



Santa Clara Valley Water District

File No.: 23-0248

Agenda Date: 3/17/2023

Item No.: 5.2.

COMMITTEE AGENDA MEMORANDUM Water Conservation and Demand Management Committee

Government Code § 84308 Applies: Yes No
(If "YES" Complete Attachment A - Gov. Code § 84308)

SUBJECT:

Water Conservation Savings Model and Program Overview.

RECOMMENDATION:

Receive, review, and discuss information on the water conservation savings model and an overview of current water conservation programs.

SUMMARY:

Santa Clara Valley Water District (Valley Water) has provided a robust water conservation program since 1992. In November 2019, the Board approved the 2040 Water Supply Master Plan that updated the long-term conservation targets to 99,000 acre-feet per year (AFY) and 109,000 AFY by 2030 and 2040 (compared to the 1992 baseline), respectively. In October 2021, the Water Conservation and Demand Management Committee (Committee) received Valley Water's updated [Water Conservation Strategic Plan <https://s3.us-west-2.amazonaws.com/assets.valleywater.org/Valley%20Water%20WC%20Strategic%20Plan.pdf>](https://s3.us-west-2.amazonaws.com/assets.valleywater.org/Valley%20Water%20WC%20Strategic%20Plan.pdf) (Strategic Plan) to guide staff on how best to achieve the long-term savings targets.

Valley Water staff tracks progress towards the long-term conservation targets using a custom, Excel-based Water Conservation Savings Model (Savings Model). In July 2022, the Committee received information on how staff use the Savings Model to evaluate water conservation program offerings, analyze program water-saving potential and cost effectiveness, and update annual savings across all programs relative to the long-term savings targets.

The purpose of this memorandum is to review how the Savings Model is used to evaluate water conservation programs in preparation for the annual long-term water conservation savings report to be brought to the committee at a future meeting, and to present an overview of current water conservation programs. Information about current, water conservation programs can be found at [www.watersavings.org <http://www.watersavings.org>](http://www.watersavings.org) and in the Water Conservation Program Flyer (Attachment 2).

Background

Valley Water uses the Savings Model to evaluate the cost effectiveness (\$/acre foot) of water conservation programs, whether to offer certain water conservation programs over others, and progress towards Valley Water's long-term conservation targets. Over time programs have transitioned from focusing on indoor conservation programs like high-efficiency toilet and clothes washer rebates to outdoor conservation programs like the popular Landscape Rebate Program (Attachment 2).

Every year, Staff inputs annual participation totals from the prior fiscal year into the Savings Model to track progress towards the long-term conservation targets. The current drought has increased interest in the conservation programs which will contribute to both short-term and long-term savings. Based on the Savings Model, over 75% of the community's water conservation savings since the program began in 1992 was from the residential sector, and over 85% of the savings to-date has come from indoor sources. After staff began transitioning from plumbing efficiency toward irrigation efficiency beginning in the early 2010s, outdoor savings have represented an increasing share of our savings portfolio and are the most impactful and effective way to yield significant water savings both for short-term drought responses and achieving long-term targets.

Savings Model Inputs and Outputs

The Alliance for Water Efficiency (AWE) is a national 501(c)(3) non-profit organization dedicated to the efficient and sustainable use of water. The AWE advances research, promotes national and state policy to advocate for water-efficient products and programs, and develops tools for water agencies across the United States. Based on the AWE's Water Conservation Tracking Tool, the Savings Model incorporates demographic and policy data with conservation participation savings assumptions and participation rates to produce acre-foot savings per year. Specifically, the Savings Model incorporates local demographic data from the Department of Finance including population, housing, building types, and persons per household. Inflation and real discount rates help convert between one-time and annualized costs—for example, installing a high-efficiency toilet continues to generate water savings for decades after it was paid for.

The Savings Model incorporates quantifiable savings data from pilot program results, regional and statewide best management practices, and research from the EPA WaterSense Program. Then every year, Staff inputs annual participation totals from the prior fiscal year into the Savings Model to track progress towards the long-term conservation targets. The Savings Model outputs gross savings as the sum of passive and active water savings.

Passive savings include savings from plumbing codes, appliance standards, ordinances, and program free riders. For example, the Federal Energy Policy Act of 1992 established the first national standards for toilet and showerhead efficiency; AB 715 (2007), SB 407 (2009), and CALGreen increased plumbing standards further in California relative to federal actions. These policy examples are why in California, the least efficient plumbing fixtures that can be purchased are 1.28 gallons per flush for toilets and 1.8 gallons per minute for showerheads, respectively (the difference between current policy compared to the absence of these policies generates passive savings). As local municipalities pass elements of the Model Water Efficient New Development Ordinance, the Savings Model would count the savings generated as "passive savings".

Active savings are a direct result of water conservation program activity. Every gallon of water saved through converting turf to water-wise plants is counted as active savings; that is, there is no policy to-date that forces constituents to convert turf to water-wise plants. When Valley Water offered toilet rebates, Staff required even greater toilet efficiencies than the plumbing code requires. Toilet rebates produced both active and passive savings. Over time as the plumbing code became more stringent, toilet rebates became less cost-effective since only high-efficiency toilets were available to purchase regardless of Valley Water's toilet rebates. This contributed to Valley Water's ongoing strategy to focus on producing savings from outdoor conservation programs, which was a strategy affirmed by the 2021 Strategic Plan. The current drought has increased interest in the water conservation programs which will contribute to both short-term and long-term savings.

Evaluating Potential Conservation Programs

As new or improved water conservation devices are made available, staff uses the Savings Model to evaluate the cost-effectiveness of offering a new conservation program by analyzing the estimated water savings compared to the cost of offering a rebate or other type of incentive. The output of the Savings Model is a \$/acre-foot (AF) value; this value, when compared to the values of other conservation programs, helps answer whether a program makes sense financially or programmatically to increase water supply reliability. Staff will also review and analyze comparable programs offered by other water agencies throughout the region, state, and Western United States.

The Strategic Plan identified several key strategies to augment Valley Water's water conservation programs. Targeted marketing to expand participation to new customer groups as well as building on current successes of existing marketing strategies will be one of the most cost-effective means of generating additional water savings. For example, further expansion of the Large Landscape Program to more, smaller commercial properties, as well as leveraging outreach channels offered through this program will generate significant savings at only \$85/AF. On average Valley Water's water conservation program cost is about \$600 per acre-foot.

Lastly, educational programs are important to meeting staff and Board priorities but may not generate water savings. The Landscape Maintenance Consultation Program and the Water Waste Program, initiated from this committee's feedback, are important for raising awareness about how to maintain water-efficient landscapes and options to be in compliance with water-waste restrictions, respectively. Even though these examples do not have quantifiable savings data in the model, they do provide multiple benefits that together increase our water supply reliability.

Next Steps

Valley Water's water conservation programs are periodically evaluated for cost-effectiveness by using the Savings Model that provides a cost effectiveness defined as \$/AF value. While there are many creative water saving devices on the market, not all systems translate well into a cost-effective program and the Savings Model has allowed Staff to prioritize those that are most effective. Staff will return in April with an update on the long-term savings total as of FY 2022 and a review of customer satisfaction survey results.

ATTACHMENTS:

File No.: 23-0248

Agenda Date: 3/17/2023
Item No.: 5.2.

Attachment 1: PowerPoint Presentation

Attachment 2: Water Conservation Program Flyer (PDF)

UNCLASSIFIED MANAGER:

Kirsten Struve, 408-630-3138