DATE: May 25, 2017

TO: Water Resources Committee
Ed Colley, Chair
Jerry Gladbach, Vice Chair
Tom Campbell
Bill Cooper
Dean Efstathiou

FROM: Dirk Marks
Water Resources Manager

A meeting of the Water Resources Committee is scheduled to meet on **Thursday, June 1, 2017 at 5:30 PM** at the Santa Clarita Water Division located at 26521 Summit Circle, Santa Clarita, CA 91350 in the Training Room.

MEETING AGENDA

1. Public Comment

2. * Recommend Approval of a Resolution Adopting an Addendum to the Santa Clarita Valley Water Use Efficiency Strategic Plan

3. Water Resources Manager's Report
   * 3.1 Status of Rosedale Rio-Bravo Water Storage District Banking and Exchange Program Extraction Facilities
   * 3.2 Status of Groundwater Sustainability Agency Formation
   3.3 Status of K-12 Education Activities
   3.4 Other Staff Activities

4. * Committee Planning Calendar

5. CLOSED SESSION
   5.1 Conference with Legal Counsel – Anticipated Litigation, Significant Exposure to Litigation Pursuant to Paragraph (2) of Subdivision (d) of Section 54956.9 (1 case)
   5.2 Conference with Real Property Negotiators (Section 54956.8):
   Property: The Castaic Lake Water Agency Owned Property within the Devil's Den Water District, Located in Kings and Kern County
   Agency Negotiators: Dirk Marks and Matthew Stone
   Negotiating Parties: Total Recall, Rolling Hills Farms, SunPower, Inc.
   Under Negotiation: Price and Terms of Payment

6. Closed Session Announcements

7. Adjournment

* Indicates attachment
♦ To be distributed

cc: CLWA Board of Directors
Joseph Byrne

Notice:

Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by telephoning (661) 297-1600, or writing to Castaic Lake Water Agency at 27234 Bouquet Canyon Road, Santa Clarita, CA 91350. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that Agency staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the Agency to provide the requested accommodation.

Pursuant to Government Code Section 54957.5, non-exempt public records that relate to open session agenda items and are distributed to a majority of the Board less than seventy-two (72) hours prior to the meeting will be available for public inspection at the Castaic Lake Water Agency, located at 27234 Bouquet Canyon Road, Santa Clarita, California 91350, during regular business hours. When practical, these public records will also be made available on the Agency's Internet Web site, accessible at http://www.clwa.org.

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ITEM NO.
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Castaic Lake Water Agency
Memorandum

June 1, 2017

To: Water Resources Committee

From: Dirk Marks
Water Resources Manager

Subject: Recommend Approval of a Resolution Adopting an Addendum to the Santa Clarita Valley Water Use Efficiency Strategic Plan

SUMMARY

The Addendum to the Santa Clarita Valley Water Use Efficiency Strategic Plan (SCV WUE SP) presents historic conservation program participation from 2014-2016 (Attachment A) and makes recommendations for future program participation (Attachment B). A high percentage of water use in the Agency service area is associated with residential and outdoor use, so residential and irrigation conservation programs are the primary focus moving ahead. The total savings from recommendations contained in the Addendum are approximately 12% of total Valleywide consumption in 2020 and approximately 9,200 acre-feet per year in 2020 with an additional 3,100 acre-feet per year from plumbing codes and standards.

DISCUSSION

The SCV WUE SP identifies the conservation effort required for the Santa Clarita Valley to reach 20% reduction in water use by 2020 as required by SBX7-7. It was adopted in June 2015 and is consistent with the Agency's Strategic Plan objective to advance water conservation (Strategy B.4 – Advance demand management and achieve the water target of 20% per capita by 2020). The Agency and local water retailers initiated an update of the SCV WUE SP models in August of 2016 to create the attached Addendum (Attachment C).

During 2014-2016, the drought and resulting statewide and local conservation messages led to a considerable reduction in water use in the Santa Clarita Valley. The table below illustrates that during the height of the drought in 2015, state mandated conservation resulted in all water retailers exceeding 2020 water saving targets.

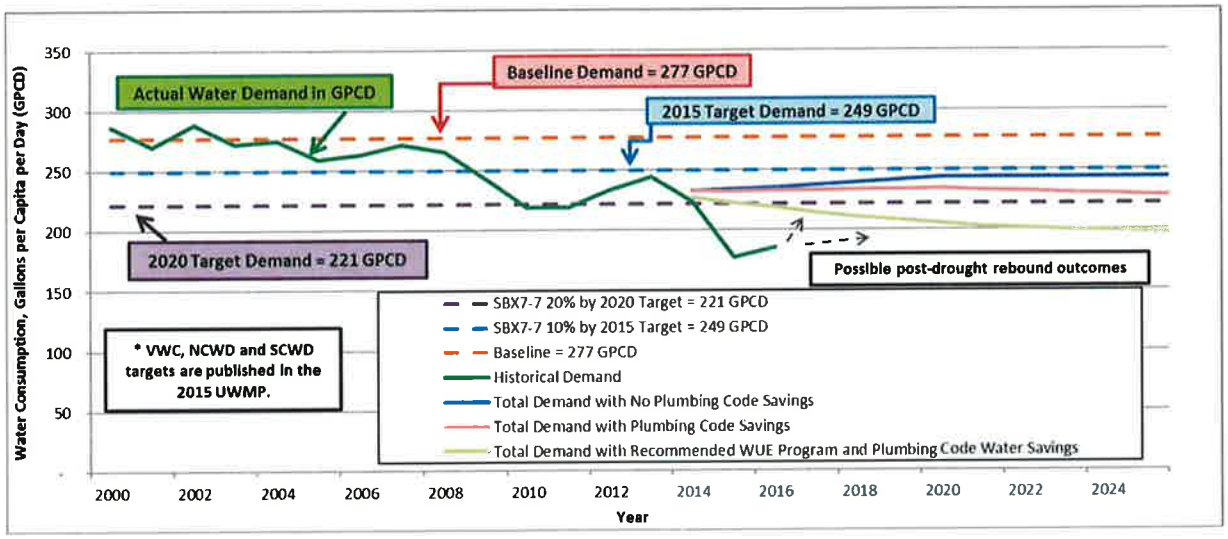
Water Retailer Baseline and Target GPCD

Retailer	Baseline [a]	2015 Target[a]	2020 Target[a]	Actual 2015 (Drought Restriction Year)	Actual 2016 (Drought Rebound Year)
Los Angeles County Waterworks District 36[b]	235	212	188	145	144
Newhall County Water District	238	214	190	156	157
Santa Clarita Water Division	251	226	201	158	172
Valencia Water Company	334	300	267	213	220
Valleywide[c]	277[c]	249[c]	221[c]	176[c]	185[c]

a. Targets are consistent with 2015 UWMP (2016). GPCD values represent potable per capita water use only
b. LA County Waterworks is included for completeness and to calculate the Valleywide numbers, but LA County Waterworks does not have to meet the 20% by 2020 due to size.

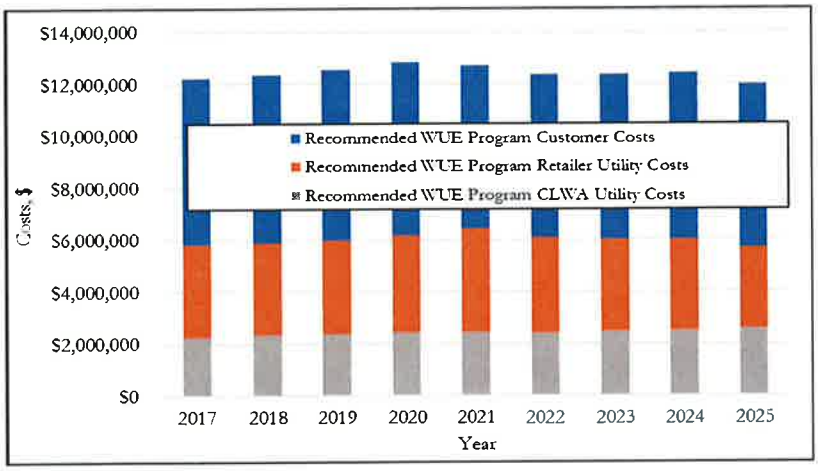
While the 2015 Targets were surpassed by all water retailers, currently statewide, there is considerable concern about an impending rebound. In the graph below, two possible post-drought rebound outcomes are shown with steep and slight slopes to show the variability in rebound.

Valleywide Per Capita Water Use



The programs in the SCV WUE SP drive demand down slowly over time. This strategy accounts for some of the challenges in the Santa Clarita Valley, including relatively low retail water rates, relatively affluent population that is less responsive to current price signals to conserve, prevalence of turf grass in existing landscape, and a diversified water supply portfolio that provides relative protection from potential droughts.

The Recommended SCV WUE SP has the possibility to reduce per capita water use in a cost-effective manner. With the recommended SCV WUE SP programs, approximately 9,200 AFY could be saved valleywide in 2020. This does not include the approximately 3,100 AFY saved from plumbing codes and standards. Annual costs to implement these programs are estimated in the following figure. The costs for the Agency are approximately $2 million per year.



The report concludes that six full time equivalents (FTEs) would be required to implement the Agency's Valleywide programs. Currently, the Agency has 2.5 full time staff (FTE) working on conservation programs and 3.5 FTE working in education-related to conservation, primarily with K-12 students.

FINANCIAL CONSIDERATIONS

The proposed FY 2017/18 Budget for the implementation of Best Management Practices conservation programs is $1,800,000. The program would be funded by the wholesale water rate. The consequences for not implementing the conservation measures identified in the SCV WUE SP include losing eligibility for state grant funding. Additionally, unknown administrative consequences from state regulatory agencies may be imposed. Furthermore, without conservation, the Agency would ultimately be faced with increased costs associated with acquiring and/or developing more expensive alternative water supplies.

RECOMMENDATION

That the Water Resources and Outreach Committee recommend that the Board of Directors approve the attached resolution adopting the Addendum to the Santa Clarita Valley Water Use Efficiency Strategic Plan.

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Attachments

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Attachment A

Valleywide CLWA Highlights & Programs

CLWA has had numerous water-use efficiency program highlights and achievements over the past three years.

Drought Response – During the drought, Castaic Lake Water Agency conducted a valleywide outreach campaign on behalf of the Family of Water Suppliers. The campaign consisted of messaging which sought to reinforce the continuation of the drought despite occasional rain (see example below).

CLWA Highlights

Over the past three years, Castaic Lake Water Agency has also:

- Launched a Cash for Grass (Lawn Replacement) Program in 2014 with an online format and outreach campaign;
- Hosted six Q & A sessions for customers with questions about their weather-based irrigation controllers and watering restrictions;
- Increased the Waterwise gardening classes to 24 per year, provided c Saturdays and in the evenings;
- Removed 816,508 square feet of turf grass in commercial, industrial, and institutional settings; and
- Created a multi-year social marketing campaign stressing the benefit of life without turf grass.

The following table presents a brief description of the measures that CLWA has conducted this past three years valleywide. Note that targets were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP.

Summary of CLWA Measures and Participation Rates[1]

Measure	Units		2014	2015	2016	Notes
Public and School Education	Students	**Target**	15,876	16,172	16,470	CLWA offers curriculum in person at CLWA and in classrooms for K-12 students as well as Waterwise gardening classes for adults.
		Actual	15,231	13,270	12,523	
SF Turf Replacement Program	Number of Projects	**Target**	145	148	151	CLWA offers a rebate of $2/square foot for the removal of turf grass and replacement with water-efficient plants and mulch, rocks or decomposed granite in residential settings. While this program was slow to take off in 2014, it surged with participation in 2015 and then declined in 2016 as the public's focus shifted away from the drought and drought fatigue set in.
		Actual	23	259	76	
MF CII Turf Replacement Rebate	Square feet of Turf	**Target**	265,000	272,500	280,000	CLWA offers a rebate of $2/square foot for the removal of turf grass and replacement with water-efficient plants and mulch, rocks or decomposed granite in MF/CII settings. This program surged in popularity in 2015 and 2016.
		Actual	31,008	423,250	362,250	
SF WBIC Free Controller	Number of Controllers	**Target**	359	365	371	CLWA provides free weather based controllers after completion of on-line training class. All controllers are inspected to make sure they are installed and address remaining questions. With a valleywide campaign in 2014, this program was close to meeting the target, but without valleywide marketing, the program seems to have much less interest.
		Actual	675	366	241	
MF CII	Number of	**Target**	420	432	456	CLWA rebates irrigation controllers at

[1] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

Measure	Units		2014	2015	2016	Notes
WBIC Rebate	Stations	**Actual**	1383	2643	468	$25/active station with pre- and post-inspection required. This program may have reached a saturation point in 2016 with few non-weather-based controllers needing replacement.
HECW Rebate	Number of Machines	**Target**	1,762	1,800	N/A	CLWA and the retailers offered a rebate of $200 per high-efficiency washing machine with a water factor of 4.0 or less. This program ended in 2015 in August after two months of rebates in the fiscal year to shift funds to SF Turf Replacement.
		Actual	1,989	441	N/A	
Low-income High-efficiency Fixture	Number of rebates	**Target**	284	289	294	Sempra Energy offers a direct install program to low-income homeowners within the Santa Clarita Valley. An average of 250 homes participate each year and have low-flow aerators, high-efficiency showerheads and washing machines installed. This program is paid for by Sempra Energy.
		Actual	250	250	250	

[1] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

LACWD Highlights and Programs

Los Angeles County Waterworks District provides a sustainable supply of water to select customers throughout the County of Los Angeles. In response to the drought, LACWD (Val Verde community only) launched two successful outreach campaigns: "*Drop Your Water Weight: Put Your Lawn on the Drought Diet*" in 2015, and "*Drop Your Water Weight: Find and Fix Leaks*" in 2016. The campaigns were featured in local newspapers, as well as on various radio stations, bus advertisements, and the Waterworks District's website, lacwaterworks.org.

LACWD customers received up-to-date drought information and enhanced customer service features, including:

- Dedicated email accounts for customer inquiries:
  - Water Audits (wateraudit@dpw.lacounty.gov)
  - Rebate Programs (rebates@dpw.lacounty.gov)
  - Drought Information and Billing Appeals (drought@dpw.lacounty.gov)
- A conservation hotline (1-888-893-2555) answered by engineers specializing in phased water conservation and District rebate programs
- Online live chat assistance on the Waterworks website and the County Drought website
- Water waste reporting available through email, phone, online, and the smart phone app, "The Works"

LACWD Highlights/Achievements (from June 1, 2015, through March 31, 2017):

- Water Savings: 178 million gallons
- Average Monthly Water Conservation: 23%

The following table presents a summary and brief descriptions of LACWD's measures and participation rates. Note that targets were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP.

Summary of LACWD Measures and Participation Rates[2]

Measure	Units		2014	2015	2016	Notes
SF MF Outdoor Surveys	Number of Surveys	**Target**	-	1	2	LACWD offers outdoor water surveys offered for existing customers.
		Actual	x	x	x	
SF MF Survey Leak & Pressure	Number of Accounts	**Target**	-	1	2	LACWD offer indoor water surveys for existing single and multi-family residential customers.
		Actual	x	x	x	
Sprinkler	Number of	**Target**	3	4	4	LACWD provides $2 rebates to replace

[2] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

Measure	Units		2014	2015	2016	Notes
Nozzle Rebate	Accounts	**Actual**	x	x	x	standard spray sprinkler nozzles with rotating nozzles that have lower application rates.
Landscape Ordinance	Number of Design Reviews	**Target**	103	103	112	LACWD enforces Water Efficient Landscape Design Standards. Standards specify that development projects subject to design review be landscaped per climate appropriate principals, with appropriate turf ratios, plant selection, efficient irrigation systems and smart irrigation controllers
		Actual	x	x	x	
Education and Water Waste Enforcement	Number of Accounts (customers assisted)	**Target**	4	4	5	This measure involves assisting customers reduce water waste.
		Actual	x	x	x	

NCWD Highlights and Programs

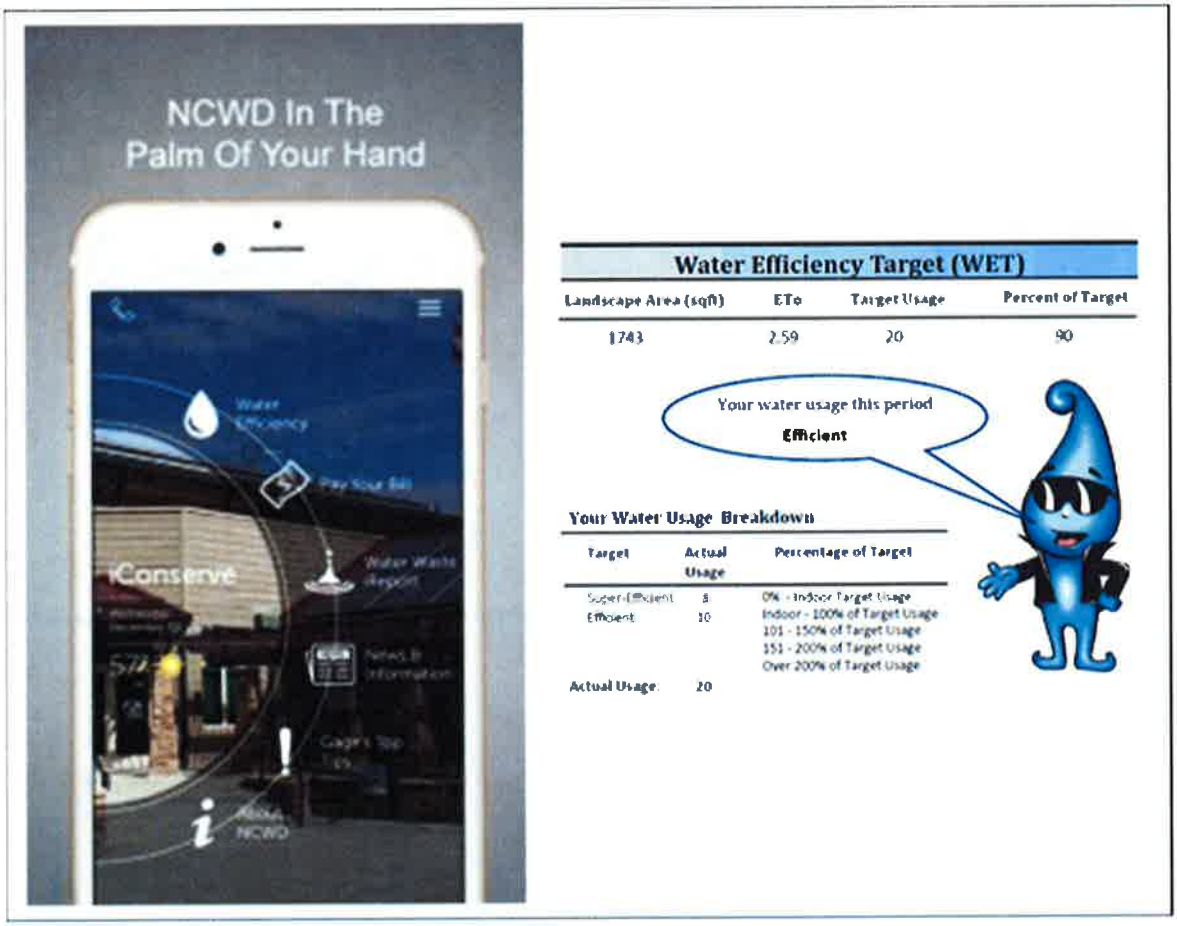
During the drought, Newhall County Water District increased educational messaging requesting customers to decrease water usage. NCWD also had a customized program allowing customers to receive rebates (including rain barrels and pool covers) matching other Southern California water suppliers.

Since the emergency drought restrictions have been lifted, NCWD continues to provide educational messaging so customers can maintain savings by taking advantage of the Water Efficiency Programs. More information is available at ncwd.org.

NCWD Highlights/Achievements:

- Developed an app for reporting water waste and learning about water conservation
- Created a Water Efficiency Target (WET) Program with water budgets for each single family residential customer with an explanation here: https://vimeo.com/116884249
- Began a branding campaign with Gage the Water Drop
- Consistent savings of 27% for 2016 compared to 2013 levels.
- Due to the high customer response to NCWD's drought educational messaging, the need for savings from external Water Efficiency Programs diminished.

NCWD Water Efficiency Customer Outreach Program Highlights



The following table presents a summary and brief descriptions of NCWD's measures and participation rates. Note that targets were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP.

Summary of NCWD Measures and Participation Rates[3]

Measure	Units		2014	2015	2016	Notes
Customer Water Use Reports	Number of Accounts	**Target**	-	2,179	2,201	NCWD provides detailed customer specific home water use information taken from billing data to support the customer making informed choices to conserve.
		Actual	N/A	1,462	5,050	
SF Drip Irrigation Incentives	Number of Accounts	**Target**	-	13	13	NCWD offers spray to drip conversion rebates for $0.25 per square foot for a maximum of $625 rebate.
		Actual	N/A	9	10	
MF CII Drip Irrigation Incentives	Number of Accounts	**Target**	-	3	3	NCWD offers spray to drip conversion kits for $0.25 per square foot for a maximum of $1,000 rebate per meter; assume 3 meters per account (except MF - 1 meter).
		Actual	N/A	-	-	
SF MF Outdoor Surveys	Number of Accounts	**Target**	-	36	36	NCWD offers outdoor water surveys existing customers. Normally those with high water use are targeted and provided a customized report on how to save water.
		Actual	N/A	1	12	
SF MF Survey Leak & Pressure	Number of Accounts	**Target**	-	68	68	NCWD offers indoor water surveys for existing single and multi-family residential customers.
		Actual	N/A	1	12	
HE Faucet & HE Showerhead Giveaway	Number of Accounts	**Target**	223	225	228	NCWD offers showerheads and faucet aerators at office or community events. Giveaway includes automatic shut off nozzles. *NCWD no longer tracks
		Actual	*261	*289	*307	

[3] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

Measure	Units		2014	2015	2016	Notes
						this by account and the total provided is estimated based on product purchased and distributed.
Sprinkler Nozzle Rebate	Number of Accounts	**Target**	48	49	50	NCWD provides rebates to replace standard spray sprinkler nozzles with rotating nozzles that have lower application rates. The first number represents the number of customers and the second represents the number of nozzles replaced.
		Actual	13/446	13/575	12/421	
Landscape Ordinance	Number of Accounts	**Target**	138	138	138	The City and County enforce Water Efficient Landscape Design Standards, that specify development projects subject to design review be landscaped per climate appropriate principals, with appropriate turf ratios, plant selection, efficient irrigation systems, smart irrigation controllers. This is only an estimate.
		Actual	Not reviewed by NCWD	Not reviewed by NCWD	Not reviewed by NCWD	
Education and Water Waste Enforcement	Number of Accounts	**Target**	46	46	47	This measure involves assisting customers reduce water waste. NCWD didn't begin this program until FY 2015-16. An additional educational program allowed customers to be rebated for rain barrels and pool covers and is shown in the bottom row.
		Actual	N/A	313	72	
		Actual	N/A	2	6	

[1] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

SCWD Highlights and Programs

During the past few years of the drought, the Santa Clarita Water Division has been busy promoting conservation to its customers. Numerous programs have been implemented and expanded, including drip irrigation conversion, high efficiency sprinkler nozzles, and increased conservation-related outreach. Additional information on programs is available at scwater.org.

SCWD Highlights/Achievements:

- Over 22,000 high efficiency sprinkler nozzles installed
- Consistent savings from 20-30% monthly compared to 2013 levels
- Updated website to provide for an interface for customers to report leaks or water waste
- Conducted routine field patrols to interact with customers, answering questions and providing conservation assistance
- Conducted SCWD service area drought inspections 2015, 2016
- Achieved 2015 savings of 26.4 % as compared to 2013 and 2016 savings of 19.2% as compared to 2013 levels
- Provided our customers with a water use calculator www.home-water-works.org and water conservation tips through a link on our website;

The following table presents a summary and brief descriptions of SCWD's measures and participation rates. Note that targets were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP.

Summary of SCWD Measures and Participation Rates[4]

Measure	Units		2014	2015	2016	Notes
SF Drip Irrigation Incentives	Number of Accounts	**Target**	-	48	49	SCWD offers no-cost drip conversion kits (RainBird 1800 Retro) as well as $0.25/sq ft rebate for sprinkler replacement projects.
		Actual	-	18	12	
MF CII Drip Irrigation Incentives	Number of Accounts	**Target**	-	14	14	SCWD offers a $0.25 per square foot rebate up to 6,000 square feet to replace sprinklers with drip irrigation.
		Actual	-	1	-	
SF MF Outdoor Surveys	Number of Accounts	**Target**	93	94	-	SCWD offered outdoor water surveys for existing customers during the drought.
		Actual	-	7	-	
HE Faucet & HE Showerhead Giveaways	Number of Accounts	**Target**	200	202	204	SCWD gives showerheads and aerators away at office and at events.
		Actual	148	147	39	
Sprinkler Nozzle Rebate	Number of Accounts	**Target**	24	24	24	SCWD participates in freesprinklernozzles.com, which rebates 25 HE nozzles for residential accounts and potentially unlimited number to commercial accounts.
		Actual	280	87	22	
Irrigation	Number of	**Target**	11	12	-	SCWD offered outdoor water audits

[4] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

Measure	Units		2014	2015	2016	Notes
Surveys and Landscape Budgets	Accounts	**Actual**	6	6	-	to existing large landscape customers; provided customized report on how to save water.
Landscape Ordinance	Number of Accounts	**Target**	395	395	395	The City and County enforce Water Efficient Landscape Design Standards, that specify development projects subject to design review be landscaped per climate appropriate principals, with appropriate turf ratios, plant selection, efficient irrigation systems, smart irrigation controllers. This is only an estimate.
		Actual	Not Reviewed by SCWD	Not Reviewed by SCWD	Not Reviewed by SCWD	
Education and Water Waste	Number of Accounts	**Target**	4,128	4,175	4,221	This measure involves assisting customers reduce water waste.
		Actual	551	5784	926	

VWC Highlights and Programs

About the Drought – VWC provided leadership in water conservation and innovative messaging initiatives during the 2014-2017 drought emergency.

VWC Highlights/Achievements:

- Conserved 6,798,669,311 gallons or 20,864 AF (2014-2017 vs. 2013 usage)
- Exceeded State Mandatory Conservation Standard of 24% (2015-2016 vs. 2013)
- Received Drought Performance Recognition from the State Water Resource Control Board
    - December 2014 – Noteworthy South Coast Achievement
    - July 2015 – Top Performer
    - October 2015 – Noteworthy Supplier Achievement
- Implemented "About the Drought" Messaging Campaign (2014-2017)
- Developed Drought Response Integration Plan (DRIP)
- Designed, developed and implemented Personal Drought Reports (2014, 2015, 2016)
    - NBC Los Angeles: http://www.nbclosangeles.com/news/local/SoCal-Water-Agency-to-Issue-Personal-Drought-Reports-258231711.html
    - FOX 11: http://www.foxla.com/news/7143154-story
- Designed, developed and implemented Drought Report Online Utility Tracking Tool (DROUTT)
    - ABC 7: http://abc7.com/news/valencia-customers-can-monitor-real-time-water-usage-/245610/
- Conducted VWC Service Territory Drought Inspection (2015)
- Designed, developed and launched the online Water SMART Workshop
- Designed and launched the Water SMART Drought Tolerant Demonstration Garden at VWC Facility
- Designed, developed and launched Water Champions Great Leak Sweep, including 135 commercial surveys
- Expanded High Consumption Notification Program to include leak alert customer outreach

VWC Water Efficiency Customer Outreach Program Highlights

The following table presents a summary and brief descriptions of VWC's measures and participation rates. Note that targets were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP.

