



# S A W P A

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

## **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, MARCH 26, 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: FEBRUARY 26, 2015..... 3**  
**Recommendation:** Approve as posted.

**4. COMMITTEE DISCUSSION ITEMS**

- A. COLOR/INFRARED IMAGERY AERIAL MAPPING PROJECT ..... 7**  
**Recommendation:** Consider and approve staff’s recommendation for selection of a qualified aerial imagery vendor to fly the urban portions of the watersheds, subject to the results of the issued Request for Proposals closing on March 20, 2015.

- B. POLICY STATEMENT REGARDING CONSERVATION BASED WATER RATES..... 17**
  - PA 22 Committee Policy Statement No. 2**Recommendation:** Review and adopt the Policy Statement regarding the Implementation of Conservation Based Rate Structures Project, a policy on allocation of grant funds for education, regional wide support tools and support to individual retail water agencies.

C. **TASK ORDER FOR CONSERVATION BASED WATER RATES SUPPORT** ..... 19

- Task Order for Issuance to Kenneth A. Baerenklau, Ph. D.

**Recommendation:** Approve Task Order No. KENB504-301 in the amount not to exceed \$25,000.00 for Kenneth A. Baerenklau to serve as an expert, reviewer and facilitator on rate structures and water rate models in order to assist retail agencies in implementation of conservation based water rates.

D. **CONSERVATION BASED RATE STRUCTURE SUPPORT TOOLS** ..... 21

- Tools to Support Implementation of Conservation Based Water Rates

**Recommendation:** Receive and file an informational report on various region-wide tools that can be used to implement conservation based water rates, provided by program advisor Tom Ash of Inland Empire Utilities Agency.

5. **FUTURE AGENDA ITEMS**

6. **ADJOURNMENT**

**PLEASE NOTE:**

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact Kelly Berry at [kberry@sawpa.org](mailto:kberry@sawpa.org) or (951) 354-4230. Notification at least 48 hours prior to the meeting will enable staff to make reasonable arrangements to ensure accessibility to this meeting.

Materials related to an item on this agenda submitted to the Committee 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](http://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 Thursday, March 19, 2015, a copy of this agenda has been uploaded to the SAWPA website at [www.sawpa.org](http://www.sawpa.org) and posted in SAWPA's office at 11615 Sterling Avenue, Riverside, California.

/S/

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Kelly Berry, CMC

**2015 – Project Agreement 22 Committee Regular Meetings**

(NOTE: Unless otherwise noted, all Committee meetings begin at **8:00 a.m.** and are held at SAWPA.)

January 22, 2015  
February 26, 2015  
March 26, 2015  
April 23, 2015  
May 28, 2015  
June 25, 2014  
July 23, 2015  
August 27, 2015  
September 24, 2015  
October 22, 2015  
November 19, 2015  
December 17, 2015



**PROJECT AGREEMENT 22 COMMITTEE**  
Interregional Landscape Water Demand Reduction Program  
**REGULAR MEETING MINUTES**  
**FEBRUARY 26, 2015**

**COMMITTEE MEMBERS PRESENT**

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 [8:09 a.m.]  
Larry McKenney, Executive Counsel, Santa Ana Watershed Project Authority – Convener [Non-Voting]

**COMMITTEE MEMBERS ABSENT**

John Rossi, General Manager, Western Municipal Water District

**STAFF PRESENT**

Celeste Cantú, Rich Haller, Mark Norton, Karen Williams, Dean Unger, Kelly Berry, Rick Whetsel,  
Ian Achimore, Marie Jauregui

**1. CALL TO ORDER (Larry McKenney, Convener)**

The meeting was called to order at 8:02 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: JANUARY 22, 2015**

**MOVED**, approve the Consent Calendar.

Result:	<b>Adopted (Unanimously; 3-0-2)</b>
Motion/Second:	Jones/Headrick
Ayes	Grindstaff, Headrick, Jones
Nays:	None
Abstentions:	None
Absent:	Markus, Rossi

#### 4. COMMITTEE DISCUSSION ITEMS

##### A. CONSERVATION IMPLEMENTATION ADVISORY WORKGROUP

Larry McKenney reported that SAWPA staff has been meeting with the conservation coordinators of the Committee member agencies, as well as from Municipal Water District of Orange County and Rancho California Water District, to help staff develop recommendations for the Committee related to conservation efforts. Although Project Agreement 22 provides authority to create advisory bodies, staff recommends the Committee not take action in this regard, and that SAWPA continue on the present course. Committee members concurred with staff's recommendation.

