Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

AGENDA

MEETING/WORKSHOP
OF THE
BOARD OF DIRECTORS

WEDNESDAY, OCTOBER 3, 2018
10:00 A.M.

INLAND EMPIRE UTILITIES AGENCY*
AGENCY HEADQUARTERS
KOOPMAN CONFERENCE ROOM – BUILDING B
(Please note change in location)
6075 KIMBALL AVENUE
CHINO, CALIFORNIA 91708

CALL TO ORDER
OF THE INLAND EMPIRE UTILITIES AGENCY BOARD OF DIRECTORS
MEETING/WORKSHOP

FLAG SALUTE

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 three minutes per speaker. Thank you.

ADDITIONS TO THE AGENDA

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

1. **ACTION ITEM**

   A. **VIDEO RECORDING AND BROADCASTING OF MEETINGS**
   Staff has no recommendations for the Board at this time. Options for the Board's consideration:

      1. Select an option as listed; or

      2. Direct staff to research further.

   B. **LABORATORY EQUIPMENT RELOCATION SOLE SOURCE CONTRACT AWARD**
   Staff recommends that the Board:

      1. Award a Laboratory Equipment Relocation Sole Source Contract Award to PerkinElmer Health Sciences, Inc., for the not-to-exceed amount of $140,754; and

      2. Authorize the General Manager to execute the Laboratory Equipment Relocation Contract subject to non-substantive changes.

2. **WORKSHOP**

   A. **CHINO BASIN PROJECT WORKSHOP NO. 1**

3. **INFORMATION ITEM (RECEIVE AND FILE)**

   A. **CALIFORNIA WATER EFFICIENCY: LEADING THE WAY INTO THE FUTURE (WRITTEN)**

4. **CLOSED SESSION**

   A. **PURSUANT TO GOVERNMENT CODE SECTION 54954.5 – PUBLIC EMPLOYMENT**
   Board Secretary/Office Manager

5. **ADJOURN**

*A Municipal Water District

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

Proofed by: jh

Declaration of Posting

I, April Woodruff, Board Secretary of the Inland Empire Utilities Agency*, A Municipal Water District, hereby certify that a copy of this agenda has been posted by 5:30 p.m. at the Agency's main office, 6075 Kimball Avenue, Building A, Chino, CA on Thursday, September 27, 2018.

April Woodruff

ACTION
ITEM

1A

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: October 3, 2018 HHR

To: The Honorable Board of Directors **From:** Halla Razak, General Manager

Committee:

Executive Contact: Halla Razak, General Manager

Subject: Video Recording and Broadcasting of Meetings

Executive Summary:

Staff was requested at the September Board meeting to bring information forward for discussion and possible action regarding the video taping and broadcasting of meetings of the Board. Staff has researched various options and costs to provide video hosting services.

Options for the Board of Director's consideration:

1. Status quo - continue with audio recording only

2. In-house video recording and posting (~$12,500)

3. 3rd party video hosting – Off-site hosting ($6,500 initial; $4,000 annually)

Staff's Recommendation:

There are no recommendations for the Board at this time. Options for the Board's consideration:

1. Select an option as listed; or

2. Direct staff to research further.

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

Account/Project Name:

Fiscal Impact (explain if not budgeted):

Full account coding (internal AP purposes only): - - - Project No.:

Prior Board Action:

None.

Environmental Determination:

Not Applicable

Business Goal:

The video recording and broadcasting of meetings is consistent with the Agency's value of being committed to applying ethical, fiscally responsible, transparent and environmentally sustainable principles to all aspects of business and organizational conduct.

Attachments:

ACTION
ITEM

1B

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: October 3, 2018 HHR

To: The Honorable Board of Directors **From:** Halla Razak, General Manager

Committee:

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

Subject: Laboratory Equipment Relocation Sole Source Contract Award

Executive Summary:

In 2005, the Agency performed a preliminary evaluation of the existing laboratory facility located at Regional Water Recycling Plant No. 1 (RP-1) followed by a feasibility study conducted in 2006 for a new laboratory facility. The existing laboratory facility cannot meet future needs with an anticipated 30 percent increase in the number of annual samples. Based on the assessments and the future increase in required samples, the decision was made to construct a new laboratory behind the Agency Headquarters Building B.

Currently, there are equipment and instruments located at the RP-1 Laboratory that must be moved to the new Water Quality Laboratory. To ensure continued compliance, along with certification timing, staff is requesting the sole source contract be awarded to PerkinElmer Health Sciences, Inc., (PHC). IEUA has had master service contracts with PHC and has successfully utilized them for maintenance and compliance of lab equipment.

Staff's Recommendation:

1. Award a Laboratory Equipment Relocation Sole Source Contract Award to PerkinElmer Health Sciences, Inc., for the not-to-exceed amount of $140,754; and

2. Authorize the General Manager to execute the Laboratory Equipment Relocation Contract subject to non-substantive changes.

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

Account/Project Name:

EN15008 - Water Quality Laboratory

Fiscal Impact (explain if not budgeted):

None.

Full account coding (internal AP purposes only): 1000 - 10800 - 127100 - 590000 Project No.: EN15008

Prior Board Action:

On May 18, 2016, the Board awarded the Water Quality Laboratory Construction Contract Award to to Kemp Bros. Construction, Inc., in the amount of $17,460,000; approved a total project budget amendment in the amount of $3,745,000, which will increase the total project budget from $20,900,000 to $24,645,000; and authorized the Agency to request an increase to the current SRF Loan Agreement in the amount of $7,545,000.

Environmental Determination:

Addendum to

The Final Program Environmental Impact Report for the Proposed Regional Plant Number 5 Project (SCH #1998031115, RP-5 PEIR) certified by IEUA in 1999. Since the proposed new project modifications do not alter the conclusions contained in the PEIR, in 2010 IEUA prepared an Addendum to the original RP-5 PEIR, for the main new laboratory.

Business Goal:

The Water Quality Laboratory Project is consistent with IEUA's business goal of Wastewater Management, specifically the water quality objective that IEUA will ensure that Agency systems are planned, constructed, and managed to protect public health, the environment, and meet anticipated regulatory requirements.

Attachments:

Attachment 1 - Contract

Attachment 1

RELOCATION MASTER SERVICES AGREEMENT
BETWEEN
INLAND EMPIRE UTILITIES AGENCY
AND
PERKINELMER HEALTH SCIENCES, INC.

This Relocation Master Services Agreement (this "Agreement") is entered into as of **September ____, 2018** (the "Effective Date"), by and between the **Inland Empire Utilities Agency**, with a business address of 2662 E. Walnut St., Ontario, CA 91761 ("Company"), and PerkinElmer Health Sciences, Inc., a Delaware corporation with a place of business at 710 Bridgeport Avenue, Shelton, CT 06484 ("PKI").

RECITALS

WHEREAS, PKI is in the business of providing laboratory relocation services and related deliverables, and Company and/or its Affiliates (as hereinafter defined) may engage PKI from time to time for such types of services pursuant to one or more Statements of Work (as hereinafter defined). For purposes of this Agreement, "Affiliate" shall mean with respect to a party hereto, a company controlling, controlled by or under common control with such party, where control means direct or indirect ownership of more than fifty percent (50%) of the voting stock or interest in a company or control of the composition of the board of directors;

WHEREAS, PKI is interested in accepting such engagements, subject to mutual written agreement on the scope and terms of each such Statement of Work; and

WHEREAS, Company and PKI mutually desire to set forth in this Agreement the terms and conditions applicable to all such engagements.

NOW, THEREFORE, INTENDING TO BE LEGALLY BOUND, THE PARTIES HEREBY AGREE AS FOLLOWS:

1. AGREEMENT DOCUMENTS

During the term of this Agreement, subject to the terms of a statement of work (a "Statement of Work"), such as the one attached to this Agreement as Exhibit A, agreed to by PKI and Company and/or an Affiliate of Company (as applicable pursuant to and as set forth in such Statement of Work, "Client"), PKI shall provide Client the services, including any deliverables, set forth in such Statement of Work (the "Services"). Each Statement of Work will be subject to the terms and conditions of this Agreement and shall become an integral part hereof upon its execution by PKI and Client. A Statement of Work is not binding on either party until executed in writing by the authorized representatives of PKI and Client.

In the event of any discrepancies or inconsistencies between the provisions of this Agreement and a Statement of Work, the provisions of this Agreement shall prevail.

Any other terms or conditions included in any license agreement, quote, purchase order, invoice, acknowledgment, bill of lading, or other similar documents utilized or exchanged by PKI and Company shall not be incorporated in this Agreement or be binding upon PKI and Company unless the parties expressly agree in writing by reference to the modified Section number(s) of this Agreement.

2. TERM OF AGREEMENT

This Agreement shall commence upon its execution by the parties and shall continue for such period as Services are being provided under a Statement of Work.

3. SCOPE OF SERVICES

3.1 Scope

PKI shall use its commercially reasonable efforts to perform the Services specified in sufficient detail in the Statement of Work.

3.2 Notification

PKI agrees to notify Client promptly of any factor, occurrence, or event coming to its attention that may affect PKI's ability to meet the requirements of this Agreement, or that is likely to occasion any material delay in completion of the Services contemplated by this Agreement. Such notice shall be given in the event of any loss or reassignment of key employees, threat of strike, or major equipment failure.

4. SERVICES IN GENERAL

In connection with the performance of any Services pursuant to this Agreement:

4.1 Number of Employees

PKI warrants it will provide sufficient employees to complete the Services within the applicable timeframes established and agreed to pursuant to a Statement of Work. Furthermore, PKI shall, at its expense and subject to Section 6.2 hereof, supply all tools, equipment and other materials necessary to perform the Services contemplated in a Statement of Work.

4.2 Skill of Employees

PKI warrants that employees shall have sufficient skill, knowledge, and training to perform the Services and that the Services shall be performed in a professional and workmanlike manner.

4.3 Security and Safety

PKI shall require its employees and subcontractors providing Services at Client's location to comply with Client's security and safety regulations and policies that have been disclosed to PKI, its employees and subcontractors.

4.4 Obligations to Employees

PKI shall provide for and pay the compensation of its employees and shall pay all taxes, contributions, and benefits (such as, but not limited to, workers' compensation benefits) which an employer is required to pay relating to the employment of employees. Company shall not be liable to PKI or to any employee for PKI's failure to perform its compensation, benefit, or tax obligations. PKI shall indemnify, defend and hold Company harmless from and against all such taxes, contributions and benefits and will comply with all associated governmental regulations, including the filing of all necessary reports and returns.

4.5 Account Managers

To the extent provided for in a Statement of Work, PKI and Client each agree to appoint a qualified staff member or members to function as overall Account Manager(s) for the Services to be supplied pursuant to a Statement of Work. PKI's Account Manager and Client's Account Manager will act as the principal points of interface between PKI and Client during performance of the Services. The respective Account Managers of PKI and Client shall be identified in the applicable Statement of Work.

4.6 Records and Inspection

PKI shall establish and shall retain, during the period of performance of a Statement of Work and for a period of one (1) year following completion of such Statement of Work, records which adequately substantiate the applicability and accuracy of such Services performed and related expenses. Upon receipt of reasonable advance written notice from Company, and not more than once per calendar year, PKI shall produce such records for inspection by an independent, external auditor reasonably acceptable to PKI.

4.7 Subcontractors

PKI may subcontract any of its obligations hereunder; provided that PKI shall be responsible for ensuring that any subcontractors comply with this Agreement and shall be responsible for all actions of such subcontractors in connection with this Agreement, including any actions that would be in breach of this Agreement if performed by PKI.

5. CHANGE ORDER PROCEDURE AND AUTHORIZATION

5.1 Change Requests

Either PKI or Client may, from time to time, and at any time request a change to the Services to be performed under a Statement of Work (a "Request"). Requests for changes shall be in writing and shall be addressed and delivered to the other party. Such writing shall be identified as a "Contract Change Request," shall carry a sequential number for ease of tracking, shall set forth in detail the nature of the change requested and the costs associated therewith, and shall identify the Services, deliverables or schedules to be changed.

5.2 Change Order Procedures

As soon as practical after receipt by the notified party of copies of the Request, PKI and Client shall as necessary meet to discuss the change and to ascertain its cost and schedule impacts, if any.

5.3 Change Order Authorization

If PKI and Client decide to implement a change Request, a standard form Change Order ("CO") shall be prepared in a form substantially similar to the form attached as Appendix 1 to Exhibit A attached hereto, which CO shall describe the change, delineate the cost, schedule, and other impacts of the change and the payment terms for any price increase. Only Client's Account Manager and PKI's Account Manager shall have authority to execute CO's to a Statement of Work. Execution of a CO by Client's Account Manager and PKI's Account Manager shall constitute a modification thereof and shall be binding on both parties.

6. CLIENT RESPONSIBILITIES

6.1 The timetables for providing the Services under a Statement of Work assumes that Client will provide fast turnaround time on critical decisions, essential information gathering, and approvals which are required to continue work in progress, or which are critical to meeting deliverable due dates. Decisions required by Client shall be elevated by Client to the appropriate level within Client's organization in a timely manner.

6.2 At Client's sole cost and expense, Client shall provide PKI with such serviced office accommodation (including furniture, external communications link, and photocopying services) as may be reasonably required to perform the Services together with the use of such supplies of electricity, gas and water that there may be at Client's facility and the use of any telephone or facsimile services at Client's facility. Further, Client shall be solely responsible for preparing its site environmentally and providing services, power, water, drainage, air, bottled gases, permits, licenses and approvals required for PKI to perform and complete the Services on Client's premises.

7. COMPENSATION

In consideration of the Services and deliverables provided by PKI to Client, Client shall pay PKI an amount as set forth and agreed in each Statement of Work. PKI shall invoice Client in accordance with the schedule set forth in the applicable Statement of Work. PKI shall include on all invoices a reference to the applicable Statement of Work. Unless otherwise agreed in a Statement of Work, Client shall pay all invoices within thirty (30) days of the date of invoice. Payments referencing the invoice number should be made to PKI at:

PerkinElmer Health Sciences, Inc.
13633 Collections Center Drive
Chicago, IL 60693-3685
Tax ID 04-3361624

8. TERMINATION

8.1 Termination Upon Completion

Either Party shall have the right to terminate this Agreement, by giving prior written notice of termination to the other Party upon completion of the work detailed in a Statement of Work, so long as there is no other outstanding Statement of Work.

8.2 Termination for Default

If PKI or Client fails to perform any of its material obligations under this Agreement or a Statement of Work, in addition to all other remedies provided by law, the non-breaching party may immediately terminate this Agreement or such Statement of Work in the event the breaching party is unable to cure such failure within thirty (30) days of receipt of written notice thereof. If this action is taken, the breaching party reserves the option to exercise the Dispute Resolution process defined in Section 15 of this Agreement.

8.3 Consequences of Termination

In the event of termination of a Statement of Work, PKI shall deliver to Client copies of all reports, documents, and other work performed by PKI specifically for Client under such Statement of Work, provided Client has paid PKI in full for the Services performed and reimbursable expenses incurred to the effective date of termination.

8.4 Survival

Notwithstanding the expiration or termination of this Agreement or any or all Statements of Work, the rights and obligations of the parties thereto which by intent or meaning have validity beyond any such expiration or termination, including, but not limited to, rights with respect to confidentiality, indemnification and liability limitations, shall survive termination or expiration. Further, the terms of this Agreement shall survive for incomplete Statements of Work issued prior to the expiration of this Agreement, and such Statements of Work shall continue to be subject to this Agreement until such Statements of Work are completed or terminated in accordance with this Agreement.

9. INDEMNIFICATION; LIMITATION OF LIABILITY

(a) PKI shall defend, indemnify and hold harmless Company, its Affiliates and their officers, employees and agents (each, in such capacity, a "Company Indemnified Party") against any claim, loss or liability resulting in any way from the willful or negligent acts or omissions by PKI's officers, employees or agents in performing work under this Agreement or a Statement of Work, except to the extent such claim, loss or liability is caused by the willful or negligent acts or omissions of a Company Indemnified Party.

(b) Company shall defend, indemnify and hold harmless PKI, its Affiliates and their respective officers, employees and agents (each, in such capacity, a "PKI Indemnified Party") against any claim, loss or liability resulting in any way from the willful or negligent acts or omissions by Company, any of its Affiliates, or their respective officers, employees or agents, except to the extent such claim, loss or liability is caused by the willful or negligent acts or omissions of a PKI Indemnified Party.

(c) NO PARTY TO THIS AGREEMENT OR ANY STATEMENT OF WORK SHALL BE RESPONSIBLE FOR PUNITIVE, EXEMPLARY, MULTIPLIED OR CONSEQUENTIAL DAMAGES OF THE OTHER PARTY (INCLUDING, BUT NOT LIMITED TO, THE LOSS OF OPPORTUNITY, LOSS OF USE, OR LOSS OF REVENUE OR PROFIT), ANY ATTORNEYS' FEES AND COSTS OF THE OTHER PARTY AND ANY PREJUDGMENT INTEREST WITH RESPECT TO ANY DISPUTE BETWEEN THE PARTIES. FURTHER, IN NO EVENT SHALL EITHER PARTY'S AGGREGATE LIABILITY TO THE OTHER FOR ANY CLAIM ARISING IN CONNECTION WITH A PARTICULAR STATEMENT OF WORK OR DERIVING DIRECTLY OR INDIRECTLY OUT OF THE PROVISION OF THE SERVICES OR USE OF OTHER DELIVERABLES PROVIDED BY PKI UNDER SUCH STATEMENT OF WORK, REGARDLESS OF THE FORM OF THE ACTION AND WHETHER IN CONTRACT OR IN TORT, INCLUDING NEGLIGENCE, EXCEED THE MAXIMUM AMOUNT PAID BY CLIENT FOR THE SERVICES PERFORMED UNDER SUCH STATEMENT OF WORK.