Summary of VWC Measures and Participation Rates[5]

Measure	Units		2014	2015	2016	Notes
Customer Water Use Reports	Number of Accounts	**Target**	7,321	7,496	7,671	VWC provides detailed customer specific home water use reports with billing information to support the customer making informed choices to conserve. See Drought Reports
		Actual	26,200	26,447	26,732	
SF Drip Irrigation Incentives	Square Feet	**Target**	315,600	324,000	331,800	VWC will provide direct install service or rebates for customers to convert existing spray irrigation systems to Drip Irrigation as part of HELIUM (High Efficiency Landscape Irrigation).
		Actual	1,540	26,130	10,000	
MF CII Drip Irrigation Incentives	Square Feet	**Target**	354,000	360,000	360,000	VWC will provide direct install service or rebates for customers to convert existing spray irrigation systems to Drip Irrigation as part of HELIUM (High Efficiency Landscape Irrigation).
		Actual	0	150,344	57,666	
UHET Rebates	Number of Accounts	**Target**	98	100	103	VWC provides a rebate or voucher for the installation of an ultra high efficiency toilet (UHET).
		Actual	164	40	170	
Top User Indoor Surveys and Incentives	Number of Accounts	**Target**	42	43	45	VWC provides top water users in each category a professional water survey to evaluate ways to save water and money, but CII programs were offline during drought.
		Actual	N/A	N/A	N/A	
CII Replace Equipment and Performance	Number of Accounts	**Target**	13	13	14	VWC offers rebates for a standard list of water efficient equipment, but CII programs were offline during drought.
		Actual	N/A	N/A	N/A	
SF MF	Number of	**Target**	613	629	645	VWC offers an outdoor

[5] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

Measure	Units		2014	2015	2016	Notes
Outdoor Surveys	Accounts	**Actual**	441	397	461	component of the water surveys offered for existing customer
SF MF Survey Leak & Pressure	Number of Accounts	**Target**	613	629	645	VWC offers an indoor component of water surveys for existing single and multi-family residential customers.
		Actual	732	484	575	
HE Faucet & HE Showerhead Giveaway	Number of Accounts	**Target**	120	123	126	VWC offers showerheads and faucet aerators in bulk and give at office or community events.
		Actual	770	448	786	
Sprinkler Nozzle Rebate	Number of Nozzles	**Target**	14,680	17,070	17,410	Provide rebates to replace standard spray sprinkler nozzles with rotating nozzles with lower application rates from www.freesprinklernozzles.com and through HELIUM (High Efficiency Landscape Irrigation Upgrade Measures).
		Actual	2,805	18,100	7,901	
Irrigation Surveys and Landscape Budgets	Number of Accounts	**Target**	74	75	75	VWC offers outdoor water audits for existing large landscape customers.
		Actual	2	2	3	
Landscape Ordinance	Number of Accounts	**Target**	677	677	677	For Dedicated Irrigation Meters, VWC collects, records, and incorporates the data included in the site plans for use with our WaterSMART Allocation and Tiered Rates Program. The City and County enforce Water Efficient Landscape Design Standards, that specify development projects subject to design review be landscaped per climate appropriate principals, with appropriate turf ratios, plant selection, efficient irrigation systems, smart irrigation controllers. This is only an estimate.
		Actual	Not reviewed by VWC	Not reviewed by VWC	Not reviewed by VWC	
Education and Water Waste Enforcement	Number of Accounts	**Target**	559	572	585	Measure involves assisting customers reduce water waste. This includes Drought Water Waste Courtesy Notices and Official Warnings for Water Waste Violations.
		Actual	233	1,237	363	

Measure	Units		2014	2015	2016	Notes
Water SMART Workshop	Number of Accounts	**Target**	1,446	1,484	1,521	VWC workshop is an online course where customers learn about current drought, how to become more efficient in water use, how to read/analyze bill; how to save water inside/outside the home. Customers who complete course receive a $20 credit on water bill. In 2014, the classes were in-person. In 2015, online class was being developed. Classes came on-line in 2016.
		Actual	208	0	840	

[1] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

Attachment B

Los Angeles County Waterworks District #36 Conservation Measures (in number of units)

Measure	2017	2018	2019	2020	2021	2022	2023	2024	2025
Water Loss*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conservation Pricing*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SF MF Outdoor Surveys	2	2	2	2	2	2	2	2	3
SF MF Survey Leak & Pressure	2	2	2	2	2	2	2	2	3
Sprinkler Nozzle Rebate	4	5	5	5	6	6	6	6	7
Landscape Ordinance	121	132	143	155	77	77	77	77	77
Education and Water Waste Enforcement	5	6	6	7	7	7	7	8	8

* Water Loss and Conservation Pricing measures target overall production and consumption, respectively, to lower GPCD

Newhall County Water District Conservation Measures (in number of units)

Measure	2017	2018	2019	2020	2021	2022	2023	2024	2025
Water Loss[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conservation Pricing[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Customer Water Use Reports	2,224	2,246	2,268	2,290	2,335	2,379	2,424	2,468	2,512
SF Drip Irrigation Incentives	13	13	14	14	14	14	15	15	15
MF CII Drip Irrigation Incentives	4	4	4	4	4	4	5	5	5
Top User Indoor Surveys and Incentives	1	1	1	1	1	1	1	1	1
CII Replace Equip and Performance Program	2	2	2	2	2	2	2	3	3
SF MF Outdoor Surveys	37	37	38	38	39	39	40	41	42
SF MF Survey Leak & Pressure	69	70	71	71	73	74	75	77	78
HE Faucet & HE Showerhead Giveaway[b]	230	233	235	238	N/A	N/A	N/A	N/A	N/A
Sprinkler Nozzle Rebate	50	51	52	53	54	55	56	57	58
Irrigation Surveys and Landscape Budgets[c]	N/A	12	13	14	14	15	15	15	16
Landscape Ordinance	138	138	138	138	198	198	198	198	198
Education and Water Waste Enforcement	47	48	49	49	50	51	52	53	54
Conservation Pricing – Irrigation[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[a] The Water Loss and Conservation Pricing measures target overall production and consumption, respectively, to lower GPCD.
[b] The HE Faucet & HE Showerhead Giveaway measure ends in 2021.
[c] The Irrigation Surveys and Landscape Budgets measure begins in 2018

Santa Clarita Water Division Conservation Measures (in number of units)

Measure	2017	2018	2019	2020	2021	2022	2023	2024
Water Loss[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AMI[b]	N/A	N/A	N/A	10,450	10,587	10,724	N/A	N/A
Conservation Pricing[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Customer Water Use Reports[c]	7,424	7,534	7,644	7,753	7,855	N/A	N/A	N/A
SF Drip Irrigation Incentives	49	50	50	50	51	51	52	52
MF CII Drip Irrigation Incentives	15	15	16	16	17	17	17	18
HE Faucet & HE Showerhead Giveaway[d]	206	208	210	212	N/A	N/A	N/A	N/A
Sprinkler Nozzle Rebate[e]	24	24	24	24	24	24	24	N/A
Landscape Ordinance	395	395	395	395	366	366	366	366
Education and Water Waste Enforcement	4,268	4,315	4,362	4,408	4,462	4,516	4,569	4,623

[a] The Water Loss and Conservation Pricing measures target overall production and consumption, respectively, to lower GPCD.
[b] The AMI measure is anticipated to take three years to implement beginning in 2020.
[c] The Customer Water Use Reports measure is projected to go offline by 2022.
[d] The HE Faucet & HE Showerhead Giveaway is modeled to be offline by 2021.
[e] Sprinkler Nozzle Rebates are anticipated to be offline by 2024.

Valencia Water Company Conservation Measures (in number of units)

Measure	2017	2018	2019	2020	2021	2022	2023	2024	2025
Water Loss[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conservation Pricing[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Customer Water Use Reports	7,846	8,021	8,196	8,370	8,529	8,687	8,845	9,004	9,162
SF Drip Irrigation Incentives[b]	567	580	594	608	618	628	638	648	N/A
MF CII Drip Irrigation Incentives[b]	61	61	61	62	64	66	69	71	N/A
UHET Rebates[c]	106	108	111	114	116	N/A	N/A	N/A	N/A
Top User Indoor Surveys and Incentives	47	49	50	52	55	58	61	64	67
CII Replace Equip and Performance Program	14	15	15	16	17	18	19	19	20
SF MF Outdoor Surveys	661	677	693	709	722	735	749	762	776
SF MF Survey Leak & Pressure	661	677	693	709	722	735	749	762	776
HE Faucet & HE Showerhead Giveaway[c]	129	132	136	139	141	N/A	N/A	N/A	N/A
Sprinkler Nozzle Rebate	784	802	819	837	852	868	884	899	915
Irrigation Surveys and Landscape Budgets	76	76	77	77	80	83	86	89	92
SF Hot Water on Demand	94	96	98	100	102	104	105	107	109
Landscape Ordinance	677	677	677	677	570	570	570	570	570
Education and Water Waste Enforcement	598	610	623	636	648	659	671	683	694
Conservation Pricing - Irrigation[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Water SMART Workshop	1,559	1,596	1,634	1,671	1,699	1,727	1,755	1,783	1,811

[a] The Water Loss and Conservation Pricing measures target overall production and consumption, respectively, to lower GPCD.
[b] SF Drip Irrigation Incentives and MF CII Drip Irrigation Incentives measures go offline in year 2024.
[c] Both the UHET Rebates measure and HE Faucet & HE Showerhead Giveaway measure go offline in year 2021.

MADDAUS WATER MANAGEMENT

Attachment C

SCV Family of Water Suppliers

Addendum

Prepared for: Santa Clarita Valley Family of Water Suppliers

Project Title: Addendum to the Water Use Efficiency Strategic Plan

Date: May 16, 2017

To: Dirk Marks, Castaic Lake Water Agency

Stephanie Anagnoson, Castaic Lake Water Agency

From: Lisa Maddaus, Maddaus Water Management, Inc.

Tess Kretschmann, Maddaus Water Management, Inc.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

AB	Assembly Bill
AF	acre-foot/acre-feet
AFY	acre-foot/acre-feet per year
AMI	advanced metering infrastructure
AWWARF	American Water Works Association Research Foundation
BAWSCA	Bay Area Water Supply and Conservation Association
BLS	U.S. Bureau of Labor Statistics
BC	benefit cost ratio
BMP	best management practice
BVWSD	Buena Vista Water Storage District
Cal-WEP	California Water Efficiency Partnership
CCF	hundred cubic feet
CCR	California Code of Regulations
CII	commercial, industrial, institutional
CLWA	Castaic Lake Water Agency
COM	Commercial
CUWCC	California Urban Water Conservation Council
DMM	demand management measure
DOF	Department of Finance
DP	dwelling property
DSS	Demand Side Management Least Cost Planning Decision Support System
DU	dwelling unit
DWR	California Department of Water Resources
EPA	Environmental Protection Agency
ESAP	Energy Savings Assistance Program
ETo	reference evapotranspiration
FY	fiscal year
GPCD	gallons per capita per day
gpd	gallons per day
GPF	gallon per flush
GPM	gallon per minute
HE	high-efficiency
HELIUM	High Efficiency Landscape Irrigation Upgrade Measures
HET	high-efficiency toilet
HEU	high-efficiency urinal
HECW	high-efficiency clothes washer
HOA	Homeowner's Association
IA	Irrigation Association
ILI	infrastructure leakage index
IND	industrial
INST	institutional
IRR	irrigation
LACWD	Los Angeles County Waterworks District No. 36
MF	residential multi-family
MG	million gallons
MGD	million gallons per day
MGY	million gallons per year
MOU	Memorandum of Understanding Regarding Urban Water Conservation
MWD	Municipal Water District
MWELO	Model Water Efficiency Landscape Ordinance
MWM	Maddaus Water Management, Inc.
NACIS	North American Code Identification System
NCWD	Newhall County Water District
ND	New development
NOAA	National Oceanic and Atmospheric Administration
NRW	Non-revenue water
OVOV	One Valley One Vision
PRISM	Parameter-elevation Regression on Independent Slopes Model
psi	pounds per square inch
PV	present value
QWEL	Qualified Water Efficient Landscaper program
RRBWSD	Rosedale Rio-Bravo Water Storage District
RW	recycled water
SB	Senate Bill
SCV	Santa Clarita Valley
SCWD	Santa Clarita Water Division of Castaic Lake Water Agency

SF	residential single family
SFR	Single Family Residence
sq ft	square feet
SWAT	Smart Water Application Technology
SWP	State Water Project
SWRCB	State Water Resources Control Board
UHET	ultra-high efficiency toilet
ULFT	Ultra Low Flow Toilet
US EPA	US Environmental Protection Agency
UWMP	Urban Water Management Plan
VWC	Valencia Water Company
WBIC	Weather Based Irrigation Controller
WET	Water Efficiency Target
WF	Water Factor
WMWD	Western Municipal Water District
WSA	Water SMART Allocation program
WUE	Water Use Efficiency
WUE SP	Water Use Efficiency Strategic Plan
YR	Year

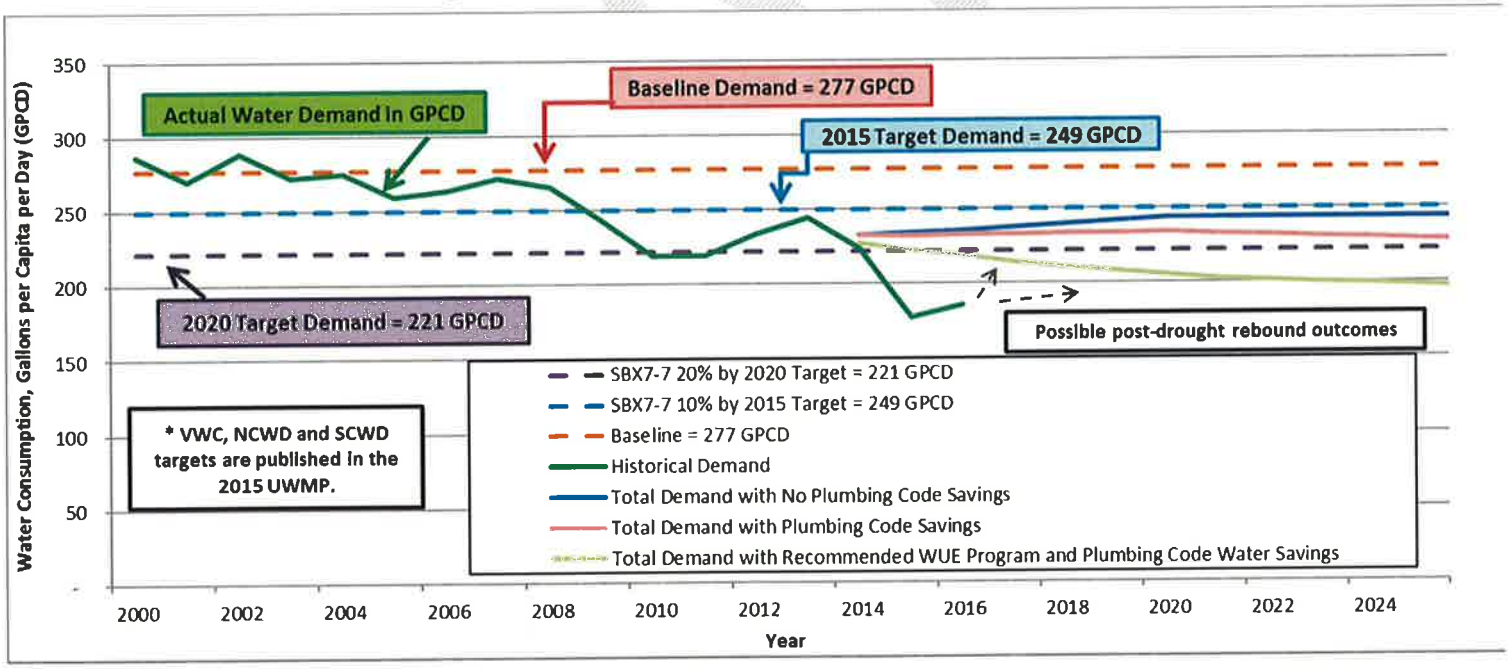
EXECUTIVE SUMMARY

Water conservation is a key element of the Santa Clarita Valley (Valley) water supply portfolio for Castaic Lake Water Agency (CLWA) and the four water retailers (Retailers): Los Angeles County Waterworks District 36 (LACWD), Newhall County Water District (NCWD), Santa Clarita Water Division (SCWD), and Valencia Water Company (VWC). Additionally, with the passage of Senate Bill 7 of Special Extended Session 7 (SB X7-7) in November 2009, water utilities throughout the state, including CLWA and the Retailers, are required to meet specific water conservation savings targets by December 31, 2020 or face potential state judicial or administrative action.

An essential theme of the June 2015 Water Use Efficiency Strategic Plan (WUESP) and this Addendum to the WUESP (Addendum) was to maximize the use of existing water and fiscal resources and maintain the flexibility to adjust planning to meet changing conditions. This adaptive approach is necessary as CLWA and the Retailers continue to work to address evolving local economic conditions, water demands, climate variability, potential drought conditions, and changing state regulations.

The following figure presents a valleywide estimate of average per capita per day use without conservation, with the plumbing codes only, and the Recommended WUE Program water savings at the valleywide level. Plumbing code includes retrofits to current state and federal standards for items such as toilets, urinals, faucets, showerheads, and clothes washers.

Figure ES-1 Valleywide Per Capita Water Use



Notes:

1. Valleywide GPCD values are based on a weighted average using population estimates for NCWD, SCWD, VWC and LACWD as reported in the 2015 UWMP. Though SB X7-7 does not apply to LACWD, the valleywide GPCD calculation includes both water production and population from LACWD service area to examine regional water use.
2. The demand projection analysis was conducted in year 2014 and so the demand projection estimate begins in 2014. The dashed line between actual 2016 water use and the projected water use represents a possible post-drought demand rebound back towards normalized water use conditions.
3. GPCD values represent potable per capita water use only and do not include any recycled water use. Recycled water is included in VWC total production and demand graphs, however for potable GPCD calculations and associated

GPCD graphs, recycled water is not included to allow for comparison with potable GPCD water use targets mandated per the definition provided in SB X7-7.

The primary objectives used to develop the WUESP and this Addendum include:

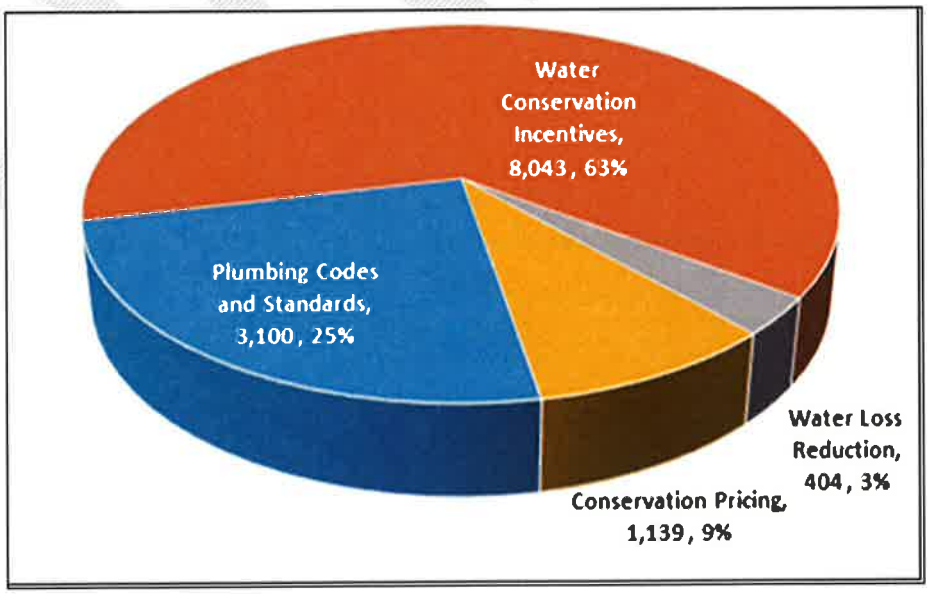
- Deliver cost-effective water conservation and water use efficiency measures to maximize opportunities to sustainably meet the future water needs of the valley residents;
- Offset and/or delay the need to construct additional water production capacity in the future;
- Assist with reducing ratepayer costs for the treatment and delivery of water, the treatment of wastewater, and water-related energy consumption;
- Meet state and federal water conservation mandates as follows:
    - Achieve 20% per capita water use reduction statewide by 2020 or better;
    - Initiate measures most likely to achieve targets established in the 2015 Urban Water Management Plan; and
    - Account for the state and federal codes and standards, including state and national appliance and plumbing fixtures efficiency standards and the statewide Model Water Efficiency Landscape Ordinance (MWELO).

This Addendum is directly connected to the 2015 Urban Water Management Plan (UWMP) and is consistent with CLWA's Strategic Plan Objectives including:

- Ensure long-term average water supply meets current and future demand;
- Meet Retailers' water demands; and
- Achieve the water conservation target of 20% per capita by 2020.

Water savings will come from the components of the Recommended WUE Program as noted in Figure ES-2: Automated Meter Infrastructure (AMI) installation and water conservation pricing, system water loss reduction, the successful implementation of programs and measures by Retailer and CLWA conservation measures, and the benefits from existing and new plumbing codes and standards. Water conservation incentive savings include both Retailer-led measure savings and CLWA-led measure savings for overall "Valleywide" estimated water savings planned. This represents an estimated 12,700 AFY in year 2020 whereas in the previous WUESP approximately 11,000 AFY was estimated.

Figure ES-2 Estimated Valleywide Water Savings in Year 2020 by Measure Type (AFY)



The following table presents year 2020 GPCD targets and Recommended WUE Program GPCD estimates for CLWA and the Retailers. LACWD GPCD is included in the valleywide estimate though they are not required to meet any targets as a water agency.

Table ES-1 GPCD Target – Year 2020

	SB X7-7 2020 Target[a]	2020 GPCD	
		With Plumbing Code Savings	With Plumbing Code Savings & Recommended WUE Program
LACWD[b]	188[b]	242	224
NCWD	190	209	186
SCWD	201	214	190
VWC	267	280	242
Valleywide[c]	221[c]	237[c]	208

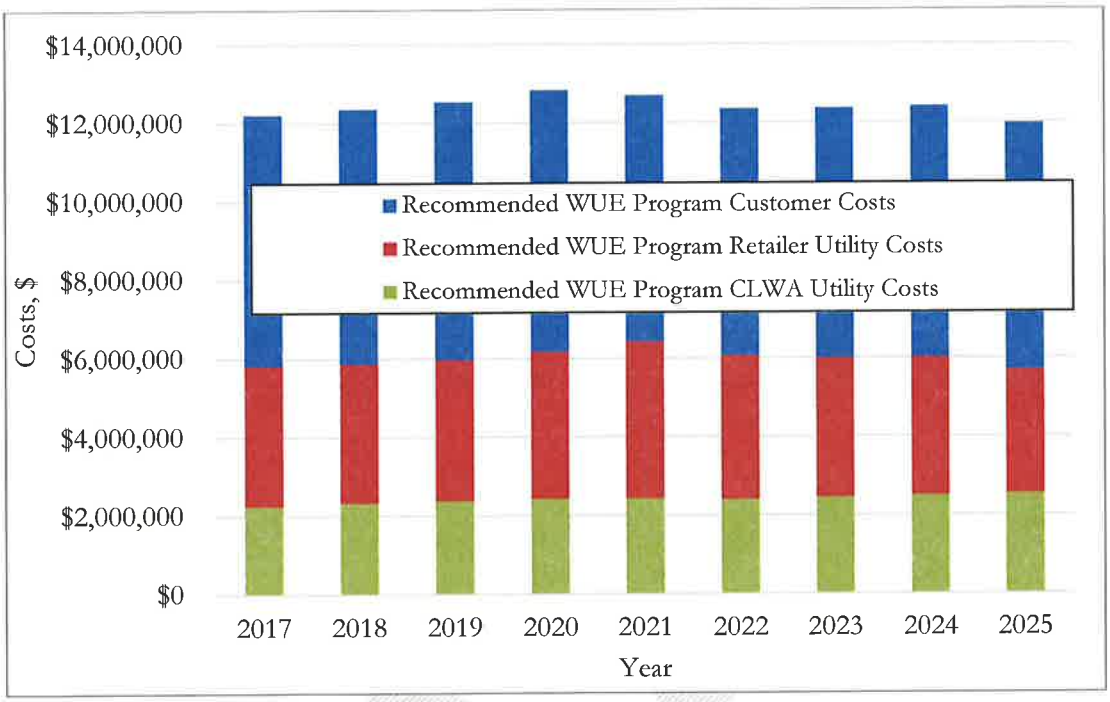
a. Targets are consistent with 2015 UWMP (2016). GPCD values represent potable per capita water use only and do not include any recycled water use. Recycled water is included in VWC total production and demand graphs, however for potable GPCD calculations and associated GPCD graphs, recycled water is not included to allow for comparison with potable GPCD water use targets mandated per the definition provided in SB X7-7.

b. Since Los Angeles County Waterworks District 36 does not have 3,000 AF served or 3,000 connections, SB X7-7 does not apply.

c. Valleywide GPCD values are based on a weighted average using population estimates for NCWD, SCWD, VWC and LACWD as reported in the 2015 UWMP. Though SB X7-7 does not apply to LACWD, the valleywide GPCD calculation includes both water production and population from the LACWD service area to examine the regional water use.

The following figure presents the proposed implementation budget for the ongoing and planned CLWA measures as well as the Retailer-led Recommended WUE Program measures. Customer costs for ALL Recommended WUE Program measures, both CLWA-led and Retailer-led, are also shown. Utility costs include unit costs (incentives and rebates) as well as administrative costs.

Figure ES-3 Annual Estimated Conservation Recommended WUE Program Costs



The recommended next steps for the successful implementation of the Addendum include:

- Reassess program focus and activity levels annually and following the recent drought to help decide upon priorities for the next year, using the recommendations from this Addendum;
- Prioritize measures for implementation with those that contribute the most to meeting the per capita water use targets with consideration for the lesser cost;
- Strengthen existing partnerships, forge new ones, and apply for grants where available;
- Hire highly qualified staff to sustainably implement the recommendations from the Addendum and comment on policies from local and state government (e.g., State Water Resources Control Board);
- Conduct a market penetration study within the next few years to determine the saturation of high efficiency fixtures primarily in the single-family sector; and
- Continue engaging regional stakeholders to review and provide input on the progress and schedule to meet the valleywide GPCD target.

1 INTRODUCTION AND BACKGROUND

The Castaic Lake Water Agency Water (CLWA) Santa Clarita Valley Family of Water Suppliers completed the Water Use Efficiency Strategic Plan (WUESP) in June 2015 prior to the March 2016 publishing of the Updated Final Technical Memorandum #2 SCV Demand Study: Demand Projection Analysis Update Results Phase 2 (TM2) and the June 2016 adoption of the 2015 Urban Water Management Plan (UWMP). This Addendum summarizes the updated demand projections, estimated water savings and projected water use efficiency (WUE) activities and budget levels for CLWA, as well as the four Retailers: Valencia Water Company (VWC), Newhall County Water District (NCWD), Santa Clarita Water Division (SCWD), and Los Angeles County Waterworks District 36 (LACWD) to plan for the near future. This document will also present recommendations for looking ahead to meet water savings targets in 2020 (and beyond) based on the current law Senate Bill SB X7-7.

It is recognized by CLWA and the Retailers that the State Water Resources Control Board may take future action related to mandated permanent water demand reductions. In response to the 2014-2016 severe statewide drought conditions, the State Board started monitoring water use and then began regulating mandated curtailments in residential per capita demand in June 2015. Given these were short term drought restrictions, this does not directly impact this long-range planning process beyond review of the demand reductions documented. It is anticipated that demand will mostly rebound to prior usage levels, as occurred in past droughts; this rebounding is illustrated in the historical water use presented in Figure ES-1, Figure 3-1 and Figure 6-1. Therefore, this Addendum, like the WUESP, continues to focus on the long-term savings for meeting demand reductions in the Santa Clarita Valley. The long-range goals are part of an integrated water resources planning strategy employed by CLWA and the Retailers which also target meeting the SB X7-7 goals. If more state required reductions which are planned to be finalized later in 2017, occur, then CLWA may update their strategies for meeting any new mandates.

This Addendum was prepared on behalf of the CLWA and the Retailers, in support of Santa Clarita CLWA and the individual Retailer programs. The Addendum was developed as a collaborative effort among staff at CLWA and the Retailers and consultant, Maddaus Water Management, Inc. (MWM).