##### B. WATER USE EFFICIENCY ADVISOR

Mark Norton noted that IEUA has agreed to provide the services of Tom Ash, IEUA's Senior Environmental Resources Planner, in support of this effort. His labor hours will be utilized as a local in-kind match for the grant program.

**MOVED**, approve use of Tom Ash, Senior Environmental Resources Planner, IEUA, in an advisory role in support of SAWPA in the water use efficiency program implementation with his IEUA labor hours accounted as an additional in-kind funding match.

Result:	<b>Adopted (Unanimously; 3-0-2)</b>
Motion/Second:	Jones/Headrick
Ayes	Grindstaff, Headrick, Jones
Nays:	None
Abstentions:	None
Absent:	Markus, Rossi

##### C. CONSERVATION BASED RATE STRUCTURE FIRST WORKSHOP

Michael Markus arrived at 8:09 a.m., during the presentation of Agenda Item No. 4.C.

Mark Norton reviewed the two-page Workshop #1 Outline and Tentative Workshop Agenda relating to implementation of the Interregional Landscape Water Demand Reduction Program.

Paul Jones suggested specific, customized marketing to water agencies within the watershed that have yet to implement conservation based water rate structures, with structured follow-up ensuring the word is getting out. Joe Grindstaff agreed, noting similar workshops have been successful in convincing water agencies to adopt conservation based water rate structures. Doug Headrick also concurred but noted venue choice is important and suggested holding the workshop in one of our board rooms.

##### D. AERIAL SURVEY AND PHOTOGRAMMETRY ADVISOR

Dean Unger provided a PowerPoint presentation and reviewed the Imagery and LiDAR Acquisition Project Timeline and Work Plan. A discussion ensued regarding whether or not other public entities would be interested in joining the project and the utilization of their funds toward the grant's 50% local match.

**MOVED**, authorize SAWPA to procure the specialized services of Richard Schulman under a sole source work order to assist with Request for Proposal preparation and coordination tasks for the aerial survey, infrared, LiDAR and photogrammetry of the urban areas of the Santa Ana River Watershed and portions of the Upper Santa Margarita Watershed (Work Plan Subtask 11.1).

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

**E. POLICY STATEMENT REGARDING USE OF TURF REMOVAL GRANT FUNDING**

Policy statements regarding Turf Removal and Conservation Based Rate Structures were considered by the Committee at the January 22<sup>nd</sup> meeting; after extensive discussion it was decided they would be brought back before the Committee in the future. Staff will continue to work with the conservation coordinators group in further developing the Conservation Based Rate Structures policy statement, which will be brought back at a future meeting.

Ian Achimore provided a PowerPoint presentation on the Turf Removal Funding Policy Statement (Policy). The intent of the Policy is to allocate the \$4.3 million to the five subregions within the SAR watershed; it is not applicable to the Upper Santa Margarita Watershed. Allocation criteria will include: population, evapotranspiration rates, geographic location. The \$4.3 million will be allocated in two phases, with an initial allocation of 60% and a second allocation of 40%. The proportional share of the initial allocation (60%/\$2,580,000) would be divided among the five subregions based on the three criteria set forth above. Using the subregions as a guide will enable the utilization of SAWPA Member Agencies as the administrating arm of the Turf Removal Program.

The agencies within the watershed will work proactively in ensuring Metropolitan rebate local match funding is available. Doug Headrick advised that SBVMWD staff will soon submit a similar program to their Board for approval.

The Policy allocates funding to highly visible properties maintained by a public agency or homeowner association, and places a per-property cap of \$250,000.

Ian Achimore provided a PowerPoint slide mapping the evapotranspiration rates (ET rates) allocation criteria. A discussion ensued regarding its accuracy and collection of the supporting data. Doug Headrick and Joe Grindstaff voiced concern about the accuracy of the data. Larry McKenney noted there is discussion within the watershed that part of this grant program may involve how the ET data collection process can become more uniform and accurate throughout the region.

