

January 23, 2024

MEETING NOTICE

WATER CONSERVATION AND DEMAND MANAGEMENT COMMITTEE

Members of the Water Conservation and Demand Management Committee:

Director Nai Hsueh, Committee Chair

Director Rebecca Eisenberg, Committee Vice Chair

Director Barbara F. Keegan

Staff Support of the Water Conservation and Demand Management Committee:

Rick L. Callender, Esq., Chief Executive Officer

Melanie Richardson, Assistant Chief Executive Officer

Aaron Baker, Chief Operating Officer, Water Utility

Rachael Gibson, Chief of External Affairs

J. Carlos Orellana, District Counsel

Joseph Aranda, Assistant District Counsel

Sam Bogale, Deputy Operating Officer, Treated Water Division

Vincent Gin, Deputy Operating Officer, Water Supply Division

Gregory Williams, Deputy Operating Officer, Raw Water Division

Bart Broome, Assistant Officer, Office of Government Relations

Marta Lugo, Deputy Administrative Officer, Office of Government Relations

Kirsten Struve, Assistant Officer, Water Supply Division

Antonio Alfaro, Government Relations Advocate

Vanessa De La Piedra, Groundwater Management Manager

Metra Richert, Water Supply Planning & Conservation Unit Manager

Samantha Greene, Senior Water Resources Specialist

Jing Wu, Senior Water Resources Specialist

Ashley Shannon, Senior Water Conservation Specialist

Karen Adriano, Staff Analyst

The special meeting of the Water Conservation and Demand Management Committee is scheduled to occur on **January 29, 2024 in the Headquarters Building Boardroom located at the Santa Clara Valley Water District, 5700 Almaden Expressway, San Jose, California.**

The meeting agenda and corresponding materials are located on our website:

<https://www.valleywater.org/how-we-operate/committees/board-advisory-committees>

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Santa Clara Valley Water District Water Conservation and Demand Management Committee Meeting

Headquarters Building Boardroom
5700 Almaden Expressway, San Jose, CA 95118

Join Zoom Meeting:
<https://valleywater.zoom.us/s/92597340524>

SPECIAL MEETING AGENDA

**Monday, January 29, 2024
11:00 AM**

District Mission: Provide Silicon Valley safe, clean water for a healthy life, environment and economy.

Water Conservation and Demand
Management Committee
Director Nai Hsueh (District 5,
Committee Chair)
Director Rebecca Eisenberg, (District 7,
Committee Vice Chair)
Director Barbara F. Keegan (District 2)

All public records relating to an item on this agenda, which are not exempt from disclosure pursuant to the California Public Records Act, that are distributed to a majority of the legislative body will be available for public inspection at the Office of the Clerk of the Board at the Santa Clara Valley Water District Headquarters Building, 5700 Almaden Expressway, San Jose, CA 95118, at the same time that the public records are distributed or made available to the legislative body. Santa Clara Valley Water District will make reasonable efforts to accommodate persons with disabilities wishing to attend Board of Directors' meeting. Please advise the Clerk of the Board Office of any special needs by calling (408) 265-2600.

Vincent Gin
Kirsten Struve
(Staff Liaisons)

Nicole Merritt
Assistant Deputy Clerk II
Office/Clerk of the Board
(408) 630 - 3262
nmerritt@valleywater.org

Note: The finalized Board Agenda, exception items and supplemental items will be posted prior to the meeting in accordance with the Brown Act.

Santa Clara Valley Water District
Water Conservation and Demand Management Committee
SPECIAL MEETING
AGENDA

Monday, January 29, 2024

11:00 AM

Headquarters Building Boardroom
5700 Almaden Expressway,
San Jose, CA 95118
Join Zoom Meeting
<https://valleywater.zoom.us/j/92597340524>

IMPORTANT NOTICES AND PARTICIPATION INSTRUCTIONS

Santa Clara Valley Water District (Valley Water) Board of Directors/Board Committee meetings are held as a “hybrid” meetings, conducted in-person as well as by telecommunication, and is compliant with the provisions of the Ralph M. Brown Act.

To maximize public safety while still maintaining transparency and public access, members of the public have an option to participate by teleconference/video conference or attend in-person. To observe and participate in the meeting by teleconference/video conference, please see the meeting link located at the top of the agenda. If attending in-person, you are required to comply with Ordinance 22-03 - AN ORDINANCE OF THE SANTA CLARA VALLEY WATER DISTRICT SPECIFYING RULES OF DECORUM FOR PARTICIPATION IN BOARD AND COMMITTEE MEETINGS located at <https://s3.us-west-2.amazonaws.com/valleywater.org.if-us-west-2/f2-live/s3fs-public/Ord.pdf>

In accordance with the requirements of Gov. Code Section 54954.3(a), members of the public wishing to address the Board/Committee during public comment or on any item listed on the agenda, may do so by filling out a Speaker Card and submitting it to the Clerk or using the Raise Hand tool located in the Zoom meeting application to identify yourself in order to speak, at the time the item is called. Speakers will be acknowledged by the Board Chair in the order requests are received and granted speaking access to address the Board.

- Members of the Public may test their connection to Zoom Meetings at: <https://zoom.us/test>
- Members of the Public are encouraged to review our overview on joining Valley Water Board Meetings at: <https://www.youtube.com/watch?v=TojJpYCxXm0>

Valley Water, in complying with the Americans with Disabilities Act (ADA), requests individuals who require special accommodations to access and/or participate in Valley Water Board of Directors/Board Committee meetings to please contact the Clerk of the Board’s office at (408) 630-2711, at least 3 business days before the scheduled meeting to ensure that Valley Water may assist you.

This agenda has been prepared as required by the applicable laws of the State of California, including but not limited to, Government Code Sections 54950 et. seq. and has not

been prepared with a view to informing an investment decision in any of Valley Water's bonds, notes or other obligations. Any projections, plans or other forward-looking statements included in the information in this agenda are subject to a variety of uncertainties that could cause any actual plans or results to differ materially from any such statement. The information herein is not intended to be used by investors or potential investors in considering the purchase or sale of Valley Water's bonds, notes or other obligations and investors and potential investors should rely only on information filed by Valley Water on the Municipal Securities Rulemaking Board's Electronic Municipal Market Access System for municipal securities disclosures and Valley Water's Investor Relations website, maintained on the World Wide Web at <https://emma.msrb.org/> and <https://www.valleywater.org/how-we-operate/financebudget/investor-relations>, respectively.

Under the Brown Act, members of the public are not required to provide identifying information in order to attend public meetings. Through the link below, the Zoom webinar program requests entry of a name and email address, and Valley Water is unable to modify this requirement. Members of the public not wishing to provide such identifying information are encouraged to enter "Anonymous" or some other reference under name and to enter a fictional email address (e.g., attendee@valleywater.org) in lieu of their actual address. Inputting such values will not impact your ability to access the meeting through Zoom.

Join Zoom Meeting:

<https://valleywater.zoom.us/j/92597340524>

Meeting ID: 925 9734 0524

Join by Phone:

1 (669) 900-9128, 92597340524#

1. CALL TO ORDER:

1.1. Roll Call.

2. TIME OPEN FOR PUBLIC COMMENT ON ANY ITEM NOT ON THE AGENDA.

Notice to the public: Members of the public who wish to address the Board/Committee on any item not listed on the agenda may do so by filling out a Speaker Card and submitting it to the Clerk or using the "Raise Hand" tool located in the Zoom meeting application to identify yourself to speak. Speakers will be acknowledged by the Board/Committee Chair in the order requests are received and granted speaking access to address the Board/Committee. Speakers' comments should be limited to three minutes or as set by the Chair. The law does not permit Board/Committee action on, or extended discussion of, any item not on the agenda except under special circumstances. If Board/Committee action is requested, the matter may be placed on a future agenda. All comments that require a response will be referred to staff for a reply in writing. The Board/Committee may take action on any item of business appearing on the posted agenda.

3. APPROVAL OF MINUTES:

- 3.1. Approval of Minutes. [24-0046](#)

Recommendation: Approve the December 11, 2023, Meeting Minutes.

Manager: Candice Kwok-Smith, 408-630-3193

Attachments: [Attachment 1: 12112023 WCaDMC DRAFT Mins](#)

Est. Staff Time: 5 Minutes

4. REGULAR AGENDA:

- 4.1. Review Potential Water Conservation Targets for Inclusion in the 2050 Water Supply Master Plan; and Recommend to the Valley Water Board the 126,000 Acre Feet per Year (Option B) Water Conservation Target by 2050 for Inclusion in the Water Supply Master Plan 2050. [24-0153](#)

Recommendation: Review potential water conservation targets for inclusion in the 2050 Water Supply Master Plan; and recommend to the Valley Water Board the 126,000 acre feet per year (Option B) water conservation target by 2050 for inclusion in the Water Supply Master Plan 2050.

Manager: Kirsten Struve, 408-630-3138

Attachments: [Attachment 1: PowerPoint](#)
[Attachment 2: 2050 Master Plan Potential Savings Target Memo.](#)
[Attachment 3: 2050 Mstr Pln. Conserv. Measure Dtls. & Portfolios](#)
[Attachment 4: Link to 2021 Water Conservation Strategic Plan](#)

Est. Staff Time: 15 Minutes

- 4.2. Review and Approve the Proposed Water Conservation and Demand Management Committee (WCaDMC) Work Plan, the Outcomes of Board Action of Committee Requests; and the Committee's Next Meeting Agenda. [24-0047](#)

Recommendation: Review and Approve the proposed Committee work plan to guide the committee's discussions regarding policy alternatives and implications for Board deliberation.

Manager: Candice Kwok-Smith, 408-630-3193

Attachments: [Attachment 1: 2023 WCaDMC Work Plan](#)
[Attachment 2: 2024 Proposed WCaDMC Work Plan](#)

Est. Staff Time: 5 Minutes

5. CLERK REVIEW AND CLARIFICATION OF COMMITTEE REQUESTS.

This is an opportunity for the Clerk to review and obtain clarification on any formally moved, seconded, and approved requests and recommendations made by the Committee during the meeting.

6. ADJOURN:

- 6.1. Adjourn to Regular Meeting at 11:00 a.m. on February 26, 2024. (To be rescheduled.)



Santa Clara Valley Water District

File No.: 24-0046

Agenda Date: 1/29/2024

Item No.: 3.1.

COMMITTEE AGENDA MEMORANDUM **Water Conservation and Demand Management Committee**

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

SUBJECT:

Approval of Minutes.

RECOMMENDATION:

Approve the December 11, 2023, Meeting Minutes.

SUMMARY:

A summary of Committee discussions, and details of all actions taken by the Committee, during all open and public Committee meetings, is transcribed and submitted for review and approval.

Upon Committee approval, minutes transcripts are finalized and entered into the District's historical records archives and serve as historical records of the Committee's meetings.

ENVIRONMENTAL JUSTICE IMPACT:

There are no environmental Justice impacts associated with this item.

ATTACHMENTS:

Attachment 1: 12112023 WCaDMC Draft Meeting Mins.

UNCLASSIFIED MANAGER:

Candice Kwok-Smith, 408-630-3193

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WATER CONSERVATION AND DEMAND MANAGEMENT COMMITTEE MEETING

DRAFT MINUTES

MONDAY, DECEMBER 11, 2023

A regular meeting of the Water Conservation and Demand Management Committee was held on December 11, 2023, at Santa Clara Valley Water District, Headquarters Building Boardroom, 5700 Almaden Expressway, in San Jose, California.

1. CALL TO ORDER

Committee Chair Director Nai Hsueh called the meeting to order at 11:02 a.m.

1.1. ROLL CALL

Committee Board Members in attendance were: Committee Member Director Barbara F. Keegan (District 2), Committee Chair, Director Nai Hsueh (District 5), establishing a quorum, and Committee Vice Chair Director Rebecca Eisenberg (District 7-arrived at 11:08 a.m.),

Valley Water Staff in attendance were: Antonio Alfaro, Joseph Aranda, Aaron Baker, Sam Bogale, Glenna Brambill, Theresa Chinte, Vanessa De La Piedra, Adelina Del Real, Philip Dolan, Rachael Gibson, Samantha Greene, Heather Hamp, Linh Hoang, Matt Keller, Candice Kwok-Smith, Emelia Lamas, Dave Leon, Jessica Lovering, Marta Lugo, Becky Manchester, Brian Mendenhall, Carlos Orellana, Metra Richert, Don Rocha, Michelle San Miguel, Ashley Shannon, Kirsten Struve, Cheryl Togami, and Jing Wu.

Public in attendance were: Bill Baron and Brian Boyer (Cinnabar Hills Golf Club), Erica Kudyba, Katja Irvin (Sierra Club-Loma Prieta Chapter), Julia Nussbaum, and Julia C. Schmitt.

2. TIME OPEN FOR PUBLIC COMMENT ON ANY ITEM NOT ON AGENDA

There was no one present who wished to speak.

3. APPROVAL OF MINUTES

3.1 APPROVAL OF MINUTES OCTOBER 23, 2023

Committee Chair Director Nai Hsueh reviewed the materials as outlined in the agenda items.

It was moved by Committee Member Director Barbara F. Keegan, seconded by Committee Chair Director Nai Hsueh, and unanimously approved, the minutes of the October 23, 2023, Water Conservation and Demand Management Committee regular meeting as presented.

4. REGULAR AGENDA ITEMS

4.1 WATER CONSERVATION COLLABORATION WITH WATER RETAILERS

Ashley Shannon reviewed the materials as outlined in the agenda item and was available to answer questions as needed.