10. CONFIDENTIAL INFORMATION; INTELLECTUAL PROPERTY

10.1 Confidential Information

(a) As used herein, "Confidential Information" shall include all information given to one party (the "Receiving Party") by the other party (the "Disclosing Party"), or otherwise acquired by the Receiving Party, in connection with this Agreement or any Statement of Work, and all information directly derived or generated there from, including (i) information regarding any of the products of the Disclosing Party or any of its Affiliates, (ii) information regarding costs, productivity or technological advances and (iii) this Agreement, any Statement of Work, any Services and any other information in connection therewith.

(b) Notwithstanding the foregoing, Confidential Information does not include the following information: (i) information that is or was independently developed by the Receiving Party without use of or reference to any Confidential Information of the Disclosing Party, (ii) information that is or was received from a third party that did not have any confidentiality or other similar obligation or restriction on use to the Disclosing Party with respect to such information; or (iii) information that becomes or was a part of the public domain through no breach of this Section by the Receiving Party.

(c) The Receiving Party shall not, except as otherwise provided below or herein (i) use or reproduce the Confidential Information for any purpose other than as required to perform in connection with the applicable Statement or Work or (ii) disclose the Confidential Information to any third party, without the prior written approval of the Disclosing Party. Notwithstanding the foregoing, the Receiving Party may disclose Confidential Information to the extent such information is required to be disclosed by law, including a subpoena, or to respond to a regulatory request; provided the Receiving Party promptly notifies the Disclosing Party in writing of such intention prior to any

disclosure to allow the Disclosing Party to seek a protective order or similar relief in the Disclosing Party's sole and absolute discretion.

(d) The Receiving Party shall (i) use at least the same degree of care that the Receiving Party uses to protect its own proprietary information of a similar nature and value, but no less than reasonable care, to protect and maintain the Confidential Information, (ii) restrict disclosure of the Confidential Information to its employees, consultants, agents and representatives who have a need to know such information and shall advise such persons of the confidentiality of such information and be responsible for any actions of such parties that would be in breach of this Agreement if done by Recipient and (iii) return or destroy, as requested by the Disclosing Party, all Confidential Information upon the Disclosing Party's request, except as required to perform obligations or exercise rights granted in connection with the applicable Work Order.

(e) Except as otherwise provided herein, no right, title, interest or license to the Receiving Party is either granted or implied under any trademark, patent, copyright or any other intellectual property right by the disclosure of the Confidential Information hereunder. Except as otherwise provided herein, the Receiving Party acknowledges that the Disclosing Party is the exclusive owner of and has all rights to its Confidential Information, including all intellectual property rights therein, such as patents, copyrights, trade secrets, trademarks, moral rights, and similar rights of any type under the laws of any governmental authority.

10.2 Ownership of Data; Reports

All data, reports, documents or other written materials developed by PKI or any other person engaged directly by PKI specifically for Client in performance of the Services are Client's property without restriction or limitation upon their use. Notwithstanding the foregoing or any provision to the contrary contained in this Agreement, PKI shall not be restricted from utilizing for any purpose, whether during the term or following the termination of this Agreement, the data and information generated under this Agreement and held within PKI's maintenance management system, including, but not limited to, asset information, service and maintenance histories, service request call logs, equipment reliability data, maintenance costs booked to equipment, and bills of material, in each case as associated with the equipment serviced hereunder. PKI shall provide Client, upon Client's reasonable request, a report of such data in a mutually agreed upon format.

10.3 PKI Intellectual Property

PKI's maintenance management system, analytical tools, software and software processes and routines, and work methods, designs and techniques, related to or utilized in its performance of the Services, and any improvements or modifications made to, and any derivatives derived or generated from, any of the foregoing, and all intellectual property rights however conceived, generated, made, or reduced to practice related thereto, shall be the sole and exclusive property of PKI and neither Company nor any of its Affiliates shall have any rights with respect thereto.

11. INSURANCE REQUIREMENTS

PKI agrees to have and maintain during the term of this Agreement the insurance coverages set forth in Exhibit B attached hereto.

12. INDEPENDENT CONTRACTOR

The relationship of the parties established by this Agreement and all Statements of Work is that of independent contractors, and nothing contained herein shall be construed to (i) give either party any right or authority to create or assume any obligation of any kind on behalf of the other or (ii) constitute the parties as partners, joint ventures, co-owners or otherwise as participants in a joint or common undertaking.

13. COMPLIANCE WITH LAWS

Each of the parties to this Agreement or any Statement of Work, at its own cost and expense, shall at all times strictly comply with all applicable laws, rules, regulations and governmental orders, now or hereafter in effect, relating to its performance under this Agreement or Statement of Work, including, without limitation, tax laws and regulations, and export control laws and regulations, and maintain in full force and effect all licenses, permits, authorizations, registrations and qualifications from all applicable governmental departments and agencies to the extent necessary to perform its obligations thereunder. Each party shall defend, hold harmless and indemnify the other party from and against any and all liability of such other party arising by reason of the indemnifying party's failure to comply with such applicable laws or regulations.

14. NONDISCRIMINATION

PKI shall not discriminate against any employee, applicant for employment, or any member of the public because of race, color, religion, sex, national origin or any other class protected by federal, state or local employment discrimination laws. PKI shall adhere to affirmative action guidelines in selecting employees and shall ensure that employees are treated equally during employment, without regard to their race, color, religion, sex, national origin or any other class protected by federal, state or local employment discrimination laws. Such action shall include, but not be limited to, the following: hiring, promotion, demotion, transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship.

15. DISPUTE RESOLUTION

15.1 Negotiations.

In the event of any controversy or claim arising from or relating to this Agreement or a Statement of Work, or a breach thereof, the parties to this Agreement or such Statement of Work shall use their commercially reasonable efforts to settle the controversy or claim. Any party may initiate negotiations of any controversy or claim by providing written notice to the other party. The parties shall then consult and negotiate with each other in

good faith in an attempt to reach a just and equitable solution satisfactory to both parties. If the controversy or claim is not settled or resolved within thirty (30) days from the date of the written request initiating the negotiations, the parties agree to proceed to binding arbitration.

15.2 Arbitration.

(a) Upon the failure of the parties to resolve by negotiation any controversy or claim within the time frame specified above in Section 15.1 then upon written notice by any party to the other party to this Agreement or a Statement of Work, any controversy or claim arising out of or relating to this Agreement or a Statement of Work, or the breach thereof, shall be finally settled by arbitration administered by the American Arbitration Association ("AAA") in accordance with AAA's then existing Commercial Arbitration Rules (to the extent not modified by this Section 15.2). In the event that more than one controversy or claim arises out of this Agreement or a Statement of Work such controversies or claims may be consolidated in a single arbitration proceeding. Each party will pay its own costs plus an equal share of the cost of the arbitrators and the arbitration facilities.

(b) The arbitration tribunal shall be composed of three arbitrators, all of whom shall be neutral arbitrators selected in accordance with the then existing rules of the AAA. Such arbitration shall be conducted in the English language.

(c) If within ten (10) days from the initiation of a demand for arbitration with the AAA under this Section, the parties cannot mutually agree as to the place for conducting the arbitration, the arbitration shall take place at the offices of the AAA in Boston, Massachusetts.

(d) The parties agree that judgment on any award rendered by the arbitrators may be entered in any court of competent jurisdiction.

(e) Nothing in this Section will preclude a party's recourse to a court of competent jurisdiction to (a) enforce the terms of, or an arbitration award under, this Section, (b) seek equitable relief necessary to protect its interests, or (c) recover specific property, including an action in replevin, without any obligation on the part of such party to first attempt to negotiate a settlement of any claim or submit such claim to arbitration, pursuant to this Section before seeking such relief.

(f) EACH PARTY TO THIS AGREEMENT OR A STATEMENT OF WORK WAIVES ITS RIGHT TO TRIAL OF ANY ISSUE BY JURY.

(g) EACH PARTY TO THIS AGREEMENT OR A STATEMENT OF WORK WAIVES ANY CLAIM TO PUNITIVE, EXEMPLARY, SPECIAL, OR ANY OTHER INDIRECT OR MULTIPLIED DAMAGES FROM THE OTHER.

(h) EACH PARTY TO THIS AGREEMENT OR A STATEMENT OF WORK WAIVES ANY CLAIM FOR ATTORNEYS' FEES AND COSTS AND PREJUDGMENT INTEREST FROM THE OTHER.

16. GOVERNING LAW

This Agreement and all Statements of Work shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts, without regard to its conflicts of law principles.

17. NOTICES

All notices and other communications required or permitted to be given under this Agreement must be in writing and must be personally served, or mailed, postage prepaid via U. S. mail, or sent via courier service, addressed to the respective party as follows:

To PKI:	PerkinElmer Health Sciences, Inc. 710 Bridgeport Avenue Shelton, CT 06484 Attn: Contracts Department
With a copy to:	PerkinElmer Health Sciences, Inc. 710 Bridgeport Avenue Shelton, CT 06484 Attn: General Counsel
To Company:	**Inland Empire Utilities Agency** [_____] Attn: [_____]

With a copy to the applicable Client at the address set forth in the applicable Statement of Work.

Notice will be effective on the date personally delivered or if sent by courier service, on the date of receipt. If mailed, notice will be effective three (3) days after deposit in the mail. The parties may change their respective addresses in accordance with the provisions of this Section.

18. MISCELLANEOUS

18.1 Severability

If any Section, term or provision of this Agreement is found or held to be invalid or unenforceable in any jurisdiction in which this Agreement is being performed, the remainder of this Agreement shall be valid and enforceable and the parties shall negotiate

in good faith, a substitute, valid and enforceable provision which most nearly effects the parties' intent in entering into this Agreement.

18.2 Force Majeure

Neither party shall be liable to the other for its failure to perform any of its obligations under this Agreement or a Statement of Work (except the obligation to make payment) during any period in which such performance is delayed by circumstances beyond its reasonable control including, but not limited to, fire, flood, war, terrorist act, embargo, strike, riot, inability to reasonably secure materials and transportation facilities, or the intervention of any governmental authority, in each case not otherwise invoking a breach of this Agreement. If such delay continues for more than sixty (60) days, the party damaged by the inability of the other party to perform shall, notwithstanding the provisions of Sections 8.1 and 8.2, have the right to terminate this Agreement or a Statement of Work with immediate effect upon written notice.

18.3 Entire Agreement

This Agreement (including the Exhibits attached hereto) and each Statement of Work constitutes the entire agreement and understanding between the parties with respect to the subject matter hereof, and supersedes all prior and contemporaneous agreements, understandings and representations between the parties, whether written or oral, concerning such subject matter.

18.4 Amendment

No alteration, amendment, waiver, cancellation or other change in any term or condition of this Agreement or a Statement of Work shall be valid or binding on a party unless the same has been agreed to in writing by the parties.

18.5 Waiver

The failure of either party to enforce at any time a Section or part thereof of this Agreement, or the failure to require at any time performance by the other party of a Section or a portion thereof of this Agreement, shall in no way constitute present or future waiver of such Section or portion thereof, nor in any way affect the validity of either party to enforce each and every Section of this Agreement.

18.6 Assignment

Subject to Section 4.7 hereof, neither party shall assign this Agreement or a Statement of Work without the prior written consent of the other party, provided, however, that PKI, without first obtaining such consent, may assign this Agreement or a Statement of Work to any Affiliate of PKI or in connection with a merger or consolidation or a sale of all or substantially all of the assets of the business to which this Agreement relates. Subject to the foregoing, this Agreement binds and inures to the benefit of the parties and their respective successors and permitted assigns.

18.7 Headings

The headings of the sections and exhibits of this Agreement are inserted for convenience only. They do not constitute part of this Agreement and are not to be used in its construction.

18.8 Counterparts; Facsimile Signatures

This Agreement may be signed in one or more counterparts, each of which is an original, with the same effect as if the signatures thereto and hereto were upon the same instrument and constitute one and the same instrument. Facsimile signatures may be accepted and will be binding until replaced subsequently by originally signed signatures.

18.9 Non-Solicitation

During the term of a Statement of Work and for a period of 12 months following completion thereof, neither Client nor PKI shall solicit or recruit any employee or contractor of the other party or its Affiliates directly connected with, or known due to or derived from information learned through, the performance of Services hereunder, unless otherwise agreed to by the other party in writing. For the purposes of this section, "solicit or recruit" does not include contact resulting from indirect means such as public advertisement, placement firm searches or similar means not directed specifically to an individual and to which the individual responds on his or her own initiative.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, DULY AUTHORIZED REPRESENTATIVES OF THE PARTIES HERETO HAVE EXECUTED THIS AGREEMENT AS OF THE EFFECTIVE DATE.

Inland Empire Utilities Agency

By:_____
Name:_____
Title:_____
Date:_____

PerkinElmer Health Sciences, Inc.

By:_____
Name:_____
Title:_____
Date:_____

Exhibit A

[Sample Statement of Work, including Relocation Plan, Form of Change Order, and other documents attached as Appendices thereto to be attached as Exhibit A to this Agreement.]

PerkinElmer For the Better	**Sample Statement Of Work** **Relocation Project**	PerkinElmer Health Sciences, Inc. 710 Bridgeport Avenue Shelton, CT 06484-4794 USA Phone: 800.762.4000 Fax: 203.944.4914

I. General Description

Inland Empire Utilities Agency ("Client") desires to engage PerkinElmer Health Sciences, Inc. ("PerkinElmer") to relocate its laboratory containing 57 laboratory instruments and certain other equipment from the facility located at 2662 E. Walnut St., Ontario, CA 91761 to a facility located at 6075 Kimball Ave., Chino, CA 91708. The move will occur over an estimated one month period, commencing on or about **October 8, 2018**. The move will be handled in accordance with the schedule agreed upon by the parties and included herein.

PerkinElmer shall provide all project supervision, labor, materials, supplies and operating expenses reasonably necessary for the safe and proper fulfillment of the relocation services specified. Services will include: **inventory verification; tracking; move planning / logistics; benchmarking, decommissioning and packing laboratory equipment; moving laboratory equipment, supplies between facilities; and unpacking, re-commissioning and validating laboratory equipment.**

The terms and conditions of the Master Services Agreement dated [_____], 2018 between PerkinElmer and Client (the "MSA") shall apply in full to the services provided under this Statement of Work.

II. Laboratory Equipment

A laboratory equipment list for this relocation has been compiled and attached hereto as Attachment 1. This list sets forth all equipment, including certain items (e.g. freezer, refrigerators, bio-safety cabinet, centrifuges, incubators, etc.) in which some systems are extremely delicate. Client has identified all such equipment on Attachment 1 and provided any specific handling instructions required for any piece of equipment. This list, or the instructions contained therein, may be modified upon the written agreement of the parties pursuant to the change control process set forth in Section 5 of the MSA.

III. Move Locations

ORIGINATING LOCATION	NEW FACILITY LOCATION	DISTANCE
2662 E. Walnut St., Ontario, CA 91761	6075 Kimball Ave., Chino, 91708	10 miles

IV. Project Manager

PerkinElmer and Client will each identify a Project Manager below, who will be the parties' respective points of contact for all activities related to laboratory and personnel moves. The Project Managers will each report into a governance structure to be agreed upon by the parties as part of the Move Plan (as defined below).

PerkinElmer	**Client**
Shanita Karsan	**Gary Dix**
Project Manager	**Project Manager**

V. Move Planning

Pre-move Planning

The PerkinElmer Project Manager will schedule a pre-move survey with the Client Project Manager to create a detailed plan for the move (the "Move Plan").

The Move Plan shall include all aspects of the move, including but not limited to: the sequence of the move, handling of phases, schedules, details regarding the handling of the equipment; and the responsibilities of the PerkinElmer staff and the Client staff as necessary.

Upon approval of the Move Plan, it will be attached to this Statement of Work as Attachment II. The Move Plan may be modified upon the written agreement of the parties pursuant to the change control process set forth in Section 5 of the MSA.

Benchmarking, Decommissioning, Decontamination and Packaging

Client is responsible for decontaminating any equipment that requires decontamination prior to any benchmarking and decommissioning by PerkinElmer. A signed certificate of decontamination will be issued by such organization and posted on equipment by Client.

Benchmarking of equipment will be performed prior to the decommissioning of equipment and will consist of basic functionality testing only. Any additional benchmarking requirements will require an executed change order pursuant to Section 5 of the MSA setting forth the specific benchmarking requirements and the additional fees associated therewith.