The geographic location allocation criteria places a greater value on conservation in the upper portions of the watershed; water is used multiple times before it reaches the ocean, so the value of conservation is greater the higher in the watershed that conservation occurs. Larry McKenney noted the idea is to weight investment on conservation higher in the watershed because the belief is that benefits are greater. When it comes to water conservation, you get more benefits from conservation efforts higher in the watershed. Michael Markus and Joe Grindstaff questioned why this was part of the allocation criteria. Larry McKenney stated this idea was brought forward in the discussion and the conservation coordinators group recommended its inclusion as one of the three criteria; however, he

emphasized the ultimate decision is the Committee's.

A table outlining these three allocation criteria among the five subregions was presented. A discussion ensued regarding the criteria allocation methodology. Larry McKenney suggested the language within the Policy relating to the second round allocation be changed to read that prior to the beginning of the second round, the PA 22 Committee will re-evaluate the quality of the ET data and the criteria that are used for allocation. Joe Grindstaff expressed interest in utilizing information obtained during the LiDAR project which may be useful in the second round to assist in better focusing the funding. There was further discussion regarding options for the Committee to review and re-evaluate midway through the first round and prior to commencement of the second round; Larry McKenney advised the Committee has the option of reviewing and re-evaluating as early and as often as desired.

Direction was given to staff to compose a letter to Metropolitan regarding an advance reservation to secure funding for a watershed-wide program.

**MOVED**, adopt the Policy Statement for Commercial, Institutional, Publicly Owned and HOA Turf Removal Project, with the revision that midway through the first round (Initial Allocation) the PA 22 Committee will re-evaluate the quality of the evapotranspiration rates (ET rates) data and other criteria used for allocation. (Work Plan Subtask 11.2).

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

**F. SUBAGREEMENT TEMPLATE**

This item was informational only and not an action item.

**5. FUTURE AGENDA ITEMS**

**6. ADJOURNMENT**

There being no further business for review, Convener McKenney adjourned the meeting at 9:05 a.m.

**Approved at a Regular Meeting of the Project Agreement 22 Committee on Thursday, March 26, 2015.**

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Larry B. McKenney, Convener

# Aerial Mapping Project

Phase 1 - Service Contract Specifications  
and Vendor Selection  
March 26<sup>th</sup>, 2015



# Recommendation

- Approve staff's recommendation for selection of a qualified aerial imagery vendor to fly the urban portions of the watersheds subject to the results of the Request for Proposal closing on March 20, 2015.

# Project Steps

- Aerial Imagery Flight
  - Color
  - Infrared
- LiDAR Flight:
  - DEM / Contours / Canopy / Building Footprints
- Additional Retail Agency Support

# Timeline

Project Steps	2015	February			March			April			May			June			July			August		
		Beg	Mid	End	Beg	Mid	End	Beg	Mid	End	Beg	Mid	End	Beg	Mid	End	Beg	Mid	End	Beg	Mid	End
<b>IMAGERY AND LIDAR ACQUISITION PROJECT</b>																						
<b>PHASE ONE: Orthorectified RGB and/or CIR Imagery</b>																						
Develop and Issue RFP																						
Evaluate and Select Vendor																						
Imagery Flights																						
Receive Imagery Product																						
<b>PHASE TWO: LiDAR Elevation Data</b>																						
Develop and Issue RFP																						
Evaluate and Select Vendor																						
LiDAR Flights																						
Delivered LiDAR Products																						
<b>Landscape Measurements Project Timeline</b>																						
<b>IMAGERY/LiDAR GIS Data Analysis PROJECT</b>																						
Develop and Issue RFP																						
Evaluate and Select Vendor																						
Data Analysis																						
Receive GIS and Tabular Product																						
<i>Data Analysis to commence upon receipt of LiDAR products. Expected completion October 1st</i>																						



# Budget

- \$2.6 million overall budget for Aerial Mapping Project
- 3 inch Pixel recommended

