



SAWPA

SANTA ANA WATERSHED PROJECT AUTHORITY
11615 Sterling Avenue, Riverside, California 92503 • (951) 354-4220

NOTICE OF REGULAR MEETING OF THE PROJECT AGREEMENT 22 COMMITTEE

Interregional Landscape Water Demand Reduction Program

Committee Members:

Joe Grindstaff, General Manager, Inland Empire Utilities Agency
Doug Headrick, General Manager, San Bernardino Valley Municipal Water District
Paul D. Jones, General Manager, Eastern Municipal Water District
Michael Markus, General Manager, Orange County Water District
John Rossi, General Manager, Western Municipal Water District

THURSDAY, DECEMBER 17, 2015 – 8:00 A.M.

AGENDA

1. CALL TO ORDER (Larry McKenney, Convener)

2. PUBLIC COMMENTS

Members of the public may address the Committee on items within the jurisdiction of the Committee; however, no action may be taken on an item not appearing on the agenda unless the action is otherwise authorized by Government Code §54954.2(b).

3. CONSENT CALENDAR

All matters listed on the Consent Calendar are considered routine and non-controversial and will be acted upon by the Committee by one motion as listed below.

- A. APPROVAL OF MEETING MINUTES: SEPTEMBER 24, 2015 5**
Recommendation: Approve as posted.

4. COMMITTEE DISCUSSION ITEMS

- A. OVERVIEW OF TECHNOLOGY BASED INFORMATION SYSTEMS PROJECT BY OMNIEARTH (PA22#2015.12) 11**
• Preliminary Presentation

Recommendation: Receive this update and overview of the water conservation tool funded by the drought grant program.

- B. POLICY STATEMENT ON MILESTONES FOR THE CONSERVATION BASED WATER RATES PROJECT (PA22#2015.13) 21**
• Preliminary Presentation
• Draft Policy Statement No. 4

Recommendation: Adopt Policy Statement No. 4.

- C. [RETAIL WATER AGENCY REIMBURSEMENT FOR THE CONSERVATION BASED WATER RATES PROJECT \(PA22#2015.14\)](#) 31
- Preliminary Presentation
 - Letters of Interest – City of Garden Grove, Cucamonga Valley Water District
 - Template Contract
- Recommendation:** Create a grant funding waiting list, recognize first, the City of Garden Grove, and second, Cucamonga Valley Water District, as interested agencies on the waiting list, and provide for potential funding to those agencies in that order by executing the template contract.
- D. [UPDATE ON DEMAND MODELING INDEPENDENT ANALYSIS BY DR. KENNETH BAERENKLAU \(PA22#2015.15\)](#) 49
- Preliminary Presentation
 - Final Analysis of Demand Modeling
- Recommendation:** Receive and file the final analysis by Dr. Kenneth Baerenklau that was provided to interested retail water agencies in the Santa Ana River Watershed.
- E. [UPDATE ON AERIAL MAPPING PROJECT CONSULTANT \(PA22#2015.16\)](#) 67
- Change Order No. 1 to Task Order RESO504-301-01
- Recommendation:** Receive and file this update on the change order to Resource Strategies Inc. (RSI) Task Order RESO504-301-01.
- F. [UPDATE ON AERIAL MAPPING PROJECT DATA WORKSHOP \(PA22#2015.17\)](#) 73
- Preliminary Presentation
- Recommendation:** Receive and file this update on the November 23, 2015 workshop held by SAWPA with assistance from East Valley Water District and Eastern Municipal Water District in order to provide technical assistance to retail water agencies in the watershed.

5. FUTURE AGENDA ITEMS

6. ADJOURNMENT

PLEASE NOTE:

Americans with Disabilities Act: Meeting rooms are wheelchair accessible. If you require any special disability related accommodations to participate in this meeting, please contact (951) 354-4220 or kberry@sawpa.org. Notification at least 48 hours prior to the meeting will enable staff to make reasonable arrangements to ensure accessibility for this meeting. Requests should specify the nature of the disability and the type of accommodation requested.

Materials related to an item on this agenda submitted to the Commission after distribution of the agenda packet are available for public inspection during normal business hours at the SAWPA office, 11615 Sterling Avenue, Riverside, and available at www.sawpa.org, subject to staff's ability to post documents prior to the meeting.

Declaration of Posting

I, Kelly Berry, Clerk of the Board of the Santa Ana Watershed Project Authority declare that on Friday, December 11, 2015, a copy of this agenda has been uploaded to the SAWPA website at www.sawpa.org and posted in SAWPA's office at 11615 Sterling Avenue, Riverside, California.

/s/

Kelly Berry, CMC

<u>2016 – Project Agreement 22 Committee Regular Meetings</u>	
(NOTE: Unless otherwise noted, all Committee meetings begin at 8:00 a.m. and are held at SAWPA.)	
January 28, 2016	July 28, 2016
February 25, 2016	August 25, 2016
March 24, 2016	September 22, 2016
April 28, 2016	October 27, 2016
May 26, 2016	November 17, 2016*
June 23, 2016	December 22, 2016
Meeting date adjusted due to conflicting holiday.	

Page Intentionally Blank



PROJECT AGREEMENT 22 COMMITTEE
Interregional Landscape Water Demand Reduction Program
REGULAR MEETING MINUTES
September 24, 2015

COMMITTEE MEMBERS PRESENT

Doug Headrick, General Manager, San Bernardino Valley Municipal Water District
Joe Grindstaff, General Manager, Inland Empire Utilities Agency
Paul D. Jones, General Manager, Eastern Municipal Water District
John Rossi, General Manager, Western Municipal Water District
Larry McKenney, Executive Counsel, Santa Ana Watershed Project Authority – Convener [Non-Voting]

COMMITTEE MEMBERS ABSENT

Michael Markus, General Manager, Orange County Water District

STAFF PRESENT

Mark Norton, Rick Whetsel, Ian Achimore, Dean Unger, Marie Jauregui, Zyanya Blancas,
Kelly Berry

1. CALL TO ORDER (Larry McKenney, Convener)

The meeting was called to order at 8:00 a.m. by Larry McKenney at the Santa Ana Watershed Project Authority, 11615 Sterling Avenue, Riverside, California.

2. PUBLIC COMMENTS

There were no public comments.

3. CONSENT CALENDAR

A. APPROVAL OF MEETING MINUTES: August 27, 2015

MOVED, approve the Consent Calendar.

Result:	Adopted (Unanimously; 4-0)
Motion/Second:	Rossi/Jones
Ayes	Grindstaff, Headrick, Jones, Rossi
Nays:	None
Abstentions:	None
Absent:	Markus

4. COMMITTEE DISCUSSION ITEMS

A. UPDATE ON THE EMERGENCY DROUGHT GRANT PROGRAM BUDGET (PA22#2015.6)

Larry McKenney handed out an updated informational packet for Agenda Item No. 4.A., PA22#2015.6 memo with some corrections to the dollar amounts shown in the tables.

Ian Achimore provided an overview of the Emergency Drought Grant Program (Program) budget. The Emergency Drought Grant Program (Program) was split into two projects for invoicing purposes to the State.

Project/Phase 1: Conservation Based Reporting Tools and Rate Structure Implementation

- \$864,620 has been spent and reported in grant reimbursable dollars, which is 11% of the total budget of \$7,587,610. There is no local match for Project 1; since there is no matching requirement, DWR grant funds can be accessed right away.
- Includes implementation administration of the Program, conservation based water rates structures, web based consumption reporting (Omniearth/Dropcountr), and aerial mapping.

Project/Phase 2: High Visibility Turf Removal & Retrofit

- Total budget of \$15,917,500; \$2,556,436 has been spent in local match by the project proponents, which is 37% of the required local match of \$7,051,533. For Project 2, there is a local match; the DWR grant requires spending the total local match before gaining access to DWR grant funds.
- 1,326,105 SF of turf has been removed, which is 27% of the goal of 4,950,000 SF as of today, the amount spent in reimbursable dollars is at a low 7%.
- The member agencies and RCWD have not reached their local match threshold for the turf project and the vendors for the Aerial Mapping and Web Based Water Consumption Reporting have not implemented their more costly stages.

Joe Grindstaff asked when SAWPA will be in a position to access reimbursement funds from the State. Staff clarified that each member agency will be able to satisfy its matching funds requirement and begin drawing on their portion of the grant.

MOVED, to receive and file updated information on the Emergency Drought Grant Program budget.

Result:	Adopted (Unanimously; 4-0)
Motion/Second:	Rossi/Jones
Ayes	Grindstaff, Headrick, Jones, Rossi
Nays:	None
Abstentions:	None
Absent:	Markus

B. RETAIL WATER AGENCY REIMBURSEMENT FOR THE CONSERVATION BASED WATER RATES PROJECT (PA22#2015.7)

Ian Achimore presented the Retail Water Agency Reimbursement for the Conservation Based Water Rates project, including information that was updated after agenda posting.

SAWPA received letters of interest from the Cities of San Jacinto and Tustin to pursue conservation-based water rates and reimbursement from the program. With the addition of these cities, SAWPA will have reached its goal of obtaining 10 agencies. All agencies must adhere to approved Policy Statement No. 2 in order to be approved for reimbursement. They must transition from a flat tiered rate structure to a customer-specific allocation that follows an increasing block rate structure that includes at least three blocks, with one or more blocks accounting for high or exceeding water use, based on State efficiency standards or more stringent efficiency standards, and the customer class for which the rate applies shall comprise at least 50% of the agency's potable water demand.

Currently, the remaining reimbursement balance for the Conservation Based Water Rates Phase (Phase 1) is \$1.9 M, leaving an approximate allocation of up to \$215,030 for the remaining nine agencies: City of Redlands, City of Riverside, City of Rialto, West Valley Water District, City of Chino, City of Chino Hills, City of Hemet, City of Tustin, City of San Jacinto.

John Rossi voiced concern if an agency drops out of the program before implementing Phase 2. Larry McKenney requested direction from the Committee with respect to the allocation of the unused funds. He noted that other agencies (City of Garden Grove, City of La Habra) have shown interest in participating and are in some ways wait-listed. Staff has advised these agencies that there may be financial opportunities through SARCCUP in the near future. Two options were presented to the Committee regarding the unused funds:

1. Roll funds into Project/Phase 2 and allow the remaining agencies to receive a larger reimbursement.
2. Use the funds to jump start agencies that are wait-listed.

Staff recommended the second option to support agencies getting involved with the process. There are no indications that any of the involved agencies may drop out. They are currently starting their process and will be approving rates next year. It was decided staff should proceed to sign up as many agencies as possible for Phase 1; what happens should one of them drop out would be addressed by the Committee at a later date.

Discussion ensued regarding possible SARCCUP funding. Ian Achimore noted that DWR has not yet awarded the funds to SARCCUP, and if awarded, it may take six months for the contract to be signed. It should be clearly communicated that agencies in the queue would be first in line for SARCCUP funds. Mark Norton reminded the Committee the competitive aerial mapping will be a much lower price than budgeted; any leftover funds could be utilized to bring in additional agencies. It was decided that agencies in Phase 1 will have a deadline to commit to Phase 2 sometime in March of 2016.

Larry McKenney stated that moving forward, staff will tell future interested agencies Phase 1 is fully subscribed, they will be put on a waiting list and we will get back to them in March 2016. Staff will inform them of available funds through SARCCUP.

MOVED, approve contracting with the Cities of Tustin and San Jacinto for this program using the standard contract.

Result:	Adopted (Unanimously; 4-0)
Motion/Second:	Jones/Headrick
Ayes	Grindstaff, Headrick, Jones, Rossi
Nays:	None
Abstentions:	None
Absent:	Markus

C. TECHNOLOGY BASED INFORMATION SYSTEMS PROJECT (PA22#2015-8)

Rick Whetsel presented the Technology Based Information Project. Three outreach workshops focusing on water conservation and customer outreach tools that can help reduce water demand for retail agencies across the Santa Ana River Watershed were held on September 21-23. Twenty-six water retailers attended and received information on the tools being made available through this project. After the outreach workshops, five agencies submitted letters of interest. Doug Headrick voiced his desire to have OmniEarth give a presentation to the Committee at a future meeting.

Agreements for OmniEarth and Dropcountr were recently finalized. There is \$1.5 million budgeted to the OmniEarth/Dropcountr tasks. Outreach items will target water-wasting customers within a retail agency for cost efficiency. It is estimated that targeting the top 15% of water-using customers watershed-wide, assuming a 10% increase in efficiency, could achieve over 7,000 AFY in water savings. A minimal \$5,000 buy-in fee from each retailer was recommended, which could be allocated toward any upfront payments to OmniEarth prior to receiving reimburse from the State.

Larry McKenney expressed his appreciation to Rick Whetsel (SAWPA), Mark Norton (SAWPA) and Jonathan Fentzke (OmniEarth) for working after hours to complete the OmniEarth agreement.

This item was for information purposes only; no action was taken on Agenda Item No. 4.C.

D. AERIAL MAPPING PROJECT (PA22#2015.9)

Larry McKenney stated that there was an adjustment made to the contract for the Aerial Mapping Project. Geophex will provide quality control to the orthophotography and will evaluate and produce the information into a uniform set of data so that SRI can perform detail analytics of aerial orthophotography for the characterization by parcel of irrigated areas. A change to the contractors' work plan was necessary to expedite this work, because for agencies that are trying to move toward conservation based rates, it is important for them to start their cost of service studies now and be on track to adopt rates in conjunction with the fiscal year.

With the assistance of Richard Schulman (Resource Strategies), Geophex and SRI were able to create an expedited solution where Geophex would provide raw data that is a little less accurate to SRI starting this month, focusing on the ten priority agencies signed up to move toward budget conservation based water rates. SRI will be able to produce the parcel-specific evaluation of irrigated area during the month of October and into November. Priority areas do include the recently approved Cities of Tustin and San Jacinto. This information should be accurate enough to be used in cost of service studies. The more accurate data

will still be provided in March for the agencies to use for billing purposes.