The Water Conservation and Demand Management Committee discussed the following: AMI meters, funds, San Jose Water Company's pilot program, possible financial incentives for water retailers, cost-share agreements, water usage and water conservation information/data and possible partnerships.

Metra Richert, Kirsten Struve, and Aaron Baker were available to answer questions.

The Water Conservation and Demand Management Committee took no formal action. Staff will come back to the Committee with further information.

4.2 POTENTIAL WATER CONSERVATION TARGETS FOR INCLUSION IN THE 2050 WATER SUPPLY MASTER PLAN

Metra Richert reviewed the materials as outlined in the agenda item and was available to answer questions as needed.

The Water Conservation and Demand Management Committee discussed the following: dying lawns, Landscape Rebate Program, Option C, outdoor water usage, clear messaging, looking at big water users (corporations), having correct numbers, potential/passive savings, CII ban, update with state's new regulations, aggressive goal settings, targeting big businesses with outreach, research how agencies deal with fines/penalties, enforcement, other regulations, and how to reach our conservation goals.

Metra Richert, Kirsten Struve, and Aaron Baker were available to answer questions. Was available to answer questions

Public Comment:

Katja Irvin (Sierra Club-Loma Prieta Chapter) spoke on Option C, additional 25% reduction in outdoor water use, that is hard to understand because it's not compared to the baseline. What was the reduction in the 2040 master plan (how many TAF)? It might be helpful to provide that information. As far as conservation strategies, it could be productive to audit water usage for the County's largest water users (Valley Medical, the Jail, schools), especially facilities that are outdated.

The Water Conservation and Demand Management Committee took no formal action. Staff will come back to the Committee with further information.

4.3 UPDATE ON STATE REGULATIONS RELATED TO WATER CONSERVATION

Philip Dolan reviewed the materials as outlined in the agenda item and was available to answer questions as needed.

The Water Conservation and Demand Management Committee discussed the following: Updates on AB1572 and SB676 allows enforcement incentives, following proper protocols already set forth, and have staff look at what other agencies are doing.

Kirsten Struve was available to answer questions.

The Water Conservation and Demand Management Committee took no formal action.

4.4 REVIEW AND APPROVED PROPOSED WATER CONSERVATION AND DEMAND MANAGEMENT COMMITTEE WORK PLAN, THE OUTCOMES OF BOARD ACTION OF COMMITTEE REQUESTS; AND THE COMMITTEE'S NEXT MEETING AGENDA

Committee Chair Director Nai Hsueh reviewed the materials as outlined in the agenda items. Director Hsueh also thanked staff for a great year of meetings and accomplishing tasks in the work plan.

The next meeting will be January 29, 2024, 11:00 a.m., to discuss the new year's items.

The Water Conservation and Demand Management Committee took no action.

5. CLERK REVIEW AND CLARIFICATION OF COMMITTEE'S REQUESTS

Glenna Brambill stated there were no formal action items for Board consideration.

6. ADJOURNMENT

Committee Chair Director Nai Hsueh adjourned at 12:49 p.m. to the special meeting Scheduled for January 29, 2024.

Glenna Brambill
Board Committee Liaison
Office of the Clerk of the Board

Approved:

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Santa Clara Valley Water District

File No.: 24-0153

Agenda Date: 1/29/2024

Item No.: 4.1.

COMMITTEE AGENDA MEMORANDUM **Water Conservation and Demand Management Committee**

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

SUBJECT:

Review Potential Water Conservation Targets for Inclusion in the 2050 Water Supply Master Plan; and Recommend to the Valley Water Board the 126,000 Acre Feet per Year (Option B) Water Conservation Target by 2050 for Inclusion in the Water Supply Master Plan 2050.

RECOMMENDATION:

Review potential water conservation targets for inclusion in the 2050 Water Supply Master Plan; and recommend to the Valley Water Board the 126,000 acre feet per year (Option B) water conservation target by 2050 for inclusion in the Water Supply Master Plan 2050.

SUMMARY:

Valley Water is the primary water resources agency in Santa Clara County, California, and serves about 2 million residents, primarily through 13 water retailers. Valley Water has been providing water conservation programs to its retail agencies' customers since 1992 and offers over 20 programs to reach all customer sectors to achieve the Valley Water Board of Directors (Board) long-term 2030 and 2040 water conservation targets.

Valley Water is currently developing its Water Supply Master Plan 2050 (Master Plan) and seeks to identify conservation targets for inclusion in the Master Plan. The potential conservation targets provide options to maintain or achieve additional savings beyond Valley Water's currently planned water conservation activities (i.e., the activities and anticipated savings through 2040 as identified in Valley Water's 2021 Water Conservation Strategic Plan [2021 Strategic Plan]).

Three (3) potential 2050 Conservation Targets (2050 Potential Targets) and the menu of conservation programs being considered were presented at the December 2023 Water Conservation and Demand Management Committee meeting and are summarized below. Modeling was completed to assess the program implementation rates that would be required to achieve each 2050 Potential Target. This memorandum provides an overview of how the portfolios were constructed, the cost-effectiveness of achieving the portfolios, the associated staffing resources, as well as staff's recommendation for the

Water Conservation and Demand Management Committee's (Committee) consideration.

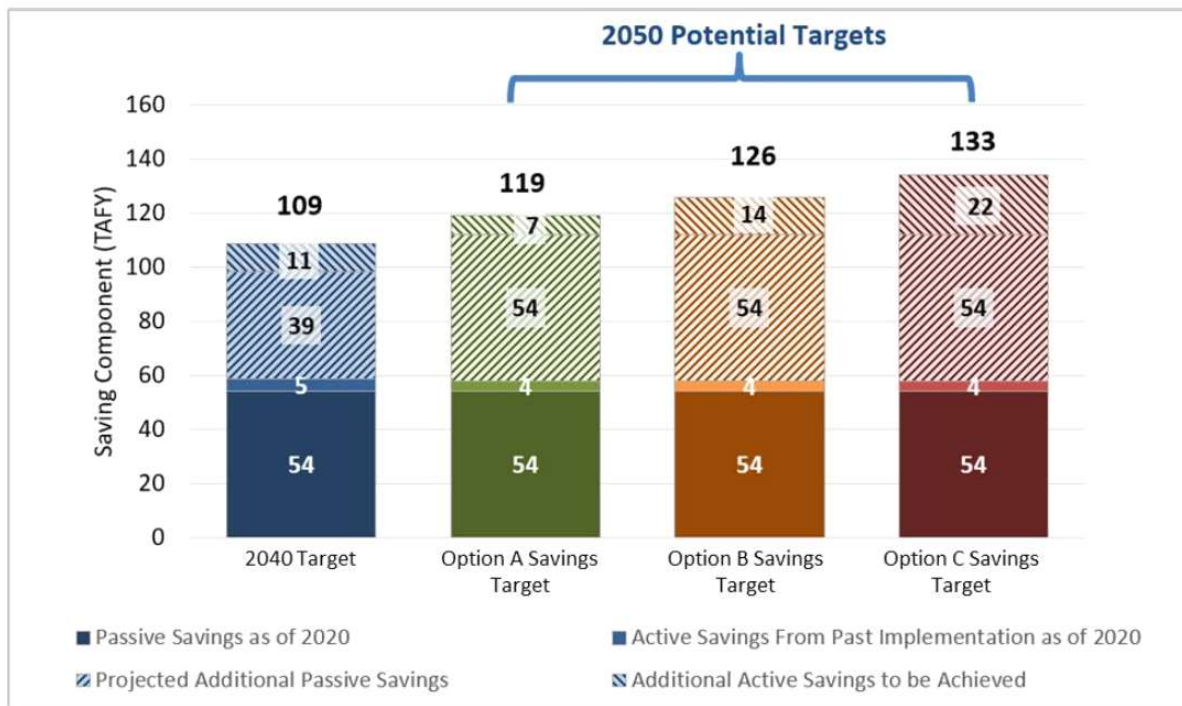
Potential Conservation Savings Targets

The 2050 Potential Targets would be achieved by leaning into Valley Water's existing program while still providing flexibility to enhance existing and add new programs. As discussed at the December Committee meeting, three (3) potential 2050 Targets have been identified and are described below:

1. **Option A Savings Target** - This target assumes future conservation savings through 2050 at recent average rates of implementation that are consistent with the water savings projected to be achieved from the implementation of Valley Water's existing mix of conservation programs by 2040 (from the 2021 Strategic Plan) while accounting for a reduced future active conservation savings potential due to demand hardening. This represents maintaining an active savings rate of seven (7) thousand-acre feet per year (TAFY) (i.e., median implementation rate for 2018 to 2020).
2. **Option B Savings Target** - This target assumes future conservation savings through 2050 at recent drought rates of implementation that are consistent with the water savings projected to be achieved through the implementation of the Broad Program Mix portfolio by 2040 (from the 2021 Strategic Plan) while accounting for a reduced future active conservation savings potential due to demand hardening. This represents maintaining an active savings rate of 14 TAFY (i.e., drought implementation rates).
3. **Option C Savings Target** - This target assumes future conservation savings to achieve a goal of an additional 25% reduction in outdoor water use within Valley Water's service area by 2050 compared to estimated outdoor water use in 2020, which includes water savings achieved through implementation of Valley Water's existing programs.

Figure 1 summarizes the: (1) passive savings achieved as of 2020 within the Valley Water service area, (2) the active savings from past implementation of water conservation programs as of 2020, (3) projected additional passive savings estimated to occur in the future, and (4) the additional active savings to be achieved from program implementation that would be required to achieve 2050 Potential Targets.

Figure 1. Potential 2050 Conservation Savings Targets - Active and Passive Savings



Conservation Measures

As discussed above, to leverage the past and current investments in the water conservation program, the 2050 Targets aim to lean into Valley Water's existing programs while still providing flexibility to enhance existing and add new programs. A preliminary list of 15 conservation measures was developed, and ten (10) conservation measures (listed below) were selected for further analysis in developing the three Conservation Portfolios (e.g., one for each of the 2050 Targets) each with a different combination of conservation measures.

1. Large Landscape Water Budget and Large Landscape Program
2. Large Landscape Irrigation Controller
3. Flow Sensor with Automatic Shutoffs/Dedicated Irrigation Meter
4. Water Efficient Technologies (WET)
5. Advance Metering Infrastructure (AMI) Leak Alert & Home Water Report
6. Residential Irrigation Controller for Single Family Home (SFH)
7. Turf Replacement Rebate
8. Submetering (MFH & Accessory Dwelling Unit [ADU])
9. Leak Assistance Program
10. Whole House Graywater/Reuse

Potential Conservation Portfolios

Three (3) portfolios were developed to meet each of the 2050 Potential Targets, and they build upon Valley Water's planned water conservation activities through 2040 as detailed in the 2021 Strategic Plan (i.e., the "Business-as-Usual without Model Water Efficiency New Development Ordinance

[MWENDO]" scenario).

Valley Water's Conservation Tracking Model was used to assess the implementation rates that would be required from 2041 through 2050 for the ten (10) selected conservation measures to achieve each 2050 Potential Target. The average annual implementation rates for the selected conservation measures to achieve each 2050 Potential Target, compared to the "Business-as-Usual without MWENDO" scenario in the 2021 Strategic Plan, are shown in Table 1.

Based on this analysis, Option A would require scaling the annual implementation rates for the eight selected existing measures by 86% from 2041 through 2050 (relative to implementation rates through 2040); Option B would require scaling the annual implementation rates for the eight existing measures by 192% and adding the Leak Assistance Program; and Option C would require scaling the annual implementation rates for the eight existing measures by 290% and adding both the Leak Assistance Program and the Whole House Graywater Reuse Program.

Table 1. Average Annual Implementation Levels

Conservation Measure	Sector	Unit	2021 Strategic Plan "Business-As-Usual without MWENDO" Scenario Annual Participation (through 2040)	Participation (2041 – 2050)		
				Option A	Option B	Option C
Large Landscape Water Budgets and Large Landscape Survey	IRR	Survey/Site	2,647 (a)	86% of Business-as-Usual without MWENDO Annual Participation	192% of Business-as-Usual without MWENDO Annual Participation	290% of Business-as-Usual without MWENDO Annual Participation
Large Landscape Irrigation Controller	IRR	Controller	34			
Flow Sensor with Automatic Shutoffs	IRR	Meter	36			
Water Efficient Technologies (WET)	CII	CCF	10,446			
AMI Leak Alert & Home Water Report	SFR	Home	600			
Residential Irrigation Controller, SFR	IRR	Controller	661			
Turf Replacement Rebate	IRR	sq ft	384,854			
Submetering (MFR and ADU) (b)	CII	Meter	236			
Whole House Graywater/Reuse	SFR	Home	0	0	0	500
Leak Assistance	SFR	Home	0	0	500	500

Abbreviations:

ADU = additional dwelling unit

MFR = Multi-Family Residential

AMI = Advanced Metering Infrastructure

SFR = Single-Family Residential

CCF = one hundred cubic feet

sq ft = square foot

CII = Commercial, Industrial, and Institutional

WET = Water Efficient Technologies

IRR = irrigation

MWENDO = Model Water Efficient New Development Ordinance

Notes:

(a) Since the 2021 Strategic Plan, the total number of participants has increased to 3,879 sites as of the end of fiscal year 2023. Valley Water anticipates the number of participants will increase in the next two fiscal years to support California's Framework for the Making Conservation a California Way of Life regulation. However, for the purposes of this analysis, the participation was assumed consistent with the 2021 Strategy Plan.

