

BAWSCA **Annual Water** **Conservation** **Report**

FY 2018-19

**A Summary of BAWSCA's
Regional Water Conservation
Program Implementation Efforts
for Fiscal Year 2018-19**

BAWSCA
Bay Area Water Supply & Conservation Agency

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I. Introduction

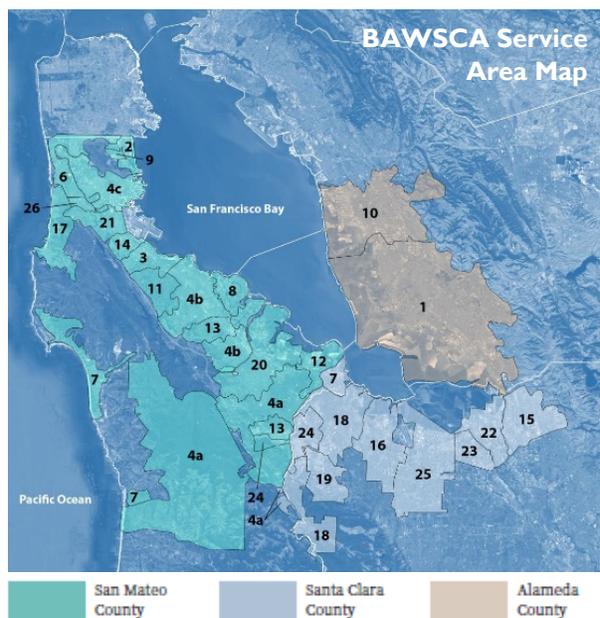
The Bay Area Water Supply and Conservation Agency (BAWSCA) provides regional water supply planning, resource development, and conservation program services to enhance the water supply reliability of the *16 cities, eight water districts, one private water provider, and one university that provide water to over 1.8 million people and 40,000 commercial, industrial, and institutional accounts in Alameda, Santa Clara and San Mateo Counties.*

BAWSCA was established as a multicounty agency authorized to “*plan for and acquire supplemental water supplies, to encourage water conservation and use of recycled water on a regional basis.....*” (Bay Area Water Conservation Agency Act, AB2058). Consistent with the legislature’s intent, BAWSCA’s water management objective is to ensure a reliable supply of high quality water at a fair price to protect the health, safety, and economic well-being of the people, businesses, and community organizations within its service area.

BAWSCA manages a Regional Water Conservation Program that is made up of several different programs and initiatives, and it supports and augments its member agencies’ and customers’ efforts to use water more efficiently. These efforts:

- ◆ *Extend limited supplies of water* that are available to meet both current and future water needs;
- ◆ *Increase drought reliability* of the existing water system; and
- ◆ *Save money* for both the member agencies and their customers.

In Fiscal Year (FY) 2018-19, BAWSCA continued to implement the **Regional Water Conservation Program** that builds upon both the Water Conservation Implementation Plan (WCIP, completed in September 2009) and the Regional Demand and Conservation Projections Project (Demand Study, completed in September 2014). These efforts included administering several regional water conservation programs and initiatives, including both **Core Programs**



- | | |
|------------------------------------------|---------------------------------------|
| 1. Alameda County Water District | 14. Millbrae, City of |
| 2. Brisbane, City of | 15. Milpitas, City of |
| 3. Burlingame, City of | 16. Mountain View, City of |
| 4a. CWS – Bear Gulch | 17. North Coast County Water District |
| 4b. CWS – Mid Peninsula | 18. Palo Alto, City of |
| 4c. CWS – South San Francisco | 19. Purissima Hills Water District |
| 5. Coastside County Water District | 20. Redwood City, City of |
| 6. Daly City, City of | 21. San Bruno, City of |
| 7. East Palo Alto, City of | 22. San Jose Municipal Water System |
| 8. Estero Municipal Improvement District | 23. Santa Clara, City of |
| 9. Guadalupe Valley MID | 24. Stanford University |
| 10. Hayward, City of | 25. Sunnyvale, City of |
| 11. Hillsborough, Town of | 26. Westborough Water District |
| 12. Menlo Park, City of | |
| 13. Mid-Peninsula Water District | |

(implemented regionally throughout the BAWSCA service area) and **Subscription Programs** (funded by individual member agencies that elect to participate and implemented within their respective service areas).

As can be seen in Table I-1, *all 26 member agencies benefitted from the Core conservation programs* implemented by BAWSCA. Additionally, *all 26 member agencies participated in one or more of the Subscription Programs* offered by BAWSCA, including rebates, water loss management and large landscape audits, in the past five years.

This report documents BAWSCA's continued implementation of the Regional Water Conservation Program, which includes conservation measures that: (1) are included as part of its annual work plan, and (2) are consistent with the objectives of the WCIP (2009) and Demand Study (2014).

In addition to continued implementation of its Core and Subscription conservation programs, BAWSCA completed Phase II of its "Making Conservation a Way of Life" Strategic Plan in FY 2018-19. The Strategic Plan is a multi-year effort to develop and implement a strategy to meet new long-term water use efficiency requirements adopted by the State of California in May 2018. Phase II included an indoor-outdoor water use study to evaluate current levels of indoor and outdoor water use within BAWSCA member agency service areas and identified remaining opportunities for improved efficiency. The agencies that volunteered for this analysis provided a representative cross-section of the overall BAWSCA service area in terms of land use and climate and water use. Additionally, a commercial/industrial water audit pilot study was launched in order to evaluate cost-effectiveness for ongoing implementation of an official program.

BAWSCA also initiated the Demand Study to develop revised forecasts for water demand and conservation savings projections for each BAWSCA agency through 2045. The Demand Study will be informed by the Phase II Strategic Plan results and will support agencies in completing their 2020 Urban Water Management Plans (UWMPs) and in preparing for the new long-term water use efficiency targets (SB606/AB1668).

As evidenced in the data presented in this report, *participation in the BAWSCA Regional Water Conservation Program slightly increased overall in FY 2018-19 as compared to FY 2017-18*. This increase is largely attributed to the launch of the Water Loss Management Program in which 16 agencies participated. Additionally, the Lawn Be Gone! Program saw an increase in square footage converted due to some large projects that took place in the summer of 2018. Compared to FY 2012-13, the year immediately preceding the drought, expenditures in FY 2018-19 were 6% lower. BAWSCA will continue to adjust the type and number of conservation measures that it offers to match the needs of its member agencies and their customers.

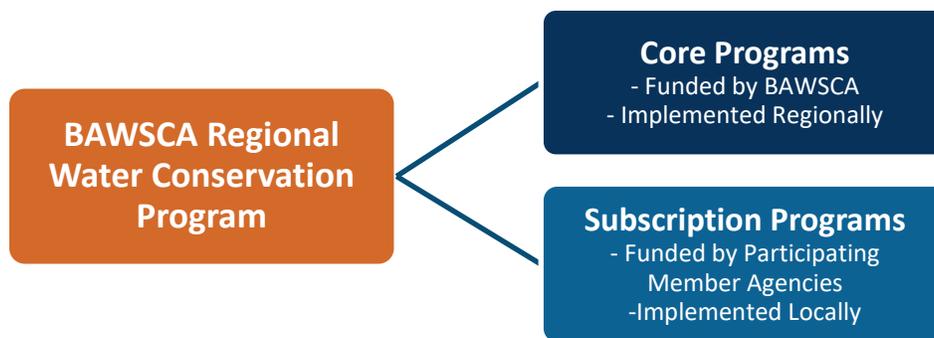
2. Overview of the BAWSCA Regional Water Conservation Program

BAWSCA follows several key principles in the development and implementation of its Regional Water Conservation Program:

- ◆ *Meet the specific needs and requirements* of the BAWSCA member agencies
- ◆ *Offer increased water savings at a lower cost* to the member agencies and their customers
- ◆ *Member agencies fund the Subscription conservation measures* they choose to implement

BAWSCA’s Regional Water Conservation Program is a two-tier program that offers a “Core Program” and a “Subscription Program”:

- ❖ The **Core Program** is *funded through BAWSCA’s annual budget*; and features those *conservation measures that benefit from regional implementation and provide regional benefits*, irrespective of individual agency jurisdictions.
- ❖ The **Subscription Program** is *fully funded by the individual agency that elects to participate in the measure*, and funding is based on the agency’s level of participation. The Subscription Program features *conservation measures whose benefits can be realized within individual water agency service areas*.



The following sections summarize the Core Programs and Subscription Programs that were offered as part of the BAWSCA Regional Water Conservation Program in FY 2018-19. In addition to the BAWSCA programs, *many of the member agencies administer additional water conservation measures independently or through another entity*, such as the Santa Clara Valley Water District (Valley Water).