This two-step approach will allow agencies to get their information in time to begin their cost of services studies. A change order of \$19,896 to the contract with Geophex was issued and approved to produce their data set to SRI a bit earlier.

This item was for information purposes only; no action was taken on Agenda Item No. 4.D.

E. UPDATE ON LIST OF DEMAND MODELING CONSULTANTS AND BAERENKLAU EVALUATION (PA22#2015.10)

Ian Achimore provided a PowerPoint presentation that updated the Committee on Analysis of Demand Modeling Consultants and Baerenklau Evaluation.

Dr. Kenneth Baerenklau was tasked to analyze rate models and provide information to retail water agencies. SAWPA issued a request for qualifications (RFQ) on June 16, 2015. Four consultants responded to the RFQ: A&N Technical Services, Raftelis Financial Consultants, RDN, and Valor Water Analytics. Dr. Baerenklau determined that the level of information provided was very general which made it difficult to determine if their models accurately model water demand under conservation based water rates. He requested more information from the consultants, which they provided. Currently, Dr. Baerenklau is working on analyzing the recent information. A complete analysis will be available in the next 1-2 weeks. The information will be shared with the retail water agencies and will be posted to the SAWPA website.

Paul Jones expressed his concern over the possibility of making it look as though SAWPA is endorsing the four consultants or certifying that they will do the work. We need to make it clear that these are the consultants that responded, but we are not recommending or endorsing them.

This item was for information purposes only; no action was taken on Agenda Item No. 4.E.

F. DISCUSSION OF RELATIONSHIP OF SARCCUP TO THE PA22 COMMITTEE (PA22#2015.11)

Under the Proposition 84 grant application, the Santa Ana River Conservation and Conjunctive Use Program (SARCCUP) may be awarded \$55 million for its implementation, although to date a grant agreement has not been executed. The project will include water use efficiency activities in the form of financial assistance to additional retail agencies to move toward conservation based rate structures. Staff recommends that the PA22 Committee oversee implementation of those actions, which are closely related to the ongoing work of the Committee under the existing Drought Round work plan. The terms of PA22 Committee agreement are written broadly enough to encompass all water use efficiency activities; an amendment would most likely not be necessary.

Paul Jones stated he feels comfortable with administering the water use efficiency portion of SARCCUP through the PA22 Committee. For the other portions of the SARCCUP, he believed that the SARCCUP applicants and agencies should get together and decide which of those items may or may not be conducive to being administered through the Committee.

Joe Grindstaff agreed, and added that the SARCCUP workgroup is not at a point where he would feel comfortable setting governance over it. He voiced his appreciation to staff, noting SAWPA's work is making a real difference in the region. John Rossi and Doug Headrick

concurred with Grindstaff's comments.

The PA22 Committee agreed to oversee the water use efficiency portion of SARCCUP, but decided not make any decisions with respect to the rest of the SARCCUP project without all SARCCUP agencies present.

Ian Achimore inquired whether the PA22 Committee would administer Orange County Coastkeeper's SmartScape (SARCCUP's turf removal portion) or if they would solely focus on conservation based water rates. The Committee agreed that they would defer making a decision until all members are present. Paul Jones attended a Committee meeting at Orange County Water District where they agreed to continue their participation in the SARCCUP program, but had questions about the turf removal element and Orange County Coastkeeper's participation. OCWD was looking into other turf removal providers for their areas, and they may present that possibility in the future.

5. FUTURE AGENDA ITEMS

Larry McKenney noted the following future agenda items:

- OmniEarth demonstration

6. ADJOURNMENT

There being no further business for review, Convener McKenney adjourned the meeting at 8:56 a.m.

**Approved at a Regular Meeting of the Project Agreement 22 Committee on Thursday,
December 17, 2015.**

Larry B. McKenney, Convener

Attest:

Kelly Berry, CMC
Clerk of the Board

PA22 COMMITTEE MEMORANDUM (PA22#2015.12)

DATE: December 17, 2015

SUBJECT: Overview of Technology Based Information Systems Project by OmniEarth

RECOMMENDATION

That the Committee receive this update and overview of the water conservation tool funded by the drought grant program.

DISCUSSION

The Committee asked that OmniEarth present its project for information. The presentation will describe the tools OmniEarth is developing and providing, the additional services that can be added by participating retail agencies, and the status of the effort. The tool will be demonstrated, and OmniEarth will be available to answer questions.

MATERIALS

Presentation



OmniEarth/Dropcountr Program Update

for **SAWPA** Web-based Water Consumption
Reporting, Analytics, and Customer Engagement Tool

Retailer Grant Included Services



OMNIEARTH DATA & ANALYSIS

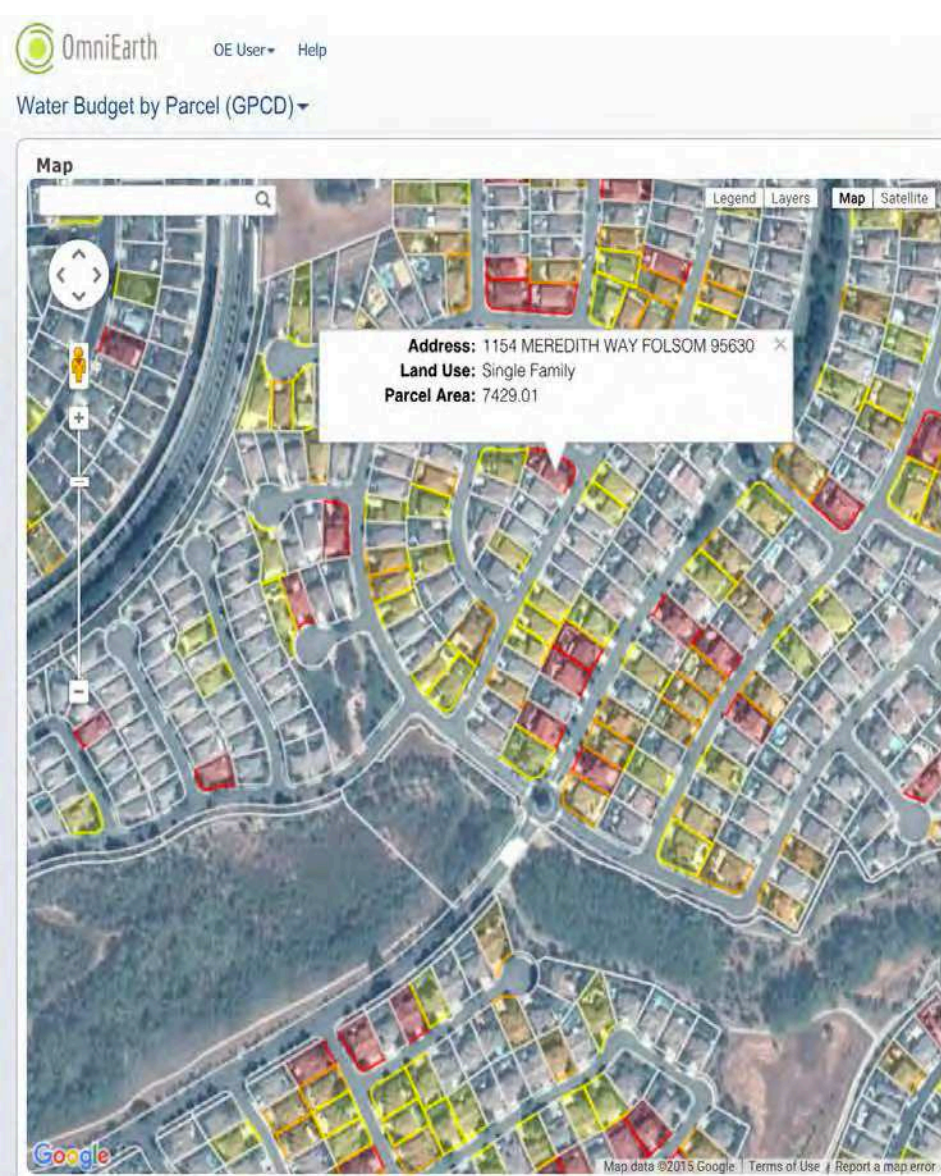
- Indoor & Outdoor Water Budget by Parcel
- Sq. Footage of Irrigated Area by Parcel
- Automatic identification of difference between budget and actual usage
- Inefficient User Identification Layer
- Tracking Against 2013 Baseline
- 5 system dashboards
- Training + Support



DROPCOUNTR OUTREACH

- Dropcountr CLEAR product for agencies to manage outreach
- Dropcountr mobile app for 25% of most inefficient customers
- Traditional Outreach (paper) for top 10% most inefficient customers:
 - Two postcard mailers OR
 - One detailed budget/usage report

OmniEarth Efficiency Analysis



Parcel Information (GPCD)

Address	2014 Budget	2015 Budget	Current Budget
1142 MEREDITH WAY FOLSOM...	110.6	45.2	9.6
1146 MEREDITH WAY FOLSOM...	102.3	41.5	9
617 ASCADA CT FOLSOM 95630	179.3	65.2	19.4
1150 MEREDITH WAY FOLSOM...	91.2	34.9	9
1154 MEREDITH WAY FOLSOM...	83.2	31.8	8.3
1172 CLEMENSEN CIR FOLSO...	223.6	87.6	21.3
1166 CLEMENSEN CIR FOLSO...	75.4	30.3	6.8

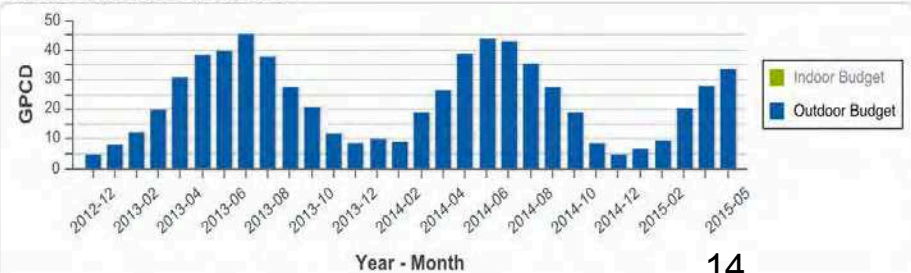
Page 57 of 108

Displaying 2801 - 2850 of 5381

Water Budget (GPCD) by Parcel

Year - Month ▾	Indoor Budget	Outdoor Budget	Total Budget
2015-05	26.5	33.4	59.9
2015-04	26.5	27.6	54.1
2015-03	26.5	20.5	47
2015-02	26.5	9.6	36.1
2015-01	26.5	6.5	33
2014-12	26.5	4.9	31.4
2014-11	26.5	8.3	34.8
2014-10	26.5	19	45.4
2014-09	26.5	22.2	52.2

Water Budget (GPCD) by Parcel

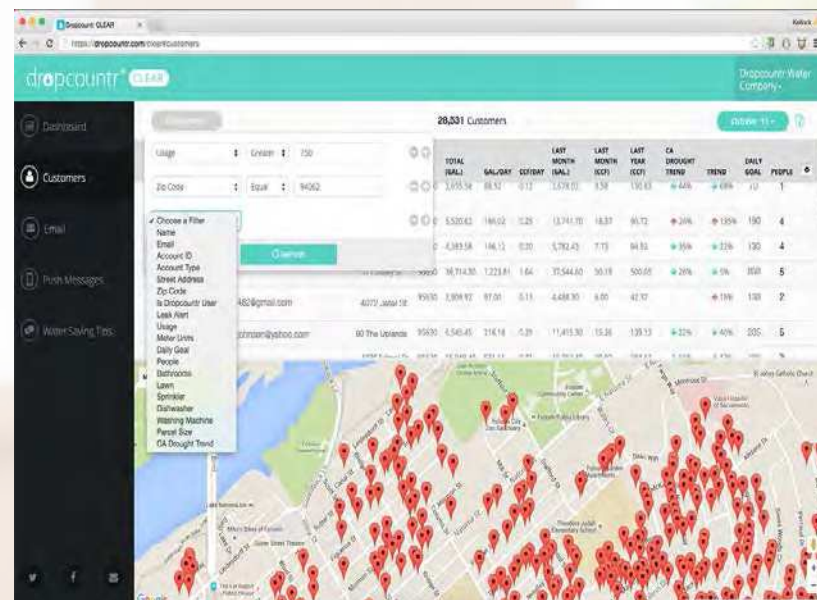
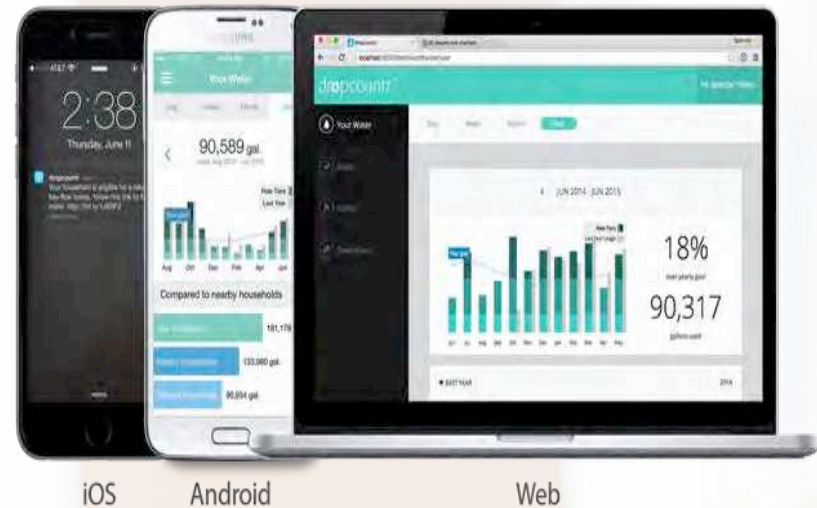