(b) Option A assumes that Valley Water will continue offering the Submetering (MFR and ADU) conservation measure through 2040 but sunset the program after 2040 as it is not needed to achieve the Option A Target. Option B and Option C assume that Valley Water will continue offering the Submetering (MFR and ADU) through 2050 as it provides additional savings needed to achieve the higher savings thresholds.

Successful implementation of the conservation portfolios requires dedicated staff and resources to, among other things, provide program administration, market the conservation programs, conduct stakeholder engagement, and monitor program implementation. The 2021 Strategic Plan identified the water conservation team needs to grow to ten (10) full-time (FT) staff to achieve the Board's 2030

and 2040 long-term water conservation goals. It is assumed that Option A could be implemented with the ten (10) FT staff members. However, implementation of Option B and Option C may not be feasible without additional staff and resources. For Options B and C, staffing assumptions were scaled up consistent with measure implementation rates (e.g., 192% of “Business-as-Usual without MWENDO” for Option B and 290% of “Business-as-Usual without MWENDO” for Option C). As shown in Table 2, Valley Water would need to almost double staff levels to implement Option B and almost triple staff levels to implement Option C.

Table 2. Average Annual Implementation Units and Staff Levels

Conservation Measure	Sector	Unit	Historical Average Participation (2011-2020) (a)	Participation (2041 – 2050)		
				Option A	Option B	Option C
Large Landscape Water Budgets and Large Landscape Survey	IRR	Survey / Site	1,253	2,288 (b)	5,085	7,674
Large Landscape Irrigation Controller	IRR	Controller	96	29	65	99
Flow Sensor with Automatic Shutoffs	IRR	Meter	34	31	69	104
Water Efficient Technologies (WET)	CII	CCF	6,707	9,031	20,067	30,286
AMI Leak Alert & Home Water Report	SFR	Home	500	600	96,300	145,344
Residential Irrigation Controller, SFR	IRR	Controller	469	571	1,270	1,916
Turf Replacement Rebate	IRR	sq ft	1,195,272	332,702	739,276	1,115,777
Submetering (MFR and ADU)	CII	Meter	250	0 (c)	452	683
Whole House Graywater/Reuse	SFR	Home	0	0	0	500
Leak Assistance	SFR	Home	0	0	500	500
Staffing Levels			-	10	19	29
Abbreviations:						
ADU = accessory dwelling unit		MFR = Multi-Family Residential				
AMI = Advanced Metering Infrastructure		SFR = Single-Family Residential				
CCF = one hundred cubic feet		sq ft = square foot				
CII = Commercial, Industrial, and Institutional		WET = Water Efficient Technologies				
IRR = irrigation						
Notes:						
(a) Average participation includes participation during the historic 2014 – 2016 drought.						
(b) Since the 2021 Strategic Plan, the total number of participants has increased to 3,879 sites as of the end of fiscal year 2023. Valley Water anticipates the number of participants will increase in the next two fiscal years to support California’s Framework for the Making Conservation a California Way of Life regulation. However, for the purposes of this analysis, the participation was assumed consistent with the 2021 Strategic Plan.						
(c) Average annual participation in the Submetering (MFR and ADU) conservation measure for Option A is 0 because no participation is required to achieve the Option A Target.						

As shown in Table 2, implementation levels of existing measures for Option B and Option C will need to be scaled significantly to achieve the level of savings for the corresponding 2050 Targets. Given the implementation levels for Option B and Option C are higher than the current planned levels (per 2021 Strategic Plan), it is anticipated that Valley Water will have to increase the incentive program benefits (e.g., rebate amounts or Valley Water cost share amounts) to drive increased participation. In the Conservation Tracking Model, the Valley Water unit costs for measures under Option B and

Option C have been scaled by 192% and 290%, respectively, consistent with the increased participation levels required to achieve the 2050 Targets (see Table 3). The resultant conservation measure unit costs for the ten selected measures under each conservation portfolio are shown in Table 3.

Table 3. Incentive Program Unit Costs

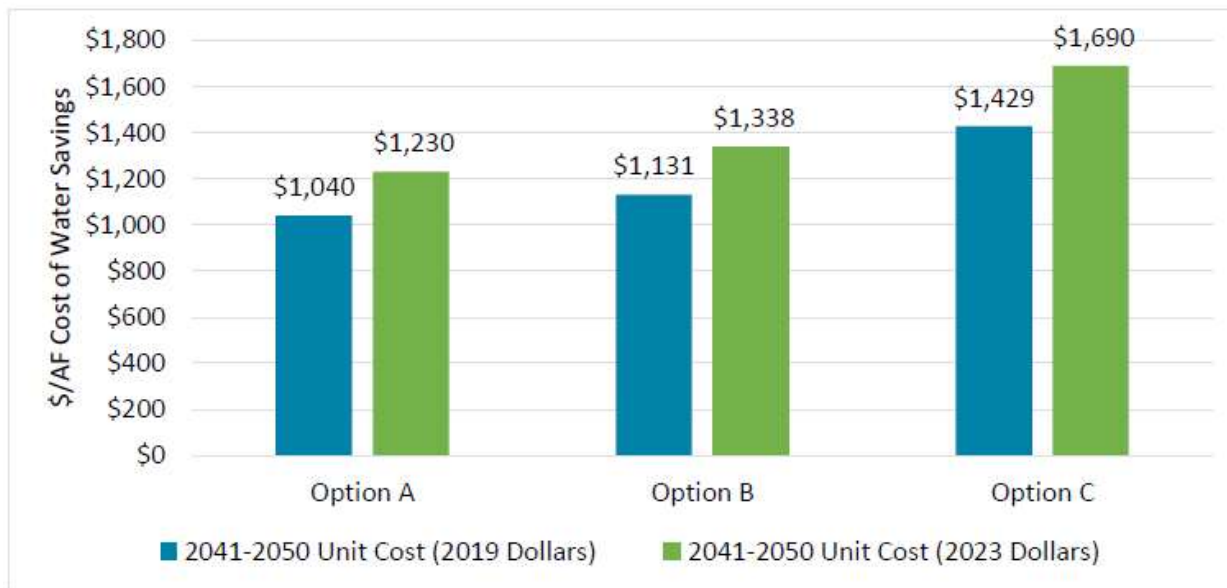
Conservation Measure	Valley Water Costs for (\$/unit)		
	Option A	Option B (a)	Option C (a)
Large Landscape Water Budgets and Large Landscape Survey	\$110	\$212	\$319
Large Landscape Irrigation Controller	\$764	\$1,468	\$2,215
Flow Sensor with Automatic Shutoffs	\$722	\$1,387	\$2,093
Water Efficient Technologies (WET)	\$3	\$5	\$8
AMI Leak Alert & Home Water Report	\$5	\$7	\$9
Residential Irrigation Controller, SFR	\$233	\$448	\$676
Turf Replacement Rebate	\$2	\$3	\$5
Submetering (MFR and ADU)	\$150	\$288	\$435
Whole House Graywater/Reuse	\$5,000	\$5,000	\$5,000
Leak Assistance	\$257	\$257	\$257
Abbreviations:			
ADU = accessory dwelling unit	SFR = Single-Family Residential		
AMI = Advanced Metering Infrastructure	WET = Water Efficient Technologies		
MFR = Multi-Family Residential			
Notes:			
(a) Unit costs are scaled to 192% of “Business-as-Usual without MWENDO” scenario unit costs for Option B and 290% of “Business-as-Usual without MWENDO” scenario unit costs for Option C, consistent with participation level multiplier factors (see Table 1).			

Results

The Conservation Tracking Model was used to determine the cost to achieve each 2050 Potential Target through the implementation of the associated conservation measures in each conservation portfolio. The cost per acre-foot (AF) of savings for each conservation portfolio is a function of the assumed annual savings per unit, useful life, implementation rates, and Valley Water costs for implementation. The cost per AF of water savings for each 2050 Potential Target is provided in Figure 2. The cost per unit of water savings from 2041 through 2050 in 2023 dollars is approximately \$1,230

for Option A, \$1,338 for Option B, and \$1,690 for Option C.

Figure 2. Cost to Valley Water to Achieve 2050 Potential Targets



As previously described, the incentive program unit costs for conservation measures under Option B and Option C were scaled to achieve unprecedented participation rates. Furthermore, the higher savings targets would require the implementation of more expensive conservation measures, such as the Whole House Graywater/Reuse, due to more easily attainable and affordable successes already being implemented. As a result, the cost to achieve each additional unit of water savings is progressively more expensive. The cost of water savings, per AF, is approximately 9% higher for Option B and approximately 37% higher for Option C, compared to Option A.

Staff Recommendation and Next Steps

The Master Plan analysis to date has demonstrated that water conservation alone will not solve the long-term water supply reliability needs of Valley Water. Options B and C are ambitious, requiring scaling implementation rates by approximately 200% and 300% with commensurate staffing and funding resource increases. Furthermore, the analysis demonstrated that the higher savings targets require the implementation of more expensive and less cost-effective conservation measures, as a result, the cost to achieve each additional unit of water savings is progressively more expensive.

For these reasons, staff recommends the Committee recommend Option B as the 2050 Water Conservation Target to the Board for adoption.

The long-term water conservation targets (i.e., 2030, 2040, and 2050) are monitored annually by the Committee and the Board as part of the long-term water conservation goals progress update and the Master Plan Monitoring and Assessment Plan (MAP) update. Additionally, the Master Plan is updated every five (5) years allowing the Committee and Board an opportunity to modify the goals as new

technologies, laws, regulations, and trends become available or enacted.

ENVIRONMENTAL JUSTICE AND EQUITY IMPACT:

This action is not subject to Environmental Justice analysis because it is unlikely to result in adverse impacts. However, Water Conservation offers a range of environmental justice benefits by promoting equitable access to clean water, reducing pollution, protecting ecosystems, mitigating climate change, saving costs for vulnerable communities, enhancing drought resilience, and empowering residence with knowledge and skills for sustainable water use. Valley Water provides such water conservation information in multiple language and via various outreach techniques to reach all members of our community. Valley Water acknowledges that during drought, disadvantaged communities may be disproportionately impacted. To address these impacts, Valley Water promotes access to equitable and affordable water supplies (Water Supply Goal 2.6). Valley Water offers specific programs, such as the Lawn Busters program to provide water-efficient landscapes to low-income, elderly, disabled or veteran homeowners and schools with disadvantaged communities.

ATTACHMENTS:

Attachment 1: PowerPoint

Attachment 2: 2050 Master Plan Potential Savings Target Memo.

Attachment 3: 2050 Mstr. Pln. Conserv. Measure Dtls. & Portfolios

Attachment 4: Link to 2021 Water Conservation Strategic Plan

UNCLASSIFIED MANAGER:

Kirsten Struve, 408-630-3138



Valley Water

Clean Water • Healthy Environment • Flood Protection



Potential Water Conservation Targets for Inclusion in 2050 Water Supply Master Plan

Water Conservation and Demand Management Committee, January 29, 2024
Presented by: **Metra Richert**, Water Supply Planning & Conservation Manager

Water Supply Master Plan Background

Guiding document for long-term water supply investments

Major update every five years

Current Targets of 99 TAFY by 2030 and 110 TAFY by 2040 guided by 2021 Strategic Plan

Develop 2050 Conservation Targets for inclusion in Water Supply Master Plan

Potential Savings Targets

Option A: assumes recent average rates of implementation, achieving 7 TAFY by 2050.

Option B: assumes recent drought rates of implementation, achieving 14 TAFY by 2050.

Option C: assumes to achieve an additional 25% reduction in outdoor water use, achieving 22 TAFY by 2050.

