Appendix L: Conservation Master Plan

- Conservation Master Plan 2016 – 2020
- CUWCC BMP Reports

CONSERVATION MASTER PLAN 2016 – 2020

March 2016

Dixon District

California Water Service

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List of Acronyms

AB	Assembly Bill
AF	Acre-feet (one AF equals 325,851 gallons)
AMI	Advanced metering infrastructure
AMR	Automatic meter reading
AWE	Alliance for Water Efficiency
BCR	Benefit Cost Ratio
BMP	Best Management Practice
CII	Commercial, industrial, and institutional
CPUC	California Public Utilities Commission
CUWCC	California Urban Water Conservation Council
EO	Executive Order
GPCD	Gallons per capita per day
GPF	Gallons per flush
GPM	Gallons per minute
GRC	General Rate Case
HET	High efficiency toilet
HEU	High efficiency urinal
HEW	High efficiency clothes washer
IOU	Investor-owned utility
MaP	Maximum Performance toilet testing program
MGD	Million gallons per day
MOU	Memorandum of Understanding Regarding Urban Water Conservation in California
SB	Senate Bill
SB X7-7	Senate Bill X7-7 Water Conservation Act of 2009
ULFT	Ultra low flow toilet
UWMP	Urban Water Management Plan
WF	Water Factor
WSCP	Water Shortage Contingency Plan

1 Introduction

1.1 Master Plan Scope and Objectives

Cal Water is committed to helping its customers use water efficiently and has developed a range of water conservation programs to support this goal. To ensure that it is providing the right mix of programs in the most cost-effective manner possible, Cal Water routinely conducts comprehensive conservation program analysis and planning. This is done on a five-year cycle in tandem with the Urban Water Management Plan (UWMP). The results of this planning for the Dixon District are summarized in this report, which covers the period 2016 to 2020.

The main purposes of this Conservation Master Plan are to:

- Serve as a broad guidance document that helps inform annual conservation activities, such as program levels, staffing, and budget needs both internally and for stakeholders;
- Summarize the mix of conservation measures that Cal Water plans to implement going forward, including the estimated water savings, costs, and effects on water demand;
- Explain the evaluation process and factors considered in selecting conservation measures;
- Provide an update to the 2011-15 Conservation Master Plan as part of a five-year review cycle to assess program performance and identify the need for any adjustments; and
- Ensure Cal Water districts are on a path to meet their demand-reduction requirements under the Water Conservation Act of 2009 (SB X7-7), which mandated a 20 percent reduction in per capita water use by 2020.

1.2 Relationship to GRC and UWMP

As an investor-owned utility, Cal Water's operations are regulated by the California Public Utilities Commission (CPUC), which approves the budgets and rates for each Cal Water district every three years in a General Rate Case (GRC) proceeding. The district's conservation programs and expenditures are part of the GRC proceeding. The last GRC covered the three-year period 2014-16 and a new GRC covering the period 2017-19 is presently underway. The conservation programs and budgets for 2016 in this plan reflect those authorized in the last GRC while those recommended for 2017-19 reflect programs and budgets being proposed by Cal Water in the current

GRC. Conservation expenditures recommended for 2020 are consistent with amounts being proposed for 2017-19.

This plan is an update to the Conservation Master Plan Cal Water completed in 2011 covering the period 2011-15. It constitutes the primary source of information on historical and proposed implementation of conservation programs reported in the Dixon District's 2015 UWMP. A copy of this plan is provided in Appendix L of the 2015 UWMP.

1.3 Relationship to Water Shortage Contingency Plan

The Water Conservation Master Plan is distinct from Cal Water's Water Shortage Contingency Plan (WSCP), which is also part of each district's UWMP. While the main purpose of the WSCP is to provide a blue-print for responding to water shortage emergencies caused by drought or other calamities resulting in temporary disruption to water supplies, the goal of the Water Conservation Master Plan is to provide a blue-print for providing education, assistance, and incentives to help customers use water as efficiently as possible all the time. Even absent drought, water in California is an increasingly scarce resource. Investing in water use efficiency has repeatedly been shown to be one of the most cost-effective ways to ensure adequate supply of water for the future. While the conservation programs Cal Water implements are critically important during periods of water shortage, their primary purpose is to help make sure Cal Water can reliably serve customer water needs far into the future.

1.4 Report Organization

The remainder of this report is organized as follows:

- Section 2 provides a brief overview of the District, including the communities it serves, its sources of water supply, and its customer water demands.
- Section 3 discusses Cal Water's conservation goals and progress towards meeting them, with particular emphasis given to the per capita water use reduction requirements established by SB X7-7.
- Section 4 describes the existing conservation programs Cal Water currently offers to its customers and discusses new programs Cal Water intends to offer.
- Section 5 presents the water savings, costs, and benefits expected from the recommended conservation programs.
- Section 6 presents performance metrics used to assess program sufficiency.
- Section 7 addresses issues of program monitoring and future updates to the Conservation Master Plan.

2 District Overview

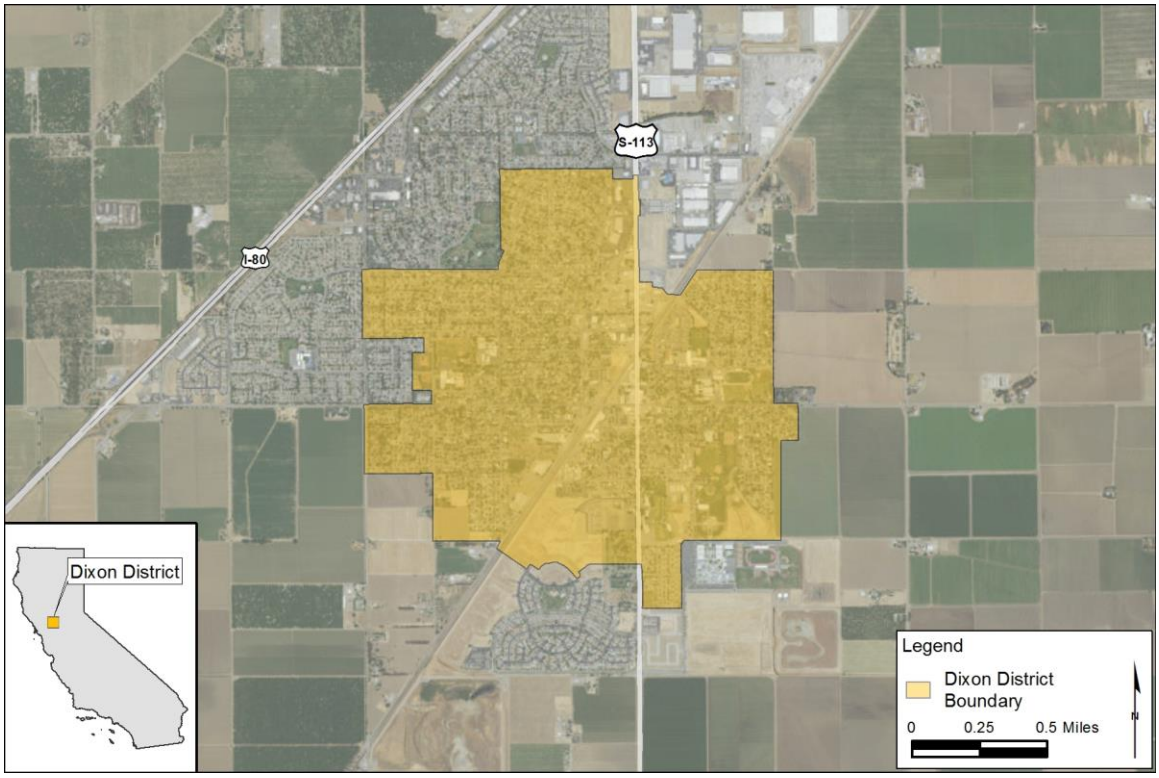
District Quick Facts:

- Communities Served: A portion of the city of Dixon
- Population served in 2015 : 9,891
- Residential Customers: 93% of total services and 86% of total use
- Sources of Supply: 100% groundwater
- Average Annual Water Deliveries Last Five Years: 1,400 AF
- Average Per Capita Water Use Last Five Years: 128 GPCD

The Dixon District was formed in 1927 with the purchase of the water system from Pacific Gas and Electric Company. The District is located south of Interstate 80 in northern Solano County, approximately 20 miles southwest of Sacramento and 65 miles northeast of San Francisco. Water served by the District comes from local groundwater. The District operates nine groundwater wells, two storage tanks, and 32 miles of pipeline. The District delivers up to three million gallons of water per day to more than 2,800 service connections.

A map of the service area boundaries is shown in Figure 1.

