditions and provisions of

this Direct Agreement and any such agreement, document or instrument, the terms, conditions and provisions of this Direct Agreement shall prevail.


*[Signature page follows.]*

IN WITNESS WHEREOF, the parties to this Direct Agreement have caused it to be duly executed and delivered as of the date first written above.

**INLAND EMPIRE UTILITIES AGENCY,**  
a Municipal Water District,  
as Contracting Party

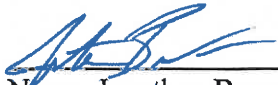
By: \_\_\_\_\_  
Name:  
Title:

**FOUNDATION HA ENERGY GENERATION,  
LLC,**  
a California limited liability company  
as Project Owner

By:   
Name: STEVE SHEAR  
Title: VICE PRESIDENT

Accepted and Agreed:

**ZB, N.A. dba National Bank of Arizona,**  
as the Lender

By:   
Name: Jonathan Bouvet  
Title: Vice President

Address for Notices:

6001 N. 24<sup>th</sup> Street  
Phoenix, AZ 85016  
(Tel) (602) 242-6440  
(Fax) (602) 351-3825  
(email) Jonathan.Bouvet@nbarizona.com  
Attn: Jonathan Bouvet

Schedule A  
to Direct Agreement and Agreement

Wiring Instructions

[To be provided]





**ACTION  
ITEM  
1J**


Date: July 19, 2017

To: The Honorable Board of Directors

Through: Engineering, Operations, and Water Resources Committee (7/12/17)

From:  P. Joseph Grindstaff  
General Manager

Submitted by: Chris Berch   
Executive Manager of Engineering/Assistant General Manager

 Sylvie Lee  
Manager of Planning and Environmental Resources

Subject: Memorandum of Understanding for the Development of a Renewable Natural Gas Project with Anaergia

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### **RECOMMENDATION**

It is recommended that the Board of Directors:

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.

### **BACKGROUND**

On October 1, 2010, IEUA and Anaergia, through its affiliate UTS and RP1 Fuel Cell LLC, entered into a Power Purchase Agreement (PPA) for the installation, operation, and maintenance of a 2.8 Mega Watts (MW) fuel cell at Regional Plant No. 1 (RP-1).

Under the PPA, IEUA agreed to purchase all renewable electricity generated by the fuel cell at a fixed escalation rate of 2.5% over 20 years, starting at \$0.1262/kilowatt-hour (kWh). IEUA is also responsible for providing the fuel, made of at least 75% biogas and the remaining amount as natural gas.

Due to the fuel cell performance and existing litigation between UTS and the fuel cell manufacturer, the fuel cell has been off line since July 21, 2016; as result, biogas is beneficially used by the boilers for digester heating, excess biogas is flared, and electricity is imported from the grid.

Over the last several months, IEUA staff has worked closely with Anaergia to develop alternative operational scenarios to beneficially use biogas and reduce costs. Both parties agree that exploring the use of the biogas for export as renewable natural gas or as vehicle fuel, and monetizing associated environmental attributes, is a financially and environmentally responsible proposition.

The objective of the MOU is to evaluate the economic and technical viability of a renewable natural gas facility located at RP-1 for the export of biomethane. Both parties agree to jointly develop a project through a public/private partnership and equally share such capital, resources, expenses, revenues, assets, and environmental benefits.

IEUA and Anaergia will have the option to use the fuel cell for power generation. The MOU also contemplates an update to the current Fuel Cell PPA, to be coupled with the RP-1 grid electricity rate. Any savings from the fuel cell operation would be equally shared between IEUA and Anaergia. IEUA staff believes that this renegotiation would significantly reduce cost exposure to IEUA in the event that the fuel cell is recommissioned.

The parties intend to implement the Project as developed if it shows at least \$2 million in savings over the 20-year term, and if the business case evaluation indicates the Project is the best option compared to other projects using the biogas generated at RP-1. If this occurs, a formalized contract will be brought back to the Board of Directors as a replacement to this MOU.

IEUA's General Counsel has been continuously engaged in the performance under the existing PPA as well as the development of the MOU.

The MOU meets IEUA's adopted Business Goals for *Wastewater Management* by optimizing renewable resources, containing future energy costs, and progressing toward peak power independence.

### **PRIOR BOARD ACTION**

On September 15, 2010, the Board awarded the Fuel Cell PPA to RP-1 Fuel Cell, LLC.

### **IMPACT ON BUDGET**

If the MOU is approved, a feasibility study will be conducted and the cost of the study will be equally shared by IEUA and Anaergia. The anticipated feasibility study cost of \$75,000 will be within FY 2016/17 project budget of \$1,000,000 for Project No. EN17055 RC Planning Documents, in the Regional Wastewater Capital (RC) fund.

Attachment: Memorandum of Understanding

# **Memorandum of Understanding**

**between**

**Anaergia Services, LLC (“Anaergia”)**

**and**

**Inland Empire Utilities Agency (“Agency”)**

**(Individually considered “Party” and Collectively referred to as “Parties”)**

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## **I. Purpose and Scope**

RP-1 Fuel Cell, LLC, Anaergia’s affiliate, has a contract with the Agency to convert biogas into useable renewable electricity using fuel cells (“PPA”). There have been performance difficulties with the equipment developed under the PPA. The purpose of this Memorandum of Understanding (“MOU”) is to clearly identify the roles and responsibilities of each party as they relate to the development of a potential new public private partnership. The objective of this MOU is to evaluate the economic and technical viability of a renewable natural gas facility for export of biomethane, located at the Agency’s Regional Plant No. 1 (“RP-1”) known as the Renewable Natural Gas Development Export Program (“Program”). In the event that the evaluation is favorable for both parties, this MOU will serve as the basis for the amendment of the existing PPA and the implementation of the Program through a separate agreement that contemplates an equal partnership.

The Parties agree that exploring the use of all or part of the biogas for export into renewable portfolio standards (“RPS”) markets or vehicle fuel markets is an environmentally responsible proposition. This includes the pursuit of offtake contracts. An offtake contract is contemplated as an agreement between a producer of biomethane gas and a third party purchaser for all or portions of biomethane production for a specified period of time, at a price that may be fixed for the duration or escalate at an agreed upon rate. Since the renewable natural gas markets are expected to have significant volatility in the future, the public-private partnership contemplated here will mitigate risk for both parties and provide financial upside.

Parties acknowledge that under AB1826 municipalities have mandates to divert organics from landfills. Parties may determine during evaluation phase that it is advantageous to jointly consider as part of the project, development of an organics program to enhance biogas production to enable organics diversion, secure long term offtakes or to improve project economics. Any such endeavor will be undertaken with mutual agreement with a clear objective to enhance overall viability of the project.

It is expected that the value created by the Program will be shared equally between both parties. This program will help the Agency in its management goals to reduce dependence on the electrical grid through use of the RP-1 Fuel Cell facility or repurposing the existing infrastructure.

This MOU shall not materially change the terms of the existing Fuel Cell Power Purchase Agreement ("PPA") with exception to pricing.

This MOU contemplates in two simultaneous agreements or amendments.

1. The Current PPA price will be coupled with the RP-1 grid electricity rate as follows: fuel cell costs will be equal to Operational Cost + Cost of Natural Gas Fuel ("Fuel Cell Cost"). Anaergia will cause operations to be RP-1 Fuel Cell LLC's responsibility. Natural Gas procurement will be IEUA's responsibility. The fuel cell will be generally operational if Fuel Cell Cost is lower than the RP-1 grid electricity rate. Any savings through operation of the fuel cell, defined as the difference between the RP-1 grid electricity rate and the fuel cell cost, will be shared equally between the relevant parties. The revised PPA price shall not exceed the RP-1 grid electricity rate or the existing PPA pricing as in Exhibit C of the RP-1 Fuel Cell PPA Agreement.
2. As a consideration for entering into 1 above, the Agency agrees to jointly develop with Anaergia, through a public/private partnership, the Program. Any cost saving, after capital and operational cost, will be shared between parties. It is contemplated that parties will jointly pursue third party offtake contracts and grants. The Agency will use its best efforts in providing low cost capital financing to fund the construction of the Program. To the extent permitted by law, any difference between the grid electricity rate and the Fuel Cell Cost, after capital and operational costs, shall be shared equally amongst the Parties. Furthermore, Environmental benefits will also be equally shared.

## **II. Anaergia's Responsibilities**

Anaergia shall undertake the following activities during the duration of the MOU term:

1. Anaergia shall comply with any and all local, state, and federal laws as they relate to a public-private partnership in developing, designing, engineering, constructing, managing, operating, and maintaining the Program.
2. Anaergia shall lead the development of long term third party offtake contracts for the sale of biomethane gas produced by the Program.
3. Anaergia shall lead the technology selection and pipeline interconnection required for the proper and responsible functioning of the Program.

4. Anaergia shall lead the process of engineer and design activities for the Program.
5. Anaergia shall lead vendor selection, project management, and construction of the Program. However, Anaergia must comply with any and all local, state, and federal laws as they relate to a public-private partnership.
6. Anaergia shall support and co-lead with the Agency in obtaining local, state and federal grants for the Program.
7. Anaergia agrees that it shall indemnify, and hold harmless the Agency, in the event that any of Anaergia's successors, or assigns, defaults on Program, or public private partnership contemplated under this MOU.