**Color Imagery Resolution LiDAR Costs**

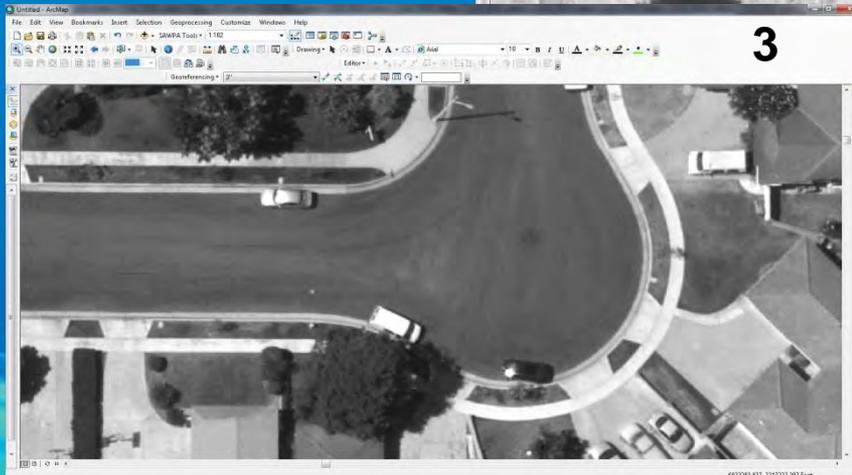
	<b>3 inch / Pixel</b>	<b>3 Inch / Pixel</b>	<b>4 Inch / Pixel</b>	<b>6 Inch / Pixel</b>	<b>12 Inch Pixel</b>
<b>Color Imagery Cost Estimate (Urban Areas)</b>	\$365,000	\$365,000	\$325,000	\$250,000	\$165,000
<b>Contours</b>	1' Contours	2' Contours	4' or 5' Contours	5' or 10' Contours	10' or 20' Contours
<b>Minium LiDAR Specification</b>	4 or 5 LiDAR points per Meter-Square	3 or 4 points per Meter-Square	1 or 2 points per Meter-Square	.5 or 1 Points per Meter-Square	.5 Points per Meter-Square

# Watershed Imagery – Phase 1

- Color and near infrared
- Urbanized area
- 3 inch pixel (2 foot contours or better) resolution recommended
  - 10% average improvement in vegetation area identification versus 12 inch pixel (10 foot contours)
  - Improved identification in non uniform rural lots
  - Within budget based estimated costs of LiDAR
- Additional uses for 3 inch
  - Easy identified maintenance access structures and meter locations
  - Facility mapping