PerkinElmer will generally be responsible for dismantling, packing, crating and labeling of items listed in Attachment 1. All content will be packed in a manner reasonably designed to ensure safe transportation. However, certain equipment or other items may be packed by Client personnel or the applicable OEM and the Client Project Manager will work with PerkinElmer to obtain any packing materials required by Client or the applicable OEM for packing and/or labeling of items. PerkinElmer shall not be responsible for damage caused to items as a result of improper packing by Client or OEM employees.

Transportation of Goods

The physical move is expected to be completed in 1 day per each phase of the two-phase project unless otherwise pre-arranged with Client Project Manager or as otherwise required by Client. Equipment shall not be stored in any off-site location(s) or transport vehicles unless a pre-arranged plan has been agreed upon by Client and PerkinElmer. The majority of equipment will need to be offloaded in the receiving area docks. If required, PerkinElmer will work with Client to define the scheduling and reserve loading docks, service elevators, or other requirements of the destination facility. Client shall be responsible for ensuring that the destination facility has sufficient access for the move.
Goods-In-Transit insurance can be procured for Client at Client's cost, provided that the value of the instruments is first provided to PerkinElmer by the Client and a request is made in writing to enable PerkinElmer to obtain the necessary coverage. Without Goods-In-Transit insurance coverage, Client is not covered, and PerkinElmer is not responsible for, any loss or damage to equipment while in transit.

Re-commissioning & Qualification Services (IQ, OQ)

All cartons which have been packed by PerkinElmer personnel will be unpacked by PerkinElmer. Such cartons will be recycled/reused and any debris or unusable items will be deposited in an on-site dumpster provided by Client. Client may elect to have certain items remain in carton/boxes/crates and will notify PerkinElmer of such election in writing pursuant to the change control process set forth in Section 5 of the MSA. All other items will be re-commissioned as set forth in the Move Plan.

PerkinElmer will be responsible for the provision of all specified qualification protocols as specified in the pre-move planning; provided that Client may provide special standards for calibration where necessary. All such protocols will be provided to Client for final review and approval. Unless otherwise expressly set forth in this SOW, customization of protocols is not included in the pricing presented herein. PerkinElmer will utilize its standard service documentation to support the services provided under this SOW. PerkinElmer technical writers will facilitate some document customization, such as editing of steps, tests, set-points, and tolerances to align with specific Client policies. This customization service will be limited to four 4 hours of service. Extensive document customization requirements by Client (e.g., reformatting to Client template, adding additional tests, etc.), in excess of the four hour limit set forth in this paragraph, is an elective service and will be performed on a billable basis at PerkinElmer's then prevailing billable rate for such services. Client and PerkinElmer will agree in writing on the scope and cost prior to commencing any such services.

Notwithstanding anything to the contrary contained in Section 10.2 of the MSA, PerkinElmer and Client shall jointly own the customized documents and protocols created under this SOW, and PerkinElmer shall provide such deliverables to Client on a non-exclusive basis. PerkinElmer expressly reserves the right to provide such deliverables to any third party, either free of charge or in return for payment. Client may provide any of the deliverables to its

Affiliates provided such Affiliates are bound by the same use restrictions as set forth herein. Client and its Affiliates are authorized to use the deliverables for its internal business purposes without further obligation towards PerkinElmer, provided, however, that Client shall be prohibited from providing any such deliverables, either free of charge or in return for payment, to any third party without the prior written agreement of PerkinElmer.

Client shall be responsible for purchasing its own reagents, chemicals, consumables and other disposables required for the recommissioning of any equipment hereunder in accordance with the project timelines established by the parties. Further, Client shall provide any and all utilities required for the recommissioning of such equipment and shall be responsible for the proper disposal of any chemicals, samples and similar items in accordance with applicable environmental laws and regulations. Upon completion of re-commissioning and qualification, equipment will be properly tagged with stickers indicating the date such services were performed.

Final Walk-through

Client's Project Manager shall perform a final walk-though of each destination facility with PerkinElmer's Project Manager immediately following the completion of the move. There shall be a written sign-off to confirm receipt of all relocated items.

VI. Moving Vehicles, Equipment and Supplies

Existing and Destination lab facility shall have loading docks to facilitate loading/unloading. Where no such docks exist, the use of a special truck requiring lift gates may be necessary and will be accounted for in the Move Plan. The majority of equipment will be offloaded in the new location receiving dock and moved to the necessary floor location. PerkinElmer will determine what equipment, methods, personnel and supplies will best fit the requirements of each equipment move.

VII. Service Responsibilities and Requirements

PerkinElmer shall perform, directly or through approved subcontractors, all services reasonably necessary to perform the move as set forth in the Move Plan. Unless otherwise specifically agreed to by the parties and set forth in the Move Plan, all relocation services are anticipated to be performed during PerkinElmer's normal working hours and on standard business days. Relocation services will not be provided on weekends or holidays unless specifically agreed and additional labor charges will apply to such services.

PerkinElmer shall provide all standard tools, equipment and moving vehicles reasonably required to perform the moving services under this contract. If any move requires specialized equipment, PerkinElmer may, with *prior written approval* of Client, rent such specialized equipment reasonably necessary to perform the move in accordance with the instructions contained herein and the costs associated with the move will be adjusted accordingly.

Client shall be responsible for disconnecting equipment from hard-wired electrical outlets, plumbed water and gas lines, and/or communication lines. Client shall also be responsible for ensuring that the destination facility is prepared in advance of the move in accordance with the schedule set forth in the Move Plan, including the readiness of all electrical outlets, plumbed water and gas lines and other required services.

PerkinElmer will work with Client's Project Manager to plan and coordinate equipment placement and re-connection timing at the destination facility as set forth in the Move Plan. PerkinElmer will be responsible for placement of all equipment at locations identified by Client.

VIII. Period of Performance & Timeline

The Move Plan shall include a clear timeline defining key milestones and deliverables established and agreed upon by PerkinElmer and Client.

Delay in Move
In certain circumstances, PerkinElmer may require the assistance of third party organizations or a defined internal specialist for moving specific equipment. Client is responsible for the preparation of the destination facility in advance of the Move. PerkinElmer shall not be responsible for any delay caused by Client's failure to prepare the destination facility. Furthermore, Client may face additional costs in relation to such delays as a result of cancellations and re-scheduling. Any changes to, or delay of, the Move Plan requested by Client may result in increase expense to Client.

IX. Payment Schedule & Terms

PerkinElmer shall bill Client at the end of each month for all relocation services provided during the course of the month. Each PerkinElmer invoice will include a detailed list of all activity performed during the applicable invoice period.

Instrument Services and Support

Instrument Pricing	Description	Fee
OEM	OEM Providers	15,894
Tier 1	TPV	10,158
Tier 2	PerkinElmer	43,160
Tier 3		
OEM Transactional Fee's	PerkinElmer	954
	TOTAL	**$70,166**

Transportation Logistics and Project Management		
OneSource Moving Partner		**Fee**
Materials and Equipment, Move Labor		45,388.00
	SECTION TOTAL	**$45,388**
Optional		
Project Management		**Fee**
Relocation Project Manager	40 hours	6,400
Project Coordinator	120 hours	16,800
Project Procurement		
Travel and out of pocket expense		2,000
	SECTION TOTAL	**$25,200**
	Total	**$70,588**

For OEMs and third-party vendors ("TPVs") that Client requires PerkinElmer to engage in connection with the Services provided under this SOW, PerkinElmer shall act as a billing and administrative agent and arrange for services to be performed by such OEM or TPV (on either a fixed cost service contract or time and materials basis) on Client's behalf. For such services, PerkinElmer will procure the services or the service contract, proceed with invoice review and vendor payment and subsequently invoice the Client in full for the services or the service contract when purchased. All such services shall be subject to a service fee of **3%** per event. OEMs and TPVs providing services on a pass-through basis shall not be deemed to be subcontractors of PerkinElmer.

Any and all changes to this Statement of Work can result in an increase in price and shall follow Section 5 (Change Order Procedure and Authorization) of the MSA.

[Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto each acting with proper authority have executed this Statement of Work, under seal.

Inland Empire Utilities Agency	PerkinElmer Health Sciences, Inc.
Full name	Full name
Title	Title
Signature	Signature
Date	Date

Attachment 1

Line item - Unique identifier	Description:	MANUFACTURER:	Model number:
W1	Ion Chromatograph	Dionex	ICS-2000
W2	Ion Chromatograph	Dionex	ICS-2100
W3	Ion Chromatograph	Dionex	Inspiron
W4	Titrator	Radiometer Analytical	TitraLab 870
W5	Segmented Flow Analyzer	Skalar	SAN++
W6	Segmented Flow Analyzer	Skalar	SAN++
W7	Digestion Block	Seal Analytical	
W8	TOC Analyzer	Teledyne Tekmar	TOC Torch
W9	TOC Analyzer	Teledyne Tekmar	Phoenix
W10	Cyanide Analyzer	O.I. Analytical	CN 3000
W11	Digestion Block	Lachat	MicroDist
W12	Muffle Furnace	Hoskins	
W13	Spectrophotometer	HACH	
W14	Balances	Mettler	AE160, AE200
W15	Ovens	Varies	
MB1	Specific Ion Meter	Thermo Orion	960
MB2	Autoclave w/stand	Market Forge	
MB3	Incubators	Precision Scientific	
MB4	Water Bath	Precision Scientific	
MB5	Ovens	Varies	
MB6	Refrigerator	Sears	25367800792
MB7	Specific Ion Meter	Thermo Orion	950
E1	Oven	Lindberg/Blue	MO1440A
E2	Kiln	Cress	ET27
E3	TurboVap	Zymark	500
E4	Chiller	Neslab	CFT-25
E5	Refrig	Equatherm	Flammable
E6	TurboVap	Zymark	II
E7	Chiller	Neslab	CFT-33
M1	ICP-OES	Perkin Elmer	DV5300
M2	ICP-OES	Perkin Elmer	DV7300
M3	Mercury Analyzer	Perkin Elmer	FIMS100
M4	Chiller (ICPs)	PolyScience	6180T2
M5	ICP/MS (bench model)	Perkin Elmer	NexION 350D
M6	Re-Circulating Pump (ICP/	PolyScience	6180T2
M7	Autoblock Digester	Seal Analytical	Deena II
M8	Analytical balance	Mettler	
M9	Top loader balance	Ohaus	
S1	GC/MS	Agilent	7890A (GC)
S2	GC/MS	Agilent	5975 (MS)
S3	GC/MS	Agilent	6890
S4	GC	Agilent	6890
S5	GC	Agilent	6890
S6	Hydrogen Generator	Matheson	NMH-500
S7	Lab Bench Refrigerator	Kenmore	
S8	GC/MS	Agilent	7890A (GC)
S9	GC/MS	Agilent	5975 (MS)
S10	Auto sampler	Agilent	7683A/B
V1	GC/MS	Agilent	5975 (MS)
V2	GC/MS	Agilent	6890A (GC)
V3	GC/MS	Agilent	5975 (MS)
V4	GC/MS	Agilent	7890A (GC)
V5	Purge & Trap Concentrato	Tekmar	Stratum
V6	Autosampler	Varian	Archon
V7	Refrigerators	Thermo	
V8	Lab Bench Freezer	VWR	
V9	Oven	VWR	1410

Appendix 1
Form of Change Order

Project Name:

_____

Purchase Order No.: _____

This Change Order (this "Change Order") is dated as **[Insert Date]** by and between **[Insert Client Name]**, with an office location at **[Insert Client Address]** ("Client"), and **PerkinElmer Health Sciences, Inc.**, a Delaware corporation with a place of business at 710 Bridgeport Avenue, Shelton, CT 06484 ("PerkinElmer").

WHEREAS, Client and PerkinElmer have entered into a Relocation Master Services Agreement effective as of **[Insert MSA Effective Date]** (the "Agreement");

WHEREAS, pursuant to the Agreement, Client and PerkinElmer entered into that certain Relocation Project Statement of Work **[__]** dated as of **[Insert SOW Effective Date]** (the "SOW") for the provision of certain relocation Services; and

WHEREAS, both Client and PerkinElmer wish to enter into this Change Order to amend the Services contracted for under the SOW (all terms not otherwise defined herein shall have the meanings ascribed to such terms in the SOW).

NOW, THEREFORE, in consideration of the foregoing and the mutual promises, covenants and agreements set forth below, and for other good and valuable consideration, the receipt and sufficiency of which the parties hereby acknowledge, the parties agree as follows:

1. The Services shall be amended as follows:

A. SCOPE OF SERVICES CHANGE (attached additional sheets as necessary)

[Describe in detail all Services that will be added, changed or deleted]

_____

_____

Revised project deliverables: **[What is the output of this work? A report? Be specific.]**

_____

_____

Revised compensation/fees:

_____

_____

Revised work is to start: Revised work is expected to be complete:

Name of individual(s) and contact information of those who will perform this work:

_____

Name and contact information of the internal project manager or responsible person to whom PKI will report:

_____

_____

2. All of the terms and conditions of the Agreement and the SOW, to the extent not expressly modified herein, are hereby incorporated into the terms and conditions of this Change Order by this reference as if set out in full herein.

IN WITNESS WHEREOF, the parties have caused this Change Order to be executed by their duly authorized representatives as of the date first written above.

[INSERT CLIENT NAME]

By: _____
Name:
Title:
Date:

PERKINELMER HEALTH SCIENCES, INC.

By: _____
Name:
Title:
Date:

Exhibit B

[PerkinElmer's Certificate of Insurance to be attached.]

WORKSHOP
ITEM

2A

Chino Basin Project

1water forward

Chino Basin Conjunctive Use Environmental Water Storage / Exchange Program

IEUA Board Workshop | October 3, 2018

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Chino Basin Project
1water forward

AGENDA

1. Region's Success in Water Resilience
2. Chino Basin Project CBP Delivers 1Water Innovation
3. CBP Achieves Affordable Investment in Basin Needs
4. CBP Reduces Risks
5. Next Steps

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Chino Basin Project
1water forward

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Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

IEUA is Advancing Regional 1Water Resilience

1950

Past Water Portfolio

- Chino Basin Groundwater
- Creek Water
- MWD Imported Water

2018

Today's Water Portfolio

- Chino Basin Groundwater
- Creek Water
- MWD Imported Water
- Recycled Water
- Water Use Efficiency
- Chino Basin Desalter
- Groundwater and Stormwater Recharge

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

IEUA is Advancing Regional 1Water Resilience

$500 million
investment in water infrastructure

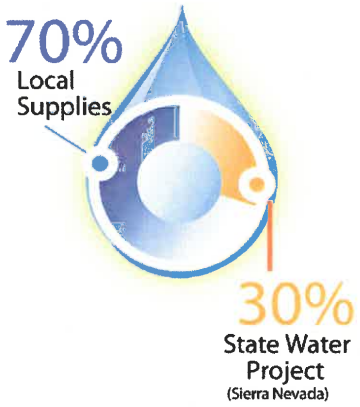
25%
increase in local water supplies

achieved **100%**
regional water use efficiency target

IEUA is Advancing Regional 1Water Resilience

2018

Water Portfolio



- Chino Basin Groundwater
- Creek Water
- MWD Imported Water
- Recycled Water
- Water Use Efficiency
- Chino Basin Desalter
- Groundwater and Stormwater Recharge

Imported water supplies vulnerable to **drought and water quality**

Local supplies impacted by **salts/total dissolved solids (TDS) & subsidence** continues to be a risk

Chino Basin Project
1water forward

AGENDA

1. Region's Success in Water Resilience
2. **Chino Basin Project (CBP) Delivers 1Water Innovation**
3. CBP Achieves Affordable Investment in Basin Needs
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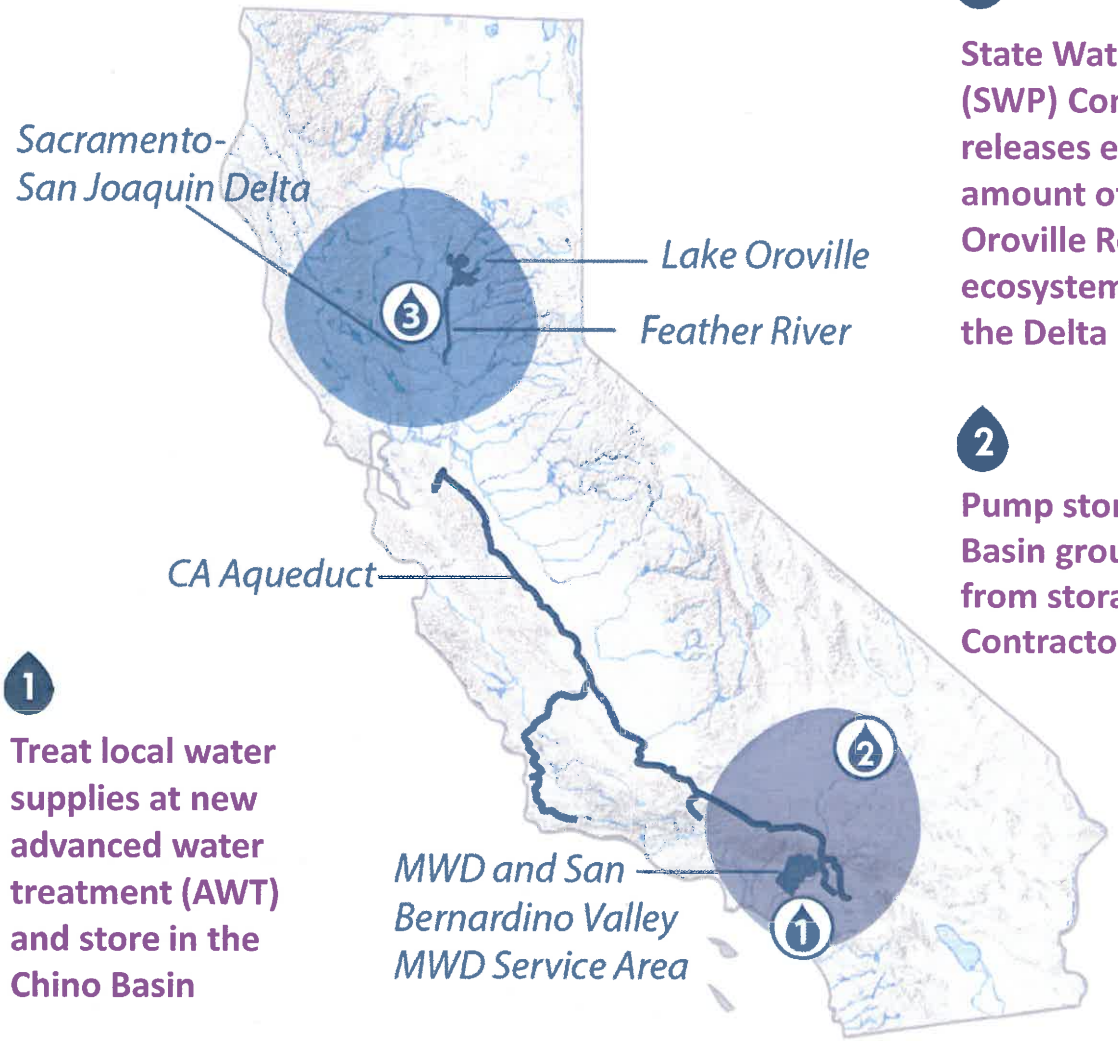
5. Next Steps

