

# Adoption of Bureau of Reclamation Agreement

Ian Achimore, Senior Watershed Manager

PA 22 Committee | January 23, 2020

Item No. 4.A.



# Agreement Purpose

- ▶ Allows Reclamation to provide \$597,500 worth of in-kind staff time/resources to implement the Watershed-Wide Water Budget Decision Support Tool (Project)

# Project Description

- ▶ Will create budgets based on efficiency at the customer and retail water agency scale;
- ▶ Budgets will be shared with retail water agencies through a web-based tool;
- ▶ Retail agencies will target inefficient customers and use tool for compliance with 2018 water conservation legislation\* requirements.

**What Reclamation staff will help with.**

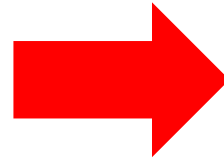


\*Assembly Bill 1668 and Senate Bill 606

# Scope of New Water Conservation Requirements

Require the following data to calculate agency-wide “objectives” (water budgets):

- A. Indoor residential.
- B. Outdoor residential.
- C. Outdoor dedicated irrigation meters.
- D. Efficient water losses (pipe leaks).
- E. Approved variances (water use by horse corrals).



**Project will help agencies with these categories.**

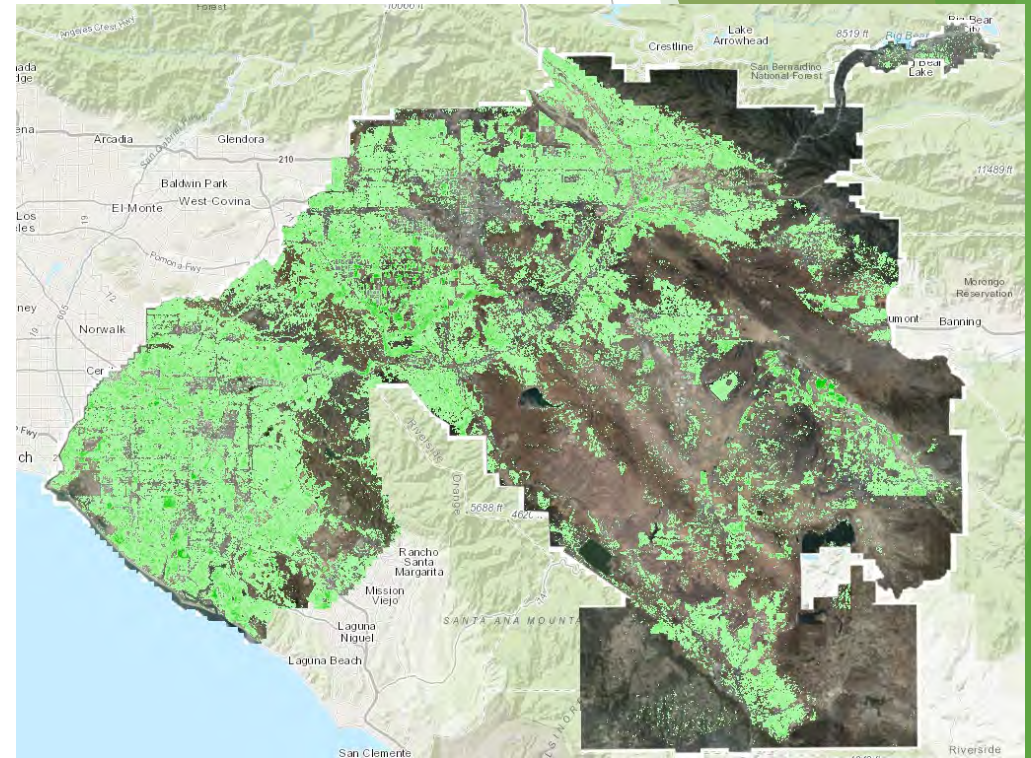
# Comparison Between Budget and Consumption Data

Residential Customer A, B, C...	Water Used	Budget
Dedicated Landscape Customer A, B, C...	Water Used	Budget
Approved Variances	Water Used	Budget
Efficient Water Losses	Water Used	Budget
	Sum	≤ Sum

The legislation also allow a bonus budget increase for agencies that use potable reuse water. Agencies will receive an additional up to 10% or 15% of total water use objective based on when the reuse facility was established.