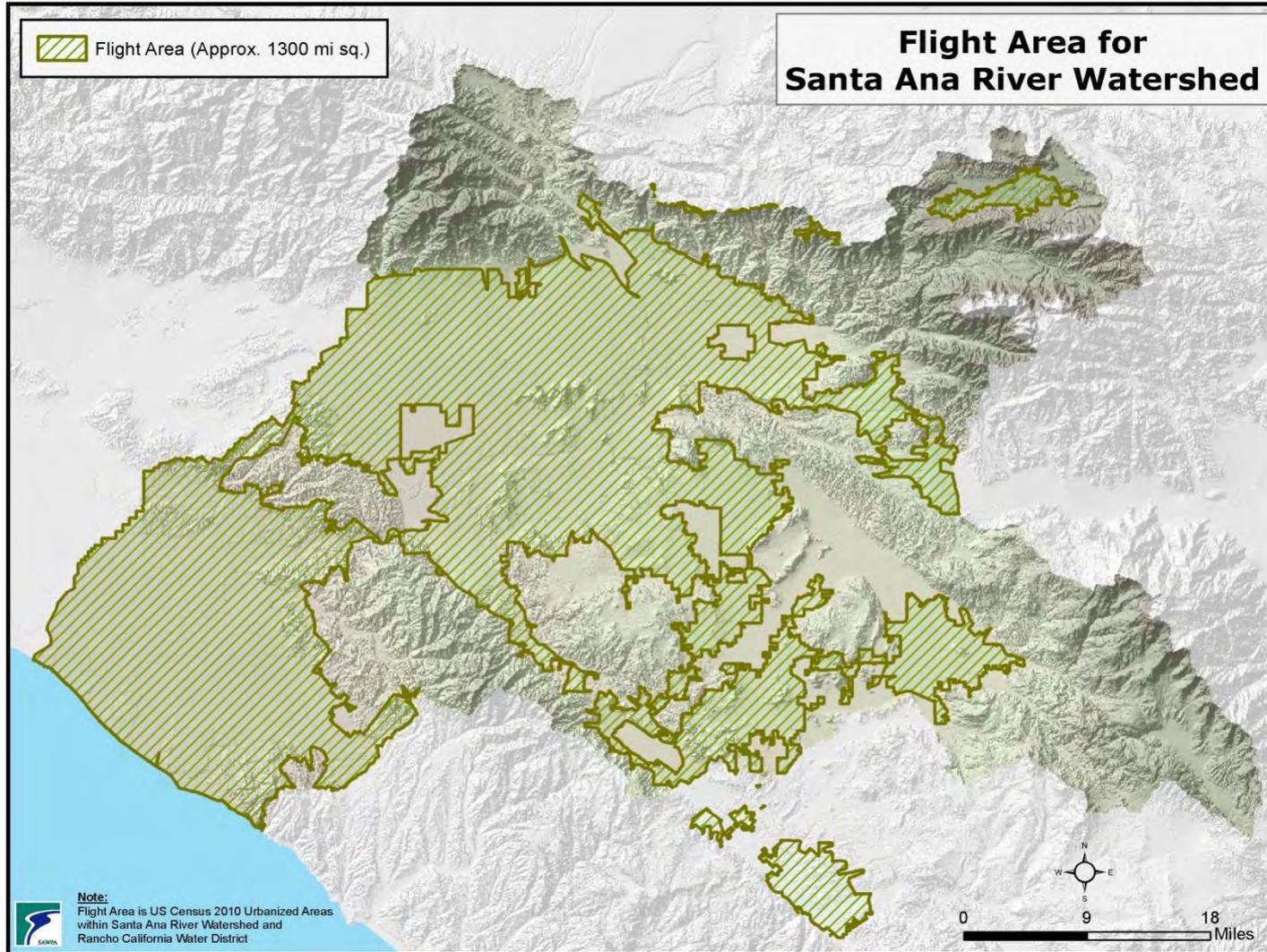


12 v 6 v 3



# Urbanized Areas

2010 census urbanized areas



**Note:**  
Flight Area is US Census 2010 Urbanized Areas  
within Santa Ana River Watershed and  
Rancho California Water District



0 9 18 Miles



SAWPA

# LiDAR and aerial photography relationship

- 3 inch pixel resolution Imagery is best matched up with LiDAR 3 to 4 points per square-meter or better.
- Able to use LiDAR data to rectify aerial photography
- LiDAR datasets match Aerial Photography
- LiDAR Datasets can include:
  - Contours / slope
  - Tree and Bush Canopy
  - Building Footprints

# Recommendation

- Approve staff's recommendation for selection of a qualified aerial imagery vendor to fly the urban portions of the watersheds subject to the results of the Request for Proposal closing on March 20, 2015.

## **Draft Policy Statement for PA 22 No. 2: Implementation of Conservation Based Rate Structures Project**

The SAWPA Commission approved Project Agreement 22 (PA22) on October 7, 2014 for the purpose of transforming the choice of landscaping pallet in the Santa Ana River and Upper Santa Margarita watersheds, developing a wide range of tools to assist agencies with reducing overall demand in response to the current drought, and implementing water rate structures that promote water use efficiency and at the same time sustain revenue stability as efficiency increases and the drought continues.

Project Agreement 22 created the PA22 Committee to set policies as part of the Interregional Landscape Water Demand Reduction Program (Demand Reduction Program), which is funded through local funding match and grant funding provided by the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84, Chapter 2).

For the Implementation of Conservation Based Rate Structures Project (the Project) component of the Demand Reduction Program, the PA22 Committee intends this policy for the funding provided by the grant to assist up to ten retail water agencies in implementing conservation-based rate structures within the Santa Ana River Watershed.

The Project will include a stair step outreach approach with workshops aimed at agency decision-makers on the economic and political benefits of conservation-based rates. Initial workshops will be supported by targeted follow-up meetings with interested agencies. These meetings are intended to educate policy makers and retail water agency staff on conservation-based rate structures and billing system requirements, and how grant funding provided by the Project can assist each agency who chooses to transition to new rate structures.