Figure 1. Dixon District Service Area Boundaries



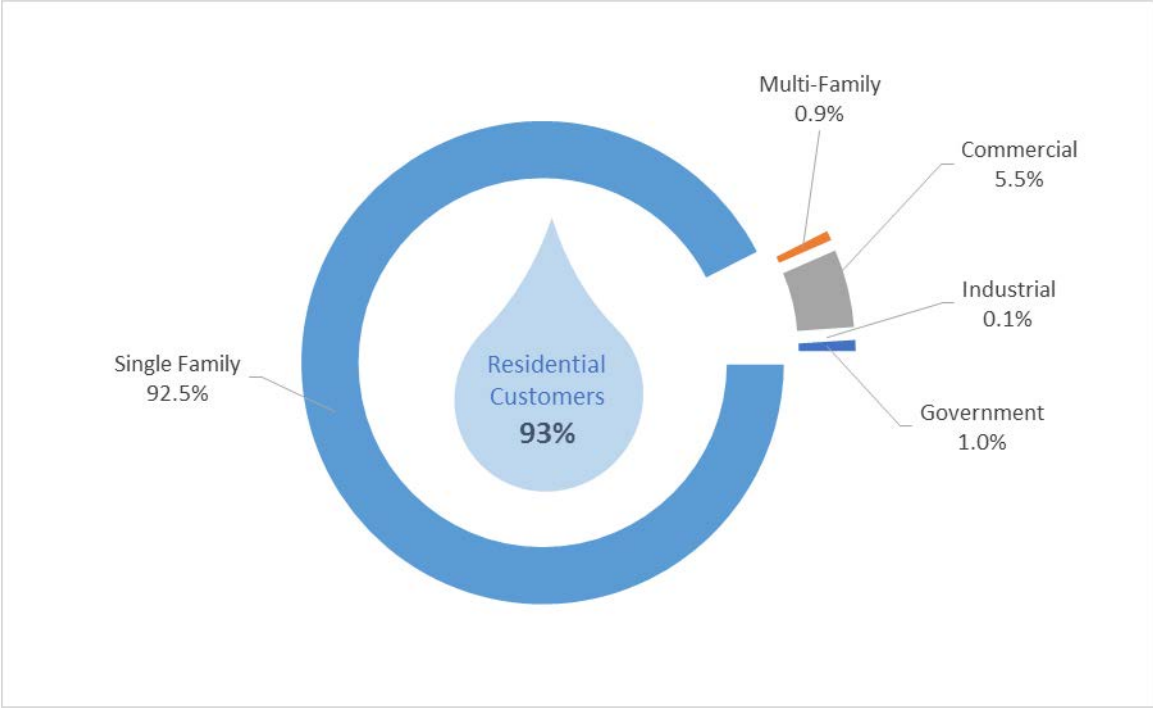
Cal Water estimates the service area population was 9,891 in 2015. Service area population has been growing at an annual rate of less than one percent for the past

15 years. Between the 2000 and 2010 Censuses, growth was slow, averaging only 0.3 percent per year. Between 2010 and 2015, population growth sped up to an average annual rate of 1.02 percent per year. Going forward, service area population is projected to increase at an average rate of approximately one percent annually through the 2040 planning horizon.

The District delivers water to residential, commercial, industrial, and governmental customers. Residential customers account for approximately 93 percent of water services in the District. The distribution of services in 2015 by customer category is shown in Figure 2. The share of total water sales by customer category over the period 2011-2015 is shown in Figure 3. Residential customers accounted for 86 percent of water use over this period.

Annual demand has averaged about 1,400 acre-feet (AF) over the five-year period 2011-2015. [1] As will be discussed in the next section, demand in 2015 was significantly below this level due to mandatory water use restrictions on potable water use imposed by the state in response to three years of uninterrupted drought. Total annual demand since 1980 is shown in Figure 4.

Figure 2. Distribution of Services in 2015 by Customer Category



[1] One acre-foot is equal to 325,851 gallons.

Figure 3. Share of Water Sales by Customer Category: 2011-2015

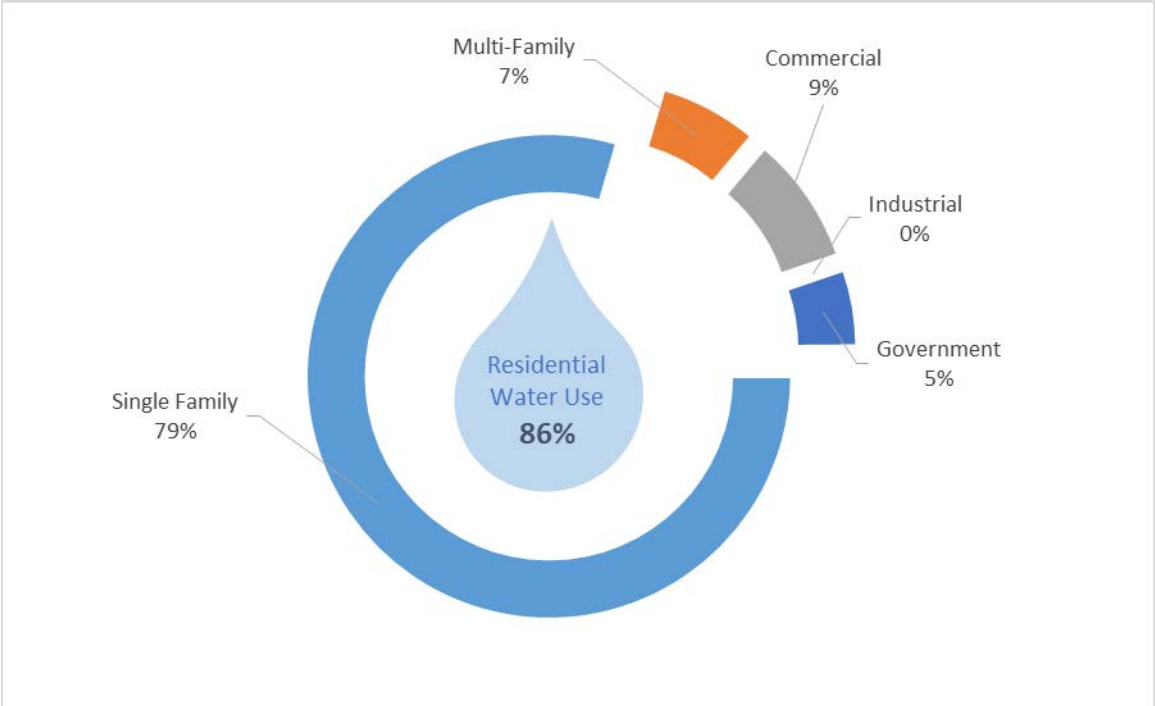
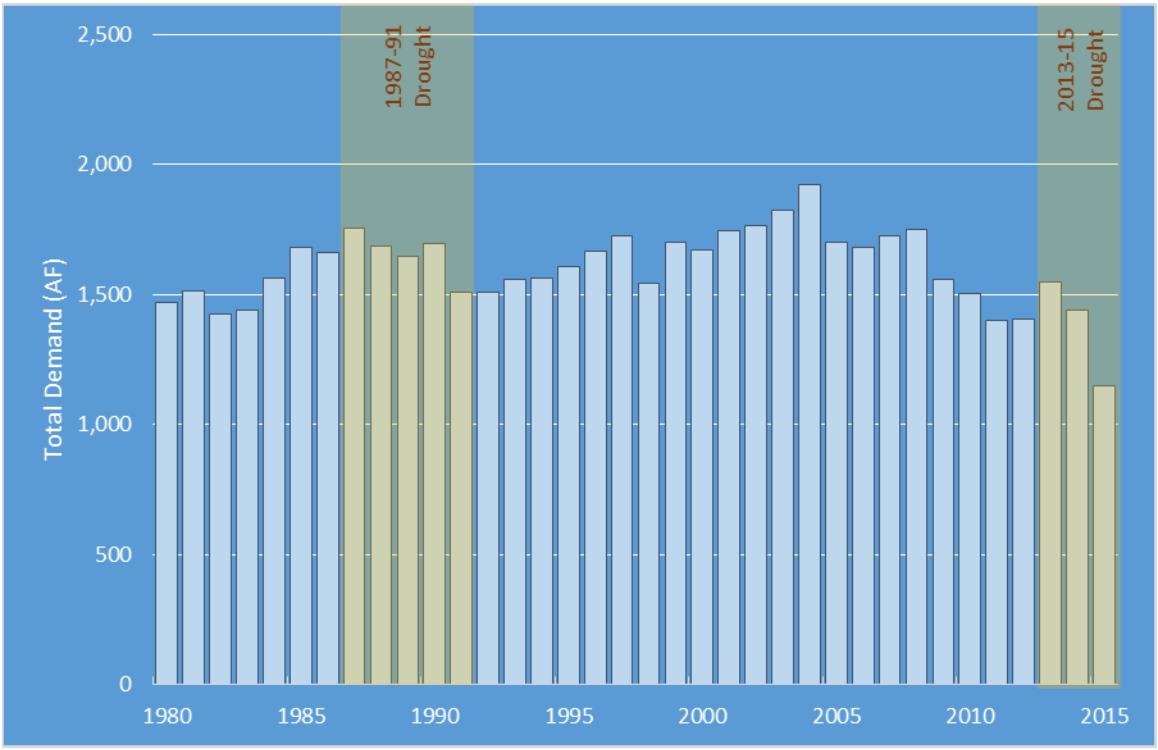


Figure 4. Dixon District Total Demand: 1980 - 2015



3 Conservation Goals and Progress

In this section, conservation goals and progress for the Dixon District are presented.