### **III. Agency Responsibilities**

Agency shall undertake the following activities during the duration of the MOU term:

1. The Agency shall use its best efforts to obtain local, state, or federal grants to assist in financing the Program.
2. The Agency shall review and examine the prospect of providing low-cost funding or credit enhancement for the Program.
3. The Agency shall support Anaergia's efforts in obtaining long-term offtake third party contacts for the sale of biomethane gas.
4. The Agency will act as lead agency in obtaining any local, state, or federal permits or approvals for the design and construction of the Program.
5. The Agency will review and examine the feasibility of operating the equipment and facilities involved in the Program.
6. The Agency shall comply with any and all local, state, and federal laws as they relate to a public-private partnership in developing, designing, engineering, constructing, managing, operating, and maintaining the Program.
7. Agency agrees it will indemnify, hold harmless and defend Anaergia, in the event that any of Agency's officers, directors, employees, contractors and agents defaults on its responsibilities under the Program, or public private partnership contemplated under this MOU.



#### **IV. MOU Milestones**

The term of this MOU is the period within which the responsibilities of this MOU shall be performed. The development process will take place in two phases: Phase 1 will develop a business case evaluation to address the economic and technical viability of the Program, and provide a recommendation to implement the Program or terminate the MOU. Phase 2 should build upon the findings and agreements established in Phase 1, it includes contract execution, design, construction, and start up. The approximate timeline for the development and financing of the Program is 18 months from the execution of this MOU.

The targeted milestones are as follows (All development cost will be shared):

##### **Phase 1**

1. Project description – September 2017
2. Complete 30% Design –December 2017
3. Business Case Evaluation and Program Decision – December 2017

##### **Phase 2**

1. Draft Financial Plan –January 2018
  - a. The Agency will review and examine the feasibility in providing low cost financing for the Program.
2. PPA Amendment and Program Agreement Execution – January 2018
3. Jointly Develop Offtake Third Party Agreements – Immediately through February 2018
4. Complete 100% Design – July 2018
5. Pursue Local, State and Federal Grants – through the end of the term
6. Program Financing –October 2018
7. Complete Construction – January 2019
8. Program Startup – February 2019

#### **V. Special Terms and Conditions**

1. **Program Structure:** The Program will be structured as a public-private partnership. Parties will evaluate codes to ensure legal compliance for ownership and tax issues. The Program will be structured to maximize the value from tax benefits, grants proceeds, outside funding opportunities, and through low cost financing.
2. **Costs:** The Parties will each pay for and track internal costs and capitalize such costs at financing. All external costs will be shared and agreed upon during development phase of the Program. If one Party believes that the other has used unreasonable costs in the development, operation, and financing of the Project, the Parties agree that they shall mutually discuss and refine said costs prior to payment by the Parties. Annual budgets will be mutually developed and agreed to by both parties. Grants will be pursued by the Agency and Anaergia equally.



3. Profits and Losses: It is the intention of the Parties that public-private partnership be entered into mutually. All profits and losses, after operations and capital costs, from the Program shall be shared equally between the parties. This includes, but is not limited to, sharing profits and losses in grants, third party offtake contracts, savings, and any tax benefits obtained by either Anaergia or the Agency as permitted by law.
4. Any activities led or contracted by either party must be charged against the mutually agreed upon task order budgets and shared equally in compliance with the agreement terms.
5. Exclusivity and Binding Nature: Parties agree to develop the Program jointly through the development period. If the Parties agree at the end of Phase 1 that the Program financial analysis shows at least \$2,000,000 in savings over the 20-year term, and the Business Case Evaluation provides the Program as the best option to beneficially utilize biogas generated at RP-1, the Agency and RP-1 Fuel Cell LLC, will in good faith amend the PPA, and the Parties will implement the Program as developed in Phase 2.

Signatures and Dates



Anaergia Services, LLC

Inland Empire Utilities Agency

PRESIDENT

Its:

Its: General Manager

Date

6/5/17

Date

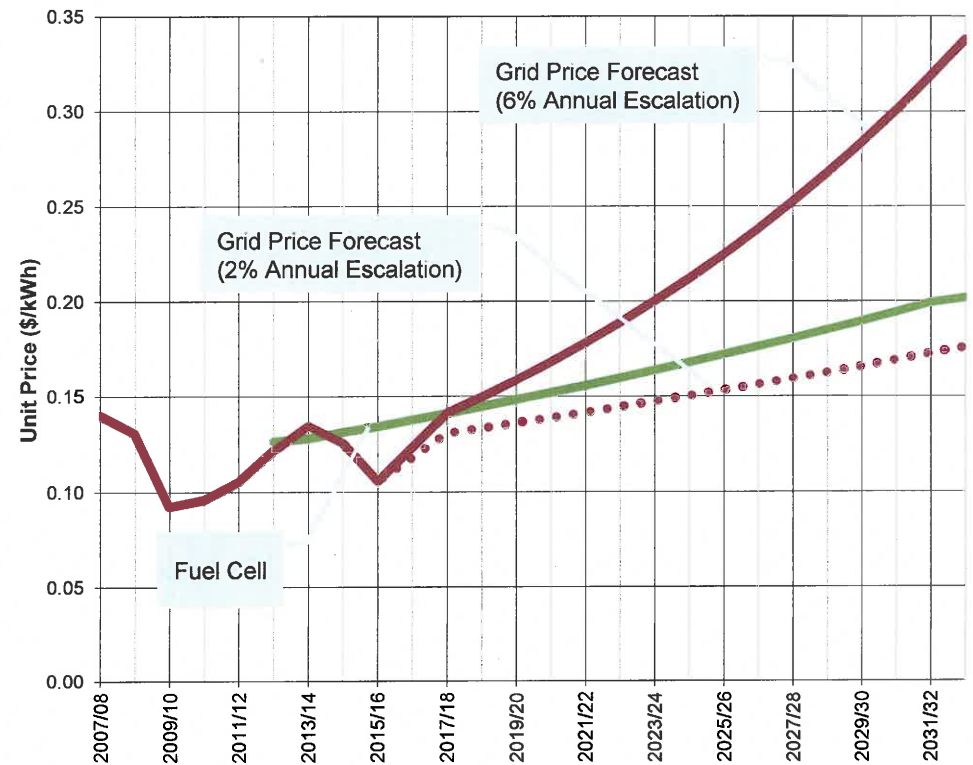
# Renewable Natural Gas Project Memorandum of Understanding



July 2017

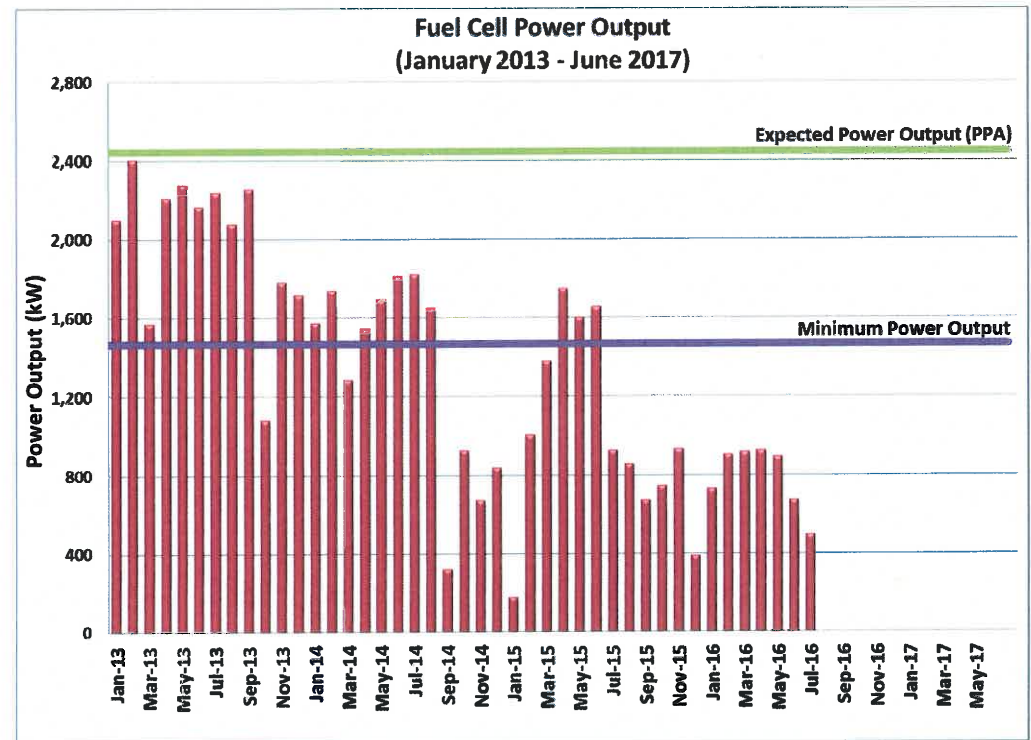
# Background

- Power Purchase Agreement (PPA) with Anaergia
  - 2.8 MW fuel cell at RP-1 (January 2013 – January 2033)
  - Anaergia: install, operate, and maintain fuel cell
  - IEUA: provide fuel, purchase electricity, recover heat
    - Current rate = \$0.1392/kWh, 2.5% escalation