Potential Savings Targets



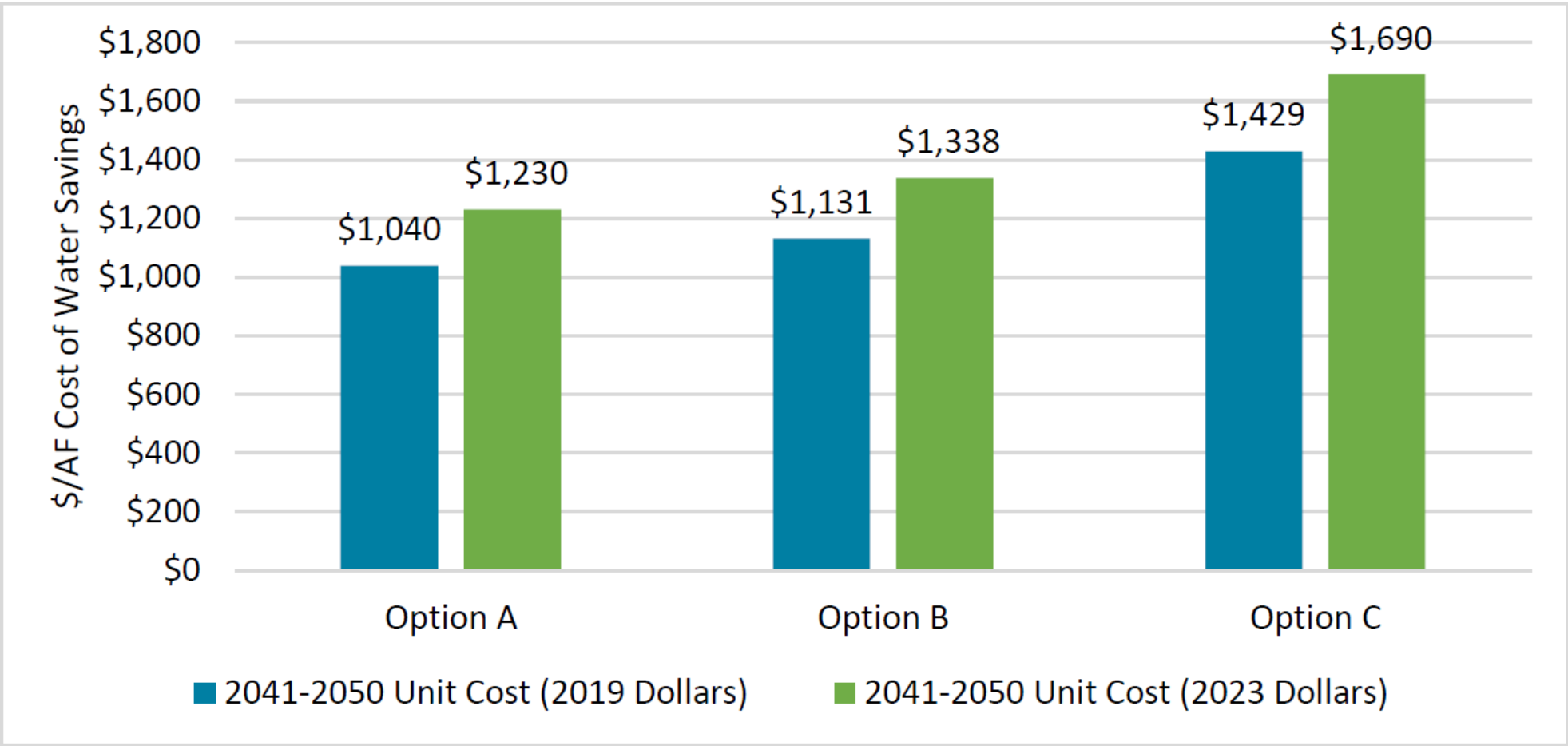
Conservation Measures

1. Large Landscape Water Budgets and Large Landscape Survey
2. Large Landscape Irrigation Controller
3. Flow Sensor with Automatic Shutoffs
4. Water Efficient Technologies (WET)
5. AMI Leak Alert & Home Water Report
6. Residential Irrigation Controller for SFH
7. Turf Replacement Rebate
8. Submetering (MFH & ADU)
9. Whole House Graywater/Reuse
10. Leak Assistance Program

Implementation and Staffing Levels

Conservation Measure	Sector	Unit	Participation (2041 – 2050)		
			Option A	Option B	Option C
Large Landscape Water Budgets and Large Landscape Survey	IRR	Survey / Site	86% of Business-as-Usual without MWENDO Annual Participation	192% of Business-as-Usual without MWENDO Annual Participation	290% of Business-as-Usual without MWENDO Annual Participation
Large Landscape Irrigation Controller	IRR	Controller			
Flow Sensor with Automatic Shutoffs	IRR	Meter			
Water Efficient Technologies (WET)	CII	CCF			
AMI Leak Alert & Home Water Report	SFR	Home			
Residential Irrigation Controller, Single Family Resident	IRR	Controller			
Turf Replacement Rebate	IRR	sq ft			
Submetering (MFR and ADU) (a)	CII	Meter	0	0	500
Whole House Graywater/Reuse	SFR	Home			
Leak Assistance	SFR	Home			
Staffing Levels =			10	19	29

Unit Cost of 2050 Potential Targets



Next Steps

Bring the committee's recommendation to the board for approval

Once approved by the Board, update the Master Plan modeling analysis if needed

Committee Recommendation

- A. Recommend to Valley Water Board 126,000 Acre Feet per Year (Option B) water conservation target by 2050 for inclusion in the Water Supply Master Plan 2050.

QUESTIONS





Valley Water

Clean Water • Healthy Environment • Flood Protection

Final - 6 November 2023

MEMORANDUM

To: Ashley Shannon (Valley Water)
Metra Richert (Valley Water)

From: Andree Lee (EKI)
Anona Dutton (EKI)

Subject: 2050 Master Plan Potential Savings Targets
Valley Water
(EKI C00054.00)

Valley Water is currently developing its 2050 Master Plan (Master Plan) and seeks to identify Conservation Portfolio(s) for potential inclusion in the Master Plan. The Conservation Portfolio(s) will provide options to maintain or achieve additional savings beyond Valley Water's currently planned water conservation activities (i.e., the activities and anticipated savings through 2040 as identified in Valley Water's 2021 Water Conservation Strategic Plan [2021 Strategic Plan]).

This memorandum provides a summary of: (1) the potential 2050 Conservation Savings Targets (2050 Targets) for the Master Plan, and (2) the preliminary Conservation Measures List. Following Valley Water's review and confirmation of each potential 2050 Target and selection of up to ten Conservation Measures¹, EKI will identify up to three Conservation Portfolios (e.g., one for each of the 2050 Targets), each with a different combination of four to six measures.² EKI will evaluate the cost-effectiveness of achieving each 2050 Target through implementation of the associated measures. Valley Water may select one or more 2050 Targets and accompanying portfolios for inclusion in the Master Plan.

1. EXISTING 2040 CONSERVATION SAVINGS TARGET

EKI recently completed Valley Water's 2021 Strategic Plan that included, among other things, water use profiles for each Valley Water retail agency, a detailed analysis of the water conservation programs offered within Valley Water's service area, and recommendations to Valley Water on how to increase its long-term conservation savings from about 80 thousand acre-feet per year (TAFY) in 2022 to about 99 TAFY by 2030 and 109 TAFY by 2040 relative to a baseline of 1992. **Figure 1** shows the projected water savings to reach the 2040 Targets from achieved passive savings, active savings from past implementation, projected additional passive savings, and remaining savings needed from additional active programs.³ Passive savings come from plumbing codes, appliance water use standards, and other regulations that improve water use efficiency over time. These passive savings would be realized over time regardless of Valley Water or retail agency conservation programs. Active savings come from water conservation

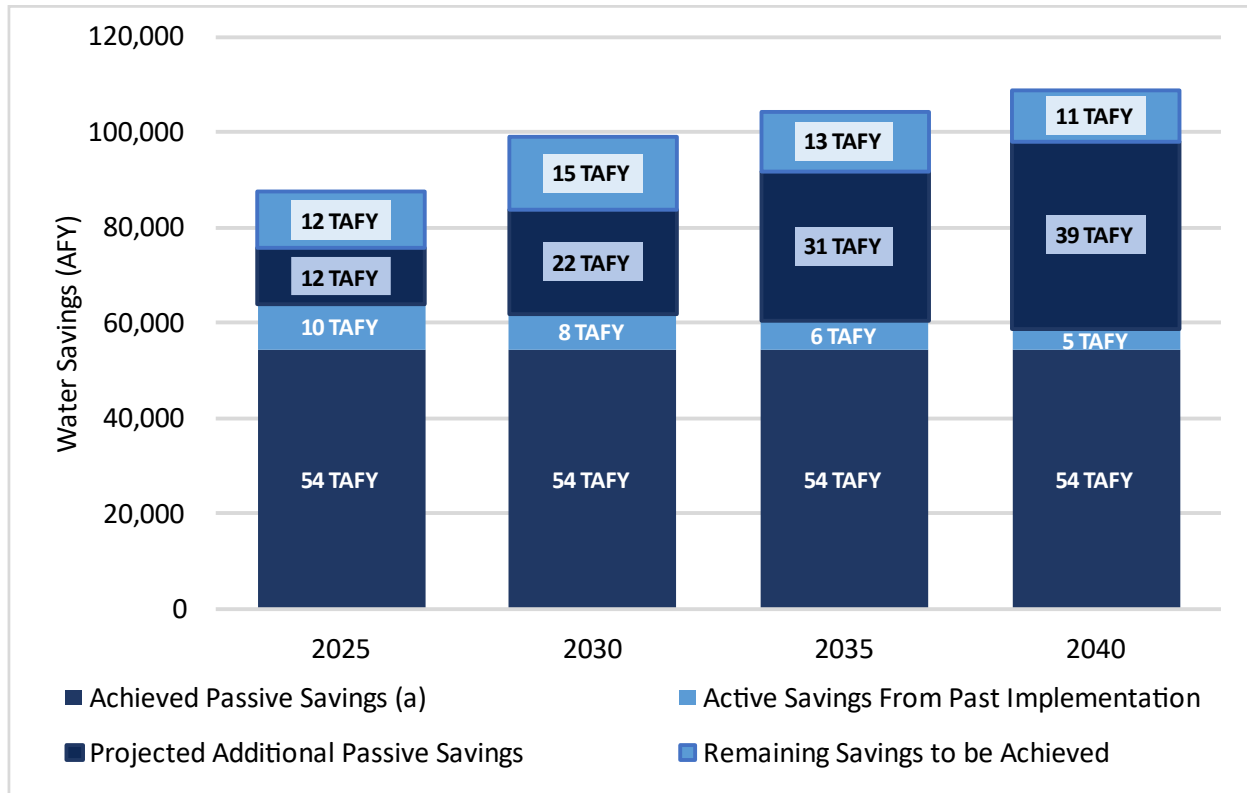
¹ Up to 10 conservation measures will be selected from the preliminary 15 Conservation Measures considered in the detailed analysis.

² It is important to note that measures not selected for inclusion in a portfolio may still be offered by Valley Water in the future.

³ Valley Water, 2021. Adapted from Figure 4-6.

programs run by Valley Water or its retail agencies, such as plumbing fixture rebates, turf replacement rebates, and home water use reports and surveys.

Figure 1. Projected Water Savings to Reach 2040 Targets



Note:

(a) Achieved Passive Savings are estimated from 1992 onward, with 1992 as the first year that passive savings are accrued. Appendix D of Valley Water's 2021 Strategic Plan provides greater detail on the calculations and assumptions used to project water savings.

2. POTENTIAL CONSERVATION SAVINGS TARGETS

EKI has identified three potential 2050 Targets, described below, for consideration.

1. *Option A Savings Target:* This target assumes future conservation savings through 2050 at rates that are consistent with the water savings projected to be achieved from implementation of Valley Water's existing mix of conservation programs by 2040 (from the 2021 Strategic Plan), while accounting for a reduced future active conservation savings potential due to demand hardening. This target assumes existing conservation programs at recent average rates of implementation (i.e., median implementation rate for 2018 to 2020).
2. *Option B Savings Target:* This target assumes future conservation savings through 2050 at the rates projected to be achieved through implementation of the Broad Program Mix portfolio by 2040 (from the 2021 Strategic Plan), while accounting for a reduced future active conservation savings potential due to demand hardening. This target assumes that implementation rates are

scaled to achieve the 2030 and 2040 conservation targets in the 2021 Strategic Plan, then savings rates are sustained through the new 2050 target.

3. *Option C Savings Target*: This target assumes future conservation savings to achieve a goal of an additional 25% reduction in outdoor water use within Valley Water’s service area by 2050 compared to estimated outdoor water use in 2020, which includes water savings achieved through implementation of Valley Water’s existing programs. This target does not build upon the Option A or Option B targets.

The potential 2050 Targets for only active savings are provided in **Figure 2** below, and for both passive and active savings are provided in **Figure 3**. The methodology and assumptions are summarized in **Table 1** and further described below.

Figure 2. Potential 2050 Conservation Savings Targets – Active Savings

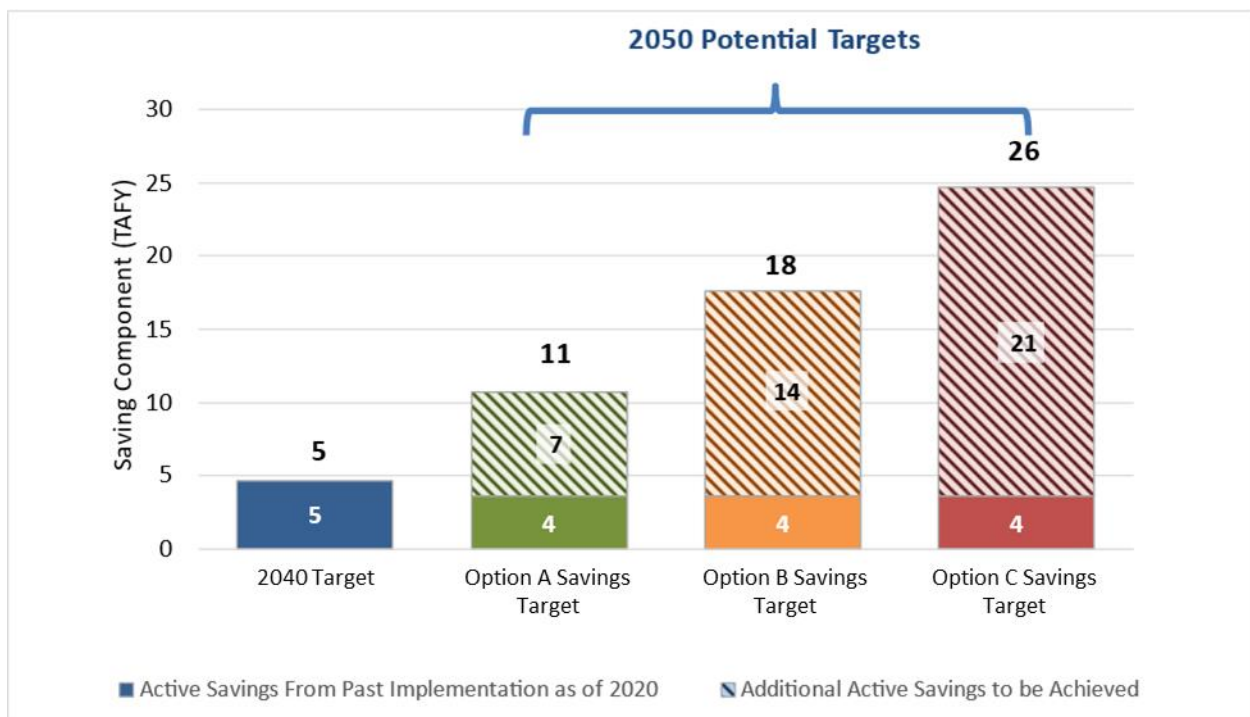


Figure 3. Potential 2050 Conservation Savings Targets – Active and Passive Savings