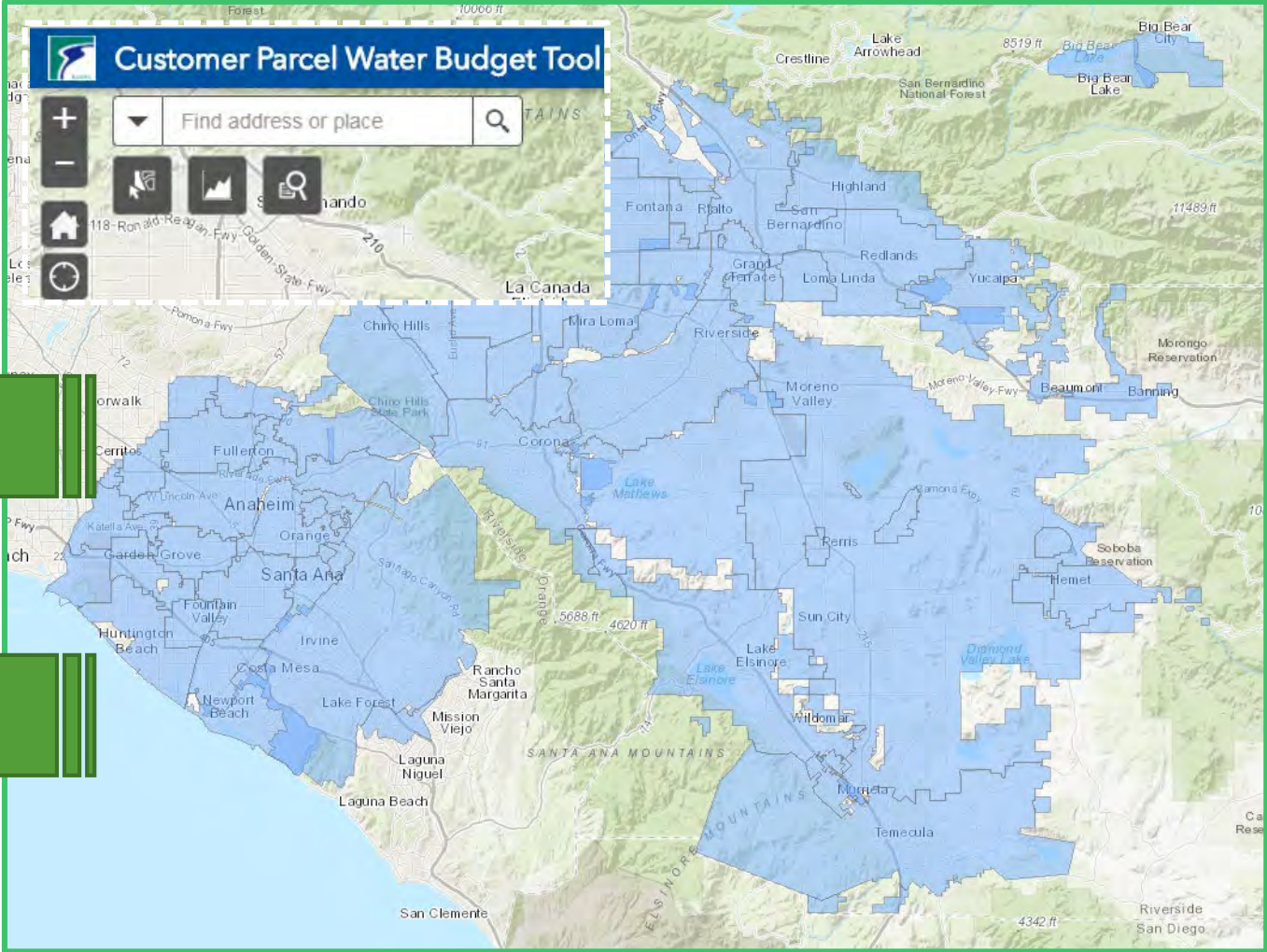
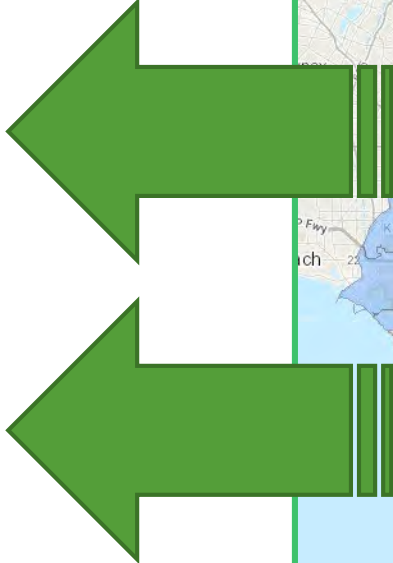
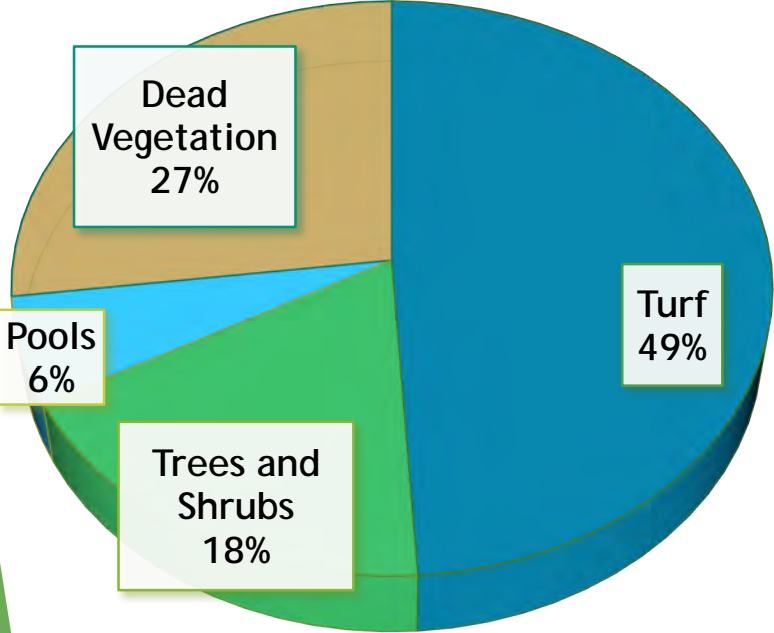
# Analysis of Imagery