CLWA Retailers plan to use a combination of WUE measures and recycled water to help meet or exceed the per capita water use targets to support the overall goal of more supply reliability for the Santa Clarita Valley. Each Retailer has a different per capita baseline and 2020 target.

Table 1-1 Retailer Baseline and Target GPCD

Retailer	Baseline [a]	2015 Target[a]	2020 Target[a]	Actual 2015 (Drought Restriction Year)	Actual 2016 (Drought Rebound Year)
Los Angeles County Waterworks District 36[b]	235	212	188	145	144
Newhall County Water District	238	214	190	156	157
Santa Clarita Water Division	251	226	201	158	172
Valencia Water Company	334	300	267	213	220
Valleywide[c]	277[c]	249[c]	221[c]	176[c]	185[c]

a. Targets are consistent with 2015 UWMP (2016). GPCD values represent potable per capita water use only and do not include any recycled water use. Recycled water is included in VWC total production and demand graphs. However, for potable GPCD calculations and associated GPCD graphs, recycled water is not included to allow for comparison with potable GPCD water use targets mandated per the definition provided in SB X7-7.

b. Since Los Angeles County Waterworks District 36 does not have 3,000 AF served or 3,000 connections, SB X7-7 does not apply.

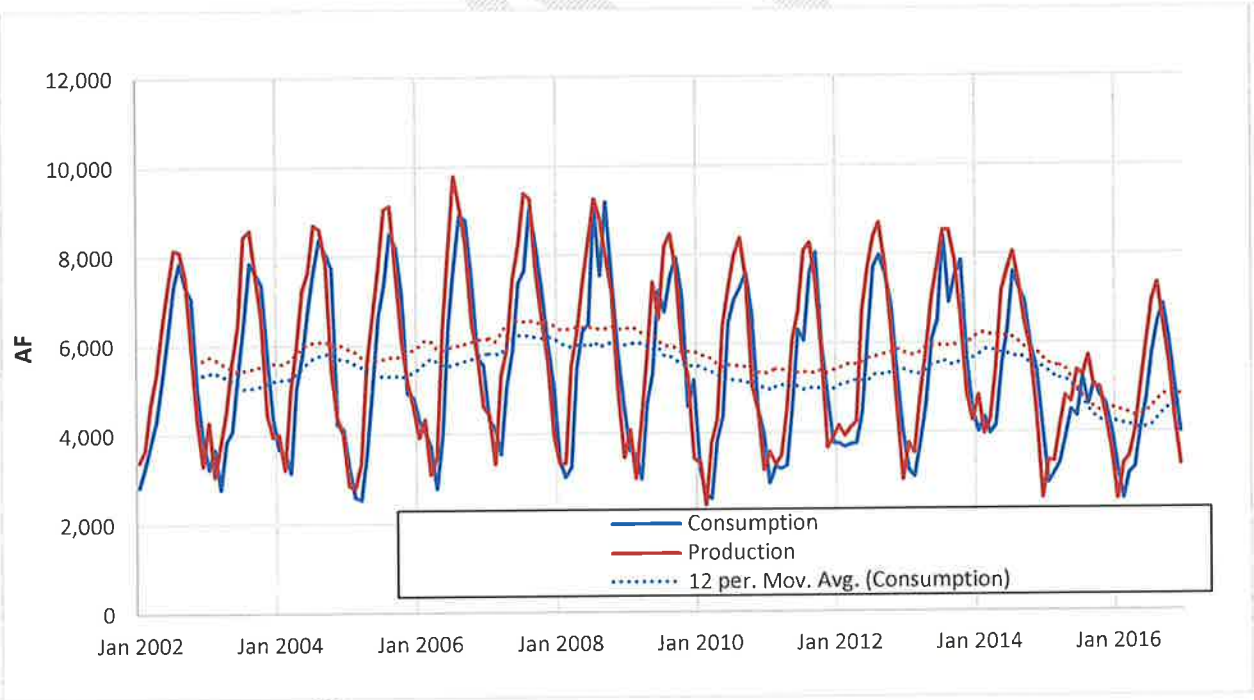
c. Valleywide GPCD values are based on a weighted average using population estimates for NCWD, SCWD, VWC and LACWD as reported in the 2015 UWMP. Though SB X7-7 does not apply to LACWD, the valleywide GPCD calculation includes both water production and population from the LACWD service area to examine the regional water use.

2 ANALYSIS OF HISTORICAL WATER DEMAND

The historical water use patterns for CLWA and the Retailers were analyzed based on water production and consumption data provided by each Retailer. In this development of this Addendum, monthly water consumption and production was updated for recent years through 2016. This Addendum organizes users into single family residential (SF), multi-family residential (MF), commercial, industrial (IND), institutional, irrigation and other categories. Baseline year 2013 consumption by category and indoor water use information can be found in the WUESP.

Total water production and consumption (billed water) valleywide data are presented is the following figure over the period 1997-2016. Retailer-specific information can be found in Appendices A-D. Water production data were measured at each Retailer's respective sources (purchased and transported or well-pumped). Water consumption data were measured at the customer meters. Note the downward trend that began in 2007 and continued to 2011, most likely due to the recession, weather and water rate increases. Note the initial increase and then decrease in water use in the recent 2012-2016 drought with a rebounding increase in water use towards the end of 2016 that is possible to continue in the future as water supply conditions improve. Recycled water is included in VWC total production and demand graphs, however for potable GPCD calculations and associated GPCD graphs, recycled water is not included to allow for comparison with potable GPCD water use targets mandated per the definition provided in SB X7-7.

Figure 2-1 Total Production vs. Total Consumption – Valleywide*



* Note recent local dry years include 2012-2016.

3 PROJECTION OF FUTURE WATER DEMAND

Valleywide and Retailer-specific forecasts of water demands in this Addendum are consistent with the revised demand projection estimates in the March 2016 publishing of TM2 and later in adoption in June 2016 of the 2015 UWMP. Valencia Water Company advised that the demand projection in TM2 projections should be used for the Addendum.

As compared to the WUESP, the TM2, the Retailer DSS Models, and consequently this Addendum have updated plumbing code savings estimates due to legislation enacted because of the recent drought. Both the 2015 CALGreen Building Code and the California Code of Regulations Title 20 Appliance Efficiency Regulations adopted by the California Energy Commission (CEC) on September 1, 2015 yielded more aggressive plumbing code savings, which has consequently affected the active conservation savings potential and savings estimates. More information about these updated plumbing codes can be found in Appendix E.

Since a key purpose of the WUESP is to ensure that the CLWA Retailers successfully meet their GPCD targets in 2020 to comply with the requirements of SB X7-7, only a short-term forecast (2016 through 2025) is presented. The long-term demand forecast, required for the 2015 UWMP, can be found in both TM2 and Appendix J of the 2015 UWMP.

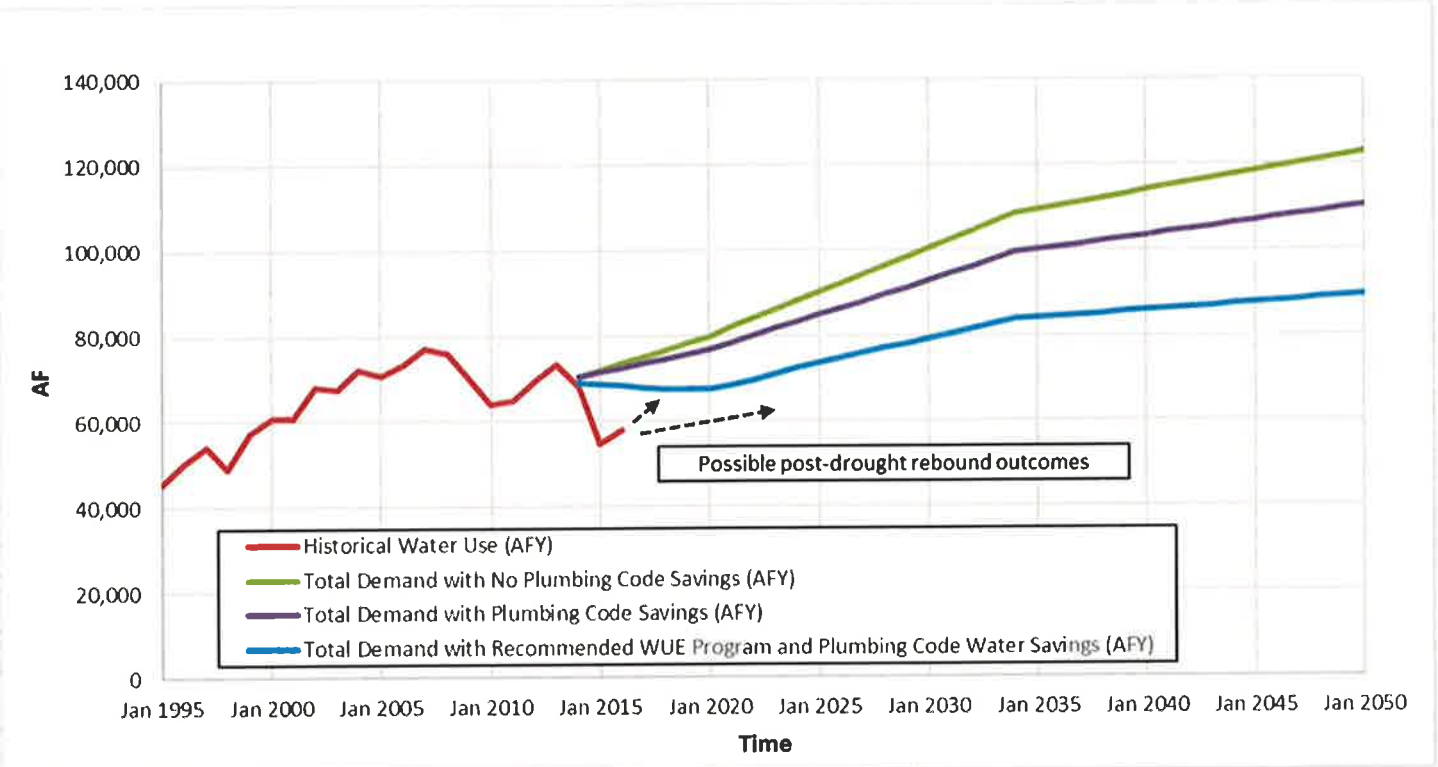
The Econometric Model and DSS Model were used to generate water demand projections for each Retailer. The following table and figure presents the valleywide demand projections with and without plumbing code savings through 2025. Retailer-specific demand projections can be found in Appendices A-D. Longer-term projections can be found in each Retailer's DSS Model. The development of these demand projections is based on land-use based projections detailed in TM2. Recycled water is included in VWC total production and demand graphs, however for potable GPCD calculations and associated GPCD graphs, recycled water is not included to allow for comparison with potable GPCD water use targets mandated per the definition provided in SB X7-7.

Table 3-1 Demand Projections – Valleywide

Draft Demand Forecast	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Demand with No Plumbing Code Savings (AFY)	75,100	76,600	78,200	79,800	81,900	84,000	86,000	88,100	90,100
Total Demand with Plumbing Code Savings (AFY)	73,600	74,600	75,600	76,700	78,400	80,000	81,600	83,200	84,800

The following figure presents historical actual demand and projected estimated demand *with* and *without* plumbing code savings. Projected demands assume 1) normal weather, 2) economic recovery by 2020, 3) price escalation projections of roughly 1.5% per year, 4) land use analysis land-use derived population projections, and 5) plumbing code.

Figure 3-1 Demand Projections – Valleywide*



* The demand projection analysis was conducted in year 2014 and so the demand projection estimate begins in 2014. The dotted line between actual 2016 water use and the projected water use represents a possible post-drought rebound back to normalized water use conditions.

4 CURRENT WATER CONSERVATION PROGRAM ACTIVITY

A summary of the current (recent year 2015-2016) conservation activity can be found in this section, whereas a summary of each Retailer's historical water conservation activity can be found in the WUESP.

4.1 Introduction and Background

CLWA was formed in 1962 to contract with DWR to acquire and distribute imported State Water Project (SWP) water to the purveyors in the Santa Clarita Valley. CLWA serves an area of 195 square miles in Los Angeles and Ventura Counties. Four retail purveyors provide water service to most residents of the Santa Clarita Valley.

- LACWD's service area includes the Hasley Canyon area in the unincorporated community of Val Verde. LACWD obtains its water supply from CLWA and local groundwater.
- NCWD's service area includes portions of the City of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Castaic, Newhall, Valencia, and Canyon Country. NCWD supplies water from local groundwater and CLWA imported water.
- SCWD's service area includes portions of the city of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Canyon Country, Newhall, and Saugus. SCWD supplies water from local groundwater and CLWA imported water.
- VWC's service area includes a portion of the City of Santa Clarita and unincorporated portions of Los Angeles County in the communities of Valencia, Stevenson Ranch, and portions of Castaic, Saugus, and Newhall. VWC supplies water from local groundwater, CLWA imported water, and recycled water.

Both CLWA and the Retailers water conservation programs are revised periodically as the water savings potential wanes as conservation is achieved and as new opportunities or technologies arise. Any changes in water conservation programs reflect the benefits (and costs) of water conservation in Santa Clarita Valley, including benefits associated with protecting the valley's quality of life. Moreover, water efficiency measures often have ancillary benefits, including reductions in energy use and may include improvements in water quality depending on the type of efficiency upgrade. Water conservation is an important measure to reduce greenhouse gas generation and to adapt to a predicted future outcome of decreased snowpack in the Sierra Nevada.

CLWA and the Retailers continue to aggressively pursue more efficient water use, and are committed to fully participating in meeting California's statewide reduction goals in per capita water use in a manner that is most cost-effective and provides the greatest benefits to the valley's ratepayers. CLWA and the Retailers are committed to being proactive in marketing and educating customers as to the benefits of installing water efficient devices and changing water use habits.

CLWA and the Retailers are on track to meet their 2020 targets. Each Retailer has a different per capita baseline and 2020 target. Valleywide 2015 and 2020 target GPCDs are based on a weighted average using projected 2015 and 2020 populations for NCWD, SCWD and VWC. Since Los Angeles County Waterworks District 36 does not have 3,000 AF served or 3,000 connections, SB X7-7 targets do not apply. Valleywide target calculations do include LACWD GPCD. SB X7-7 targets are consistent with the 2015 UWMP.

Table 4-1 Valleywide Baseline and Target GPCD

Retailer	2015 Target[a]	2020 Target[a]	Actual 2015 (Drought Restriction Year)	Actual 2016 (Drought Rebound Year)
Los Angeles County Waterworks District 36[b]	212	188	145	144
Newhall County Water District	214	190	156	157
Santa Clarita Water Division	226	201	158	172
Valencia Water Company	301	267	213	220
Valleywide[c]	249	221	176	185

a. Targets are consistent with 2015 UWMP (2016). GPCD values represent potable per capita water use only and do not include any recycled water use. Recycled water is included in VWC total production and demand graphs. However, for potable GPCD calculations and associated GPCD graphs, recycled water is not included to allow for comparison with potable GPCD water use targets mandated per the definition provided in SB X7-7.

b. Since Los Angeles County Waterworks District 36 does not have 3,000 AF served or 3,000 connections, SB X7-7 does not apply.

c. Valleywide GPCD values are based on a weighted average using population estimates for NCWD, SCWD, VWC and LACWD as reported in the 2015 UWMP. Though SB X7-7 does not apply to LACWD, the valleywide GPCD calculation includes both water production and population from the LACWD service area to examine the regional water use.

4.2 Valleywide CLWA Highlights & Programs

CLWA has had numerous water-use efficiency program highlights and achievements over the past three years.

Drought Response – During the drought, Castaic Lake Water Agency conducted a valleywide outreach campaign on behalf of the Family of Water Suppliers. The campaign consisted of messaging which sought to reinforce the continuation of the drought despite occasional rain (see example below).

CLWA Highlights

Over the past three years, Castaic Lake Water Agency has also:

- Launched a Cash for Grass (Lawn Replacement) Program in 2014 with an online format and outreach campaign;
- Hosted six Q & A sessions for customers with questions about their weather-based irrigation controllers and watering restrictions;
- Increased the Waterwise gardening classes to 24 per year, provided on Saturdays and in the evenings;
- Removed 816,508 square feet of turf grass in commercial, industrial, and institutional settings; and
- Created a multi-year social marketing campaign stressing the benefits of life without turf grass.

The following table presents a brief description of the measures that CLWA has conducted this past three years valleywide. Note that targets were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP.

Table 4-2 Summary of CLWA Measures and Participation Rates[1]

Measure	Units		2014	2015	2016	Notes
Public and School Education	Students	**Target**	15,876	16,172	16,470	CLWA offers curriculum in person at CLWA and in classrooms for K-12 students as well as Waterwise gardening classes for adults.
		Actual	15,231	13,270	12,523	
SF Turf Replacement Program	Number of Projects	**Target**	145	148	151	CLWA offers a rebate of $2/square foot for the removal of turf grass and replacement with water-efficient plants and mulch, rocks or decomposed granite in residential settings. While this program was slow to take off in 2014, it surged with participation in 2015 and then declined in 2016 as the public's focus shifted away from the drought and drought fatigue set in.
		Actual	23	259	76	
MF CII Turf Replacement Rebate	Square feet of Turf	**Target**	265,000	272,500	280,000	CLWA offers a rebate of $2/square foot for the removal of turf grass and replacement with water-efficient plants and mulch, rocks or decomposed granite in MF/CII settings. This program surged in popularity in 2015 and 2016.
		Actual	31,008	423,250	362,250	
SF WBIC Free Controller	Number of Controllers	**Target**	359	365	371	CLWA provides free weather based controllers after completion of on-line training class. All controllers are inspected to make sure they are installed and address remaining questions. With a valleywide campaign in 2014, this program was close to meeting the target, but without valleywide marketing, the program seems to have much less interest.
		Actual	675	366	241	

[1] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

Measure	Units		2014	2015	2016	Notes
MF CII WBIC Rebate	Number of Stations	**Target**	420	432	456	CLWA rebates irrigation controllers at $25/active station with pre- and post-inspection required. This program may have reached a saturation point in 2016 with few non-weather-based controllers needing replacement.
		Actual	1383	2643	468	
HECW Rebate	Number of Machines	**Target**	1,762	1,800	N/A	CLWA and the retailers offered a rebate of $200 per high-efficiency washing machine with a water factor of 4.0 or less. This program ended in 2015 in August after two months of rebates in the fiscal year to shift funds to SF Turf Replacement.
		Actual	1,989	441	N/A	
Low-income High-efficiency Fixture	Number of rebates	**Target**	284	289	294	Sempra Energy offers a direct install program to low-income homeowners within the Santa Clarita Valley. An average of 250 homes participate each year and have low-flow aerators, high-efficiency showerheads and washing machines installed. This program is paid for by Sempra Energy.
		Actual	250	250	250	

[1] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

4.3 LACWD Highlights and Programs

Los Angeles County Waterworks District provides a sustainable supply of water to select customers throughout the County of Los Angeles. In response to the drought, LACWD (Val Verde community only) launched two successful outreach campaigns: "*Drop Your Water Weight: Put Your Lawn on the Drought Diet*" in 2015, and "*Drop Your Water Weight: Find and Fix Leaks*" in 2016. The campaigns were featured in local newspapers, as well as on various radio stations, bus advertisements, and the Waterworks District's website, lacwaterworks.org.

LACWD customers received up-to-date drought information and enhanced customer service features, including:

- Dedicated email accounts for customer inquiries:
  - Water Audits (wateraudit@dpw.lacounty.gov)
  - Rebate Programs (rebates@dpw.lacounty.gov)
  - Drought Information and Billing Appeals (drought@dpw.lacounty.gov)
- A conservation hotline (1-888-893-2555) answered by engineers specializing in phased water conservation and District rebate programs
- Online live chat assistance on the Waterworks website and the County Drought website
- Water waste reporting available through email, phone, online, and the smart phone app, "The Works"

LACWD Highlights/Achievements (from June 1, 2015, through March 31, 2017):

- Water Savings: 178 million gallons
- Average Monthly Water Conservation: 23%

The following table presents a summary and brief descriptions of LACWD's measures and participation rates. Note that targets were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP.

Table 4-3 Summary of LACWD Measures and Participation Rates[1]

Measure	Units		2014	2015	2016	Notes
SF MF Outdoor Surveys	Number of Surveys	**Target**	-	1	2	LACWD offers outdoor water surveys offered for existing customers.
		Actual	x	x	x	
SF MF Survey Leak & Pressure	Number of Accounts	**Target**	-	1	2	LACWD offer indoor water surveys for existing single and multi-family residential customers.
		Actual	x	x	x	
Sprinkler Nozzle Rebate	Number of Accounts	**Target**	3	4	4	LACWD provides $2 rebates to replace standard spray sprinkler nozzles with rotating nozzles that have lower application rates.
		Actual	x	x	x	
Landscape Ordinance	Number of Design Reviews	**Target**	103	103	112	LACWD enforces Water Efficient Landscape Design Standards. Standards specify that development projects subject to design review be landscaped per climate appropriate principals, with appropriate turf ratios, plant selection, efficient irrigation systems and smart irrigation controllers
		Actual	x	x	x	
Education and Water Waste Enforcement	Number of Accounts (customers assisted)	**Target**	4	4	5	This measure involves assisting customers reduce water waste.
		Actual	x	x	x	

[1] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

4.4 NCWD Highlights and Programs

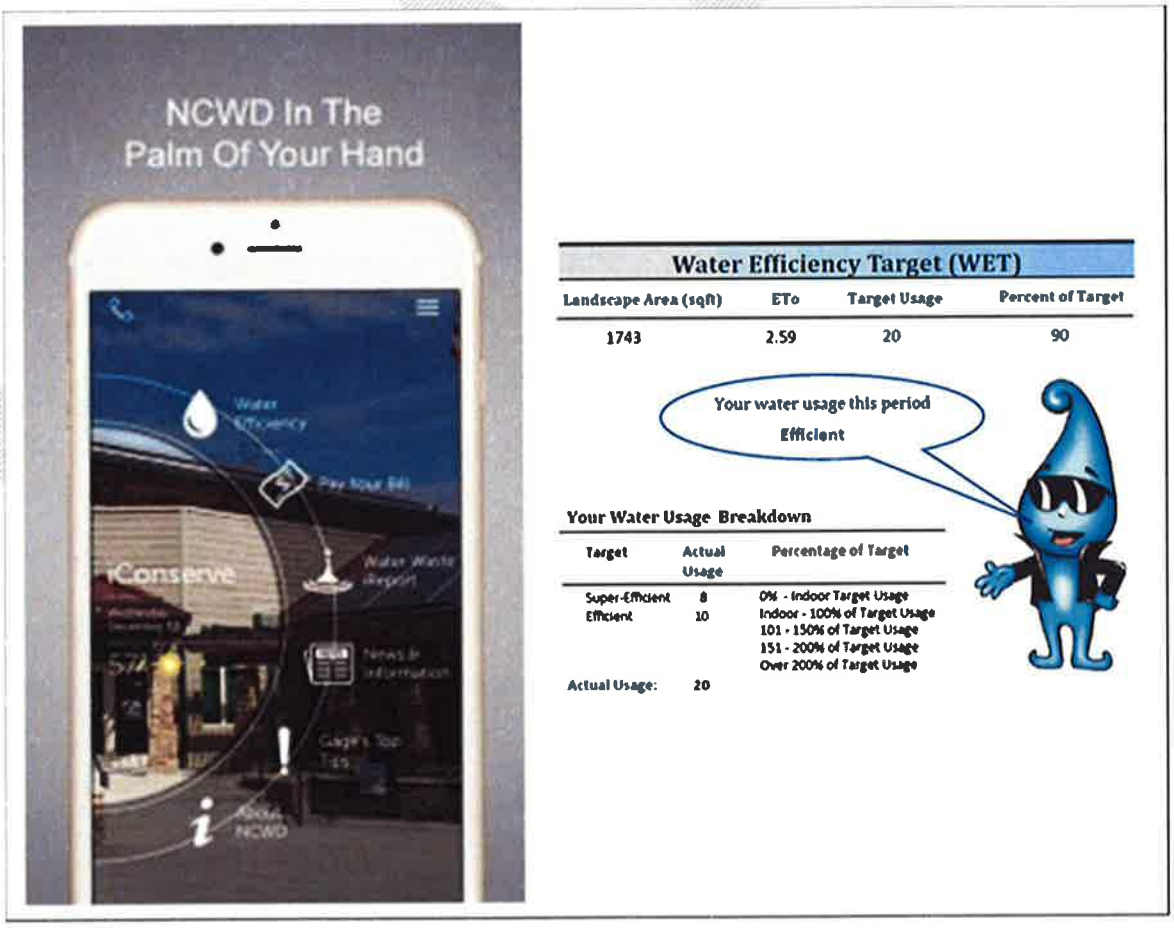
During the drought, Newhall County Water District increased educational messaging requesting customers to decrease water usage. NCWD also had a customized program allowing customers to receive rebates (including rain barrels and pool covers) matching other Southern California water suppliers.

Since the emergency drought restrictions have been lifted, NCWD continues to provide educational messaging so customers can maintain savings by taking advantage of the Water Efficiency Programs. More information is available at ncwd.org.

NCWD Highlights/Achievements:

- Developed an app for reporting water waste and learning about water conservation
- Created a Water Efficiency Target (WET) Program with water budgets for each single family residential customer with an explanation here: https://vimeo.com/116884249
- Began a branding campaign with Gage the Water Drop 
- Consistent savings of 27% for 2016 compared to 2013 levels.
- Due to the high customer response to NCWD's drought educational messaging, the need for savings from external Water Efficiency Programs diminished.

Figure 4-1 NCWD Water Efficiency Customer Outreach Program Highlights



The following table presents a summary and brief descriptions of NCWD's measures and participation rates. Note that targets were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP.

Table 4-4 Summary of NCWD Measures and Participation Rates[1]

Measure	Units		2014	2015	2016	Notes
Customer Water Use Reports	Number of Accounts	**Target**	-	2,179	2,201	NCWD provides detailed customer specific home water use information taken from billing data to support the customer making informed choices to conserve.
		Actual	N/A	1,462	5,050	
SF Drip Irrigation Incentives	Number of Accounts	**Target**	-	13	13	NCWD offers spray to drip conversion rebates for $0.25 per square foot for a maximum of $625 rebate.
		Actual	N/A	9	10	
MF CII Drip Irrigation Incentives	Number of Accounts	**Target**	-	3	3	NCWD offers spray to drip conversion kits for $0.25 per square foot for a maximum of $1,000 rebate per meter; assume 3 meters per account (except MF - 1 meter).
		Actual	N/A	-	-	
SF MF Outdoor Surveys	Number of Accounts	**Target**	-	36	36	NCWD offers outdoor water surveys existing customers. Normally those with high water use are targeted and provided a customized report on how to save water.
		Actual	N/A	1	12	
SF MF Survey Leak & Pressure	Number of Accounts	**Target**	-	68	68	NCWD offers indoor water surveys for existing single and multi-family residential customers.
		Actual	N/A	1	12	
HE Faucet & HE Showerhead Giveaway	Number of Accounts	**Target**	223	225	228	NCWD offers showerheads and faucet aerators at office or community events. Giveaway includes automatic shut off nozzles. *NCWD no longer tracks this by account and the total provided is
		Actual	*261	*289	*307	

[1] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

Measure	Units		2014	2015	2016	Notes
						estimated based on product purchased and distributed.
Sprinkler Nozzle Rebate	Number of Accounts	**Target**	48	49	50	NCWD provides rebates to replace standard spray sprinkler nozzles with rotating nozzles that have lower application rates. The first number represents the number of customers and the second represents the number of nozzles replaced.
		Actual	13/446	13/575	12/421	
Landscape Ordinance	Number of Accounts	**Target**	138	138	138	The City and County enforce Water Efficient Landscape Design Standards, that specify development projects subject to design review be landscaped per climate appropriate principals, with appropriate turf ratios, plant selection, efficient irrigation systems, smart irrigation controllers. This is only an estimate.
		Actual	Not reviewed by NCWD	Not reviewed by NCWD	Not reviewed by NCWD	
Education and Water Waste Enforcement	Number of Accounts	**Target**	46	46	47	This measure involves assisting customers reduce water waste. NCWD didn't begin this program until FY 2015-16. An additional educational program allowed customers to be rebated for rain barrels and pool covers and is shown in the bottom row.
		Actual	N/A	313	72	
		Actual	N/A	2	6	

[1] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

4.5 SCWD Highlights and Programs

During the past few years of the drought, the Santa Clarita Water Division has been busy promoting conservation to its customers. Numerous programs have been implemented and expanded, including drip irrigation conversion, high efficiency sprinkler nozzles, and increased conservation-related outreach. Additional information on programs is available at scwater.org.