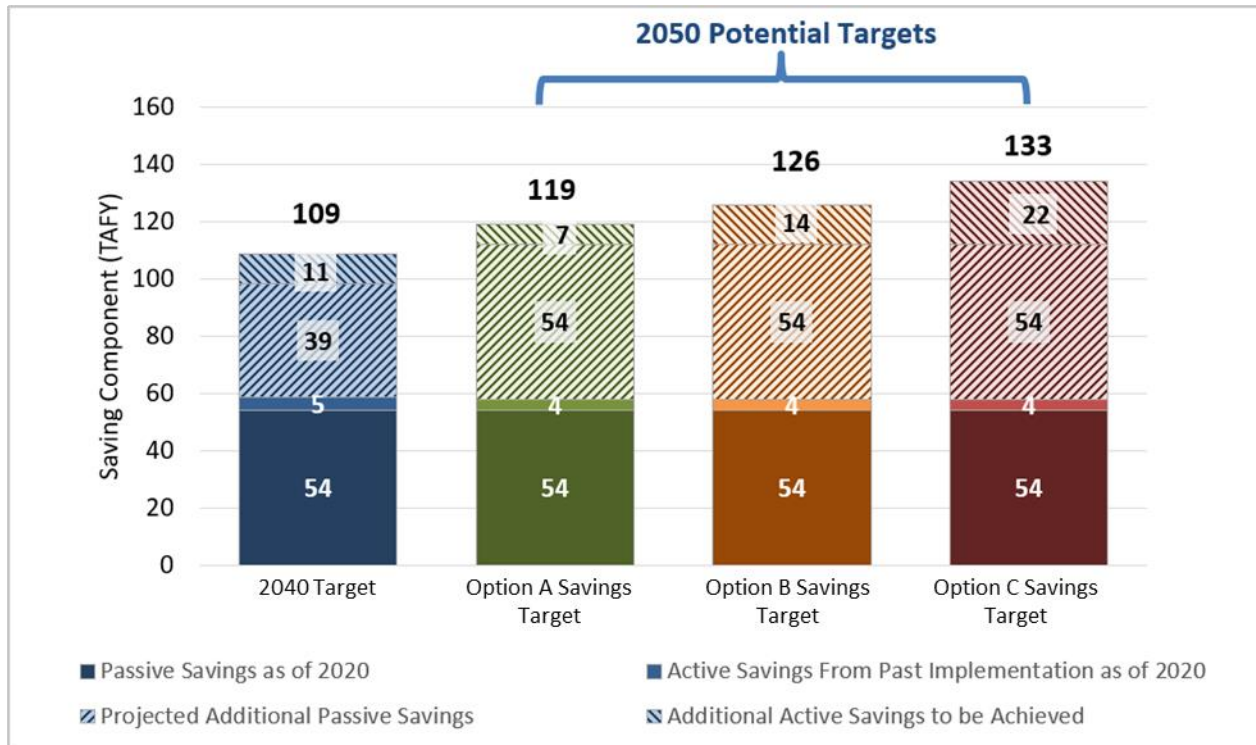


Table 1. Methodology and Assumptions for Calculating Savings Targets

	Option A Savings Target	Option B Savings Target	Option C Savings Target
Approach	Beyond the projected passive savings in 2050, maintaining a consistent active savings rate of 7 TAFY, which is consistent with the trend of active savings from 2020 through 2040 without the MWENDO ⁴ Scenario shown in the 2021 Strategic Plan (Figure 1).	Beyond the projected passive savings in 2050, maintaining a consistent active savings rate of 14 TAFY from program implementation, which is consistent with the active savings from the “Broad Program Mix” without MWENDO Scenario shown in the 2021 Strategic Plan.	Beyond the projected passive savings in 2050, targeting further outdoor water demand reduction in addition to the 2050 active savings from past programs targeting outdoor water use. This target does not specifically consider the MWENDO Scenario shown in the 2021 Strategic Plan.
Passive Savings as of 2020	54 TAFY as documented in the 2021 Strategic Plan.		
Active Savings From Past Implementation as of 2020	4 TAFY of active savings (residual savings ⁵) is estimated to be available in 2050 from the past program implementation as of 2020 per the M.Cubed Model output.		
Future Additional Passive Savings	54 TAFY obtained by subtracting the 2020 estimated passive savings from the 2050 estimated passive saving per the M.Cubed Model dated 1 May 2021.		
Additional Savings to be Achieved	The identified additional savings to be achieved reduces from 15 TAFY in 2030 to 11 TAFY in 2040, as shown in Figure 1 . Thus, assuming a linearly decreasing trend as a result of demand hardening, the active savings to be achieved in 2050 would be 7 TAFY.	Extend the “Broad Program Mix” without MWENDO Scenario saving rates in 2040 (i.e., 18 TAFY) to 2050. The savings rate is further adjusted by 4 TAFY to account for active savings from implementation through 2040. Thus, 14 TAFY of additional savings are needed to achieve a similar savings rate.	Reduce the estimated outdoor water demand in Valley Water’s 11 urban retailers by 25% from the estimated outdoor water demand in 2020, for an additional 21 TAFY of savings.
2050 Target⁶	119 TAFY	126 TAFY	133 TAFY

2.1 Option A Savings Target

The Option A Savings Target assumes that Valley Water will seek to maintain a consistent trend of active conservation savings from 2040 through 2050 as planned from 2020 through 2040. Consistent with the savings trends from 2020 through 2040 without the MWENDO Scenario projected in the 2021 Strategic Plan and M.Cubed Model output, the Option A Savings Targets anticipates that passive conservation will continue to increase in the Valley Water service area through 2050, totaling 54 TAFY of additional passive

savings from 2020 to 2050 in addition to the 54 TAF of passive savings achieved as of 2020. This target also assumes that 4 TAFY of residual active savings from past implementation of active conservation programs will be maintained in 2050. In addition to the passive savings and residual active savings, the Option A Savings Target aims to achieve an additional active savings of 7 TAFY in 2050. This is consistent with the trend of declining active savings from 2020 through 2040 shown in the 2021 Strategic Plan for the “Business as Usual” scenario without the MWENDO Scenario as a result of demand hardening.

2.2 Option B Savings Target

The Option B Savings Target assumes that Valley Water will achieve a consistent savings rate of 14 TAFY from program implementation beyond the residual active savings. This level of savings is consistent with the active savings from the “Broad Program Mix” without MWENDO Scenario shown in the 2021 Strategic Plan. Consistent with the savings trends projected in the 2021 Strategic Plan and M.Cubed Model output, the Option B Savings Targets anticipates that passive conservation will continue to increase in the Valley Water service area through 2050, totaling 54 TAFY of additional passive savings from 2020 to 2050 in addition to the 54 TAF of passive savings achieved as of 2020. This target also assumes that 4 TAFY of residual active savings from past implementation of active conservation programs will be maintained in 2050. In addition to the passive savings and residual active savings, the Option B Savings Target aims to achieve an additional active savings of 14 TAFY in 2050. This is consistent with the “Broad Program Mix” without MWENDO Scenario in the 2021 Strategic Plan, reduced by 4 TAFY to account for the residential active savings.

2.3 Option C Savings Target

The Option C Savings Target assumes that Valley Water will aim to reduce outdoor water use within the service area by 25% by 2050, compared to the estimated outdoor water use in 2020. Consistent with the other savings targets, the Option C Savings Targets anticipates that passive conservation will continue to increase through 2050, totaling 54 TAFY of additional passive savings from 2020 to 2050 in addition to the 54 TAF of passive savings achieved as of 2020. This target also assumes that 4 TAFY of residual active savings from past implementation of active conservation programs will be maintained in 2050. In addition to the passive savings and residual active savings, the Option C Savings Target aims to achieve an additional active savings of 21 TAFY in 2050. It is anticipated that the savings would be achieved through aggressive implementation of conservation measures primarily targeting outdoor water use. Further details on the methodology for estimating outdoor water use in the Valley Water service area are provided below.

2.3.1 Estimated Outdoor Water Demand within Valley Water

To establish the Option C Savings Target, current outdoor water use was estimated within the Valley Water service area using monthly production data for the Valley Water retail agencies. The potable water

⁴ The Model Water Efficient New Development Ordinance (MWENDO) represents a new conservation initiative being pursued by Valley Water. The model ordinance is intended to be adopted by all cities within Santa Clara County. MWENDO savings are assumed will occur gradually increase over time, from 100 AFY in 2025 to 4,200 AFY in 2040.

⁵ Active savings refers to savings generated by water conservation programs currently funded by Valley Water, whereas residual savings are savings refers to savings generated by water conservation programs previously funded by Valley Water.

⁶ Total may not sum due to rounding.

production for 13 Valley Water retail agencies⁷ is shown in **Table 2**. Red shading is used to highlight years where the agency's annual demand was higher than average, while blue shading indicates years where the demand was lower than the average demand from 2015 to 2022.

2.3.2 Methodologies and Assumptions of the Outdoor Water Demand Estimate

Table 3 presents the estimated proportion of outdoor water demand for each Valley Water retail agency. Red shading is used to highlight years where the annual outdoor demand proportion was higher than average, while blue shading indicates years where the proportion was lower than the average. In order to calculate the outdoor water demand, it is assumed that the minimum water production month represents indoor water usage exclusively and remains consistent throughout the year.⁸ The remaining water production is then assumed to be allocated for outdoor water use. The minimum production month may vary by supplier, as shown in **Table 4**.

2.3.3 Outdoor Water Demand Estimate Results

Table 5 presents the estimated outdoor water demand for each Valley Water retail agency. The 2020 water demand was selected as the base year for outdoor water use reduction because it reflects the recent developments within Valley Water and is not constrained by drought restrictions. Similarly, red shading is used to highlight years where the annual outdoor demand was higher than average, while blue shading indicates years where the demand was lower than the average.

⁷ DWR defines an "urban water supplier" as "a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually." Retail agencies that meet this definition are required to report their monthly water demand to the State Water Resources Control Board (SWRCB). Purissima Hills Water District and Stanford University do not meet this definition and thus do not report their monthly water demand to SWRCB. However, these suppliers do report their water demand to the Bay Area Supply and Conservation Agency (BAWSCA).

⁸ It is important to note that some outdoor irrigation still occurs during the minimum water production month. However, for the purposes of this analysis, outdoor irrigation during the minimum water production month is assumed to be negligible.

Table 2. Total Potable Water Production (AFY)

Agencies (a)	2015	2016	2017	2018	2019	2020	2021	2022	Avg.
City of Gilroy	6,870	6,983	7,813	7,854	7,691	8,219	7,822	7,411	7,583
City of Milpitas	8,665	8,589	8,742	7,808	9,319	9,366	9,006	8,628	8,765
City of Morgan Hill	(b)	6,280	7,079	7,272	7,235	7,809	7,182	6,884	7,106
City of Mountain View	8,871	8,741	9,202	9,526	9,474	10,033	9,412	8,992	9,281
City of Palo Alto	9,539	9,901	10,921	10,918	10,775	11,222	10,922	11,282	10,685
City of Santa Clara	17,621	17,160	18,681	18,481	17,789	18,301	17,317	16,913	17,783
City of Sunnyvale	15,387	16,507	18,639	18,573	18,771	19,811	18,840	18,243	18,096
CWS - Los Altos	10,189	10,265	11,656	12,438	11,863	13,024	11,440	10,761	11,454
Great Oaks Water Company	8,943	8,911	9,996	10,277	10,393	(b)	10,379	9,389	9,755
Purissima Hills Water District	(b)	(b)	(b)	(b)	(b)	2,060	(b)	(b)	2,060
San José Municipal Water	16,072	15,740	16,563	17,069	16,860	17,545	16,636	15,989	16,559
San Jose Water Company	105,713	103,676	111,543	115,123	113,928	121,454	113,455	105,291	111,273
Stanford University	(b)	(b)	(b)	(b)	(b)	2,712	(b)	(b)	2,712

Abbreviations:

AFY = Acre-feet per year

CWS = California Water Service

Notes:

(a) Production data was obtained from the SWRCB for urban water suppliers as defined by DWR. Production data for suppliers that do not meet the definition of an urban water supplier was obtained from BAWSCA. This analysis only includes data starting in 2015 as this is the first year in which reliable data is available.

(b) Production data was not available.

Sources:

(1) SWRCB monthly reporting data dated 15 May 2023, accessed online via: https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.html.

(2) BAWSCA monthly reporting data, provided on 28 June 2023.