- ▶ SAWPA will use flight or satellite imagery to create the landscape measurement database.
  - ▶ Will then use California Irrigation Management Information System (CIMIS) weather stations to calculate water needs of landscapes.
- ▶ Will group dates and flight time to minimize shadows.
- ▶ Note: SAWPA is lead for acquiring imagery while Reclamation will lead the analysis.



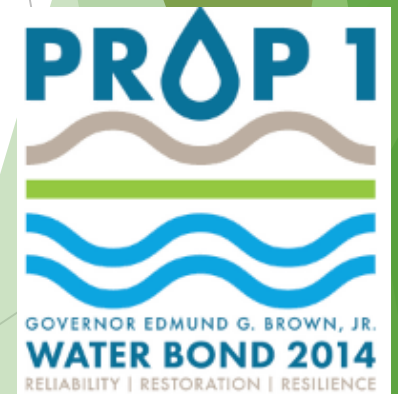


# Decision Support Tool Functionality



# Recap of Project Development Milestones

- ▶ **March 28, 2019:** PA 22 Committee supported application to DWR for Proposition 1 funding and Bureau of Reclamation for in-kind Reclamation staff time/resources.
- ▶ **July 15, 2019:** SAWPA submitted project proposal to Reclamation.
- ▶ **September 23, 2019:** Reclamation announces SAWPA successful in proposal.
- ▶ **November 1, 2019:** SAWPA submitted project proposal to Department of Water Resources for Proposition 1 Round 1 IRWM.
- ▶ **Winter 2020:** DWR to announce draft funding awards for Proposition 1 Round 1 IRWM grant.