A. Core Programs

In FY 2018-19, BAWSCA implemented the following water conservation programs and initiatives as part of its Core Programs:

- ❖ Water Efficient Landscape Education Classes
- ❖ AMI Assessment & Workshop
- ❖ LEAK Work Group
- ❖ Water-Wise Gardening in the Bay Area Landscape Educational Tool
- ❖ Native Garden Tours and Symposiums
- ❖ Water Conservation Database (WCDB)
- ❖ "Making Conservation a Way of Life" Strategic Plan
- ❖ Regional Water Demands and Conservation Projections (Demand Study)
- ❖ Public Outreach



B. Subscription Programs

In FY 2018-19, BAWSCA implemented the following water conservation programs and initiatives as part of its Subscription Programs:

- ◆ High-Efficiency Toilet (HET) Rebates
- ◆ Home Water Use Reports
- ◆ Lawn Be Gone! Turf Replacement Rebates
- ◆ Rain Barrel Rebates
- ◆ Large Landscape Audits
- ◆ Water-Wise School Education Kits and Curriculum
- ◆ EarthCapades Assemblies School Education Program
- ◆ Tuolumne River Trust School Education Program
- ◆ WaterSense Fixtures Bulk Pricing Program
- ◆ Water Loss Management Program

Each of these water conservation measures was administered by BAWSCA at the regional level in an *efficient, cost-effective* manner.





C. Other Activities

To augment the Regional Water Conservation Program in FY 2018-19, BAWSCA continued to:

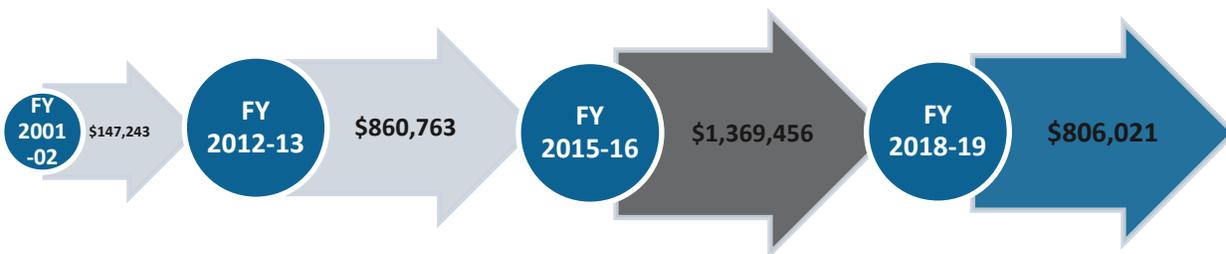
- ◆ Conduct *public outreach* promoting water awareness and conservation
- ◆ Develop and foster *regional partnerships*
- ◆ Investigate *grant funding* alternatives and other financial support
- ◆ Support member agencies' water conservation *reporting and budgeting* efforts
- ◆ Provide *technical support and training* to the member agencies
- ◆ Provide *legislation analysis* for the member agencies



One successful partnership in FY 2018-19 is the Ecology Action WaterLink Program. The WaterLink program was a water and energy savings program that provided turnkey water and energy upgrades to residents and businesses in disadvantaged communities throughout San Mateo, Alameda, and Santa Clara Counties. To achieve significant water and energy savings, the WaterLink program delivered a suite of direct installation projects that produced persistent water and energy savings along with tangible economic benefits by reducing utility bills. Once Ecology Action began implementing the WaterLink program, BAWSCA helped foster partnerships with other regional stakeholders, assisted with the equipment purchasing process, and supported successful completion of the DWR grant application. The program achieved an annual water savings of 671 acre-feet (AF).

D. Program Participation and Budget Overview

The following section provides a comparison of the participation and associated expenditures in BAWSCA's Core and Subscription Programs each year since FY 2001-02. *In FY 2018-19, overall expenditures increased by 13%.* The main reason for this increase is due to the launch of BAWSCA's Water Loss Management Program. In comparison to the \$147,243 expended in FY 2001-02, when BAWSCA first began offering regional programs, total expenditures are currently up by 447%, reflecting the increased focus on water conservation among the BAWSCA member agencies. BAWSCA will continue to evaluate the effectiveness of each of its conservation program offerings as part of its Regional Water Conservation Program management.



Although the Free Sprinkler Nozzles Program was discontinued, many of BAWSCA's subscription conservation programs saw slight increases in program participation. Additionally, the launch of the Water Loss Management Program contributed to the increase in program activity among most member agencies. Program participation has largely returned to pre-drought levels, which is likely due to decreased customer interest and lower agency budgets for water conservation activities following a surge in activity during the 2014-2017 drought. BAWSCA's rebate programs, including the High-Efficiency Toilet Rebate Program and Rain Barrel Rebate program also experienced downward trends in participation.

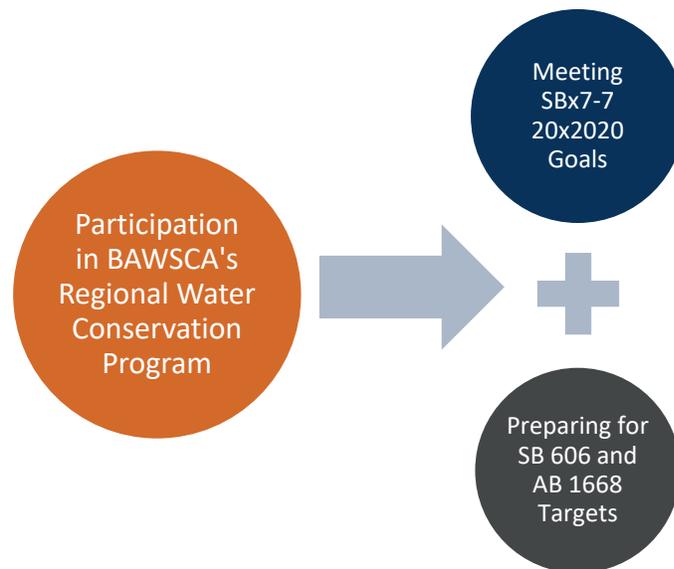


These downward trends can be attributed to the fact that many agencies are only offering premium HET model rebates while others have opted out of the program entirely due to market saturation. However, the Lawn Be Gone! Program showed a slight increase in participation and total square footage replaced. Compared to FY 2012-13, the most recent non-drought year, conservation program activity decreased by 6%. This is primarily due to Cal Water ending participation in BAWSCA's program after FY 2012-13.

Table 2-1, Table 2-2, and Table 2-3 detail the level of participation, as measured by member agency funding, for each Core and Subscription water conservation measure. Table 2-1 presents the annual BAWSCA Water Conservation Program budgets since FY 2001-02. Table 2-2 shows BAWSCA’s regional Core Water Conservation Program summary since FY 2005-06. Table 2-3 shows select BAWSCA program expenditures from FY 2001-02 through FY 2018-19.

E. Member Agency Support for BAWSCA’s Water Conservation Programs

As part of its work plan, BAWSCA is actively working with its member agencies to implement and expand the WCIP (2009) and the Demand Study (2014). BAWSCA is also completing its “Making Conservation a Way of Life” Strategic Plan (Phase II completed in FY 2018-19) and Regional Water Demand and Conservation Savings Projections Project (Demand Study) (to be completed in June 2020) to identify additional ways to support the BAWSCA agencies in complying with new water use efficiency requirements in a cost-effective manner. *BAWSCA agencies have expressed a continued desire to participate in new and ongoing conservation measures offered by BAWSCA. Participation in BAWSCA’s Regional Water Conservation Program assists agencies in meeting the existing Senate Bill x7-7 (SB x7-7) requirements for achieving a 20% reduction in urban water use by 2020 and will support agencies in complying with new water use efficiency targets to be implemented per SB 606 and AB 1668.*



3. BAWSCA Core Water Conservation Programs

The following sections provide detailed information regarding the conservation measures and initiatives implemented as part of BAWSCA’s Core Programs in FY 2018-19.

A. Water Efficient Landscape Education Program

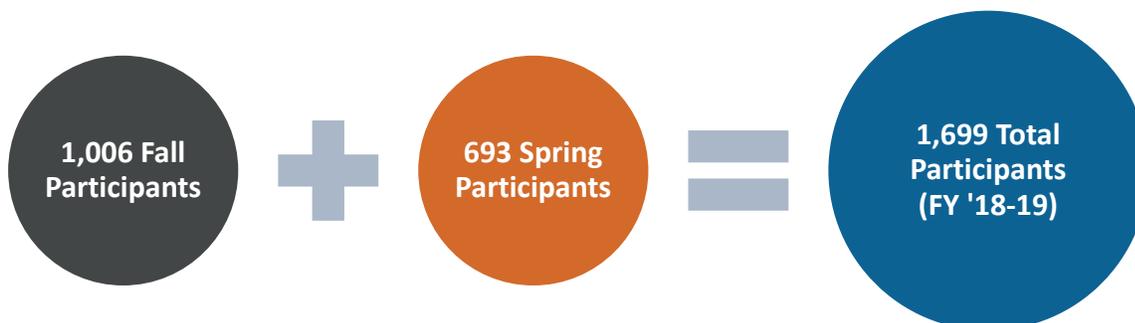


In FY 2018-19, BAWSCA partnered with the member agencies to provide the **Water Efficient Landscape Education Program**. Classes are offered to the public for free during the Spring and Fall seasons. *The classes are designed to introduce homeowners and landscape professionals to the concepts of sustainable landscape design with a focus on creating beautiful, water-efficient gardens as an alternative to lawns.* The types of classes include: (1)

lecture classes, where attendees receive an informative presentation and/or demonstration; and (2) hands-on workshops, where attendees help install or maintain a water-efficient garden.