Table 3. Estimated Outdoor Water Use Proportion

VW Agencies	2015	2016	2017	2018	2019	2020	2021	2022
City of Gilroy	29%	34%	40%	36%	40%	41%	34%	33%
City of Milpitas	17%	19%	22%	22%	21%	20%	24%	21%
City of Morgan Hill	(a)A	42%	48%	45%	43%	49%	40%	38%
City of Mountain View	27%	39%	37%	32%	35%	33%	29%	33%
City of Palo Alto	34%	37%	47%	40%	39%	36%	41%	40%
City of Santa Clara	22%	28%	33%	26%	27%	28%	25%	23%
City of Sunnyvale	25%	30%	34%	30%	31%	30%	28%	28%
CWS Los Altos	42%	46%	53%	45%	46%	50%	42%	45%
Great Oaks Water Company	28%	30%	35%	31%	34%	(a)	31%	27%
Purissima Hills Water District	(a)	(a)	(a)	(a)	(a)	67%	(a)	(a)
San José Municipal Water	26%	29%	35%	35%	35%	34%	30%	30%
San Jose Water Company	26%	27%	33%	30%	33%	34%	28%	26%
Stanford University	(a)	(a)	(a)	(a)	(a)	55%	(a)	(a)

Abbreviations:

AFY = Acre-feet per year

CWS = California Water Service

Note:

(a) Production data were not available.

Table 4. Minimum Water Production Month by Agency

Agencies	Month (a)						
	2015	2016	2017	2018	2019	2020	2021
City of Gilroy	Dec	Jan	Feb	Dec	Feb	Jan	Dec
City of Milpitas	Dec	Jan	Jan	Mar	Dec	Jan	Dec
City of Morgan Hill	Dec	Jan	Feb	Mar	Dec	Jan	Dec
City of Mountain View	Nov	Jan	Apr	Jan	Dec	Jan	Jan
City of Palo Alto	Nov	Jan	Jan	Dec	Feb	Jan	Jan
City of Santa Clara	Nov	Jan	Jan	Dec	Jan	Jan	Jan
City of Sunnyvale	Oct	Jan	Feb	Jan	Dec	Jan	Dec
CWS Los Altos	Dec	Jan	Feb	Dec	Feb	Jan	Dec
Great Oaks Water Company	Dec	Jan	Feb	Jan	Feb	Jan	Dec
Purissima Hills Water District	(b)	(b)	(b)	(b)	(b)	Jan	(b)
San José Municipal Water	Dec	Dec	Feb	Dec	Feb	Jan	Dec
San Jose Water Company	Dec	Jan	Feb	Jan	Feb	Jan	Dec
Stanford University	(b)	(b)	(b)	(b)	(b)	Apr	(b)

Note:

(a) Monthly water production was normalized by the number of days in a month.

(b) Production data were not available

Table 5. Estimated Total Potable Water Production for Outdoor Use (AFY)

Agencies	2015	2016	2017	2018	2019	2020	2021	2022	Avg.
City of Gilroy	2,015	2,346	3,119	2,857	3,061	3,354	2,647	2,467	2,733
City of Milpitas	1,471	1,610	1,946	1,706	1,941	1,886	2,175	1,828	1,820
City of Morgan Hill	(a)	2,666	3,426	3,300	3,089	3,796	2,875	2,588	3,106
City of Mountain View	2,386	3,381	3,399	3,050	3,269	3,292	2,689	2,928	3,049
City of Palo Alto	3,287	3,648	5,093	4,363	4,161	4,072	4,516	4,507	4,206
City of Santa Clara	3,881	4,790	6,117	4,750	4,719	5,174	4,316	3,933	4,710
City of Sunnyvale	3,907	4,995	6,346	5,480	5,862	5,969	5,240	5,182	5,373
CWS Los Altos	4,296	4,691	6,174	5,544	5,505	6,558	4,802	4,869	5,305
Great Oaks Water Company	2,470	2,638	3,488	3,193	3,527	3,527 (b)	3,183	2,582	3,076
Purissima Hills Water District	(a)	(a)	(a)	(a)	(a)	1,382	(a)	(a)	1,382
San Jose Municipal Water	4,220	4,581	5,841	5,904	5,899	5,914	4,929	4,860	5,268
San Jose Water Company	27,158	28,457	36,802	34,707	37,542	41,825	31,645	27,503	33,205
Stanford University	(a)	(a)	(a)	(a)	(a)	1,500	(a)	(a)	1,500
Total	55,092	63,804	81,751	74,854	78,575	86,750	69,018	63,247	71,636

Abbreviations:

AFY = Acre-feet per year

CWS = California Water Service

Notes:

(a) Production data were not available.

(b) The estimated outdoor water demand of Great Oaks Water Company in 2020 is assumed to be similar to what it was in 2019.

As shown in **Table 5**, the total estimated outdoor water demand in the Valley Water service area in 2020 was approximately 85.4 TAFY. Assuming a 25% reduction after adjusting for the residual active savings from program implementation through 2040 for the irrigation sector⁹, the outdoor water reduction target would be 21 TAFY, as shown in **Table 6**.

⁹ The residual active savings in 2050 from program implementation through 2040 is estimated to be 0.433 TAFY per the "Business-As-Usual" without MWENDO Scenario.

Table 6. Outdoor Water Demand Reduction Target (TAFY)

	(a)	Values (b)	Unit
2020 Estimated Outdoor Demand	[A]	85.4	TAFY
2050 Active savings from past irrigation program implementation	[B]	0.4	TAFY
25% Reduction	[C]	21	TAFY

Notes:

(a) Values shown above are obtained by: $[C] = ([A] - [B]) * 25\%$.

(b) Total may not sum due to rounding.

3. PRELIMINARY LIST OF CONSERVATION MEASURES

As shown in **Attachment A**, a comprehensive list of potential Conservation measures were evaluated using the following criteria:

- Measures that were previously identified in the 2021 Strategic Plan as having high water savings potential (e.g., savings potential above the median of 90 AF of water savings in 2030).
- Measures that target key end uses (irrigation, cooling tower, pool, etc.), in particular end uses that will not be impacted by passive conservation savings.
- Measures provide alternative supplies (e.g., rainwater, graywater, etc.).
- Measures that break down known customer barriers to participation (e.g., direct install turf, Water Efficient Technologies [WET] program, and leak repair assistance) or benefit a potentially underserved segment of Valley Water's customer base, such as renters and/or low-income residential customers.
- Measures that leverage and/or maintain the benefits of Valley Water's investment in Advanced Metering Infrastructure (AMI).
- Previously considered and new measures of interest to Valley Water and/or that have been successfully implemented by other agencies.

As shown in **Table 6**, EKI then developed a preliminary list of 15 Conservation Measures for potential inclusion in the Master Plan Conservation Portfolio(s) that met the following criteria:

1. Existing measures with estimated water savings above the median water savings in 2030 that meets at least one of the additional criteria described above; or
2. Potential new measures, for which estimated water savings have not yet been calculated, that meet at least two of the additional criteria described above.

Table 7. Preliminary List of Conservation Measures

Measure	Sector	Current Program	Previously Evaluated	Estimated Savings in 2030 (AF) (a)
Large Landscape Water Budgets	IRR	Yes	Yes	5,197
Rain Sensors	IRR	Yes	Yes	110
Large Land. Irrigation Controller	IRR	Yes	Yes	255
Flow Sensor with Automatic Shutoffs/Dedicated Irrigation Meter	IRR	Yes	Yes	219
Agriculture Mobile Lab	OTH	Yes	Yes	2,000
WET	CII	Yes	Yes	154
AMI Leak Alert & Home Water Report	SFR	Yes	Yes	811
Large Landscape Program	IRR	Yes	Yes	104
Residential Irrigation Controller, SFR	IRR	Yes	Yes	358
Turf Replacement Rebate	IRR	Yes	Yes	396
Whole House Graywater/Reuse	SFR	No	No	TBD
Leak Assistance Program	SFR	No	No	TBD
Direct Install Turf Replacement, SRF/MFR	IRR	No	No	TBD
Pool Covers	IRR	No	No	TBD
Submetering (Multi-family and ADU)	MFR	No	No	18,615
<p>Abbreviations:</p> <p>ADU = additional dwelling unit AF = acre-feet AMI = Advanced Metering Infrastructure CCF = hundred cubic feet CII = Commercial, Industrial, and Institutional</p> <p>Notes:</p> <p>(a) The estimated savings in 2030 are provided for informational purposes, based on Table 6-8 of the 2021 Strategic Plan and studies conducted by Valley Water to evaluate savings generated for submetering. These values will be re-evaluated, or developed where not currently available, in the subsequent modeling effort.</p>				

4. NEXT STEPS

Following Valley Water’s approval of the 2050 Targets and selection of ten Conservation Measures for further analysis, EKI will identify up to three Conservation Portfolios (e.g., one for each of the 2050 Targets) each with a different combination of four to six programs. Modeling will be completed, in coordination with M.Cubed, to assess the magnitude of implementation of the selected measures that would be required to achieve the level of savings required for each target, as well as the overall cost per acre-foot saved for each portfolio.

ATTACHMENTS

Tables

Table 1. Methodology and Assumptions for Calculating Savings Targets

Table 2. Total Potable Water Production (AFY)

Table 3. Estimated Outdoor Water Use Proportion

Table 4. Minimum Water Production Month by Agency

Table 5. Total Potable Water Production for Outdoor Use (AFY)

Table 6. Outdoor Water Demand Reduction Target

Table 7. Preliminary List of Conservation Measures

Figures

Figure 1. Projected Water Savings to Reach 2040 Targets

Figure 2. Potential 2050 Conservation Savings Targets – Active Savings

Figure 3. Potential 2050 Conservation Savings Targets – Active and Passive Savings

References

Valley Water, 2021. Water Conservation Strategic Plan, Valley Water, dated July 2021.

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18 January 2024

MEMORANDUM

To: Justin Burks, Santa Clara Valley Water District (Valley Water)
Ashley Shannon, Valley Water
Metra Richert, Valley Water

From: Andree Lee, EKI Environment & Water, Inc. (EKI)
Anona Dutton, EKI
Vanessa De Anda, EKI

Subject: Technical Memorandum #2: 2050 Master Plan Conservation Measure Details and
Conservation Portfolios
Valley Water
(EKI C00054.00)

Valley Water is currently developing its 2050 Water Supply Master Plan (Master Plan) and seeks to identify conservation portfolio(s) for potential inclusion in the Master Plan. The conservation portfolio(s) will provide options to maintain or achieve additional savings beyond Valley Water’s currently planned water conservation activities (i.e., the activities and anticipated savings through 2040 as identified in Valley Water’s *2021 Water Conservation Strategic Plan* [2021 Strategic Plan]).

This Technical Memorandum (TM #2) provides a summary of the potential water conservation measures and estimates the savings potential and costs for the ten measures identified for further analysis by Valley Water in the *2050 Master Plan Potential Savings Targets Technical Memorandum* (TM #1). TM #2 also identifies three conservation portfolios, one for each of the 2050 Conservation Savings Targets (2050 Potential Targets) identified in TM #1. Modeling was completed to assess the measure implementation rates that would be required to achieve each 2050 Potential Target, as well as the cost effectiveness of the associated conservation portfolios. Valley Water may select one or more 2050 Targets and accompanying portfolios for inclusion in the Master Plan.

1. POTENTIAL CONSERVATION SAVINGS TARGETS

Three 2050 Potential Targets were identified for consideration in the Master Plan in TM #1. The 2050 Targets build upon the “Business-as-Usual without Model Water Efficient New Development Ordinance (MWENDO)” scenario in the 2021 Strategic Plan. The potential 2050 Targets include:

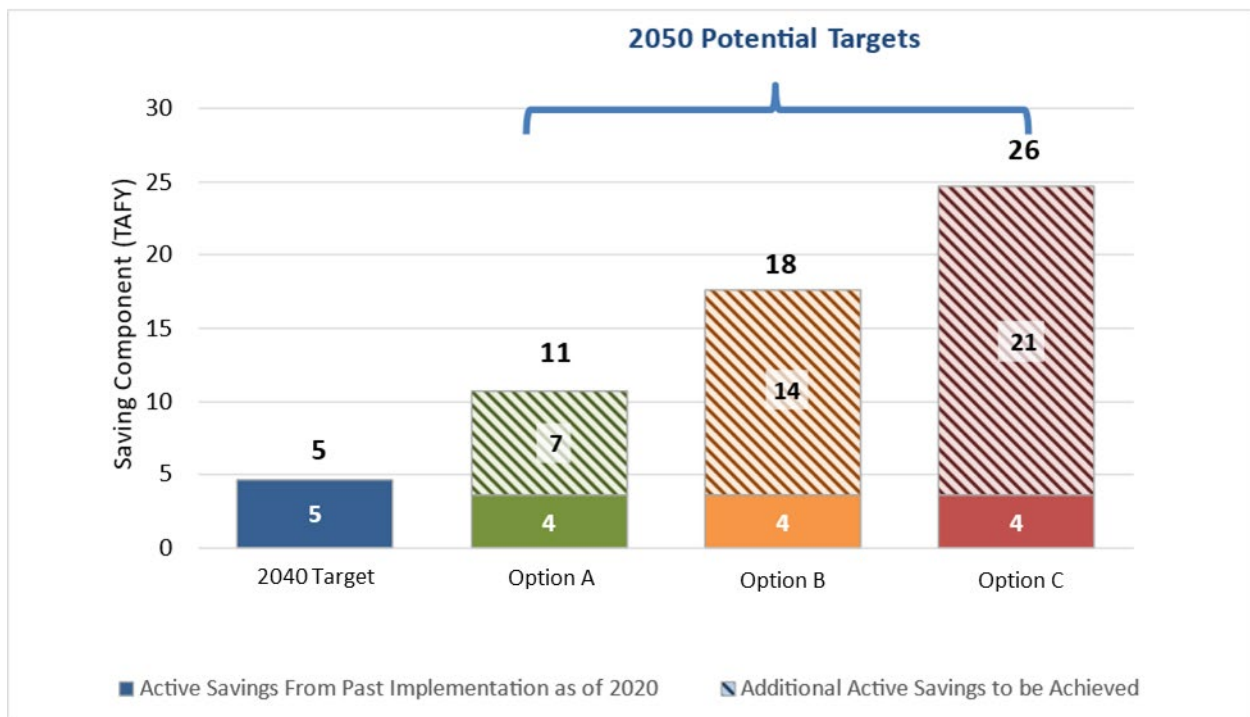
1. **Option A:** This target assumes future conservation savings through 2050 at rates that are consistent with the water savings projected to be achieved from implementation of Valley Water’s existing mix of conservation programs by 2040 (from the 2021 Strategic Plan), while accounting for a reduced future active conservation savings potential due to demand hardening. This target assumes that the existing conservation programs will continue to be implemented at recent average rates (i.e., the median implementation rate observed between 2018 and 2020).
2. **Option B:** This target assumes future conservation savings through 2050 at the rates projected to be achieved through implementation of the “Broad Program Mix” portfolio by 2040 (from the

2021 Strategic Plan), while accounting for a reduced future active conservation savings potential due to demand hardening. This target assumes that implementation rates are increased to achieve the conservation targets identified in the 2021 Strategic Plan and then sustained through 2050.