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Chino Basin Project is a 25-Year Collaboration that Provides Regional and State-Wide Benefits



3

State Water Project (SWP) Contractor releases equivalent amount of water at Oroville Reservoir for ecosystem benefits at the Delta

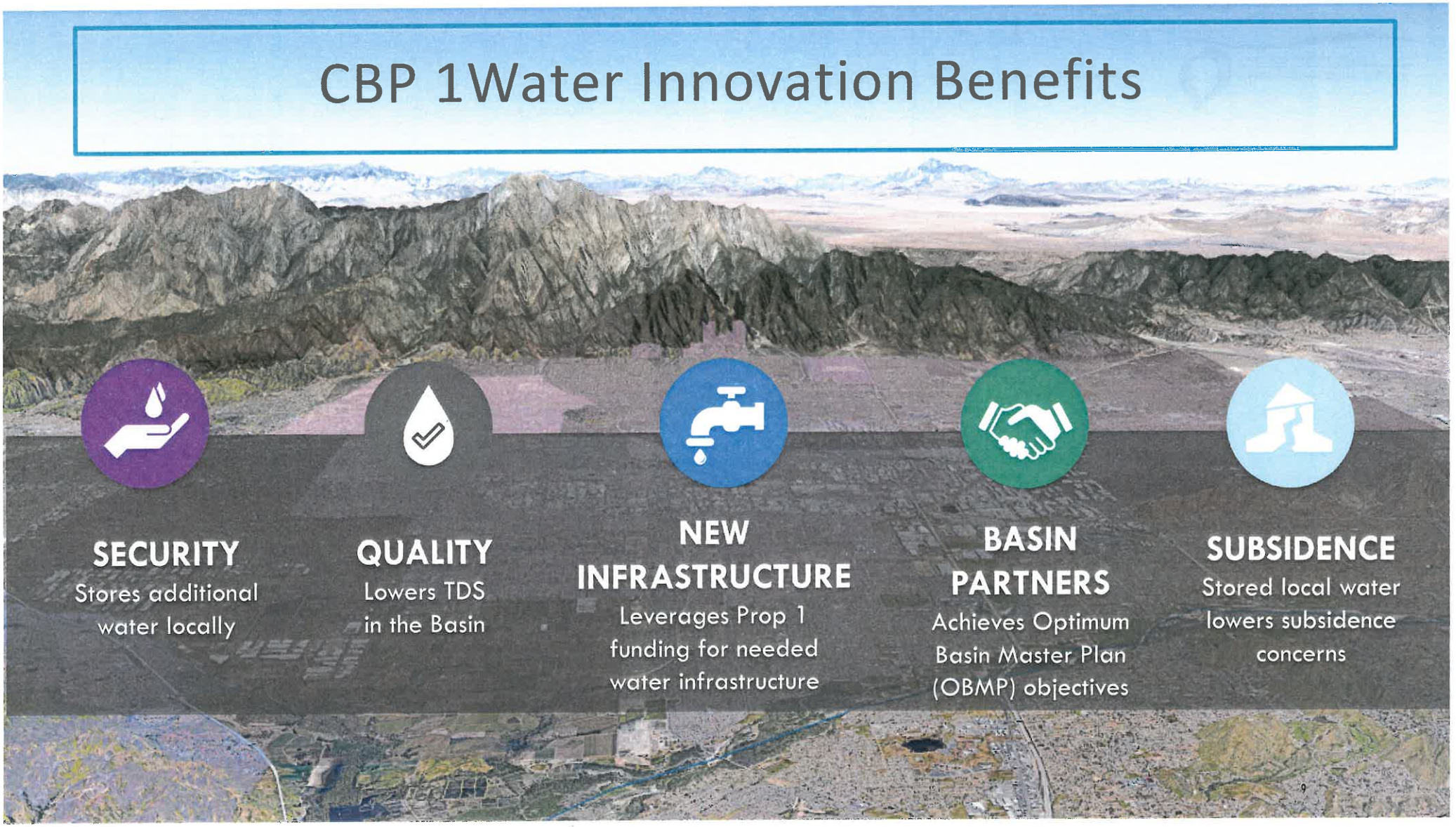
2

Pump stored Chino Basin groundwater from storage to SWP Contractor

1

Treat local water supplies at new advanced water treatment (AWT) and store in the Chino Basin

CBP 1Water Innovation Benefits



SECURITY
Stores additional water locally

QUALITY
Lowers TDS in the Basin

NEW INFRASTRUCTURE
Leverages Prop 1 funding for needed water infrastructure

BASIN PARTNERS
Achieves Optimum Basin Master Plan (OBMP) objectives

SUBSIDENCE
Stored local water lowers subsidence concerns

Chino Basin Project
1water forward

AGENDA

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Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Investment in Basin Needs

PROP 1
GOVERNOR EDMUND G. BROWN, JR.
WATER BOND 2014

IEUA's Largest Grant Funding Award

$207 million
Award toward $385M project

54% of the Chino Basin Project funded

100% included in Capital Improvement Plan

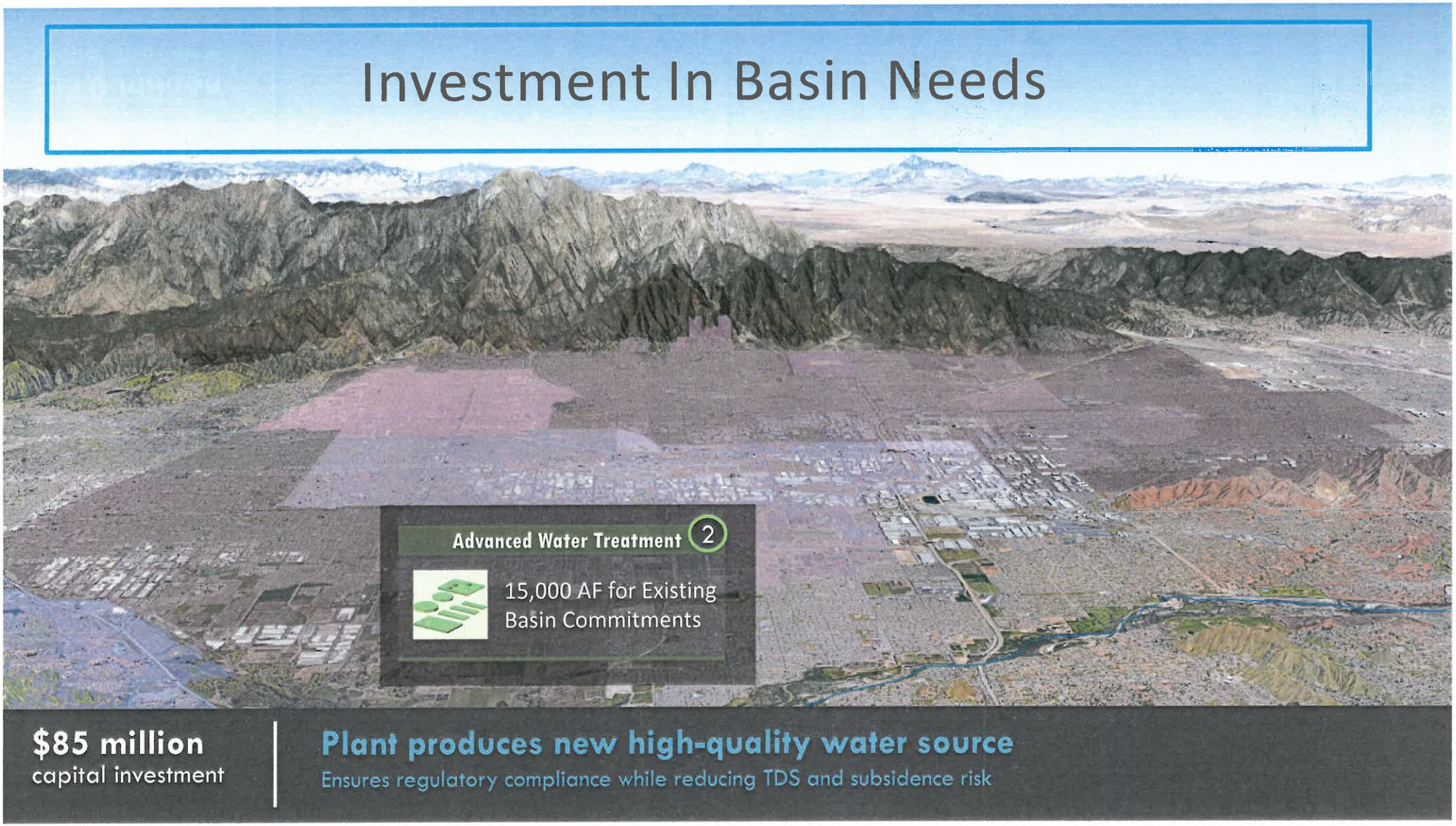
Investment In Basin Needs

$100 million
capital investment

Recycled Water Interties Improves Water Management Flexibility

Maximizes the ability to utilize local recycled water supplies and reduces TDS and subsidence

Investment In Basin Needs



$85 million
capital investment

Plant produces new high-quality water source
Ensures regulatory compliance while reducing TDS and subsidence risk

Investment In Basin Needs

$110 million
capital investment

Promotes Water Management Flexibility

Supports region's water needs through system interconnection amongst agencies and imported water pipeline

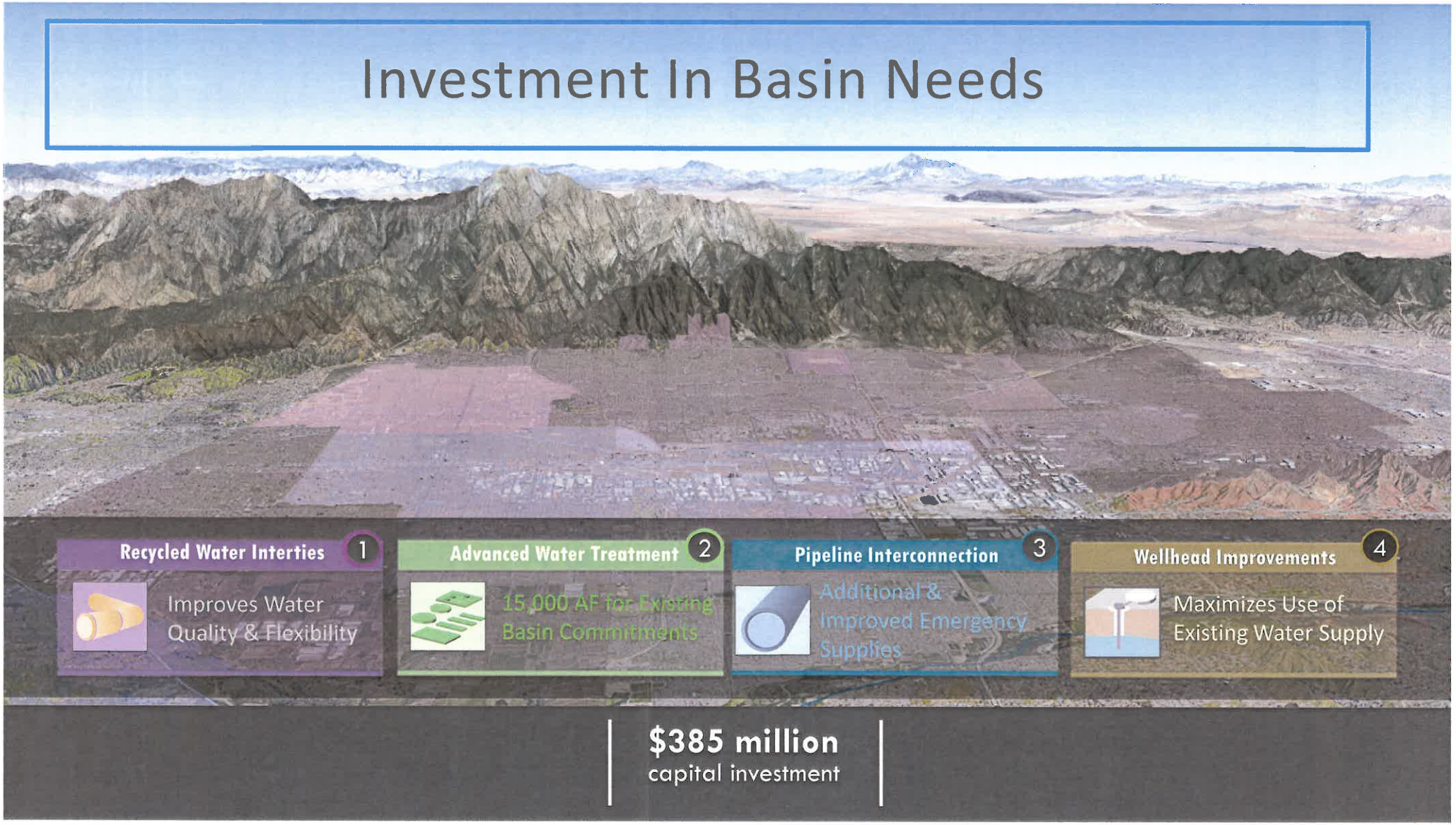
Investment In Basin Needs

$90 million
capital investment

Well Improvements Maximize Local Water Use

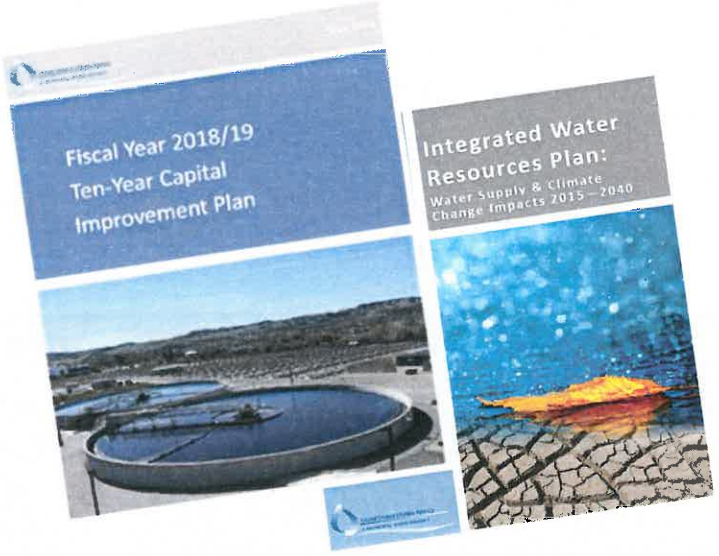
Achieves timely well improvements for optimal use of existing supplies