3.1 Conservation Program Activity and Water Savings

Conservation program activity and estimated water savings for the period 2011-15 are shown in Table 1. Estimated water savings shown in the table are only for the 2011-15 period. It is important to note that water savings from this activity will continue beyond 2015 and last for the useful savings life of each measure. The lifetime savings from programs implemented in 2011-15 are expected to be roughly three times the amount shown for 2011-15 in Table 1, or about 108 AF.

Table 1. Conservation Program Activity and Water Savings: 2011-15

1. Plumbing Fixture Replacement	**2011 – 2015 Total Activity**
Toilets & Urinals (number distributed)	257
Clothes Washers (number distributed)	69
Consv. Kits (number distributed)	264
2. Irrigation Equip./Landscape Upgrades	
Smart Controllers (number distributed)	6
Nozzles & Spray Bodies (number distributed)	37
Turf Replacement (sq ft removed)	1,219
3. Residential Customer Assistance	
Surveys/Audits (homes receiving)	41
4. Non-Residential Customer Assistance	
Surveys/Audits (sites receiving)	0
Large Landscape Reports (sites receiving)	36
Estimated Water Savings (AF)	**36**
Lifetime Water Savings: 108 AF	

Note: Water savings from customer DMMs implemented between 2011 and 2015 will continue after 2015 and last for the useful life of each DMM. The lifetime water savings is the estimated total cumulative water savings over the useful life of the measures.

3.2 Plumbing Codes and Water Use Efficiency Standards

Cal Water's conservation programs are operated within the context of existing plumbing codes and water use efficiency standards that are designed to improve the future water use efficiency of major water using appliances and fixtures, such as toilets and clothes washers, as well as water used outdoor for landscaping. Cal Water estimates that plumbing codes and water use efficiency standards will cumulatively

save more than 1,600 AF in the District over the next 25 years. The primary drivers for the expected water savings are as follows:

- AB 715, enacted in 2007, requires that any toilet or urinal sold or installed in California on or after January 1, 2014 cannot have a flush rating exceeding 1.28 and 0.5 gallons per flush, respectively. AB 715 superseded the state's previous standards for toilet and urinal water use set in 1991 of 1.6 and 1.0 gallons per flush, respectively. On April 8, 2015, in response to the Governor's Emergency Drought Response Executive Order (EO B-29-15), the California Energy Commission approved new standards for urinals requiring that they not consume more than 0.125 gallons per flush, 75% less than the standard set by AB 715.

- Water use standards for residential and commercial clothes washers and dishwashers are established by the U.S. Department of Energy through its authority under the federal Energy Policy and Conservation Act. Water use efficiency is summarized by the water factor for the appliance which measures the gallons of water used per cycle per cubic foot of capacity. A typical top-loading residential clothes washer manufactured in the 1990s had a water factor of around 12. In 2015, the allowable water factor for top- and front-loading residential clothes was reduced to 8.4 and 4.7, respectively. In 2018, the water factor standard for top-loading residential clothes washers will be reduced to 6.5. In 2010 the allowable water factor for top- and front-loading commercial clothes washers was reduced to 8.5 and 5.5, respectively. The maximum water factor for Energy Star compliant top- and front-loading washers is 3.7 and 4.3, respectively. EPA estimates that Energy Star washers comprised at least 60 percent of the residential market and 30 percent of the commercial market in 2011.[2] An Energy Star compliant washer uses about two-thirds less water per cycle than washers manufactured in the 1990s. Federal dishwasher water use efficiency standards were last updated in 2013. The maximum water use for standard and compact sized dishwashers is 5.0 and 3.5 gallons per cycle, respectively.

- New construction and renovations in California are now subject to CalGreen Code requirements. CalGreen includes prescriptive indoor provisions for maximum water consumption of plumbing fixtures and fittings in new and renovated properties. CalGreen also allows for an optional performance path to compliance, which requires an overall aggregate 20% reduction in indoor water use from a calculated baseline using a set of worksheets provided with the CalGreen guidelines.

[2] EPA Energy Star Unit Shipment and Market Penetration Report Calendar Year 2011 Summary.

- SB 407, enacted in 2009, mandates that all buildings in California come up to current State plumbing fixture standards within this decade. This law establishes requirements that residential and commercial property built and available for use on or before January 1, 1994 replace plumbing fixtures that are not water conserving, defined as "noncompliant plumbing fixtures" as follows:
    - any toilet manufactured to use more than 1.6 gallons of water per flush;
    - any urinal manufactured to use more than one gallon of water per flush;
    - any showerhead manufactured to have a flow capacity of more than 2.5 gallons of water per minute; and
    - any interior faucet that emits more than 2.2 gallons of water per minute.
- For single-family residential property, the SB 407 compliance date is January 1, 2017. For multi-family and commercial property, it is January 1, 2019. In advance of these dates, the law requires effective January 1, 2014 for building alterations and improvements to all residential and commercial property that water-conserving plumbing fixtures replace all noncompliant plumbing fixtures as a condition for issuance of a certificate of final completion and occupancy or final permit approval by the local building department.
- SB 407 also requires effective January 1, 2017 that a seller or transferor of single-family residential property disclose to the purchaser or transferee, in writing, the specified requirements for replacing plumbing fixtures and whether the real property includes noncompliant plumbing. Similar disclosure requirements go into effect for multi-family and commercial transactions January 1, 2019. SB 837, passed in 2011, reinforces the disclosure requirement by amending the statutorily required transfer disclosure statement to include disclosure about whether the property is in compliance with SB 407 requirements. If enforced, these two laws will require retrofit of non-compliant plumbing fixtures upon resale or major remodeling for single-family residential properties effective January 1, 2017 and for multi-family and commercial properties effective January 1, 2019.

California has also adopted regulations governing the future use of water for landscape.

- The California Water Commission approved the State's updated Model Water Efficient Landscape Ordinance (MWELO) on July 15, 2015. The updated MWELO supersedes the State's MWELO developed pursuant to AB 1881. Local agencies have until December 1, 2015 to adopt the MWELO or to adopt a Local Ordinance which must be at least as effective in conserving water as MWELO.

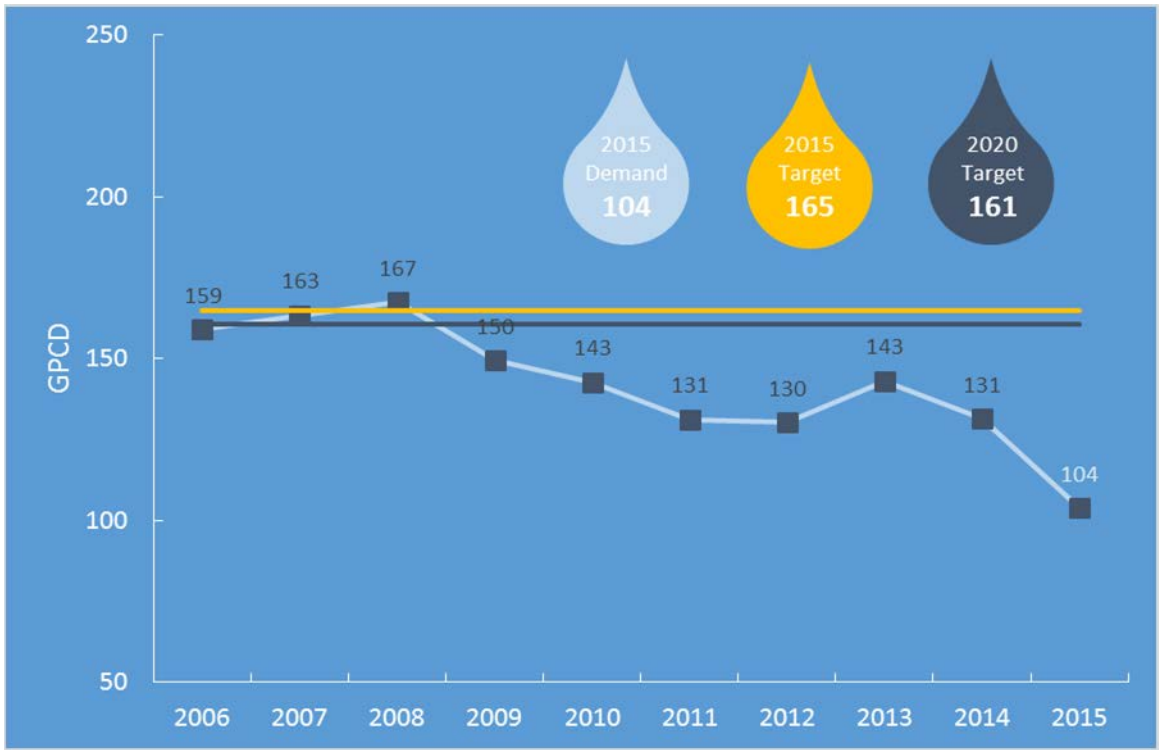
Local agencies working together to develop a Regional Ordinance have until February 1, 2016 to adopt. The size of landscapes subject to MWELO has been lowered from 2500 sq. ft. to 500 sq. ft. The size threshold applies to residential, commercial, industrial and institutional projects that require a permit, plan check or design review. Additionally, the maximum applied water allowance (MAWA) has been lowered from 70% of the reference evapotranspiration (ETo) to 55% for residential landscape projects, and to 45% of ETo for non-residential projects. This water allowance reduces the landscape area that can be planted with high water use plants such as cool season turf. For typical residential projects, the reduction in the MAWA reduces the percentage of landscape area that can be planted to high water use plants from 33% to 25%. In typical non-residential landscapes, the reduction in MAWA limits the planting of high water use plants to special landscape areas. The revised MWELO allows the irrigation efficiency to be entered for each area of the landscape. The site-wide irrigation efficiency of the previous ordinance (2010) was 0.71; for the purposes of estimating total water use, the revised MWELO defines the irrigation efficiency (IE) of drip irrigation as 0.81 and overhead irrigation and other technologies must meet a minimum IE of 0.75.