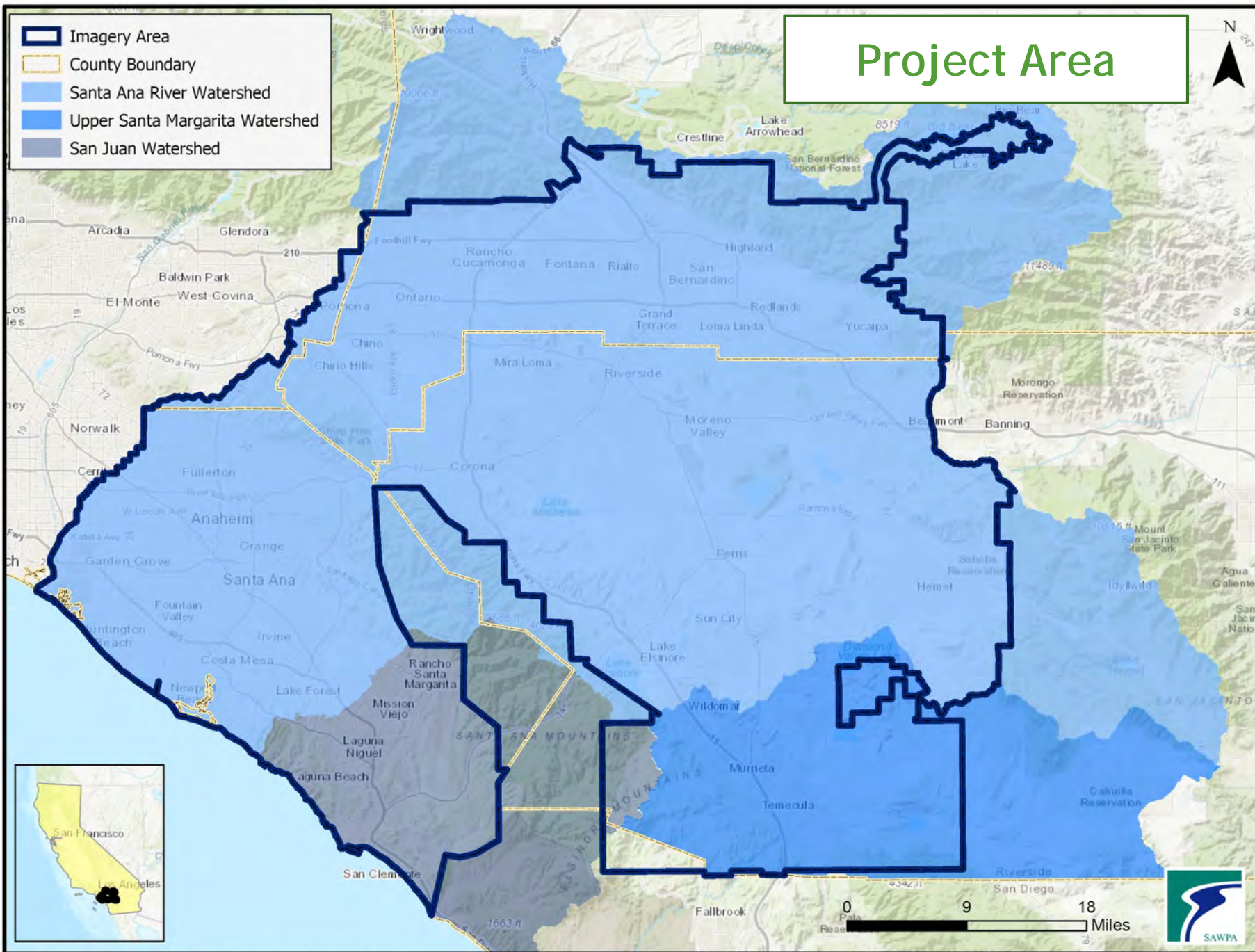






# Budget By Task

Task	Task Description	Cost
1	Imagery	\$560,000
2	Analysis	\$565,000
3	Decision Support Tool	\$340,000
<b>Total</b>		<b>\$1,465,000</b>
Funding Sources	Prop 1 Grant Share	\$500,000
	Bureau of Reclamation Share	\$597,500
	Cost Share	\$367,500



# Benefits to SAWPA and Member Agencies

- ▶ Use the Reclamation's Geographic Applications and Analysis Group expertise and software to:
  - ▶ Analyze the imagery, and
  - ▶ Conduct quality control on the imagery analysis.
- ▶ Save staff time from going through RFP for imagery analysis and quality control;
- ▶ Save an estimated 4,775 acre-feet per year;
- ▶ Reduce local cost shares by over \$590 K for an estimated \$1.4 M project; and
- ▶ Further strengthen the long-term SAWPA/Reclamation partnership.



## Recommendation

Authorize the General Manager to execute the Memorandum of Agreement by and between the Department of Interior, Bureau of Reclamation (BOR) and the Santa Ana Watershed Project Authority (SAWPA) for the Santa Ana River Watershed-Wide Water Budget Decision Support Tool.

# State Aerial Imagery for Retail Wide Water Budget - Status

Ian Achimore, Senior Watershed Manager

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Item No. 4.B.