Consumer Engagement

- Mobile App Interface
- Monthly Water Reports
- Rebate Tracking

Dropcountr CLEAR

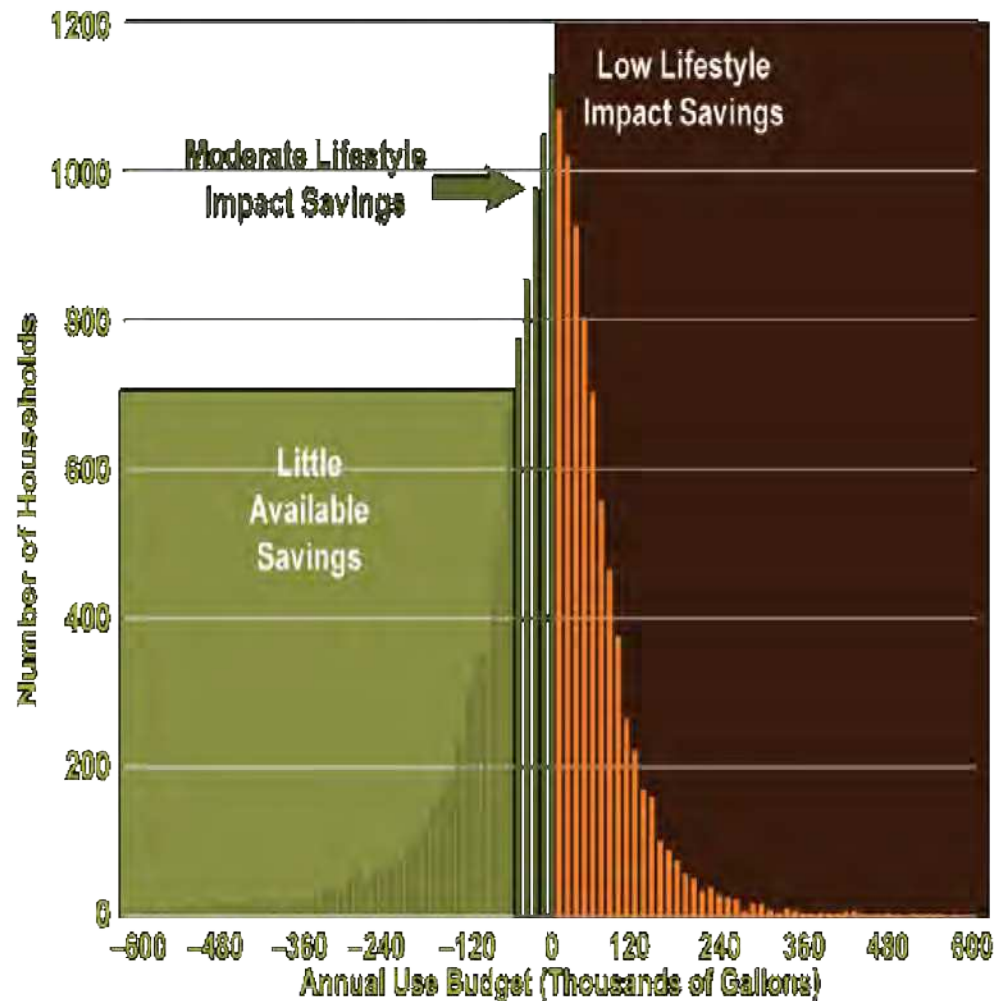
- Reporting and Analytics
- Instant Communication
- Filter and Sort



dropcountr®
your water, right now

Benefits of Efficiency Analysis:

- Identifies users with potential to save water with no ceiling on conservation potential
- Provides both large-scale (service area-wide) and granular (parcel-by-parcel) insights
- Increases effectiveness of conservation outreach
- Clearly identifies trends and tracks progress against state standards
- Provides supporting data for rate studies for agencies considering budget based rates
- Provides access to data and management tools through simple, intuitive, cloud based and mobile products that are not resource intensive for agency users or their customers



Enrollment Status:

AGENCIES OPTING IN

City of Riverside

City of Rialto

City of Colton

West Valley Water District

Garden Grove

Eastern Municipal Water District

Western Municipal Water District

City of Loma Linda

City of Tustin

City of Fullerton

Monte Vista Water District

AGENCIES INTERESTED

City of Redlands

Irvine Ranch Water District

Beaumont Cherry Valley

City of Upland

Additional Requests

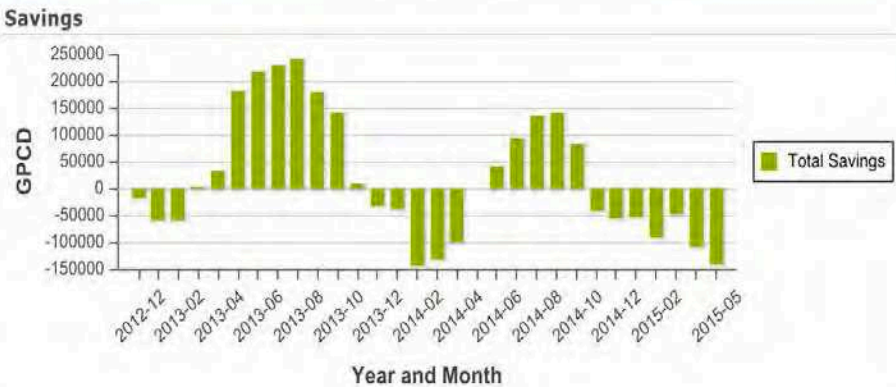
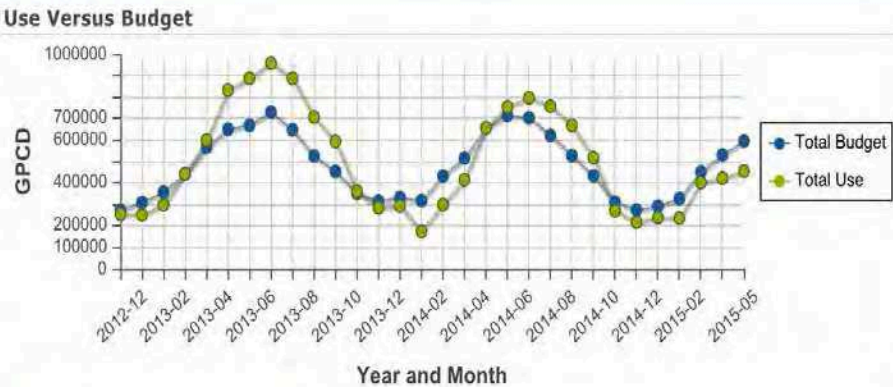
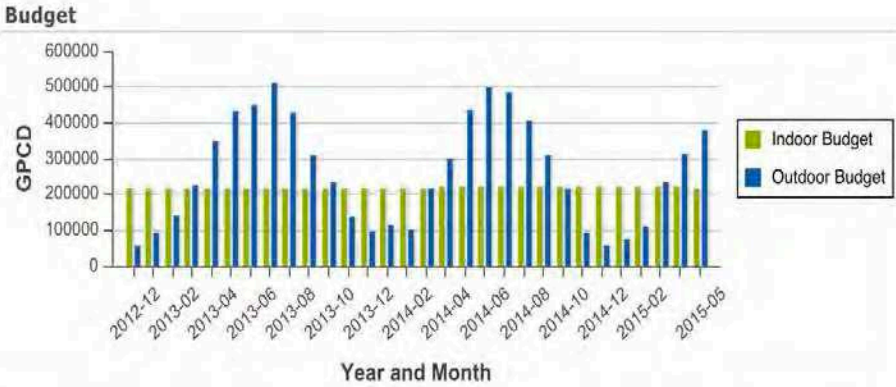
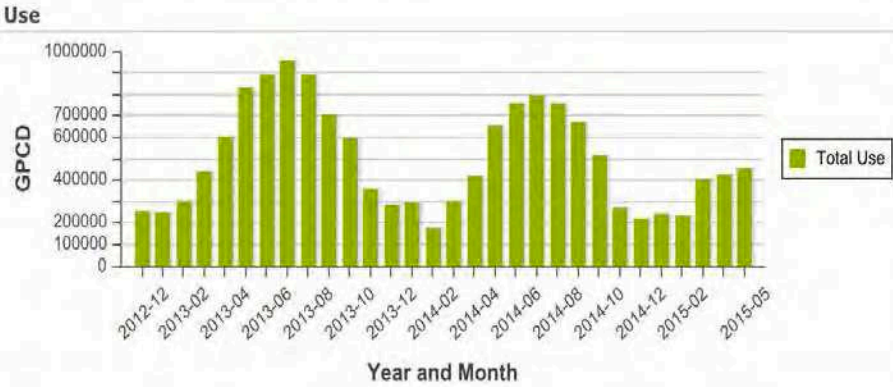
- Custom Budgets: Inclusion of existing agency budgets and automated comparison to OmniEarth budgets
- Custom AMI data processing: Custom querying of indoor/outdoor usage by hour/day/week
- Commercial parcel water budget analysis
- Reporting: Ability to export all water budgets quarterly or annually to support rate studies
- Imagery Update: Integration of SAWPA imagery into OmniEarth platform and updating budgets for consistency



Demonstration

*Water Resource Management Demonstration-
what agencies see today...*

Summary: Agency Water Use (GPCD) ▾



Water Use (GPCD) Summary

Year and Month	Indoor Budget	Outdoor Budget	Total Budget	Total Use	Total Savings
2012-12	218343.5	55505.8	273840.6	255182.2	-18991.5
2013-01	218343.5	91233.6	309562.9	252271.9	-57583.4
2013-02	218343.5	139083.4	357405.3	298878.9	-59076.8
2013-03	218343.5	223299.1	441607.9	444335.5	2579.2
2013-04	218336.8	347674.1	565956.8	599868.6	33506.1
2013-05	218336.8	432519.3	650788.9	833591.1	182572.4
2013-06	218336.8	451019.4	669286.1	888331.9	218999.3
2013-07	218375.7	511757.1	730053.2	958630.8	228517.7

PA22 COMMITTEE MEMORANDUM (PA22#2015.13)

DATE: December 17, 2015

SUBJECT: Policy Statement on Milestones for the Conservation Based Water Rates Project

RECOMMENDATION

That the Committee adopt Policy Statement No. 4.

DISCUSSION

The proposed policy establishes three milestones for agencies that have been approved as of November 1, 2015 to receive grant funds by the PA 22 Committee. The purpose of the milestones is to identify expected progress and to allow the PA22 Committee the opportunity to reallocate grant funds to other interested agencies if appropriate.

Previously, the Committee approved Policy Statement No.2, which sets forth how funding support for the development of budget based rates will be allocated to participating agencies. In September, the Committee provided general direction to seek to gain the broadest possible participation among interested agencies.

MATERIALS

Presentation

Draft Policy Statement No. 4

POLICY STATEMENT ON MILESTONES FOR THE CONSERVATION BASED WATER RATES PROJECT



PA 22 Committee
December 17, 2015

PA 22 Policy Statements



- *Policy Statement No. 1: Turf related (not rates)*



- **Policy Statement No. 2:** Rate structures, amount of funding, two allocations established

- *Policy Statement NO. 3: Turf related (not rates)*



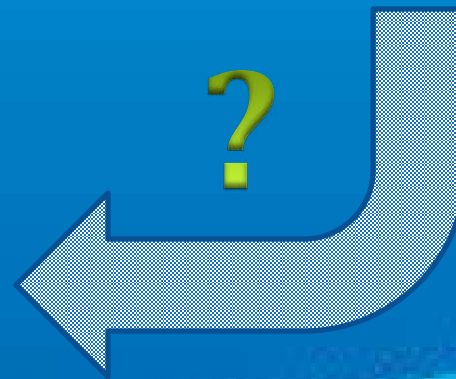
- **Policy Statement No. 4:** New recommended language on milestones

Agencies in Funding Queue

1. East Valley WD
2. City of Redlands
3. City of Chino
4. City of Chino Hills
5. City of Hemet
6. City of Riverside
7. City of Rialto
8. West Valley WD
9. City of Tustin
10. City of San Jacinto

Two agencies on waiting list:

1. Garden Grove
2. Cucamonga Valley WD



Clarification Needed to Assist Other Interested Agencies

- Need to ensure agencies make timely progress
 - Do not hold up funds for other interested agencies
- Draft policy statement coordinated with SAWPA member agencies
- Draft policy statement language provided to affected retail water agencies to ensure they make necessary preparations



Further Info on Policy Statement

- If an agency fails to meet the deadlines, they will not be eligible to receive the amount of funding remaining in their funding contract with SAWPA, and the SAWPA contract will be terminated.
- The PA22 Committee may waive these deadlines for agencies under special circumstances.

Recommendation

Adopt Policy Statement Number 4.



**Policy Statement for PA 22 No. 4:
Implementation of Conservation Based Rate Structures Project**

For the Implementation of Conservation Based Rate Structures Project (the Project), a component of the Emergency Drought Grant Program, the PA22 Committee intends this policy to support Policy Statement No. 2 adopted on March 26, 2015 that established funding allocations per each retail water agency for 10 retail water agencies. This policy statement shall ensure that each retail water agency that has been approved by the PA22 Committee for funding has made timely progress participating in the Project and provides for reallocation of unused funds to other agencies interested in conservation based rate structure implementation.

In order to ensure timely progress for those agencies that have been approved for funding as of November 1, 2015, the following deadlines are established:

- By January 31, 2016, execute the Proposition 84 Santa Ana Watershed Project Authority Sub-Agreement.
- By June 30, 2016, start work on a conservation based rate study and provide SAWPA a copy of the detailed scope of work and deadlines.
- By December 31, 2016, bring a final draft conservation based rate study ready before the agency elected board and provide SAWPA a copy.

If an agency fails to meet the deadlines, they will not be eligible to receive the amount of funding remaining in their funding contract with SAWPA without a PA22 Committee waiver, and the SAWPA contract may be terminated. The PA22 Committee may waive these deadlines for agencies under special circumstances.

Unused funds that become available by the operation of this policy may be allocated by the PA22 Committee to agencies that submitted letters of interest in the project but were not previously approved for participation due the unavailability of funding.

Page Intentionally Blank

PA22 COMMITTEE MEMORANDUM (PA22#2015.14)

DATE: December 17, 2015

SUBJECT: Retail Water Agency Reimbursement for the Conservation Based Water Rates Project

RECOMMENDATION

That the Committee create a grant funding waiting list, recognize first, the City of Garden Grove, and second, Cucamonga Valley Water District, as interested agencies on the waiting list, and provide for potential funding to those agencies in that order by executing the template contract.