SCWD Highlights/Achievements:

- Over 22,000 high efficiency sprinkler nozzles installed
- Consistent savings from 20-30% monthly compared to 2013 levels
- Updated website to provide for an interface for customers to report leaks or water waste
- Conducted routine field patrols to interact with customers, answering questions and providing conservation assistance

- Conducted SCWD service area drought inspections 2015, 2016
- Achieved 2015 savings of 26.4% as compared to 2013 and 2016 savings of 19.2% as compared to 2013 levels
- Provided our customers with a water use calculator www.home-water-works.org and water conservation tips through a link on our website;

The following table presents a summary and brief descriptions of SCWD's measures and participation rates. Note that targets were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP.

Table 4-5 Summary of SCWD Measures and Participation Rates[1]

Measure	Units		2014	2015	2016	Notes
SF Drip Irrigation Incentives	Number of Accounts	**Target**	-	48	49	SCWD offers no-cost drip conversion kits (RainBird 1800 Retro) as well as $0.25/sq ft rebate for sprinkler replacement projects.
		Actual	-	18	12	
MF CII Drip Irrigation Incentives	Number of Accounts	**Target**	-	14	14	SCWD offers a $0.25 per square foot rebate up to 6,000 square feet to replace sprinklers with drip irrigation.
		Actual	-	1	-	
SF MF Outdoor Surveys	Number of Accounts	**Target**	93	94	-	SCWD offered outdoor water surveys for existing customers during the drought.
		Actual	-	7	-	
HE Faucet & HE Showerhead Giveaways	Number of Accounts	**Target**	200	202	204	SCWD gives showerheads and aerators away at office and at events.
		Actual	148	147	39	
Sprinkler Nozzle Rebate	Number of Accounts	**Target**	24	24	24	SCWD participates in freesprinklernozzles.com, which rebates 25 HE nozzles for residential accounts and potentially unlimited number to commercial accounts.
		Actual	280	87	22	
Irrigation Surveys and Landscape Budgets	Number of Accounts	**Target**	11	12	-	SCWD offered outdoor water audits to existing large landscape customers; provided customized report on how to save water.
		Actual	6	6	-	
Landscape Ordinance	Number of Accounts	**Target**	395	395	395	The City and County enforce Water Efficient Landscape Design Standards, that specify development projects subject to design review be landscaped per climate appropriate principals, with appropriate turf ratios, plant selection, efficient irrigation systems, smart irrigation controllers. This is only an estimate.
		Actual	Not Review-ed by SCWD	Not Review-ed by SCWD	Not Review-ed by SCWD	
Education and Water Waste	Number of Accounts	**Target**	4,128	4,175	4,221	This measure involves assisting customers reduce water waste.
		Actual	551	5784	926	

[1] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

4.6 VWC Highlights and Programs

About the Drought – VWC provided leadership in water conservation and innovative messaging initiatives during the 2014-2017 drought emergency.

VWC Highlights/Achievements:

- Conserved 6,798,669,311 gallons or 20,864 AF (2014-2017 vs. 2013 usage)
- Exceeded State Mandatory Conservation Standard of 24% (2015-2016 vs. 2013)
- Received Drought Performance Recognition from the State Water Resource Control Board
    - December 2014 – Noteworthy South Coast Achievement
    - July 2015 – Top Performer
    - October 2015 – Noteworthy Supplier Achievement
- Implemented "About the Drought" Messaging Campaign (2014-2017)
- Developed Drought Response Integration Plan (DRIP)
- Designed, developed and implemented Personal Drought Reports (2014, 2015, 2016)
    - NBC Los Angeles: http://www.nbclosangeles.com/news/local/SoCal-Water-Agency-to-Issue-Personal-Drought-Reports-258231711.html
    - FOX 11: http://www.foxla.com/news/7143154-story
- Designed, developed and implemented Drought Report Online Utility Tracking Tool (DROUTT)
    - ABC 7: http://abc7.com/news/valencia-customers-can-monitor-real-time-water-usage-/245610/
- Conducted VWC Service Territory Drought Inspection (2015)
- Designed, developed and launched the online Water SMART Workshop
- Designed and launched the Water SMART Drought Tolerant Demonstration Garden at VWC Facility
- Designed, developed and launched Water Champions Great Leak Sweep, including 135 commercial surveys
- Expanded High Consumption Notification Program to include leak alert customer outreach

Figure 4-2 VWC Water Efficiency Customer Outreach Program Highlights

The following table presents a summary and brief descriptions of VWC's measures and participation rates. Note that targets were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP.

Table 4-6 Summary of VWC Measures and Participation Rates[1]

Measure	Units		2014	2015	2016	Notes
Customer Water Use Reports	Number of Accounts	**Target**	7,321	7,496	7,671	VWC provides detailed customer specific home water use reports with billing information to support the customer making informed choices to conserve. See Drought Reports
		Actual	26,200	26,447	26,732	
SF Drip Irrigation Incentives	Square Feet	**Target**	315,600	324,000	331,800	VWC will provide direct install service or rebates for customers to convert existing spray irrigation systems to Drip Irrigation as part of HELIUM (High Efficiency Landscape Irrigation).
		Actual	1,540	26,130	10,000	
MF CII Drip Irrigation Incentives	Square Feet	**Target**	354,000	360,000	360,000	VWC will provide direct install service or rebates for customers to convert existing spray irrigation systems to Drip Irrigation as part of HELIUM (High Efficiency Landscape Irrigation).
		Actual	0	150,344	57,666	
UHET Rebates	Number of Accounts	**Target**	98	100	103	VWC provides a rebate or voucher for the installation of an ultra high efficiency toilet (UHET).
		Actual	164	40	170	
Top User Indoor Surveys and Incentives	Number of Accounts	**Target**	42	43	45	VWC provides top water users in each category a professional water survey to evaluate ways to save water and money, but CII programs were offline during drought.
		Actual	N/A	N/A	N/A	
CII Replace Equipment and Performance	Number of Accounts	**Target**	13	13	14	VWC offers rebates for a standard list of water efficient equipment, but CII programs were offline during drought.
		Actual	N/A	N/A	N/A	
SF MF Outdoor Surveys	Number of Accounts	**Target**	613	629	645	VWC offers an outdoor component of the water surveys offered for existing customer
		Actual	441	397	461	
SF MF Survey Leak & Pressure	Number of Accounts	**Target**	613	629	645	VWC offers an indoor component of water surveys for existing single and multi-family residential customers.
		Actual	732	484	575	
HE Faucet & HE	Number of Accounts	**Target**	120	123	126	VWC offers showerheads and faucet aerators in bulk and give at office or

[1] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

Measure	Units		2014	2015	2016	Notes
Showerhead Giveaway		**Actual**	770	448	786	community events.
Sprinkler Nozzle Rebate	Number of Nozzles	**Target**	14,680	17,070	17,410	Provide rebates to replace standard spray sprinkler nozzles with rotating nozzles with lower application rates from www.freesprinklernozzles.com and through HELIUM (High Efficiency Landscape Irrigation Upgrade Measures).
		Actual	2,805	18,100	7,901	
Irrigation Surveys and Landscape Budgets	Number of Accounts	**Target**	74	75	75	VWC offers outdoor water audits for existing large landscape customers.
		Actual	2	2	3	
Landscape Ordinance	Number of Accounts	**Target**	677	677	677	For Dedicated Irrigation Meters, VWC collects, records, and incorporates the data included in the site plans for use with our WaterSMART Allocation and Tiered Rates Program. The City and County enforce Water Efficient Landscape Design Standards, that specify development projects subject to design review be landscaped per climate appropriate principals, with appropriate turf ratios, plant selection, efficient irrigation systems, smart irrigation controllers. This is only an estimate.
		Actual	Not reviewed by VWC	Not reviewed by VWC	Not reviewed by VWC	
Education and Water Waste Enforcement	Number of Accounts	**Target**	559	572	585	Measure involves assisting customers reduce water waste. This includes Drought Water Waste Courtesy Notices and Official Warnings for Water Waste Violations.
		Actual	233	1,237	363	
Water SMART Workshop	Number of Accounts	**Target**	1,446	1,484	1,521	VWC workshop is an online course where customers learn about current drought, how to become more efficient in water use, how to read/analyze bill; how to save water inside/outside the home. Customers who complete course receive a $20 credit on water bill. In 2014, the classes were in-person. In 2015, online class was being developed. Classes came on-line in 2016.
		Actual	208	0	840	

[1] Note that estimated participation targets in this table were adjusted in 2016 based on the historic activity in 2014 and 2015 and do not match the original SCV WUE SP. Customer participation rates are expected to vary over time and future adjustments are anticipated to align with overall water savings goals.

5 INDIVIDUAL WATER CONSERVATION MEASURE EVALUATION

To develop demand forecasts for each agency for both the WUESP, 2015 UWMP, and this Addendum that account for conservation from both passive (future code and standards) and active conservation programs, the individual Retailer DSS Models were designed to (1) account for passive conservation savings and (2) analyze potential savings from a variety of water use efficiency measures to facilitate the development of individual Retailer conservation savings estimates. The WUESP and each Retailer's DSS Model present a description of all the modeled conservation measures.

This section presents a comparison of 10 ongoing and planned CLWA-led valleywide measures for all four Retailers. These measures represent the valleywide measures planned to be implemented by CLWA; they are included in the Recommended Water Use Efficiency (WUE) Program. Annual individual measure targeted accounts for each of the CLWA measures through 2025 are compiled for all the four Retailers and presented in the following table. A benefit cost analysis for all the recommended measures modeled in each Retailer's DSS Model can be found in Appendices A-D. Individual measure inputs can be found in each Retailer's DSS Model. Annual measure targeted accounts for all Recommended WUE Program measures for each of the four Retailers are presented in Appendices A-D as well as in each Retailer's DSS Model.

The following table presents the number of accounts targeted annually for each CLWA measure for all four Retailers. It is important to note that one targeted account may represent more than one measure incentive (i.e., two clothes washers per HECW targeted multi-family account).

Table 5-1 CLWA Measure Targeted Accounts

Measure	2017	2018	2019	2020	2021	2022	2023	2024	2025
Public & School Education	16,771	17,075	17,381	17,691	17,986	18,281	18,576	18,870	19,165
SF Turf Replacement Program	153	156	159	162	164	167	169	171	174
MF CII Turf Replacement Program	116	119	123	126	130	133	137	140	144
SF WBIC Free Controller Program	378	384	390	397	402	407	412	417	422
MF CII WBIC Free Controller Program	39	40	41	42	43	45	46	47	48
School Building Retrofit	6	6	6	6	6	-	-	-	-
Pre-Rinse Spray Nozzle	0	89	95	101	-	-	-	-	-
Low-Income HE Fixture Installation	299	294	298	302	-	-	-	-	-
Soil Moisture Sensor Rebates	373	381	389	397	404	411	418	425	433
Pool Cover Rebates	153	156	159	162	164	167	169	171	174

Notes:

1. Years with no targeted accounts for a measure indicate that the measure had not yet come online or has gone offline. See Section 6.4 for the proposed implementation schedule for CLWA-led measures.
2. A targeted account may represent more than one measure incentive (i.e., two clothes washers per one multi-family account). This helps with administrative planning in providing the number of accounts planned to participate. This also represents the basis for number of accounts used in the DSS Model, which calculates water savings on a per-account basis.

6 RECOMMENDED WATER USE EFFICIENCY PROGRAM

This section presents a summary of the Recommended Water Use Efficiency Program conservation analysis results for the Santa Clarita Valley service area. Numerous conservation measures were incorporated into each Retailer's DSS Model for cost-benefit analysis and selection of a conservation program to meet the Retailer's goals. Included in each Retailer's DSS Model is a list of measures in each of three alternative conservation scenarios (Scenarios A, B, and C), which were designed to illustrate a range of various measure combinations and resulting water savings. Four key items were taken into consideration during measure selection for the various program alternatives:

- Measures managed by retail water agencies;
- Measures managed by CLWA;
- Water use targets and cost effectiveness; and
- New and innovative measures.

More information about each program alternative can be found in the WUESP. The Recommended WUE Program presented in this Addendum is based on Scenario B and represents an optimized suite of water use efficiency measures that includes all the measures the retailers have been implementing to date. These measures are typically both cost-effective and save significant amounts of water. Key benchmarks for the proposed strategies include cost effectiveness and the ability to help achieve water use reduction targets by 2020 (SB X7-7) if applicable for the individual Retailer.

The section presents several elements of the Recommended WUE Program, including: (1) program description, (2) program water savings, (3) program schedule, (4) program budget, (5) program staffing needs; (6) program monitoring progress; and (7) recommended next steps.

6.1 Description of Recommended Program Measures

The measures each Retailer is committed to is provided in their Recommended WUE Program and is comprehensive in serving all customer sectors. More details can be found in the Retailer-specific Appendices A-D. For more specific details, each Recommended WUE Program's measure design inputs as well as water savings and benefits outputs can be found in each Retailer's DSS Model. Recommended WUE Program Retailer-led measure utility costs, administrative costs, water savings, and account targets are all calculated in their respective DSS Models.

The following table displays the conservation measures included in each Retailer's Recommended WUE Program; the table does not include measures that ended before 2017. CLWA-led valleywide measures are also exhibited.

Table 6-1 Recommended WUE Program Measures – Valleywide

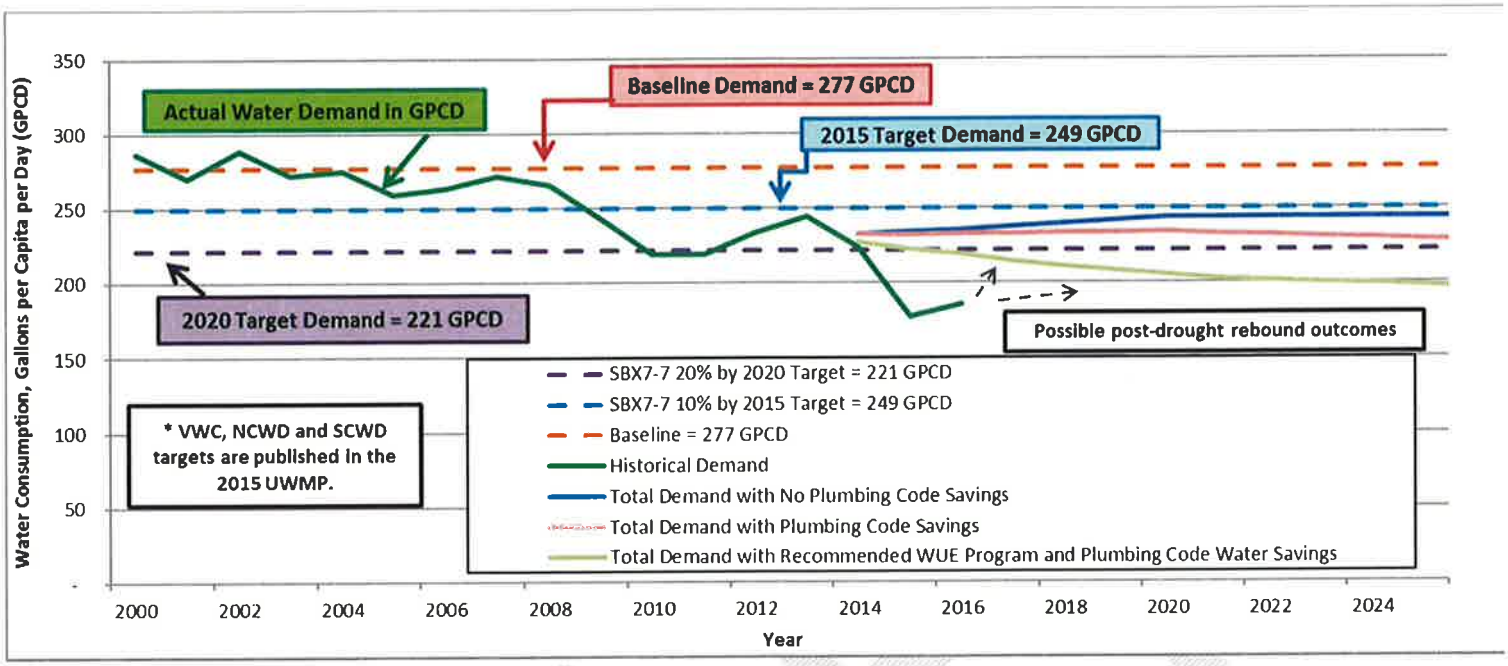
Conservation Measure	LACWD	NCWD	SCWD	VWC	CLWA[a]
Water Loss (Retailer)	√	√	√	√	N/A
AMI (Retailer)			√		N/A
Conservation Pricing (Retailer)	√	√	√	√	N/A
Public & School Education (CLWA)	√	√	√	√	√
Customer Water Use Reports (Retailer)		√	√	√	N/A
SF Turf Replacement Program (CLWA)	√	√	√	√	√
MF CII Turf Replacement Program (CLWA)	√	√	√	√	√
SF Drip Irrigation Incentives (Retailer)		√	√	√	N/A
MF CII Drip Irrigation Incentives (Retailer)		√	√	√	N/A
SF WBIC Free Controller Program (CLWA)	√	√	√	√	√
MF CII WBIC Free Controller Pgm (CLWA)	√	√	√	√	√
School Building Retrofit (CLWA)	√	√	√	√	√
UHET Rebates (Retailer)				√	N/A
Top User Indoor Surveys and Incentives (Retailer)		√		√	N/A
CII Replace Equip and Performance Program (Retailer)		√		√	N/A
Pre-Rinse Spray Nozzle (CLWA)	√	√	√	√	√
SF MF Outdoor Surveys (Retailer)	√	√	√[b]	√	N/A
SF MF Survey Leak & Pressure (Retailer)	√	√		√	N/A
HE Faucet & HE Showerhead Giveaway (Retailer)		√	√	√	N/A
Low-Income HE Fixture Installation (CLWA)	√	√	√	√	√
Sprinkler Nozzle Rebate (Retailer)	√	√	√	√	N/A
Irrigation Surveys and Landscape Budgets (Retailer)		√	√[b]	√	N/A
Soil Moisture Sensor Rebates (CLWA)	√	√	√	√	√
SF Hot Water on Demand (Retailer)				√	N/A
Pool Cover Rebates (CLWA)	√	√	√	√	√
Landscape Ordinance (Retailer)	√	√	√	√	N/A
Education and Water Waste Enforcement (Retailer)	√	√	√	√	N/A

[a] Retailer-led measures NOT implemented by CLWA are denoted as not applicable (N/A).
[b] SCWD did not continue implementing these measures beyond 2015.

6.2 Progress to Date in Planning Per Capita Use

As required by the Urban Water Management Planning Act and published in the CLWA's 2015 UWMP, each Retailer is expected to reduce baseline per capita water consumption by 20% by 2020 as per SB X7-7. The following figure presents a valleywide estimate of average per capita per day use without conservation, with the plumbing codes only, and with plumbing code savings *and* the Recommended WUE Program water savings. Plumbing code includes retrofits to current state and Federal standards for items such as toilets, urinals, faucets showerheads, and clothes washers.

Figure 6-1 Valleywide Per Capita Water Use



Notes:

1. Valleywide GPCD values are based on a weighted average using population estimates for NCWD, SCWD, VWC and LACWD as reported in the 2015 UWMP. Though SB X7-7 does not apply to LACWD, the valleywide GPCD calculation includes both water production and population from the LACWD service area to examine the regional water use.
2. The demand projection analysis was conducted in year 2014 and so the demand projection estimate begins in 2014. The dotted line between actual 2016 water use and the projected water use represents a possible post-drought rebound back to normalized water use conditions.
3. GPCD values represent potable per capita water use only and do not include any recycled water use. Recycled water is included in VWC total production and demand graphs, however for potable GPCD calculations and associated GPCD graphs, recycled water is not included to allow for comparison with potable GPCD water use targets mandated per the definition provided in SB X7-7.

The following table presents year 2020 GPCD targets and Recommended WUE Program GPCD estimates for CLWA and the Retailers. LACWD GPCD is included in the valleywide estimate though they are not required to meet any targets as a water agency.

Table 6-2 GPCD Target – Year 2020

	SB X7-7 2020 Target	2020 GPCD	
		With Plumbing Code Savings	With Plumbing Code Savings & Recommended WUE Program
LACWD[b]	188[b]	242	224
NCWD	190	209	186
SCWD	201	214	190
VWC	267	280	242
Valleywide[c]	221[c]	237[c]	208[c]

a. Targets are consistent with 2015 UWMP (2016). GPCD values represent potable per capita water use only and do not include any recycled water use. Recycled water is included in VWC total production and demand graphs, however for potable GPCD calculations and associated GPCD graphs, recycled water is not included to allow for comparison with potable GPCD water use targets mandated per the definition provided in SB X7-7.

b. Since Los Angeles County Waterworks District 36 does not have 3,000 AF served or 3,000 connections, SB X7-7 does not apply.

c. Valleywide GPCD values are based on a weighted average using population estimates for NCWD, SCWD, VWC and LACWD as reported in the 2015 UWMP. Though SB X7-7 does not apply to LACWD, the valleywide GPCD calculation includes both water production and population from the LACWD service area to examine the regional water use.

6.3 Projected Water Savings of Recommended Program

A high percentage of the Retailer service areas' water usage is associated with residential water use. Consequently, residential and irrigation conservation programs will produce the most savings. None of the Retailer service areas contain intensive industrial activity (where CII is less than 10% of valleywide total water use); therefore, the conservation potential for this sector is less than in other communities. Some overall conclusions are:

- The total savings from the Recommended WUE Program is approximately 12% of total valleywide production in 2020.
- The Recommended WUE Program has the possibility to reduce per capita water use in a cost-effective manner based on the implementation level on the plan. With the Recommended WUE Program, approximately 9,200 AFY could be saved valleywide in 2020. This does not include the approximately 3,100 AFY saved from plumbing codes and standards.

6.4 Implementation Schedule

The following table presents the proposed implementation schedule for the 10 ongoing and planned CLWA Recommended WUE Program measures. These measures will be run by CLWA and rolled-out in the same time frame among the four Retailers. Individual Retailer measure start years and time periods can be found with all other measure input parameters in each Retailer's DSS Model.

Table 6-3 Proposed Implementation Schedule for CLWA Recommended WUE Program Measures

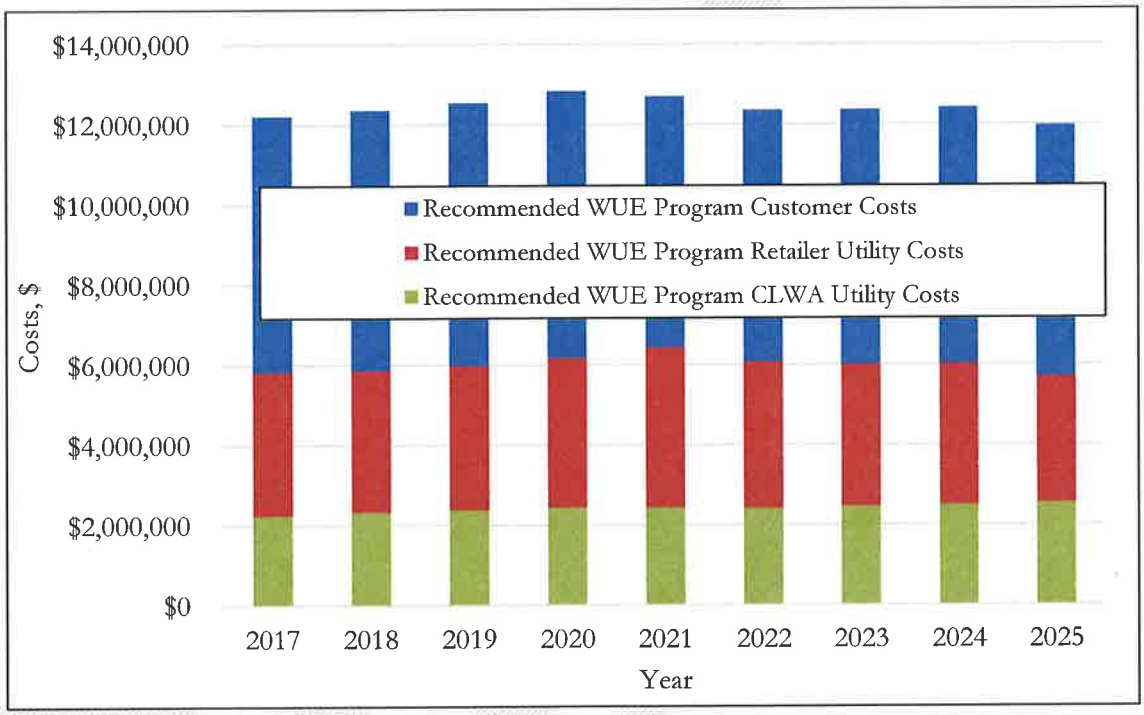
Measure	Year								
	2017	2018	2019	2020	2021	2022	2023	2024	2025
Public & School Education	■	■	■	■	■	■	■	■	■
SF Turf Replacement Program	■	■	■	■	■	■	■	■	■
MF CII Turf Replacement Program	■	■	■	■	■	■	■	■	■
SF WBIC Free Controller Program	■	■	■	■	■	■	■	■	■
MF CII WBIC Free Controller Program	■	■	■	■	■	■	■	■	■
School Building Retrofit	■	■	■	■	■				
Pre-Rinse Spray Nozzle*		■	■	■	■				
Low-Income HE Fixture Installation*	■	■	■	■	■				
Soil Moisture Sensor Rebates	■	■	■	■	■	■	■	■	■
Pool Cover Rebates	■	■	■	■	■	■	■	■	■

*Pre-Rinse Spray Nozzles and Low-Income HE Fixture Installation are primarily funded by Sempra Energy (and not CLWA). Their staff costs on behalf of CLWA are also minimal.

6.5 Estimated Implementation Budget

The following figure presents the proposed implementation budget for the ongoing and planned CLWA measures as well as the Retailer-led Recommended WUE Program measures. Customer costs for ALL Recommended WUE Program measures, both CLWA-led and Retailer-led, are also shown. Similar to what was presented previously, the budget includes the CLWA-led measure utility costs and the Retailer-led measure utility costs for all four Retailers for the Recommended WUE Program. Utility costs include unit costs (incentives and rebates) as well as administrative costs. Individual Retailer-led measure costs (including utility costs, administrative costs and customer costs) can be found in each Retailer's measure input sheets in Appendices A-D.