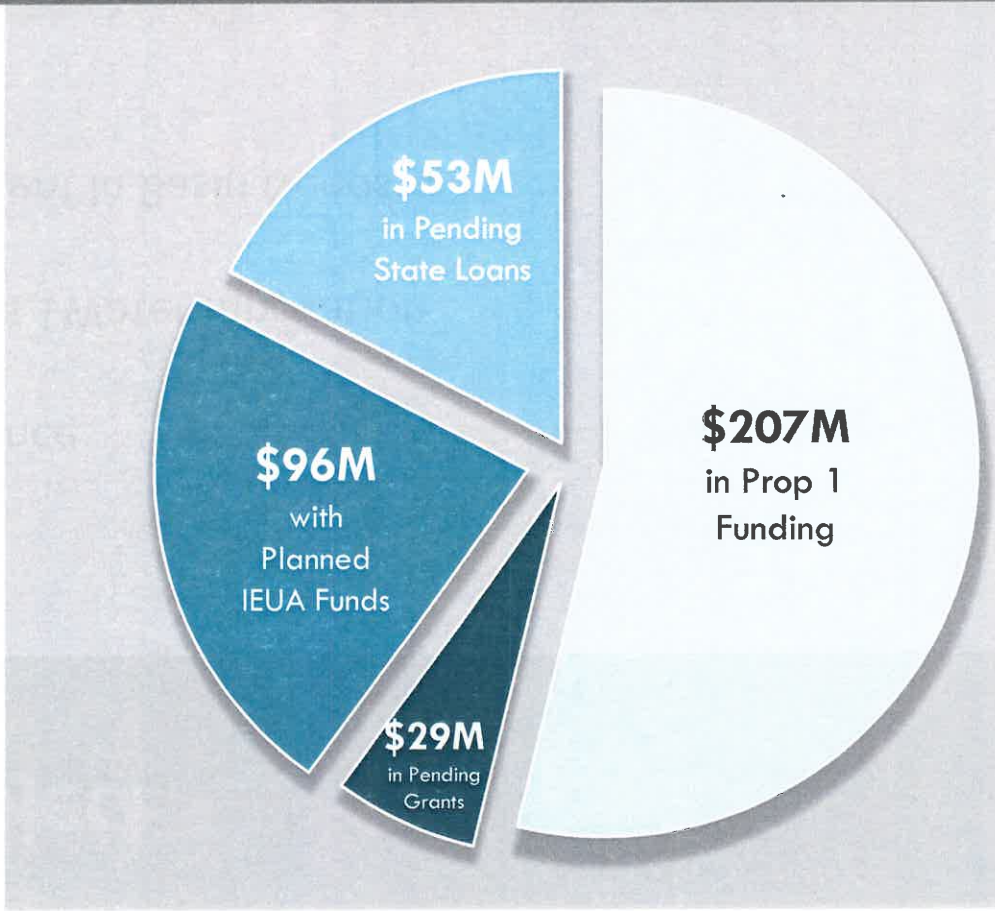
Investment In Basin Needs



Investment in Basin Needs

Grant Award Covers 54% of Chino Basin Project Capital Costs





Chino Basin Project
1water forward

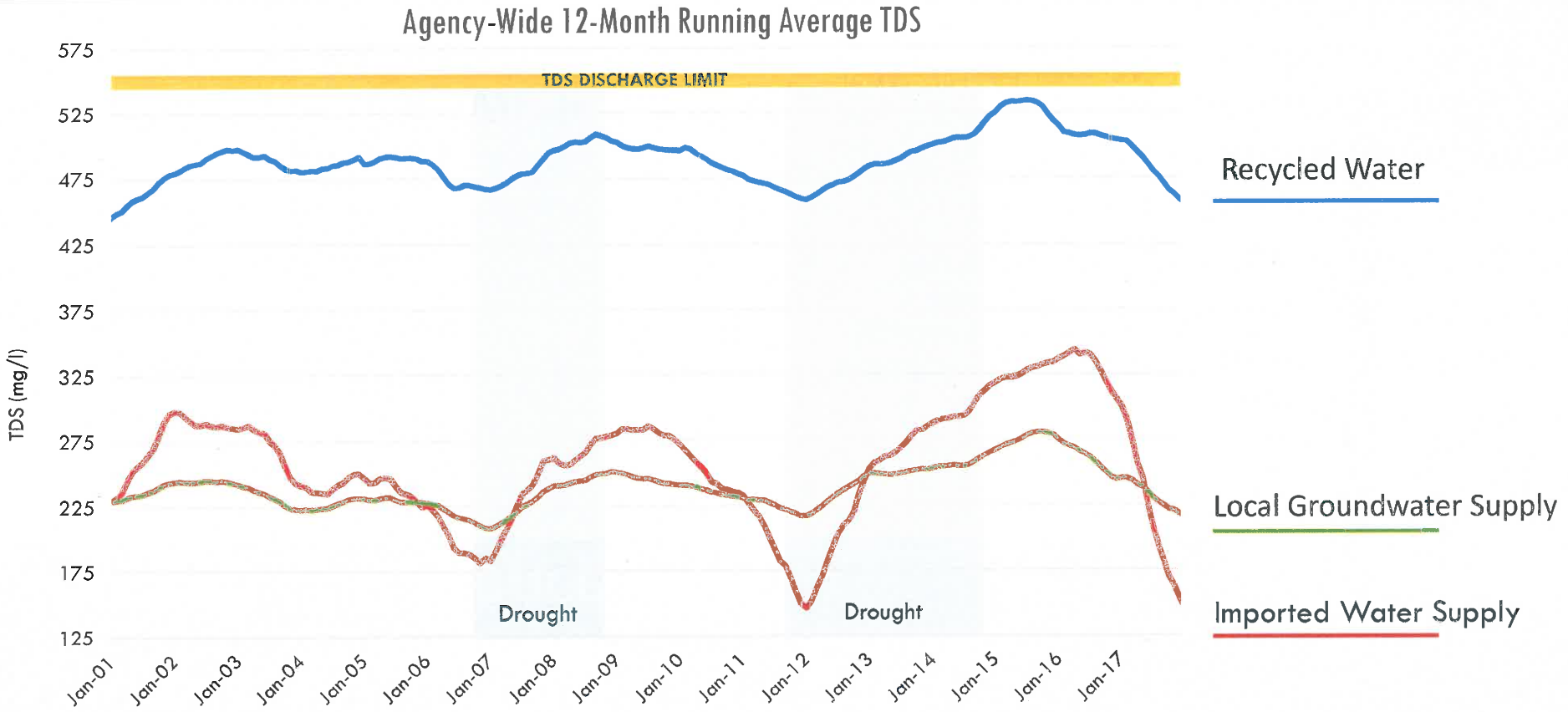
AGENDA

1. Region's Success in Water Resilience
2. Chino Basin Project (CBP) Delivers 1Water Innovation
3. CBP Achieves Affordable Investment in Basin Needs
4. **CBP Reduces Risks**
5. Next Steps

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Quality

CBP Will Reduce Salinity Risk



Chino Basin Project will Reduce Subsidence Risks

Subsidence

Subsidence results from depleted groundwater levels and over-pumping

EFFORTS CONSISTENT WITH CHINO BASIN GOALS

IEUA will work with the Watermaster to identify optimal locations for recharge to reduce risk

Security

CBP will reduce emergency response risk

DROUGHT | FIRE | FLOOD | SEISMIC

Chino Basin Project improves existing infrastructure / interties and gives IEUA additional water management flexibility in the case of an emergency

Chino Basin Project
1water forward

AGENDA

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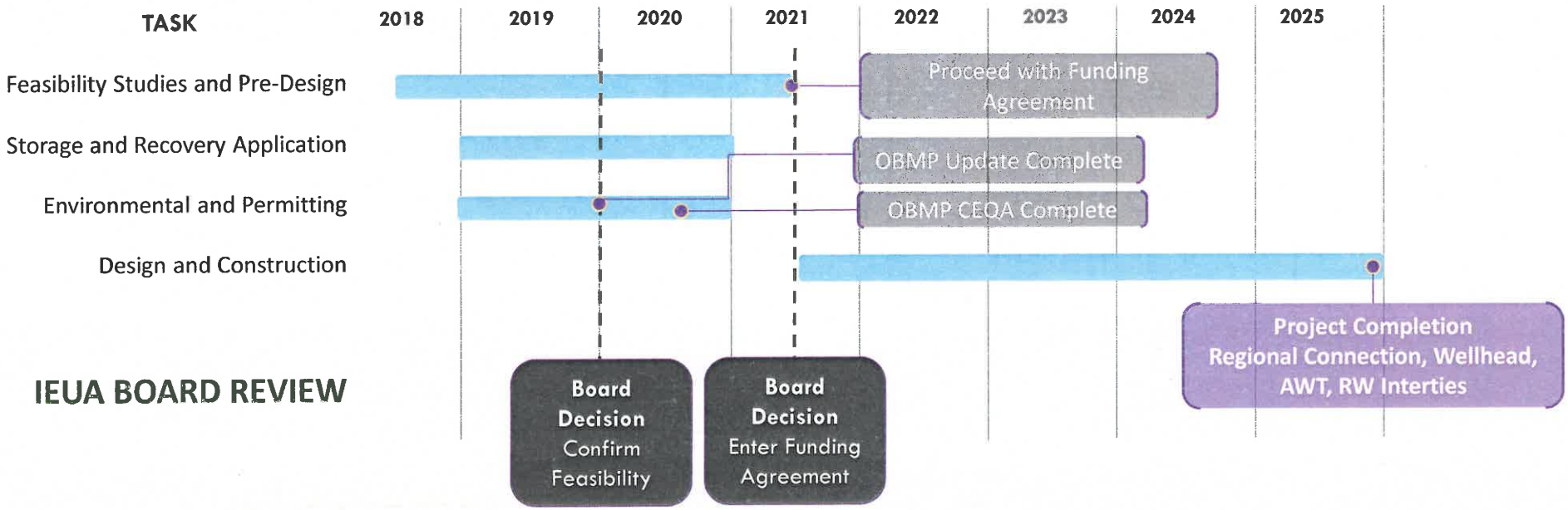
4. CBP Reduces Risks
5. **Next Steps**

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Chino Basin Project Schedule



Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Next Steps

OCTOBER

Workshop 1

Project Overview

10/3/18

IEUA Board Feedback

Considerations for November Workshop

Further Project Analysis

NOVEMBER

Workshop 2

Business Case

11/7/18

Life-Cycle Cost

Relation of Chino Basin Project to other Regional Projects

Basin Partnerships

Project Partners and Regional Support

PROJECT PARTNERS:

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

The Nature Conservancy
Protecting nature. Preserving life.

City of Chino Hills

Chino Basin Watermaster
Partners in Basin Management

The Metropolitan Water District of Southern California

CDA Chino Basin Desalter Authority

City of Ontario
Incorporated Jan 1891

California Water Boards

Western Municipal Water District

American Rivers
Thriving By Nature

EDF
Environmental Defense Fund
Finding the wave that work

PCFFA
Stewards of the Fisheries

Monte Vista Water District

Cucamonga Valley Water District

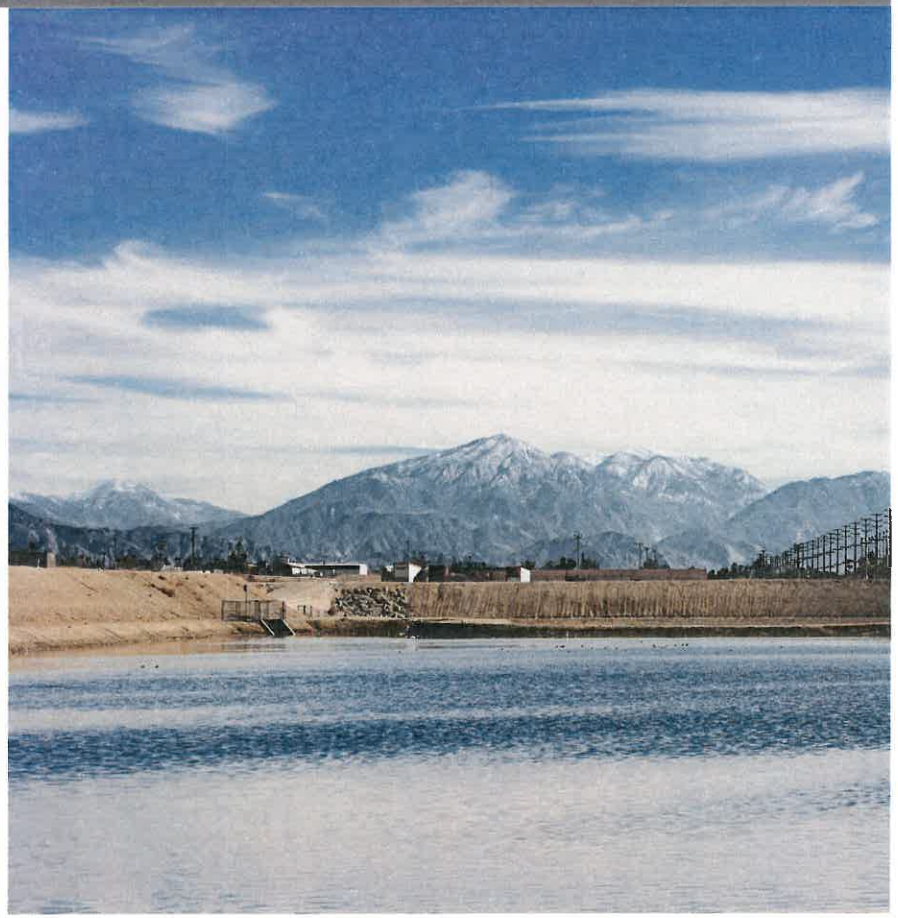
CCEA

jurupa
COMMUNITY SERVICES DISTRICT

SAWPA

GoldenGate Salmon Association

TROUT UNLIMITED



Chino Basin Project Supports *Existing Investment Needs* and *Adaptable 1Water Management* for the Future

Chino Basin Project
1water forward

INFORMATION
ITEM

3A

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Date: October 3, 2018

To: The Honorable Board of Directors

From: Halla Razak, General Manager

Committee:

Executive Contact: Halla Razak, General Manager

Subject: California Water Efficiency: Leading the Way into the Future

Executive Summary:

The Southern California Water Coalition (SCWC), in collaboration with the California Data Collaborative (CaDC), released an whitepaper - California Water Efficiency: Leading the Way into the Future on September 10, 2018.

The report leverages data and technology to provide thoughtful recommendations on how California can meet new mandates on outdoor water use and conservation amidst the increasing impacts of climate change - providing a roadmap for how water agencies and other stakeholders can support and encourage responsible water management.

Staff's Recommendation:

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

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

Account/Project Name:

N/A

Fiscal Impact (explain if not budgeted):

N/A

Full account coding (internal AP purposes only): - - - Project No.:

Prior Board Action:

None

Environmental Determination:

Not Applicable

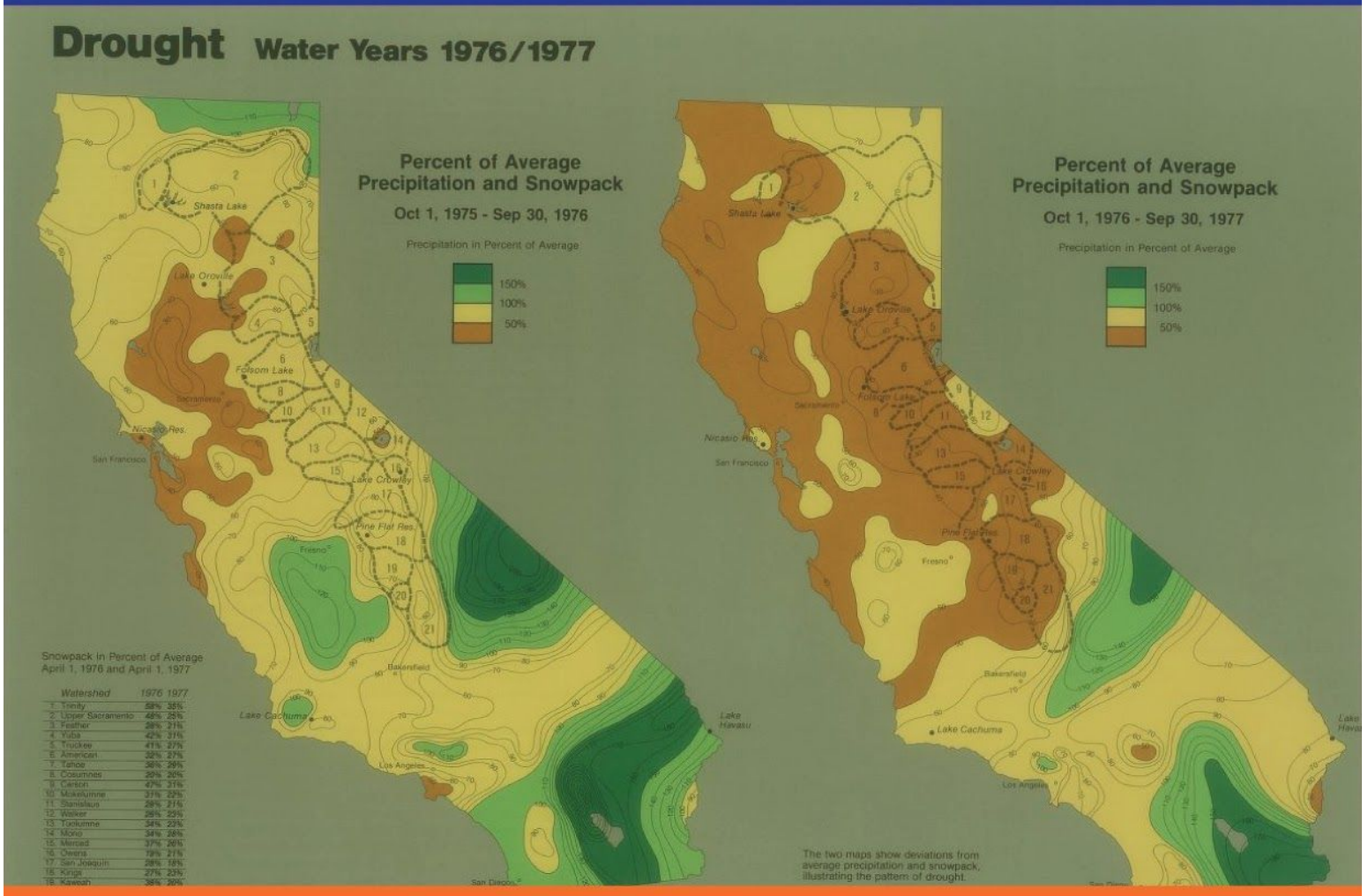
Business Goal:

Attachments:

Attachment 1 - California Water Efficiency: Leading the Way into the Future

California Water Efficiency

LEADING THE WAY INTO THE FUTURE



SCWC

SCWC Water Energy Task Force 2018

CALIFORNIA DATA COLLABORATIVE

California water efficiency: leading the way into the future

SCWC Water-Energy Task Force September 10, 2018

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"A market transformation (MT) occurs when a new technology or method emerges, is found to be superior, and results in the product and/or service, which pre-dated it, to become obsolete. A prime example of MT in the world marketplace (or a series of market transformation initiatives) are well known to all consumers starting with the shift from vinyl records to the more portable eight track tapes…then eight track tapes to the more compact cassette tapes...cassette tapes to higher sound quality CDs and forward to today's iPods or similar electronic devices. Clearly the market for audio devices has transformed over time and consumers have no desire to purchase the earlier technologies."