DISCUSSION

Additional funds for assistance to agencies interested in moving to water budget based rates may become available through cost savings by other participants, drop outs among other participants, or from subsequent grant funding. The recommended action here will allow SAWPA to apply such funds to additional agencies in an orderly way in the order in which the agencies formally express interest.

MATERIALS

Presentation

Letters of Interest

Template Contract

Retail Water Agency Reimbursement for Conservation Based Water Rates



PA 22 Committee
December 17, 2015

Project Goal



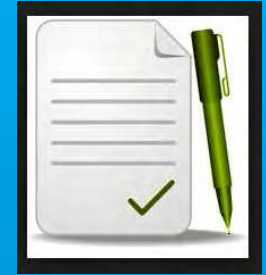
- **5-10 agencies** adopt conservation based water rates
- **Policy Statement No. 2:** Transition from a flat or tiered rate structure to a customer-specific allocation that follows an increasing block rate structure that includes at least three blocks, with one or more blocks accounting for high or exceeding water use, based on State efficiency standards or more stringent efficiency standards.
 - The customer class for which the rate applies shall comprise at least 50% of the agency's potable water demand.

Project Budget



- **\$2,322,000** Total
 - **\$25,000** Dr. Ken Baerenklau
 - **\$24,000** Video
 - **\$2,273,000** Remaining
- Full reimbursement for East Valley Water District (EVWD) for **\$337,727**
- **\$1.9 M** remaining (up to \$215,030 for remaining 9 agencies)

Letters of Interest

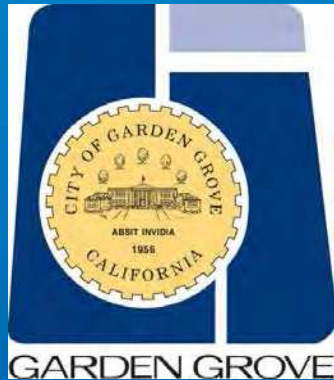


- From 10 agencies - date of PA 22 Approval in ()
 1. East Valley WD – (July 23)
 2. City of Redlands – (July 23)
 3. City of Chino – (Aug 27)
 4. City of Chino Hills – (Aug 27)
 5. City of Hemet – (Aug 27)
 6. City of Riverside – (Aug 27)
 7. City of Rialto – (Aug 27)
 8. West Valley WD – (Aug 27)
 9. City of Tustin – (Sept 24)
 10. City of San Jacinto – (Sept 24)

Will meet project goal when 5-10 adopt conservation based water rates

Clarification Needed for Other Interested Agencies

- Future funding could be available due to drop outs
- \$215,030 needed in place for a new agency contract
- Garden Grove letter submitted – Sept 16, 2015
- Cucamonga Valley WD letter submitted – Nov 17, 2015



Recommendation

That the Committee create a grant funding waiting list, recognize first, the City of Garden Grove, and second, Cucamonga Valley Water District, as interested agencies on the waiting list, and provide for potential funding to those agencies in that order by executing the template contract.



CITY OF GARDEN GROVE PUBLIC WORKS

September 16, 2015

Project Agreement 22 Committee
11615 Sterling Avenue
Riverside, CA 92503

Bao Nguyen
Mayor

Steven R. Jones
Mayor Pro Tem

Christopher V. Phan
Council Member

Phat Bui
Council Member

Kris Beard
Council Member

Subject: Memorandum of Understanding (MOU) with the City of Garden Grove for the investigation and development of conservation based rate and cost reimbursement.

Dear Project Agreement 22 Committee,

The City of Garden Grove (City) is formally requesting SAWPA execute a MOU with the City for cost reimbursement for the investigation and development of a conservation based rate structure. City representatives were in attendance at the Water Rate Workshop held at the Orange County Water District on May 14, 2015, and contacted SAWPA following a presentation by SAWPA staff on September 15, 2015. As the City's Water Services Manager, I approve consideration of a conservation based water rate structure after discussion on the information presented by SAWPA. City staff was directed to study the impacts of a conservation based water rate structure and I am now requesting financial assistance from SAWPA for the study and possible implementation of a conservation based water rate structure.

With continued drought and a state mandated 20% water use reduction, the City is interested in furthering efforts that encourage water efficiency. However, an increase in efficiency will result in a revenue decrease, because of this, the City wishes to implement a rate structure that will achieve revenue stability and efficient water use.

Thank you for your consideration of this matter.

Sincerely,



William E. Murray, P.E.
Water Services Manager



Cucamonga Valley
Water District

10440 Ashford Street, Rancho Cucamonga, CA 91730-2799
P.O. Box 638, Rancho Cucamonga, CA 91729-0638
(909) 987-2591 Fax (909) 476-8032

Martin E. Zvirbulis
Secretary / General Manager/CEO

November 17, 2015

Project Agreement 22 Committee
11615 Sterling Avenue
Riverside, CA 92503

NOV 23 2015

RE: CVWD Letter of Interest

Dear PA 22 Committee Members,

The Cucamonga Valley Water District (CVWD) would like to formally express our interest in pursuing the development of budget based water rates. CVWD staff attended the Emergency Drought Grant Program Workshop on May 27, 2015 and expressed our interest to participate.

CVWD was assigned a state mandated water reduction requirement of 32%. We have taken a number of measures to reach our goal: (1) adopted Stage 6: Severe Water Emergency requiring 35% conservation, (2) adopted tiered drought rates, (3) implemented an aggressive outreach campaign, and (4) dedicated additional resources to our Water Watch leak detection program. In addition, the CVWD Board recently approved a contract to install a new Fixed Network Automated Meter Infrastructure System. CVWD believes we have most of the tools in place to promote water use efficiency; however, we do not currently have customized water budgets for our diverse customer base.

CVWD is requesting assistance through the Proposition 84 Integrated Regional Waste Management grant programs. CVWD foresees assistance with aerial mapping, consultant assistance with developing an allocation-based rate structure, assistance with re-programming our current billing system, integration of data with our GIS system, and migration to monthly billing for more up-to-date customer communications.

If you have any questions regarding our request, please contact Carrie Corder, Assistant General Manager/CFO. Thank you for your consideration of our request for assistance.

Sincerely,

Martin E. Zvirbulis
General Manager/CEO

James V. Curatalo, Jr.
President

Luis Cetina
Vice President

Oscar Gonzalez
Director

Randall Reed
Director

Kathleen J. Tiegs
Director

**PROPOSITION 84 INTEGRATED REGIONAL WATER MANAGEMENT PROGRAM 2014
DROUGHT SOLICITATION IMPLEMENTATION GRANT FUNDING CONTRACT
BETWEEN THE**

SANTA ANA WATERSHED PROJECT AUTHORITY

AND

XXXX

This Proposition 84 Integrated Regional Water Management Program ("IRWMP") 2014 Drought Solicitation Implementation Grant Funding Contract ("Contract") is made between Santa Ana Watershed Project Authority, acting through the Project Agreement 22 Committee ("SAWPA"), and XXX (the "Sub-Grantee"). SAWPA and the Sub-Grantee may be individually referred to as "Party", and collectively referred to as the "Parties".

WHEREAS, on July 20, 2015, the California Department of Water Resources ("DWR") and SAWPA entered into a Proposition 84 Integrated Regional Water Management Implementation Grant Agreement ("Grant Agreement") providing that SAWPA would serve as the program manager for the \$12,860,110 in IRWMP grant funds to be disbursed to sub-grantees, consistent with IRWMP requirements, and ensuring that the maximum benefit of such funds are realized in the Santa Ana River and the Upper Santa Margarita Watersheds; and

WHEREAS, the Sub-Grantee is participating in the Implementation of Conservation Based Rate Structures Project ("Project"); and

WHEREAS, at the time of the request, SAWPA adopted a policy statement that defined adoption of conservation-based water rate structures as an agency transitioning from a flat or tiered rate structure to a customer-specific allocation that follows an increasing block rate structure that includes at least three blocks, with one or more blocks accounting for high or exceeding water use, based on State efficiency standards or more stringent efficiency standards. The policy statement specified that the customer class for which the rate applies shall comprise at least 50 percent of the agency's potable water demand.

THEREFORE, based on the foregoing incorporated recitals and in consideration of the mutual covenants and conditions set forth in this Contract, the Parties hereby agree to the following:

SECTION 1. PROJECT DESCRIPTION

The Sub-Grantee participates in investigation and possible implementation of conservation-based water rates structure. The Sub-Grantee will receive IRWMP grant funds in two phases.

Phase 1

This phase will occur after invoicing is completed for work needed to prepare an agency to possibly implement and prepare a governing board to possibly adopt a conservation-based water rate structure ("Phase 1").

Phase 2

This phase will occur after invoicing of the Sub-Grantee's costs for implementation of a conservation-based water rate structure after adoption by the Sub-Grantee's elected governing board ("Phase 2"). If adopted, the Sub-Grantee will maintain its conservation-based water rate structure in accordance with the policy statement for three years after the date of adoption of a conservation-based water rate structure by the Sub-Grantee's elected governing board.

SECTION 2. CONTRACT DOCUMENTS; ORDER OF PRECEDENCE; SUB-GRANTEE
GENERAL COMMITMENT

This Contract incorporates and includes as part of its terms and conditions the Grant Agreement between DWR and SAWPA, Agreement No. 4600010903, attached hereto as **Attachment “A”**.

In the event of any inconsistency between this Contract and the Grant Agreement, except as otherwise specifically provided, the inconsistency shall be resolved by giving precedence to the Grant Agreement.

The Sub-Grantee shall comply with all terms, provisions, conditions, and commitments of this Contract and the Grant Agreement (as the Grant Agreement pertains to the Grantee). Such compliance shall include providing SAWPA with all deliverables, budget detail, reports and all other documents required by the Grant Agreement (as the Grant Agreement pertains to the Grantee).

On behalf of and for the benefit of SAWPA, Sub-Grantee shall comply with all of the obligations and requirements of the Grant Agreement as if the Sub-Grantee were the “Grantee” under the terms of the Grant Agreement (as the Grant Agreement pertains to the Grantee). Such compliance shall be to the extent reasonably necessary and as may be reasonably required by SAWPA in order to enable SAWPA to comply with the Grant Agreement as “Grantee.”

SECTION 3. ESTIMATED ELIGIBLE COSTS; PHASE 1 AND 2 ALLOCATIONS; GRANT
AMOUNT

The estimated total reasonable and eligible cost of Phase 1 and Phase 2 at the time of SAWPA and DWR’s approval of the Grant Agreement is up to \$215,030.00. Funding will be provided on a reimbursement basis of the Sub-Grantee’s expenses. There are no matching funds required although only eligible costs are covered as described in this Section. The amount of eligible costs for reimbursement by IRWMP grant funds for Phase 1 is up to \$107,515.00. The amount of eligible costs for reimbursement for Phase 2 is up to \$107,515.00 although any portion of Phase 1’s allocation not utilized by the Sub-Grantee is also eligible for reimbursement for the second phase. The Sub-Grantee is eligible for Phase 2’s allocation once it provides SAWPA with a resolution of adoption of conservation-based water rates structures by the Sub-Grantee’s elected governing board. In addition, to be eligible to receive IRWMP grant funds for Phase 2, the Sub-Grantee shall provide updated customer water use data for a period of time that SAWPA will specify before conservation-based water rates were adopted in order to establish a water usage baseline by customer class. For the reporting required described in Section 12 and 14 of this Contract, the Sub-Grantee shall report on water savings by customer class in order to provide an effective comparison to the established baseline.

Subject to all of the terms, provisions, and conditions of this Contract, and subject to the availability of the grant funds, SAWPA shall disburse such grant funds in an amount not to exceed the Sub-Grantee’s estimated reasonable costs. However, SAWPA’s actual grant disbursements to the Sub-Grantee under this Contract shall not exceed payments received from DWR.

After Phase 2, if the Sub-Grantee fails or refuses to maintain its conservation-based water rates structure for three (3) years after adoption, SAWPA shall consider such failure or refusal to be a material violation and breach of this Contract. SAWPA’s sole right and remedy for violation of this section is to require any monies received by Sub-Grantee from SAWPA for Phase 2 to be returned with interest calculated at the State of California general obligation bond interest rate in effect at the time of the breach. Sub-Grantee will not be in violation of this section for failure to maintain the conservation-based rates due to the establishment or change of law or ruling on the part of a court which provides that conservation-based water rates are not allowed by law.

If actual costs exceed the estimated reasonable cost, SAWPA shall have no obligation to provide grant funds for such exceedance.

Eligible project costs include the reasonable costs of a water rates consultant, a rate design study, aerial imagery and global information system data, legal review, consultant fees for training board members, temporary customer service during the initial implementation of the work, Proposition 218 notices, bill design and shadowing and initial equipment needed during the implementation of the conservation based water rate structure.

Costs not eligible for reimbursement or eligible to be counted as local match include, but are not limited to:

- Costs incurred before the dates specified below.
- Operation and maintenance costs, including post monitoring costs.
- Purchase of equipment that is not an integral part of the project.
- Establishing a reserve fund.
- Purchase of water supply.
- Replacement of existing funding sources for on-going programs.
- Monitoring and assessment costs for efforts required after project construction is complete.
- Support of existing agency requirements and/or mandates in response to negligent behavior.
- Purchase of land in excess of the minimum required acreage necessary to operate as an integral part of a project.
- Payment of principal or interest of existing indebtedness or any interest payments unless the debt is incurred after execution of this Grant Agreement.
- Overhead not directly related to project costs.
- Travel and per diem costs.

Work performed after January 1, 2010, is eligible to be counted as local match. Work performed on or after January 17, 2014, is eligible for reimbursement.

SECTION 4. DISBURSEMENT

IRWMP grant funds will be disbursed in accordance with the disbursement provisions of the Grant Agreement. Disbursement will follow the invoicing received by SAWPA and transmitted to DWR in accordance with Section 10 and the allocations in accordance with Section 1.