- CalGreen requires that automatic irrigation system controllers for new landscaping provided by a builder and installed at the time of final inspection must be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plant water needs as weather or soil conditions change.

3.3 SB X7-7 GPCD Targets

With the passage of the Water Conservation Act of 2009, also known as SB X7-7, the state is required to reduce urban water use by 20 percent by the year 2020. Each urban retail water supplier must determine a base period per capita water use and also per capita water use targets for the years 2015 and 2020. The District's historical per capita water use and the state legislated targets for 2015 and 2020 are shown in Figure 5. Its 2015 interim target is 165 GPCD while its 2020 target is 161 GPCD. Water use in 2015 was significantly below both these targets at just 104 GPCD. The low per capita water use in 2015 was in large part due to water use reduction requirements placed on the District by the State Water Resources Control Board because of the drought, as discussed in the next section.

Figure 5. Historical GPCD & State Legislated Targets



3.4 Executive Orders B-29-15 and B-36-15

In response to three uninterrupted years of severe drought, on April 1, 2015, Governor Brown issued Executive Order B-29-15 requiring a statewide mandatory reduction of 25 percent in potable urban water use compared to 2013. The order, implemented by the State Water Resources Control Board, took effect June 1, 2015 and was originally scheduled to run midway through February 2016. Governor Brown issued Executive Order B-36-15 in November 2015 extending the restrictions an additional eight months through October 2016 unless drought conditions significantly abate. Individual urban retail water suppliers were ordered to reduce potable water use by percentage amounts specified by the State Water Resources Control Board. The Dixon District was ordered to reduce potable water use by 28 percent relative to use over the same period in 2013.

Between June 2015 and February 2016 the Dixon District reduced its use of potable water by 29 percent relative to 2013, beating the reduction mandate for by one percent.

The water use restrictions have spurred a significant increase in customer participation in the District's conservation programs. For example, distribution of home conservation kits increased by 39 percent compared to average participation over the four years prior to 2015. Similarly, homes requesting water use surveys

increased 131 percent while rebates for smart irrigation controllers increased by more than 1,000 percent.

Some of the actions households and businesses are taking, such as when a household decides to replace its lawn with drought-tolerant landscaping or to replace an old water guzzling toilet with a high-efficiency toilet, are expected to result in permanent reductions in demand. Other actions, such as taking shorter showers, limiting the flushing of toilets, or reducing the number of days landscape is irrigated, are expected to produce temporary reductions in water use. Some of this demand will return when the drought is over and the water use restrictions are lifted.

Thus, even though water use in 2015 was below the District's 2020 GPCD target, it is by no means certain this will still be the case in 2020. Following the 1987-91 drought, there was a slow but steady rebuilding of demand over several years. The potential exists for the same type of demand rebound following the present drought. In fact if the demand rebound pattern following the 1987-91 drought were to repeat itself, demand in the district could increase by 20 to 25 percent by 2020 compared to its 2015 level.

3.5 2020 Baseline Demand and SB X7-7 Noncompliance Risk

Assuming normal weather conditions return and drought restrictions are lifted, Cal Water's baseline demand forecasting models indicate that District demand could rebound to 121 GPCD by 2020 without continued investment in conservation. The baseline demand forecast adjusts future predicted demand for expected water savings from plumbing codes and appliance standards as well as water rate and income effects, but excludes water savings from future implementation of District conservation programs. This is done so that the amount of additional needed water savings from District conservation programs can be estimated.

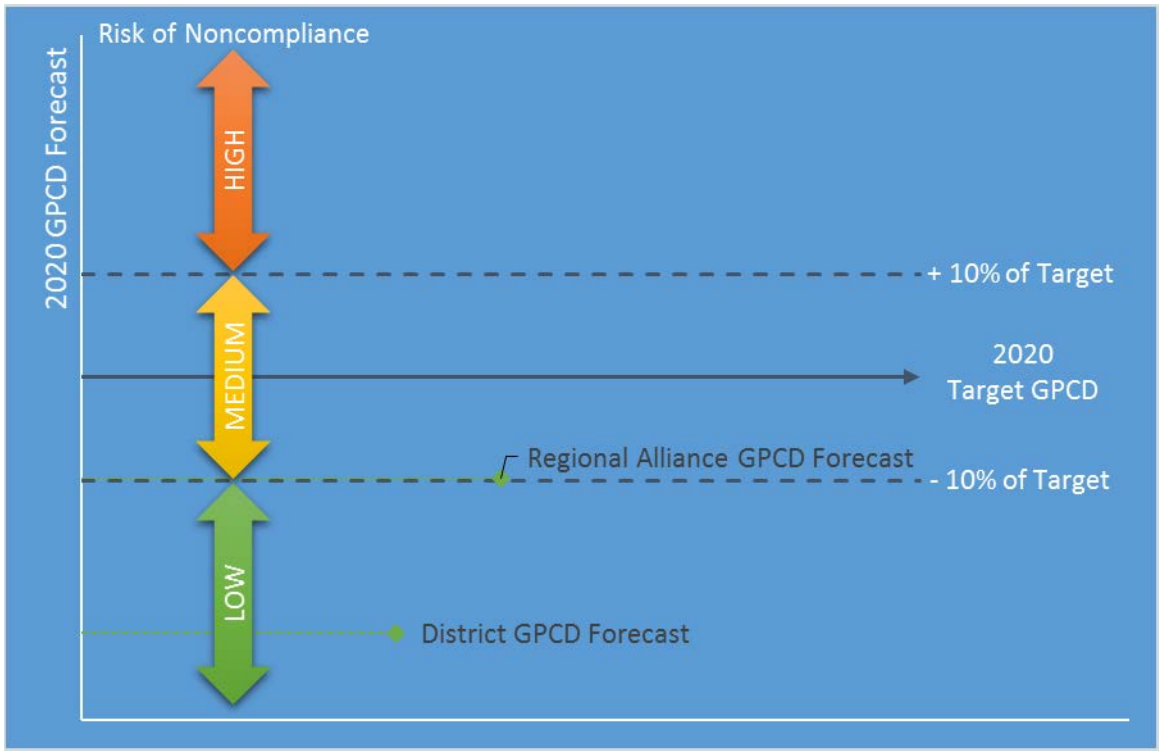
This is not a certainty, of course. Forecasts are informed predictions of an uncertain future. As part of its planning process, Cal Water scored each of its districts in terms of SB X7-7 noncompliance risk, as illustrated in Figure 6. A district was scored "LOW" if its forecast GPCD was more than 10 percent below its target GPCD. It was scored "HIGH" if its forecast GPCD was more than 10 percent above its target GPCD. And it was scored "MEDIUM" if its forecast GPCD was within 10 percent of its target GPCD. The exceedence threshold of +/-10 percent differentiating "LOW" from "HIGH" was used to account for possible forecast error in the district's baseline demand forecasts. Noncompliance risk for the Dixon District was scored "LOW" because predicted 2020 demand of 121 GPCD is more than 10 percent below its legislated target demand of 161 GPCD.

3.5.1 Regional Alliance Compliance Option

SB X7-7 allows water suppliers to form regional alliances and set regional targets for purposes of compliance. Under the regional compliance option, water suppliers within the same hydrologic region can comply with SB X7-7 by either meeting their individual target or being part of a regional alliance that meets its regional target. The regional target is calculated as the population-weighted average target for the water suppliers comprising the regional alliance. Importantly, a water supplier that is part of a regional alliance will be in compliance if either its district target or the regional target is satisfied. This gives a water supplier two ways to comply with SB X7-7.

The Dixon District is in a regional alliance with Cal Water's four other water districts in the Sacramento River hydrologic region. The District's SB X7-7 non-compliance risk was scored "Low" under the regional alliance compliance option because the baseline GPCD forecast for the regional alliance is 10 percent below its target GPCD, as illustrated in Figure 6.

Figure 6. SB X7-7 Non-Compliance Risk Scoring



4 Water Conservation Program

Cal Water centrally administers its conservation programs for its 24 districts. This creates both constraints and opportunities in terms of program design and

implementation. The key constraint is the need to have consistent program offerings across districts. Except under unique circumstances, it is generally not logistically feasible or cost-effective to create customized programs for individual districts. Also, if Cal Water offers a program in one district, its customers in other districts generally expect it to also be available in their district. This puts a premium on offering a relatively small set of programs that can benefit all Cal Water customers. The advantage of central administration, however, is that it gives Cal Water scale economies and purchasing power that helps it keep program costs down, thereby improving the cost-effectiveness of the programs.