# Background

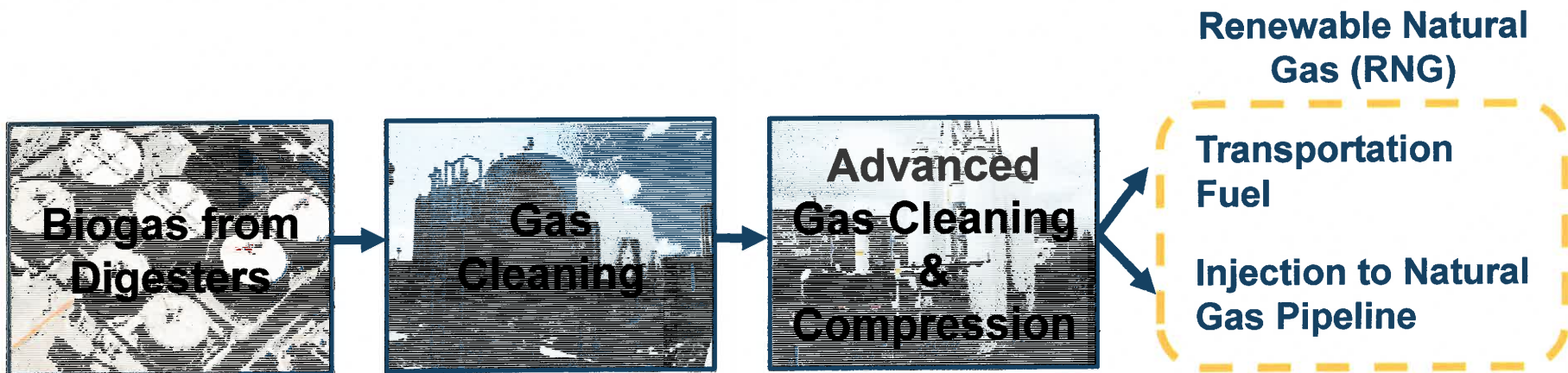
- Fuel cell offline since July 2016
  - Biogas used for plant heating and remaining is flared
  - Electricity imported from the grid





# Feasibility Study

- Evaluate, develop, and finance, a renewable natural gas facility
  - Transportation fuel or
  - Pipeline quality gas



# Memorandum of Understanding (MOU)

- Public/private partnership
  - Reduce IEUA operations costs
  - Equally share capital, resources, expenses, revenues, assets, and environmental benefits
- Implement project if cost effective
- Option to use fuel cell for power generation
  - Update current fuel cell PPA rate (guaranteed at less than SCE rate)

# Considerations

## Pros

- Environmental attributes
- Revenue stream to reinvest for onsite renewables
- Possible long term contracts
- 100% beneficial use of biogas (minimize flaring)
- Align with State and local air quality goals

## Cons

- Environmental attributes market volatility (risk)
- Does not directly meet all IEUA Energy Management Plan Initiatives
- Energy Market Price



# Recommendation

1. Approve 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

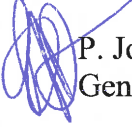
The approval of this MOU is consistent with IEUA's Adopted Business Goals for **Wastewater Management** by optimizing renewable resources, containing future energy costs, and progressing toward peak power independence.


**ACTION  
ITEM  
1K**


Date: July 19, 2017

To: The Honorable Board of Directors

Through: Engineering, Operations, and Water Resources Committee (7/12/17)

From:  P. Joseph Grindstaff  
General Manager

Submitted by: Chris Berch   
Executive Manager of Engineering/Assistant General Manager

 Sylvie Lee  
Manager of Planning and Environmental Resources

Subject: Agency Membership in the California Data Collaborative

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### **RECOMMENDATION**

It is recommended that the Board of Directors approve IEUA membership in the California Data Collaborative for FY 2017/18, in the amount of \$27,500.

### **BACKGROUND**

The California Data Collaborative (CaDC) is a coalition of water utilities that in January 2016 joined together to form a data infrastructure 501(c)3 non-profit to analyze and support water management efficiency and reliability objectives. Founding members included IEUA, Eastern Municipal Water District, Irvine Ranch Water District, Moulton Niguel Water District, East Bay Municipal Utility District, Santa Margarita Water District, Las Virgenes Municipal Water District, and UC Davis.

The goals of the CaDC are to merge water data with data science analytical tools, such as those utilized by Netflix and Microsoft. This is accomplished by working with a group of data scientists who ingest raw water usage and billing data from individual agencies, standardize the information, and make it available on a secure, centralized platform. This data can then be plugged into customized dashboards that were developed by water managers and analysts. Dashboards that have been developed over the past 18 months include an interactive rate modeling tool, a neighborhood level analysis of turf-rebate participation, and an in-process analysis of the impacts of proposed state water use efficiency standards.

Another benefit of the CaDC is that the standardized data makes it easier and more attractive for research institutions to partner with water resources to expand the industry's understanding of how different policies and demand management strategies across the State achieve water management goals. Since its inception, the CaDC has built partnerships with Stanford Business School, Claremont McKenna Graduate School, UC Riverside, and UC Los Angeles on a variety of topics from the impact price incentives for turf-grass rebate programs have on customer participation to cutting-edge remote imagery sensing to determine outdoor irrigated areas in alignment with State water use efficiency and drought requirements.

The CaDC operates as an inter-sectoral Memorandum of Understanding run through the National Center for Civic Innovation as a fiscally sponsored non-profit. To date, IEUA has contributed \$50,000 towards the work of the CaDC through Phase 1A and Phase 1B from January 2016 through June 2017. The CaDC is moving from an ad-hoc start-up to a membership driven organization in FY 2017/18. Due to the timing of this transition it is being presented separately from other memberships. In the future, this item will be included along with the Agency-Wide Memberships in December. The \$27,500 fee includes two components: \$10,000 for IEUA to continue to participate in the working group on the statewide efficiency work, analysis of landscape area by parcel, and involvement in regional research partnerships; and \$17,500 for one member agency, Monte Vista Water District, to continue to receive urban metered water use data integration with dashboards and tools. Monte Vista Water District has been the only member agency in IEUA's service area that has participated in the CaDC since the inception and has requested to continue receiving services from CaDC. If other IEUA member agencies request membership, the request will be presented to the Board for consideration.

The CaDC membership 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.

#### **PRIOR BOARD ACTION**

None.

#### **IMPACT ON BUDGET**

The proposed membership fee in the amount of \$27,500 will be paid as follows: \$10,000 from the Agency's FY 2017/18 Administrative Services Fund under account number 10200-112100-100000-514010, Agency-wide Memberships, and \$17,500 from Project No. WR15002, Drought Funds.

## **CaDC Fiscal Year 2017 - 2018 Scope of Work**

*July 1, 2017 through June 30, 2018*

### **Summary of successes to date**

Since launching in January of 2016, the California Data Collaborative partnership has grown from seven to fourteen water agencies and developed a broad network of academic, technology and industry collaborations. This visionary investment from leading water utilities has already shown results. Key successes are summarized below.

1. CaDC staff has completed a rapid assessment of Governor Brown's statewide water use efficiency targets in partnership with Claremont Graduate University.
2. Working in deep collaboration with members of the technical working group, CaDC staff has implemented the requested feature improvements to the rate comparison tool.
  - a. In addition, CaDC staff has developed a new open water rate specification to deploy tool more efficiently.
3. CaDC staff has also ongoing evaluation of outdoor water use efficiency programs.
  - a. Statistical analysis of water savings
  - b. CGU collaboration on remote sensing to measure changes in photosynthetically active turf to estimate the peer effect associated with turf rebate programs.
  - c. Civic Spark Survey of Outdoor water use attitudes

Perhaps of most long term value is the underlying investment in new 501(c)3 nonprofit data infrastructure and the ability to leverage that data to support water managers in ensuring water reliability for years to come.

### **CaDC Staffing**

The CaDC project has been staffed cost effectively through ARGO Labs, a 501(c)3 civic data science nonprofit. This data team will work closely with the new data action teams in the coming fiscal year to improve how CaDC analytics are operationalized to support participating water utilities.

Position	Description	Current	Proposed FY 17-18
CaDC Project Manager	Ensure analytics support water managers	Full Time	Full Time
CaDC Data Scientist x2	Integrate data and develop analytics	Full Time x 2	Full Time x 2
Program Coordinator (Part time contractual)	Streamline integrating data, managing CaDC events, supporting deployment of tools	60 estimated hours a month	Full Time
Backend Engineering (Part time contractual)	Build underlying data infrastructure	100 estimated hours a month	Utility growth or expansion projects
Administrative Assistant (Part time)	Scheduling, invoicing, and other administrative tasks as necessary	N/A	40
<b>TOTAL</b>		<b>3.5 FTE</b>	<b>4.5 FTE</b>

The CaDC partnership has also benefited from its diverse network of academic and technological talent, enjoying low cost and pro bono internship and volunteer projects as detailed below.

Position	Description	Estimated Total Hours for Phase 1B
Research Fellows x3	<ul style="list-style-type: none"> <li>• Redeploying demand forecasting tool for EMWD</li> <li>• Developed AB 1755 feasibility study</li> <li>• Conduct open accuracy assessment with remote sensing vendors</li> </ul>	400 total or 40 hours a month
Analytics Interns x2 (In California)	Support core CaDC analytics development	400
CUSP Winter Internship (6x in NYC)	<ul style="list-style-type: none"> <li>• Inventory and develop metadata for every dataset in AB 1755</li> <li>• Supplement CIMIS evapotranspiration data with additional sources</li> <li>• Standardize utility water rates across California</li> </ul>	240

The core CaDC budget for the next fiscal year focuses on funding staffing to support utilities in operationalizing CaDC analytics deployed for participating retailers including the CaDC efficiency explorer tool, rate comparison tool and demand forecasting tool.<sup>1</sup>

### FY 2017 - 2018 Core Dues Structure

<sup>1</sup> Note the demand forecasting tool is a tailored collaboration working to pilot the approach with specific agencies. This pilot is staffed primarily through a CaDC research fellow and the tool was initially developed by a DataKind volunteer team.

The following diagram details core CaDC revenue for the scope of work common across agencies.