# DWR and State Water Board Activities Related to the 2018 Water Conservation Legislation

## Water Agencies



- ▶ Per 2018 water conservation legislation, urban water agencies will calculate water use objectives and compare water consumption to water use;
  - ▶ Agencies can use DWR's 2018 aerial imagery data that is currently being analyzed by Eagle Aerial/Quantum
- ▶ State Water Board is working on a rulemaking that will define certain standards that will affect the calculation of the objectives;
  - ▶ As part of rulemaking, the Water Board is using various imagery to understand the impact of these standards.

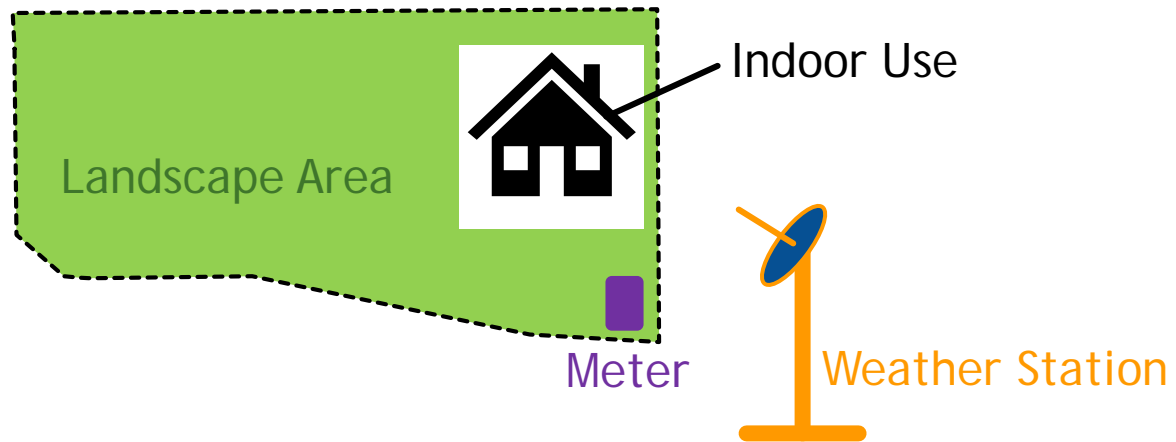
# State Water Board's Rulemaking Process

- ▶ Per California Environmental Quality Act requirements, their rulemaking requires an economic/environmental impact analysis;
- ▶ They have the 2015 Santa Ana River Watershed aerial imagery data, as well as data from East Bay Municipal Utilities District, Padre Dam Municipal Water District, the cities of Santa Rosa and Benicia, and Sacramento Regional Water Authority to assist in this analysis;
- ▶ They will also analyze potential changes in water use trends across the State, such as water use declining to drought-era levels.