4.1 Conservation Program Drivers

While Cal Water strives to develop programs that can be deployed in any of its districts, it tailors the marketing, targeting of customers, and levels of implementation of specific programs according to the needs of each district. In the Dixon District, the main drivers shaping the conservation program are summarized in Table 2.

Table 2. Main Conservation Program Drivers in Dixon District

Driver	Explanation
High Residential Demand	93% of services and 86% of water use is residential, putting a premium on conservation programs designed to help households and multi-family properties use water efficiently.
High Outdoor Demand	Summer monthly demand, driven by residential outdoor water uses, is significantly greater than average monthly demand, putting a premium on conservation programs designed to help households and multi-family properties manage landscape water use.
System Water Loss	System water loss averaged 16% of total production for the period 2011-2015. This is above the loss range considered acceptable for modern water systems. Leak detection and prevention programs are needed to bring system losses below 10%.

4.2 Customer Conservation Programs

Cal Water's customer conservation programs are grouped into four categories:

- Plumbing Fixture Replacement
- Irrigation Equipment/Landscape Upgrades
- Residential Customer Assistance

- Non-Residential Customer Assistance

A description of current programs in each of these categories follows. Where rebate amounts are listed, these are current rebate levels. Readers should note that rebate amounts may be adjusted in the future in response to CPUC requirements or changes to program design.

4.2.1 Plumbing Fixture Replacement

MaP Premium and Non-Premium Toilet Replacement – This program replaces old toilets with MaP certified high-efficiency toilets. Financial rebates, direct installation, and direct distribution are used to deliver toilets to customers. Premium MaP certified toilets which have greater water savings potential are eligible for a $100 rebate while the rebate for MaP non-premium toilets is $50. Cal Water centrally administers the program. This program is available to all residential and non-residential customers. Cal Water markets the program through direct mail, print media, bill stuffers, and its website. Where advantageous, Cal Water partners with local or regional agencies and community organizations to offer the program.

Urinal Valve and Bowl Replacement – This program replaces old urinals with high-efficiency urinals meeting the new 0.125 gallon per flush water use standard adopted by the California Energy Commission in April 2015. Financial rebates of up to $150 and direct installation are used to deliver urinals to customers. The program targets offices and public buildings receiving significant foot traffic. Cal Water centrally administers the program. While this program is available to all non-residential customers, marketing focuses on prime targets, such as restaurants and high-density office buildings. Cal Water markets the program through direct mail, print media, bill stuffers, and its website.

Clothes Washer Replacement – This program provides customer rebates up to $150 for residential and up to $200 for non-residential high-efficiency clothes washers. The program targets single-family households, multi-family units, multi-family common laundry areas, and commercial coin-op laundries. Cal Water centrally administers the program, and markets the program through direct mail, print media, bill stuffers, and its website. This program is available to all residential and non-residential customers. Where advantageous, Cal Water partners with local or regional agencies to offer the program.

Residential Conservation Kit Distribution – This program offers Cal Water residential customers conservation kits featuring a range of water-saving plumbing retrofit fixtures. Kits are available at no charge to customers, who can request them via Cal Water's website, via mail, or by contacting or visiting their District. Each kit includes the following items: high-efficiency showerheads, kitchen faucet aerator, bathroom faucet aerators, full-stop hose nozzle, and toilet leak detection tablets. Cal Water centrally administers this program as part of a company-wide program

operated in each of its districts. This program is available to all residential customers. Cal Water markets the program through direct mail, print media, bill stuffers, and through its website.

4.2.2 Irrigation Equipment/Landscape Upgrades

Smart Controllers Rebates/Vouchers – This program targets residential and non-residential customers with high landscape water use. The program offers financial incentives up to $125 for residential controllers and up to $25 per station for commercial-grade controllers to either the customer or contractor for proper installation of the Smart Controller at customer sites. The landscape contractor has the direct relationship with customers and is typically the entity customers listen to when making landscape and irrigation decisions. The program educates contractors about the customer benefits of Smart Controllers along with proper installation of the devices. This program is offered to all residential and non-residential customers. Cal Water markets the program through direct mail, print media, bill stuffers, and its website.

High Efficiency Irrigation Nozzle Web Vouchers/Rebates – Water efficient sprinkler nozzles (popup and rotating) and integrated pressure-regulated spray bodies use significantly less water than a standard sprinkler head by distributing water more slowly and uniformly to the landscape. In addition to reducing water use, water directed from these nozzles reduces run-off onto streets and sidewalks with a more directed flow. Customers are able to obtain the nozzles either directly through Cal Water or via a web-voucher program. Rebates are used to encourage adoption of high-efficiency spray bodies. Restrictions on the number of nozzles individual customers may receive vary by customer class and/or landscape size. Cal Water centrally administers this program as part of a company-wide program operated in select districts, including the Dixon District.

Turf Replacement Rebate Program – This program offers customers a $1 per square foot rebate to replace turf with qualified drought-tolerant landscaping. Customer applications are screened to ensure program requirements are met, including before and after photos of the retrofitted landscape area. Turf replacement rebates were offered in a subset of Cal Water districts starting in 2014 and offered across all districts starting in 2015 as a drought response measure. Governor Brown's Executive Order B-29-15 calls on the Department of Water Resources to lead a statewide initiative, in partnership with local agencies, to replace 50 million square feet of lawns and ornamental turf with drought tolerant landscapes.

4.2.3 Residential Customer Assistance

Residential Customer Assistance – this category of programs provides tailored assistance to residential customers through home water surveys and monthly water use reports. It is designed to help residential customers wanting to reduce their

indoor and outdoor water uses. While available to all residential customers, marketing of home water surveys is generally focused on high use residential customers.

4.2.4 Non-Residential Customer Assistance

Non-Residential Customer Assistance – this category provides tailored assistance to commercial customers through commercial water surveys, monthly landscape reports to large landscape customers, and large landscape water use surveys. It is designed to help commercial customers wanting to reduce their use of water for sanitation, hygiene, process, and landscape purposes.

4.2.5 Summary of Customer Programs

The customer conservation programs offered to customers in Dixon District are summarized in Table 3 by customer class.

Table 3. Cal Water Conservation Programs Available to Dixon District Customers

1. Plumbing Fixture Replacement	Customer Class Eligibility		
Rebates	Single Family	Multi Family	Non Residential
MaP Premium Toilet 1/	✓	✓	✓
MaP Non-Premium Toilet	✓	✓	✓
Urinal Bowl & Valve (< 0.125 gal)			✓
Clothes Washer (In Unit)	✓	✓	
Clothes Washer (Commercial)		✓	✓
Direct Install			
MaP Premium Toilet	✓	✓	
MaP Non-Premium Toilet			
Urinal Valve (< 0.125 gal)			
Direct Distribution			
MaP Premium Toilet	✓	✓	
Conservation Kits (showerheads, aerators)	✓		✓
2. Irrigation Equipment/Landscape Upgrades			
Rebates/Vouchers			
Smart Irrigation Controller	✓	✓	✓
HE Irr Popup Nozzle	✓	✓	✓
HE Irr Rotating Nozzle	✓	✓	✓
HE Irr Spray Body		✓	✓
Turf Buy-Back	✓	✓	✓
Direct Distribution			
Smart Irrigation Controller		✓	✓

3. Residential Customer Assistance			
Monthly Home Water Report	✓		
Residential Water Survey	✓	✓	
4. Non-Residential Customer Assistance			
Commercial Water Use Surveys			✓
Monthly Water Use Report			✓
Large Landscape Water Use Survey			✓
Notes: 1/ MaP Premium toilets: flush vol <= 1.1 gallons; MaP Non-Premium: flush vol <= 1.28 gallons.			

4.3 School Education and Public Information Programs

Public Information Program - Cal Water's public information program provides general information on the need for and value and methods of water conservation through multiple media outlets, such as its website, direct mail, external print media, and radio. It uses this program to help educate its customers about water use efficiency opportunities, including ways they can participate in Cal Water conservation programs.

School Education Program - Cal Water's school education program includes the Cal Water H2O Challenge, a project-based learning competition for grades 4-6, Cal Water Town, an interactive online learning tool, and general information and learning materials for students and teachers. Cal Water deploys its school education program throughout all of its districts.

Cal Water H2O Challenge is a project-based, environmentally-focused competition for classrooms, grades 4-6. Designed in conjunction with NAAEE, the WestEd K-12 Alliance, and Cal Water, and aligned with the Common Core State Standards and the Next Generation Science Standards, Cal Water H2O Challenge offers a unique opportunity for upper elementary teachers to facilitate their students' learning of standards-based content, while developing the core understanding of environmental principles necessary to becoming science-literate citizens.

4.4 Water System Efficiency

4.4.1 System Water Loss Reporting

Cal Water annually quantifies the District's volume of apparent and real water loss. Cal Water's conservation staff have received training in the AWWA water audit method and component analysis process and have completed water balances for each Cal Water District using AWWA's water audit software.