Figure 6-2 Annual Estimated Conservation Recommended WUE Program Costs

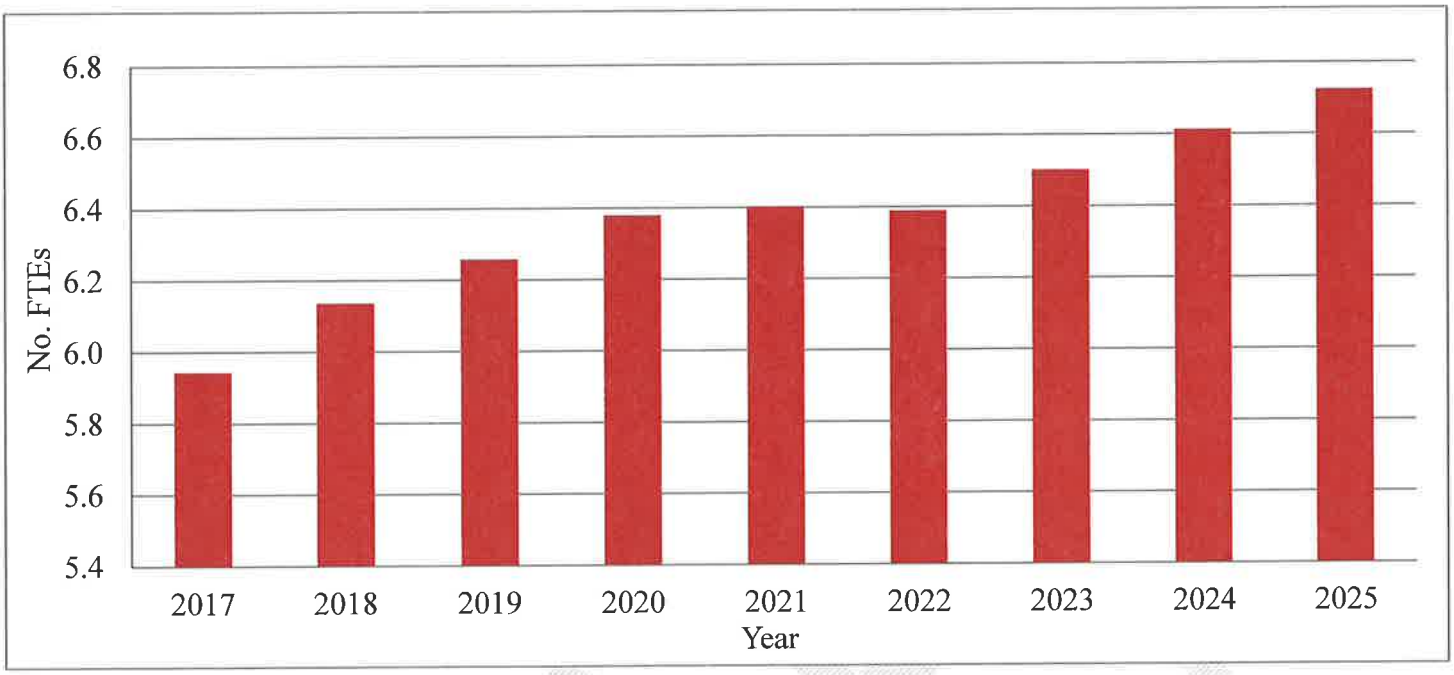


6.6 Staffing Needs

As part of this planning effort, consideration has been given to program staffing levels. Addressing the initiatives needed to reduce water demand is applicable across many departments at the wholesale level for CLWA and each Retailer's staff and will require a coordinated effort. Current and proposed future needs for staff support of the conservation program is presented in this section.

The following figure presents the proposed implementation staffing needs for CLWA for implementing the 10 ongoing and planned CLWA measures. These measures are all run by CLWA; they will be rolled-out in the same time frame among the Retailers. Individual Retailer measure staffing needs can be found in the Retailer-specific Appendices A-D. CLWA staffing needs for CLWA measures for all four Retailers were calculated by dividing annual administrative costs by an average annual CLWA salary of $85,000 per staff person; or $120,000 burdened. For example, approximately six staff would support the over $715,000 in administrative costs to run the CLWA-led measures in 2017. Administrative costs were derived for each measure by taking a percentage of each measure utility costs.

Figure 6-3 Proposed Staffing for CLWA Valleywide Recommended WUE Program Measures



CLWA plans to develop consistent staff to manage the emerging and permanent water conservation needs recognizing the specialized skill set necessary. Staffing levels remain approximately 6 FTE positions. This will be revisited in the next Addendum.

It is important to recognize that most staff in conservation are in education-related outreach, including 9 part-time education specialists (3.5 FTEs) whereas conservation staff for rebate programs are currently at 2.5 FTE.

6.7 Monitoring Progress

The WUESP is intended to be dynamic and change and adjustments are expected. Monitoring progress on implementing the Recommended WUE Program should be a priority. Costs, participation rates, water use should be tracked to ensure that targets and goals are met. As new promising technologies emerge, they should be tested and possibly replace programs that are underachieving.

As CLWA and the Retailers further implement their water use efficiency programs, progress will be made and CLWA and the Retailers will evaluate this progress in terms of meeting the 2020 SB X7-7 per capita use targets.

Given that the requirements for the program are to have reduced water demand based on a gallons per capita per day target, CLWA and the Retailers are following a "water savings based performance approach." This allows CLWA and the Retailers flexibility in pursuing measures that are the most effective for achieving its goals. This is a significant change from the "best management practice activities based approach." The BMP activities-based approach had specific numerical targets calculated for how many of what type of activity had to be done (e.g., 15% of all single family residential accounts were to be surveyed). This BMP approach was traditionally followed by all Group 1 Water Utilities, including the Retailers, prior to the 2008 CUWCC MOU update. When the MOU was updated both new "Flexible Track" and "GPCD" compliance options were added. In addition, with the passage of SB X7-7 in November 2009, the Retailers had the ability to adjust its budget, staffing and outreach efforts to those measures that can (a) save the most water, (b) are the most cost-effective, and/or (c) can be more easily implemented to obtain higher participation rates. Some measures may perform better than others given the volunteer nature of customer participation for many of these measures that drives the ability to lower demands (and meet targets).

The overarching theme from state agencies (State Water Resources Control Board and Department of Water Resources) is to increase emphasis for the water conservation program on outdoor conservation measures rather than indoor measures. This is logical for the following reasons:

- The highest potential for water savings is with implementation of utility operations and outdoor conservation measures (which is an opportunity to save on peak water treatment plant capacity while reducing peak energy demand and greenhouse gas emissions).
- Indoor measures have pending increasingly stringent laws and codes that will provide passive water savings (from replacement by higher efficiency fixtures and appliances in the coming three-five years).
- It is the greatest perceived need by CLWA, based on interactions with customers, for curbing residential outdoor irrigation. This need will in turn likely drive the most customer participation in the water conservation program by implementing outdoor measures.

For these reasons, CLWA and the retailers focus on outdoor measures in the SCV WUE SP and Addendum.

6.8 Overall Recommended Next Steps

MWM recommends that CLWA and the Retailers consider the following next steps:

- Staff conservation programs appropriately so that customer participation is successful. Both the WUESP and meeting state mandates is largely driven by voluntary customer changes in equipment and behaviors that need to be permanent (including following the drought).
- Seek testimonials of success to help with outreach materials and presentations to garner more and consistent customer participation.
- Look for new or expanded partnerships with local irrigation equipment contractors.
- Seek additional new funding sources, such as Proposition 1E, 84, Cap & Trade and/or US Bureau of Reclamation funds to support Plan budget needs. The existing budgets may be used as cost share to leverage into funding more activities, especially the less cost-effective measures.
- Strengthen relationships with landscape professional associations, non-profits (e.g., University of California Cooperative Extension [UCCE], Native Plant Society, etc.) to gain more word-of-mouth exposure to the community that is installing new or re-landscaping properties to capture the maximum water savings from the point of initial installation of new landscapes and meeting Santa Clarita Valley stormwater permit needs.
- Market conservation opportunities through accredited program membership lists as a low-cost means to spread the word to other professionals in the water industry (e.g., Green Plumbers, WaterSense Partners, Irrigation Association Certified Professionals, etc.).

The Retailers will be preparing comprehensive water conservation pricing and rate studies periodically. In addition, staff will work with CLWA, the City, and the County to initiate a review of Santa Clarita's Model Efficient Landscape Ordinance, including enforcement. CLWA will also actively pursue applications for state and federal grants, and partnering opportunities.

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APPENDIX A LACWD INFORMATION FOR THE WUE STRATEGIC PLAN ADDENDUM

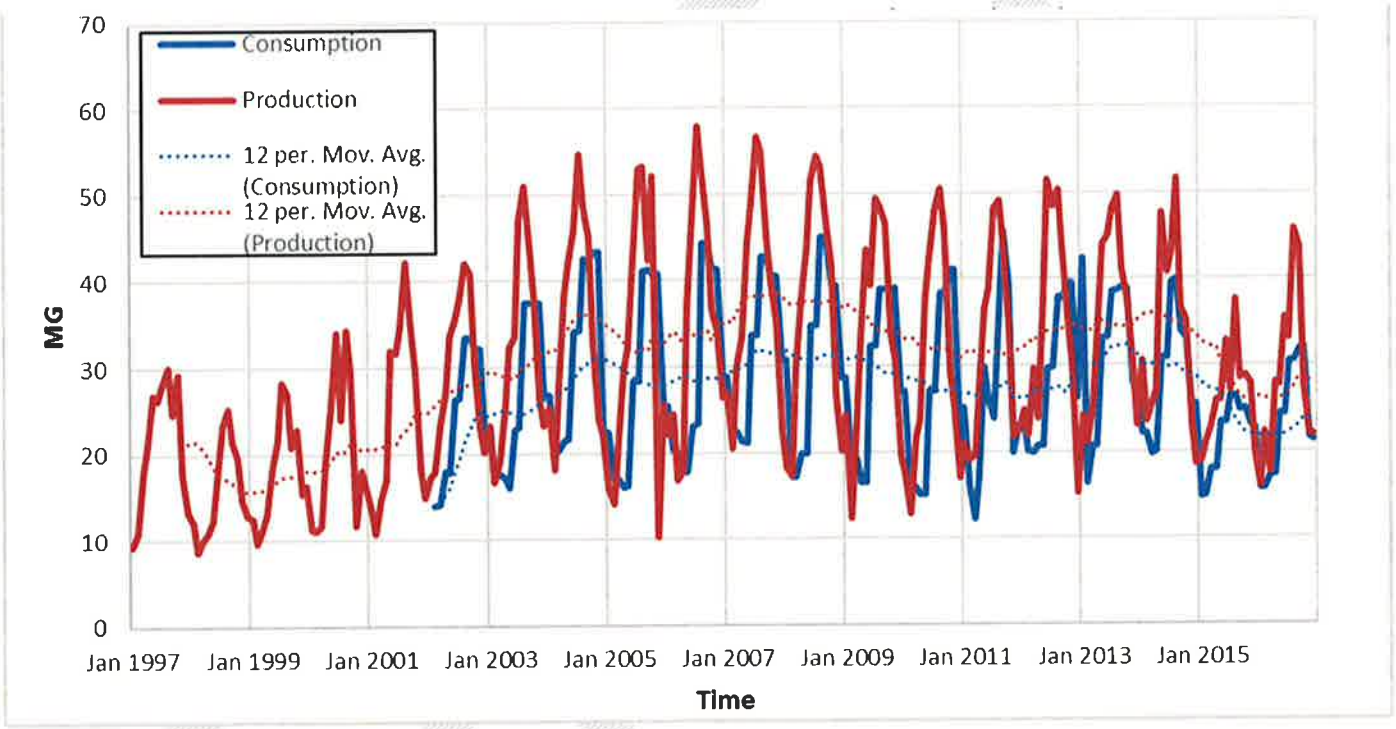
This appendix presents Retailer-specific information for this Addendum. The following sections are presented in the main body of this Addendum at the CLWA level with a reference to more Retailer-specific information being found in this appendix, the WUESP and each Retailer's DSS Model.

A.1 Production versus Consumption

Total water production and consumption (billed water) data were compared over the period 2002-2016. The following figure illustrates the total production versus total consumption.

Since LACWD tracks consumption bimonthly, it's important to note the parallel pattern of both the production and consumption 12-month average trend lines; the difference between them represents non-revenue water. This Retailer's water usage breakdown by customer category can be found in the WUESP.

Figure A-1 Total Production vs. Total Consumption – LACWD



A.2 Water Demand Projections with and without Plumbing Code

The following table and figure present the Retailer demand projections with and without plumbing code savings through 2020.

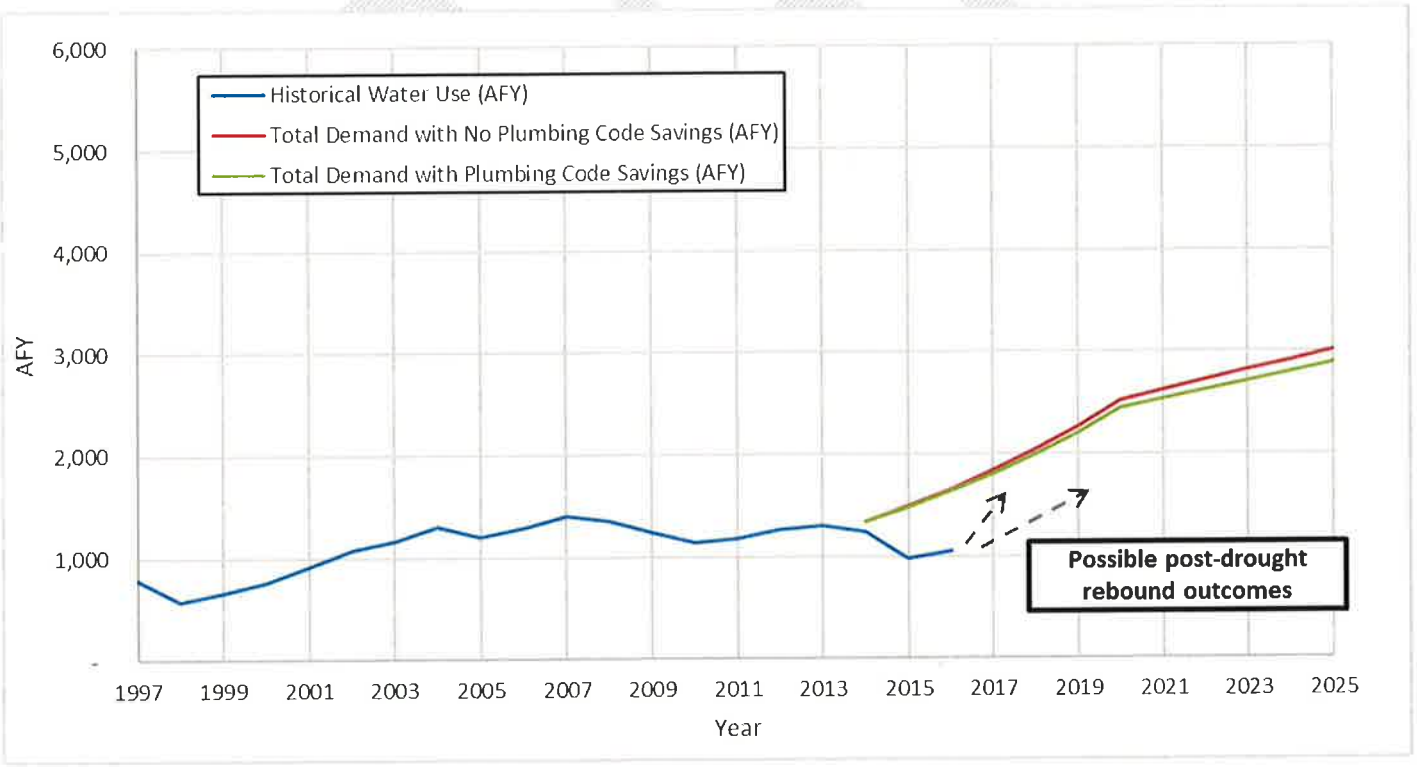
Table A-1 Demand Projections With and Without Plumbing Codes – LACWD

Demand Forecast	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Demand with No Plumbing Code Savings (AFY)	1,800	2,000	2,300	2,500	2,600	2,700	2,800	2,900	3,000
Total Demand with Plumbing Code Savings (AFY)	1,800	2,000	2,200	2,400	2,500	2,600	2,700	2,800	2,900

The following figure presents historical actual demand and projected estimated demand *with* and *without* plumbing code savings. Projected demands assume 1) normal weather, 2) economic recovery by 2020, 3) price escalation projections of roughly 1.5% per year, 4) population-based projections, and 5) plumbing code. Savings from plumbing codes (also known as "passive conservation") is based on federal and state legislated efficiency standards pertaining to plumbing fixtures and appliances. The impact of codes quantified here include the Energy Policy Act of 1992, CALGreen Building Code, AB 715, and SB 407 which governs the types of fixtures available on the market for toilets, showers, washers, etc. The curve with "no plumbing code" would be the demand if these laws were not in place.

As detailed in the March 2016 Updated Final Technical Memorandum #2 SCV Demand Study: Demand Projection Analysis Update Results Phase 2 (TM2), Los Angeles County Water District 36 did not have sufficient detailed enough information (such as specific billing data by lot type to derive demand factors) to further refine the Phase 1 forecast into a more detailed demand forecast as part of the Phase 2 land-use analysis. Future demands in the LACWD 36 service area use the Phase 1 information.

Figure A-2 Projected Demands – LACWD*



*The demand projection analysis was conducted in year 2014 and so the demand projection estimate begins in 2014. The dotted line between actual 2016 water use and the projected water use represents the possible post-drought rebound back towards more normalized water use conditions.

A.3 Historical and Current Conservation

A summary of recent year 2014-2016 conservation activity can be found in Section 4 of this Addendum.

A.4 Water Billing Structure

LACWD has a monthly base charge based on meter size and number of billing units, with additional charges for each hundred cubic feet (ccf) of water used in excess of the monthly allowance a fixed usage amount. The monthly allowance is calculated based on number of billing units multiplied by 5 ccf. This fixed usage rate is for all customer categories. According to the CUWCC's BMP Reporting online database, in 2012 LACWD reported 70% volumetric-based billing.

A.5 Estimated Recommended WUE Program Measure Costs and Savings

The following table presents year 2020 savings and the cost of savings per unit volume for the conservation measures conducted by the Retailer in its Recommended WUE Program. The Recommended WUE Program is not intended to be a rigid framework but rather to demonstrate the potential savings that could be generated if the listed measures are implemented collaboratively in a flexible approach. Only ongoing measures or planned future measures are presented. Ongoing residual savings from measures that ended before 2017 are incorporated in each Retailer's water demand projections. Measures that are no longer being implemented are not presented in this Addendum; however, their previous activity provides residual savings and the measures retain various water savings benefits depending on their savings life. More information about these measures can be found in the WUESP and the Retailer's DSS Model.

Table A-2 Estimated Recommended WUE Program Measure Costs and Savings – LACWD[a]

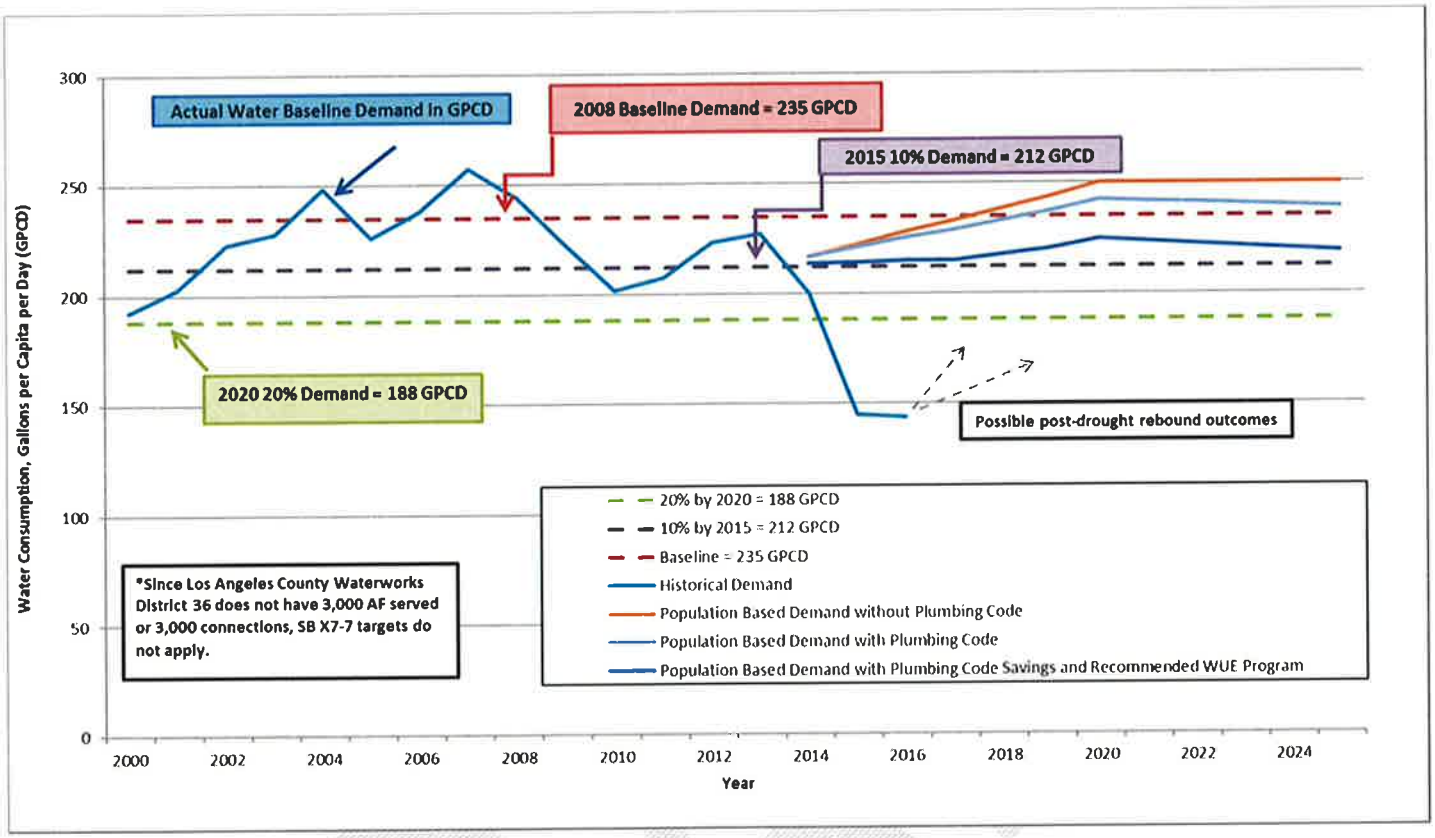
Retailer-Led Measure	Water Savings in 2020 (AFY)	Cost of Savings per Unit Volume ($/AF)
Water Loss	2	$12,640
Conservation Pricing[a]	55	$4
SF MF Outdoor Surveys	0.5	$330
SF MF Survey Leak & Pressure	0.3	$500
Sprinkler Nozzle Rebate	2	$50
Landscape Ordinance[b]	99	< $1
Education and Water Waste Enforcement	0.6	$180

a. LACWD assumes no annual maintenance costs in their Conservation Pricing measure design and conducts a rate study every 10 years beginning in year 2022.
b. The Landscape Ordinance has minimal Retailer utility or administrative costs as this measure is not run by the water department. Costs are to the developer and customer.

A.6 Per Capita Water Use

The following figure presents an average annual Retailer per capita per day use without conservation, with the plumbing codes only, and with the Recommended WUE Program at the Retailer level.

Figure A-3 Per Capita Water Use – LACWD



Notes:

1. Since Los Angeles County Waterworks District 36 does not have 3,000 AF served or 3,000 connections, SB X7-7 targets do not apply.
2. The demand projection analysis was conducted in year 2014 and so the demand projection estimate begins in 2014. The dotted line between actual 2016 water use and the projected water use represents a possible post-drought rebound back towards more normalized water use conditions.

The following table presents the Retailer's year 2020 GPCD target as well as the projected Recommended WUE Program year 2020 GPCD estimate for the Retailer.

Table A-3 GPCD Target – Year 2020

LACWD	SB X7-7 2020 Target*	2020 GPCD with plumbing codes	Recommended WUE Program 2020 GPCD
	188	242	224

* Since Los Angeles County Waterworks District 36 does not have 3,000 AF served or 3,000 connections, SB X7-7 does not apply.

A.7 Recommended WUE Program Cost and Savings Comparison

The following table shows the estimated benefits, costs and savings for the Retailer's Recommended WUE Program.

Table A-4 Recommended WUE Program Estimated Costs and Water Savings – LACWD

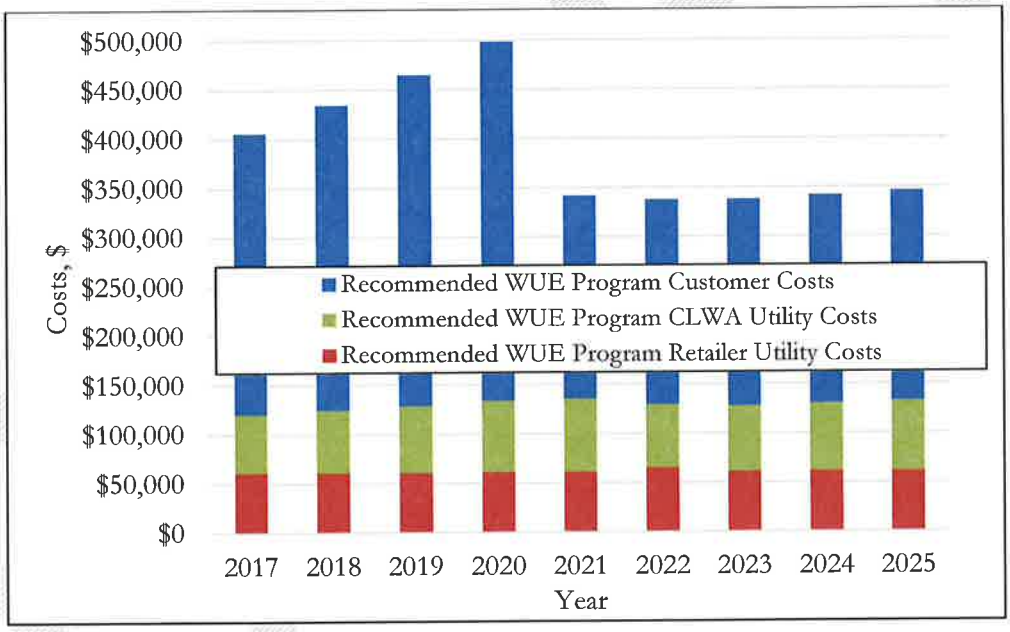
Recommended WUE Program and Plumbing Code Water Savings (AFY)									Water Utility Benefit to Cost Ratio*	Present Value of Water Savings*	Present Value of Utility Costs*
2017	2018	2019	2020	2021	2022	2023	2024	2025			
100	100	300	200	300	300	300	300	400	4.10	$11,504,000	$2,806,000

* Since the region's buildout year is anticipated to be year 2050, the DSS Model runs through year 2050 and the benefit cost analysis conducted for the WUESP presents present value costs, benefits, benefit cost ratios, and costs of savings over the evaluation period. The change in 2020 is representative of the difference between the demand forecasts methods with normalization (near term) and long-term forecast. Present value costs and benefits are in year 2014 dollars.

A.8 Recommended WUE Program Implementation Budget

The following figure presents the proposed implementation costs for the Retailer's CLWA-led and Retailer-led Recommended WUE Program measures. This budget includes CLWA utility costs, Retailer utility costs and customer costs. Utility costs include unit costs (site audit costs, incentives, rebates, etc.) and administrative costs.

Figure A-4 Recommended WUE Program CLWA, Retailer, and Customer Costs – LACWD



A.9 Recommended WUE Program Staffing Needs

The proposed implementation staffing needs for the Retailer for implementing the Retailer-led measures in the Recommended WUE Program is approximately 1-2 hours per year. This estimate includes staffing needs to address the Retailer-led measures that the Retailer plans to implement as part of the Recommended WUE Program. These measures are all run in-house. Staffing needs were calculated by dividing annual administrative costs by an average annual CLWA salary of $85,000 per staff person; or $120,000 burdened. New development landscape plan review following the City and County's Landscape Ordinance is not completed by Retailer staff.

A.10 DSS Model Recommended WUE Program Measure Results

This section presents the number of accounts targeted annually for each Recommended WUE Program Retailer-led measure.

Table A-5 Retailer-Led Recommended WUE Program Measure Targeted Accounts – LACWD

Measure	2017	2018	2019	2020	2021	2022	2023	2024	2025
Water Loss*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conservation Pricing*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SF MF Outdoor Surveys	2	2	2	2	2	2	2	2	3
SF MF Survey Leak & Pressure	2	2	2	2	2	2	2	2	3
Sprinkler Nozzle Rebate	4	5	5	5	6	6	6	6	7
Landscape Ordinance	121	132	143	155	77	77	77	77	77
Education and Water Waste Enforcement	5	6	6	7	7	7	7	8	8

* Water Loss and Conservation Pricing measures target overall production and consumption, respectively, to lower GPCD.