BAWSCA offered *33 Fall landscape classes and hands-on workshops* from September through December 2018. The most requested topics by attendees included native and drought tolerant plants, design and planning, water wise edibles/gardening, and alternative to lawns. The classes with the highest levels of participation focused on design and planning, native and drought-tolerant planting, and pruning and dead heading. *Approximately 1,006 people attended the 2018 Fall series.*

BAWSCA offered *28 Spring landscape classes* from March 2019 through the beginning of June 2019. Class topics included alternatives to lawn, gardening with succulents, native and drought tolerant planting, irrigation equipment upgrades, and a four-part series on drought-tolerant landscape design. *Approximately 693 people attended the 2019 Spring Landscape Education Program series.*



As shown in Table 2-2, participation in the Water Efficient Landscape Education Program increased from FY 2017-18 and is more consistent with FY 2014-15/FY 2015-16 levels. Overall interest and participation in the classes remains high among BAWSCA member agencies. BAWSCA continues to explore new class structures and marketing techniques to ensure the program meets the needs of customers.

B. Water Wise Gardening in the Bay Area – Landscape Education Tool

In FY 2018-19, BAWSCA member agencies continued to promote the popular landscape education tool, **Water-Wise Gardening in the Bay Area**. This resource is now available online via BAWSCA’s website so it can be readily accessed by the public. *It contains information on how to create and maintain a beautiful, low-water-use garden and includes photographs of water-efficient gardens with links to the plants featured in the gardens.* Most of the gardens are located within the Bay Area, specifically within the BAWSCA service area.

In FY 2018-19, the Water-Wise Gardening in the Bay Area website had approximately 2,787 unique visitors and 4,233 total visits.

This number represents a 7% decrease in total visits from FY 2017-18. Since BAWSCA began tracking website analytics in FY 2009-10, an average of 8,570 visitors have accessed the website each year.



C. Native Garden Tours and Symposiums

BAWSCA co-sponsored two garden tours in Spring of FY 2018-19. *Each tour was designed to showcase local homes that have beautiful water-conserving gardens comprised primarily of California native plants.* The tours take place throughout the Bay Area, although many gardens featured in the tours were located within the BAWSCA service area.

❖ **Going Native Garden Tour.** The 16 annual Going Native Garden Tour took place May 4 & 5, 2019. *The 4,272 tour participants made a total of 5,398 visits to the 53 open gardens.* 183 volunteers assisted as docents and greeters at the open gardens. Three nursery sponsors conducted three native plant sales at select tour gardens, and informative talks were given at several gardens. Participants provided many positive comments about the tour, plant sales, and talks.



❖ **Bringing Back the Natives Garden Tour.** The twelfth annual Bringing Back the Natives Garden Tour took place on May 5, 2019, and showcased gardens and nurseries located in 18 cities and unincorporated areas of Alameda and Contra Costa Counties. *The 2,625 participants made a total of 8,489 visits to 42 open gardens and nurseries.* Over 50 talks and demonstrations were given at the showcased gardens and nurseries on tour.



D. Regional Water Conservation Database

Since FY 2010-11, BAWSCA has operated and maintained a **Water Conservation Database (WCDB)** that serves as the repository for BAWSCA member agency water use and water conservation program information. In FY 2017-18, BAWSCA began using the latest version of the Water Conservation Database (WCDB), developed in FY 2016-17 utilizing consultants Immersive Media and Hanley Communications. BAWSCA utilized the database in FY 2018-19 to support the Demand Study.

The purpose of the WCDB is to: (1) streamline data collection to *support tracking of water conservation activities* in the region; (2) *monitor quantifiable water savings* in the BAWSCA region; and (3) *facilitate data collection and data management* to support the following activities:

- ◆ Internal agency reporting and budgeting
- ◆ BAWSCA Annual Survey Report
- ◆ DSS Model updates
- ◆ “Making Conservation a Way of Life” Strategic Plan development
- ◆ DWR UWMP and annual Public Water Supervision System reporting requirements

The WCDB was developed with input from the BAWSCA member agencies in order to ensure their needs and objectives were achieved. *It features unique portals for each member agency, an easier and more user-friendly interface, and enhanced reporting features.* A user manual and how-to video was created, and two webinar trainings were held to help member agency staff learn how to use the new database.

The new WCDB was first used for reporting in Fall of 2017, and enhancements to the system will continue to be made based on user feedback.

Overall, users report a higher level of satisfaction and reporting ease with the new WCDB, though some reporting features will require fine-tuning over time.



E. BAWSCA’s “Making Conservation a Way of Life” Strategic Plan

On April 7, 2017, the State of California released the “Making Water Conservation a California Way of Life, Implementing Executive Order B-37-16” Final Framework Report¹ (State Framework Report). The State Framework Report, which builds upon Governor Brown’s call for new long-term water use efficiency requirements in Executive Order B-37-16, outlines the State’s proposed approach for implementing new long-term water conservation requirements. A key element of the report is new water use targets for urban water suppliers that go beyond existing SB x7-7



¹ California Department of Water Resources, et al. *Making Water Conservation a California Way of Life, Implementing Executive Order B-37-16*, April 2017. Online: http://www.water.ca.gov/wateruseefficiency/conservation/docs/20170407_EO_B-37-16_Final_Report.pdf

*requirements*² and are based on strengthened standards for indoor residential per capita use; outdoor irrigation; commercial, industrial, and institutional (CII) water use; and water loss.

BAWSCA’s “Making Conservation a Way of Life” Strategic Plan (Plan) *is being developed to support BAWSCA agencies in the implementation of proposed new water use targets.* BAWSCA contracted with Maddaus Water Management (MWM) and its team, consisting of Brown and Caldwell, Water Systems Optimization, Waterfluence, and Western Policy Research to complete Phase I.

Phase I of the Plan, completed in FY 2017-18, had two primary goals:

- ✓ *Evaluate the feasibility of implementing the proposed water use targets and the associated cost impacts to BAWSCA agencies.*
- ✓ *Identify actions to support BAWSCA agencies in preparing for and implementing the proposed water use targets.*

Phase I assessed BAWSCA agencies’ current practices and water industry best practices for the components of the proposed new requirements that present the greatest level of uncertainty and potential risk to the BAWSCA agencies. Phase I identified five actions which were implemented in FY 2018-19 based upon: (1) their direct connection to known legislative requirements; and (2) their potential to provide key information to inform BAWSCA input into the public processes to develop water efficiency standards. These completed actions include:

- ✓ *Conducted a study to review current residential indoor and outdoor water use trends to determine current levels of water use and additional water savings potential.*
- ✓ *Organized an AMI symposium to enable information exchange, including case studies, implementation strategies, and data analysis techniques.*
- ✓ *Implemented a regional commercial, industrial, and institutional (CII) customer audit pilot program.*
- ✓ *Implemented a regional program for water loss control to help BAWSCA agencies comply with regulatory requirements and implement cost-effective water loss interventions.*
- ✓ *Engaged with the SFPUC to optimize meter testing and calibration practices for SFPUC’s meters at BAWSCA agency turnouts.*

In FY 2018-19, BAWSCA contracted with MWM to initiate Phase II of the BAWSCA “Making Conservation a Way of Life” Strategic Plan. Phase II of the Strategic Plan, completed in FY 2018-19, had two primary objectives:

² SB X7-7, also known as the Water Conservation Act of 2009, was introduced after the drought of 2007-2009 due to the California Governor’s call for a statewide 20% reduction in urban water use by the year 2020. See the California Department of Water Resources website for more information: www.water.ca.gov/wateruseefficiency/sb7/

- ◆ *Complete a Residential Water Use Study in order to provide insight into the current breakdown of indoor and outdoor water use among residential customers within the BAWSCA service area.*
- ◆ *Implement a CII Audit Program Pilot Project meant to evaluate the potential for the successful implementation of a Regional CII Audit Program.*

The Residential Indoor/Outdoor Water Use Study results will be utilized in the development of BAWSCA agency demand projections as part of the Demand Study. The recommended next steps include: (1) setting up a Work Group of interested BAWSCA member agencies to discuss the development of a list of parameters to collect data; and (2) continue to host AMI symposiums to discuss meter selection, implementation, data collection, and data analysis. BAWSCA has since initiated work with the SFPUC on meter testing.

The CII Pilot Study was completed in FY 2018-19 by BAWSCA’s consultant on the project, MWM. BAWSCA’s CII Pilot Tool accomplishments include a target industry being selected, the creation of an online survey tool on the BAWSCA website, the launch of the formal survey, and the analysis of survey results.

F. Regional Demand and Conservation Savings Projections

BAWSCA utilizes **Decision Support System (DSS) Models**, developed for each member agency, as part of the Regional Demand and Conservation Projections Project (Demand Study). The Demand Study, completed in September 2014, developed *transparent, defensible, and uniform demand and conservation projections for each BAWSCA member agency*. These projections were used to support the development of BAWSCA’s Long-Term Reliable Water Supply Strategy (Strategy) as well as other regional and agency-specific efforts. The objectives of the Demand Study were to:



- ◆ *Quantify the total average-year water demand for each BAWSCA member agency through 2045.*
- ◆ *Quantify the passive and active conservation water savings potential for each BAWSCA member agency through 2045.*
- ◆ *Identify conservation programs for further consideration of regional implementation by BAWSCA.*

- ◆ Provide each member agency with a user-friendly model that can be used to support ongoing demand and conservation planning efforts.