The \$2,322,000 budgeted for the Project would be apportioned into an allocation for region-wide support tools and an allocation for individual retail water agency support.

A portion of the funding will provide education (workshops, individual agency meetings, etc.) and be available to develop region-wide support tools which could include landscape square footage and aerial imaging databases, a localized evapotranspiration data gathering and reporting tool, a water efficiency calculator, a water rate modeling tool and billing system options. These tools are intended to provide benefits to retail agencies in the Santa Ana River Watershed with enough flexibility that any retail agency could quickly and effectively use them. As technology moves quickly, the PA22 Committee seeks to maintain flexibility in assessing and selecting tools that can provide the most benefit to member agencies.

Each retail water agency that is identified through the targeted outreach will be eligible to receive a proportion of the allocation for individual retail water agency support. Prior to adoption of conservation based water rates, the targeted retail agency shall be eligible to receive 50% of their allocation, based upon approval by the PA22 Committee, for billing system needs, website upgrades, public outreach, including Proposition 218 related outreach, and other internal needs an agency may have to accomplish adopting conservation-based rates. The retail water agency allocations will be capped at a level determined prior to December 31, 2015 by the PA22 Committee in order to allow sufficient time to itemize the costs of the region-wide support tools. In order to be eligible, agencies shall provide updated customer use data on a quarterly basis or monthly basis, including the corresponding Assessor's Parcel Number (APN) and account address in order to establish a water usage baseline. The remaining 50% allocation would be available to agencies who take successive steps toward the adoption of conservation based rates. PA22 Committee approval of such funds would be based on requests filed by agencies and

determined on an agency by agency basis. The remaining allocation of funding for retail agency support will be made available upon the agency's adoption of conservation based water rates by its board.

For the purposes of eligibility, adoption of conservation based water rates is defined 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 the third 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 water demand.

DRAFT





# IMPLEMENTATION OF CONSERVATION BASED WATER RATES PROJECT

Tools to Support Implementation of  
Conservation Based Water Rates

Tom Ash, IEUA, Program Advisor

# Customer Level Data Collection

**Aerial Imagery** – Collects residential (and limited) commercial landscape area

## Why?

- ◆ Foundation for calculating site by site water efficiency

## How?

- ◆ Task goes to RFP
- ◆ Fly the region at the appropriate time, using infrared and potentially LiDAR (currently underway)
- ◆ Evaluate most accurate and cost-effective approach as well as multiple uses

High Resolution Aerial Image



Landcover Area and Percentage



APN	CLASS	AREA	%
7126411	grass	503.00	13.80
7126411	impervious	2604.02	71.46
7126411	trees/bushes	537.01	14.74
7126409	impervious	3384.00	78.33
7126409	grass	843.00	19.50
7126409	trees/bushes	93.00	2.17

# Customer Level Data

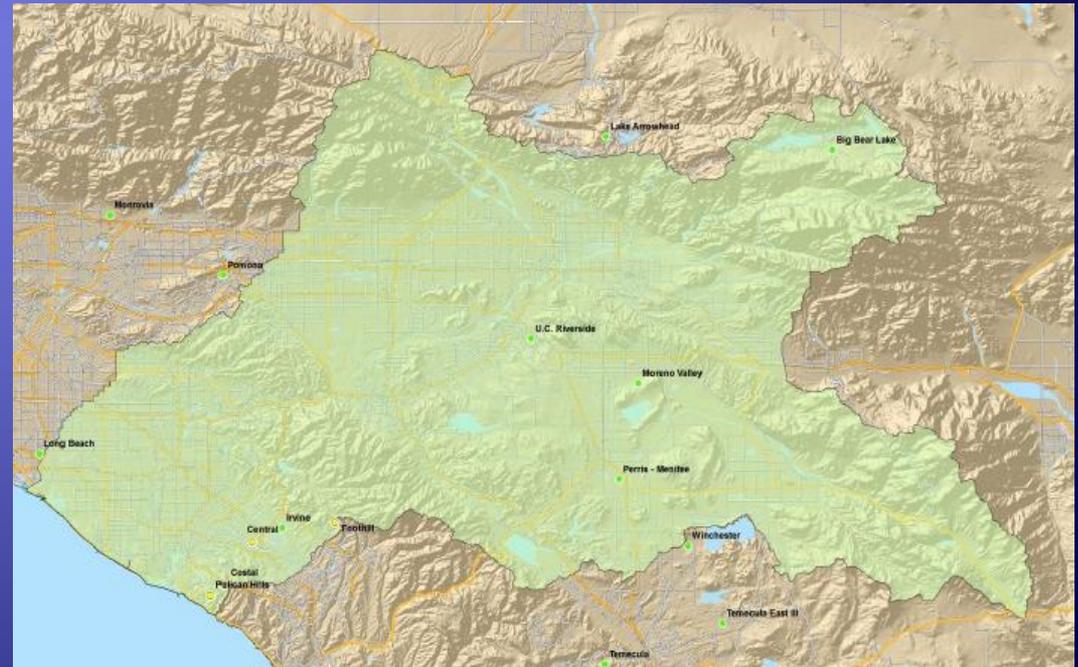
Weather/ET – Develop watershed-wide daily ET collection