4.4.2 System Leak Detection

In addition to its routine and planned system maintenance and water loss reporting, Cal Water has proposed to implement a lift-and-shift sonic data logger leak detection program in the District starting in 2017. The lift-and-shift program will survey up to one-third of main miles annually in three shifts. Each leak detection shift will last approximately 80 days. Lift-and-shift sonic data logging technology will enable Cal Water to quickly and efficiently locate leaks in one part of the water distribution network and then redeploy the equipment to another part of the network. Staff will review sound files from the loggers for potential leak warnings and discuss this information with District management, who can then assign work orders for repair crews to investigate and repair leaks. Cal Water conservatively estimates the lift-and-shift program will reduce real water loss in the District by up to 43 AFY – enough water for about 130 households. Additional potential benefits of the program include reduced excavation of streets, less staff overtime spent responding to and repairing catastrophic main breaks, and improvement to the best management practices of the valve maintenance program. This program was submitted as part of Cal Water's 2015 General Rate Case with the CPUC and is subject to CPUC approval prior to implementing.

4.4.3 Customer Metering and Pricing

All service connections within the Dixon District are metered. Meters are read monthly and routinely maintained and calibrated. Customers are billed monthly based on their metered water use.

As an investor owned utility, Cal Water rates and charges are reviewed and authorized by the CPUC every three years. Starting in 2008 the CPUC ordered all Class A investor owned water utilities, such as Cal Water, to adopt tiered rate designs for single family residential service to promote more efficient water use.

Cal Water is also piloting automatic meter reading (AMR) and advanced metering infrastructure (AMI) in several of its districts. AMI may be used by Cal Water in the future to detect and alert households of leaks and other possible problems as well as to provide customers with tailored water use information to help them use water more efficiently.

4.5 Conservation Partnerships

Cal Water collaborates on local, statewide, and national levels to promote and advance water use efficiency.

California Water Conservation Council - Cal Water is a long-standing member of the California Urban Water Conservation Council (CUWCC), which pioneered comprehensive and integrated urban conservation programming in California. As a

CUWCC member, Cal Water is committed to developing and operating its conservation programs in accordance with the Conservation Best Management Practices (BMPs) set forth in the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU). It submits conservation program implementation reports to the CUWCC every two years to document its compliances with the requirements of the MOU.

Alliance for Water Efficiency - Cal Water is also a member of the Alliance for Water Efficiency (AWE), a national non-profit organization dedicated to efficient and sustainable use of water. Cal Water uses the AWE Water Conservation Tracking Tool to evaluate all of its conservation programs in terms of their water savings potential and cost-effectiveness.

EPA WaterSense - Cal Water is an EPA WaterSense partner. As such, Cal Water has committed to educating its customers about the value of water, water efficiency, and the WaterSense brand. Products and services that have earned the WaterSense label have been certified to be at least 20 percent more efficient without sacrificing performance.

5 Water Savings and Cost

This section presents the recommended levels of implementation for each conservation program for the Dixon District for the period 2016-2020. The objective is to identify the right mix of programs for the District that enable it to meet its water savings goals in the most cost effective way possible. Implementation levels recommended for 2016 are based on the amounts authorized in the last GRC. The recommendations for 2017-19 are what Cal Water has proposed in its current GRC filing and the amounts recommended for 2020 are consistent with these levels.

5.1 Methodology

The general methodology for developing the proposed mix of programs and activity levels is illustrated in Figure 7. The analysis begins with a qualitative screening of conservation measures Cal Water could potentially implement. The goal of the qualitative screening is to filter out those measures that fail to meet one or more essential program requirement. The filters used in the qualitative screening are described in Table 4. The measures that pass through the qualitative screening are then quantitatively evaluated in terms of expected water savings, implementation cost, cost-effectiveness, and benefit-cost ratio (BCR). These analyses are performed using the AWE Water Conservation Tracking Tool. Once the quantitative assessment is done, the recommended mix of measures are packaged into a proposed program portfolio that specifies the measures proposed for implementation, the recommended annual activity level for each measure, the delivery mechanisms to be

used (e.g. rebate, voucher, distribution, direct installation, site visit, etc.), and a suggested program budget is developed. All of these recommendations are subject to review and approval by the CPUC as part of the GRC. The recommended mix of programs and proposed budget for the Dixon District are presented in the next section.

Figure 7. Schematic of Conservation Program Assessment Methodology

Table 4. Conservation Measure Qualitative Screening Filters

Filter	Description
Water Savings Potential	The amount of water a measure can potentially save over its lifespan or over a certain period after an action that encourages behavioral change (such as receipt of a home water survey). This filter screens out measures where potential savings are too low to make it worthwhile.
Certainty of Water Savings	The certainty of the water savings estimated in Water Savings Potential. Some measures have high potential but low certainty because they are new and untested or because they rely on uncertain behavioral actions of participants. Other measures have low potential but high certainty. This filter screens out measures that have low expected savings (i.e. measures with high certainty but low potential or measures with high potential but very low certainty) or flags these measures as candidates for pilot programs.
Implementation Feasibility	The ease with which a measure can be implemented, such as adequate budget and staff resources to handle outreach and ongoing administrative needs. This filter screens out measures than are considered infeasible to implement.
Customer Receptivity	The degree to which customers are receptive to a measure, such as how easy or difficult it is for a customer to apply for a certain rebate or arrange for a water survey. This filter screens out measures that are unlikely to be favored by customers.
Adaptability	The ease with which a measure can be scaled to react to a changing market (e.g., increasing or decreasing a toilet rebate to ramp up/down the participation rate), or adjusted to accommodate a different market sector (e.g., redesigning the incentives or other parameters of a single family landscape turf replacement program to target the multi-family or commercial sectors). This filter screens out measures that cannot be readily adapted to changing circumstances of the market.
Cost	The expected cost-effectiveness of the measure relative to other measures. This filter screens out measures that are unlikely to be cost-effective or would crowd out other desirable measures because of its expense.

5.2 Recommended Program Mix and Implementation Level

Recommended implementation of customer and water loss management programs for the period 2016 to 2020 are summarized in Table 5. In addition to the programs shown in Table 5, Cal Water will continue to fully implement its metering,

conservation pricing, public outreach, and school education programs described previously.

Actual implementation levels may vary from the amounts shown in Table 5 depending on customer response and whether Cal Water determines a need to shift program emphasis due to changing circumstances. The programs are designed with this type of implementation flexibility in mind.

Table 5. Recommended Conservation Program Implementation Levels

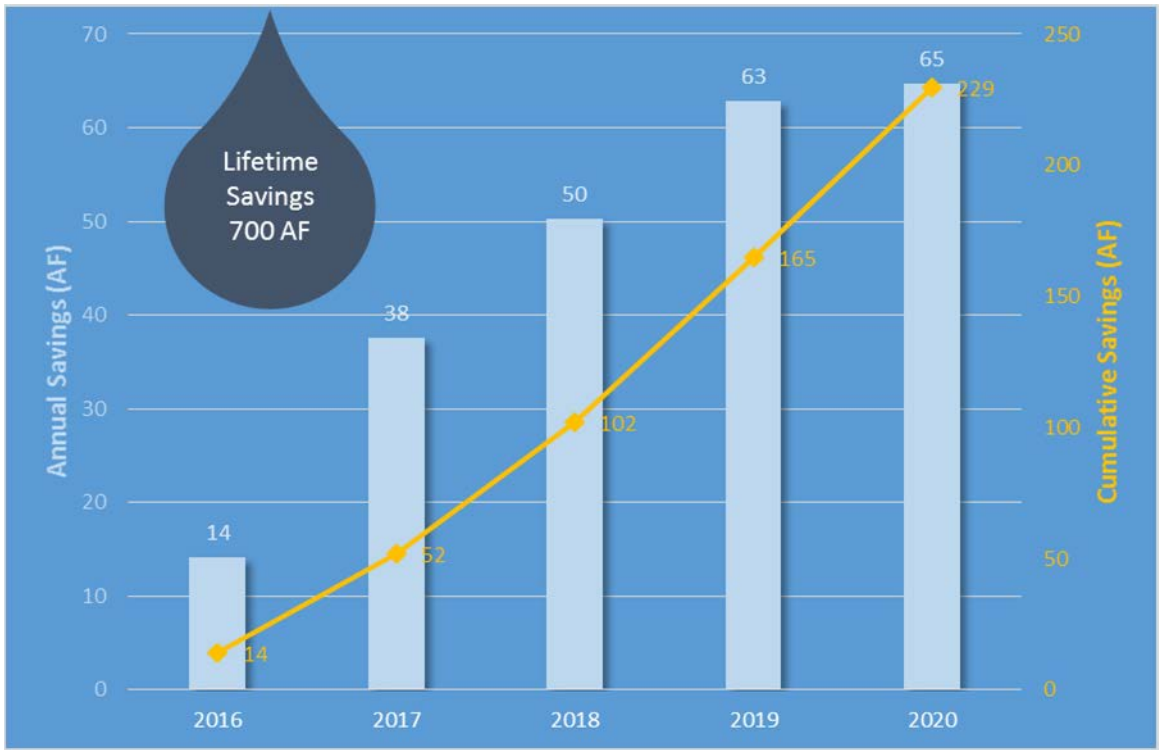
1. Plumbing Fixture Replacement	2016	2017	2018	2019	2020
Toilets & Urinals (number distributed)	9	34	34	34	34
Clothes Washers (number distributed)	1	1	1	1	1
Consv. Kits (number distributed)	1	50	50	50	50
2. Irrigation Equip./Landscape Upgrades					
Smart Controllers (number distributed)	0	0	0	0	0
Nozzles & Spray Bodies (number distributed)	350	150	150	150	150
Turf Buy-Back (Sq. ft. removed)	3,000	4,000	4,000	4,000	4,000
3. Residential Customer Assistance					
Monthly home water reports (homes receiving)	666	666	666	666	666
Surveys/Audits (homes receiving)	20	10	10	10	10
4. Non-Residential Customer Assistance					
Surveys/Audits (sites receiving)	0	0	0	0	0
Large Landscape Reports (sites receiving)	0	0	0	0	0
5. Water Loss Management					
Leak Detection (miles of main)	0	6	8	11	11