In FY 2018-19, BAWSCA began an effort to update the Demand Study completed in 2014. The intent of the update was to revisit the estimate of water demand patterns and conservation savings potential for the BAWSCA agencies. In addition, it would produce necessary information to support individual agency efforts such as compliance with the new State water efficiency requirements and completion of UWMPs. The update was anticipated to be an 18-month work effort, aligned with the State’s UWMP submittal schedule, and was to be completed by June 2020.

To prepare the demand and conservation projections, BAWSCA sought a consultant to revise the individual Decision Support System (DSS) models prepared in 2014 for each BAWSCA agency. The improved DSS models would add additional capabilities, including: (1) ability to estimate each agency’s annual urban water use objectives as mandated by the State; (2) ability to forecast water demands and conservation savings under a range of hydrologic conditions; and (3) ability to incorporate water use projections for new developments based on land use projections.

In response to BAWSCA’s November 9, 2018 Request for Proposals (RFP) for consultant support, MWM was hired in mid-January 2019 and began work later that month.

When completed, the results of the updated Demand Study will be reflected in future Annual Water Conservation Reports.

G. AMI Assessment & Workshop

During preliminary discussions in the Water Resources Committee in FY 2018-19, member agencies expressed the desire for regional collaboration for implementing Advanced Metering Infrastructure (AMI) technology. Following these discussions, BAWSCA and its member agencies identified the need to develop baseline information about their existing metering infrastructure. As a result, BAWSCA and Valley Water decided to jointly work on obtaining information about their agencies’ current and planned work with AMI technology.



To support BAWSCA and Valley Water’s efforts, ManageWater Consulting, Inc., in association with Don Schlenger and Associates, LLC., developed a comprehensive survey and analyzed its responses. The survey gauged agencies’ present and near-future involvement in AMI and interest in regional collaboration. Based on review of BAWSCA’s Strategic Plan, knowledge about BAWSCA and Valley Water agencies, and expertise with AMI, ManageWater Consulting identified four main

sections for the survey: (1) Agency Profile; (2) Existing metering and data management systems; (3) Agencies with AMI; and (4) Potential areas for collaboration, including level of interest.

A summary of the information and its analysis gathered from the survey was presented at BAWSCA's AMI Workshop on March 27, 2019. The responses will guide BAWSCA's and Valley Water's decisions about the efficacy and options for regional collaboration on AMI projects. The key findings from the survey include:

- ◆ *In all agencies, meter data is used by diverse groups and end-uses. Agencies maintain many common, routine processes and products.*
- ◆ *AMI and Visual/Manual meter reading are most common, Rockwell/Sensus and Badger meter brands dominate, and agencies use similar practices for meter maintenance, calibration, and replacement.*
- ◆ *Typically, meter data does not use automating integration for routine data(except for billing).*
- ◆ *Virtually all agencies recognize the important features and added value of AMI technology.*
- ◆ *Sixty-two percent of survey participants are interested in collaboration.*

The goals of the workshop were to support member agency efforts to advance the implementation of AMI within their respective service area, provide guidance on using AMI data to improve water use efficiency, and identify potential opportunities for regional coordination on AMI planning and implementation.

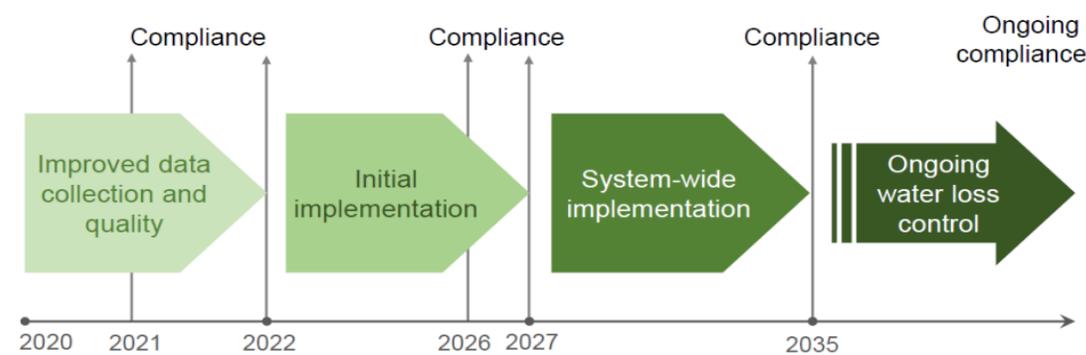


H. LEAK Workgroup

The Loss Evaluation & Knowledge (LEAK) Workgroup is a Core Program which provides water loss control education and peer-to-peer learning opportunities for BAWSCA member agencies. The first LEAK Workgroup was held in November 2018. Topics included:

Water Loss Regulations

SWRCB recently previewed their performance target framework



★ *Customized water loss target designated for each agency*

- *Phased approach*
- *Emphasis on component analysis*
- *Aligned timing with Conservation EO*

- ◆ *The results of the 2018 water audit submittals to the State.*
- ◆ *Status of State actions to implement water loss requirements.*
- ◆ *Source meter testing.*
- ◆ *Identification of desired topics for future workgroups.*

The second LEAK Workgroup was held in February 2019. Topics included:

- ◆ *Regulatory updates on the State Water Resources Control Board's loss performance requirements as well as stakeholder meeting updates and insights.*
- ◆ *SFPUC current meter maintenance practices for wholesale customer meter calibration and testing.*
- ◆ *Discussion of water loss control work to consider as well as the timeline for recommended actions.*

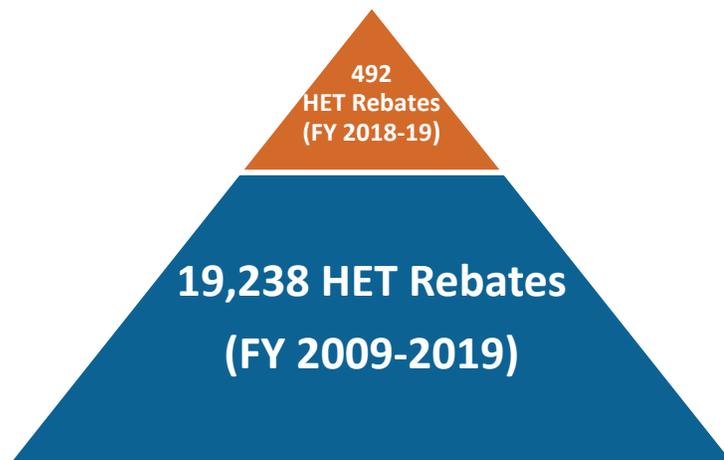
4. BAWSCA Subscription Water Conservation Programs

The following sections present detailed information on the individual conservation programs that constituted BAWSCA's Subscription Program in FY 2018-19.

A. High-Efficiency Toilet Rebates

The High-Efficiency Toilet Program (HET Program), initiated in 2008, enables participating member agencies to offer customers a *\$50 to \$100 rebate for replacing a high-volume toilet* (i.e., 1.6 gallons per flush, GPF, or more) with a EPA WaterSense certified high-efficiency toilet that uses 1.28 GPF or less. To receive the higher rebate, customers must purchase a Maximum Performance (MaP) Premium Toilet (i.e. 1.06 GPF or less).

12 agencies participated in the HET Program in FY 2018-19. In total, the participating BAWSCA member agencies issued 492 rebates for a total expenditure of \$41,202, including program administration costs. To date, a total of 19,238 HET Program rebates have been paid to customers within the BAWSCA service area. Some member agencies not participating in the BAWSCA program also offer HET rebates either individually or as part of the Valley Water conservation programs. Additional details for measure implementation and BAWSCA agency participation are shown in Table 4-1 and Figure 4-1.



The number of customer rebates provided by the HET Program decreased by 45% compared to FY 2017-18. This decrease in participation is attributed to lower rebate amounts and the transition by several agencies to offering rebates only for MaP Premium toilets.

As part of its administration of the HET Program for the participating member agencies, BAWSCA performed the following activities:



- ◆ Proposition 84 grant administration
- ◆ Promotional materials development and outreach
- ◆ Advertising and outreach
- ◆ Hosting information and application forms on the BAWSCA website
- ◆ Receive and process rebate applications
- ◆ Management of HET database
- ◆ Coordinate management of rebate distribution and approvals to the participating agencies
- ◆ Technical and customer support for agencies and rebate applicants
- ◆ Tracking progress against Agency conservation targets
- ◆ Initiating development of an online rebate application system

As shown in Table 4-1, *the cost-effectiveness of the HET Program in FY 2018-19 is estimated at \$286 per AF of water saved.* Thus, even in absence of the grant funds, this measure continues to be a cost-effective means of achieving water conservation savings in the home, especially when compared to the wholesale cost of purchasing water from the SFPUC, which was \$1,956 per AF for FY 2018-19.³

B. Lawn Be Gone! Program

Since 2010, BAWSCA's **Lawn be Gone! Program** has provided rebates to customers who replace turf with water-efficient landscaping. *In FY 2018-19, the program provided customers with rebates of \$1-\$4 per square foot of turf replaced, as determined by the participating BAWSCA member agency.* Per the Lawn Be Gone! Program terms, the new landscape must include at least 50% live plant coverage, with the remainder completed in permeable hardscape. All plants must be low water use plants from the BAWSCA-Approved Plant List.