## Why?

- ◆ Foundational data for calculating water use efficiency

## How?

- ◆ Task goes to RFP to evaluate approaches for accuracy and cost-effectiveness



# Agency Level Tools

**Water Efficiency Calculator** – Utilizes customer level data (landscape square footage, ET and water use) calculate customer by customer water use efficiency level (based on State efficiency standards or beyond)

## Why?

- Used to target landscape transformation sites
- Used to determine current water efficiency levels
- Used to consider future/potential water efficiency levels
- Made available to each individual agency in a secure fashion

## How?

- Goes to RFP

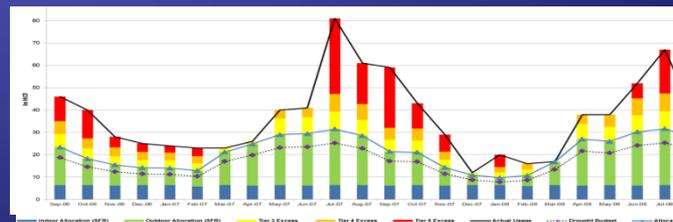
Consumption	% of Customers
At or below allocation	74.1%
Greater than 100% up to 125% of allocation	17.6%
Greater than 125% up to 150% of allocation	5.1%
More than 150% of allocation	3.2%

Cust. No	Average Usage as Percentage of Water Budget
42527-1	260.1%
41617-1	259.4%
40726-1	256.0%
42525-1	252.9%

Most inefficient users, top drought response targets

Cust. No	Average Usage as Percentage of Water Budget
40688-1	35.3%
40035-1	34.0%
40107-1	33.0%
40935-1	31.5%

Efficient customers not included in drought outreach



# Agency Level Tools

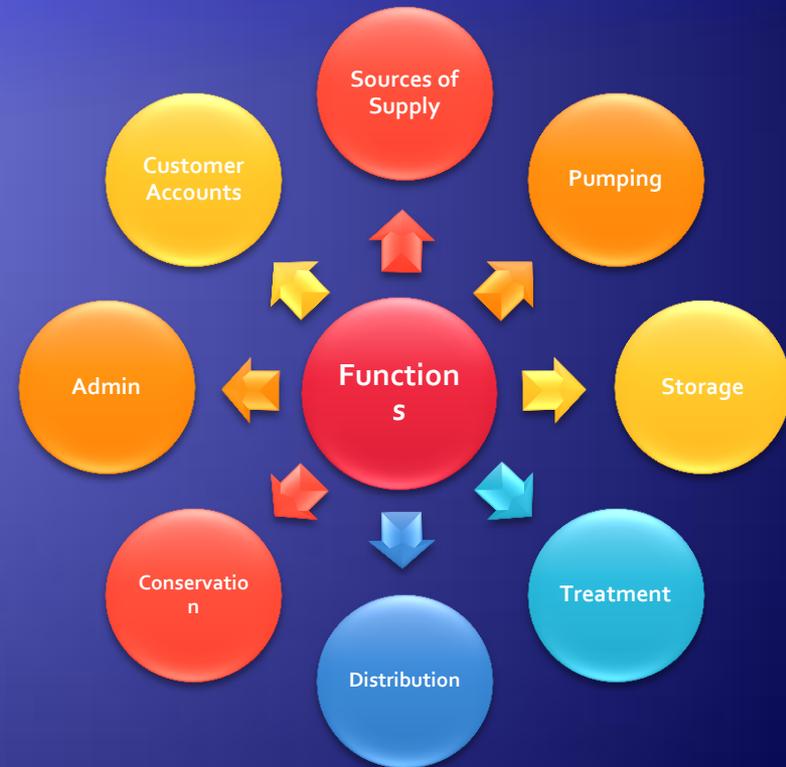
**Water Rate Modeler** – Utilizes customer level data, water efficiency standard and calculation, individual agency financial data and the ability to “test” any rate scenario