SECTION 5. FISCAL MANAGEMENT SYSTEMS AND ACCOUNTING STANDARDS

The Sub-Grantee agrees that, at a minimum, its fiscal control and accounting procedures shall be sufficient to permit tracking of grant funds to a level of expenditure adequate to establish that such funds have not been used in violation of State law or this Contract. The Sub-Grantee shall maintain separate Project accounts in accordance with generally accepted government accounting standards and the conditions outlined in Exhibit D.

SECTION 6. TERM

This Contract shall not be effective until it has been executed by the Parties. The Term of this Contract shall be the same as the Term of the Grant Agreement, unless sooner terminated pursuant to the provisions of this Contract or the Grant Agreement. Notwithstanding the foregoing, the obligations of this Contract and the Grant Agreement shall continue through the life of the Grant Agreement.

SECTION 7. COVENANT TO MAINTAIN RATE STRUCTURE PROGRAM

Under Phase 2, the Sub-Grantee shall maintain and implement its conservation-based water rates structure for three (3) years following adoption, provided that Sub-Grantee may change its rates during such three (3) year period provided that the changed rates are conservation-based rates. The Parties understand and agree that this covenant shall survive the expiration or termination of this Contract. The Parties agree that reporting on the benefits of the rate structure implementation is required until June 30, 2028.

SECTION 8. COMPLIANCE WITH GRANT REQUIREMENTS, LAWS AND REGULATIONS

Before IRWMP grant funds are provided for the adoption of conservation-based water rates, the Sub-Grantee shall:

- (1) Provide SAWPA with documentation showing the adoption of the Santa Ana Funding Area's IRWM Plan, the One Water One Watershed 2.0 Plan which is available on SAWPA's website.
- (2) Provide documentation from DWR that verifies the supplier's 2010 Urban Water Management Plan (UWMP) addresses the requirements of the California Water Code (CWC).
- (3) Self-certify their compliance with the requirements contained in AB 1420.
- (4) Self-certify their compliance with the water metering requirements contained in CWC Section 525 et. seq.
- (5) If applicable, provide their surface water diversion reports surface water diversion reports in compliance with requirements outlined in Part 5.1 (commencing with Section 5100) of Division 2 of the CWC.

The Sub-Grantee agrees that it shall, at all times, comply with and require its consultants, contractors and subcontractors to comply with all applicable federal and state laws, rules, regulations and guidelines as described in the Grant Agreement, including Exhibit D. To maintain eligibility, the Sub-Grantee, as an urban water supplier, must meet the following ongoing requirements to receive IRWMP grant funds:

Maintain compliance with the Urban Water Management Planning Act and Sustainable Water Use and Demand Reduction, Part 2.55 of Division 6. By June 28, 2016, submit documentation to SAWPA that demonstrates the Sub-Grantee is meeting the 2015 interim gallons per capita per day (GPCD) target. If not meeting the interim target, also include a schedule, financing plan, and budget for achieving the GPCD. Subsequently, if not meeting the 2015 GPCD target, submit annual reports that include a schedule, financing plan, and budget for achieving the GPCD every year by June 28, starting in 2017.

SECTION 9. WITHHOLDING OF GRANT DISBURSEMENTS

SAWPA may withhold all or any portion of the grant funds provided for by this Contract in the event that:

- (1) The Sub-Grantee has violated any term, provision, condition, or commitment of this Contract;
- (2) The Sub-Grantee fails to maintain its conservation-based water rates structure per Section 3 of this Contract; or
- (3) DWR directs SAWPA to withhold any such grant funds.

SECTION 10. INVOICING

- (A) Invoices shall be completed on a State-provided invoice form and shall meet the following format requirements:
- (1) Invoices must contain the date of the invoice, the time period covered by the invoice, and the total amount due.
 - (2) Invoices must be itemized. Refer to **Attachment C**.
 - (3) Sufficient evidence of funding documentation must be provided for all costs included in the invoice.
 - (4) Each invoice shall clearly delineate those costs claimed for reimbursement from the State's grant.
- (B) Invoices also shall include the following information:
- (1) Appropriate receipts and reports for all costs incurred.

SECTION 11. RECORDS AND REPORTS

- (A) Without limitation on the requirement that the work be maintained in accordance with generally accepted government accounting standards, the Sub-Grantee shall comply with the records and reporting requirements imposed by the Grant Agreement, and shall also:
- (1) Establish an official Project file that documents all significant actions relative to the Project;
 - (2) Establish an accounting system that adequately and accurately itemizes and describes final total costs of the work;
 - (3) Establish such accounts and maintain such records as may be necessary for the State, DWR and SAWPA to fulfill federal reporting requirements, including any and all reporting requirements under federal tax statutes or regulations; and
- (B) The Sub-Grantee shall maintain its books, records and other material concerning the work in accordance with generally accepted government accounting standards and as required by the Grant Agreement.
- (C) The Sub-Grantee agrees to expeditiously provide, during implementation phase and for three (3) years after the termination of the Grant Agreement, such reports, data, information and certifications as may be reasonably required by SAWPA or DWR. Such documents and information shall be provided in electronic format.

SECTION 12. QUARTERLY PROGRESS REPORTS

Quarterly Progress Reports shall be completed using the templates provided as shown in **Attachment B**. Quarterly Progress Reports shall provide a brief description of the work performed, activities, milestones achieved, any accomplishments as well as any problems encountered in the performance of the work. The first quarterly report shall cover the period between August 1, 2015, and October 31, 2015, and be submitted

no later than November 15, 2015, to SAWPA, with future reports due in successive 3-month increments. Future quarterly reports shall cover the periods February-April (due May 15), May-July (due August 15), August-October (due November 15), and November-January (due February 15). Quarterly Progress Reports are required until the Project Closeout Documentation is received and submitted to the State.

SECTION 13. PROJECT REVIEW AND EVALUATION; FINAL REPORTS AND AUDIT

- (A) SAWPA may perform a project review or otherwise evaluate the project to determine compliance with the contract documents at any time or if questions about the proper use or management of the funds arise. SAWPA may review or evaluate the contractor or vendor for compliance with the terms and conditions of the contract document. The work review and evaluation may be performed by SAWPA or may be contracted to a responsible third party. Any findings and recommendations of the work review and evaluation shall be addressed by the Sub-Grantee within sixty (60) days of the date such findings and recommendations are provided to the Sub-Grantee and before the next invoice is paid by SAWPA.
- (B) SAWPA may call for an audit of financial information relative to the work at any time during the term of this Contract and for three years after project completion or final payment, whichever is later, where SAWPA determines that an audit is desirable to assure program integrity or where such an audit becomes necessary because of federal or state requirements. Where such an audit is called for, the audit shall be performed by a Certified Public Accountant independent of the Sub-Grantee and at the cost of the Sub-Grantee. The audit shall be in the form required by SAWPA.

SECTION 14. POST-PERFORMANCE REPORTS

Post-Performance Reports shall be submitted to SAWPA within seventy-five (75) calendar days after the first operational year of a project has elapsed. This record keeping and reporting process shall be repeated annually until June 30, 2028.

SECTION 15. TERMINATION; IMMEDIATE REPAYMENT; INTEREST

- (A) SAWPA may terminate this Contract at any time prior to completion of the work for Sub-Grantee's violation of any provision of this Contract upon written notice by SAWPA of the violation and failure of Sub-Grantee to come into compliance within five days of the notification.
- (B) In the event of such termination, the Sub-Grantee agrees, upon demand, to immediately repay to SAWPA an amount equal to the amount of grant funds disbursed to the Sub-Grantee prior to such termination with interest, which shall be equal to the State of California general obligation bond interest rate in effect at the time of SAWPA's notice of termination.
- (C) SAWPA may terminate this Contract should DWR terminate SAWPA as program manager, terminate funding for this Contract, or terminate the Grant Agreement. Upon such DWR-caused termination, SAWPA shall not be liable to Sub-Grantee for any damages, costs or expenses resulting from such termination. If the State so declares, Sub-Grantee shall be required to return any monies previously distributed to Sub-Grantee pursuant to the terms of the Grant Agreement.

SECTION 16. ARBITRATION

Any dispute which may arise under this Contract by and between the SAWPA and the Sub-Grantee, including the Sub-Grantee's subcontractors, shall be submitted to binding arbitration. The arbitrator shall decide each and every dispute in accordance with the laws of the State of California, and all other applicable laws. Unless the Parties stipulate in writing to the contrary, prior to the appointment of the arbitrator, all disputes shall first be submitted to non-binding mediation.

SECTION 17. COSTS AND ATTORNEY FEES

In the event of arbitration or litigation between the parties hereto arising from this Contract, it is agreed that the prevailing party shall be entitled to recover reasonable costs and attorney fees.

SECTION 18. WAIVER

Any waiver of any rights or obligations under this Contract or the Grant Agreement shall be in writing and signed by the Party making such waiver, and approved by SAWPA.

SECTION 19. AMENDMENT

This Contract may be amended at any time by mutual written agreement of the Parties.

SECTION 20. SAWPA REVIEWS; SUB-GRANTEE AS INDEPENDENT CONTRACTOR

- (A) The Parties agree that review or approval of the Project by SAWPA is for administrative and eligibility purposes only and does not relieve the Sub-Grantee of its responsibility to properly develop, adopt, implement, and maintain its conservation-based water rates structure. As between SAWPA and the Sub-Grantee, the Sub-Grantee agrees that it has sole responsibility for proper development, adoption, implementation, and maintenance of its conservation-based water rates structure.
- (B) The Sub-Grantee is an independent contractor exclusively responsible for the work funded by this Grant Funding Contract and that the Sub-Grantee is not acting as SAWPA's agent, nor is SAWPA acting as an agent of the Sub-Grantee.

SECTION 21. INDEMNIFICATION

The Sub-Grantee shall defend, indemnify and hold harmless SAWPA and its directors, commissioners, officers, employees, agents and assigns against any and all losses, claims, damages or liabilities, joint or several, including attorneys fees and expenses incurred in connection therewith, to which SAWPA may become liable in connection with or arising from this Contract. Sub-Grantee shall reimburse SAWPA for any legal or other expenses incurred by it in connection with investigating any claims against it and defending any actions, insofar as such losses, claims, damages, liabilities or actions arise out of or related to this Contract. Sub-Grantee shall indemnify and save SAWPA harmless from and against any claims, losses, damages, attorneys fees and expenses arising from any and all other contracts, contractors, subcontractors, suppliers, laborers, and any other person, entity or corporation furnishing or supplying such services, materials or supplies in connection with Sub-Grantee's work funded, in part, by this Contract. Sub-Grantee shall indemnify and save SAWPA harmless from any and all claims, losses, damages, attorneys fees and expenses that may arise from any breach or default by Sub-Grantee in the performance of its obligations under this Contract, or any act of negligence by the Sub-Grantee or any of its agents, contractors, subcontractors, servants, employees or licensees concerning the subject matter of this Contract. Sub-Grantee shall indemnify and hold SAWPA harmless from any and all claims, losses, damages, attorneys' fees and expenses arising out of the completion of the work or the authorization of payment of work costs or by the Sub-Grantee. No indemnification is required under this Section for claims, losses or damages arising out of the sole and exclusive misconduct or negligence under this Contract by SAWPA.

SECTION 22. PROJECT AND INFORMATION ACCESS

The Sub-Grantee agrees to ensure that SAWPA, DWR, or any authorized representative thereof, shall have reasonable access to supporting conservation rate structure information at all reasonable times during the term of the Grant Agreement, and thereafter for the useful life of this Contract.

IN WITNESS THEREOF, the parties have executed this Contract on the dates set forth below.

SANTA ANA WATERSHED PROJECT AUTHORITY

Dated: _____

By: _____
Celeste Cantú, General Manager

Sub-Grantee

NAME

Dated: _____

By: _____
XXXX Manager

Typed Name

Page Intentionally Blank

PA22 COMMITTEE MEMORANDUM (PA22#2015.15)

DATE: December 17, 2015

SUBJECT: Update on Demand Modeling Independent Analysis by Dr. Kenneth Baerenklau

RECOMMENDATION

That the Committee receive and file the final analysis by Dr. Kenneth Baerenklau that was provided to interested retail water agencies in the Santa Ana River Watershed.

DISCUSSION

Dr. Baerenklau was tasked with reviewing information submitted by consultants who provide rate modeling that could support budget based rate structure development. Dr. Baerenklau reviewed the materials independently of staff. He asked several consultants for additional information and engaged in discussion about his conclusions. SAWPA staff also received comments from two of the consultants, but did not interfere with Dr. Baerenklau's review. His comparison, as documented in the attached materials and including the SAWPA disclaimer, has been provided to retail agencies in the watershed and was posted on SAWPA's website.

MATERIALS

Presentation

Final Analysis of Demand Modeling

Update on Demand Modeling Independent Analysis by Dr. Baerenklau



PA 22 Committee
December 17, 2015

Project Goal

- To provide retail water agencies with tools to design their rate structure to meet conservation goals, revenue/cost goals and a legal requirements.
- Asked vendors for qualifications and details of their rate design models.
- Pass along information to retail water agencies so they can make informed decisions.

RFQ For Demand Modeling

- Gathered information by RFQ released June 16, 2015
- Dr. Baerkenklau of UC Riverside lead review
- Four responses received

<u>Vendor</u>	<u>Location</u>
A & N Technical Services	California
Raftelis Financial Consultants	California
RDN	California
Valor Water Analytics	California

Comparison of Rate Models

- Coordinated comparison document, developed by Baerenklau, with SAWPA member agencies
- Comparison document released Nov 17, 2015, posted on SAWPA.org along with a SAWPA disclaimer clause on reviewed firms
- Also sent to approximately 30 interested retailers in watershed
- Comparison document includes a comparison table and a 1-2 page detailed summary of each model
- Includes information on pricing, the type of models used, data needed from retailers, etc.

Recommendation

- Receive and file the final analysis by Dr. Baerenklau that was provided to interested retail water agencies in the Santa Ana River Watershed.