-Case Studies of Market Transformation as a Means for Delivering Regional Conservation Results. T. Chesnutt, M. Erbeznik, D. Pekelney. Prepared for The Metropolitan Water District of Southern California

Acknowledgements

The Southern California Water Coalition would like to extend its deepest gratitude to task force participants and in particular the California Data Collaborative (“CaDC”) coalition of water utilities whose visionary investment in a new nonprofit data platform made this work possible:

- East Bay Municipal Utilities District
- Eastern Municipal Water District
- El Toro Water District
- Inland Empire Utilities Agency
- Irvine Ranch Water District
- Las Virgenes Municipal Water District
- Metropolitan Water District of Southern California
- Monte Vista Water District
- Moulton Niguel Water District
- Sacramento Department of Utilities
- Santa Ana Watershed Project Authority
- Santa Margarita Water District
- Santa Rosa Department of Utilities
- Western Municipal Water District

In addition, SCWC would like to thank Anaheim Public Utilities and Irvine Ranch Water District for graciously hosting meetings for the task force. Lastly, SCWC would like to thank the CaDC research fellows who volunteered their time to contribute to this report.

Executive Summary

California's water industry has a long tradition of pioneering new technologies and visionary approaches to ensure a bright future for the state. Recently, the state's historic drought made headlines across the globe and Governor Brown has focused on opportunities for increased water efficiency in residential landscapes across the state.

The purpose of this white paper is to use data analysis and research to make recommendations on how to achieve market transformation in outdoor water use efficiency. This market transformation approach is timely and necessary. Assembly Bill 1668 (AB 1668) and Senate Bill (SB 606), passed in the spring of 2018, call for the development of standards and regulations at the state level that set individualized water objectives for urban retail water suppliers.

Included in the legislation is a water budget approach comprised of efficient indoor water use, efficient outdoor water use, efficient outdoor water use for landscape areas irrigated through a dedicated meter, efficient water losses, variances to account for unique local situations and bonus incentives for potable reuse. The water budgets create a custom water efficiency objective that each retail water supplier must meet by before the end of 2025. The legislation provides deference and flexibility to the water suppliers on how meet the efficiency objective but there remains some uncertainty on how this new legislation will impact the average customer.

Since launching in January of 2016, the California Data Collaborative (CaDC) coalition of water agencies have developed tools by and for water agencies to assist in understanding and navigating complex statewide requirements. As the new regulation evolves and objectives are developed, water managers will need to find ways to work with their customers to meet these new efficiency goals. Further, many of the underlying necessary shifts in natural resource demand management have already been successfully implemented in the energy sector and by leading water utilities around the state.

The Southern California Water Coalition (SCWC) Water Energy Efficiency Task Force was formed to bring together leaders across not only water and energy utilities but also a uniquely broad spectrum of local government, business, labor, and other civic organizations. The SCWC Water Energy Efficiency Task Force has built upon the CaDC's unique repository of data and experience with leading technology practices to provide the following recommendations for supporting water managers as they work to meet their new water efficiency goals:

- **Customer education and incentives are critical to achieve the opportunity in urban outdoor usage.** This whitepaper supports the market transformation framework

developed by the Alliance for Water Efficiency and the “big data” approach to targeted messaging that will continue the current momentum on a cost effective basis.[1]

- **Cooperative purchasing for aerial imagery and other technology to leverage shared resources.** It is recommended that stakeholders support regionally driven cooperative procurement to improve the implementation, measurement of, and education about water efficiency programs. One important opportunity to improve cost-effectiveness and efficiency is using cooperative efforts to acquire aerial imagery.

- **Quantifying carbon and energy embedded in outdoor water use to unlock new conservation funding.** It is recommended that California continue to promote utilizing Investor-Owned Energy Utility (IOU) energy-related conservation investments to fund water conservation (including cold water) which also saves energy. Agencies may want to participate in the Climate Registry’s upcoming process to align the many methodologies currently in use to quantify the energy and carbon embedded in water conservation.

- **Best in class tools and new technology to support water managers in achieving their goals**. Agencies can work together collaboratively through partnerships like the CaDC to develop online tools that will help water agencies quantify their target water usage and help customers quantify the potential savings of switching to water efficient landscaping along with other water management benefits.

Of course, water management involves much more than just urban water use efficiency, and the task force worked to maintain a balanced perspective between water demand management and supply development. Future work will involve building out the roadmap developed at the 2017 Stanford Water Data Summit.

Introduction

Water agencies face numerous uncertainties and challenges providing supply reliability, such as population and economic growth, increasingly stringent water quality and environmental regulations, aging infrastructure, and the effects of climate change, including droughts and floods. Water agencies are working to overcome these challenges with water management planning and investments, yet future solutions necessitate the increased involvement of land use agencies, business associations, water technology companies and the local community.

[1] By “big data” this whitepaper means the integration of a large variety of datasets both within and beyond utilities to achieve a holistic understanding of customer behavior and achieve water efficiency on a cost effective basis. Example documentation detailing this type of water usage “big data” can be seen at bit.ly/scuba_metadata. In addition, where available there is also an opportunity for greater velocity and volumes of information with high frequency Advanced Metering Infrastructure.

One key area to ensuring urban water reliability in the Golden State is investing in greater water use efficiency, or as Governor Brown stated “making water conservation a California way of life.” The legislation enacting the Governor’s framework, (AB 1668 / SB 606), requires retail urban water agencies to develop water use efficiency objectives customized to the unique conditions of their communities.

Responding to the need for a planning tool, the CaDC coalition of water utilities provided input and quality assurance into a new open source planning tool the Efficiency Explorer version 1.2. This tool won the “Best Urban Tool” award at the 2016 California Water Data Challenge held by state water agencies in partnership with the White House Council on Environmental Quality.

The Efficiency Explorer provides an integrated data visualization and scenario planning tool for future residential water efficiency goals for more than 400 California water retailers (Figure 1). Version 1.2 of the tool is available at the following link (https://futureofwatermanagement.org/) and is detailed in publicly available methodology.[2]

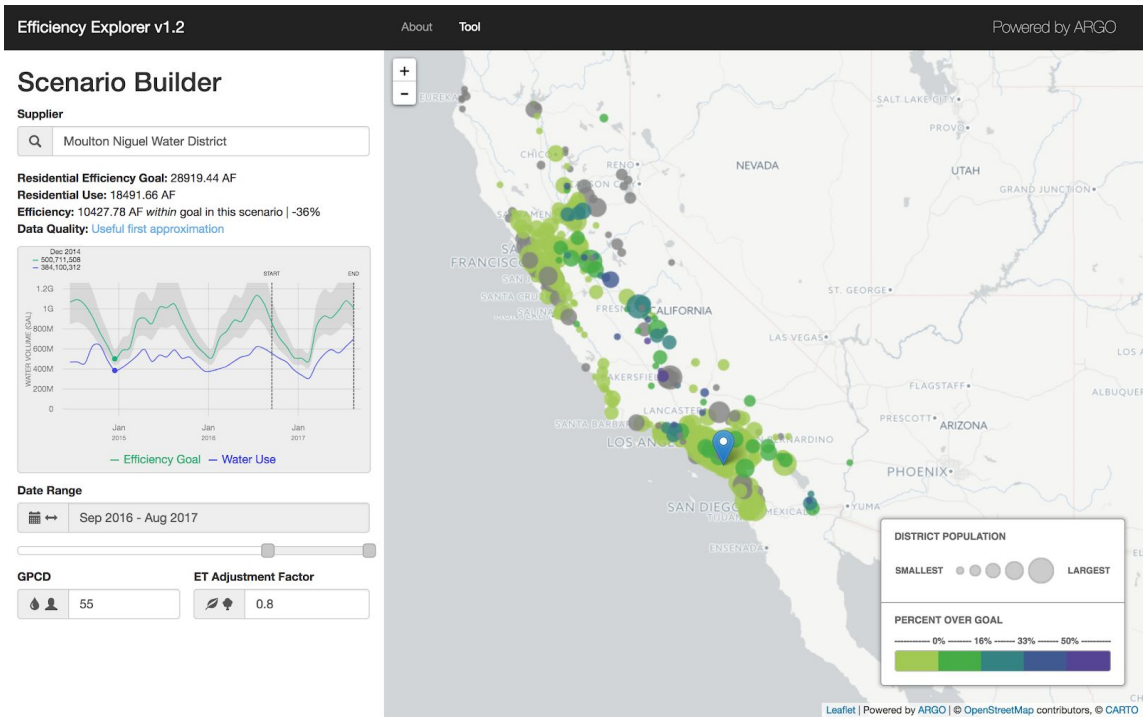

Figure 1. CaDC Integrated Reliability Toolkit v1.2 Residential Efficiency Explorer

[2] California Data Collaborative Efficiency Explorer Methodology: http://californiadatacollaborative.org/blog/2017/4/28/cadc-statewide-efficiency-explorer-methodology

SCWC and Water Energy Efficiency Task Force Background

The Southern California Water Coalition (SCWC) spans Los Angeles, Orange, San Diego, San Bernardino, Riverside, Ventura, Kern, and Imperial counties, and is comprised of approximately 200 member organizations including leaders from business, regional and local government, agricultural groups, labor unions, environmental organizations, and water agencies, as well as the general public. Key technical support is provided by flood control district staff, city engineers, urban planners and redevelopment staff, water resource planners, real estate development professionals, hydrogeologists, and experts from consulting firms.

SCWC uniquely brings a broad coalition of water utilities, cities, counties, water technology companies, and environmental groups that are all critical to making water conservation a way of life. The Water Energy Efficiency Task Force (Task Force) is focused on the key opportunity to reduce urban outdoor water use as part of an integrated approach to the future of water management. Leveraging its diverse array of perspectives, the task force has investigated and developed recommendations on how to help make conservation a California way of life and assist in improving outdoor water efficiency. These recommendations are outlined in this report.

By better quantifying where we are in transforming the market for outdoor water use, this report first aims to illuminate the path ahead for achieving that important area of urban water efficiency. Second, by supporting cooperative procurement to break through barriers to using useful technologies like aerial imagery, this report aims to support strategies most likely to achieve increased outdoor water efficiency. Lastly, by reviewing methods to measure the amount of carbon saved by water conservation, this report aims to open new potential funding streams for achieving water efficiency goals.

The opportunity in urban outdoor water usage

Customer education and incentives: *This whitepaper supports the market transformation developed by the Alliance for Water Efficiency and the "big data" approach to targeted messaging that will continue the current momentum on a cost effective basis. Agencies can work together collaboratively through partnerships like the CaDC to develop online tools that will help water agencies quantify their target water usage and help customers quantify the potential savings of switching to water efficient landscaping along with other water management benefits.*

Indoor water usage is well understood and has seen tremendous efficiency accomplishments. From 1990 to 2010, Southern California has added several million people without increasing the region's overall water demand through successful water efficiency measures, primarily indoors.[3]

By contrast, outdoor water usage is much less understood. It is frequently cited that between half to two-thirds of residential water usage occurs outdoors, based upon whether the area is in the cooler coastal region or in the hotter inland areas and also based on the typical plant palettes for each region. A long-time effort of water suppliers, especially in response to drought conditions, is the transformation of high water use turf to more water efficient landscape options. To encourage this effort suppliers have provided financial incentives, educational opportunities and outreach campaigns.

This whitepaper conducted an assessment of the research literature to ascertain 1) where the water industry lies on the market transformation curve in outdoor water irrigation and 2) offer recommendations on how to continue transforming the market for outdoor water irrigation on a cost effective basis. The graphic below provides a conceptual illustration of the market transformation curve.

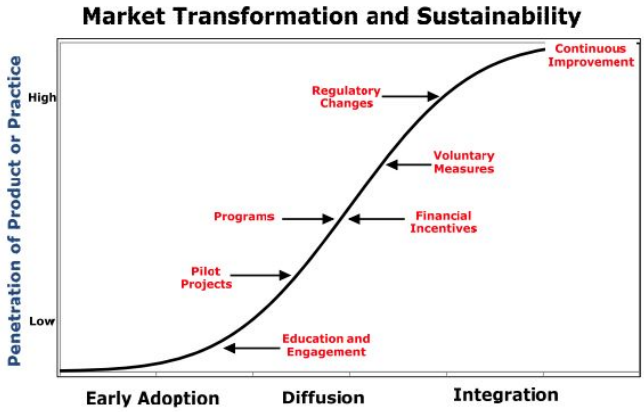

Figure 2. Conceptual diagram illustrating market transformation.

This market transformation approach has been applied in residential solar. The table below summarizes recent progress and provides a reference point for residential outdoor water efficiency. The similarities and differences in what causes California households to adopt solar panels and transform their landscape remains an area for future study.

[3] See the following Economist article (https://www.economist.com/united-states/2015/04/11/the-price-is-wrong) as well as the MWD IRP (http://www.mwdh2o.com/PDF_About_Your_Water/2015%20IRP%20Update%20Exec%20Summ%20(web).pdf)

Net Energy Metering (NEM) Solar Residential Adoption Rates

	2013	2014	2015	2016	2017	2018
Total NEM Residential Solar Count	63673	96086	150322	201904	244531	269304
Residential Customer Count	4,344,429	4,368,897	4,393,150	4,417,340	4,447,706	NA
Adoption Rate	1.47%	2.20%	3.42%	4.57%	5.50%	
5 Year Average	3.43%					

Source: NEM data taken from Department of Energy (DOE) 826 July 2018 file

The task force believes that we are still in the early days of the long work to achieve market transformation in outdoor water efficiency. The newly legislated efficiency goals provide an invaluable benchmarking tool for water managers. Furthermore, even with the hundreds of millions of dollars invested in turf rebates and other outdoor water efficiency programs, the percentage of turf that has been converted to drought-tolerant landscaping statewide remains relatively small (in the single digit percentages rather than a majority of the market like high efficiency toilets). Water suppliers and other stakeholders in water efficiency have much work to do to make water efficient landscape the social norm.

One indicator of the cost effectiveness of turf removal, as a strategy, is whether it results in neighbors removing turf without receiving a rebate (multiplier effect). A summary of the existing research literature on the multiplier effect in Southern California is provided below.

Study	**Estimated Multiplier Effect**	**Year**	**Utility**	**General Method** (More detail in Appendix 1)
Multiplier Effect Study for Turf Removal	1.36	2015	IRWD	Field Survey / GIS
Multiplier Effect Study for Turf Removal -- 2016 Update	2.63	2016	IRWD	Field Survey / GIS
Evaluating the Effects of Turf-Replacement Programs in Los Angeles County	0.36	2017	LADWP (UCLA / UU)	Utilized google streetview and rebate data

WMWD's Turf Replacement Program Evaluation	2.5	2017	WMWD	GIS inspection via Google Earth
Methods Report on Detecting Turf Removers	0.069	2010-2016	MWD / USC (Andrew Marx)	GIS/NAIP image analysis

Another indicator of the effectiveness of turf removal is whether the turf is later re-planted. If the turf is re-planted, the turf removal rebate program would be considered not cost effective. If the water efficient landscaping remains, this historic investment could represent the tipping point in making drought tolerant plants mainstream and would be viewed as a visionary and extremely cost effective program.

This reality highlights the importance of overcoming outstanding barriers and continuing the momentum in transforming the market for outdoor water use efficiency. The Alliance for Water Efficiency outdoor water market transformation report identified four barriers to drought tolerant landscaping. This AWE report built on an authoritative literature review and nationwide survey of customers. The four barriers are customer barriers, program barriers, supply chain barriers, and contractor barriers.