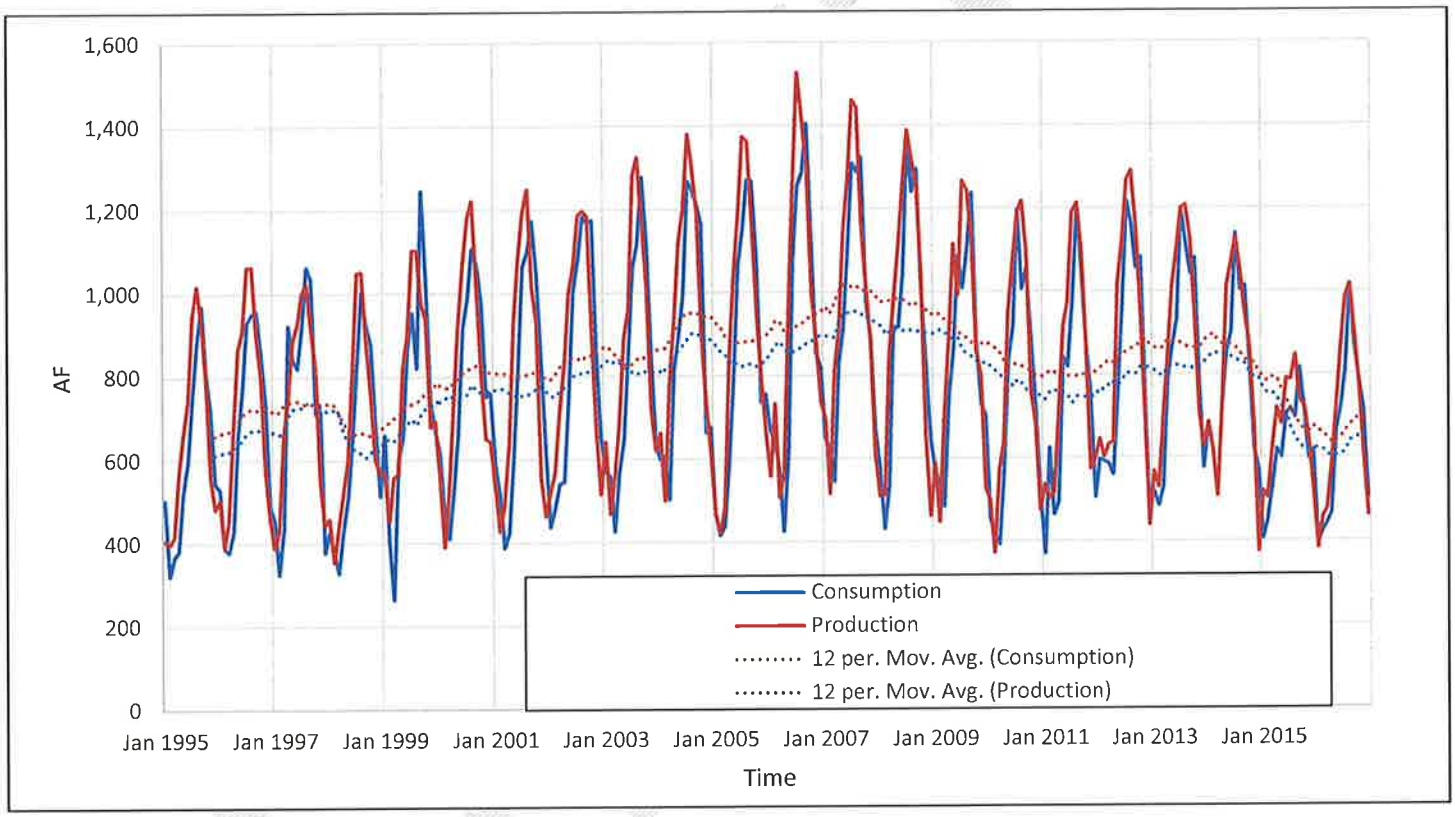
APPENDIX B NCWD INFORMATION FOR THE WUE STRATEGIC PLAN ADDENDUM

This appendix presents Retailer-specific information for this Addendum. The following sections are presented in the main body of this Addendum at the CLWA level with a reference to more Retailer-specific information being found in this appendix, the WUESP and each Retailer's DSS Model.

B.1 Production versus Consumption

Total water production and consumption (billed water) data were compared over the period 1995-2016. The following figure illustrates the total production versus total consumption. Water production data were measured at the source (purchased and transported or well-pumped). Water consumption data were measured at the customer meters. This Retailer's water usage breakdown by customer category can be found in the WUESP.

Figure B-1 Total Production vs. Total Consumption – NCWD



B.2 Water Demand Projections with and without Plumbing Code

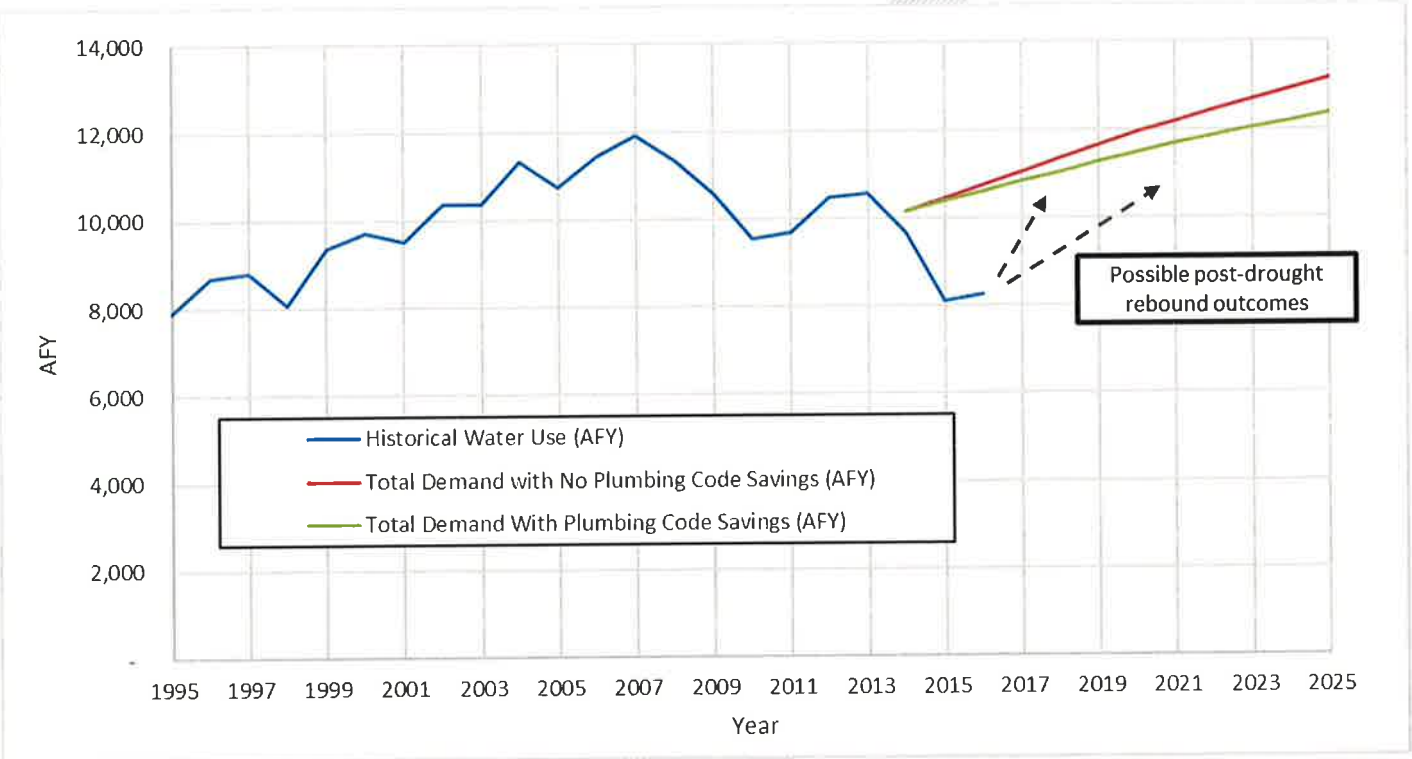
The following table and figure present the Retailer demand projections with and without plumbing code savings through 2025.

Table B-1 Demand Projections With and Without Plumbing Codes – NCWD

Demand Forecast	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Demand with No Plumbing Code Savings (AFY)	11,000	11,300	11,600	11,900	12,200	12,400	12,700	12,900	13,200
Total Demand with Plumbing Code Savings (AFY)	10,800	11,000	11,300	11,500	11,700	11,800	12,000	12,200	12,400

The following figure presents historical actual demand and projected estimated demand *with* and *without* plumbing code savings. Projected demands assume 1) normal weather, 2) economic recovery by 2020, 3) price escalation projections of roughly 1.5% per year, 4) land use analysis land-use derived population projections, and 5) plumbing code. Savings from plumbing codes (also known as "passive conservation") is based on federal and state legislated efficiency standards pertaining to plumbing fixtures and appliances. The impact of codes quantified here include the Energy Policy Act of 1992, CALGreen Building Code, AB 715, and SB 407 which governs the types of fixtures available on the market for toilets, showers, washers, etc. The curve with "no plumbing code" would be the demand if these laws were not in place.

Figure B-2 Projected Demands – NCWD



Note: The demand projection analysis was conducted in year 2014 and so the demand projection estimate begins in 2014. The dotted line between actual 2016 water use and the projected water use represents a possible post-drought rebound back towards more normalized water use conditions.

B.3 Historical and Current Conservation Program

A summary of recent year 2014-2016 conservation activity can be found in Section 4 of this Addendum.

B.4 Water Billing Structure

Since 2014, NCWD has employed a uniform volumetric rate structure for all accounts. All accounts are charged a flat fee for water availability and a variable charge based on usage for purchased water from CLWA. Newhall County Water District has recently created a water budget structure. The Water Efficiency Target (WET) goals are provided to most individually metered residential homes and are based on the specific indoor and outdoor water needs of each individual residence. Residential customers began seeing their target data on their bills in January 2015. NCWD is currently completing targets for all individually metered landscape accounts. The targets will give NCWD the ability to appropriate a relative charge to customers that require a higher priced water supply due to inefficient usage.

B.5 Estimated Recommended WUE Program Measure Costs and Savings

The following table presents year 2020 savings and the cost of savings per unit volume for the conservation measures conducted by the Retailer in its Recommended WUE Program. The Recommended WUE Program is not intended to be a rigid framework but rather to demonstrate the potential savings that could be generated if the listed measures are implemented collaboratively in a flexible approach. Only ongoing measures or planned future measures are presented. Ongoing residual savings from measures that ended before 2017 are incorporated in each Retailer's water demand projections. Measures that are no longer being implemented are not presented in this Addendum; however, their previous activity provides residual savings and the measures retain various water savings benefits depending on their savings life. More information about these measures can be found in the WUESP and the Retailer's DSS Model.

Table B-2 Estimated Recommended WUE Program Measure Costs and Savings – NCWD[a]

Retailer-Led Measure	Water Savings in 2020 (AFY)	Cost of Savings per Unit Volume ($/AF)
Water Loss	165	$790
Conservation Pricing	131	$90
Customer Water Use Reports	286	$10
SF Drip Irrigation Incentives	1	$1,350
MF CII Drip Irrigation Incentives	3	$710
Top User Indoor Surveys and Incentives	2	$760
CII Replace Equip and Performance Program	1	$3,970
SF MF Outdoor Surveys	8	$660
SF MF Survey Leak & Pressure	13	$970
HE Faucet & HE Showerhead Giveaway	15	$120
Sprinkler Nozzle Rebate	50	$60
Irrigation Surveys and Landscape Budgets	19	$580
Landscape Ordinance[b]	258	<$1
Education and Water Waste Enforcement	7	$250
Conservation Pricing - Irrigation	151	$40

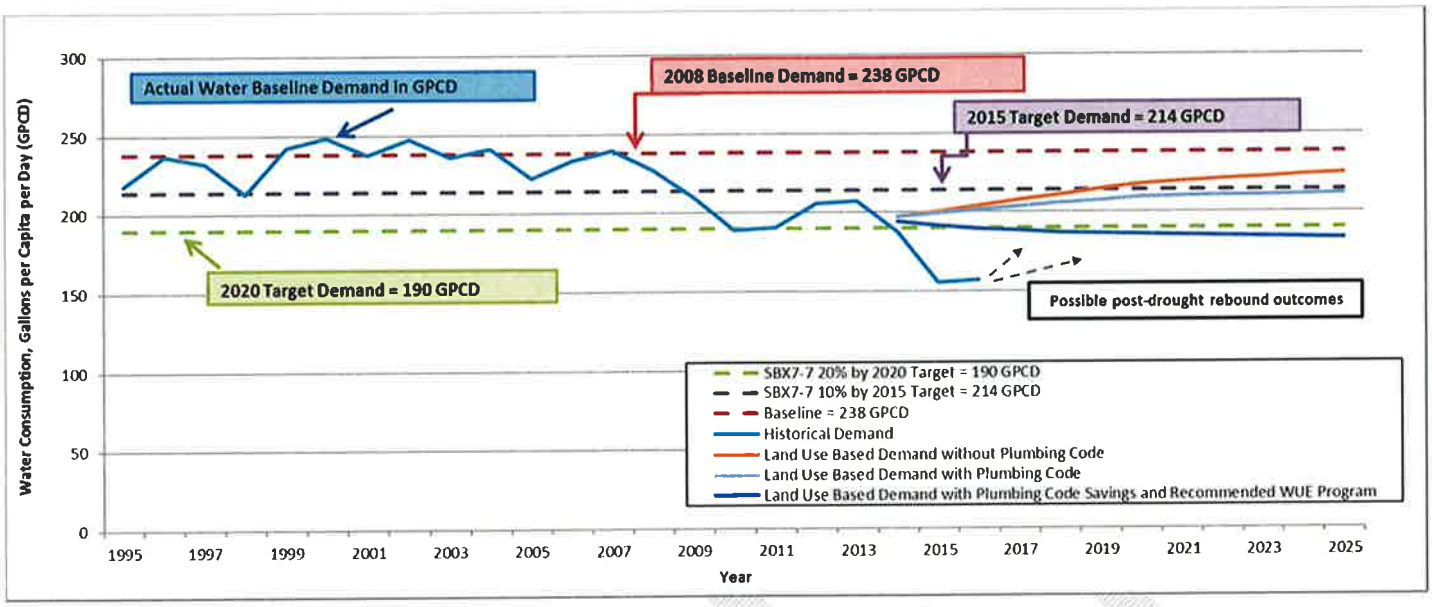
[a] Since the region's buildout year is anticipated to be year 2050, the DSS Model runs through year 2050 and the benefit cost analysis conducted for the WUESP presents present value (PV) costs, benefits, benefit cost (BC) ratios, and costs of savings over the evaluation period. Present value costs and benefits are in year 2014 dollars.

[b] The Landscape Ordinance has minimal Retailer utility or administrative costs as this measure is not run by the water department. Costs are to the developer and customer.

B.6 Per Capita Water Use

The following figure presents an average annual Retailer per capita per day use without conservation, with the plumbing codes only, and with the Recommended WUE Program at the Retailer level.

Figure B-3 Per Capita Water Use with Recommended WUE Program – NCWD



Note: The demand projection analysis was conducted in year 2014 and so the demand projection estimate begins in 2014. The dotted line between actual 2016 water use and the projected water use represents a possible post-drought rebound back to normalized water use conditions.

The following table presents the Retailer's year 2020 GPCD target as well as the projected Recommended WUE Program year 2020 GPCD estimate for the Retailer.

Table B-3 GPCD Target – Year 2020

NCWD	SB X7-7 2020 Target	2020 GPCD with plumbing codes	Recommended WUE Program 2020 GPCD
	190	209	186

B.7 Recommended WUE Program Cost and Savings Comparison

The following table shows the estimated benefits, costs and savings for the Retailer's Recommended WUE Program.

Table B-4 Recommended WUE Program Estimated Costs and Water Savings – NCWD

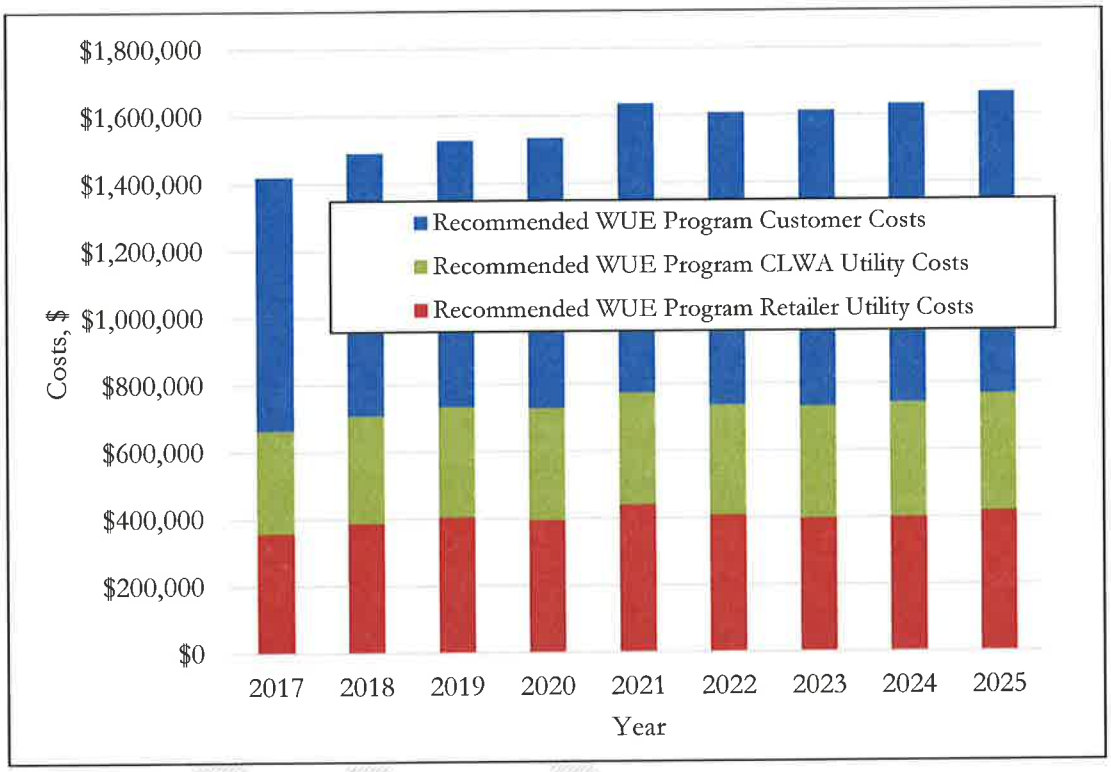
Recommended WUE Program and Plumbing Code Water Savings (AFY)									Water Utility Benefit to Cost Ratio*	Present Value of Water Savings*	Present Value of Utility Costs*
2017	2018	2019	2020	2021	2022	2023	2024	2025			
1,000	1,300	1,500	1,700	1,900	2,000	2,100	2,200	2,400	4.57	$74,529,000	$16,307,000

* Since the region's buildout year is anticipated to be year 2050, the DSS Model runs through year 2050 and the benefit cost analysis conducted for the WUESP presents present value costs, benefits, benefit cost ratios, and costs of savings over the evaluation period. Present value costs and benefits are in year 2014 dollars.

B.8 Recommended WUE Program Implementation Budget

The following figure presents the proposed implementation costs for the Retailer's CLWA-led and Retailer-led Recommended WUE Program measures. This budget includes CLWA utility costs, Retailer utility costs and customer costs. Utility costs include unit costs (site audit costs, incentives, rebates, etc.) as well as administrative costs.

Figure B-4 Recommended WUE Program CLWA, Retailer, and Customer Costs – NCWD



B.9 Recommended WUE Program Staffing Needs

The proposed implementation staffing needs for the Retailer for implementing the Retailer-led measures in the Recommended WUE Program is approximately 0.1-0.2 FTE per year or 200-400 hours per year. This estimate includes staffing needs to address the Retailer-led measures that the Retailer plans to implement as part of the Recommended WUE Program. These measures are all run in-house. Staffing needs were calculated by dividing annual administrative costs by an average annual CLWA salary of $85,000 per staff person; or $120,000 burdened. New development landscape plan review following the City and County's Landscape Ordinance is NOT completed by Retailer staff.

B.10 DSS Model Recommended WUE Program Measure Results

This section presents the number of accounts targeted annually for each Recommended WUE Program Retailer-led measure.

Table B-5 Retailer-Led Recommended WUE Program Measure Targeted Accounts - NCWD

Measure	2017	2018	2019	2020	2021	2022	2023	2024	2025
Water Loss[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conservation Pricing[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Customer Water Use Reports	2,224	2,246	2,268	2,290	2,335	2,379	2,424	2,468	2,512
SF Drip Irrigation Incentives	13	13	14	14	14	14	15	15	15
MF CII Drip Irrigation Incentives	4	4	4	4	4	4	5	5	5
Top User Indoor Surveys and Incentives	1	1	1	1	1	1	1	1	1
CII Replace Equip and Performance Program	2	2	2	2	2	2	2	3	3
SF MF Outdoor Surveys	37	37	38	38	39	39	40	41	42
SF MF Survey Leak & Pressure	69	70	71	71	73	74	75	77	78
HE Faucet & HE Showerhead Giveaway[b]	230	233	235	238	N/A	N/A	N/A	N/A	N/A
Sprinkler Nozzle Rebate	50	51	52	53	54	55	56	57	58
Irrigation Surveys and Landscape Budgets[c]	N/A	12	13	14	14	15	15	15	16
Landscape Ordinance	138	138	138	138	198	198	198	198	198
Education and Water Waste Enforcement	47	48	49	49	50	51	52	53	54
Conservation Pricing – Irrigation[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

a. The Water Loss and Conservation Pricing measures target overall production and consumption, respectively, to lower GPCD.
b. The HE Faucet & HE Showerhead Giveaway measure ends in 2021.
c. The Irrigation Surveys and Landscape Budgets measure begins in 2018.

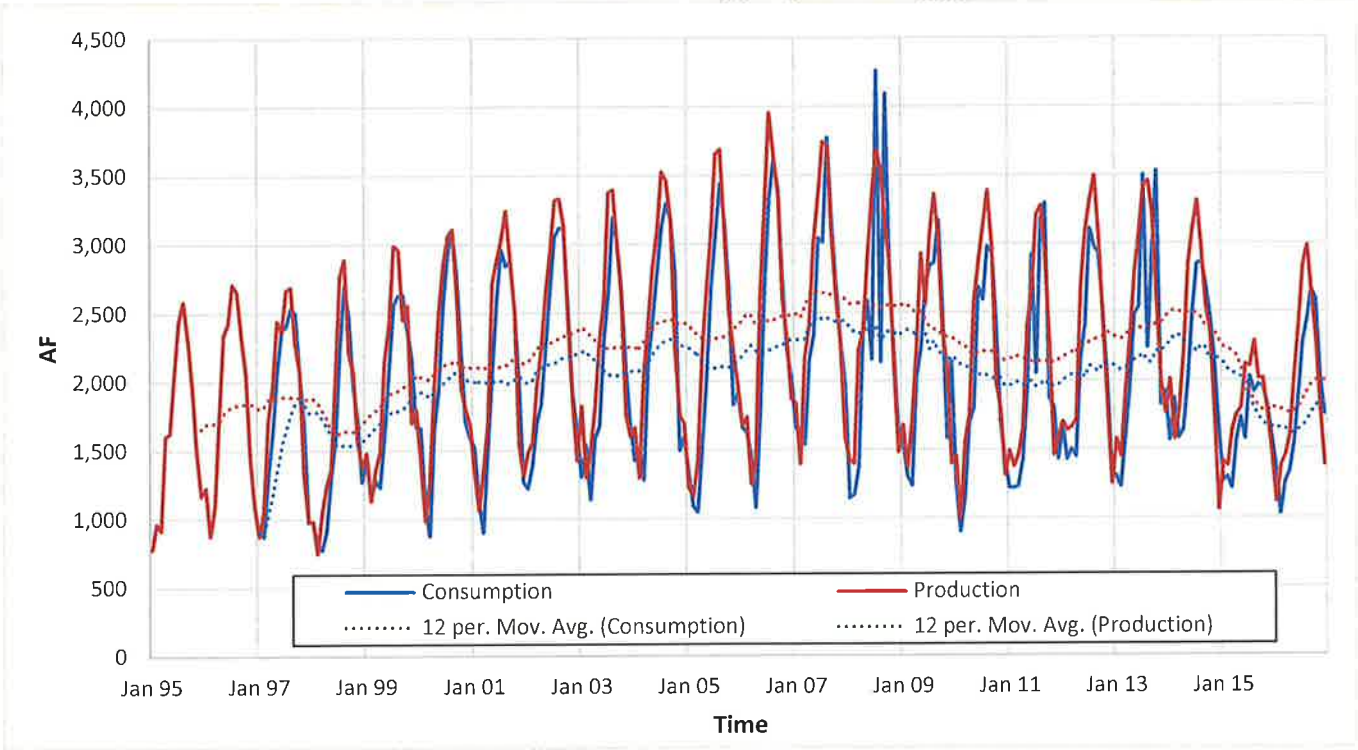
APPENDIX C SCWD INFORMATION FOR THE WUE STRATEGIC PLAN ADDENDUM

This appendix presents Retailer-specific information for the Water Use Efficiency Strategic Plan. The following sections are presented in the main body of the WUESP at the CLWA level with a reference to more Retailer-specific information being found in this appendix.

C.1 Production versus Consumption

Total water production and consumption (billed water) data were compared over the period 1995-2016. The following figure illustrates the total production versus total consumption. Water production data were measured at the source (purchased and transported or well-pumped). Water consumption data were measured at the customer meters. This Retailer's water usage breakdown by customer category can be found in the WUESP or DSS Model.

Figure C-1 Total Production vs. Total Consumption – SCWD



C.2 Water Demand Projections with and without Plumbing Code

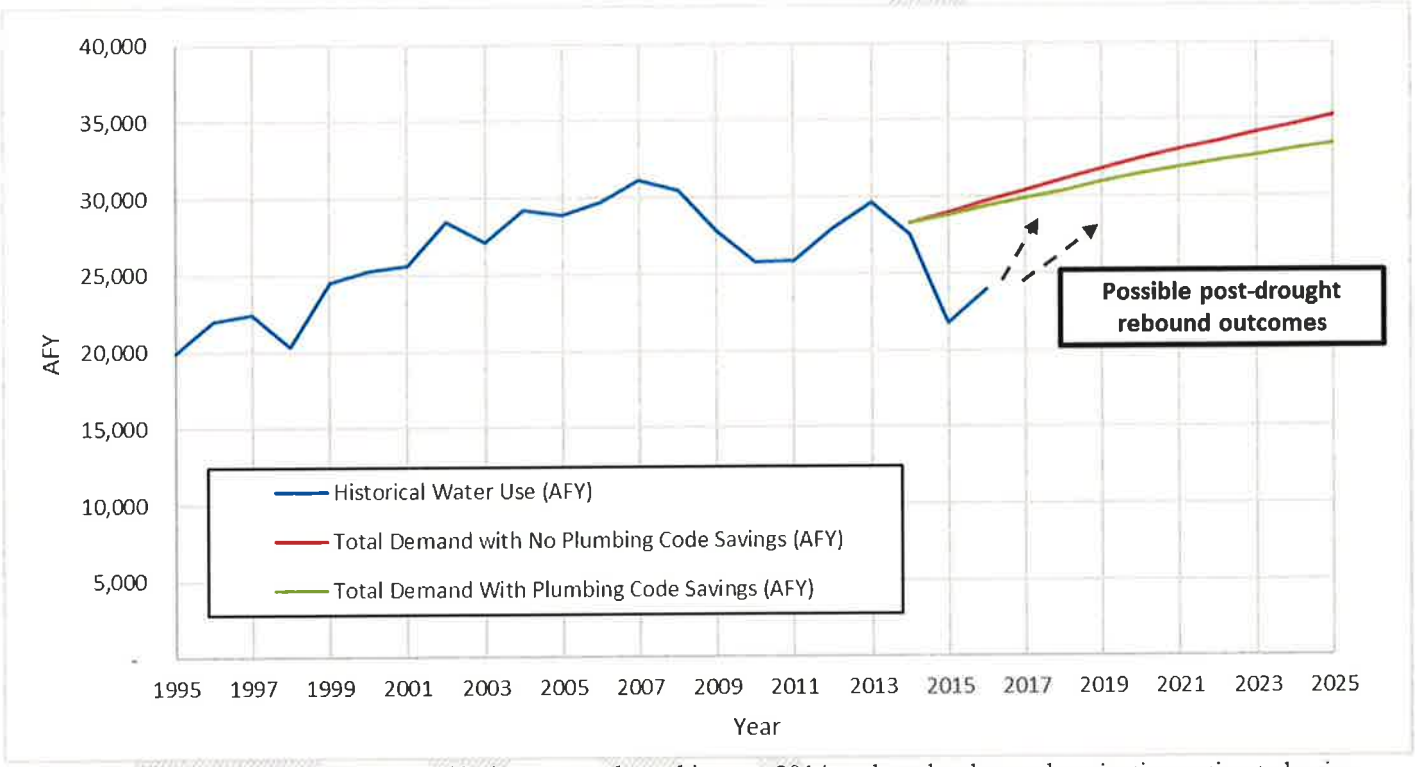
The following table and figure present the Retailer demand projections with and without plumbing code savings through 2025.