³ Represents the SFPUC FY 2018-19 wholesale water rate plus the BAWSCA bond surcharge.

Participation in this program provides BAWSCA members a way to offer their customers an incentive, via rebates, to reduce their outdoor water use and create long-term water savings. This program also has an educational element – demonstrating to the public that low water use landscapes can be an attractive alternative to lawns.



Eight agencies participated in the Lawn Be Gone! Program in FY 2018-19 (see Table 4-2). In total, the BAWSCA member agencies issued 28 rebates in FY 2018-19 and supported the conversion of 55,094 square feet of turf grass to water-efficient landscaping. The total program expenditure, including administration costs, was approximately \$67,430. A total of \$503,429 in rebates have been paid to customers within the BAWSCA service area since the program began in 2010.

As part of its administration of the Lawn be Gone! Program, BAWSCA performed the following activities for the participating member agencies:

- ◆ Proposition 84 grant administration
- ◆ Development and production of promotional materials
- ◆ Development of the BAWSCA-Approved Plant list, which includes over 1,600 plants and denotes whether they are appropriate for the Coast, Peninsula or East Bay climates, as well as their water demand
- ◆ Advertising and outreach
- ◆ Hosting information on the BAWSCA website
- ◆ Coordinating management of rebate distribution and approvals in collaboration with customers and the participating agencies
- ◆ Tracking progress against individual agency conservation targets
- ◆ Initiating development of an online rebate application system

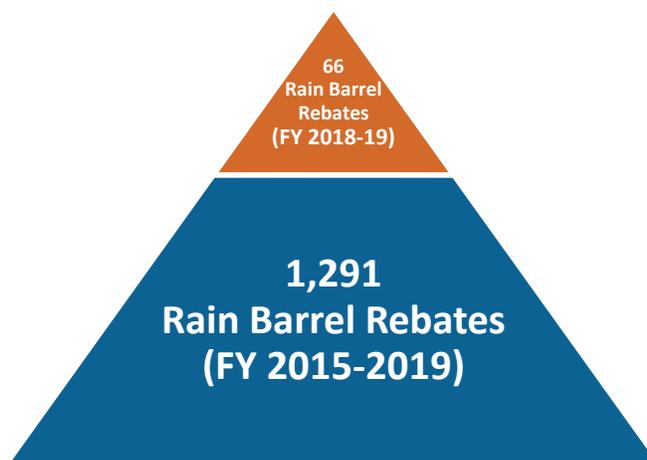
As seen in Table 4-2, *the cost-effectiveness of the BAWSCA Lawn Be Gone! Program in FY 2018-19 is estimated to be \$1,089 per AF of water saved.* Thus, this measure is a cost-effective means of achieving water conservation savings outside the home, especially when compared to the wholesale cost of purchasing water from the SFPUC, which was \$1,956 per AF for FY 2018-19.

C. Rain Barrel Rebate Program



Since 2014, BAWSCA has partnered with the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) on the **Rain Barrel Rebate Program**, to offer rebates of up to \$100 for the purchase and installation of rain barrels. Rain barrels are used to collect rainwater from hard surfaces, such as rooftops, to be stored for later use in watering landscapes. *In FY 2018-19, the SMCWPPP provided rebates of up to \$50 per rain barrel for installations within San Mateo County. Participating BAWSCA member agencies provided additional rebates of up to \$50 per rain barrel, for a total maximum customer rebate of \$100 in areas where both rebates were offered.*

Eight agencies participated in the Rain Barrel Rebate Program in FY 2018-19 (see Table 4-3). In total, the participating BAWSCA member agencies issued 66 rain barrel rebates. 13 of these rebates were within the BAWSCA service area in San Mateo County and received additional funding from the SMCWPPP. Total expenditures were \$10,255. The water savings associated with each rain barrel installation is dependent on a variety of factors, including precipitation and time between rain events.



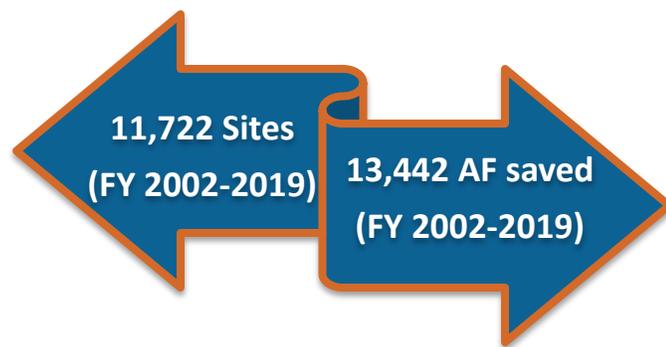
D. Large Landscape Audits

BAWSCA has offered **Large Landscape Audits** to its member agencies since FY 2002-03. This measure enables participating BAWSCA agencies to reduce the amount of water used for outdoor landscaping and to cost-effectively meet the requirements of the California Urban Water Conservation Council's (CUWCC) Programmatic Best Management Practice that targets large landscape customers.



The Large Landscape Audit measure provides landscape surveys to assess watering needs and distributes monthly landscape water budgets for select accounts. This work is done by Waterfluence, under contract with BAWSCA, and includes audits to qualifying commercial and residential accounts. A key component of the measure implementation is the ongoing tracking of actual water use and estimated water savings at surveyed sites.

A total of 1,017 sites in nine different member agency service areas participated in the BAWSCA Large Landscape Audit measure in FY 2018-19, as shown in Table 4-4. Additional BAWSCA member agencies also offer this program, contracting with Waterfluence independently or through Valley Water.



The 2019 Waterfluence Annual Report found that overwatering at participating sites has dropped significantly since 2002, reaching a low point in 2015

during a statewide drought. Overwatering has rebounded in subsequent years but is still below 2013 levels. Significant reductions in overwatering can still be made at commercial sites, sites with less than one acre of landscaping, sites planted predominantly with shrubs, and sites not including their landscape contractor as an online viewer.

As part of its administration of the Large Landscape Audit measure for the participating member agencies, BAWSCA performed the following activities:

- ◆ Hosting information on the BAWSCA website
- ◆ Contract negotiation with Waterfluence
- ◆ Service as liaison between agencies and Waterfluence
- ◆ Managing agency invoicing

As can be seen in Table 4-4, the unit cost of water saved by the Large Landscape Audit measure in FY 2018-19 is conservatively estimated at \$99 per AF.⁴ Thus, this measure continues to be very cost effective, especially when compared to the wholesale cost of purchasing water from the SFPUC, which was \$1,956 per AF for FY 2018-19.

⁴ The unit cost of water saved for this program varies year to year based on weather, observed water savings, the number of landscape surveys completed, and changes in program offerings and cost.

E. School Education – Water Wise School Program

Since 2005, BAWSCA has contracted with Resource Action Programs (RAP) to implement the **Water Wise School Education Program**. *This program provides 5th grade students with educational, in-class water conservation materials and free indoor/outdoor water conservation kits (i.e., Water Wise Kits) designed to be used at home.* RAP works directly with teachers and schools to provide turnkey, in-class program and free Water Wise Kits.

The Water Wise curriculum is designed to be easily implemented by teachers and taken into the home by participating students. Each Water Wise Kit includes a water audit that students can perform at home with their parents as well as water-



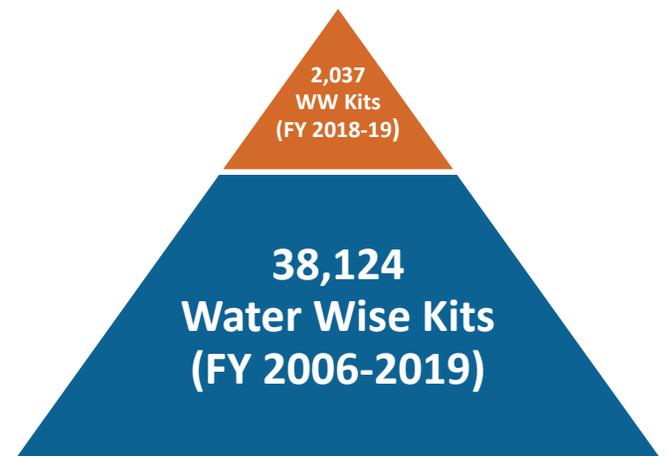
saving devices that can be installed at the student's home (e.g., low-flow

showerheads and faucet aerators). The materials provided to the teachers and students also include methods for calculating water savings resulting from the installation of equipment contained in the kit and performing the recommended water-saving actions.



After the student performs the audit and installs the water and energy-saving devices, affidavits signed by the parents are returned to the school, collected by the teacher, and forwarded to RAP. This documentation allows RAP to measure program implementation and quantify water savings that results from the program. RAP then prepares a final report for distribution to the participating agencies.

RAP reports that participation in the FY 2018-19 Water Wise School Education Program is expected to result in savings of over 136 AF of water over the next 10 years. In addition to helping member agencies save water, the Water Wise school education measure assists participating agencies in implementing the CUWCC Foundational Education Programs, which include Public Information and School Education, as well as the CUWCC Programmatic Best Management Practice that targets residential customers. *In FY 2018-19, a total of 2,037 kits were distributed.* Since the program's inception in FY 2005-06, a total of 38,124 students and teachers have participated in the Water Wise School Education Program. This yields an estimated total lifetime water savings of up to 6,104 AF. See Table 4-5.