5.3 Expected Water Savings

Estimated annual and cumulative water savings over the five-year implementation period are shown in Figure 8. Annual water savings build over the implementation period because most of the conservation measures have multi-year useful lives. For example, if 100 toilets are replaced each year, there will be 100 toilets saving water in the first year, 200 in the second year, 300 in the third year, and so on. Thus annual savings start in 2016 at about 14 AF and build up to about 65 AF by 2020. Cumulative water savings over the five-year period are just over 229 AF.

Because many of the measures have long useful lives, it is important to emphasize that water savings from this activity will continue beyond 2020 and last many more years. The lifetime savings from programs implemented in 2016-2020 are expected to be roughly three times the five-year cumulative total, or about 700 acre-feet (AF).

Figure 8. Estimated Annual and Cumulative Water Savings: 2016-2020

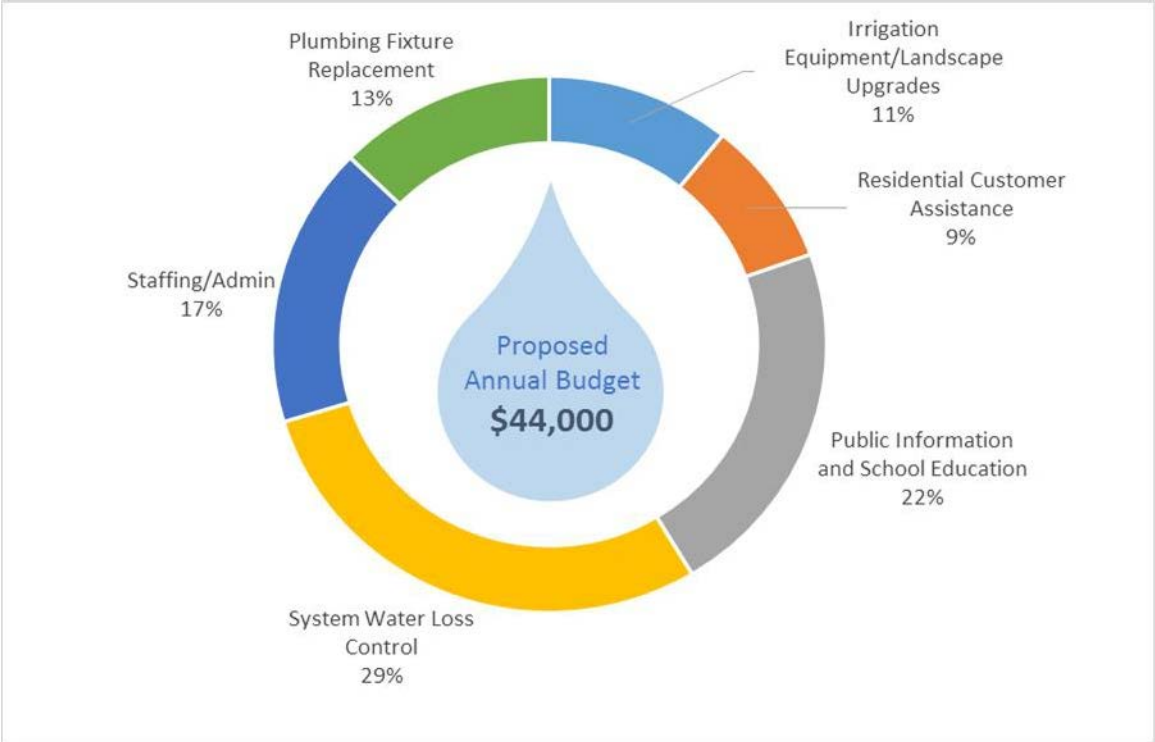


5.4 Program Costs

The cost to implement the conservation program at the recommended levels of program activity, including staffing and administration cost, is projected to average $44,000 per year. The allocation of this cost by program category is illustrated in Figure 9. About a quarter of the budget is dedicated to plumbing fixture replacement and irrigation equipment/landscape upgrade programs; 31 percent is dedicated to customer assistance, public information, and school education; 29 percent would fund system leak detection; and the remaining 17 percent would cover program staffing and administration costs.

Because Cal Water is an investor-owned utility, the recommended programs and corresponding expenditures are subject to CPUC review and approval during the GRC proceeding. While budgets for 2016 were established by the last GRC, authorized conservation program expenditures for 2017-19 will not be set until the current GRC concludes and budgets for 2020 will not be set until the following GRC.

Figure 9. Recommend Conservation Budget and Allocation: 2016-2020



5.5 Benefit-Cost Analysis

Cal Water puts all proposed conservation programs through a rigorous benefit-cost analysis as part of its program review and assessment process. The benefit-cost analysis compares the expected benefits from the conservation program relative to expected costs. Benefits primarily come from reduced water production and water supply development costs, which benefit ratepayers by reducing future system costs that would be recovered through rates.

Results of the benefit-cost analysis are used to rank programs in terms of cost-effectiveness, calculate the overall program unit cost of saved water and program benefit-cost ratio. The recommended program for the Dixon District has a unit cost of $388 per AF, which compares favorably to the cost of purchased water and the cost of developing new water supply through new wells or recycling.

The overall benefit-cost ratio for the program is less than one, but this is because the District's water supply comes from groundwater that has a low marginal pumping cost.

6 Program Performance Metrics

This section provides a brief summary and discussion of the program performance metrics for the conservation program recommended for the Dixon District.

- **Water Savings** – the recommended program is expected to cumulatively save up to 229 AF over the period 2016-2020 and up to 700 AF over the useful life of the measures. These water savings will help to ensure SB X7-7 compliance and help to ensure District supply reliability, particularly during prolonged dry periods when water supplies upon which the District depends may be curtailed.

- **Unit Cost** – the unit cost of saved water is $388 per AF. This is very cost competitive with other potential sources of new water. If the District replaced these savings with purchased or developed water supply, it is highly unlikely it could do so at a lower cost.

These performance metrics indicate the recommended conservation program is a good investment for the Dixon District. The water savings will help ensure compliance with state legislated potable water use targets in 2020. The water savings will also help to improve system supply reliability and operational efficiency, especially in dry periods. The recommended program is cost-competitive compared to other supply alternatives as evidenced by the low unit cost.

7 Monitoring and Updates

The conservation programs described in this report will be regularly reviewed and, as necessary, modified and updated as new information becomes available. This section describes key monitoring and updating activities Cal Water anticipates undertaking as programs are implemented.

Program Tracking - Cal Water uses conservation program tracking software to track and manage its programs. The software helps Cal Water track customer participation in its programs, manage program materials, track program costs, and estimate program water savings. Cal Water conservation staff is coordinating with IT staff to include a conservation module in the company's customer database.

Program Evaluation and Research – Cal Water routinely undertakes program pilots, evaluation, and research to assess the effectiveness of its programs. The results from these evaluations are used to update its conservation savings assumptions and projections, identify new savings opportunities, and evaluate possible new programs. Previous evaluations of its toilet replacement programs, sprinkler nozzle distribution

programs, and meter conversion programs have provided essential information used in the design and management of these programs.

2015 UWMP - Under SB X7-7, water suppliers may update their baseline demands and per capita water use targets in their 2015 UWMP. As part of its 2015 UWMP preparation, Cal Water updated its baseline demand estimates and gpcd targets for the District in order to incorporate data from the 2010 Census that was not available at the time the baseline demands and targets were originally developed.

Local Codes and Ordinances - Water waste prohibitions, building codes, and ordinances affecting new construction and landscape design and irrigation enacted by cities and counties in the communities served by the District may alter demands in ways not anticipated by this document. Cal Water will work with local planning and enforcement departments to ensure that its conservation programs are consistent with and complementary to local water use codes and ordinances, and may elect to modify the design or level of implementation of programs included in this document in order to do so.