Table C-1 Demand Projections With and Without Plumbing Codes – SCWD

Demand Forecast	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Demand with No Plumbing Code Savings (AFY)	30,400	31,100	31,800	32,500	33,100	33,600	34,100	34,700	35,200
Total Demand with Plumbing Code Savings (AFY)	29,900	30,400	31,000	31,500	31,900	32,300	32,700	33,000	33,400

The following figure presents historical actual demand and projected estimated demand *with* and *without* plumbing code savings. Projected demands assume 1) normal weather, 2) economic recovery by 2020, 3) price escalation projections of roughly 1.5% per year, 4) land use analysis land-use derived population projections, and 5) plumbing code. Savings from plumbing codes (also known as "passive conservation") is based on federal and state legislated efficiency standards pertaining to plumbing fixtures and appliances. The impact of codes quantified here include the Energy Policy Act of 1992, CALGreen Building Code, AB 715, and SB 407 which governs the types of fixtures available on the market for toilets, showers, faucet aerators, clothes washers, etc. The curve with "no plumbing code" would be the demand if these laws were not in place.

Figure C-2 Projected Demands – SCWD



Note: The demand projection analysis was conducted in year 2014 and so the demand projection estimate begins in 2014. The dotted line between actual 2016 water use and the projected water use represents a possible post-drought rebound back to more normalized water use conditions.

C.3 Historical and Current Conservation Program

A summary of recent year 2014-2016 conservation activity can be found in Section 4 of this Addendum.

C.4 Water Billing Structure

All SCWD's customers are metered and billed monthly. On January 1, 2010, SCWD migrated its residential customers to a tiered rate structure and its CII and landscape customers to a fixed rate set at the highest tier rate. Since 2007 the proportion of revenue from fixed charge has met the BMP guidance of not to exceed 30%.

C.5 Estimated Recommended WUE Program Measure Costs and Savings

The following table presents year 2020 savings and the cost of savings per unit volume for the conservation measures conducted by the Retailer in their Recommended WUE Program. The Recommended WUE Program is not intended to be a rigid framework but rather to demonstrate the potential savings that could be generated if the listed measures are implemented collaboratively in a flexible approach. Only ongoing measures or planned future

measures are presented. Ongoing residual savings from measures that ended before 2017 are incorporated in each Retailer's water demand projections. Measures that are no longer being implemented are not presented in this Addendum. However, their previous activity provides residual savings and the measures retain various water savings benefits depending on their savings life. More information can be found in the WUESP and Retailer's DSS Model.

Table C-2 Estimated Recommended Water Use Efficiency Program Measure Costs and Savings – SCWD[a]

Retailer-Led Measure	Water Savings in 2020 (AFY)	Cost of Savings per Unit Volume ($/AF)
Water Loss	70	$1,470
AMI	85	$40
Conservation Pricing	267	$20
Customer Water Use Reports	1,406	$100
SF Drip Irrigation Incentives	12	$210
MF CII Drip Irrigation Incentives	5	$1,260
HE Faucet & HE Showerhead Giveaway	13	$100
Sprinkler Nozzle Rebate	57	$290
Landscape Ordinance [b]	611	<$1
Education and Water Waste Enforcement	589	$270

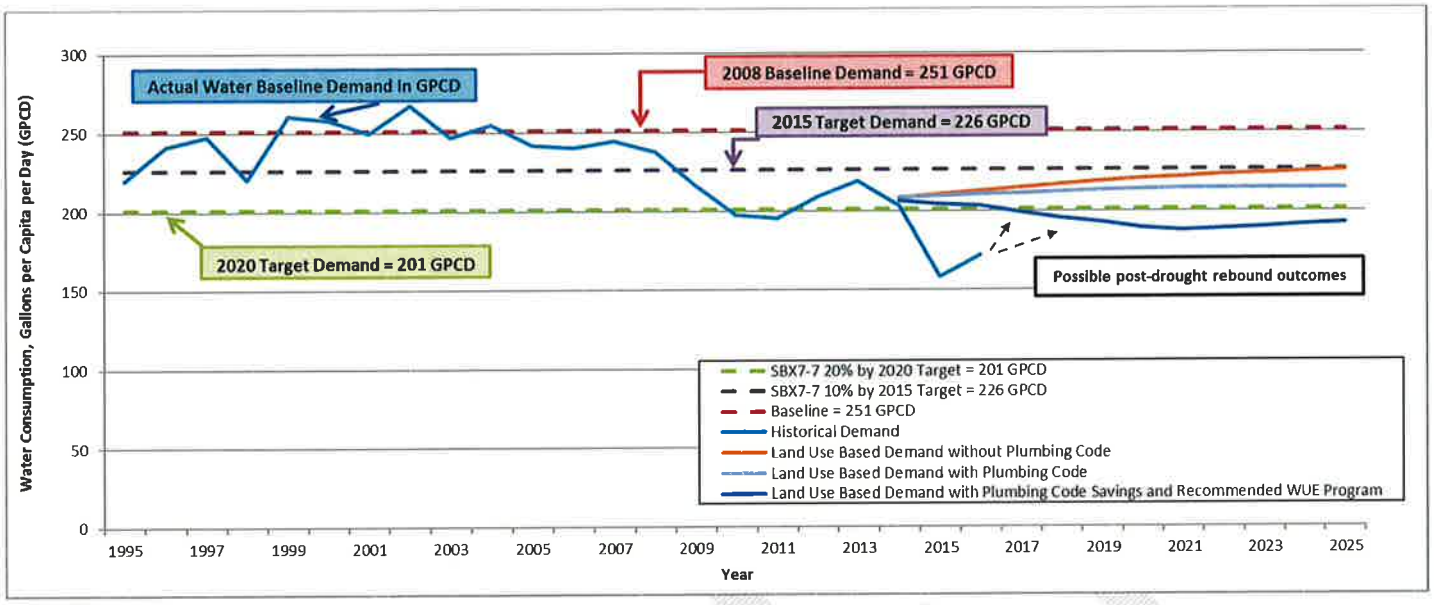
[a] Since the region's buildout year is anticipated to be year 2050, the DSS Model runs through year 2050 and the benefit cost analysis conducted for the WUESP presents present value (PV) costs, benefits, benefit cost (BC) ratios, and costs of savings over the evaluation period. Present value costs and benefits are in year 2014 dollars.

[b] The Landscape Ordinance has minimal Retailer utility or administrative costs as this measure is not run by the water department. Costs are to the developer and customer.

C.6 Per Capita Water Use

The following figure presents an average annual Retailer per capita per day use without conservation, with the plumbing codes only, and with the Recommended WUE Programs at the Retailer level.

Figure C-3 Per Capita Water Use– SCWD



Note: The demand projection analysis was conducted in year 2014 and so the demand projection estimate begins in 2014. The dotted line between actual 2016 water use and the projected water use represents a possible post-drought rebound back to more normalized water use conditions.

The following table presents year 2020 GPCD target and per capita per day use with the plumbing codes only, and with the Recommended WUE Programs at the Retailer level.

Table C-3 GPCD Target – Year 2020

SCWD	SB X7-7 2020 Target	2020 GPCD with plumbing codes	Recommended WUE Program 2020 GPCD
	201	214	190

C.7 Recommended WUE Program Cost and Savings

The following table shows the estimated benefits, costs and savings for the Retailer's Recommended WUE Program.

Table C-4 Recommended WUE Program Estimated Costs and Water Savings – SCWD

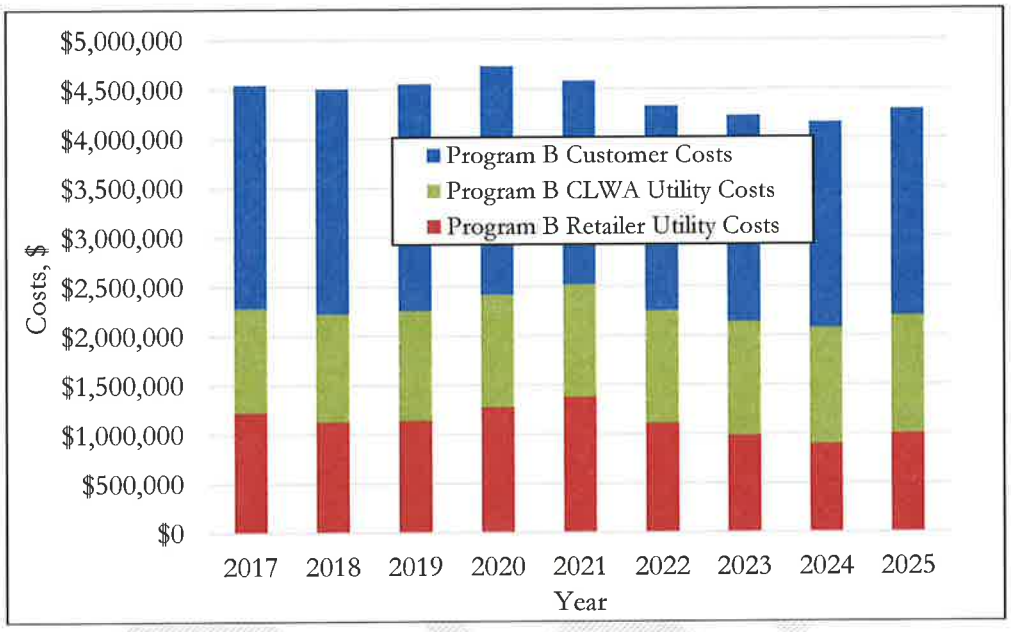
Recommended WUE Program and Plumbing Code Water Savings (AFY)									Water Utility Benefit to Cost Ratio*	Present Value of Water Savings*	Present Value of Utility Costs*
2017	2018	2019	2020	2021	2022	2023	2024	2025			
2,200	3,000	3,700	4,500	5,000	5,000	5,000	5,100	5,100	3.71	$178,581,000	$48,169,000

* Since the region's buildout year is anticipated to be year 2050, the DSS Model runs through year 2050 and the benefit cost analysis conducted for the WUESP presents present value costs, benefits, benefit cost ratios, and costs of savings over the evaluation period. Present value costs and benefits are in year 2014 dollars.

C.8 Recommended WUE Program Implementation Budget

The following figure presents the proposed implementation costs for the Retailer's CLWA-led and Retailer-led Recommended WUE Program measures. This budget includes CLWA utility costs, Retailer utility costs and customer costs. Utility costs include unit costs (site audit costs, incentives, rebates, etc.) as well as administrative costs.

Figure C-4 Recommended WUE Program CLWA, Retailer, and Customer Costs – SCWD



C.9 Recommended WUE Program Staffing Needs

The proposed implementation staffing needs for the Retailer for implementing the Retailer-led measures in the Recommended WUE Program is approximately 0.9-1.2 FTE per year. This estimate includes staffing needs to address the Retailer-led measures that the Retailer plans to implement as part of the Recommended WUE Program. These measures are all run in-house. Staffing needs were calculated by dividing annual administrative costs by an average annual CLWA salary of $85,000 per staff person; or $120,000 burdened. New development landscape plan review following the City and County's Landscape Ordinance is currently not completed by Retailer staff.

C.10 DSS Model Conservation Measure Results

This section presents the number of accounts targeted annually for each Recommended WUE Program Retailer-led measure.

Table C-5 Retailer-Led Recommended WUE Program Measure Targeted Accounts – SCWD

Measure	2017	2018	2019	2020	2021	2022	2023	2024	2025
Water Loss[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AMI[b]	N/A	N/A	N/A	10,450	10,587	10,724	N/A	N/A	N/A
Conservation Pricing[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Customer Water Use Reports[c]	7,424	7,534	7,644	7,753	7,855	N/A	N/A	N/A	N/A
SF Drip Irrigation Incentives	49	50	50	50	51	51	52	52	53
MF CII Drip Irrigation Incentives	15	15	16	16	17	17	17	18	18
HE Faucet & HE Showerhead Giveaway[d]	206	208	210	212	N/A	N/A	N/A	N/A	N/A
Sprinkler Nozzle Rebate[e]	24	24	24	24	24	24	24	N/A	N/A
Landscape Ordinance	395	395	395	395	366	366	366	366	366
Education and Water Waste Enforcement	4,268	4,315	4,362	4,408	4,462	4,516	4,569	4,623	4,676

[a] The Water Loss and Conservation Pricing measures target overall production and consumption, respectively, to lower GPCD.
[b]. The AMI measure is anticipated to take three years to implement beginning in 2020.
[c] The Customer Water Use Reports measure is projected to go offline by 2022.
[d] The HE Faucet & HE Showerhead Giveaway is modeled to be offline by 2021.
[e] Sprinkler Nozzle Rebates are anticipated to be offline by 2024.

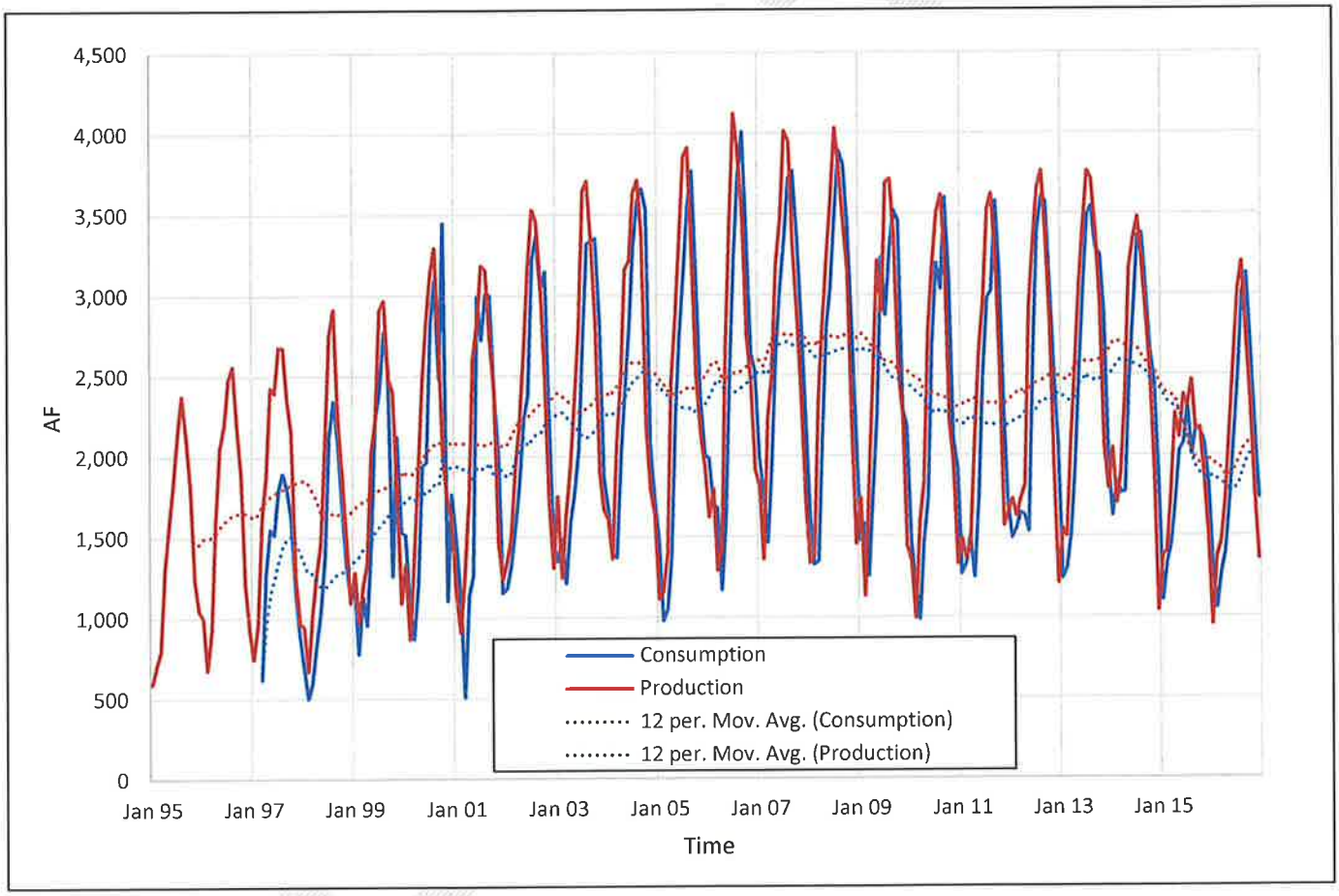
APPENDIX D VWC INFORMATION FOR THE WUE STRATEGIC PLAN ADDENDUM

This appendix presents Retailer-specific information for the Water Use Efficiency Strategic Plan. The following sections are presented in the main body of the WUESP at the CLWA level with a reference to more Retailer-specific information being found in this appendix.

D.1 Production versus Consumption

VWC provided production data from January 1995 and consumption data from March 1997. The following figure illustrates the total production versus total consumption. Recycled water is included in VWC total production and demand graphs. However, for potable GPCD calculations and associated GPCD graphs, recycled water is not included to allow for comparison with potable GPCD water use targets mandated per the definition provided in SB X7-7.

Figure D-1 Total Production vs. Total Consumption – VWC



This Retailer's water usage breakdown by customer category can be found in the WUESP.

D.2 Water Demand Projections with and without Plumbing Code

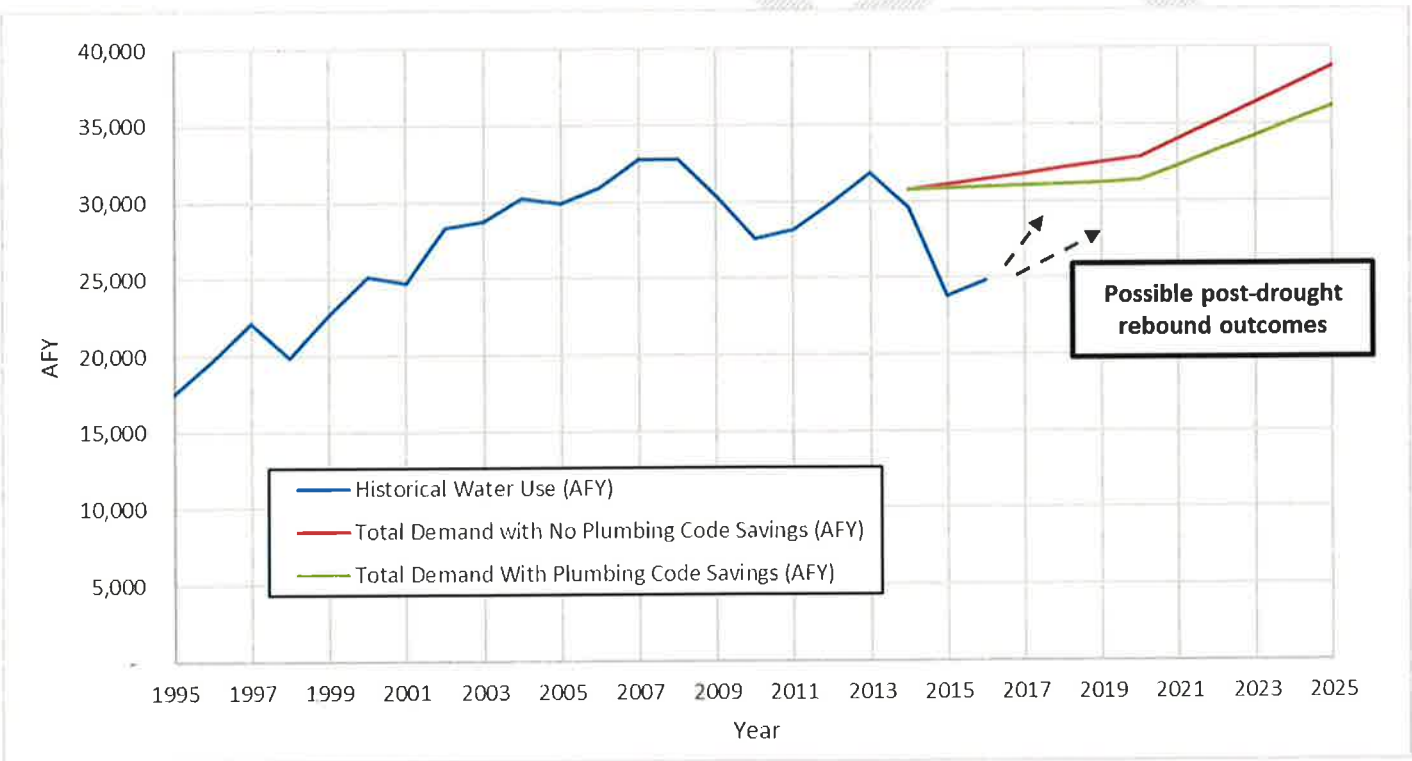
The following table and figure present the Retailer demand projections with and without plumbing code savings through 2025. Recycled water is included in VWC demand.

Table D-1 Demand Projections With and Without Plumbing Codes – VWC

Demand Forecast	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Demand with No Plumbing Code Savings (AFY)	31,800	32,200	32,500	32,900	34,100	35,200	36,400	37,600	38,700
Total Demand with Plumbing Code Savings (AFY)	31,000	31,100	31,200	31,300	32,300	33,300	34,200	35,200	36,100

The following figure presents historical actual demand and projected estimated demand *with* and *without* plumbing code savings. Projected demands assume 1) normal weather, 2) economic recovery by 2020, 3) price escalation projections of roughly 1.5% per year, 4) land use analysis land-use derived population projections, and 5) plumbing code. Savings from plumbing codes (also known as "passive conservation") is based on federal and state legislated efficiency standards pertaining to plumbing fixtures and appliances. The impact of codes quantified here include the Energy Policy Act of 1992, CALGreen Building Code, AB 715, and SB 407 which governs the types of fixtures available on the market for toilets, showers, washers, etc. The curve with "no plumbing code" would be the demand if these laws were not in place.

Figure D-2 Projected Demands – VWC



Note: The demand projection analysis was conducted in year 2014 and so the demand projection estimate begins in 2014. The dotted line between actual 2016 water use and the projected water use represents a possible post-drought rebound back to more normalized water use conditions.

D.3 Historical and Current Conservation

A summary of recent year 2014-2016 conservation activity can be found in Section 4 of this Addendum.

D.4 Water Billing Structure

On February 1, 2011 VWC changed its single volumetric rate structure to a tiered structure. The tiered system was designed to support the Water SMART Allocation (WSA) program, which sets customer specific allocations for all individually metered residential customers. Starting in 2009, customer bills included information on their allocation, allowing time for acclimation to the new approach before it was fully implemented with tiered rates in 2011. The rate structure is designed to provide support and encourage appropriate use. If a customer's water use is within the designated "efficient" range for their allocated volume, the customer is charged standard rates. If the customer uses less than the efficient limit, the customer is charged at a lower rate and, conversely, if the customer uses more, the customer is charged at the higher rates. There are five (5) tiers, ranging from "Super Efficient" at $1.144/CCF to "Wasteful" at $2.878/CCF. Customers are encouraged to access their allocation and billing information on the company's website.

Residential class customers were the first to be placed on WSA and the tiered rate structure as this group represents approximately 54% of VWC's total consumption. Dedicated landscape irrigation meters, including those at CII customer locations were placed on WSA with a tiered rate structure in 2012. VWC will evaluate the challenges of migrating the remaining customer classifications to WSA and tiered rates in the future. The proportion of revenue from volumetric charges meets the BMP guidance at about 71 to 73%.

D.5 Estimated Conservation Measure Costs and Savings

The following table presents year 2020 savings and the cost of savings per unit volume for the conservation measures conducted by the Retailer in its Recommended WUE Program. The Recommended WUE Program is not intended to be a rigid framework but rather to demonstrate the potential savings that could be generated if the listed measures are implemented collaboratively in a flexible approach. Only ongoing measures or planned future measures are presented. Ongoing residual savings from measures that ended before 2017 are incorporated in each Retailer's water demand projections. Measures that are no longer being implemented are not presented in this Addendum; however, their previous activity provides residual savings and the measures retain various water savings benefits depending on their savings life. More information about these measures can be found in the WUESP and the Retailer's DSS Model.

Table D-2 Estimated Recommended WUE Program Measure Costs and Savings – VWC*

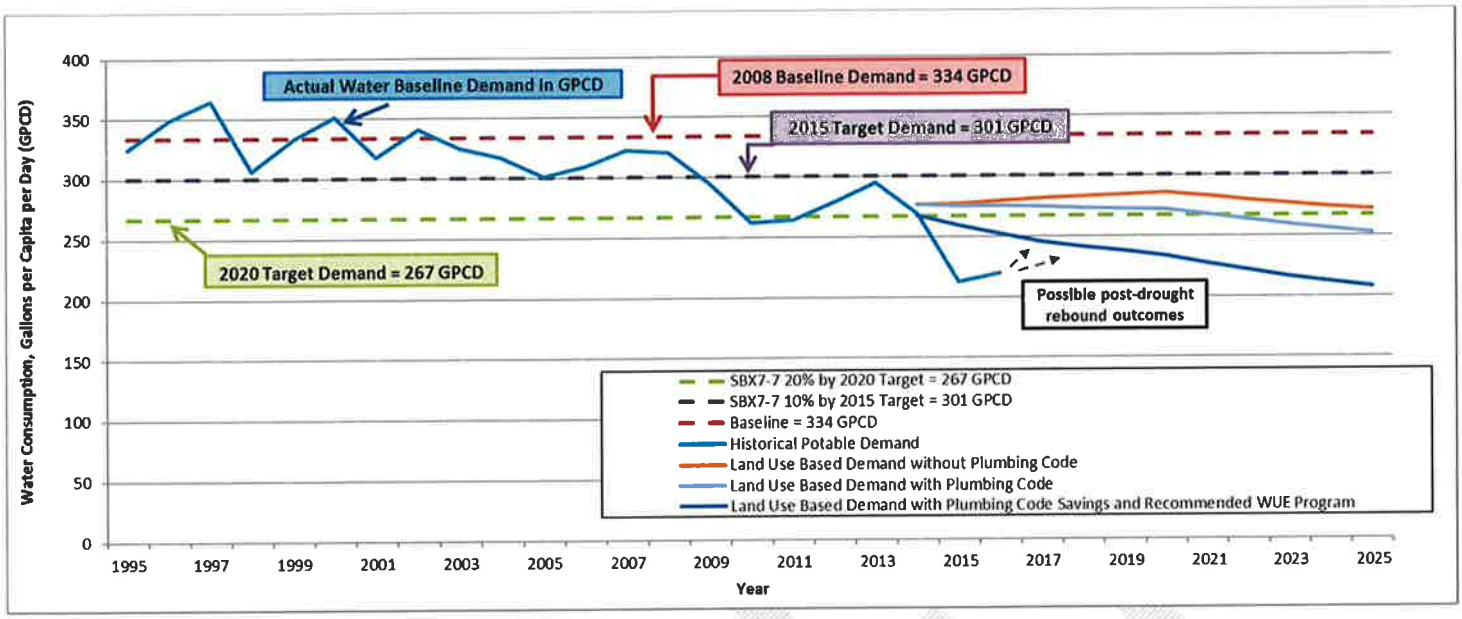
Retailer-Led Measure	Water Savings in 2020 (AFY)	Cost of Savings per Unit Volume ($/AF)
Water Loss	167	$130
Conservation Pricing	162	$20
Customer Water Use Reports	1,461	$20
SF Drip Irrigation Incentives	45	$890
MF CII Drip Irrigation Incentives	125	$370
UHET Rebates	29	$260
Top User Indoor Surveys and Incentives	93	$520
CII Replace Equip and Performance Program	28	$710
SF MF Outdoor Surveys	95	$910
SF MF Survey Leak & Pressure	24	$1,200
HE Faucet & HE Showerhead Giveaway	22	$40
Sprinkler Nozzle Rebate	408	$50
Irrigation Surveys and Landscape Budgets	329	$340
SF Hot Water on Demand	3	$890
Landscape Ordinance	433	$160
Education and Water Waste Enforcement	70	$970
Conservation Pricing- Irrigation	373	$10
Water SMART Workshop	66	$360

* Since the region's buildout year is anticipated to be year 2050, the DSS Model runs through year 2050 and the benefit cost analysis conducted for the WUESP presents present value costs, benefits, benefit cost ratios, and costs of savings over the evaluation period. Present value costs and benefits are in year 2014 dollars.