As part of its administration of the Water Wise School Education Program for the participating member agencies, BAWSCA performed the following activities:

- ◆ Development and production of BAWSCA-specific promotional materials to insert into the Water Wise kits
- ◆ Hosting information on the BAWSCA website
- ◆ Contract negotiation with Resource Action Programs
- ◆ Serving as liaison between agencies and Resource Action Programs
- ◆ Managing agency invoicing
- ◆ Tracking progress against individual agency conservation targets

In FY 2018-19 BAWSCA provided an incentive to participating classrooms and students to increase participation in, and results from, the Water Wise School Education Program. Incentives were distributed by RAP based on the following criteria:

- ◆ A \$100 cash prize was given to classrooms whose teachers enrolled in the Water Wise School Education Program and returned at least 80% the Water Wise home surveys.
- ◆ A gift valued at up to \$5 was given to students who completed the Water Wise surveys, documenting whether they installed the water conserving-devices from the kits in their homes, completed all the homework, and/or scored above 80% on the final written test given as part of the Water Wise school education measure.

As shown in Table 4-5, *the cost-effectiveness of the Water Wise School Education Program in FY 2018-19 is estimated at \$580 per AF of water saved*. Thus, this measure continues to be a very cost-effective means of achieving water conservation savings and educating students, especially when compared to the wholesale cost of purchasing water from the SFPUC, which was \$1,956 per AF for FY 2018-19.

F. School Education – EarthCapades Assemblies

BAWSCA's school education efforts for FY 2018-19 included a school assembly program run by EarthCapades. **EarthCapades Assemblies** combine age-appropriate state science standards with circus skills, juggling, music, storytelling, comedy, and audience participation to teach environmental awareness, water science and conservation to students in grades K-8. The EarthCapades assemblies are designed to include local water source and watershed education information as well as select information the participating member agencies would like to share with their customers.



BAWSCA and the participating member agencies provide specific information to EarthCapades regarding the San Francisco Regional Water System and other topics (e.g., recycled water). EarthCapades integrates this information into a custom script used during the assemblies conducted within the participating member agencies' service areas.

"My children talked about the assembly the whole way home. They were motivated to conserve water and encouraged our family to make some changes in how we use water."

-Parent, City of Mountain View

In FY 2018-19, 10 agencies sponsored 136 shows throughout the BAWSCA service area for a total expenditure of \$58,270 including BAWSCA administration fees. A total of 23,923 children attended the assemblies from 68 different schools within the BAWSCA service area. The shows were generally very well received by the schools and agencies alike.

As part of its administration of the EarthCapades school education measure for the participating member agencies, BAWSCA performed the following activities:

- ◆ Hosting information on the BAWSCA website
- ◆ Contract negotiation with EarthCapades
- ◆ Serving as liaison between agencies and EarthCapades
- ◆ Managing agency invoicing
- ◆ Tracking progress against individual agency conservation targets



G. School Education – Tuolumne River Trust



Since FY 2010, BAWSCA has partnered with **Tuolumne River Trust** (TRT) to support its water conservation outreach efforts to elementary schools within the BAWSCA service area. *The program, called “That’s the Tuolumne in My Tap,” includes a slideshow presentation to fourth and fifth grade students about the Tuolumne river water supply and water conservation.* TRT’s outreach is designed to educate students about where their water comes from and to promote an ethic of environmental stewardship. The

presentation focuses on the history and special qualities of the Tuolumne River, the animals that depend on the River, and what can be done to help protect the River by conserving water.

More information about the TRT’s School education efforts is available at

<http://www.tuolumne.org>.

Historically, BAWSCA has supplied TRT with information and materials that promoted local water conservation programs, which TRT distributed to the students.

Beginning in FY 2014-15, BAWSCA expanded the partnership with TRT to include member agency sponsorship of the classroom presentations at select schools.

In FY 2018-19, no shows were held by the participating member agencies and so the program was put on hold.



Tuolumne River
TRUST

H. Home Water Use Reports Program



In 2014, BAWSCA began contracting with WaterSmart Software to administer a **Home Water Use Reports Program**. *The Program provides customer water use portals and/or individual household reports that use data analytics and behavioral science techniques to provide customized water consumption information, messaging, and water-saving recommendations to customers.* The objective of the Program is to motivate customers to improve their water use efficiency through changes in behavior or adoption of more water efficient technology. The reports utilize social norms to motivate behavior change by comparing a household’s water usage to that of their peers.

Four agencies participated in the Home Water Use Reports Program in FY 2018-19. During that time, approximately 73,275 residential accounts received access to the customer portal or home water reports, yielding approximate 363 acre-feet in water savings. As shown in Table 4-6, the unit cost of water saved in FY 2018-19 is estimated at \$778 per AF of water saved. Thus, this measure provides a cost-effective means of achieving water conservation savings and increasing customer engagement. This cost is lower than the wholesale cost of purchasing water from the SFPUC, which was \$1,956 per AF in FY 2018-19.



I. WaterSense Fixtures Bulk Purchase Program

The **WaterSense Fixtures Bulk Purchase Program**, launched in 2015, enables BAWSCA member agencies to purchase water conservation fixtures, devices, and giveaway items from AM Conservation through BAWSCA at a pre-negotiated bulk rate. Participating agencies then distribute these devices to their customers, free of charge, to support customers in using water efficiently. Devices available through this program include low-flow showerheads, faucet aerators, hose nozzles, toilet leak detection tablets, shower timers, and soil moisture meters. Agencies may participate in the program on a rolling basis, placing orders through BAWSCA as needed throughout the year.



In FY 2018-19, four BAWSCA member agencies and Ecology Action, a non-profit organization implementing a DWR grant for installation of water-efficient fixtures in disadvantaged communities within the BAWSCA service area, participated in the WaterSense Fixtures Bulk Purchase Program. *Participants purchased a total of 1,933 water-efficient fixtures.* These purchases included 450 shower heads, 467 faucet aerators, 700 leak detection dye tablets, and 216 hose nozzles.

J. Water Loss Management Program

BAWSCA's Water Loss Management Program (WLMP) launched in FY 2018-19. The program, a recommended action in BAWSCA's "Making Conservation a Way of Life Strategic Plan," supports participating BAWSCA agencies in reducing water losses to an economically optimized level and in complying with water loss requirements implemented by the State Water Resources Control Board (SWRCB) per SB 555. The WLMP includes two components:

- ◆ *The Loss Evaluation & Knowledge (LEAK) workgroup, which is a Core Program to provide water loss control education and peer-to-peer learning opportunities for BAWSCA member agencies.*

- ◆ *The WLMP Subscription Program, which provides individual support to BAWSCA agencies on water audit completion, validation, and other tasks associated with water loss management.*

BAWSCA member agencies can choose from a range of tasks to participate in. These tasks and subtasks include:

- ◆ *Support in compiling water audits & associated data.*
- ◆ *Level I Validation of audits to comply with SWRCB requirements.*
- ◆ *Component Analysis of real losses and apparent losses.*
- ◆ *Meter Accuracy Testing.*
- ◆ *Comprehensive Leak Detection.*

In FY 2018-19, 16 BAWSCA member agencies participated in the Water Loss Management Program. As seen in Table 2-3, expenditures for the program totaled \$139,358.

Table I-1: BAWSCA Agency Participation in BAWSCA Regional Conservation Program (FY 2013-14 to FY 2018-19)

Agency	BAWSCA Core Conservation Programs			BAWSCA Subscription Water Conservation Program										
	Landscape Education Class Participants	WaterWise Garden On-Line Tool	Public Outreach (c)	Washing Machine Rebates	High-Efficiency Toilet Rebates	School Education: WaterWise Kits	School Education: EarthCapades Assemblies	School Education: Tuolumne River Trust	Large Landscape Audits (d)	Rain Barrel Rebates (e)	Lawn Be Gone! Landscape Rebates	Free Sprinkler Nozzles	Water Loss Management Program	Home Water Use Reports
Alameda County														
Alameda CWD	X	X	X		X				X	X	X			
Hayward	X	X	X	X	X	X	X		X	X			X	
San Mateo County														
Brisbane/GVMID	X	X	X	X	X		X		X	X	X			
Burlingame	X	X	X	X	X	X						X	X	
CalWater-BG	X	X	X	X	X		X				X			
CalWater-MidPen	X	X	X	X	X		X				X			
CalWater-SSF	X	X	X	X	X		X				X			
Coastside CWD	X	X	X	X	X		X	X	X		X		X	
Daly City	X	X	X	X	X		X		X	X	X			
East Palo Alto	X	X	X	X										
Estero MID	X	X	X	X	X	X	X	X	X		X		X	
Hillsborough	X	X	X	X	X	X	X					X	X	X
Menlo Park	X	X	X	X	X	X	X		X		X		X	
Mid-Peninsula WD	X	X	X	X	X	X	X	X	X	X	X		X	
Millbrae	X	X	X	X	X	X	X	X	X	X		X	X	
North Coast CWD	X	X	X	X		X		X		X	X			
Redwood City	X	X	X	X	X	X	X	X	X	X	X			
San Bruno	X	X	X	X	X		X		X		X		X	
Westborough WD	X	X	X	X	X		X						X	
Santa Clara County														
Milpitas	X	X	X										X	
Mountain View	X	X	X				X		X				X	X
Palo Alto	X	X	X										X	
Purissima Hills WD	X	X	X										X	
San Jose	X	X	X							X			X	X
Santa Clara	X	X	X											X
Stanford	X	X	X		X							X		
Sunnyvale	X	X	X							X			X	

Notes:

- (a) Tables includes an "X" if an agency has participated in a specific measure in at least one of the last five years.
- (b) An absence of an "X" may not mean that agency does not implement a measure, just that it does not participate through BAWSCA on that measure.
- (c) Includes several different programs that benefit the region, including Garden Tours, Outreach Events, and Sponsorships.
- (d) Cal Water and Hillsborough Large Landscape Audit programs began with BAWSCA but were administered by the agencies starting in FY 2013-14.
- (e) Through the San Mateo Countywide Water Pollution Prevention program, all San Mateo county residents were eligible for a \$50 rain barrel rebate. Only those agencies that offered a matching rebate are listed.