Jan 2016	Scp 2016	July 2017	June 2018
<b>Phase 1A</b>		<b>Phase 1B</b>	<b>FY 2017-18</b>
<b>Budget: \$150k</b>		<b>Revenue to date: \$284.8k</b>	<b>Proposed core budget: \$402k</b>

At the March 10, 2017 CaDC Administrative meeting, staff across participating utilities discussed annualizing and expanding membership to fund additional staffing. The resulting fee structure is broken down by the number of retail metered connections that a utility serves:

1. Utility cost for full metered use data integration
  - a. Less than 15,000 meters = \$17,500
  - b. Between 15,000 – 150,000 meters = \$35,000
  - c. More than 150k = \$70,000

These resources will empower increased staffing to support CaDC utilities in operationalizing CaDC analytics. This plan is being implemented in collaboration with the technical working group through the targeted CaDC data action teams.

Participating wholesalers can sponsor retailers in their service with full metered use data integration fees determined as above. In addition, CaDC staff can develop customized open source analytics solutions for participating wholesalers using system operations data as detailed in the “potential additional work with system operations data” section.

In addition, utilities may elect to participate as a CaDC knowledge sharing member in order to participate in technical working group workshops, collaborate with other CaDC data action team members in monthly webinars, two tickets to the annual CaDC water data summit and have input into CaDC initiatives to set new data standards. That fee is a flat \$5,000 for member participation.

## **FY 2017-18 Focus: Operationalizing CaDC Analytics**

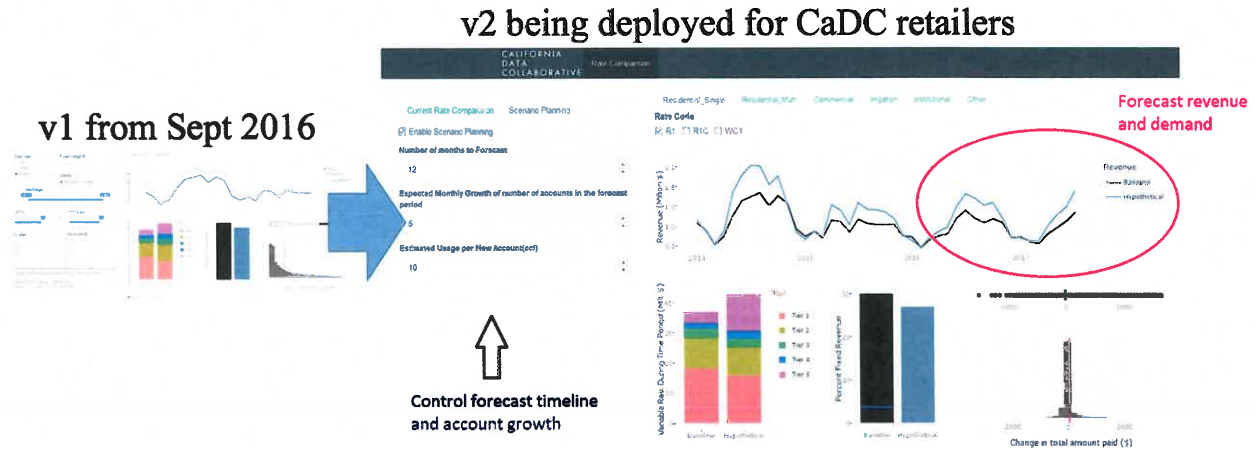
CaDC staff has developed new cutting edge open source analytics to benefit participating utilities. These tools are described briefly below and the focus of the 2017-18 fiscal year is



expanding the impact and usefulness of these tools through targeted CaDC data action teams. These five teams coordinate CaDC work in 1) statewide efficiency targets 2) water use efficiency evaluation 3) rate modeling 4) demand forecasting and 5) events and communications.

**Rate Comparison**

The CaDC Rate Comparison tool is an open source software tool developed by the California Data Collaborative (CaDC) designed to estimate the impact of a water rate shift. Open source means the tool benefits from in-kind academic and other technology collaborations, as well as review and comments from other individuals and organizations. This tool has matured greatly in the past six months and has expanded to incorporate all customer classes and enhanced scenario planning functionality to project growth in accounts broken out by each customer class.



**Efficiency Explorer**

The efficiency explorer tool has a statewide and neighborhood level component. These interactive dashboards are supplemented by deeper analyses by CaDC staff responding to participating agency data action team member requests.

- *Statewide efficiency explorer*
- *Neighborhood level efficiency explorer*
- *CaDC staff analyses responding to agencies' requests*
  - These efficiency explorer tools are aimed to provide a simple, easy to navigate picture of water efficiency across a utility's service area. That simple water efficiency benchmarking exercise will be supplemented by CaDC staff responding to water use efficiency evaluation data action team member requests. Common requests across utilities will be formalized into a reusable report generated by a CaDC programming tool.

## Demand forecaster

Faced with a historic drought and future uncertainty, California water managers need all the tools they can get to ensure water reliability. Short term demand forecasting has a long track record of helping manage peak loads in energy, and this new tool created by DataKind brings that approach to help manage recycled water demand peak loads and reduce the need for potable makeup water for irrigation watering. The CaDC water demand forecasting tool allows users to select the number of days of history to use for the forecast and how long into the future to forecast. In addition, it shows the uncertainty with the forecast and calculates the probability that outdoor irrigation demand will exceed recycled water supply. This tool will be deployed for agencies with recycled water and outdoor irrigation demand optimization needs. The results of the pilot will be shared with CaDC members and the underlying demand forecasting technology improvements will be recorded so that they can be deployed for other agencies.



The foundation of the core CaDC project deliverables for FY 17-18 involves improving these CaDC analytics and operationalizing them with partner CaDC utilities via data action teams.

## FY 2017-18 Core CaDC Project Deliverables

Over FY 2017-18 the CaDC will work with the CaDC data action teams to operationalize CaDC analytics. These data action teams will meet monthly and will work collaboratively to integrate these tools into ongoing CaDC utility workflows to benefit their utilities. In addition, the full technical working group will continue to meet quarterly to find common points of collaboration. Lastly CaDC staff will work with the Outreach / Events Data Action Team to put on the 2017 CaDC water data summit in September. Furthermore, CaDC staff will develop feature

improvements to CaDC analytics as described below to expand the value of the project for participating utilities.

There has been discussion of piloting a new system operations data integration project to explore in particular the nexus between indoor water use and recycled water flows. That work is currently being planned and would be covered by a separate scope of work.

**Rate Comparison Feature Upgrades: Estimate the demand effects of price changes**  
(*Rate Comparison Data Action Team*)

Currently, Rate Comparison assumes constant demand based on historical water use. After this work, the tool will update demand estimates based on change in price from a historical baseline and a user-provided price elasticity.

This involves the following functionality:

1. Allow users to specify a price elasticity, but provide a default from the literature.
  - a. The initial default for utilities can be the price elasticity developed<sup>2</sup> by USBR Economist Steven Piper in the 2014 study “The Influence of Conservation Pricing and Other Non-Price Factors on Residential Water Demand”, or another requested study.
2. Estimate hypothetical water demand given change in price and user-provided elasticity.
  - a. This will be implemented as the impact of a change in nominal average price on average demand in line with the methodology and data aggregation used in Steven Piper’s study. Potential methodological improvements will be discussed by the CaDC research committee and upon recommendation by said Committee, incorporated into the CaDC rate comparison tool.

This functionality will improve the CaDC rate comparison tool to support water managers in dynamic and industry leading “what if” analysis to understand and plan for the impact of prospective rate changes.

**Statewide Efficiency Targets: Supporting Water Utilities in Planning for the Future**  
(*Statewide efficiency target data action team*)

The CaDC powered by ARGO Labs has conducted a first assessment of statewide efficiency targets described in Governor Brown’s May 2016 Executive Order on “Making Conservation a California Way of Life” (EO).<sup>3</sup>

The CaDC statewide efficiency explorer tool allows users to navigate statewide residential water efficiency targets. The key excerpt from the EO is copied below:

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<sup>2</sup> <http://www.usbr.gov/research/projects/detail.cfm?id=414>

<sup>3</sup> [https://www.gov.ca.gov/docs/5.9.16\\_Attested\\_Drought\\_Order.pdf](https://www.gov.ca.gov/docs/5.9.16_Attested_Drought_Order.pdf)

*“These water use targets shall be customized to the unique conditions of each water agency, shall generate more statewide water conservation than existing requirements, and shall be based on strengthened standards for:*

- A. Indoor residential per capita water use;*
- B. Outdoor irrigation, in a manner that incorporates landscape area, local climate, and new satellite imagery data;*
- C. Commercial, industrial, and institutional water use; and*
- D. Water lost through leaks.”*

This high level executive order is further specified in the draft report from the Department of Water Resources (DWR) and State Water Resources Control Board (SWRCB).<sup>4</sup> This initial iteration funded by the Water Foundation focuses on residential water efficiency.

In particular, the CaDC Efficiency Explorer focuses on residential indoor and residential outdoor water use to set an initial target. The CaDC Efficiency Explorer tool incorporates this target calculation for any user-selected time period.

In addition, the CaDC Efficiency Explorer tool is policy-neutral and enables users to input an indoor GPCD and/or outdoor ET adjustment factor of their choosing. In each user-defined scenario, the aggregate statewide residential target for the previous twelve months is shown against the existing SBx7-7 target and the total residential usage for that same period.<sup>5</sup>

In FY 17-18, CaDC staff will maintain this tool for the benefit of CaDC member utilities to plan for future potential policy changes. In addition, staff will work collaboratively with other participating utilities to scope the data requirements to expand outdoor irrigation from residential to all customer types.