# Calculation of a Water Budget (State Water Board May Use)

$$\underbrace{[PPH * GPCD]}_{\text{Indoor Budget}} + \underbrace{[(LA * (0.62 * ETo * ETAF))]}_{\text{Outdoor Budget}} = \text{Total Water Efficiency Budget}$$



# Determining Standards

$$[\text{PPH} * \text{GPCD}] + [(\text{LA} * (0.62 * \text{ETo} * \text{ETAF})] = \text{Total Water Efficiency Budget}$$

Currently 55

Depends on plant type  
in landscape area



# Next Steps



- ▶ DWR to provide 400+ urban water agencies with irrigable land measurements by January 1, 2021;
  - ▶ DWR has convened a workgroup of water agency and environmental representatives to provide feedback on imagery process.
- ▶ State Water Board to begin formal rulemaking in 2021.
  - ▶ Staff and the Water Board's consultant team will communicate results and allow members of the public to explore conservation scenarios through a tool.

Questions

The image features a white background with several green geometric elements. On the left, there is a solid green triangle. A thin vertical green line is positioned in the upper-middle section. On the right side, there is a complex arrangement of overlapping, semi-transparent green triangles and polygons in various shades, creating a layered, abstract effect.

# Conservation -Based Water Rates Update

Ian Achimore, Senior Watershed Manager

PA 22 Committee | January 23, 2020

Item No. 4.C.



# Cities Participating

## Chino



Prop 218 Hearing:  
June 19, 2018  
Implement rates:  
December 1, 2019

## Chino Hills



Prop 218 Hearing:  
May 8, 2018  
Implemented rates:  
October 1, 2018

## Hemet



Final Rate Study Draft:  
January 3, 2020

# Status of funding by agency

Retail Water Agency	Invoiced to DWR	Estimated Future Invoice Costs	Final Costs (sum of invoiced and future invoices)
Chino	\$94,595	\$133,602	\$228,197
Chino Hills	\$1,052,304	\$20,000	\$1,072,304
Hemet	\$75,036	\$ -	\$75,036
<b>Total</b>	<b>\$1,221,934</b>	<b>\$153,602</b>	<b>\$1,355,537</b>



# Chino

- ▶ City launched budget-based rates billing structure December 1, 2019.
- ▶ Under a grace period, customers will be charged the Tier 2 rate for any Tier 3 usage for the first two water bills under the new system.

Customer Class	Tier 1 Usage	Tier 2 Usage	Tier 3 Usage
Single Family	Indoor use based on people per household	Outdoor use based on irrigation area	Usage above Tier 2
Multi-Family	Indoor use based on people per household	Outdoor use based on irrigation area	Usage above Tier 2
Commercial	Flat Rate	N/A	N/A
Landscape	Budget based on irrigated area	Usage above Tier 1	No Tier 3
Recycled Water	Flat rate	N/A	N/A

# Chino hills

- ▶ City adopted budget-based rates for residential customers (3 tiers);
- ▶ City is still incurring costs for:
  - ▶ minor billing software issues,
  - ▶ educating customers on the new billing structure, and
  - ▶ addressing variances.
- ▶ Costs are able to be covered by grant savings.

## A Tiered Rate Structure

Budget-based rates take into consideration water-efficiency targets set by the State of California for indoor and outdoor water use, lot size, and weather conditions.