Table 2-1: BAWSCA Water Conservation Program Budgets

Fiscal Year	Budget	% Change
FY 2001-02	\$147,243	--
FY 2002-03	\$435,163	196%
FY 2003-04	\$229,734	-47%
FY 2004-05	\$453,605	97%
FY 2005-06	\$485,177	7%
FY 2006-07	\$602,599	24%
FY 2007-08	\$687,063	14%
FY 2008-09	\$980,225	43%
FY 2009-10	\$1,635,110	67%
FY 2010-11	\$1,299,502	-21%
FY 2011-12	\$967,075	-26%
FY 2012-13	\$860,763	-11%
FY 2013-14	\$831,155	-3%
FY 2014-15	\$1,060,118	28%
FY 2015-16	\$1,357,352	28%
FY 2016-17	\$835,775	-38%
FY 2017-18	\$714,612	-14%
FY 2018-19	\$806,112	13%
Total	\$14,388,382	

Table 2-2: BAWSCA Core Regional Water Conservation Program Summary – FY 2018-19

Fiscal Year	Landscape Education Classes (# of classes)			Native Garden Tours, Conferences & Symposiums		WaterWise Gardening Website	
	Number of Classes	Number of Attendees	Expenditures	Number of Agencies	Expenditures	Number of Agencies	Expenditures
FY 2005-06 (a)	12	87	\$3,173	--	\$0	--	\$1,500
FY 2006-07 (a)	12	110	\$3,150	all	\$3,000	all	\$13,500
FY 2007-08 (b)	13	150	\$3,620	all	\$4,000	all	--
FY 2008-09 (c), (f)	17	320	\$7,199	all	\$5,000	all	\$5,000
FY 2009-10 (d)	41	918	\$20,059	all	\$5,814	all	\$5,100
FY 2010-11 (e), (f)	56	1,283	\$25,780	all	\$6,500	all	\$5,000
FY 2011-12	57	1,498	\$26,618	all	\$9,739	all	\$6,500
FY 2012-13	52	1,306	\$25,401	all	\$8,184	all	\$5,000
FY 2013-14	51	1,191	\$29,098	all	\$7,000	all	\$5,000
FY 2014-15 (g)	64	1,629	\$35,104	all	\$6,020	all	\$11,500
FY 2015-16	71	1,625	\$31,397	all	\$2,500	all	\$5,000
FY 2016-17	68	1,396	\$21,232	all	\$2,500	all	\$5,000
FY 2017-18	48	816	\$24,071	all	\$2,500	all	\$5,000
FY 2018-19	61	1,699	\$21,216	all	\$2,500	all	\$5,000

Notes:

- (a) In FY 2005-06 and FY 2006-07 BAWSCA partnered with member agencies to offer 4 landscape classes. However, BAWSCA also helped promote 8 additional classes that were being held by other member agencies (i.e., a total of 12 classes).
- (b) In FY 2007-08, BAWSCA co-sponsored 7 classes and co-promoted 13.
- (c) In FY 2008-09 BAWSCA co-sponsored 10 classes and co-promoted 17.
- (d) In FY 2009-10 BAWSCA co-sponsored 38 classes and co-promoted 3.
- (e) In FY 2010-11 BAWSCA co-sponsored 55 classes and co-promoted 1.
- (f) The \$5,000 per year licensing fee for the GardenSoft software for FY 2010-11 was actually paid for in FY 2008-09 because of the terms of the Agreement.
- (g) In FY 2014-15 Water-Wise Gardening Website expenditures include a licensing fee (\$5,000) and website redesign and enhancement costs.

Table 2-3: BAWSCA Regional Subscription Water Conservation Program Summary – FY 2018-19

Subscription Program		Fiscal Year											
		FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19
Residential Washing Machine Rebates	Number of Agencies	15	16	15	17	18	18	18	15	14	15	N/A	N/A
	Expenditures	\$468,199	\$573,132	\$942,381	\$658,955	\$467,631	\$441,401	\$344,773	\$309,087	\$161,321	\$104,025	\$ -	\$ -
High-Efficiency Toilet Rebates	Number of Agencies	--	13	14	14	14	15	12	14	14	13	15	12
	Expenditures	\$0	\$169,997	\$393,786	\$317,282	\$161,543	\$170,676	\$201,096	\$314,917	\$335,737	\$125,788	\$57,095	\$41,202
Lawn Be Gone! Landscape Rebates	Number of Agencies	--	--	--	9	9	10	12	12	10	10	8	8
	Expenditures	\$0	\$0	\$0	\$6,751	\$17,778	\$8,611	\$11,392	\$141,832	\$177,170	\$64,236	\$36,618	\$67,430
Rain Barrel Rebates	Number of Agencies	--	--	--	--	--	--	--	8	10	9	8	8
	Expenditures	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$34,537	\$46,484	\$12,256	\$12,719	\$10,255
Large Landscape Audit	Number of Agencies	9	11	12	9 (a) (b)	9 (a) (b)	9 (a) (b)	8 (a) (b) (c)	9 (a) (b) (c)	10 (a) (b) (c)	9	9	9
	Expenditures	\$84,425	\$108,382	\$163,879	\$103,948	\$100,789	\$67,377	\$86,816	\$63,381	\$100,992	\$92,663	\$86,977	\$94,900
School Education - EarthCapades Assemblies	Number of Agencies	--	--	--	12	13	12	13	13	13	10	10	11
	Expenditures	\$0	\$0	\$0	\$53,295	\$64,305	\$64,110	\$58,565	\$52,180	\$64,575	\$58,895	\$62,695	\$58,270
School Education - Tuolumne River Trust	Number of Agencies	--	--	--	--	--	--	--	5	6	7	2	0
	Expenditures	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,000	\$3,600	\$1,200	\$800	\$0
School Education - Water Wise Kits	Number of Agencies	14	14	12	11	8	6	8	8	8	8	8	8
	Expenditures	\$126,819	\$111,515	\$104,091	\$121,990	\$112,172	\$70,003	\$87,415	\$90,562	\$99,582	\$99,505	\$92,984	\$78,566
Free Sprinkler Nozzles	Number of Agencies	--	--	--	--	--	--	--	--	4	4	3	N/A
	Expenditures	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,244	\$8,067	\$1,368	\$ -
Home Water Use Reports	Number of Agencies	--	--	--	--	--	--	--	--	3	4	4	4
	Expenditures	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$325,751	\$235,530	\$311,207	\$282,374
WaterSense Fixtures Bulk Purchase Program (d)	Number of Agencies	--	--	--	--	--	--	--	--	--	5	3	4
	Expenditures										\$4,877	\$20,578	\$5,042
Water Loss Management Program	Number of Agencies	--	--	--	--	--	--	--	--	--	--	--	16
	Expenditures	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$139,358

Notes:

- (a) Cal-Water continues to offer the program, but now implements the program independently because it has taken the BAWSCA program state-wide in all of its districts, and is not included herein.
- (b) Hillsborough continues to offer the program, but now implements the program independently for all of its single-family residential customers and is not included herein.
- (c) Mountain View continues to offer the program, but now implements the program through the SCVWD and is not included herein.
- (d) FY 2017-18 expenditures includes purchases by Ecology Action, a non-profit organization installing water-efficient fixtures in disadvantaged communities in the BAWSCA service area.

Table 4-1: High Efficiency Toilet Rebates Summary – FY 2018-19

Fiscal Year	Number of Participating BAWSCA Agencies	Total Rebates Issued	Estimated Annual Water Savings (acre-feet, AF) (a)	BAWSCA Administrative Cost (b)	Program Cost (Rebates Paid to Customers)	Unit Cost of Water Saved (\$/AF) (c)
FY 2008-09	13	1,053	4	\$12,047	\$157,950	\$447
FY 2009-10	14	2,515	11	\$16,536	\$377,250	\$552
FY 2010-11	14	2,005	8	\$16,532	\$300,750	\$541
FY 2011-12	14	1,436	6	\$12,271	\$149,272	\$385
FY 2012-13	15	1,612	7	\$6,299	\$164,377	\$362
FY 2013-14	12	1,848	8	\$9,464	\$191,632	\$368
FY 2014-15	14	2,807	12	\$13,926	\$300,991	\$384
FY 2015-16	14	3,128	13	\$10,180	\$325,557	\$367
FY 2016-17	13	1,451	6	\$7,255	\$118,533	\$373
FY 2017-18	15	891	4	\$4,060	\$53,035	\$219
FY 2018-19	12	492	2	\$4,183	\$37,019	\$286
Totals	--	19,238	81	\$112,753	\$2,176,366	--

Notes:

(a) Estimated water savings based on water use differential between a 3.5 gallon per flush (gpf) toilet and a 1.28 gpf toilet. Assumes 5 flushes per toilet per day per person, 2.64 persons per household, and 2.2 toilets per household (modified from Vickers, Handbook of Water Use and Conservation, 2001). Water savings assumptions are only associated with the level of new activity documented for single year, and do not represent cumulative savings over time. Further, since this calculation is based only on single family, it likely underestimates savings because it does not account for savings at multi-family or

(b) Includes BAWSCA staff hours, database management, materials design and printing and other administrative services.