CaDC staff has also developed an applied research and development partnership with NYU CUSP to benchmark CII water use as called for by section 2C of the executive order. Working with Professor Constantine Kontokosta of NYU's Center for Urban Science and Progress, the CaDC is benchmarking efficient water use across Commercial, Industrial, Institutional and Multifamily Residential customer classes using our standardized data. This approach has been pioneered by CaDC staff for NYC, resulting in an award-winning Energy & Water Performance Map and associated journal paper. Lastly, CaDC staff looks forward to working with partner utility staff to scope the data requirements to improve leak loss detection.

### **Water Use Efficiency Report: Supplementing the Interactive Efficiency Explorer Dashboard**

*(Water Use Efficiency Evaluation Data Action Team)*

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<sup>4</sup> [http://www.water.ca.gov/wateruseefficiency/conservation/docs/EO\\_B-37-16\\_Report.pdf](http://www.water.ca.gov/wateruseefficiency/conservation/docs/EO_B-37-16_Report.pdf)

<sup>5</sup> Note the SBx7-7 target is an aggregate utility wide number that is adjusted by the percent of residential usage for the utility service area obtained from the monthly supplier report.

The Phase 1A Scope of Work involves integrating metered customer use data from participating agencies into the standardized “Strategic California Urban Water Use Data Waterhouse” (“SCUBA”) schema. In addition the Phase 1A Scope involves analyzing water use patterns by customer demographics, geographic, temporal and hydrologic factors.

Based on a request from WMWD for a Water Use Efficiency Master Planning Report, CaDC staff will stratify participating retailer customers by:

- Customer class
- Customer factors (household size and landscape area)
- Seasonal consumption trends
- Observed changes in water use due to policy factors (drought, rates, programs)
- Ranking of customers from least efficient to most efficient
- Water savings potential

This work will be developed through automated reporting code so that it benefits all CaDC participating agencies.

### **Streamlining participation in research projects and setting a new standard for statistical excellence in the water industry**

*(Research Committee and Water Use Efficiency Evaluation Data Action Team)*

As part of the Phase 1B NDA, CaDC utilities can share data subject to written permission from the requisite utility management. Core metered use data can be leveraged for additional projects. One of these is the aforementioned applied research project in partnership with NYU CUSP on CII water use. In addition, CaDC staff can share this data with other academic research projects subject to written permission from the respective utility management. That process has been legally incorporated into the CaDC non-disclosure agreement and CaDC staff has been collaborating with UC Davis on their trust framework, NYU CUSP on its data facility “safe data” protocols, and researching global best practices. Those will be operationalized with the CaDC Research Committee composed of technical working group staff and academic collaborators.

In addition, CaDC staff has developed open source statistical packages as part of its work measuring the water savings of turf removal. CaDC staff will work with researchers to publish the statistical analysis as part of their research as part of the “open science” trend in academia to make research replicable and reproducible.

### **Pilot demand forecasting tool and share results with other CaDC members**

*(Demand Forecasting Data Action Team)*

CaDC staff has developed prototype demand forecasting tools for several CaDC agencies. These tools will be integrated into those CaDC partner utility operations in FY 17-18 and



iteratively improved. Lessons learned from this pilot will be disseminated and discussed with the larger group of CaDC members.

## Potential additional work

*(Would involve integrating additional data)*

The CaDC project to date has focused on integrated metered water use data to support water managers in achieving water reliability. That data has been invaluable in highlighting the unique local circumstances of California's water utilities and supporting agencies in navigating the rapidly evolving statewide landscape through new open source analytics.

Additionally, there has been some interested for the CaDC project to broaden to supplemental data streams. Those are listed below and would require a specific work plan and budget to adequately resource that new work.

1. Storm water data collaboration (pilot with OC Public Works and MWND)
2. SCADA Flow Data
  - a. Analyzing indoor water use, sewer flows, and recycled water capacity
  - b. Energy water nexus optimization
3. Collaborating with the state on AB 1755 implementation

## Appendix 1 -- CaDC Data Action Teams and Committee Structure

### CaDC Data Action Teams

*The big bullets list the CaDC data action teams with participating agency staff. The sub-bullets list the items the data action team will address. Links provide context on the team projects.*

1. [Statewide Efficiency Targets team](#)
  - o Statewide Efficiency Explorer
  - o Landscape area
  - o CII
  - o Leak loss
2. [Water Efficiency Evaluation team](#) (Water Resources)
  - o Statistical Methods
  - o WUE Summary Report
  - o Civic Spark Survey
  - o Neighborhood-level Efficiency Explorer
3. [Rate Comparison team](#) (Finance)
  - o Statistical Methods

- [OWRS](#)
- Rate comparison tool
- User guide development
- 4. [Demand Forecasting team](#) (Planning / Operations)
  - Statistical methods
  - Tool deployment
- 5. Outreach / Event team (Public Relations)
  - Data Summit Planning
  - Workshop Planning
  - Marketing / Case Studies/ Press Releases

### **Other CaDC Committees**

1. Research Committee
  - Topics
    - i. Statistical methods
    - ii. QA / QC data sharing procedures
    - iii. Discuss potential new research projects
      1. Rotating academic presentations / webinars
2. Administrative Committee
  - Responsibilities
    - i. Approve membership fees
    - ii. Ensure quality and timely completion of work
    - iii. Approve new data action teams
    - iv. Review project budget

## **Appendix 2 -- Phase 1B Progress Report**

*(March 2017)*



## **Data-driven demand management**

<b>Phase 1B Task 2.0</b>	<b>Status</b>	<b>Staffing</b>
Develop rate modeling tool	Deployed as part of MNWD 2017 budget	CaDC core data team and MNWD collaboration
Second iteration of water savings statistics (including additional rebates)	In progress – ETA Summer 2017	CaDC core data team and part-time project statistician
Demand forecasting	In progress	UCLA Research Fellow and EMWD collaboration
Survey outdoor water use attitudes	Survey begins 4/1	Civic Spark Fellows

## **Statewide efficiency targets (top priority in June 2016 meeting)**

<b>Phase 1B Task 1.0</b>	<b>Status</b>	<b>Staffing</b>
Develop interactive web visualization of efficiency targets	Substantial back end improvements from prototype shown at Stanford	CaDC core data team
Improve landscape area measurements	First iteration complete with Andrew Marx	CGU Collaboration and engagement with TWG
(Supplemental) Land use data development to integrate landscape area into efficiency explorer tool	Complete	CaDC core data team

## Building water data infrastructure

Phase 1B Task 3.0	Status	Staffing
Internal automation of data ingestion	Completed internal infrastructure upgrade	CaDC core data team
Enable data sharing with utility permission – Part of Phase 1B NDA	Complete	MNWD In-Kind Legal Support
Support effective implementation of the Open and Transparent Water Data Act	Completed feasibility study Completed inventory Developing draft protocols	Interns and UCLA research fellow

## Appendix 3 -- Phase 1A Original Scope of Work

**Title: Measuring the effectiveness of various conservation programs through a new inter-utility, customer-level water usage dataset**

### Overall Project Objectives

A statewide data collaborative is currently underway involving water agencies throughout California, working in partnership with UC Davis, to collect and share data among utilities to improve efficiencies, refine demand management strategies and promote long-term sustainable solutions that build on the water/energy nexus. A secure, cloud-based platform will be built through a non-profit mechanism (CAWaterData.org) to house water utility data statewide and to facilitate analyses. This effort is a three-phased, “bottom-up” approach to providing meaningful input and recommendations that will help shape future water management decisions that have statewide impact. The goal is to facilitate informed decisions and aid agencies in meeting the State’s goal of demand management through improved understanding of unique characteristics of our communities.

The Phase One Pilot of the project brings together water retailers to consolidate customer level water usage data to proactively share information, ideas, tools, solutions and challenges in an effort to provide a collective input that can showcase how California can achieve water efficiency statewide through smart, bottom up collaborative mechanisms. The purpose is to demonstrate the benefits of a statewide data collaborative in assisting the agencies and decision makers statewide. The Phase Two Pilot of the

project will demonstrate a secure, cloud-based platform for sharing water utility data and performing analytics. Upon completion of Phase One and Two Pilot, the Phase Three will be ready for launch, offering a positive, proactive approach to work collaboratively together as a water community across California to achieve water efficiency smartly statewide.

California's worst drought in recorded history demands visionary leadership. Throughout our state's history, water utilities have come together to pioneer new physical infrastructure to ensure a safe and reliable supply for the people of California. This project will honor that tradition and California's world renowned "pioneering spirit" by boldly building the world's first data utility to manage cutting edge data infrastructure. Climate change, demographics, and thousand year hydrological records suggest water scarcity will be the new normal in twenty first century. Yet while the future is ultimately uncertain, by working smartly and collaboratively, we can prepare to adapt to whatever the future holds.

### **Project Task 1: Statewide analysis of conservation program effectiveness**

The goals of this component of the project include:

#### **1.1 Analyze unique characteristics of different parts of California and its diverse communities**

1.1.1 Collect, organize, clean, and generate a statistical dataset from the sources listed below this task specification.

1.1.2 Develop analyses of various conservation programs effectiveness on reducing water usage.

Aggregate impact of individual water conservation programs on agency water demand and revenues

1.1.3 District-level averages as well as results for various socio-economic and demographic groupings, environmental characteristics, and neighborhood characteristics.