Side-By-Side Comparison of Conservation-Based Water Rate Models*

Disclaimer: The Santa Ana Watershed Project Authority (SAWPA) does not necessarily endorse or oppose any of the following vendors who provided details on their rate models. This side-by-side comparison is strictly for information sharing purposes only. It is provided to benefit retail water agencies by assisting them in making informed decisions as they analyze conservation-based water rates (also known as budget-based water rates). The comparison documents were developed by an independent consultant, Dr. Kenneth Baerenklau, Associate Professor in the School of Public Policy and Associate Provost at the University of California, Riverside, who has extensive experience in analyzing the effects of conservation-based water rates on water demand. The summary documents and analyses were reviewed by SAWPA staff and staff from the SAWPA member agencies, but remain independent of the vendors.

For Dr. Baerenklau's CV see: <http://provost.ucr.edu/staff/baerenklau.html>. For the SAWPA member agencies see: <http://www.sawpa.org/resources/>.

***Background:** As part of the Emergency Drought Grant Program, SAWPA released a Request for Qualifications (RFQ) where a range of vendors were asked to explain their rate models for conservation based-water rates. What they provided to SAWPA is reflected in the summary documents and related information. **SAWPA encourages retail water agencies to further analyze the information provided by the vendors, and ask follow-up questions of the vendors, as SAWPA is reporting on only what was provided by the vendors.**

Rate models are the major part of any rate study. The vendors that are included in this summary document and related information are not a complete list of all the firms that can provide rate modeling services as some vendors chose not to respond to the SAWPA RFQ.

Vendors Who Responded:

1. A&N Technical Services (ANTS)
2. Robert D. Niehaus, Inc. (RDN)
3. Raftelis Financial Consultants, Inc. (RFC)
4. Valor Water Analytics (Valor)

Summary of RFQ Submissions for Retail Water Agency Conservation Rate Modeling

	Vendors			
	ANTS	RDN	RFC	Valor
Does this vendor currently model budget-based rates?	<ul style="list-style-type: none"> Does not currently model budget-based rates, but this would be added for retail water agencies, for up to 3 customer classes. 	<ul style="list-style-type: none"> Yes 	<ul style="list-style-type: none"> Yes 	<ul style="list-style-type: none"> Yes
What does a retail agency need to provide in order to use this tool?	<ul style="list-style-type: none"> 1 year of customer bill tabulations for each customer class and season per AWWA M1 standards. Current rate structure parameters for both fixed and variable components. Price elasticity of demand data, if available. Drought rates and drought stage information, if applicable. Local weather data (available online from NOAA). Estimates of anticipated future system growth. ½ to 1 day of training is recommended. 3-4 days to 5-6 weeks to produce a validated model, depending on data cleaning and structuring needs. MS Excel for Windows. 	<ul style="list-style-type: none"> Up to 5 years of customer bill tabulations and rate data for each customer class. Demographic characteristics, property characteristics (lot size or irrigated area, household size), weather – i.e. evapotranspiration (ET), conservation policies (announced/ adopted restrictions). Most recent budget and financial information, including projected revenues and expenses for 5 years, and supply costs. Previous rate studies and rate schedules. 1 day training session. 5 weeks to run the model for 1 agency after receipt of all data. 	<ul style="list-style-type: none"> 1-4 years of customer bill tabulations for each customer class. Current year financial data including capital expenditures, O&M cost data, debt service, reserve funding, transfers, conservation and water supply costs. Asset data showing year of installation. Water supply availability by source. Peaking data. Current rate schedule. Irrigated/landscaped area or lot size. ET data and household size, if available. 4-6 hours of training. Completed model within 4-6 weeks of data delivery. MS Excel or Access 	<ul style="list-style-type: none"> 4 years of customer bill tabulations for each customer class. Current and historic rate schedules and rate code glossary*. Weather (ET) data, census demographics, and property characteristics (lot size or irrigated area, household size). 3 years of revenue and cost data. Bulk purchase and special user agreements. Fiscal/budget data, capital and operating cost data (if applicable). ½ day training session for each module; kickoff meeting with finance, billing, IT staff. Completed model within 4 weeks of receiving all

	Vendors			
	ANTS	RDN	RFC	Valor
		<ul style="list-style-type: none"> • ASCII, text, MS Excel or Access, or other common formats. 	format.	agency data. <ul style="list-style-type: none"> • Text or CSV format.
Can the model be accessed online?	Yes, at www.financing.sustainablewater.org .	No.	No.	Yes.
What are the notable unique features of this model?	<ul style="list-style-type: none"> • Addresses customer affordability of rates. • Does not currently model budget-based rates, but this would be added for retail water agencies, for up to 3 customer classes. • Includes a library of pre-defined conservation activities. • Use of the ANTS model to meet Prop 218 standards requires additional analyses. 	<ul style="list-style-type: none"> • State-of-the-art discrete-continuous choice (DCC) model of demand under block pricing. • Model has performed well in tests where some other agency data is substituted for missing data. 	<ul style="list-style-type: none"> • Widely used. • Predicted demand within 3% of observed demand for two southern California water districts. 	<ul style="list-style-type: none"> • Dynamic: models incorporate new billing and ET data each month for revenue monitoring, risk assessment, model updating, and shadow rate monitoring.
Cost estimate.	<ul style="list-style-type: none"> • Model is open source and available online. Updates available to agencies if they are Alliance for Water Efficiency members (\$0.01 per connection). No other cost data provided. • Costs would cover 3-4 days of setup and 1-2 months of support. • Multi-agency training workshops would reduce 	<ul style="list-style-type: none"> • Small to medium agency (15-50K connections) with good data would be about \$35-45K. • Cost depends on the number of customer classes, number of accounts in each class, and availability of sufficient agency data. • Model is available as a perpetual in-house license with a limited 	<ul style="list-style-type: none"> • Approximate cost for average retail agency is \$35-50K, and closer to the lower end per agency if several are involved. • Cost is more dependent on number of customer classes than number of accounts. • Cost also dependent on data quality. • Willing to discuss group 	<ul style="list-style-type: none"> • \$12-36K for 10-40K connections plus \$10K annual license fee for the Water Rate Simulator. • Costs can be reduced 10% if multiple agencies participate in training workshops. • Unspecified cost to set-up and customize the EFG financial tools, but no subsequent annual

	Vendors			
	<u>ANTS</u>	<u>RDN</u>	<u>RFC</u>	<u>Valor</u>
	the cost per agency.	period of technical support, at additional cost. • Group discount is available. **	rates. **	licensing fee.
What are the notable advantages of each model?	<ul style="list-style-type: none"> • Affordability analysis good for disadvantaged communities. • Conservation activity library facilitates scenario analysis for agencies considering significant changes to programs. 	<ul style="list-style-type: none"> • Model is consistent with economic theory of demand under block rate pricing. 	<ul style="list-style-type: none"> • Likely that some retail water agencies are already familiar with, or even using, this model. 	<ul style="list-style-type: none"> • Dynamic capability good for maintaining currency of estimates and forecasts.
Agencies that have used the model previously to analyze budget-based rates. *** (For reference contact information, please contact SAWPA at iachimore@sawpa.org).	<ul style="list-style-type: none"> • City of Los Angeles DWP • Elsinore Valley MWD • California Water Services Company • Coachella Valley WD • Padre Dam MWD • California American 	<ul style="list-style-type: none"> • Las Virgenes MWD (used for budgeting water efficient customers) • Carpinteria Valley WD (utilizing a hybrid budget based structure for M&I customers since 2008; the first tiered rate is based on the account's winter use) 	<ul style="list-style-type: none"> • Santa Margarita WD • El Toro WD • Las Virgenes MWD • Huntington Beach • San Clemente • San Juan Capistrano • City of Santa Cruz • Western MWD • Eastern MWD • Rancho California WD • Elsinore Valley MWD • City of Corona • City of South Pasadena • City of Glendora 	<ul style="list-style-type: none"> • Beaufort Jasper Water and Sewer Authority • Clayton County Water Agency
Agencies in California that are implementing budget-based rates that are on the above list. ***	<ul style="list-style-type: none"> • Elsinore Valley MWD • Coachella Valley WD 	<ul style="list-style-type: none"> • Las Virgenes MWD (adopted, not yet implemented) 	<ul style="list-style-type: none"> • City of Corona • Western MWD • Eastern MWD • Rancho California MWD 	

	Vendors			
	ANTS	RDN	RFC	Valor
			<ul style="list-style-type: none"> • Elsinore Valley MWD • El Toro WD • Las Virgenes WD (adopted, not yet implemented) 	
Vendor Contact Information	http://antechserv.com/ info@antechserv.com	www.rdniehaus.com Daniel@rdniehaus.com	www.raftelis.com info@raftelis.com	https://valorwater.com/ info@valorwater.com

*Rate code glossary: A type of decoder used for translating alphanumeric rate codes into prices.

**Through the RFQ, SAWPA asked whether vendors would provide their models at a “group rate” if multiple agencies in the Santa Ana River Watershed through the Emergency Drought Grant Program wanted to use the same model.

***These listed agencies may have just used the vendor’s model to *assess* rate structures, even just generally, but not used the model to adopt and implement budget-based rate structures.

A&N Technical Services
Detailed Summary of RFQ Submission

A&N Technical Services (ANTS) has partnered with the Alliance for Water Efficiency (AWE) and M.Cubed in submitting its response to the SAWPA RFQ.

The ANTS model is named the AWE Sales Forecasting and Rates Model and is divided into two modules:

- Rate Design Module
- Revenue Simulation Module

The model is available online at www.financingsustainablewater.org. It is open source and Excel-based. Model updates are available at no cost to agencies that are members of AWE. Note that membership costs \$0.01 per service connection. Model set-up appears relatively straightforward, requiring 3-4 days assuming good data quality. Set-up may take as long as 5-6 weeks if significant data cleaning is needed. Data that must be provided by the agency include one year of customer bill tabulations for each customer class; current rate schedules; drought rates and drought stage information; price elasticities, if available; and historical weather data which are available from public sources such as NOAA, CIMIS or Daymet. It is recommended to use at least 15 years of historical weather data. ANTS is able to provide technical support for obtaining, cleaning and inputting weather data.

In addition, AWE members have access to the Water Conservation Tracking Tool which facilitates estimates of water savings from conservation programs and related benefits and costs. This tool also is Excel-based and available online. Conservation program data must be provided by the agency. A full list of data needs is here: <http://www.allianceforwaterefficiency.org/uploadedFiles/Tool/Tracking-Tool-User-Inputs-Version2.0.pdf>.

ANTS also has developed two related tools that complement the AWE Sales Forecasting and Rate Model:

- Drought Response Tool
- Water Efficiency Calculator

These tools do not appear to be available to AWE members but instead could be provided on an additional cost basis by ANTS to interested retail water agencies in the Santa Ana River Watershed. Costs estimates are not provided in the response to the RFQ. Both tools appear to be Excel-based.

Notable Advantages

1. The ANTS model appears to be relatively cost-effective compared to other submissions. The cost for an AWE membership for an agency with 100,000 service connections is only \$1,000 per year. However there may be additional set-up costs if the available data is not of high quality. Also the costs for the Drought Response Tool and Water Efficiency Calculator are not reported.
2. The ANTS model addresses affordability of rates, which should be appealing to agencies with high variances in household income across customers and/or large disadvantaged populations.
3. The ANTS model implements Monte Carlo analysis for simulating the effects of external shocks including weather on model outputs.
4. The ANTS model (specifically the AWE Water Conservation Tracking Tool) includes a library of pre-defined conservation activities which should be appealing to agencies considering implementing new and significant conservation programs or those considering significant changes to existing programs.

Other Considerations

1. Although the ANTS model can work with standard block rates, it does not currently model conservation-based rates (i.e. water budget) rates. However ANTS proposes to add this component for water agencies, for up to three customer classes, presumably for an additional cost.
2. The state-of-the-art method for modeling demand under any type of block rate schedule is the discrete-continuous choice (DCC) model developed by Hewitt and Hanemann. The ANTS model does not currently use the DCC approach.
3. The ANTS model does not conduct an incremental cost of service analysis and thus offers limited capabilities in terms of helping agencies to ensure compliance with Proposition 218. However ANTS has other experience with cost-of-service analyses.
4. The ANTS model does not utilize demographic data that can be useful for examining the effects of rate changes on segments of the customer base (such as senior or minority populations).
5. The drought rate adjustment calculation assumes that a curtailment will cause the demand curve to shift and that subsequent price increases of any magnitude will reduce consumption according to the new demand curve. Economic theory predicts that a curtailment will not cause the demand curve to shift and therefore subsequent price increases will not reduce consumption unless the price change is so large that the customer would have consumed less under the price increase than under the curtailment. Which of these methodologies is more accurate is an empirical question.

Robert D. Niehaus, Inc.

Detailed Summary of RFQ Submission

The Robert D. Niehaus, Inc. (RDN) model is named the WaterEcon model and is comprised of four main components:

1. Demand Analysis
2. Revenue Requirements
3. Cost of Service
4. Rate Setting

The model is Excel-based and utilizes parameter estimates derived from the commercially available Stata statistical software package. The model is not available online but rather can be made available to agencies as a perpetual in-house license after the initial contract expires, at an additional unspecified cost. The cost to initially set up the model for a small to medium agency with 15,000 to 50,000 connections with good data is estimated to be around \$35,000 to \$45,000. Cost depends on the number of customer classes, number of accounts, and data quality. Initial set-up requires about five weeks for one agency after receipt of all data. Data that must be provided by the agency include: up to five years of customer billing data and rate data for each customer class; property characteristics, and conservation policies; most recent budget and financial information including five-year projections; and previous rate studies. The model also uses census demographic characteristics. RDN will acquire all publicly available data; the remaining data may be provided to RDN in ASCII, text, MS Excel, MS Access or other common formats.