(c) Assumes a 15-year toilet life and 15 years of resultant water savings. Assumes a discount rate of 3.01% and a cost of water and wastewater of \$1,978 per acre-foot each, which represents the SFPUC FY 17-18 rate including bond surcharges.

Table 4-2: Lawn Be Gone Rebates Summary – FY 2018-19

Fiscal Year	Number of Participating BAWSCA Agencies	Total Rebates Issued	Total Square Feet Converted	Estimated Annual Water Savings (acre-feet, AF) (a)	BAWSCA Administrative Cost (b)	Program Cost (Rebates Paid to Customers) (c)	Unit Cost of Water Saved (\$/AF) (d)
FY 2010-11	9	16	17,079	0.86	\$1,734	\$5,017	--
FY 2011-12	9	16	37,635	2.09	\$3,760	\$14,018	\$434
FY 2012-13	10	16	10,226	0.7	\$2,914	\$5,697	\$628
FY 2013-14	12	17	11,852	0.82	\$2,420	\$8,972	\$709
FY 2014-15	12	100	89,349	6.2	\$10,329	\$131,503	\$1,168
FY 2015-16	10	93	102,461	5.9	\$3,540	\$173,630	\$1,459
FY 2016-17	10	42	40,025	2.3	\$840	\$63,396	\$1,428
FY 2017-18	8	23	23,430	1.3	\$1,380	\$35,238	\$1,370
FY 2018-19	8	28	55,094	3.2	\$1,472	\$65,958	\$1,089
Totals	--	351	387151	23.4	\$28,389	\$503,429	--

Notes:

(a) Estimated water savings based on water use differential between a turf grass (assumed to use 3.5 acre-feet per acre) and either water-efficient plantings (assumed to use 1.0 acre-feet per acre) or permeable hardscape, which is assumed to use no water.

(b) Includes BAWSCA staff hours, database management, materials design and printing and other administrative services.

(c) In FY 2014-15, the cost to agencies was \$1 to \$2 per square foot of turf grass replaced. In FY 2015-16 and FY 2016-17, the cost to agencies was \$1 to \$4 per square foot of turf replaced.

(d) Assumes a 15-year project life and 15 years of resultant water savings. Assumes a discount rate of 3.01% and a cost of water of \$1,956 per acre-foot each, which represents the SFPUC FY 18-19 rate including bond surcharges.

Table 4-3: Rain Barrel Rebates Summary – FY 2018-19

Fiscal Year	Number of Participating BAWSCA Agencies	Rebates Issued by BAWSCA Agencies	Additional Rebates Issued by SMCWPPP (b)	BAWSCA Administrative Cost	Program Cost (Rebates Paid to Customers)
FY 2014-15 (a)	8	331	110	\$6,808	\$27,729
FY 2015-16	10	445	122	\$8,436	\$38,048
FY 2016-17	9	74	37	\$4,562	\$7,694
FY 2017-18	8	69	37	\$5,259	\$7,460
FY 2018-19	8	53	13	\$4,551	\$5,704
Totals	--	972	319	\$29,616	\$86,634

Notes:

(a) Program launched on October 1, 2014

(b) Rebates within San Mateo County, outside the service area of a participating BAWSCA member agency, are funded entirely by the SMCWPPP.

Table 4-4: Large Landscape Audit Summary – FY 2018-19

Program Information	Number of Participating BAWSCA Agencies	Number of Landscaping Sites (f)	Estimated Annual Water Savings (acre-feet, AF) (a)	BAWSCA Administrative Cost (d)	Program Cost	Unit Cost of Saved Water (\$/AF) (e)
FY 2002-03	4	240	N/A	--	\$65,132	N/A
FY 2003-04	5	240	299	--	\$23,802	\$80
FY 2004-05	4	258	212	--	\$29,663	\$140
FY 2005-06	5	258	520	--	\$24,720	\$48
FY 2006-07	6	273	543	--	\$23,362	\$43
FY 2007-08	9	630	602	--	\$84,425	\$63 - 124
FY 2008-09 (b)	11	712	435	--	\$108,382	\$83 - 125
FY 2009-10 (c)	12	958	1,080	\$1,776	\$162,103	\$58
FY 2010-11	9	646	632	\$1,332	\$102,764	\$82
FY 2011-12	9	711	786	\$1,332	\$66,045	\$131
FY 2012-13	9	810	990	\$1,332	\$66,045	\$90
FY 2013-14	8	787	865	\$1,184	\$85,632	\$99
FY 2014-15	9	1248	2,204	\$1,332	\$62,049	\$29
FY 2015-16	9	973	1,432	\$1,184	\$99,808	\$71
FY 2016-17	9	967	923	\$1,184	\$91,479	\$100
FY 2017-18	9	994	949	\$1,184	\$85,793	\$92
FY 2018-19	9	1017	971	\$1,332	\$94,900	\$99
Totals	--	--	13,442	\$13,172	\$1,276,104	--

Notes:

- (a) Water savings estimated on a calendar year basis. Savings reflect the difference between reporting year's water use and pre-program annual water use.
- (b) For FY 2008-09, includes water use for the sites that have been in the program since 2004.
- (c) For FY 2009-10, includes water use for the sites that have been in the program prior to 2009.
- (d) Includes BAWSCA staff hours, materials printing and other administrative services.
- (e) For FY 2007-08 through FY 2012-13, unit cost of saved water from Landscape Program Summary Reports (2008; 2009; 2010; 2011; 2012; 2013).
- (f) Does not include California Water Service sites beginning in FY 2015-16.

Table 4-5: Water Wise School Education Summary – FY 2018-19

Fiscal Year	Number of Participating BAWSCA Agencies	Number of Participants	Estimated Annual Water Savings (gallons per kit) (a) (b)	Estimated Lifetime Savings for Kits Installed (acre-feet, AF) (a) (b)	BAWSCA Administrative Cost (c)	Program Costs (Kit Distribution)	Unit Cost of Saved Water (\$/AF) (b)
FY 2005-06	6	1,554	17,451	499	--	\$51,671	\$103
FY 2006-07	11	2,871	17,451	922	--	\$93,023	\$101
FY 2007-08	14	3,737	17,451	1,201	--	\$126,819	\$106
FY 2008-09	14	3,685	9,785	975	--	\$111,515	\$114
FY 2009-10	12	2,903	6,475	512	--	\$104,091	\$203
FY 2010-11 (d)	8	3,342	4,844	316	\$4,887	\$117,103	\$385
FY 2011-12 (d)	8	3,221	3,892	262	\$3,221	\$108,951	\$427
FY 2012-13 (d)	6	2,144	5,110	165	\$2,144	\$67,859	\$425
FY 2013-14 (d)	8	2,668	4,324	184	\$2,668	\$84,747	\$474
FY 2014-15 (d)	8	2,676	4,965	216	\$2,676	\$87,886	\$420
FY 2015-16 (d)	8	2,452	5,284	228	\$2,452	\$97,130	\$437
FY 2016-17	8	2,519	5,709	261	\$2,519	\$96,986	\$382
FY 2017-18	8	2,315	5,284	228	\$2,315	\$90,669	\$408
FY 2018-19	7	2,037	3,891	136	\$2,037	\$76,529	\$580
Totals	--	38,124	111,917	6,104	\$24,919	\$1,314,978	--

Notes:

(a) For years prior to FY 2008-09, water savings estimated based on an assumed 60 percent installation rate and a 10 year lifetime.

(b) For FY 2008-09 through FY 2013-14, water savings estimated based on actual reported installation rate and a 10 year lifetime. (Resource Action Reports, 2009; 2010; 2011; 2012).

(c) Includes BAWSCA staff hours, materials design and printing and other administrative services.

(d) Starting in 2010 water savings estimates were modified to reflect updated estimates by EPA WaterSense.

Table 4-6: Home Water Use Reports Program FY 2018-19

Fiscal Year	Number of Participating BAWSCA Agencies	Number of Households Enrolled	BAWSCA Administrative Cost (a)	Program Costs	Unit Cost of Saved Water (\$/AF) (b)
FY 2015-16	3	50,350	\$0	\$325,751	\$1,305
FY 2016-17	4	56,300	\$600	\$234,930	\$841
FY 2017-18	4	73,205	\$600	\$311,207	\$857
FY 2018-19	4	73,275	\$600	\$282,374	\$778
Totals	--	--	\$1,200	\$871,888	--

Notes:

(a) BAWSCA administration not charged in first program year. Ongoing cost is \$150 per agency.