#### **1.2 Learn from successes and challenges of different demand management programs**

1.2.1 Write a summary report and present results to agency personnel and board members. Report articulating statewide water efficiency benefits and succinct value proposition of robust granular water data. This report is anticipated to include the following key sections incorporating analyses developed in project task one:

- Baseline water usage trends and patterns:
- Water usage trajectory quantiles by customer segment for each participating utility from as long as is feasibly available and including at least 2013 – 2015.
- Those trajectories will be overlaid with conservation actions taken by utilities (dates of public education campaigns, rate shifts, etc.) to better understand "what works" to achieve water efficiency.
- Those trajectories will be compared that with what the state "sees" in residential gallons per capita per day and other statewide metrics.
- Scope how smart "bottom up" water efficiency projects enabled by this data infrastructure can scale statewide.

- Discuss lessons learned for future demand management and potential statewide water efficiency targets.

### 1.3 Conducting preliminary statistical analysis into the effectiveness of turf rebates by expanding the MNWD Turf Rebate Study published by Bloomberg Data for Good.

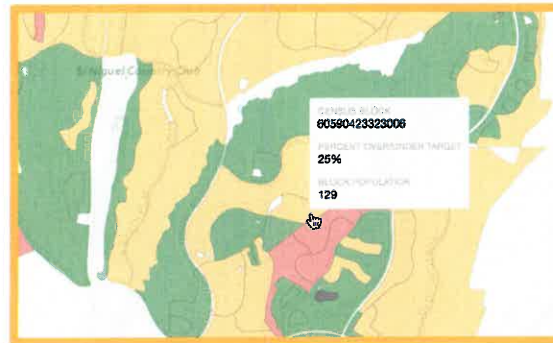
Each financially contributing retail water agency will be responsible for providing customer-level water usage data. Participating wholesale water agencies may provide this conservation analytics service at no charge to up to one retail agencies in their service area. Further wholesale agencies with parcel-level irrigable area will provide said data along with as granular water usage data as is available.

Contingency: In the event that the State Water Resources Control Board elects to provide statewide Clean Drinking Water metered usage data at the customer class level, the Phase One Pilot team will include said data in their analysis of statewide conservation programs.

In addition, Phase One Pilot staff will work with the analytical point persons on the technical working group to provide contextual data sources with clear spatial, temporal and quantitative characteristics to inform inter-utility, customer-level water usage data when available:

- Agency-level factors (Data Sources: participating water agencies)
  - Water pricing policy (i.e., structure and level)
  - Rebate levels
  - Conservation program participation
  - Outreach / media efforts
  - Conservation BMP Reporting (Data Sources:
- Household-level factors (Data Sources: Participating utilities and US Census)
  - Socio-economic factors (e.g., income, education)
  - Demographic factors (e.g., ethnicity, household size)
  - Property characteristics (e.g., lot size, age of house, irrigated area)
  - Customer awareness (through identifying district-level awareness campaigns)
- Community / Environmental Factors (Data Sources: Participating utilities, CIMIS)
  - Neighborhood program participation levels, if available
  - Outreach efforts from other agencies (wholesale and neighboring), if available
  - Methods of community outreach and engagement (e.g., newspapers, agency website, social media, community newsletters, HOA meetings, Chamber of Commerce events, etc.)
  - Biophysical factors (e.g., precipitation, temperature, evapotranspiration)

# California Data Collaborative Membership Update





# California Data Collaborative Overview

- Created Jan 2016 by water agencies for water agencies
- Goal: Leverage modern data science to ensure water reliability
- 501(c)3 Non Profit

**Founding Members:**

**New Members:**

**Partners:**



# Integrate Data Across Utilities

- Developed a cloud-based secure infrastructure
  - Data “clean up”
  - Identified and evaluated gaps
  - Automated monthly use/billing data uploads
- Data can be easily shared with researchers
  - Requires GM’s signed consent
- Partners’ data incorporated into all dashboards and tools

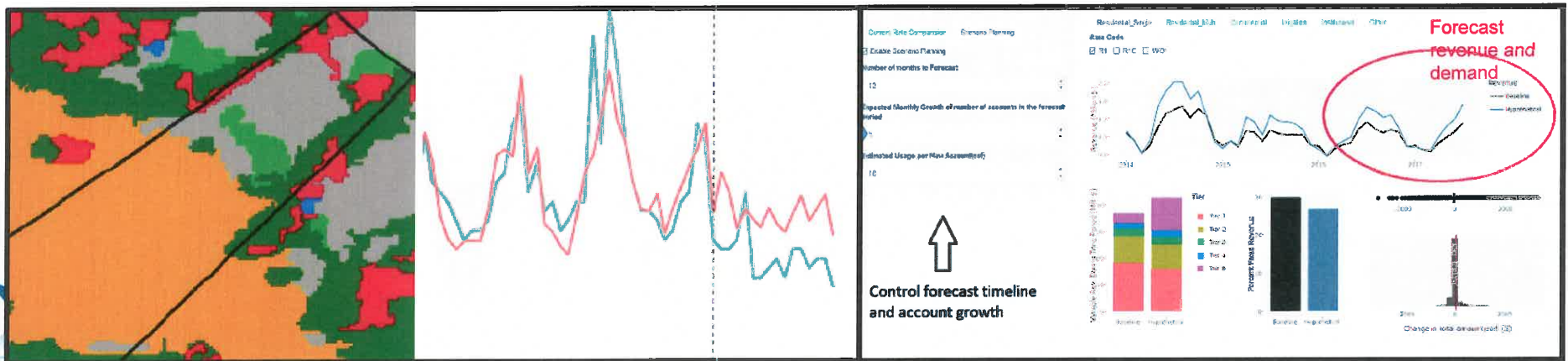


Professor Andrew Marx from Claremont Graduate University Presents research at the 2016 Data Summit hosted by Stanford.



# California Data Collaborative Membership Benefits

- Dashboard development
- Input into statewide efficiency analysis work
- Partnerships with top research institutions
- Per-meter parcel level analysis



# Membership Fees

Pilot: Jan 2016- June 2017	July 2017-June 2018
Turf program effectiveness	Landscape area by parcel
Build data infrastructure	Water Use Efficiency Reporting
Statewide Mandatory Drought Targets analysis	Pilot water/energy intensity analytics w. UC Davis
Rate tool development	Access to refined dashboards (rates, efficiency programs, demand forecast)
Model Statewide water use efficiency targets	Potential SCADA Flow data analysis for indoor use, sewer flows, recycled water capacity
Pilot Contribution: \$50,000	Annual Membership*: \$27,500

# Recommendation

- Approve membership in the California Data Collaborative for FY 2017/18, in the amount of \$27,500; and
- Authorize the General Manager to pay the annual dues.


The California Data Collaborative membership 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.


INFORMATION  
ITEM  
2A


Date: July 19, 2017

To: The Honorable Board of Directors

Through: Engineering, Operations, and Water Resources Committee (7/12/17)  
Finance and Administration Committee (7/12/17)

From:  P. Joseph Grindstaff  
General Manager

Submitted by: Chris Berch   
Executive Manager of Engineering/Assistant General Manager

Shaun J. Stone   
Manager of Engineering

Subject: RP-2 Microturbine Contract Termination

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## **RECOMMENDATION**

This is an information item on the RP-2 Microturbine Project contract for the Board of Directors to receive and file.

## **BACKGROUND**

Since 1990, Regional Water Recycling Plant No. 2 (RP-2) has produced renewable energy by fueling a cogeneration engine with digester gas. Due to stringent emissions limits imposed by South Coast Air Quality Management District (SCAQMD) Rule 1110.2, the engine is no longer able to operate in compliance. In anticipation of the engine shutdown, IEUA evaluated alternative technologies that could comply with environmental regulations while beneficially and cost effectively utilizing the digester gas produced on site in consideration of RP-2's scheduled decommissioning in January 2023.

Analysis showed that a digester gas-fueled microturbine was the most cost effective option. A prerequisite of the project's evaluation criteria was to achieve a return on investment within the remaining life of RP-2 (five years). On November 21, 2016, a Request for Proposal was advertised on *PlanetBids* to all microturbine suppliers. On February 15, 2017, IEUA awarded a design-build contract to Geveden Industrial to install a microturbine power plant at RP-2.

To mitigate the economic risks of this project, a termination clause was included in the contract. Under this provision, IEUA has the ability to stop all design and construction work on the project and terminate the contract in the event that Self-Generation Incentive Program (SGIP) funding

cannot be secured through the California Public Utilities Commission (CPUC). Without the SGIP funding, the project would not be able to achieve the desired return on investment.

IEUA initiated the SGIP application process in February 2017 with the expectation of submitting an application when the program opened in April 2017. Shortly before the program opened, the CPUC released an updated program handbook detailing existing and new SGIP requirements. One of the new requirements limited the amount of funding that self-generating projects could receive if they also planned to export a portion of the power back to the grid. Since the RP-2 microturbine would consistently export to the grid, it was determined that the SGIP funding available for the project would be significantly less than the original business case estimated, thereby inflating the return on investment beyond the remaining life of the facility. IEUA entered into negotiations with Geveden Industrial to determine if the capital costs could be reduced, but the two sides were unable to reach a mutually beneficial agreement. Based on the above, the contract will be terminated per the terms of the agreement.

Rejection of the contract is consistent with the Agency's Business Goal of Business Practices by applying fiscal responsibility in energy management projects.

#### **PRIOR BOARD ACTION**

On February 15, 2017, the Board of Directors awarded a design-build contract to Geveden Industrial for the not-to-exceed amount of \$1,876,809 and a ten-year service agreement in the amount of \$752,460.

#### **IMPACT ON BUDGET**

A total project budget of \$2,210,000 in the Regional Wastewater Operations and Maintenance (RO) Fund was approved for this project. The future year funding will be re-appropriated for energy management projects accordingly during the FY 2017/18 review of the Ten-Year Capital Improvement Plan.