CUWCC BMP Reports

CUWCC BMP Retail Coverage Report 2013

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices

ON TRACK

5004 California Water Service Company - Dixon

1. Conservation Coordinator provided with necessary resources to implement BMPs?

Name: Natalie Pavlovski

Title: Conservation Program Analyst

Email: npavlovski@calwater.com

2. Water Waste Prevention Documents

WW Document Name	WWP File Name	WW Prevention URL	WW Prevention Ordinance Terms Description
Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP.			
Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area.			California Public Utilities Commission Water Division-Instructions for Water Conservation, Rationing and Service Connection Moratoria
Option C Describe any documentation of support for legislation or regulations that prohibit water waste.			
Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP.			
Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP.			
Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development.			

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Retail Coverage Report 2013

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices **ON TRACK**

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.2 Water Loss Control **ON TRACK**

5004 California Water Service Company - Dixon

Completed Standard Water Audit Using AWWA Software?	Yes
AWWA File provided to CUWCC?	Yes
awwa_DIX2013.xls	
AWWA Water Audit Validity Score?	74
Complete Training in AWWA Audit Method	Yes
Complete Training in Component Analysis Process?	Yes
Component Analysis?	Yes
Repaired all leaks and breaks to the extent cost effective?	Yes
Locate and Repar unreported leaks to the extent cost effective?	Yes
Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair.	Yes

Provided 7 Types of Water Loss Control Info

Leaks Repairs	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost Of Interventions	Water Saved (AF)
6				False		

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.3 Metering With Commodity

ON TRACK

5004 California Water Service Company - Dixon

Numbered Unmetered Accounts	No
Metered Accounts billed by volume of use	Yes
Number of CII Accounts with Mixed Use Meters	197
Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	Yes
Feasibility Study provided to CUWCC?	Yes

Date: 1/1/0001

Uploaded file name:

Completed a written plan, policy or program to test, repair and replace meters	Yes

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.4 Retail Conservation Pricing

On Track

5004 California Water Service Company - Dixon

Implementation (Water Rate Structure)

Customer Class	Water Rate Type	Conserving Rate?	(V) Total Revenue Comodity Charges	(M) Total Revenue Fixed Carges
Single-Family	Increasing Block	Yes	913755.8	855494.35
Commercial	Uniform	Yes	114184.83	90495.31
Industrial	Uniform	Yes	303.94	1362.03
Institutional	Uniform	Yes	45583.82	47649.96
Multi-Family	Uniform	Yes	79200.15	44667.71
Dedicated Irrigation	Non-Volumetric Flat Rate	No		415.07
Other	Non-Volumetric Flat Rate	No		4930.75
Fire Lines	Non-Volumetric Flat Rate	No		14591.51
Fire Lines	Non-Volumetric Flat Rate	No		3673.32
			1153028.54	**1063280.01**

Calculate: V / (V + M) **52 %**

Implementation Option: Use Annual Revenue As Reported

☐ Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: No

At Least As effective As No

Option 3: 41.12 points

Exemption No

Comments:

On Track

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

5004 **California Water Service Company - Dixon** **Retail**

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

The name of agency, contact name and email address if not CUWCC Group 1 members

Did at least one contact take place during each quater of the reporting year? No

Public Outreach Program List	Number
Website	4
Total	**4**

Did at least one contact take place during each quater of the reporting year? Yes

Number Media Contacts	Number
Radio contacts	4
Total	**4**

Did at least one website update take place during each quater of the reporting year? Yes

Public Information Program Annual Budget

Annual Budget Category	Annual Budget Amount
annual budget	2240
Total Amount:	**2240**

Description of all other Public Outreach programs

Comments:

At Least As effective As No

Exemption No 0

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.2 School Education Programs

ON TRACK

5004 California Water Service Company - Dixon **Retail**

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

Materials meet state education framework requirements? Yes

The Cal Water H2O Challenge has been designed with standards in mind. Working with West Ed/K-12 Alliance, a handbook and lesson plans have been designed to align with Common Core State Standards and Next Generation Science Standards.

Materials distributed to K-6? Yes

Cal Water coloring and activity books, pencil pouches , and stickers. The Cal Water H2O Challenge is available to grade 4-6 classes. The interactive Cal Water Town can be accessed through the Cal Water website.

Materials distributed to 7-12 students? No (Info Only)

Annual budget for school education program: 58.00

Description of all other water supplier education programs

see above

Comments:

At Least As effective As No

Exemption No 0

CUWCC BMP Retail Coverage Report 2014

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices

ON TRACK

5004 California Water Service Company - Dixon

1. Conservation Coordinator provided with necessary resources to implement BMPs?

Name: Natalie Pavlovski

Title: Conservation Program Analyst

Email: npavlovski@calwater.com

2. Water Waste Prevention Documents

WW Document Name	WWP File Name	WW Prevention URL	WW Prevention Ordinance Terms Description
Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP.			
Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area.			California Public Utilities Commission Water Division-Instructions for Water Conservation, Rationing and Service Connection Moratoria
Option C Describe any documentation of support for legislation or regulations that prohibit water waste.			
Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP.			
Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP.			
Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development.			

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Retail Coverage Report 2014

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices **ON TRACK**

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.2 Water Loss Control **ON TRACK**

5004 California Water Service Company - Dixon

Completed Standard Water Audit Using AWWA Software?	Yes
AWWA File provided to CUWCC?	Yes
awwa_DIX2014.xls	
AWWA Water Audit Validity Score?	74
Complete Training in AWWA Audit Method	Yes
Complete Training in Component Analysis Process?	Yes
Component Analysis?	Yes
Repaired all leaks and breaks to the extent cost effective?	Yes
Locate and Repar unreported leaks to the extent cost effective?	Yes
Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair.	Yes

Provided 7 Types of Water Loss Control Info

Leaks Repairs	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost Of Interventions	Water Saved (AF)
22				False		

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.3 Metering With Commodity

ON TRACK

5004 California Water Service Company - Dixon

Numbered Unmetered Accounts	No
Metered Accounts billed by volume of use	Yes
Number of CII Accounts with Mixed Use Meters	190
Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	Yes
Feasibility Study provided to CUWCC?	Yes

Date: 1/1/0001

Uploaded file name:

Completed a written plan, policy or program to test, repair and replace meters	Yes

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.4 Retail Conservation Pricing

On Track

5004 California Water Service Company - Dixon

Implementation (Water Rate Structure)

Customer Class	Water Rate Type	Conserving Rate?	(V) Total Revenue Comodity Charges	(M) Total Revenue Fixed Carges
Single-Family	Increasing Block	Yes	1311788.23	892568.96
Commercial	Uniform	Yes	155933.98	93010.03
Industrial	Uniform	Yes	480.94	1482.17
Institutional	Uniform	Yes	116865.45	50361.68
Multi-Family	Uniform	Yes	125656.04	48711.79
Dedicated Irrigation	Uniform	Yes	3532.76	578.16
Other	Uniform	Yes	107.84	6372.56
Fire Lines	Non-Volumetric Flat Rate	No		19114.82
Fire Lines	Non-Volumetric Flat Rate	No		4047.43
			1714365.24	**1116247.6**

Calculate: V / (V + M) **61 %**

Implementation Option: Use Annual Revenue As Reported

☐ Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: No

At Least As effective As No

Option 3: 33.12 points

Exemption No

Comments:

On Track Using Option 3

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

5004 **California Water Service Company - Dixon** **Retail**

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

The name of agency, contact name and email address if not CUWCC Group 1 members

Did at least one contact take place during each quater of the reporting year? No

Public Outreach Program List	Number
Website	4
Total	**4**

Did at least one contact take place during each quater of the reporting year? Yes

Number Media Contacts	Number
Radio contacts	4
Total	**4**

Did at least one website update take place during each quater of the reporting year? Yes

Public Information Program Annual Budget

Annual Budget Category	Annual Budget Amount
public information	1832
Total Amount:	**1832**

Description of all other Public Outreach programs

Comments:

At Least As effective As	No	
Exemption	No	0

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.2 School Education Programs

ON TRACK

5004 California Water Service Company - Dixon **Retail**

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

Materials meet state education framework requirements? Yes

The Cal Water H2O Challenge has been designed with standards in mind. Working with West Ed/K-12 Alliance, a handbook and lesson plans have been designed to align with Common Core State Standards and Next Generation Science Standards.

Materials distributed to K-6? Yes

Cal Water coloring and activity books, pencil pouches , and stickers. The Cal Water H2O Challenge is available to grade 4-6 classes. The interactive Cal Water Town can be accessed through the Cal Water website.

Materials distributed to 7-12 students? No (Info Only)

Annual budget for school education program: 446.00

Description of all other water supplier education programs

see above

Comments:

At Least As effective As No

Exemption No 0

CUWCC BMP Coverage Report 2014

5004 California Water Service Company - Dixon

Baseline GPCD: 169.77

GPCD in 2014: 136.57

GPCD Target for 2018: 139.20

Biennial GPCD Compliance Table

ON TRACK

		Target		Highest Acceptable Bound	
Year	Report	% Base	GPCD	% Base	GPCD
2010	1	96.4%	**163.70**	100%	**169.80**
2012	2	92.8%	**157.50**	96.4%	**163.70**
2014	3	89.2%	**151.40**	92.8%	**157.50**
2016	4	85.6%	**145.30**	89.2%	**151.40**
2018	5	82.0%	**139.20**	82.0%	**139.20**