3. **Option C:** This target assumes future conservation savings to achieve a goal of an additional 25% reduction in outdoor water use within Valley Water’s service area by 2050 compared to estimated outdoor water use in 2020, which includes water savings achieved through implementation of Valley Water’s existing programs. A 25% reduction in outdoor use aligns with the 2021 Strategic Plan findings that future savings will need to be found predominately from outdoor conservation due to demand hardening from over 30 years of indoor conservation and code improvements. This target does not build upon the Option A or Option B targets described above.

For reference, the potential 2050 Targets for active savings are provided in **Figure 1**. These potential 2050 Targets build upon Valley Water’s existing water conservation target of approximately 99,000 acre-feet per year (AFY) in 2030 to about 109,000 AFY in 2040, equivalent to approximately 1,000 AFY between 2030 and 2040. A potential 2050 Target of 26,000 AFY under Option C, for example, is more than twice the annual rate of savings of the existing water conservation target.

Figure 1. Potential 2050 Targets – Active Savings



Source: EKI, 2023. Adapted from Figure 2.

2. POTENTIAL CONSERVATION MEASURES

EKI evaluated a comprehensive list of conservation measures for potential inclusion in the Master Plan to meet the 2050 Potential Targets. Based on this evaluation, EKI presented a preliminary list of 15 conservation

measures to Valley Water in TM #1. Of the 15 conservation measures, Valley Water selected ten conservation measures for further evaluation, summarized in **Table 1**.

Table 1. List of Selected Conservation Measures

Conservation Measures	Sector (a)	Program Status	Previously Evaluated
Large Landscape Water Budgets and Large Landscape Surveys	IRR	Existing Program	Yes
Large Landscape Irrigation Controller	IRR	Existing Program	Yes
Flow Sensor with Automatic Shutoffs	IRR	Existing Program	Yes
WET	CII	Existing Program	Yes
AMI Leak Alert & Home Water Report	SFR	Existing Program	Yes
Residential Irrigation Controller, SFR	IRR	Existing Program	Yes
Turf Replacement Rebate	IRR	Existing Program	Yes
Submetering (MFR and ADU)	MFR	Existing Program	Yes
Whole House Graywater/Reuse	SFR	New Program	No
Leak Assistance	SFR	New Program	No

Abbreviations:

ADU = accessory dwelling unit

AMI = Advanced Metering Infrastructure

CII = Commercial, Industrial, and Institutional

IRR = irrigation

MFR = Multi-Family Residential

SFR = Single-Family Residential

WET = Water Efficient Technologies

Notes:

(a) The conservation measures may target more sectors than listed (e.g., AMI Leak Alert incentivizes more than just SFR accounts). However, for modeling purposes, the primary sector listed for each measure is consistent with what was used in the 2021 Strategic Plan and savings model.

Table 2 provides the baseline cost and benefit assumptions for each of the ten conservation measures selected for further evaluation, including annual savings per unit, useful life, Valley Water costs, and participant costs. The baseline assumptions for the eight conservation measures that were previously evaluated in the 2021 Strategic Plan (identified in **Table 1**) are consistent with the assumptions included in the 2021 Strategic Plan. Assumptions for the two new conservation measures were developed based on literature review and data provided by neighboring agencies.

Table 2: Baseline Assumptions for Modeling the Conservation Measures

Conservation Measures	Sector	Unit	Annual Savings, Per Unit (gpy)	Useful Life (years)	Valley Water Costs (\$/unit)	Participant Costs (\$/unit)
Large Landscape Water Budgets and Large Landscape Surveys	IRR	Survey / Site	423,400	5	\$110	(a)
Large Landscape Irrigation Controller	IRR	Controller	265,355	10	\$764	(a)
Flow Sensor with Automatic Shutoffs	IRR	Meter	132,860	20	\$722	(a)
WET	CII	CCF	748	10	\$3 (b)	(a)
AMI Leak Alert & Home Water Report	SFR	Home	365	20	\$5	(a)
Residential Irrigation Controller, SFR	IRR	Controller	18,615	10	\$233	(a)
Turf Replacement Rebate	IRR	Sq ft	36	20	\$2 (b)	(a)
Submetering (MFR and ADU)	MFR	Meter	5,518	20	\$150	(a)
Whole House Graywater/Reuse	SFR	Home	40,000	20	\$5,000	\$15,000
Leak Assistance	SFR	Home	22,551	0.33	\$257	-

Abbreviations:

ADU = accessory dwelling unit
AMI = Advanced Metering Infrastructure
CCF = one hundred cubic feet
CII = Commercial, Industrial, and Institutional
gpy = gallons per year

IRR = irrigation
MFR = Multi-Family Residential
SFR = Single-Family Residential
sq ft = square foot
WET = Water Efficient Technologies

Notes:

(a) Participant costs were previously evaluated in 2021 Strategic Plan and not directly included in Valley Water's Conservation Tracking Model.

(b) Since the 2021 Strategic Plan, the Valley Water unit cost for WET has increased to \$4 per unit. The unit cost for the Turf Replacement Rebate may be reduced to levels prior to the drought (\$1 per sq ft) depending on Valley Water budget process. However, for the purposes of this analysis, the Valley Water unit costs were assumed to be consistent with the assumptions used in the 2021 Strategic Plan.

3. POTENTIAL CONSERVATION PORTFOLIOS

Three conservation portfolios were developed to meet each of the potential 2050 Targets. The conservation portfolios build upon Valley Water's planned water conservation activities through 2040 (i.e., the 2021 Strategic Plan's "Business-as-Usual without MWENDO" scenario) by incorporating implementation of the ten selected conservation measures from 2041 through 2050 to achieve the 2050

Targets. This section provides a summary of the measures included in each potential conservation portfolio and their implementation schedule, implementation rates, and unit costs.

3.1. Implementation Rates

Through 2040, each potential conservation portfolio is comprised of the conservation measures currently planned for implementation through 2040 as identified in the 2021 Strategic Plan (i.e., the “Business-as-Usual without MWENDO” scenario from the 2021 Strategic Plan).¹ From 2041 through 2050, each portfolio then incorporates a combination of the ten conservation measures selected by Valley Water in TM #1 to achieve the 2050 Potential Targets. The implementation schedules and rates assumed for each conservation measure from 2041 through 2050 fall into one of two categories:

1. **Existing Measures:** Conservation measures included in the 2021 Strategic Plan and selected in TM #1. It is assumed that annual implementation rates of these eight conservation measures (see **Table 1**) will be consistent with the 2021 Strategic Plan “Business-as-Usual without MWENDO” scenario recommendations through 2040, and then scaled up from 2040 levels as needed to meet 2050 Potential Targets.
2. **New Measures:** Conservation measures not included in the 2021 Strategic Plan but selected in TM #1. It is assumed that these two conservation measures (see **Table 1**) will be implemented for some potential conservation portfolios when 2050 Potential Targets cannot be reached by extending the 2040 implementation levels for the “Existing Measures.” These additional new measures will require additional staff and contractor resources to design, implement, and administer.

Valley Water’s Conservation Tracking Model was used to assess the implementation rates that would be required from 2041 through 2050 for the ten selected conservation measures to achieve each 2050 Potential Target. The average annual implementation rates for the selected conservation measures to achieve each 2050 Potential Target, compared to the “Business-as-Usual without MWENDO” scenario in the 2021 Strategic Plan, are shown in **Table 3**. Based on this analysis, implementation rates would need to be scaled as follows:

- Option A, with a potential 2050 Target of 11,000 AFY, would require scaling the annual implementation rates for seven of the eight selected existing measures by 86% from 2041 through 2050 (relative to implementation rates through 2040)²;
- Option B, with a potential 2050 Target of 18,000 AFY, would require scaling the annual implementation rates for the eight existing measures by 192% and adding Leak Assistance; and
- Option C, with a potential 2050 Target of 26,000 AFY, would require scaling the annual implementation rates for the eight existing measures by 290% and adding both Leak Assistance and Whole House Greywater/Reuse.

¹ Conservation measures in the 2021 Strategic Plan are assumed to be implemented consistent with the 2021 Strategic Plan “Business-as-Usual without MWENDO” scenario recommendations through 2040 unless selected by Valley Water in TM #1 (i.e., Valley Water can stop offering some of the measures included in the 2021 Strategic Plan in 2040 while still meeting the 2050 Potential Target).

² While the Submetering (MFR and ADU) conservation measure was selected in TM #1, Option A assumes that Valley Water will sunset the conservation measure after 2040 as it is not needed to achieve the Option A Target.

Successful implementation of the conservation portfolios requires dedicated staff and resources to, among other things, provide program administration, market the conservation programs, conduct stakeholder engagement, and monitor program implementation. The 2021 Strategic Plan recommended that Valley Water’s conservation staffing level be increased to at least 10 staff in order to adequately support achievement of the 2040 Target. Therefore, it is assumed that Option A could be implemented with the 10 staff recommended in the 2021 Strategic Plan. However, implementation of Option B and Option C would likely not be feasible without additional staff based on staffing levels observed throughout the state for similarly sized agencies with similar water conservation programs. For Options B and C, staffing assumptions were scaled up consistent with measure implementation rates (e.g., 192% of “Business-as-Usual without MWENDO” for Option B and 290% of “Business-as-Usual without MWENDO” for Option C). As shown in **Table 4**, Valley Water would need to almost double the 2021 Strategic Plan recommended staff levels to implement Option B and almost triple the 2021 Strategic Plan recommended staff levels to implement Option C. Depending on drought conditions, seasonal and program needs, part-time temporary staff, student interns, and/or contractors could provide support needed to achieve the measure implementation rates. However, this would likely increase Valley Water’s administrative staff needed to manage and oversee the support staff.

For Options B and C, marketing resources and outreach would also need to be scaled up significantly consistent with measure implementation rates. As recommended in the 2021 Strategy Plan, this would likely require leveraging strategies that work in "hot spots" of participation (i.e., areas where higher density of program participation is observed than would be expected by randomly distributed participation) and applying it to "cold spots" areas (i.e., areas of lower-than-expected participation).

Table 3: Average Annual Implementation Levels

Conservation Measures	Sector	Unit	2021 Strategic Plan “Business-As-Usual without MWENDO” Scenario Annual Participation (through 2040)	Participation (2041 – 2050)		
				Option A	Option B	Option C
Large Landscape Water Budgets and Large Landscape Surveys	IRR	Survey / Site	2,647 (a)	86% of Business-as- Usual without MWENDO Annual Participation	192% of Business-as- Usual without MWENDO Annual Participation	290% of Business-as- Usual without MWENDO Annual Participation
Large Landscape Irrigation Controller	IRR	Controller	34			
Flow Sensor with Automatic Shutoffs	IRR	Meter	36			
WET	CII	CCF	10,446			
AMI Leak Alert & Home Water Report	SFR	Home	600			
Residential Irrigation Controller, SFR	IRR	Controller	661			
Turf Replacement Rebate	IRR	sq ft	384,854	0	0	500
Submetering (MFR and ADU) (b)	MFR	Meter	236			
Whole House Graywater/Reuse	SFR	Home	0			
Leak Assistance	SFR	Home	0	0	500	500

Abbreviations:

ADU = accessory dwelling unit
AMI = Advanced Metering Infrastructure
CCF = one hundred cubic feet

CII = Commercial, Industrial, and Institutional
IRR = irrigation
MFR = Multi-Family Residential

SFR = Single-Family Residential
sq ft = square foot
WET = Water Efficient Technologies

Notes:

(a) Since the 2021 Strategic Plan, the total number of participants has increased to 3,879 sites as of the end of fiscal year 2023. Valley Water anticipates the number of participants will increase in the next two fiscal years to support California’s Framework for the Making Conservation a California Way of Life regulation. However, for the purposes of this analysis, the participation was assumed consistent with the 2021 Strategy Plan.

(b) Option A assumes that Valley Water will continue offering the Submetering (MFR and ADU) conservation measure through 2040 but sunset the program after 2040 as it is not needed to achieve the Option A Target. Option B and Option C assume that Valley Water will continue offering the Submetering (MFR and ADU) through 2050 as it provides additional savings needed to achieve the higher savings thresholds.