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



# 4th Quarter Planning & Environmental Resources Update



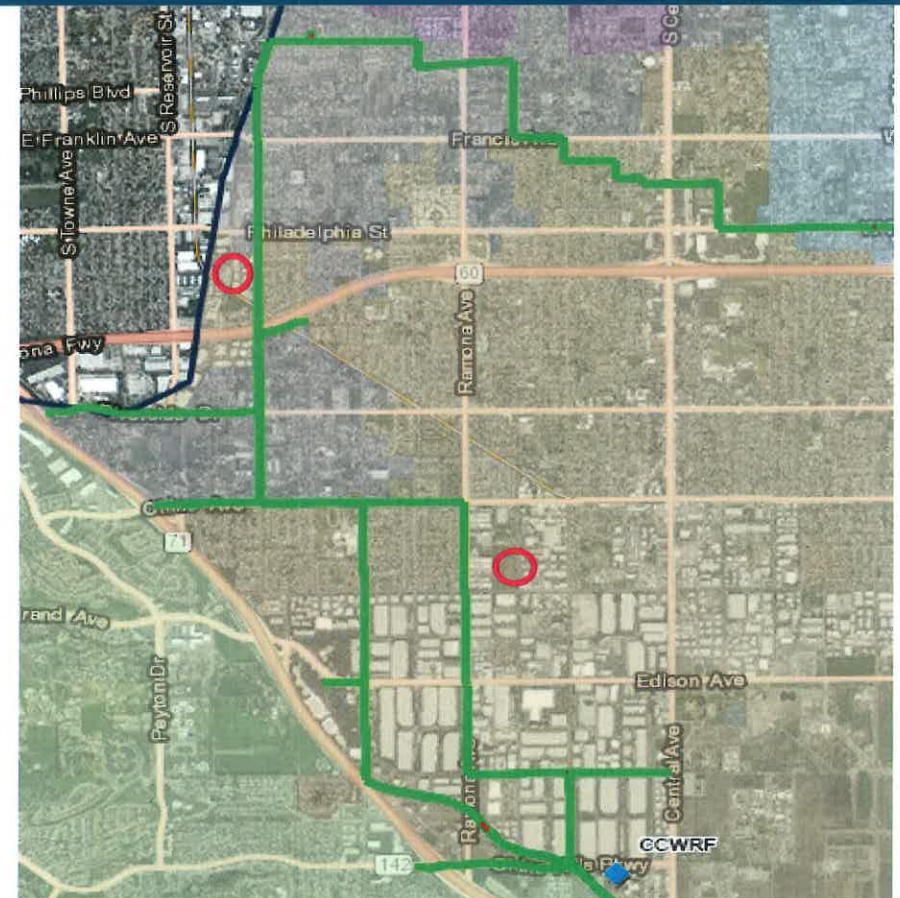
# Regulatory Compliance Update

- Regional Water Quality Control Board
  - CCWRF – Chlorodibromomethane
  - RP-5 – Total coliform
- Air Quality Management District
  - 100% compliance
- Division of Drinking Water
  - CDA1 and GWR – 100% compliance



# Bromide Source Evaluation

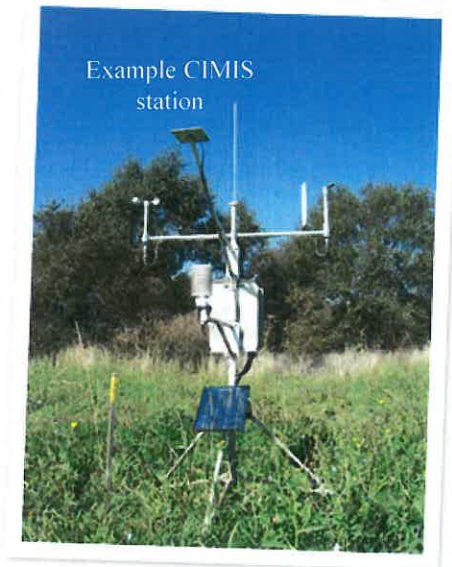
- Identification of Sources
  - Continued monitoring of Collection System (March to April)
  - Westside Interceptor and Relief Sewer
  - Popsicle Manufacturer and Slaughterhouse
- Meetings with Industries
  - Popsicle Manufacturer switched to non-Bromide bearing Salt
  - Slaughterhouse – Switch to non-Bromide sanitation chemical in process
- Next Steps
  - Continue monitoring of Slaughterhouse
  - Continue monitoring Collection System





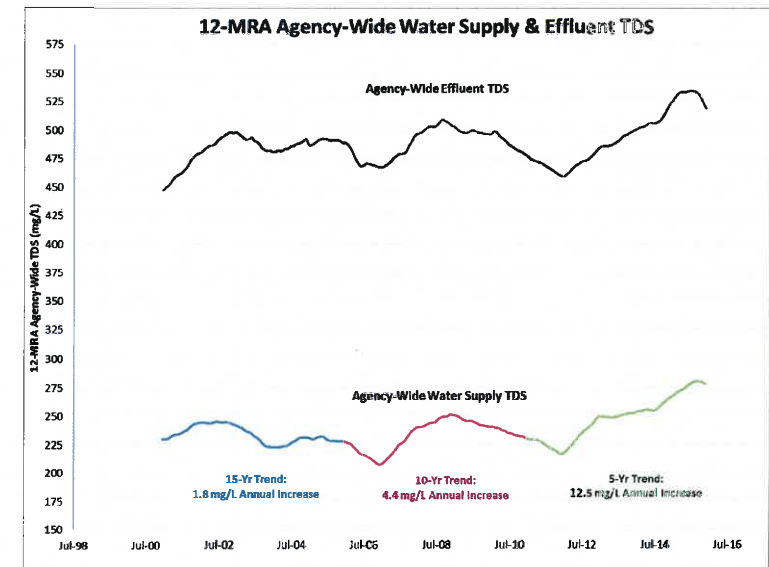
# Water Resources Activities

- **Weather Station at California Institute for Men (CIM)**
  - Received approval from State/DWR to install
  - Allows calculation of service area water budgets
- **Agricultural water use efficiency**
  - Installation of soil moisture sensors/ use of compost
  - Demonstration project: agricultural water savings
- **Integrated Water Resources Plan Phase 2**
  - Compiled Member Agency project lists for water supply improvements
  - Regional water infrastructure schematic 90% complete
  - Initiating water supply benchmark analysis



# Salinity Update

- Salinity challenges in water supply
  - Long-term trends show increasing TDS (~2 mg/L annually)
- Regional Water Quality Control Board (RWQCB) coordination
  - Collaboration between IEUA, CBWM, Wildermuth, and RWQCB
  - Regional effort on salinity management (SAWPA Task Force)
- Basin Plan Amendment
  - Update groundwater/basin modeling
  - Incorporate planned projects, source water changes, groundwater quality, and climate impact analysis
  - Will provide basis for longer averaging periods of the treatment plant limits for TDS



**INFORMATION**

**ITEM**


**2C**




Date: July 19, 2017

To: The Honorable Board of Directors

Through: Engineering, Operations, and Water Resources Committee (7/12/17)  
Finance and Administration Committee (7/12/17)

From:  P. Joseph Grindstaff  
General Manager

 Christina Valencia  
Executive Manager of Administrative Services/AGM

Subject: City of Upland Sewage Billing Error Review

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**RECOMMENDATION**

This is an information item for the Board of Directors to receive and file.

**BACKGROUND**

The Regional Technical Committee has requested IEUA to prepare a detailed report and provide a recommendation as to the treatment of the City of Upland's reimbursement request of an overpayment in the amount of \$440,083 for the last three fiscal years.

On May 18, 2017, the Agency received the attached letter from the City of Upland (Upland) requesting reimbursement of \$440,083 for overpayment of monthly sewage service charges over the last three fiscal years. As stated in the letter, Upland discovered discrepancies in their billing system which resulted in a miscalculation in the number of volumetric equivalent dwelling units (EDUs) reported to IEUA. On June 6 (the first available date), Agency staff met with Upland representatives to review their work papers summarizing the finding.

As stated in the letter, most of the discrepancies relate to commercial accounts and the misapplication of the sewerage billing factor (SBF) and the bi-monthly billing factor. The SBF assignment is based on the nature of business according to Table 1 of the Regional Sewer Billing Procedures document. The businesses in Table 1 are assigned a SBF based on their wastewater strength. The volumetric EDUs billing for each business are calculated with the water use at the site multiplied by their SBF. The bi-monthly factor applies to the Upland's billing frequency for residential, commercial, and industrial accounts which are billed every other month. However, the commercial account water meters are read on a bi-monthly basis. Application of the bi-monthly factor to commercial accounts doubled the number of EDUs reported to IEUA.

Additionally, 118 residential houses within the northern sphere of Upland's sewer service area, but within the Agency's service area, had been incorrectly overcharged. For accounts outside its



## City of Upland Sewage Billing Error Review

Page 2

service area, Upland applies a 1.50 factor to recover additional costs in providing service. This factor was also incorrectly applied to the Agency's monthly EDU rate resulting in an annual overcharge of \$230.55 per house.

Upland has agreed to work with the Agency to review the billing discrepancies discovered in their billing system and confirm the amount paid in error to IEUA over the last three fiscal years. Agency representatives from the Internal Audit and Planning departments met with the Upland staff on June 12 to begin a review of the documentation and confirm appropriate application of sewage billing factors and billing formulas.

Upon completion of the review, a final report with the confirmed amount will be provided to the Committee for final review and recommendation.