The AWE report emphasized the importance of understanding the unique motivations and circumstances that determine whether or not a customer will convert their landscape toward more water efficient practices. The report prioritizes a “big data” approach in continuing market transformation. A “big data” approach utilizes all available information to achieve a holistic understanding of a customers water usage behavior, motivations, and environmental actions. That information is integrated securely and protects customer privacy so that water efficiency programs can respect the autonomy of California households and ensure cost effective use of taxpayer dollars. The value of this approach is succinctly captured in the following quote from AWE.

“How do we tease out customer patterns and microtarget? We do what the most successful businesses are doing. We use big data, analytics, customer segmentation, and personalization.”

-Alliance for Water Efficiency 2018 Market Transformation Report

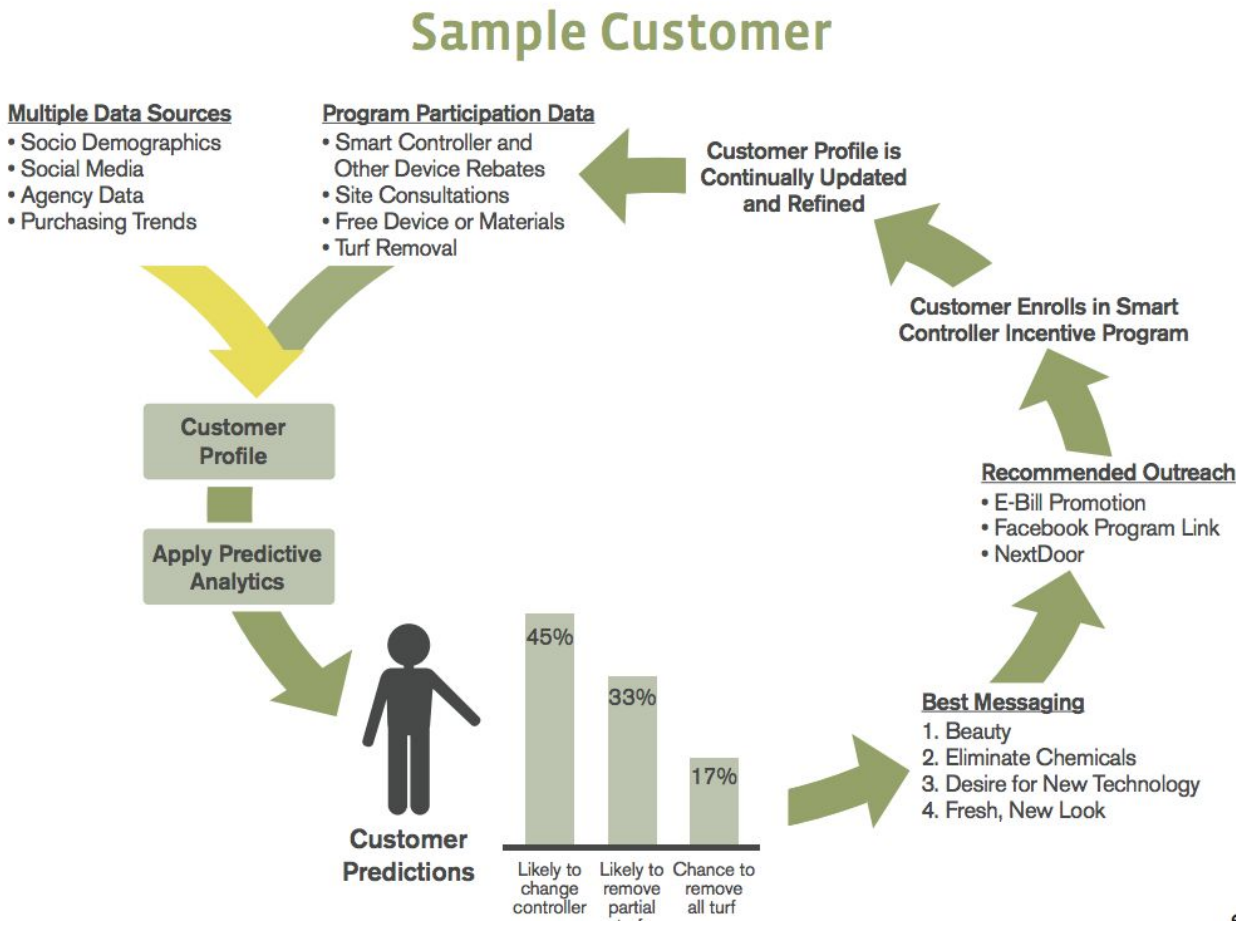

Figure 3. Diagram from AWE showing how a "big data" approach can support market transformation in outdoor irrigation.

This customer-centric approach can be used to optimize and ensure the highest return on investment of existing programs. The Metropolitan Water District of Southern California (Metropolitan) has committed $50 million a year in its conservation budget and increased its conservation marketing to $15 million a year in the current budget cycle. Continuing market transformation in outdoor water use efficiency will require increased coordination and collaboration across the water industry.

For example, databases collected for different purposes can be difficult to consolidate because they lack a common key, or because of unanticipated or uncontrollable variations in the way a common key is recorded. For example, participants in the Metropolitan's Turf Rebate Program entered their own addresses on the program application form. Frequent misspellings and the use of abbreviations make it very time consuming to match these addresses to those contained in retail agency billing files. Problems like this cause unnecessarily difficult to leverage data from different sources for program planning and evaluation. A cooperative approach, like that discussed in the next section, offers one path to addressing the underlying data management barriers.

The AWE 2018 market transformation report also stresses the importance of providing tools to actual customers who strongly expressed interest in the design and implementation of their lawn conversion project in the AWE survey. The AWE 2018 market transformation report also stresses the importance of providing tools to actual customers who strongly expressed interest in the design and implementation of their lawn conversion project in the AWE survey.

Water suppliers have developed many tools to provide education and assistance with landscape transformation. Appendix 2 has a list of water supplier resources. The challenges are ensuring that customers are aware of the tools water suppliers have, and using them effectively and that water suppliers are aware of any additional tools needed. Water suppliers also require tools to better measure landscape transformation and customers need better tools to understand the benefits of landscape transformation.

The CaDC is committed to proactively supporting water managers in achieving their water efficiency goals and providing its tools as a public service to the California water community. This collaborative approach also provides an opportunity to streamline the procurement of aerial imagery that can help water managers better understand outdoor water usage and set the utility-scale outdoor water budgets called for by the water efficiency legislation.

Overcoming technology barriers through collaboration

Cooperative purchasing for aerial imagery and other technology. *It is recommended that stakeholders support regionally driven cooperative procurement to improve the implementation, measurement of, and education about water efficiency programs. One important opportunity to improve cost-effectiveness and efficiency is using cooperative efforts to acquire aerial imagery.*

The California water industry is uniquely fragmented. Over 80% of Californians are served by the state's three largest electricity utilities. In contrast, California has thousands of local public water systems, 411 of which have over 3,000 meter connections. Approximately 170 local water retailers serve 80% of the state by metered connections.[4] This institutional fragmentation could result in duplication of effort and creates a unique opportunity for collaboration and shared services.

The Case for Cooperative Purchasing

Water utilities have shared needs. By coordinating procurement across jurisdictions, water agencies can work together to save time and money. This process, known as cooperative purchasing, reduces the administrative burden by limiting the need for duplicative Requests for

[4] This figure is derived from the 2015 Urban Water Management Plan data. The official state data recorded in Urban Water Management Plans and the Public Water System Statistics offer conflicting values.

Proposals (RFPs). Participating agencies have the opportunity to benefit from a single competitive bidding process. Cooperative purchasing happens when:

- ***Multiple entities identify their needs up front and run a shared competitive bidding process.*** The cooperative purchasing process can be organized and managed by a single jurisdiction; a Council of Government (COG) or Joint Powers Authority (JPA); or a third-party cooperative purchasing organization. This method of purchasing can help participating agencies aggregate demand to negotiate price discounts with vendors. It also can save governments time and money by consolidating the administrative burden of purchasing.
- ***One jurisdiction or organization competitively procures a good or service and other jurisdictions use (or "piggyback") on the resulting contract.*** This procurement method saves governments time spent researching and procuring a solution; it can sometimes help governments achieve a better price on goods or services (for instance, a volume discount may be negotiated that would not be possible for a smaller agency operating on its own).

One tool that is variable for measuring progress and understanding the benefit of landscape transformation programs is aerial imagery. Imagery and the analysis associated with it can be useful at key points to measure progress towards additional water use efficiency. It can also be used as an impactful communication tool when showing customers how much water is used for landscape irrigation and the benefits of landscape transformation. Aerial imagery can also be useful to other government agencies for tracking changes in land use, geographical surveys and many other purposes. As much as possible, this aerial imagery should be utilized for multiple benefits like integrated reliability planning, conservation program benchmarking, water rate setting, tax assessment, urban-wildland fire management and other areas of urban planning to maximize the return on invested taxpayer dollars.

Given the shared need for aerial imagery for water suppliers and other government agencies throughout California, there is a clear opportunity to utilize a cooperative framework. There are a number of precedents, in California and other states, for the procurement of aerial imagery and its analysis. The table below offers several examples where cooperative efforts have for aerial imagery purchase have resulted in cost savings in excess of 25% and also additional multiple benefits. Those examples are further detailed in Appendix 3. These examples can be used as a template for additional efforts and applied to other areas resulting in cost savings. For example, local water utilities that invest in Advanced Metering Infrastructure could partner with nearby agencies to maximize the usage of the resulting hourly or higher frequency data. There is also an array of new digital tools available for water managers to utilize to achieve specific water reliability objectives.

Lead Agency	Partners	Area
LA County	LA Regional Imagery Acquisition Consortium (“LARIAC”) composed of cities, universities and others in the county	LA County
Sacramento Area Council of Governments (SACOG)	Regional Water Authority and participating water suppliers and cities	Greater Sacramento area
Santa Ana Watershed Project Authority (SAWPA)	Local water retailers and water management agencies in the SAWPA service area	Santa Ana Watershed

Multiple benefits

There is also an opportunity to work cooperatively on tools to communicate with customers. One example is the web calculator developed in partnership with the CaDC coalition of water utilities to show residential customers the benefits of turf transformation. The new web calculator tool showing customers the water and financial savings from switching their landscapes helps fill that gap. That tool is developed by Applied Research in Government Operations (“ARGO”) and funded by the Innovative Conservation Program (ICP) funded by Metropolitan and others. A screenshot of the alpha version of the tool is shown below.

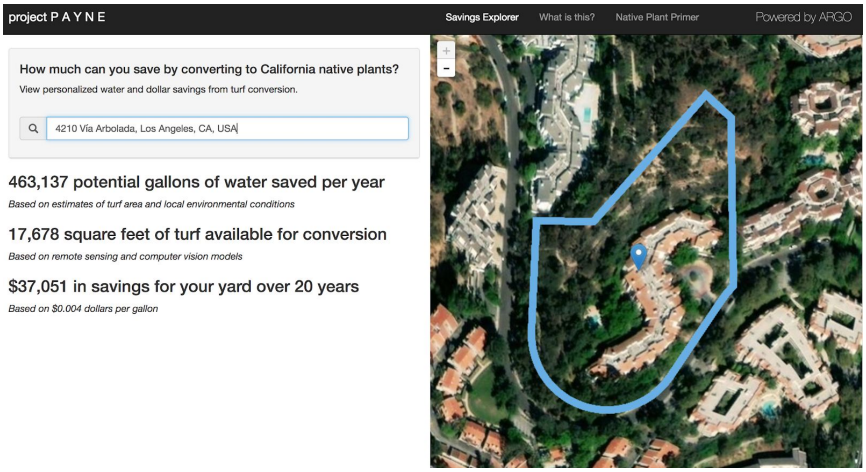

Figure 4. Prototype web tool showing the water and financial savings of converting from lawns to CA native landscaping.

Of course, these technologies still cost money to implement. Because of the multiple benefits of water conservation, which include energy savings, there is an unique opportunity for the energy

sector to partner with the water sector to finance and, thereby, accelerate the implementation of water conservation as a the new normal.

Unlocking new funding streams for water efficiency programs

(Task Three: inventorying methodologies to quantify the embedded carbon in water)

Quantifying carbon and energy embedded in water conservation. *It is recommended that California continue to promote utilizing Investor-Owned Energy Utility (IOU) energy-related conservation investments to fund water conservation (including cold water) which also saves energy. Agencies can participate in the Climate Registry's upcoming process to align the many methodologies currently in use to quantify the energy and carbon embedded in water conservation.*

Studies by the California Energy Commission[5] in 2005 and Public Utilities Commission (CPUC) in 2010[6] show that most of the energy in the water sector is attributed to customer end uses such as heating water. The studies confirm that it also takes energy to pump water to end users and thus carbon is embedded in most of the water used in California. The challenge is measuring how much energy and carbon is embedded. There are several tools and approaches available to water agencies for assessing the energy and GHG's embedded the water supplies delivered to their customers. These tools vary in their purpose and methodology.

This section inventories the various methodologies as the foundation for aligning an approach that meets the requirements of unlocking IOU energy efficiency investments in water conservation. Methodologies from five different sources were reviewed to understand what each approach has in common as well as how each is unique. The following sources were chosen for being largely representative of the different approaches often used by water agencies.

- Appendix O: Voluntary Reporting of Energy Intensity. *California Department of Water Resources 2015 UWMP Guidebook*.

- A High-Resolution Assessment of Water Utility Energy Intensity. *UC Davis Center for Water-Energy Efficiency.*

- AWE Tracking Tool Version 3.0 Documentation. *Alliance for Water Efficiency.*

[5] California Energy Commission: https://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF
[6] Public Utilities Commission: ftp://ftp.cpuc.ca.gov/gopher-data/energy%20efficiency/Water%20Studies%201/Study%201%20-%20FINAL.pdf

- Water-Energy GHG Guidance. *The Climate Registry.*

- Embedded Energy in Water Studies 1 & 2. *California Public Utilities Commision.*

Additionally, the California Air Resources Board - Department of Water Resource Water Energy grant methodology was considered. This methodology focuses on hot water end uses but does not touch on energy embedded in water through utility operations; therefore it was omitted from this comparison. Finally, the CPUC has developed a Water Energy Cost Effectiveness Calculator[7] which the IOUs may use to support energy investments into cold-water conservation programs.

Each of these studies, reports, or tools utilizes the same basic methodology. The amount of energy used is divided by the volume of water processed to obtain an *energy intensity* (EI) associated with processing that water, often expressed in kilowatt hours per acre-foot (kWh/AF) or similar units.

$$energy\ intensity\ =\ \frac{energy\ inputs - energy\ outputs}{volume\ of\ water}$$

In most cases the only energy input considered is electricity purchased from (and occasionally provided to) the grid. Energy intensity calculations also include renewable energy sources such as small-scale hydropower and the many solar projects implemented by member agencies across the state. These renewable energy investments decrease the GHG emissions of the energy embedded in the water.

Greenhouse gas (GHG) intensity is then obtained by multiplying the energy intensity (minus the renewable energy) of water by an emission factor characterizing the mass of GHGs released during the generation of each unit of energy. This may be expressed in units of carbon dioxide equivalent (CO_2e) per unit of energy, e.g. pounds per kilowatt hour (lbs/kWh) or similar.

$$GHG\ intensity\ =\ energy\ intensity\ \times emission\ factor$$

The emission factors used are often acquired from the EPA Emissions and Generation Resource Integrated Database (eGRID)[8] and as such they represent an average of the electricity mix across the entire state of California. Although local electricity mixes may vary substantially, eGRID emission factors are typically used for simplicity of calculation. Similarly, factors such as agency investments in solar electricity generation, or the incorporation of energy from natural gas use tend to be excluded from the studies reviewed here.

Note in The Climate Registry's (TCR) Water Energy GHG guidance, organizations are first asked to measure an entity-wide carbon footprint using the General Reporting Protocol (GRP).

[7] See here for the calculator: http://cpuc.ca.gov/General.aspx?id=4139
[8] https://www.epa.gov/energy/emissions-generation-resource-integrated-database-egrid

The GRP enables agencies to calculate emissions associated with the energy they actually purchase/consume (whether generated with renewables, natural gas, etc), and calculate emissions from sources beyond energy (e.g. wastewater management).

In terms of the quantification of energy intensity, the primary differences among the studies examined in this report amount to differences in project scope and detail. In other words, what aspects of the water system are included and in how much detail is each aspect examined? Additionally, some of the studies address only embedded energy, while others also consider embedded GHGs. Table 1 provides a high-level summary of each study in terms of its scope and detail. Each of these factors is explained more fully in Appendix 3.

Table 1. A high-level summary of the energy and GHG quantification and reporting methodologies reviewed here.

	CWEE LADWP Study	DWR - Method A	DWR - Method B	DWR - Method C	AWE Tracking Tool	TCR - Metric A	TCR - Metric B	TCR - Metric C	CPUC Study 1 & 2
Includes Embedded Source Energy							✔	✔	✔
Includes Non-electricity Emissions						✔	✔	✔	
Includes Wastewater	✔				✔				✔
Break out by Supply Source					◐				✔
Break out by Delivered Product				✔	◐			✔	✔
Cumulative Use Through System	✔								✔
Level of Detail:	-	-	-	-	-	-	-	-	-
System Average			✔			✔	✔	✔	
By Process		✔		✔	✔	◐	◐	◐	
By Asset	✔								✔

◐ means optional for the methodology.
✔ means required for the methodology.