Table 4: Average Annual Implementation Units and Staff Levels

Conservation Measures	Sector	Unit	Historical Average Participation (2011-2020) (a)	Participation (2041 – 2050)		
				Option A	Option B	Option C
Large Landscape Water Budgets and Large Landscape Surveys	IRR	Survey / Site	1,253	2,288 (b)	5,085	7,674
Large Landscape Irrigation Controller	IRR	Control ler	96	29	65	99
Flow Sensor with Automatic Shutoffs	IRR	Meter	34	31	69	104
WET	CII	CCF	6,707	9,031	20,067	30,286
AMI Leak Alert & Home Water Report	SFR	Home	500	600	96,300	145,344
Residential Irrigation Controller, SFR	IRR	Control ler	469	571	1,270	1,916
Turf Replacement Rebate	IRR	sq ft	1,195,272	332,702	739,276	1,115,777
Submetering (MFR and ADU)	MFR	Meter	250	0 (c)	452	683
Whole House Graywater/Reuse	SFR	Home	0	0	0	500
Leak Assistance	SFR	Home	0	0	500	500
Staffing Levels			-	10	19	29

Abbreviations:

ADU = accessory dwelling unit

AMI = Advanced Metering Infrastructure

CCF = one hundred cubic feet

CII = Commercial, Industrial, and Institutional

IRR = irrigation

MFR = Multi-Family Residential

SFR = Single-Family Residential

sq ft = square foot

WET = Water Efficient Technologies

Notes:

(a) Average participation includes participation during the historic 2014 – 2016 drought.

(b) Since the 2021 Strategic Plan, the total number of participants has increased to 3,879 sites as of the end of fiscal year 2023. Valley Water anticipates the number of participants will increase in the next two fiscal years to support California’s Framework for the Making Conservation a California Way of Life regulation. However, for the purposes of this analysis, the participation was assumed consistent with the 2021 Strategic Plan.

(c) Average annual participation in the Submetering (MFR and ADU) conservation measure for Option A is 0 because no participation is required to achieve the Option A Target.

3.2. Incentive Program Unit Costs for Each Conservation Portfolio

As previously shown in **Table 3**, implementation levels of existing measures for Option B and Option C will need to be scaled significantly to achieve the level of savings for the corresponding 2050 Potential Targets. Given

the implementation levels for Option B and Option C are higher than current planned levels (per the 2021 Strategic Plan), it is anticipated that Valley Water will have to increase the incentive program benefits (e.g., rebate amounts, Valley Water cost share amounts, or administrative costs) to drive increased participation. In the Conservation Tracking Model, the Valley Water unit costs for measures under Option B and Option C have been scaled by 192% and 290%, respectively, consistent with the increased participation levels required to achieve the 2050 Potential Targets (see **Table 3**). The resultant conservation measure unit costs for the ten selected measures under each conservation portfolio are shown in **Table 5**.

Table 5: Incentive Program Unit Costs

Conservation Measures	Valley Water Costs for (\$/unit)		
	Option A	Option B (a)	Option C (a)
Large Landscape Water Budgets and Large Landscape Surveys	\$110	\$212	\$319
Large Landscape Irrigation Controller	\$764	\$1,468	\$2,215
Flow Sensor with Automatic Shutoffs	\$722	\$1,387	\$2,093
WET	\$3	\$5	\$8
AMI Leak Alert & Home Water Report	\$5	\$7	\$9
Residential Irrigation Controller, SFR	\$233	\$448	\$676
Turf Replacement Rebate	\$2	\$3	\$5
Submetering (MFR and ADU)	\$150	\$288	\$435
Whole House Graywater/Reuse	\$5,000	\$5,000	\$5,000
Leak Assistance	\$257	\$257	\$257

Abbreviations:

ADU = additional dwelling unit

AMI = Advanced Metering Infrastructure

MFR = Multi-Family Residential

SFR = Single-Family Residential

WET = Water Efficient Technologies

Notes:

(a) Unit costs are scaled to 192% of “Business-as-Usual without MWENDO” scenario unit costs for Option B and 290% of “Business-as-Usual without MWENDO” scenario unit costs for Option C, consistent with participation level multiplier factors (see **Table 3**).

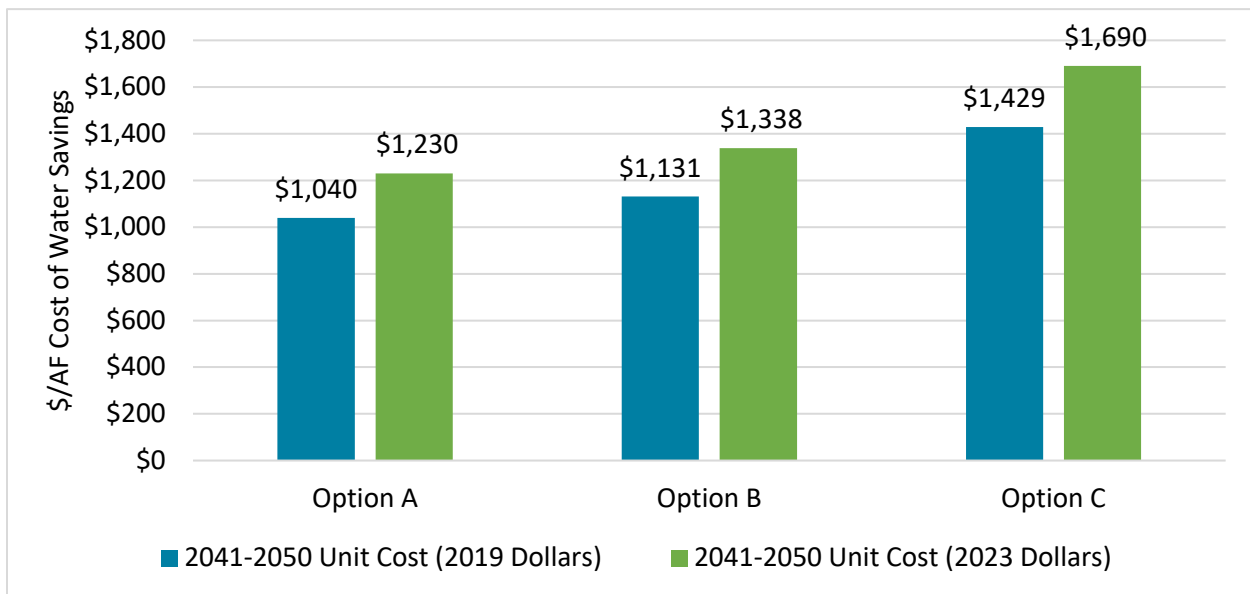
4. RESULTS

The Conservation Tracking Model was used to determine the cost to achieve each 2050 Potential Target through implementation of the associated measures in each conservation portfolio. The cost per acre foot (AF) of savings for each conservation portfolio is a function of the assumed annual savings per unit, useful life, implementation rates, and Valley Water costs for implementation (e.g., staffing required to achieve each 2050 Potential Target). The cost per AF of water savings for each 2050 Potential Target is provided in **Figure 2**. The cost per

unit of water savings from 2041 through 2050 is approximately \$1,000 for Option A, \$1,100 for Option B, and \$1,400 for Option C in 2019 dollars consistent with the 2021 Strategic Plan.

As previously described, the incentive program unit costs for conservation measures under Option B and Option C were scaled to achieve unprecedented participation rates. Furthermore, the higher savings targets required implementation of more expensive conservation measures, such as the Whole House Graywater/Reuse, due to more easily attainable and affordable successes already being implemented. As a result, the cost to achieve each additional unit of water savings is progressively more expensive. The cost of water savings, per AF, is approximately 9% higher for Option B and approximately 37% higher for Option C, compared to Option A.

Figure 2: Cost to Valley Water to Achieve 2050 Targets



5. NEXT STEPS

The Valley Water Board Committee will be asked to review the conservation portfolios. Input from the Valley Water Board Committee will be used to refine the conservation portfolios, and one conservation portfolio will be selected for potential inclusion in the Master Plan.

REFERENCES

- EKI, 2023. 2050 Master Plan Potential Savings Targets Technical Memorandum #1. Dated 28 September 2023.
- Valley Water, 2021. Water Conservation Strategic Plan, Valley Water, dated July 2021.



July 2021

Water Conservation Strategic Plan



Water Conservation Strategic Plan

Valley Water

July 2021
(EKI C00054.00)



Santa Clara Valley Water District

File No.: 24-0047

Agenda Date: 1/29/2024

Item No.: 4.2.

COMMITTEE AGENDA MEMORANDUM **Water Conservation and Demand Management Committee**

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

SUBJECT:

Review and Approve the Proposed Water Conservation and Demand Management Committee (WCaDMC) Work Plan, the Outcomes of Board Action of Committee Requests; and the Committee's Next Meeting Agenda.

RECOMMENDATION:

Review and approve the proposed Committee work plan to guide the committee's discussions regarding policy alternatives and implications for Board deliberation.

SUMMARY:

The attached Work Plan outlines the proposed topics for discussion to be able to prepare policy alternatives and implications for Board deliberation. The work plan is agendaized at each meeting as accomplishments are updated and to review additional work plan assignments by the Board.

BACKGROUND:

Governance Process Policy-8:

The District Act provides for the creation of advisory boards, committees, or commissions by resolution to serve at the pleasure of the Board.

Accordingly, the Board has established Advisory Committees, which bring respective expertise and community interest, to advise the Board, when requested, in a capacity as defined: prepare Board policy alternatives and provide comment on activities in the implementation of the District's mission for Board consideration. In keeping with the Board's broader focus, Advisory Committees will not direct the implementation of District programs and projects, other than to receive information and provide comment.

Further, in accordance with Governance Process Policy-3, when requested by the Board, the Advisory Committees may help the Board produce the link between the District and the public

through information sharing to the communities they represent.

ENVIRONMENTAL JUSTICE AND EQUITY IMPACT:

There are no environmental justice and equity impacts associated with item.

ATTACHMENTS:

Attachment 1: 2023 WCaDMC Work Plan

Attachment 2: 2024 WCaDMC Proposed Work Plan

UNCLASSIFIED MANAGER:

Candice Kwok-Smith, 408-630-3193

WCaDMC 2023 WORKPLAN

Task	Agenda Item	January	February	March	April	May	June	July to meeting	August	September	October	November	December
FY 23 Drought Response													
1.1	Monthly Drought Status			X	X	X							
1.2	Drought Response Plan						X						
1.3	Outreach Efforts.			X									
FY 23 WSMP Strategy 1: Secure Existing Supplies - 99,000 AF Conservation by 2030													
2.1	Annual Water Conservation Savings				X								
2.2	Water Conservation Strategic Plan			X									
2.3	Water Conservation Savings Model			X									
2.4	Water Conservation as a Way of Life recommendations (including water waste restrictions)						X					X	
2.5	New Programs (Lawn Busters, Pilot programs, landscape design assistance)				X					X			
2.6	Outreach (including to Renters/Landlords)									X			
2.7	SCW funding (Safe Clean Water Conservation Program - Project A2: Water Conservation Rebates and Programs Update)								X				
2.8	Affordability discussion/supporting underserved communities									X			
2.9	Collaboration with retailers											X	
2.1	Demand Model and water use data								X				
FY 23 WSMP Strategy 2: Increase Water Conservation (109,000 AF) and Stormwater Capture (1,000 AF) by 2040													
3.1	Investments in no-regrets package/stormwater resource plan implementation								X				
3.2	Collaboration with UC Water on Flood Managed Aquifer Recharge (Flood MAR)								X				
3.3	Find opportunities to ensure new development has improved water wise features (MWENDO, land use coordination)										X		
3.4	Resource Needs										X		
3.5	Review long-term goals as part of WSMP update											X	
FY 23 WSMP Strategy 3 Optimize the Use of Existing Supplies and Infrastructure													
4.1	Sustainable Groundwater Management Act (SGMA) - annual update										X		
4.2	South County Recharge												
4.3	Well control zone for Purified Water Project												
FY 23 Other Demand Management Items													
5.1													
5.2													

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PROPOSED WCADM 2024 WORKPLAN

Task	Agenda Item	January	February	March	April	May	June	July	August	September	October	November	December
FY 24 Drought Preparation													
1.1	Drought Response Plan					X							
FY 23 WSMP Strategy 1: Secure Existing Supplies - 99,000 AF Conservation by 2030													
2.1	Water Conservation Savings Model/Annual Water Conservation Savings			X									
2.2	Water Conservation as a Way of Life recommendations (including water waste restrictions)									X			
2.3	New Programs (Lawn Busters, Pilot programs, landscape design assistance)							X					
2.4	Outreach (including to Renters/Landlords)								X				
2.5	SCW funding							X					
2.6	affordability discussion/supporting underserved communities								X				
2.7	Collaboration with retailers										X		
FY 24 WSMP Strategy 2: Increase Water Conservation (109,000 AF) and Stormwater Capture (1,000 AF) by 2040													
3.1	Investments in no-regrets package, including stormwater resource plan		X										
3.2	Stormwater Capture/ FloodMAR			X									
3.3	Find opportunities to ensure new development has improved water wise features (MWENDO, land use coordination)									X			
3.4	Resource Needs										X		
3.5	Review long-term goals as part of WSMP update	X											
FY 24 WSMP Strategy 3 Optimize the Use of Existing Supplies and Infrastructure													
4.1	Sustainable Groundwater Management Act (SGMA) - annual update									X			
4.2	South County Recharge									X			
4.3	Well control zone for Purified Water Project												
FY 23 Other Demand Management Items													
5.1													
5.2													

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