## Why?

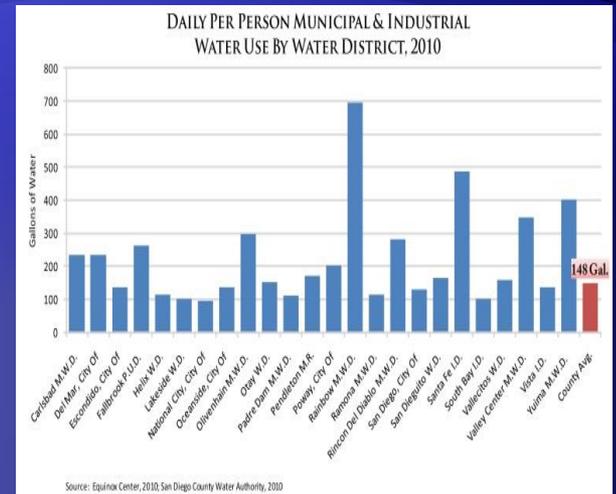
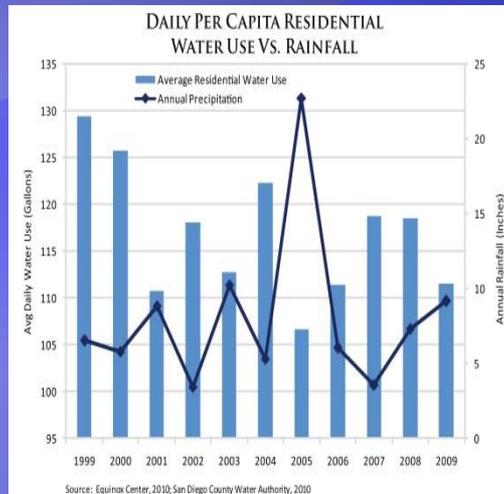
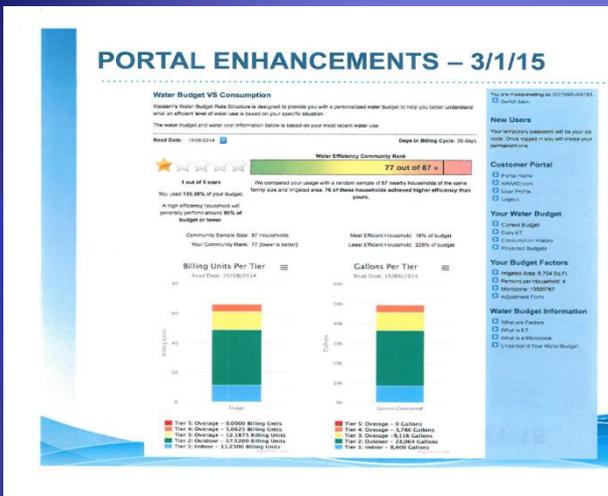
- Gives agencies a low-cost tool to test rate concepts with their specific data
- Utilizes customer level data along with agency financial data
- Does not obligate agencies to hiring consultants and/or adopting new rates

## How?

- Goes to RFP



# Agency & Customer Level Tools



## Why?

- Provide a secure, accessible location for customer level data, ET data, agency by agency water use data for use in the provided tools
- Makes data available for use by any agency at any level they choose

## How?

- Goes to RFP and/or is a joint public/private sector product