This methodological fragmentation frustrates the ability for water conservation to be eligible for energy efficiency funds. The California water industry needs clarity on what methods are

required for water conservation to count for those funding streams. The Climate Registry's workshops beginning in Fall 2018 offer an excellent opportunity to achieve that clarity across the current methodological fragmentation.

Note this fragmentation highlights the importance of the common nonprofit data platform in which the CaDC coalition of water utilities made a visionary investment. The final section highlights the long term value of this platform for water managers.

The Future of Water Management

Best in class tools to support water managers in achieving their goals. *Agencies can work together collaboratively through partnerships like the CaDC to develop online tools that will help water agencies quantify their target water usage and help customers quantify the potential savings of switching to water efficient landscaping along with other water management benefits.*

In September 2017, the CaDC held its annual Water Data Summit at Stanford Graduate School of Business, working with participants to develop a roadmap for the future of the water industry. Senior water managers, analysts, state agency leadership, environmental organizations, academic researchers, technology companies and other participants committed to better use of water data came together to discuss the future of the California water industry. Over two days the group of water data leaders aligned on a roadmap to achieve necessary changes to ensure water reliability into an uncertain future.

There are multiple opportunities for water suppliers to collaborate on rate setting to measuring conservation programs that water suppliers can work together to meet whatever challenges arise. The CaDC Summit and projects and tools developed since then are excellent examples of what can be done when we work together to develop a broad vision and then take specific steps to enact that vision. Moreover, the unique thing about modern open source software and data tools is that the water data practices pioneered by the visionary coalition of CaDC water utilities can be utilized across the California water industry. The basic model of bringing together best in class data science talent with the relevant water expertise through focused technical collaborations could be deployed in stormwater management, Delta fish counts, Sierra snowpack and countless other important areas of water management.

There are also existing legislative mandates to modernize the underlying water data. In the third quarter of 2019, any ecological and water data held by state agencies will be made available on California's statewide water data platform. There is an excellent opportunity to build upon the work of the visionary CaDC coalition of leading local water managers and achieve data sharing and analysis goals. That water data integration will not "solve" California's water problems in any sense of the word, yet it is hard to imagine a future where California meaningfully addresses those issues without proactive modernization and improvement of its water data systems. That vision has been central to the CaDC since its inception:

“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 the 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.”

-Founding memorandum of understanding amongst participating California Data Collaborative utilities signed in January 2016.

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Appendix 1 -- Inventory of turf multiplier studies

Study	Estimated Multiplier Effect	Year	Utility	General Method	Detailed Data Sources / Methodology
Multiplier Effect Study for Turf Removal	1.36	2015	IRWD	Field Survey / GIS	IRWD provided consultant, DCSE, information on single-family, residential customers who participated in the Turf Removal Rebate program. The consultant collected data to identify the rate at which landscape transformation, from turf to drought-tolerant landscapes, occurred among homes that did not receive a rebate. Fourteen representative neighborhoods in IRWD service territory (2,950 households) were selected for the study. Neighborhoods were surveyed in person (drive routes) where photo and videos helped consultant and IRWD correctly identify the landscape (four types), and proximity to customers who had participated in the Turf Removal Rebate program. A survey was administered to customers that had transformed their landscape either with or without a rebate to try to ascertain when the transformation occured and the reason for doing so. For non-responsive customers, DCSE relied on Google Earth and Google Street View to determine the year of landscape change. U.S. Census demographic data evaluated on the neighborhood level to assess how income and education levels influenced landscape conversions, and what type. A regression analysis was performed on the data to find trends in landscape types, installation dates, and saturation levels of drought-tolerant landscapes.

Multiplier Effect Study for Turf Removal -- 2016 Update	2.63	2016	IRWD	Field Survey / GIS	For the 2016 study update, consultant used the same driving routes as 2015 to identify new landscape transformations, determine the rate of adoption changes from 2015, and the saturation level of drought-tolerant landscapes in 2016.
Evaluating the Effects of Turf-Replacement Programs in Los Angeles County	0.36	2017	LADWP (UCLA / UU)	Utilized google streetview and rebate data	The UCLA-University of Utah study (Pincetl et al.) examined front-yard turf replacement rebate program participation between February 2014 and April 2016 in Los Angeles County. Data included only single-family residential properties (96% of the total) and were aggregated at the census block group level, normalized by total number of households to create a participation rate. Only block groups with at least one completed rebate project were included. This rate served as the dependent variable in three different types of regression analysis (OLS, fixed effects, and geographically-weighted regression) incorporating five independent variables: median income, median household income, median parcel area, rebate rate, and owner occupation rate. The researchers also looked for clustering using a LISA procedure. Finally, they cataloged and evaluated a random sample of 1,000 properties from the dataset using Google Street View. 400 of those included pre- and post-conversion imagery. They also noted whether the next-door or across-the-street neighbors appeared to have replaced a lawn as well (36% had).

WMWD's Turf Replacement Program Evaluation	2.5	2017	WMWD	GIS inspection via Google Earth	The WMWD study (Matlock) analyzed 193 turf replacement rebate recipients, representing 85% of program participation from 2009-2015. 52 of those participants were randomly selected and each was matched with two non-participating neighbor controls. The neighbor controls were selected to match the 52 rebate recipients in lot size, HOA watering requirements, outdoor water requirements (e.g., pools), climate, and evapotranspiration factors; four were excluded due to missing or inaccurate water usage data. Finally, monthly water usage data for July 2007–December 2016 were compiled for the 193 rebate recipients and remaining 100 neighbor controls, along with project completion date, square footage replaced (both raw total and as a percentage of total irrigable area), and rebate amount. A “difference in differences” test was conducted to compare the two groups as follows: first, a paired, one-tailed t-test compared each rebate recipient’s one-year “before” period to their one-year “after” period; next, a paired, two-tailed t-test compared before-and-after water use for the neighbor controls, using the same time periods as their respective matched recipients; and finally, a mean t-test was used to evaluate the difference between the before-and-after water use differences in the two groups. In addition, the relationships between water usage and the other variables were examined with a correlation analysis and an ANOVA test. The researches also attempted to quantify a multiplier effect wherein nearby neighbors convert their turf to drought-tolerant landscapes without applying for a rebate. This portion of the study had two parts. First, they randomly selected 54 of the rebate recipients and conducted a Google Earth visual assessment of 10 surrounding neighbors to quantify nearby turf replacement, and

					second, they used Google Earth's time feature to observe how many of those had converted their turf after their rebate-recipient neighbor had converted theirs.
Methods Report on Detecting Turf Removers	0.069	2010-2016	MWD / USC (Andrew Marx)	GIS/NAIP image analysis	The USC study (Marx 2018) analyzed 58,009 participants in Metropolitan Water District's turf rebate program. Those addresses were geocoded, joined to parcel data, and analyzed for spatial clustering. Six study areas of approximately 600 parcels each were selected in areas where high clustering of rebate participation had been observed. Within each study area, NAIP satellite imagery was analyzed to identify lawns that had been converted to drought-tolerant landscaping within three time periods (2010-2012, 2012-2014 and 2014-2016). The same imagery analysis was conducted in three additional study areas that were similar to the first six areas, except that they had no rebate participation. Results of analysis of those three areas were used to measure a baseline conversion rate to subtract from the conversion rate observed in the six study areas where rebate clustering was high.

Appendix 2 -- Water utility online water efficiency tools

East Bay Municipal Utilities District

- Conservation and Rebates: https://www.ebmud.com/water/conservation-and-rebates/watersmart-tips/
- Homeowners Association: https://www.ebmud.com/water/conservation-and-rebates/residential/homeowners-associations-hoas/
- Leaks and High Bills: https://www.ebmud.com/customers/billing-questions/leaks-and-high-bills/
- Water Budgets: https://www.ebmud.com/water/conservation-and-rebates/residential/save-pro/
- Watersmart Gardner: https://www.ebmud.com/water/conservation-and-rebates/watersmart-gardener/
- Watersmart Tips : https://www.ebmud.com/water/conservation-and-rebates/residential/watersmart-calculator/

Eastern Municipal Water District

- Residential Rebates: https://www.ebmud.com/water/conservation-and-rebates/residential/watersmart-calculator/
- Inland Empire Landscape Guidebook: https://www.emwd.org/use-water-wisely/water-wise-landscape-resources
- Water Wise Landscape Design Concept Plans: https://www.emwd.org/use-water-wisely/water-wise-landscape-design-concept-plans
- Water Wise Landscape Resources: https://www.emwd.org/use-water-wisely/water-wise-landscape-resources
- Water Wise Tips: https://www.emwd.org/use-water-wisely/water-wise-landscape-resources/water-wise-tips

El Toro Water District

- Residential Rebates: https://etwd.com/conservation/rebates/
- Water Wise Tips: https://etwd.com/conservation/waterwisetips/
- Landscape Workshops: https://etwd.com/conservation/landscape-workshops/

Inland Empire Utilities Agency

- Irrigation: https://www.ieua.org/use-water-wisely/landscaping/irrigation-controllers/
- Landscape Design Service: http://cbwcd.org/186/Landscape-Design
- Rebates: https://www.ieua.org/use-water-wisely/rebates/
- Smart Landscape Care and Maintenance Site: https://www.ieua.org/use-water-wisely/smartscape-landscape-care-and-maintenance-site-visit/
- Water Saving Garden Planner: https://www.ieua.org/use-water-wisely/landscaping/plants/

- Water Saving Plants: http://www.ie.watersavingplants.com/
- Workshops: https://www.ieua.org/use-water-wisely/workshops/

Irvine Ranch Water District

- Large Landscape & HOA: https://www.irwd.com/save-water-money/large-landscape-hoa
- Rebates: http://rightscapenow.com/rebates/residential-rebates
- Right Scape: https://www.irwd.com/save-water-money/single-family-homes
- Water Schedule: http://rightscapenow.com/landscape-resources/watering-schedules

Las Virgenes Municipal Water District

- Efficient Outdoor Water Use: https://www.lvmwd.com/conservation/efficient-outdoor-water-use
- Tips on Irrigation: https://www.lvmwd.com/conservation/efficient-outdoor-water-use/tips-on-irrigation
- California-Friendly Plant Guide: https://www.lvmwd.com/conservation/efficient-outdoor-water-use/california-friendly-plant-guide
- Contact Professional Landscaper: https://www.lvmwd.com/conservation/efficient-outdoor-water-use/california-friendly-plant-guide
- How to Garden in a Drought: https://www.lvmwd.com/conservation/efficient-outdoor-water-use/how-to-garden-in-a-drought

Metropolitan Water District of Southern California

- Classes- http://www.bewaterwise.com/classes.html
- Gardens- http://www.bewaterwise.com/garden.html
- Grants & Incentives- http://www.bewaterwise.com/grants---incentives.html
- Rebates- http://www.bewaterwise.com/rebates.html
- Toolkit- http://www.bewaterwise.com/toolkit.html

Monte Vista Water District

- Classes and Workshops- https://www.mvwd.org/workshop.cfm
- Rebates- https://www.mvwd.org/ps.watchthewater.cfm?ID=118
- Resources for Teachers- https://www.mvwd.org/ps.watchthewater.cfm?ID=134
- Stuff for Kids- https://www.mvwd.org/ps.watchthewater.cfm?ID=134
- Water Wise Gardening Classes- https://www.mvwd.org/ps.watchthewater.cfm?ID=125
- Water Wise Landscaping- https://www.mvwd.org/ps.watchthewater.cfm?ID=180

Moulton Niguel Water District

- Rebates & Programs https://www.mnwd.com/rebates/
- Water Saving Tips https://www.mnwd.com/watersavingtips/
- Landscape Transformation Center https://www.mnwd.com/landscape-transformation-center/
- Education Programs https://www.mnwd.com/education/
- Workshops https://www.mnwd.com/workshops/

- Water Saving Tools https://www.mnwd.com/watersavingtools/

Sacramento Department of Utilities

· Irrigation Scheduler: http://beyondthedrought.com/
· Residential Rebates: http://www.cityofsacramento.org/Utilities/Conservation/Residents/Residential-Rebates
· Residential Water Wise Services: http://www.cityofsacramento.org/Utilities/Conservation/Residents/Residential-Water-Wise-Services
· Resources: http://www.cityofsacramento.org/Utilities/Conservation/Water-Education/Resources
· Water Wise Tools: http://www.cityofsacramento.org/Utilities/Conservation/Water-Wise-Tools

San Bernardino Valley Municipal Water District

· Defend the Drop- http://defendthedrop.com/
· San Bernardino Valley Water Conservation Demonstration Garden- https://garden.csusb.edu/
· Water Saving Garden Friendly - http://www.ie.watersavingplants.com/

Santa Ana Watershed Project Authority

· Resources- http://www.sawpa.org/resources/
· Patti Bonawitz Demonstration Garden- http://www.sawpa.org/patti-bonawitz-demonstration-garden/

Santa Margarita Water District

· Classes and Events: http://www.smwd.com/170/Classes-Events
· HOA Landscape: http://www.smwd.com/174/HOA-Landscape
· Leak Detection: http://www.smwd.com/168/Leak-Detection
· Plants: http://www.smwd.com/175/Plants
· Rebate Programs: http://www.smwd.com/179/Rebate-Programs
· SMWD SustainaBlue Landscapes: http://www.smwd.com/180/SMWD-SustainaBlue-Landscapes
· Water Data for SMWD: http://www.smwd.com/173/Weather-Data-for-SMWD
· Watering Guide with Water Calculator: http://www.smwd.com/183/Watering-Guide
· WaterSmart Portal: http://www.smwd.com/192/WaterSmart-Portal

Santa Rosa Department of Utilities

· Do-It-Yourself: https://srcity.org/827/Do-It-Yourself
· Find and Fix Leaks: https://srcity.org/2252/Find-Fix-Leaks
· Free landscape Design Templates: http://www.savingwaterpartnership.org/concept-plans-and-design-templates/
· Rebates & Free Services: https://srcity.org/834/Rebates-Free-Services
· Watering Recommendations: https://srcity.org/821/Watering-Recommendations

Western Municipal Water District

- Programs to help you: https://www.wmwd.com/265/Programs-to-Help-You
- Rebates: https://www.wmwd.com/411/Rebates
- Water-wise Landscaping: https://www.wmwd.com/283/Water-wise-Landscaping

Appendix 3 -- Cooperative Procurement Case Studies

Case Studies
Water agencies have cooperatively procured aerial imagery in a few different ways. The following cases illustrate four different mechanisms for making the purchase:

Los Angeles Region Imagery Acquisition Consortium (LARIAC): LARIAC is a regional consortium spearheaded by the County of Los Angeles Internal Services Department. It was started in 2006 as a way to aggregate the high-resolution aerial imagery needs of public agencies in the Los Angeles County region, including water agencies, and provide a forum to share knowledge and technical expertise. Approximately every three years, LARIAC solicits signed statements from Los Angeles County cities and other public agencies to determine the exact specifications for the scope of work before putting the contract out for bid. Following the negotiation and execution of the contract, LARIAC/Los Angeles County takes on the upfront financial cost and is then reimbursed by participants for the use of imagery and analysis. Should additional municipalities or public agencies join, any surplus from the additional fees collected by LARIAC can be put toward partial refunds to participating agencies or used to procure additional imagery functionality. Purchasing together produces cost savings for individual agencies. For instance, the City of Los Angeles has reduced their imagery procurement costs from $1M to $750,000.

Sacramento Area Council of Governments (SACOG) and the Regional Water Authority (RWA): As an organization, SACOG represents the interests of the 22 cities and 6 counties in the Sacramento region. Over the last 12 years, SACOG has run 4 separate solicitations for aerial imagery services on behalf of its members. Earlier this year, the RWA was able to join the pending contract between SACOG and its aerial imagery vendor. In doing so, RWA was able to secure heavily discounted access to imagery that SACOG members were also purchasing. They were also able to negotiate coverage of additional geographic areas not included in the original contract at a rate lower than what they would have paid on their own.

Santa Ana Watershed Project Authority (SAWPA): Beginning in 2007, SAWPA has procured aerial imagery on behalf of the Santa Ana watershed, allowing local jurisdictions to utilize the imagery and analysis for water-related research and planning. In order to determine the watershed's imagery needs, SAWPA collects information from jurisdictions to understand the imagery requirements with regard to resolution and use before putting together a series of specifications for vendors. SAWPA is able to tell each participating agency the precise costs for a variety of imagery options, allowing them to make an informed decision based on their available budgets. SAWPA is then able to charge a small administrative fee of 2.5% to participating agencies, far lower than the savings enjoyed through the cooperative purchasing process alone.

State of Minnesota: The State of Minnesota maintains a master contract with 9 separate aerial imagery providers to streamline the process of imagery procurement for government agencies in Minnesota and beyond. The master contract allows interested governments to avoid the standard RFP process; instead, since vendors have been pre-qualified, governments that wish to procure imagery circulate a Statement of Work to the pre-qualified vendors and evaluate their submissions. This saves local jurisdictions the time and money of running a full competitive bidding process. Buyers can procure imagery from a trusted vendor at a rate likely lower than what they would have paid by putting it out to bid themselves.