### The 3 Tiers

#### TIER 1 INDOOR



- ▶ 55 gal/person/day
- ▶ Average water efficient household base rate

#### TIER 2 OUTDOOR



- ▶ 1/3 property landscaped
- ▶ More water in hot months
- ▶ Less water in cold months

#### TIER 3 INEFFICIENT



- ▶ High water use
- ▶ Exceeds flexible tier 2 allocation

# Hemet

- ▶ New City management feedback in May 2019 was to not move forward with finalizing rate study.
- ▶ City finalized draft rate study on January 3, 2020.

**Table 2: Proposed Water Budget Formulas, Class Definitions and Tiers**

Class	Water Budget	Indoor CCF Per Day of Billing Period	Gallons Per Person Per Day (GPCD)	Assumed Household Size	Landscape Coefficient (ETAF)	Drought Factor (DF)
Multi Family Residential	Indoor + Outdoor	0.147	55	2	0.8	1
Single Family Residential	Indoor + Outdoor	0.221	55	3	0.8	1
Irrigation	Outdoor	0			1	1

**Indoor Budget Formula**

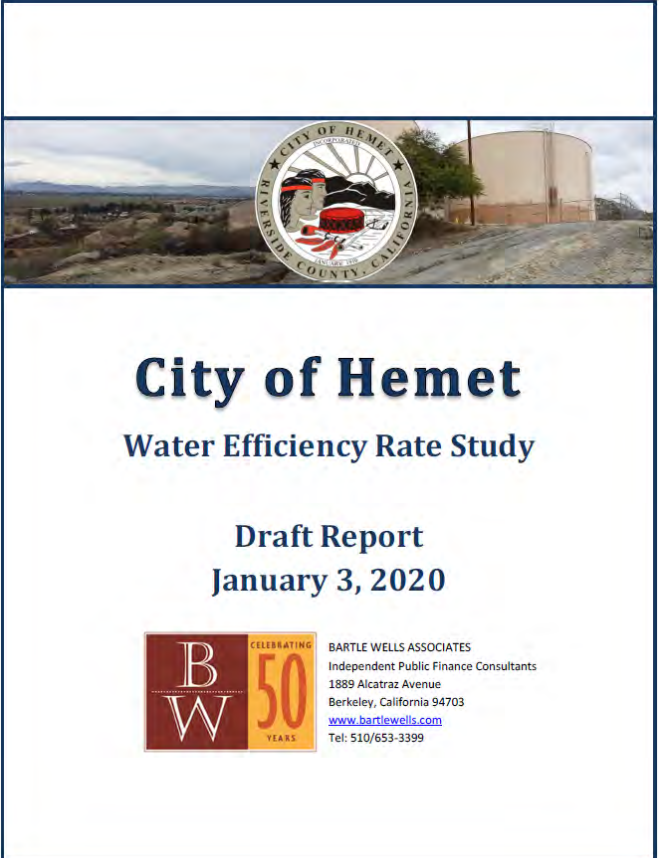
Household Size X GPCD X Days X CCF/748 Gallons

**Outdoor Budget Formula**

$((ET0 \times ETAF \times Area \times 0.62) \times DF) / 1000 \times 1.34$

**Water Budget Tiers**

Tier 1	0 - 100% of Budget
Tier 2	100 - 150% of Budget
Tier 3	> 150% of Budget



The image shows the cover of a report titled "City of Hemet Water Efficiency Rate Study Draft Report January 3, 2020". At the top, there is a banner image featuring the City of Hemet seal on the left and a photograph of a large water storage tank in a desert landscape on the right. The title "City of Hemet" is prominently displayed in a large, bold, dark blue font, with "Water Efficiency Rate Study" underneath it in a smaller, dark blue font. Below the title, the text "Draft Report January 3, 2020" is centered. At the bottom, there is a logo for Bartle Wells Associates, which includes the letters "B" and "W" in a stylized font, and a "50 YEARS" anniversary badge. To the right of the logo, the company name "BARTLE WELLS ASSOCIATES" and their contact information are listed.

## City of Hemet

### Water Efficiency Rate Study

Draft Report  
January 3, 2020



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Tel: 510/653-3399





# Smartscape Update

Ian Achimore, Senior Watershed Manager

PA 22 Committee | January 23, 2020

Item No. 4.D.