D.6 Per Capita Water Use

The following figure presents an average annual Retailer per capita per day use without conservation, with the plumbing codes only, and with the Recommended WUE Program at the Retailer level. Recycled water is included in VWC total production and demand graphs, however for potable GPCD calculations and associated GPCD graphs, recycled water is not included to allow for comparison with potable GPCD water use targets mandated per the definition provided in SB X7-7.

Figure D-3 Per Capita Water Use – VWC



Notes:

1. The demand projection analysis was conducted in year 2014 and so the demand projection estimate begins in 2014. The dotted line between actual 2016 water use and the projected water use represents a possible post-drought rebound back to more normalized water use conditions.
2. GPCD values represent potable per capita water use only and do not include any recycled water use. Recycled water is included in VWC total production and demand graphs, however for potable GPCD calculations and associated GPCD graphs, recycled water is not included to allow for comparison with potable GPCD water use targets mandated per the definition provided in SB X7-7.

The following table presents the Retailer's year 2020 GPCD target as well as the projected Recommended WUE Program year 2020 GPCD estimate for the Retailer.

Table D-3 GPCD Target – Year 2020*

VWC	SB X7-7 2020 Target	2020 GPCD with plumbing codes	Recommended WUE Program 2020 GPCD[a]
	267	280	242

* GPCD values represent potable per capita water use only and do not include any recycled water use.

D.7 Recommended WUE Program Cost and Savings

The following table shows the estimated benefits, costs and savings for the Retailer's Recommended WUE Program.

Table D-4 Recommended WUE Program Estimated Cost and Water Savings – VWC

Recommended WUE Program and Plumbing Code Water Savings (AFY)									Water Utility Benefit to Cost Ratio*	Present Value of Water Savings*	Present Value of Utility Costs*
2017	2018	2019	2020	2021	2022	2023	2024	2025			

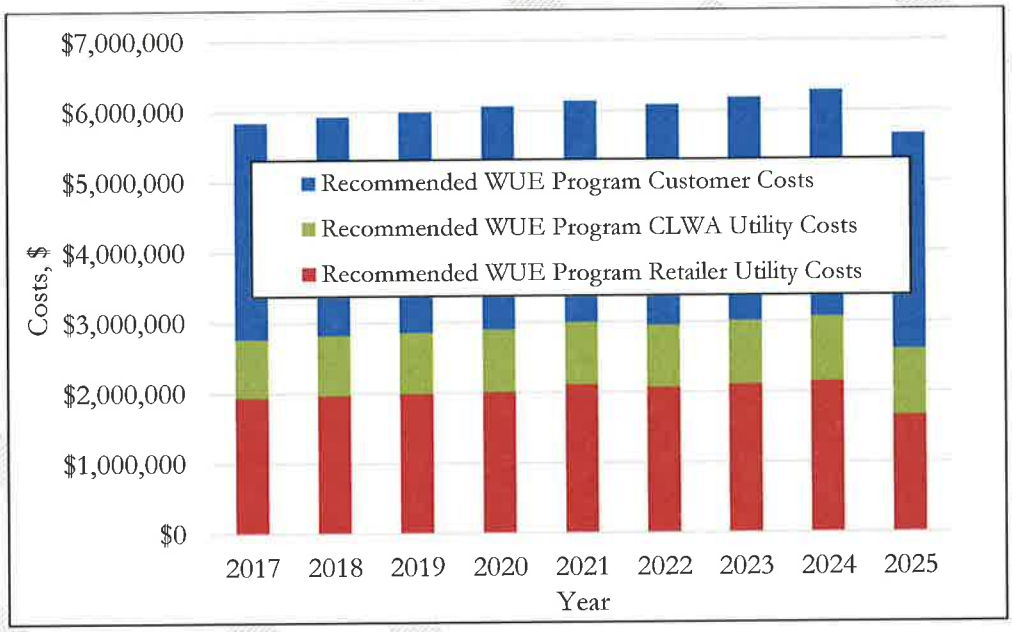
Recommended WUE Program and Plumbing Code Water Savings (AFY)									Water Utility Benefit to Cost Ratio*	Present Value of Water Savings*	Present Value of Utility Costs*
2017	2018	2019	2020	2021	2022	2023	2024	2025			
4,000	4,700	5,200	5,900	6,500	7,000	7,500	8,100	8,500	4.91	$265,475,000	$54,071,000

* Since the region's buildout year is anticipated to be year 2050, the DSS Model runs through year 2050 and the benefit cost analysis conducted for the WUESP presents present value costs, benefits, benefit cost ratios, and costs of savings over the evaluation period. Present value costs and benefits are in year 2014 dollars.

D.8 Recommended WUE Program Implementation Budget

The following figure presents the proposed implementation costs for the Retailer's CLWA-led and Retailer-led Recommended WUE Program measures. This budget includes CLWA utility costs, Retailer utility costs and customer costs. Utility costs include unit costs (site audit costs, incentives, rebates, etc.) as well as administrative costs.

Figure D-4 Recommended WUE Program CLWA, Retailer, and Customer Costs – VWC



D.9 Recommended WUE Program Staffing Needs

The proposed implementation staffing needs for the Retailer for implementing the Retailer-led measures in the Recommended WUE Program is approximately 3.3 to 3.6 FTEs per year. This estimate includes staffing needs to address the Retailer-led measures that the Retailer plans to implement as part of the Recommended WUE Program. These measures are all run in-house. Staffing needs were calculated by dividing annual administrative costs by an average annual CLWA salary of $85,000 per staff person; or $120,000 burdened. New development landscape plan review following the City and County's Landscape Ordinance is not completed by Retailer staff.

D.10 DSS Model Recommended WUE Program Measure Results

This section presents the number of accounts targeted annually for each Recommended WUE Program Retailer-led measure.

Table D-5 Retailer-Led Recommended WUE Program Measure Targeted Accounts – VWC

Measure	2017	2018	2019	2020	2021	2022	2023	2024	2025
Water Loss[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conservation Pricing[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Customer Water Use Reports	7,846	8,021	8,196	8,370	8,529	8,687	8,845	9,004	9,162
SF Drip Irrigation Incentives[b]	567	580	594	608	618	628	638	648	N/A
MF CII Drip Irrigation Incentives[b]	61	61	61	62	64	66	69	71	N/A
UHET Rebates[c]	106	108	111	114	116	N/A	N/A	N/A	N/A
Top User Indoor Surveys and Incentives	47	49	50	52	55	58	61	64	67
CII Replace Equip and Performance Program	14	15	15	16	17	18	19	19	20
SF MF Outdoor Surveys	661	677	693	709	722	735	749	762	776
SF MF Survey Leak & Pressure	661	677	693	709	722	735	749	762	776
HE Faucet & HE Showerhead Giveaway[c]	129	132	136	139	141	N/A	N/A	N/A	N/A
Sprinkler Nozzle Rebate	784	802	819	837	852	868	884	899	915
Irrigation Surveys and Landscape Budgets	76	76	77	77	80	83	86	89	92
SF Hot Water on Demand	94	96	98	100	102	104	105	107	109
Landscape Ordinance	677	677	677	677	570	570	570	570	570
Education and Water Waste Enforcement	598	610	623	636	648	659	671	683	694
Conservation Pricing - Irrigation[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Water SMART Workshop	1,559	1,596	1,634	1,671	1,699	1,727	1,755	1,783	1,811

[a] The Water Loss and Conservation Pricing measures target overall production and consumption, respectively, to lower GPCD.
[b] SF Drip Irrigation Incentives and MF CII Drip Irrigation Incentives measures go offline in year 2024.
[c] Both the UHET Rebates measure and HE Faucet & HE Showerhead Giveaway measure go offline in year 2021.

APPENDIX E PASSIVE SAVINGS ASSUMPTIONS FOR THE DSS MODEL

The following section presents the new key passive saving modeling assumptions used in the DSS Model since the WUESP was published. The DSS Model incorporates the following items as a "code" meaning that the savings are assumed to occur and are therefore "passive" savings.

- National Plumbing Code
- CALGreen
- AB 715
- SB 407
- CA Code of Regulations Title 20 Sections 1601-1608 2015 Appliance Efficiency Rulemaking New Standards

More information about the national plumbing code, SB 407, and AB715 can be found in the WUESP. As compared to the WEUSP, this Addendum has updated plumbing code savings estimates due to recent legislation enacted because of the recent drought. Both the 2015 CALGreen Building Code and the California Code of Regulations Title 20 Appliance Efficiency Regulations adopted by the California Energy Commission (CEC) on September 1, 2015 yielded more aggressive plumbing code savings, which has consequently affected the active conservation savings potential and savings estimates.

The 2015 CALGreen requirements effect all new development in the State of California after July 1, 2015.[1] The DSS Model includes the CALGreen requirements that effect all new development in the State of California after July 1, 2015. The DSS Model modeled water savings from the CALGreen building code by adding Multi-family and Commercial customer categories as appropriate to applicable conservation measures.

Fixture characteristics in the DSS Model are tracked in new accounts, which are subject to the requirements of the 2015 California Green Building Code and 2015 California Code of Regulations Title 20 Appliance Efficiency Regulations adopted by the California Energy Commission (CEC) on September 1, 2015. The CEC 2015 appliance efficiency standards applies to the following new appliances, if they are sold in California: showerheads, lavatory faucets, kitchen faucets, metering faucets, replacement aerators, wash fountains, tub spout diverters, public lavatory faucets, commercial pre-rinse spray valves, urinals, and toilets. The DSS Model accounts for plumbing code savings due to these standards effects on showerheads, faucets and aerators, urinals, and toilets.

- Showerheads: July 2016: 2.0 gpm; July 2018: 1.8 gpm
- Wall Mounted Urinals: 2016: 0.125 (pint) gpf
- Lavatory Faucets and Aerator: July 2016: 1.2 gpm at 60 psi
- Kitchen Faucets and Aerator: July 2016: 1.8 gpm with optional temporary flow of 2.2 gpm at 60 psi
- Public Lavatory Faucets: July 2016: 0.5 gpm at 60 psi

In summary, the controlling law for **toilets** is Assembly Bill (AB) 715. This bill requires high efficiency toilets (1.28 gpf) to be exclusively sold in California beginning January 1, 2014. The controlling law for wall-mounted urinals is the 2015 CEC efficiency regulations requiring that ultra-high efficiency pint **urinals** (0.125 gpf) be exclusively sold in California beginning January 1, 2016. This is an efficiency progression for urinals from AB 715's requirement of high-efficiency (0.5 gpf) urinals starting in 2014.

Standards for **residential clothes washers** fall under the regulations of the U.S. Department of Energy. In March 2015, the federal standard reduced the maximum water factor for non-Energy Star® certified top- and front-loading washing machines to 8.4 and 4.7, respectively. In 2018, the maximum water factor for standard top-loading machines will be further reduced to 6.5.

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[1] More information on the California Building Standards Commission reference documents are available online: http://www.bsc.ca.gov/pubs/bullet.aspx

Showerhead flow rates are newly regulated under the 2015 California Code of Regulations Title 20 Appliance Efficiency Regulations adopted by the CEC, which requires the exclusive sale in California of 2.0 gpm showerheads at 80 psi as of July 1, 2016 and 1.8 gpm showerheads at 80 psi as of July 1, 2018. The WaterSense specification applies to showerheads that have a maximum flow rate of 2.0 gallons per minute (gpm) or less. This represents a 20% reduction in showerhead flow rate over the current federal standard of 2.5 gpm, as specified by the Energy Policy Act of 1992.

Faucet flow rates have likewise been recently regulated by the 2015 CEC Title 20 regulations. This standard requires that the residential faucets and aerators manufactured on or after July 1, 2016 be exclusively sold in California at 1.2 gpm at 60 psi; and public lavatory and kitchen faucet/aerators sold or offered for sale on or after July 1, 2016 be 0.5 gpm at 60 psi, and 1.8 gpm at 60 psi (with optional temporary flow of 2.2 gpm), respectively. Previously, all faucets had been regulated by the 2010 California Green Building Code at 2.2 gpm at 60 psi.

Plumbing code related water savings are considered reliable, long-term savings, and can be counted on over time to help reduce overall system water demand. The demand projections including plumbing code savings further assumes no active involvement by the water utility, and that the costs of purchasing and installing replacement equipment (and new equipment in new construction) are borne solely by the customers, occurring at no direct utility expense. The inverse of the Fixture Life is the natural replacement rate, expressed as a percent (i.e., 10 years is a rate of 10% per year).

The DSS Model is capable of modeling multiple types of fixtures, including fixtures with slightly different design standards. The following table presents the list of fixtures, average fixture water use and assumed fixture life use in the DSS Model. More information about how the DSS Model does this can be found in the WUESP. The DSS Model also needs a place to start when it comes to fixture replacement. It needs to know what the initial proportions (or percentages) of each type of fixture that are currently installed (also known as fixture saturation rate) in the modeled service area for each customer class. More information about how the DSS Model uses initial fixture proportions and how fixture initial proportions are determined can be found in the WUESP. The actual fixture initial proportions can be found in each Retailer's DSS Model in the "Codes and Standards" section. Each Retailer's DSS Model includes fixture models for SF and MF toilets, lavatory and non-lavatory/kitchen faucets, showers, and clothes washers; and commercial toilets, lavatory and non-lavatory/kitchen faucets and urinals.

Table E-1 List of Fixtures

Fixture Name	End Use	Average Water Use	Units	Fixture Life (yrs.)	Replacement Rate
Efficient Front Loader	Clothes Washer	13	gal per use	10	10%
Medium Efficient Front Loader	Clothes Washer	19	gal per use	10	10%
Top Loader	Clothes Washer	34	gal per use	10	10%
0.5 gpm Non-Residential Lavatory Faucet	Lavatory Faucet	0.125	gal per use	15	7%
1.0 gpm Residential Lavatory Faucet	Lavatory Faucet	0.25	gal per use	10	10%
1.2 gpm Residential Lavatory Faucet	Lavatory Faucet	0.3	gal per use	10	10%
2.2 gpm Residential Lavatory Faucet	Lavatory Faucet	0.55	gal per use	10	10%
2.2 gpm Non-Residential Lavatory Faucet	Lavatory Faucet	0.55	gal per use	15	7%
2.5 gpm Residential Lavatory Faucet	Lavatory Faucet	0.625	gal per use	10	10%
2.5 gpm Non-Residential Lavatory Faucet	Lavatory Faucet	0.625	gal per use	15	7%
>2.5 gpm Residential Lavatory Faucet	Lavatory Faucet	0.875	gal per use	10	10%
>2.5 gpm Non-Residential Lavatory Faucet	Lavatory Faucet	0.875	gal per use	15	7%
1.8 gpm Residential Non-Lavatory/Kitchen Faucet	Non-Lavatory Faucet	1.8	gal per use	10	10%
1.8 gpm Non-Residential Non-Lavatory/Kitchen Faucet	Non-Lavatory Faucet	1.8	gal per use	15	7%
2.2 gpm Residential Non-Lavatory/Kitchen Faucet	Non-Lavatory Faucet	2.2	gal per use	10	10%
2.2 gpm Non-Residential Non-Lavatory/Kitchen Faucet	Non-Lavatory Faucet	2.2	gal per use	15	7%
2.5 gpm Residential Non-Lavatory/Kitchen Faucet	Non-Lavatory Faucet	2.5	gal per use	10	10%
2.5 gpm Non-Residential Non-Lavatory/Kitchen Faucet	Non-Lavatory Faucet	2.5	gal per use	15	7%
>2.5 gpm Residential Non-Lavatory/Kitchen Faucet	Non-Lavatory Faucet	3.5	gal per use	10	10%
>2.5 gpm Non-Residential Non-Lavatory/Kitchen Faucet	Non-Lavatory Faucet	3.5	gal per use	15	7%
Ultra High Efficiency 1.0 gpm	Showerhead	6.96	gal per use	25	4%
High Efficiency 1.5 gpm	Showerhead	10.44	gal per use	25	4%
High Efficiency 1.8 gpm	Showerhead	12.53	gal per use	25	4%
High Efficiency 2 gpm	Showerhead	13.92	gal per use	25	4%
Low Flow 2.5 gpm	Showerhead	18.27	gal per use	25	4%

Fixture Name	End Use	Average Water Use	Units	Fixture Life (yrs.)	Replacement Rate
High Flow > 3 gpm	Showerhead	23.49	gal per use	25	4%
<1.0 gpf Toilet Residential	Toilet	1	gpf	50	2%
<1.0 gpf Toilet Non-Residential	Toilet	1	gpf	50	2%
1.28 gpf HET Residential	Toilet	1.3	gpf	50	2%
1.28 gpf HET Non-Residential	Toilet	1.3	gpf	50	2%
1.6 gpf ULFT Residential	Toilet	1.8	gpf	33	3%
1.6 gpf ULFT Non-Residential	Toilet	1.8	gpf	50	2%
High Use Toilet Residential	Toilet	3.5	gpf	25	4%
High Use Toilet Non-Residential	Toilet	3.5	gpf	33	3%
Waterless Urinal	Urinal	0	gpf	50	2%
Pint Urinal	Urinal	0.125	gpf	50	2%
Quart Urinals	Urinal	0.25	gpf	50	2%
0.5 gpf Urinal	Urinal	0.5	gpf	50	2%
1 gpf Urinal	Urinal	1	gpf	50	2%
High Use Urinals	Urinal	3	gpf	40	3%

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Attachment D

RESOLUTION NO. XXXX

RESOLUTION OF THE BOARD OF DIRECTORS OF THE CASTAIC LAKE WATER AGENCY ADOPTING THE ADDENDUM TO THE SANTA CLARITA VALLEY WATER USE EFFICIENCY STRATEGIC PLAN

WHEREAS, the Castaic Lake Water Agency (CLWA) was formed and established by the California State Legislature in 1962 for the principal purpose of providing imported water for use within and adjacent to the Santa Clarita Valley; and

WHEREAS, the mission of the Castaic Lake Water Agency is to provide reliable, quality water at a reasonable cost to the Santa Clarita Valley; and

WHEREAS, a significant portion of the Agency's water supply comes from the California State Water Project; and

WHEREAS, our statewide water system faces challenges on numerous fronts, including further regulatory actions to protect species, climate change and record dry conditions, that affect the future reliability of our statewide water system; and

WHEREAS, in August 2007, the Castaic Lake Water Agency, Newhall County Water District, Los Angeles County Waterworks District 36, Santa Clarita Water Division of the Castaic Lake Water Agency and the Valencia Water Company entered into a Memorandum of Understanding to address the water use efficiency needs of the Santa Clarita Valley; and

WHEREAS, on February 25, 2009, the Board of Directors of the Castaic Lake Water Agency approved Resolution 2643 supporting and adopting the Santa Clarita Valley Water Use Efficiency Strategic Plan; and

WHEREAS, on October 28, 2009, the State of California adopted a comprehensive water legislative package that included SBX 7-7 that requires urban water users to reduce per capita water use by 20 percent by 2020; and

WHEREAS, on February 8, 2012, the Board of Directors of the Castaic Lake Water Agency approved Resolution 2840 authorizing the General Manager to enter into a Proposition 84 grant agreement that included partial funding to update the Santa Clarita Valley Water Use Efficiency Strategic Plan; and

WHEREAS, the Castaic Lake Water Agency, Los Angeles County Waterworks District 36, Newhall County Water District, Santa Clarita Valley Water Division and Valencia Water Company staff have cooperated in the preparing of the updated Santa Clarita Valley Water Use Efficiency Strategic Plan; and

WHEREAS, the Castaic Lake Water Agency, Los Angeles County Waterworks District 36, Newhall County Water District, Santa Clarita Valley Water Division and Valencia Water Company staff have cooperated in the preparing of the Addendum to the Santa Clarita Valley Water Use Efficiency Strategic Plan.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Castaic Lake Water Agency adopts the Addendum to the Santa Clarita Valley Water Use Efficiency Strategic Plan.

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ITEM NO.
3.1

Castaic Lake Water Agency
Memorandum

May 22, 2017

To: CLWA Water Resources Committee

From: Dirk Marks
Water Resources Manager

Subject: Status of Rosedale-Rio Bravo Water Storage District Banking and Exchange Program Extraction Facilities

SUMMARY AND DISCUSSION

The final well equipping bid documents were reviewed. These include additional alternative specifications for well equipping as requested. This includes use of other specifications for motors, pumps, and piping that, if selected, may result in cost savings. The release date for the bid package is May 2017. We anticipate bid opening in June 2017 with the team's (including CLWA and IRWD) review of bid item alternatives shortly thereafter. Rosedale Rio Bravo intends to seek Board approval on the bid award in July 2017.

Construction on the sixth well (Matuk well) is scheduled to commence in May 2017 and take six to eight weeks to complete. The driller is scheduled to mobilize on May 22, 2017. During the drilling of the pilot hole for the Matuk well, zone testing will be conducted for the purpose of collecting water quality samples and performing arsenic analyses on water samples. This data, along with other data collected during pilot hole drilling, will inform the final well design memorandum.

The Superior Wellfield pipeline connects the Superior Wells to the Central Intake Pipeline. Superior Wellfield Pipeline installation is mostly complete. Approximately 350 feet of pipeline remain to be installed and then the final connection to the Central Intake Pipeline will be completed. Construction of the Central Intake Pipeline is largely complete. Work to finalize punch list items is ongoing.

The 100% plans for the Cross Valley Canal turnout to the Central Intake were reviewed by the Kern County Water Agency (KCWA). Some clarifying information has been provided to KCWA regarding hydraulics and a revised coffer dam anchor system.

RDV

MGS

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ITEM NO.
3.2

Castaic Lake Water Agency
Memorandum

May 19, 2017

To: CLWA Water Resources Committee

From: Dirk Marks
Water Resources Manager

Subject: Status of Groundwater Sustainability Agency Formation

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SUMMARY AND DISCUSSION

The current focus relates to the six Groundwater Sustainability Agency (GSA) forming agencies proposing their Boards and Council adopt the GSA-forming Memorandum of Understanding (MOU). On May 9, 2017, the City of Santa Clarita City Council approved the MOU. The City Council determined then that it would select its GSA Board member during its June 2017 Board meeting. On May 18, 2017, the Newhall County Water District Board of Directors approved the MOU. Newhall County Water District reports the item was non-controversial and approved unanimously. Los Angeles County and the County Waterworks District #36 are scheduled to approve the MOU on May 23, and Castaic Lake Water Agency and its Santa Clarita Water Division are scheduled to approve the MOU on May 24, 2017. The administrative steps to provide the GSA Formation Notification to the Department of Water Resources will be completed by mid-June 2017.

A 67 acre portion of the Santa Clara River Valley East Subbasin is within Ventura County. To meet SGMA requirements, Agency staff held a public hearing in Piru on May 15, 2017 to describe the GSA formation efforts. The landowner of the 67 acre area was present, as was a staff member from Ventura County. There was no public comment.

The County of Ventura will consider, at its June 6, 2017 regular board meeting, adopting its staff's recommendation not to form a GSA for the 67 acres of the Santa Clara River Valley East Subbasin located in Ventura County.

In mid-June 2017, the public agency membership for the GSA Board is anticipated to be set and efforts will transition to creation of a Joint Powers Agency (JPA). This process is expected to take six to nine months, potentially involve the use of a facilitator, the GSA Formation Work Group would provide recommendations to the newly formed GSA Board member representatives, and required public meetings necessary for JPA adoption. Details necessary for JPA development will include consideration of voting, funding, and committees.

Staff anticipates providing additional information to the Committee at its June 1, 2017 meeting with updates on the March 23 and 24, 2017 public hearings.

RDV

MGS

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ITEM NO.
4

Water Resources Committee and Board Calendar
FY 2016/17

	Item	May 4 Comm	May 24 Board	Jun 1 Comm	Jun 28 Board
1	Status of Rosedale Rio-Bravo Water Storage District Banking and Exchange Program Extraction Facilities	C		P	
2	Status of Groundwater Sustainability Agency Formation			P	
3	Status of Water Supplies				
4	Review of Proposed Residential and CII Turf Replacement Program				
5	Real Property Negotiations Regarding Devil's Den Property Sale *(CLOSED SESSION)*		C	P	P
6	Potential Water Transfer *(CLOSED SESSION)*	C	C		
7	Recommend Approval of Resolutions Authorizing the General Manager to Enter into an Agreement to Form a Groundwater Sustainability Agency	C	C		
8	Conference with Legal Counsel – Anticipated Litigation, Significant Exposure to Litigation Pursuant to Paragraph (2) of Subdivision (d) of Section 54956.9 (1 case) *(CLOSED SESSION)*	C	C	P	P
9	Recommend Approval of a Resolution Adopting an Addendum to the Santa Clarita Valley Water Use Efficiency Strategic Plan			P	P
10	Status of K-12 Education Activities			P	

P = Planned
C = Completed
CNL = Cancelled
CNT = Continued Item

Water Resources Committee and Board Calendar

FY 2017/18

	Item	Jul 6 Comm	Jul 26 Board	Aug 3 Comm	Aug 23 Board	Sep 7 Comm	Sep 27 Board	Oct 5 Comm	Oct 25 Board	Nov 2 Comm	Nov 22 Board	Dec 6 Comm Special	Dec 27 Board	Jan 4 Comm	Jan 24 Board	Feb 1 Comm	Feb 28 Board	Mar 1 Comm	Mar 28 Board	Apr 5 Comm	Apr 25 Board	May 3 Comm	May 23 Board	Jun 7 Comm	Jun 27 Board
1	Review and File Updated Water Reliability Plan	P	P																						
2	Status of Water Banking	P																							
3	Status of Sites Reservoir Project	P																							
4	Status of Upper Santa Clara River Salt and Nutrient Management Plan	P	P																						
5	Review Proposal to Purchase Devil's Den Property (CLOSED SESSION)	P	P		P																				
6	Status of Groundwater Sustainability Agency Formation	P				P				P				P											
7	Review Devil's Den Semi-Annual Report	P	p									P	P												
8	Recommend Approval of a Resolution Authorizing the General Manager to Execute an Assignment of the Annexation Agreement for the Tesoro Del Valle Development to BLC Tesoro, LLC and extend the term of the Agreement to September 30, 2020	P	P																						
9	Status of Rosedale Rio-Bravo Water Storage District Banking and Exchange Program Extraction Facilities	P		P		P		P		P		P		P											
10	Authorize the 2018 Payment for the Buena Vista/Rosedale-Rio Bravo Water Banking and Recovery Program									P	P														
11	Status of Sites Reservoir Project											P													
12	Update on Interim Financing of the Bay Delta Conservation Plan (BDCP) Activities											P	P												
13	Status of Water Supplies											P		P		P		P		P					
14	Review of Residential and LL & CII Conservation Programs																			P	P				
15	Status of K-12 Education Activities																							P	

P = Planned
C = Completed
CNL = Cancelled
CNT = Continued Item