Attachment: City of Upland Letter



**FINANCE DEPARTMENT**  
460 North Euclid Avenue  
Upland, California 91786  
Telephone (909) 931-4150

May 18, 2017

Ms. Christina Valencia  
Chief Financial Officer/Assistant General Manager  
Inland Empire Utilities Agency  
6075 Kimball Avenue  
Chino, CA 91708

**Subject:** Overpayment of EDU Sewerage Treatment Service

Dear Ms. Valencia:

As you know, a commercial user's sewerage treatment charge is based on his/her water usage, with a sewerage billing factor (SBF) representing his/her nature of business. During the last several years, the City of Upland has been implementing its (revised) water rate schedule in conjunction with your agency's five-year sewerage treatment rate increase schedule. To ensure both schedules are implemented correctly, the City has reviewed its commercial users' sewerage charge billing, and the outcome pertaining to sewerage treatment charge is noted below.

- 1) The City users have been billed bi-monthly. Each month, about half of the users are billed, and their EDU counts are multiplied by a factor of "2". However, for the City's commercial users, because their water usages have been read bi-monthly, the factor of "2" was incorrectly applied. This error resulted in doubling the commercial EDU reported to your agency.
- 2) Many commercial users had their SBF incorrectly applied, either higher or lower than the correct SBF noted in the current Exhibit J. Coupled with the incorrect bi-monthly billing factor of "2" above, a majority of their EDU counts resulted amounts being over reported to your agency.
- 3) In addition, two other EDU counts resulting in amounts being over reported were also discovered. The first was the incorrect category of the Western Christian School's worship facility situated within its campus as a separate and independent church. This worship facility is now considered as an integral part of this campus, which is billed entirely based on its student count. The second was the case of 118 residential houses within the northern sphere of the City's sewer service being overcharged for your agency's treatment service.

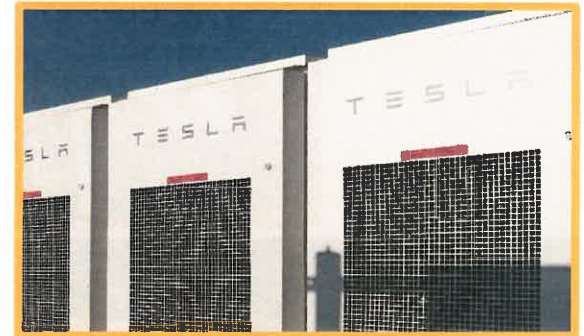
All together, the above resulted in an overpayment of \$440,083 for the last three years, of which the City is requesting a refund. The City will be available to present the details or supporting information at your availability. Please don't hesitate to contact me via email or at the above telephone number.

Misty Cheng  
Interim Finance Manager

INFORMATION  
ITEM  
2D

# Engineering and Construction Management Project Updates

## Board Meeting

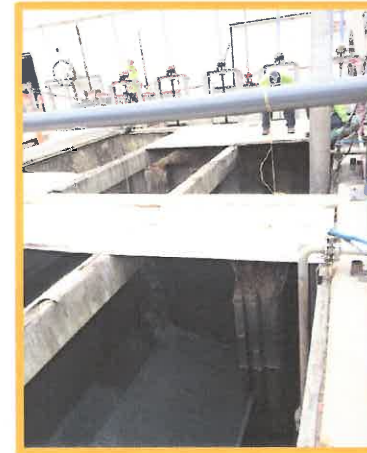


# EN14019 – RP-1 Headworks Primary and Secondary Upgrades

- Design Engineer: RMC Water and Environment
- Current Contract (Design): \$819 K
- Total Project Budget: \$10.4 M
- Project Completion: October 2018
- Percentage Complete: 85%
- Scope of Work:
  - Rehabilitate the grit removal systems
  - Install submersible scum pumps and mixer
  - Design a bypass for System C flow meter
- Current Activities:
  - Final design complete
  - Advertise to bid
- Focus Points:
  - Enhancing the instrumentation and control drawings



Grit Processing Equipment



Corroded Concrete



# EN16024 – RP-1 Mixed Liquor Return Pumps

- Contractor: J.F. Shea Construction
- Current Contract (Construction): \$5 M
- Total Project Budget: \$6.6 M
- Project Completion: January 2018
- Percentage Complete: 35%
- Scope of Work:
  - Add mixed liquor pumping
  - Upgrade electrical system
- Current Activities:
  - Start-up Train No. 2 (back in service)
- Focus Points:
  - Assessing equipment compatibility issues
  - Develop action plan for corrective measures



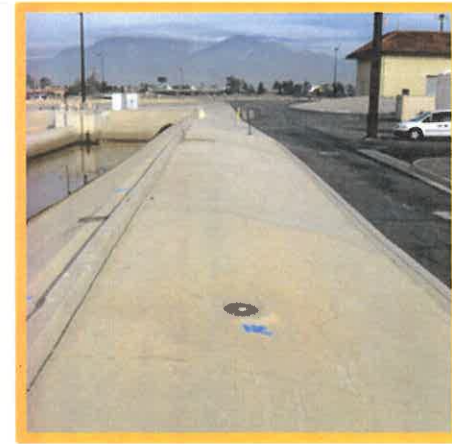
Drained Aeration Train No. 2



Aeration Basin New Conduit Installation

# EN17052 – RP-1 and RP-4 Safety Improvements

- Design Engineer: Ferreira Construction
- Current Contract (Design): \$635 K
- Total Project Budget: \$949 K
- Project Completion: December 2017
- Percentage Complete: 3%
- Scope of Work:
  - Widen access route through RP-1 (east side of channel)
  - Complete south property line wall at RP-4
- Current Activities:
  - Reviewing and approving submittals
- Focus Points:
  - Submittals



RP-1 North Access Road to be Widened

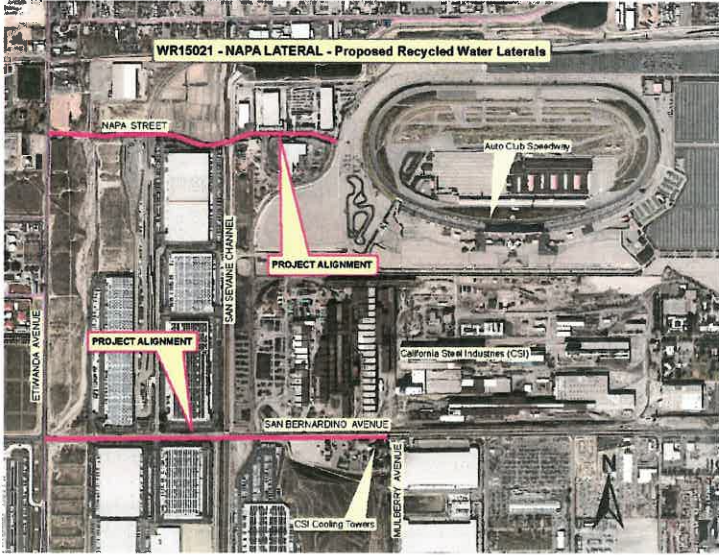


RP-4 Wall to be Completed



# WR15021 – Napa Lateral

- Design/Build: TBD
- Current Contract (Design/Build): TBD
- Total Project Budget: \$6 M
- Project Completion: August 2019
- Percentage Complete: 2%
- Scope of Work:
  - Design-build approximately 10,000 linear feet of 16-inch recycled water pipeline
- Current Activities:
  - Finalize design-build specifications
  - Include updated SWRCB Proposition 1 State Revolving Fund requirements
- Focus Points:
  - Coordinate Proposition 1 SRF requirements



Plan View of Pipe Alignment

# EN17110.01 – RP-4 Trident Filters Rehabilitation and Replacement

- Design Engineer: Carollo Engineers
- Current Contract (Design): \$1.3M
- Total Project Budget: \$4.5M
- Project Completion: December 2018
- Percentage Complete: 3%
- Scope of Work:
  - Rehab and replace trident filter equipment and media
  - Replace entire process air system
  - Install secondary clarifiers effluent channel weir covers
- Current Activities:
  - Issuing contractor Request for Qualification
  - Finalizing design
- Focus Points:
  - Schedule, speed – urgently needed



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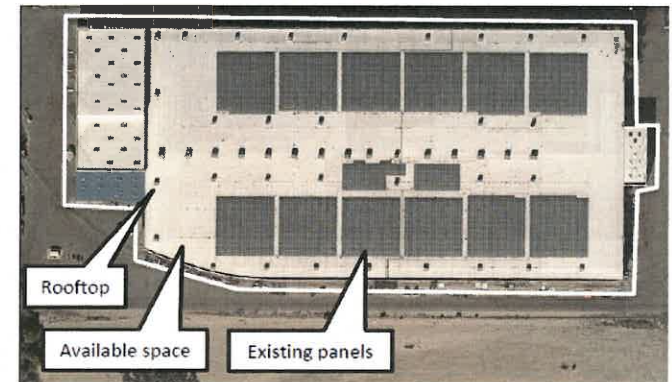
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# EN0000000016 – RP-4 Battery Storage

- Design Engineer: Core States
- Current Contract (Design): \$0
- Total Project Budget: \$150K (internal labor only)
- Project Completion: March 2018
- Percentage Complete: 10%
- Scope of Work:
  - Install 1.5 MW battery storage system at RP-4
  - Install 1.5 MW of solar on IERCF roof
- Current Activities:
  - 30% design underway
  - Southern California Edison interconnection application complete
- Focus Points:
  - Finalize energy storage services amendment to add solar and increase battery storage capacity



Proposed Battery Storage Location at RP-4



IERCF Roof Layout