# Program Development and Task List

- ▶ Smartscape is a partnership between SAWPA member agencies and OC Coastkeeper, developed in 2015 during SARCCUP initial grant application effort;
- ▶ Supports water customers that have transitioned from turf grass to drought tolerant landscaping through specific tasks:
  - ▶ Landscape site visits
  - ▶ Develop written training materials
  - ▶ Workshops, training, etc.
- ▶ Makes physical improvements to irrigation systems (prevents leaks and overwatering)



**INLAND EMPIRE WATERKEEPER.**  
*Advocacy • Education • Research • Restoration • Enforcement*



**ORANGE COUNTY**  
**COASTKEEPER.**

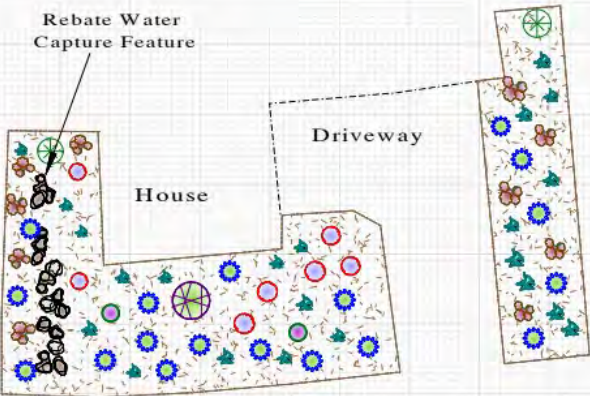
# Program Overview

- ▶ Program descriptions contained in Sub-Agreement and SAWPA Member Agency Roles/Responsibilities Memo:
  - ▶ Defines two-year schedule (March 2020 end date)
  - ▶ Defines scope and qualifications for OCCK training and outreach personnel
  - ▶ Task list and their specific costs
  - ▶ Deliverables:
    - ▶ Photo verification;
    - ▶ Customer forms; and
    - ▶ Reports on work completed.



# Examples of Tasks Implemented

## Landscape Designs - WMWD



All plants are 1 gallon in size except for Manzanita, which is a 15 or 25 gallon. You will need a minimum of 4 cubic yards of decomposed granite. Plant design features 60 plants for 1,971 sq. meeting the rebate requirement of 3 plants per 100 sq. feet.

Common Name	Botanical Name	Qty
Existing Plants		
Schwarzkopf Aeonium	<i>Illicium anisatum</i>	10
Blue Finger Senecio	<i>Senecio talinoides mandraliscae</i>	22
Lilac Verbena	<i>Verbena lilacina</i>	18
Sunset Manzanita	<i>Arctostaphylos 'Sunset'</i>	1
Mexican Bush Sage	<i>Salvia leucantha</i>	7
Texas Ranger 'Compacta'	<i>Leucophyllum frutescens</i>	2

## Irrigation Improvements - IEUA



# Smartscape Budget

	Grant Amount	Local Match*	Total Cost
Coastkeeper Sub-Agreement Amount	\$122,000	\$278,000	\$400,000

\*OCWD's SARCCUP local cost share funding originally intended for Smartscape was added to Conservation-Based Water Rates portion of SARCCUP based on Pa 22 Committee direction and OCWD request.



# Smartscape Spending to Date (Dec 2019)

Agency:	EMWD	IEUA	SBMVWD	WMWD	Total
Allocation	\$96,509	\$96,509	\$96,509	\$96,509	\$386,034
Invoiced	\$96,875	\$96,349	\$65,775	\$47,050	\$306,049
Remaining	(\$366)*	\$160	\$30,734	\$49,459	\$79,985

**79%  
Implemented**

\*SAWPA has small contingency to handle minor overages.

# Questions

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light to dark. The shapes are primarily triangles and polygons, creating a layered, modern aesthetic. The overall composition is clean and minimalist.