Notable Advantages

1. The RDN model uses state-of-the-art methods (i.e. the discrete-continuous choice framework) for modeling demand under both standard block and allocation-based block rates.
2. RDN states that the model has performed well in tests where data from a second agency is substituted for missing data from the agency under analysis.
3. Set-up of the RDN model is priced similarly to the other models, with the exception of the ANTS model.
4. The RDN model includes what appears to be a robust cost-of-service component for assessing compliance with Proposition 218.
5. The RDN model can run scenario analyses as well as Monte Carlo simulations for sensitivity analyses.
6. The RDN model incorporates census demographic data that can be useful for examining the effects of rate changes on segments of the customer base (such as senior or minority populations).

Other Considerations

- The method for simulating/predicting demand under block rates relies on calculating the expected marginal price that each household would face under a proposed rate structure. This differs from the method that is implied by the structure of the discrete-continuous choice framework. Which of these approaches is more accurate is an empirical question.

Raftelis Financial Consultants, Inc.

Detailed Summary of RFQ Submission

The Raftelis Financial Consultants, Inc. (Raftelis) model is available in both Microsoft Excel and Microsoft Access versions. The Raftelis model is not available online but will be made available to agencies after the initial contract period without a licensing charge. The approximate cost to set up the model for an “average” retail agency is \$35,000 to \$50,000. Cost is more dependent on the number of customer classes than on the number of accounts, and also depends on data quality.

Set-up for the Raftelis model requires about 4-6 weeks after receipt of data from the agency. Data that must be provided by the agency include: 1-4 years of customer bill tabulations for each customer class; irrigated (landscaped) area or lot size for each customer; current year financial data including capital and operating cost data, debt service, reserve funding, transfers, conservation, and water supply costs and availabilities by source; the current rate schedule; and peaking data. ET data and household size estimates also may be provided by the agency, or else calculated by Raftelis. These data may be provided in formats compatible with Microsoft Excel or Access.

Notable Advantages

1. The Raftelis model is widely used. It is likely that some retail water agencies in the Santa Ana River Watershed are already familiar with, or even using, this model.
2. The Raftelis model has achieved high levels of predictive accuracy (within 3% of observed demand) for two southern California water districts.
3. While set-up of the Raftelis model is priced similarly to the other models, with the exception of the ANTS model, the Raftelis model has no licensing fee which reduces its long-run total cost.
4. The Raftelis model includes what appears to be a robust cost-of-service component for assessing compliance with Proposition 218.
5. The Raftelis model can run scenario analyses as well as Monte Carlo simulations for sensitivity analyses.

Other Considerations

1. The Raftelis model does not utilize household-level socio-demographic data that can be useful for examining the effects of rate changes on segments of the customer base (such as senior or minority populations such as low-income).
2. The state-of-the-art method for modeling demand under any type of block rate schedule is the discrete-continuous choice (DCC) model developed by Hewitt and Hanemann. The Raftelis model does not currently use the DCC approach.

Valor Water Analytics

Detailed Summary of RFQ Submission

Valor Water Analytics, Inc. (Valor) has partnered with Environmental Financial Group, Inc. (EFG) in submitting its response to the SAWPA RFQ.

The Valor model is named the Valor Water Rate Simulator and is integrated with cost of service analysis tools provided by EFG. The Valor model is built with the Python and R computer programming languages and utilizes Tableau Software for its user interface. The EFG tools are Excel-based and can link to a variety of commonly used databases and statistical software packages.

The Valor model is entirely online and is made available to agencies during and after the initial contract period on a licensing fee basis. The cost to initially set up the model for an agency with 10,000 to 40,000 connections is estimated to be between \$12,000 and \$36,000 plus a \$10,000 annual license fee during each year of the contract. Cost depends on the number of meters but not the number of customer classes. An estimate of the cost to set-up the EFG tools is not provided but subsequent use of the tools after customization does not require an annual licensing fee.

Initial set-up for the Valor model requires about four weeks after all data is received from the agency. Data that must be provided by the agency include: four years of customer bill tabulations for each customer class; current and historic rate schedules and rate code glossary; three years of revenue and cost data; budgeting data, and capital and operating cost data. Weather (ET) data, census demographics, and property characteristics also are integrated into the model. These data may be provided by the agency in text or CSV format. A half-day session typically is needed to train agency staff.

Notable Advantages

1. The Valor model is dynamic: it automatically incorporates new billing and ET data each month for revenue monitoring, risk assessment, model updating and shadow rate monitoring. This is helpful for maintaining currency of model estimates and forecasts.
2. The Valor model allows an agency to monitor the performance of hypothetical “shadow” rates that differ from the actual rates currently implemented.
3. Set-up of the Valor model is priced similarly to the other models, with the exception of the ANTS model.
4. The Valor model includes what appears to be a robust cost-of-service component for assessing compliance with Proposition 218.
5. The Valor model can run scenario analyses as well as Monte Carlo simulations for sensitivity analyses.
6. The Valor model incorporates census demographic data that can be useful for examining the effects of rate changes on segments of the customer base (such as senior or minority populations).

Other Considerations

- The state-of-the-art method for modeling demand under any type of block rate schedule is the discrete-continuous choice (DCC) model developed by Hewitt and Hanemann. The Valor model does not currently use the DCC approach.

PA22 COMMITTEE MEMORANDUM (PA22#2015.16)

DATE: December 17, 2015

SUBJECT: Update on Aerial Mapping Project Consultant

RECOMMENDATION

That the Committee receive and file this update on the change order to Resource Strategies Inc. (RSI) Task Order RESO504-301-01.

DISCUSSION

Previously staff reported to the Committee on the change in work plan for Geophex and RSI in order to expedite delivery of aerial imagery to agencies who needed to move forward with cost of service studies in order to develop budget based rate structures. Expediting delivery of the imagery has been a matter of urgency. Previously staff reported to the Committee on the execution of a change order with Geophex due to the change in the work plan.

This item is to report to the Committee the analogous change order with RSI for the same purpose. The change order added \$38,050 to the contract.

There are no other contract actions associated with this change in work plan.

MATERIALS

Change Order No. 1 to Task Order RESO504-301-01



SANTA ANA WATERSHED PROJECT AUTHORITY

CHANGE ORDER NO. 1 To Task Order No. RESO504-301-01

CONSULTANT: Resource Strategies Inc.
4809 Clairemont Square #320
San Diego, CA 92117

VENDOR NO. 1297

PROJECT: OWOW 2014 Emergency Drought Implementation – Phase 2 of Imagery and LiDAR Project

COST: \$38,050

REQUESTED BY: Dean Unger
Information Systems & Technology Manager
October 19, 2015

FINANCE: K. Williams 10-20-15
Karen Williams, CFO Date

FINANCING SOURCE: Acct. Coding: 504-301CONST-6113-01
Acct. Description: General Consulting

COMMISSION AUTHORIZATION REQUIRED FOR THIS CHANGE: YES () NO (X)

Consultant is hereby directed to provide the extra work necessary to comply with this change order.

DESCRIPTION / JUSTIFICATION OF CHANGE: This Change Order No. 1 to the 3-2-2015 task order is for the continued management work into the next phase (Phase 2) of managing the imagery and elevation data products. This work is thoroughly described in the letter scope-of-work, Attachment A.

CHANGE IN CONTRACT TIME: June 30, 2016

CHANGE IN TASK ORDER PRICE:	Original Task Order Amount:	\$26,400
	Change Order No. 1 Amount:	<u>\$38,050</u>
	Amended Contract Total:	\$64,450

ACCEPTANCE:

Consultant accepts the terms and conditions stated above as full and final settlement of any claims arising from or related to this Change Order. Consultant agrees to perform the above described work in accordance with the terms and in compliance with applicable sections of the Contract Specifications. This Change Order is hereby agreed to, accepted and approved, all in accordance with the General Provisions of the Contract Specifications.

SANTA ANA WATERSHED PROJECT AUTHORITY

C. Cantú 10-20-15
Celeste Cantú, General Manager Date

RESOURCE STRATEGIES INC.

Richard D. Schulman 10/21/2015 RICHARD D. SCHULMAN
(Signature) Date Typed/Printed Name

RESOURCE STRATEGIES INC

3952 Clairemont Mesa Blvd, STE D

San Diego, CA 92117

Tel: (858) 735-7424 Fax: (858) 581-6683

September 30, 2015

Dean Unger
Information Technology Manager
Santa Ana Watershed Project Authority
11615 Sterling Avenue
Riverside, CA 92503

SUBJECT:

Dear Dean,

Resource Strategies Inc is pleased to provide you with this proposal for project management associated with the SAWPA planned acquisition of orthorectified imagery and stereo-pair derived elevation data. The Tasks outlined in this proposal are a direct follow-on to Project Phase One: Orthorectified RGB and CIR Imagery, and Project Phase Two, Part I and Part II. During the initial Task period a primary imagery and elevation vendor was selected (Geophex Surveys) and a primary imagery analysis vendor was selected (Statistical Research Inc). Resource Strategies Inc (Richard Schulman) was selected to serve as SAWPA's Project Manager for Project Phase One and the Initial Parts of Project Phase Two. **THIS PROPOSAL OUTLINES THE ADDITIONAL TASKS TO CONTINUE RSI PROJECT MANAGEMENT of additional critical Phases of the SAWPA Project. The time frame for this proposed agreement is August 4, 2015 through June 30, 2016** in order to insure continuity of supervision of the ongoing work effort by the competitively selected imagery, elevation and analysis vendors as well as SAWPA adjustments of project requirements in the first half of calendar year 2016.

Naming Convention:

Consortia = SAWPA Watershed Partners

Retailers = SAWPA Water Retailers

SAWPA Task Manager= Dean Unger

SAWPA Project Manager/Consultant = RSI/Richard Schulman

Ongoing Task Organization:

PHASE TWO, Part III: Elevation Data Acquisition, Processing and Delivery.

Tasks include refining elevation data specification, negotiation with vendor to insure appropriate ground survey, coordination of ground survey, manage generation of elevation data sets, quality control of delivery, and assignment of priority collection areas and oversee final delivery of elevation data sets.

PHASE TWO, Part IV: Provisional Ortho Imagery Delivery Options, Testing, Processing and Interim Deliveries. Tasks include creating alternative specifications for an provisional, expedited ortho delivery set for the high priority Retailers target areas, conduct extensive, expedited discussions with SAWPA and both selected vendors to insure a usable “early delivery” imagery project for the high priority Retailers, supervise testing of each of the proposed expedited products, assist SAWPA in selecting the most advantage strategy for delivery of the urgently needed interim ortho-imagery sets. Continue monitoring of deliveries of both the imagery vendor and the analysis vendor to insure initial analysis of imagery are being conducted in an efficient manner and provide an effective usable interim output. Assist SAWPA and selected analysis vendor with ground-truth process to insure that computer based analysis produces a retailer useful product. Manage data segmentation to match SAWPA and its Retailers’ requirements for the initial data sets. Structure deliveries to match priority list provided by SAWPA for all participating Retailers.

PHASE THREE: Part I Final Ortho Imagery, Delivery Specification, Processing, Quality Control, Retailers’ Imagery Packaging, Compression and Delivery. The selected imagery and elevation vendor is ortho rectifying the SAWPA 2015 imagery using both conventional auto triangulation and ortho processing as well as creation of and use of a special precision survey which will provide the accuracy needed to correct all area calculation for 360 square miles of Retailers’ highest priority target AOIs for turf detections and potential removal. The precision elevation data derived from the survey it to being used to re-rectify the imagery used in the provisional data sets being delivered in September and October 2015. The final ortho imagery data set will be delivered in the January/February 2016 time frame. This data set will include high quality custom ortho imagery for both the 360 square mile high priority AOI as well as ortho imagery for the balance of the 2400 square miles in Riverside, San Bernardino and Orange Counties.

Resource Strategies Inc will assist SAWPA in defining delivery specifications, processing options, quality control and an array of packaging options. RSI will manage delivery priorities, data tiling and tile aggregation for both priority and routine Retailers’ data deliveries. RSI will also handle ecw, and wherever necessary, MrSID, imagery compression processing. Data distribution will be performed by either RSI and/or SAWPA on a case by case basis. There may be as many as 50 Retailer variations on the size and format for the final ortho data delivery. Both geotiff tiles and/or ecw mosaic compression are likely final delivery options to be selected by SAWPA’s Retailers.

PHASE FOUR (Optional): SAWPA Three County Imagery Mosaic, Repackaging and File Compression.

The entire SAWPA 2015 imagery data set is over 2400 square miles at very high resolution (3inch/pixel) and contains 4 bands. In order to facilitate rapid viewing of the imagery on non-networked devices (e.g. field laptops) as well as non-networked desktop machines it is essential that the very large imagery data set be compressed with universal ecw compression. The pre-compression data set will have an aggregate file size of well over 2 or even 3 Terrabytes. A large 3inch/pixel data set was recently compressed for the Coachella Valley Association of Governments, the data mosaic was 1200 square miles of

color only (3 band data). A single file was created that took 11 days to compress. The SAWPA data mosaic is twice as large and will require 2 compression for each section of the extents in order to have both a color and a separate color infrared ecw file set. Due to the size of the imagery set it is recommend that the 2400 square mile watershed be equally divided into 4 smaller areas. Each area would have two ecw files representing the color and the CIR bands. Each of the eight compressions will take 3 to 4 days to complete. Several compression machines operating simultaneously will cut the delivery time from 32 days to 10 to 16 days after commencement of the processing. Resource Strategies Inc has the high speed processors, software and the expertise to accomplish this challenge in a timely and cost effective manner.

Compensation

PHASE TWO, Part III: Elevation Data Acquisition, Processing and Delivery.

Compensation is \$8,250 (55 hours at rate of \$150/hour.)

PHASE TWO, Part IV: Provisional Ortho Imagery Delivery Options including development of multiple strategies for processing, feasibility of each option, Testing, Coordination of Processing, Monitoring of Output Efficacy and all Provisional Deliveries.

Compensation is \$9,000 (60 hours at rate of \$150/hour)

PHASE THREE: Part I Final Ortho Imagery, Delivery Specification, Processing, Quality Control, Discussions with Retailers', Retailers' Imagery Packaging, Compression and Delivery. This Phase also includes communications with each Retailer, and tailored imagery sets and compression (either ecw or sid) for each participating Retailer.

Compensation is \$15,000 (100 hours at rate of \$150/hour)

TOTAL COMPENSATION PHASE TWO (III, IV), PHASE THREE = \$32,250

PHASE FOUR (Optional): SAWPA Three County Imagery Mosaic, Repackaging and File Compression. Compensation includes all repackaging, mosaic sections and intense file compression in ecw format. Eight (8) mosaics assembled and compressed at \$600/mosaic x 8 (4 color and 4 CIR) = \$600x8 = \$4,800 Distribution to SAWPA and potentially to 10 other agencies/Retailers = \$1,000 includes cost of drives, data transfer, and shipping.

TOTAL COMPENSATION FOR PHASE FOUR = \$4,800 + \$1,000 = \$5,800.

Richard D. Schulman

President and Principal

Resource Strategies Inc. 858 735-7424 resourcestrategies@usa.net Established 1985

RSI Profile

Resource Strategies Inc (RSI) is a California Corporation, founded in 1985. The Corporation is owned and operated by a single principal, Richard Schulman. For the purposes of this project the background and experience of RSI and Richard Schulman are synonymous. Schulman has fifty years' experience in the computer hardware and software industry. He is a pioneer in computer graphics, CAD/CAM, GIS, and Remote Sensing. Educational credentials include a BSEE, an MSEE in Engineering Electronics, an MSCS (eqv), PhD Studies in Computer Science, and an MBA in Marketing and Management. He is a graduate of the Defense Systems Management College (Major Project Management). For the past twenty eight years he has focused on GIS and Remote Sensing Data and Applications. His clients and business relationships include every major state agency in California, numerous California cities and counties, and dozens of water and irrigation districts. He has authored feature articles on Imagery and GIS for GIS World, Geo World, GeoInfo Systems, E-Media Professional, Unix World, EOM, Imaging Notes, ERMMapper International and ArcNews. He has extensive experience as a consultant, data provider, and project manager. He is the founder and President Emeritus of the National Computer Graphics Association. For three years he was president of a public company, the leading vendor of object recognition software for engineering and mapping applications. Schulman has been an active member of the Association of California Water Agencies (ACWA). He has been served as project manager for numerous custom aerial and elevation data acquisition projects. Schulman is the Aerial Imagery Project Manager and Fiduciary for the Coachella Valley Association of Governments (2008-2017), Sole Source Provider of Radar Satellite Imagery for the State of Arizona, Department of Water Resources (2007-2016), Sole Source Provider of Satellite Radar Imagery for JPL/California Department of Water Resources, and selected imagery vendor for the Federal Bureau of Reclamation (2008-2018). Resource Strategies Inc was the SAWPA Project Manager handling a 36 agency aerial imagery procurement in 2006 and 2007.

PA22 COMMITTEE MEMORANDUM (PA22#2015.17)

DATE: December 17, 2015

SUBJECT: Update on Aerial Mapping Project Data Workshop

RECOMMENDATION

That the Committee receive and file this update on the November 23, 2015 workshop held by SAWPA with assistance from East Valley Water District and Eastern Municipal Water District in order to provide technical assistance to retail water agencies in the watershed.

DISCUSSION

Staff will report on the workshop, which was conducted at SAWPA and by webinar. Thirteen retail agencies participated. Most were agencies who are working on budget based rates, while some were interested in the aerial mapping data for other reasons.

MATERIALS

Presentation

Landscape Analysis Update

Landscape Analysis

- Workshop – “Technical Assistance for Implementing Budget Based Rates”
- East Valley Water District
 - Detailed Overview using Landscape Data
 - 13 Agencies attended
- Eastern Municipal Water District
 - CIMIS ET Data – Ron Steneker

FROM IDEA TO IMPLEMENTATION

BUDGET BASED RATES

NOVEMBER 23, 2015

LEADERSHIP
PARTNERSHIP
STEWARDSHIP



LAYING THE GROUNDWORK



LIFE AFTER AERIAL

- Infrared Imagery
- Landform Classifications
- Landscape Analysis Raster
- Pools
- Terrain (slope)
- Meter Service Areas



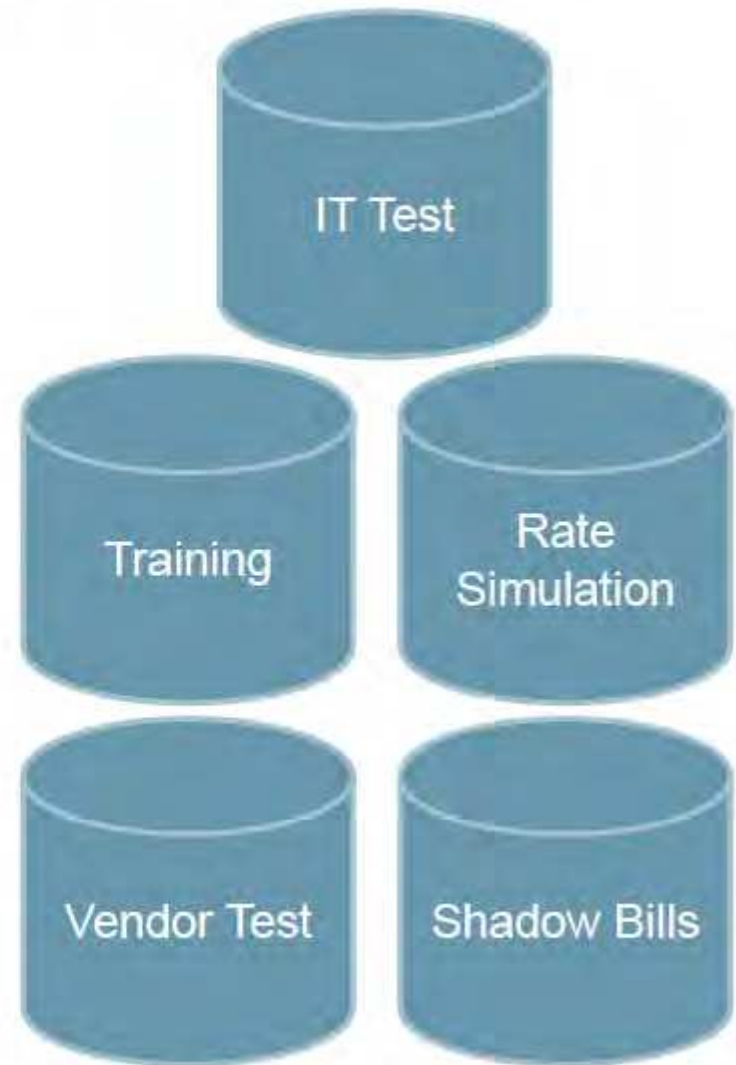
MEETING NEEDS OF SERVICE AREAS

- Multiple Meters in a Parcel
- Tree Canopies Outside a Parcel
- Parkways/Medians/Common Areas

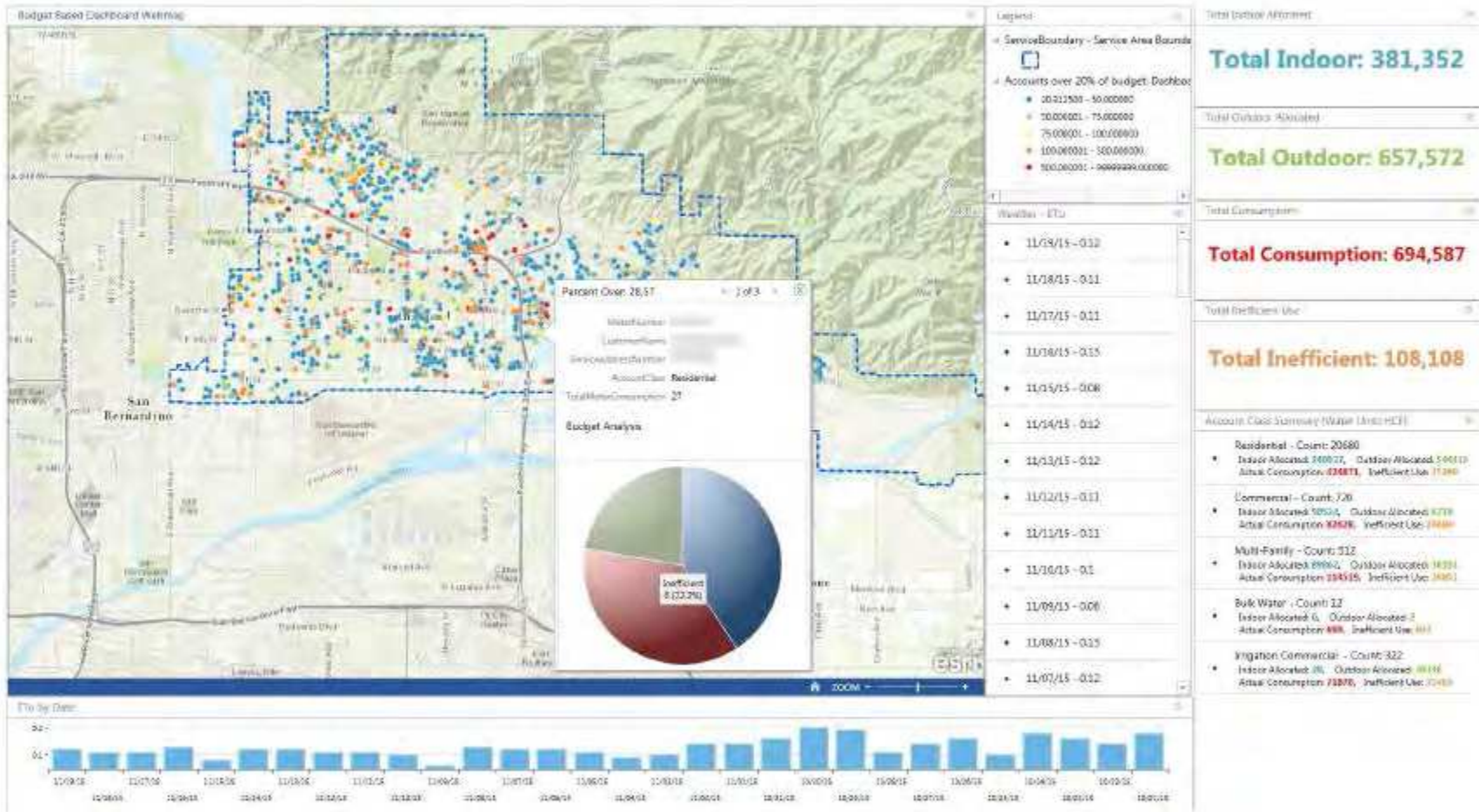


BUILDING INTERNAL CONFIDENCE

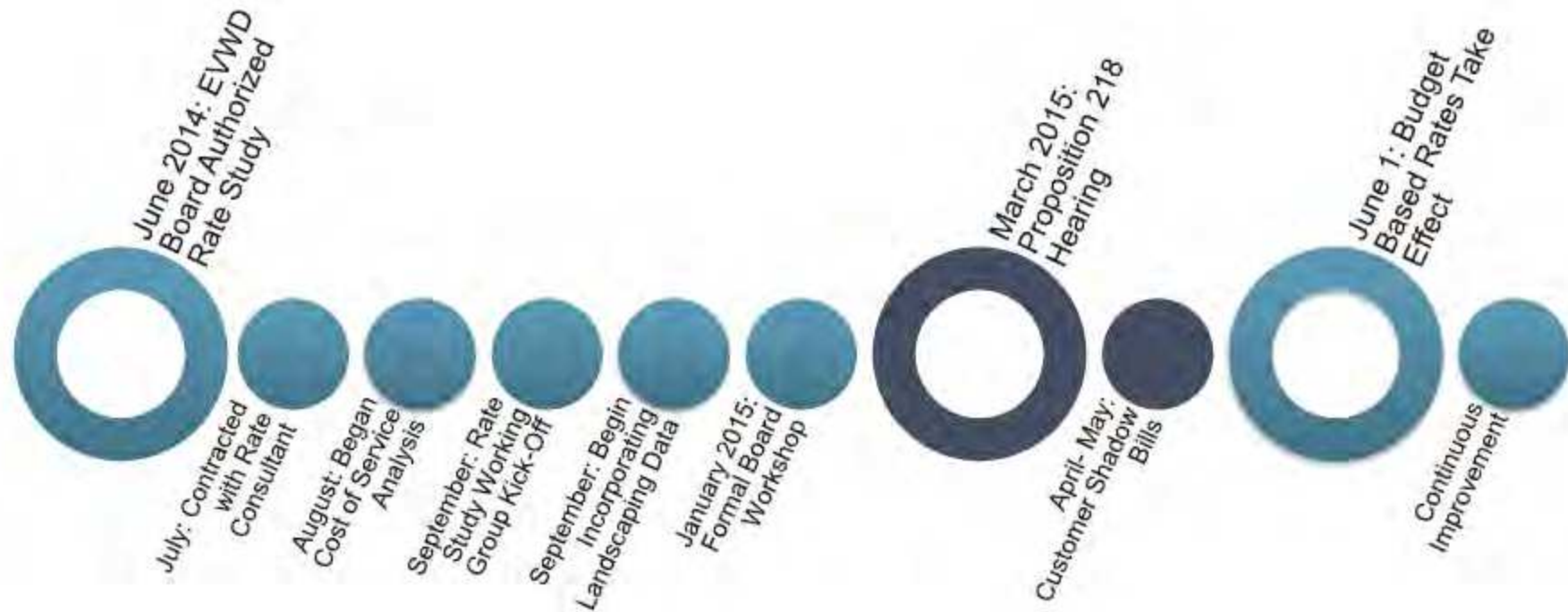
- Essential for Continued Progress
- Impacts Programs Throughout Organization
- Develops Credibility in Ratepayers



REPORTING AND ENHANCEMENTS



IMPLEMENTATION TIMELINE



Data Deliveries

- Reviewed and Delivered
 - Hemet
 - San Jacinto
 - Redlands
 - Rialto
- To Be Reviewed (12/11/2015)
 - Tustin
 - Chino
 - Chino Hills