LAS VIRGENES TRIUNFO JOINT POWERS AUTHORITY
Las Virgenes Municipal Water District, 4232 Las Virgenes Road, Calabasas, CA 91302

AGENDA
JOINT POWERS AUTHORITY - REGULAR MEETING
MONDAY, OCTOBER 2, 2023 – 5:00 PM

PUBLIC PARTICIPATION: The public may join this meeting virtually or attend in person in the Board Room. Teleconference participants will be muted until recognized at the appropriate time by the Chair. To join via teleconference, please use the following Webinar ID: https://us06web.zoom.us/j/85633877137

To join by telephone, please dial (669) 900-6833 or (346) 248-7799 and enter Webinar ID:

856 3387 7137

For members of the public wishing to address the Board during Public Comment or during a specific agenda item, please press "Raise Hand" if you are joining via computer; or press *9 if you are joining via phone; or inform the Executive Assistant/Clerk of the Board if attending in person.

Members of the public can also access and request to speak at meetings live on-line, with audio and limited video, at www.lvmwd.com/livestream. To ensure distribution of the agenda, please submit comments 24 hours prior to the day of the meeting. Those comments, as well as any comments received during the meeting, will be distributed to the members of the Board of Directors and will be made part of the official public record of the meeting. Contact Josie Guzman, Executive Assistant/Clerk of the Board, at (818) 251-2123 or jguzman@lvmwd.com with any questions.

ACCESSIBILITY: If requested, the agenda and backup materials will be made available in appropriate alternative formats to persons with a disability, as required by Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and the federal rules and regulations adopted in the implementation thereof. Any person who requires a disability-related modification or accommodation, in order to attend or participate in a meeting, including auxiliary aids or services, may request such reasonable modification or accommodation by contacting the Executive Assistant/Clerk of the Board by telephone at (818) 251-2123 or via email to jguzman@lvmwd.com at least 48 hours prior to the meeting.

Members of the public wishing to address the Board of Directors are advised that a statement of Public Comment Protocols is available from the Clerk of the Board. Prior to speaking, each speaker is asked to review these protocols, complete a speakers' card, and hand it to the Clerk of the Board. Speakers will be recognized in the order the cards are received. A live webcast of the meeting will be available at LVMWD.com. Also, a web-based version of the speaker card is available for those who would like to submit written comments electronically or request to make public comment by telephone during the meeting.

PLEDGE OF ALLEGIANCE

1. **CALL TO ORDER AND ROLL CALL**

2. **APPROVAL OF AGENDA**

3. **PUBLIC COMMENTS**

   Members of the public may now address the Board of Directors ***ON MATTERS NOT APPEARING ON THE AGENDA****, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2*

4. **CONSENT CALENDAR**

   Matters listed under the Consent Calendar are considered to be routine, non-controversial and normally approved with one motion. If discussion is requested by a member of the Board on any Consent Calendar item, or if a member of the public wishes to comment on an item, that item will be removed from the Consent Calendar for separate action.

   4.A **Minutes: Regular Meeting of September 5, 2023** **(Pg. 4)**
   Approve.

   4.B **State Legislative and Regulatory Advocacy** **(Pg. 9)**
   Authorize the Administering Agent/General Manager to execute a one-year professional services agreement with Syrus Devers Advocacy LLC, in the amount of $81,000 with four one-year renewal options, for state legislative and regulatory advocacy services.

   4.C **Federal Legislative and Regulatory Advocacy** **(Pg. 11)**
   Authorize the Administering Agent/General Manager to execute a one-year professional services agreement with Best Best & Krieger LLP, in the amount of $105,000 with four one-year renewal options, for federal legislative and regulatory advocacy services.

5. **ILLUSTRATIVE AND/OR VERBAL PRESENTATION OF AGENDA ITEMS**

   5.A **State and Federal Legislative Update** **(Pg. 14)**

5.B **Pure Water Project Las Virgenes-Triunfo: Update** **(Pg. 46)**

6. **ACTION ITEMS**

6.A **2023 Climate Action and Adaptation Plan: Adoption** **(Pg. 49)**
Pass, approve and adopt proposed Resolution No. 32, adopting the 2023 Climate Action and Adaptation Plan.

RESOLUTION NO. 32

A RESOLUTION OF THE GOVERNING BOARD OF THE LAS VIRGENES-TRIUNFO JOINT POWERS AUTHORITY ADOPTING THE 2023 CLIMATE ACTION AND ADAPTATION PLAN

(Reference is hereby made to Resolution No. 32 on file in the JPA's Resolution Book and by this reference the same is incorporated herein.)

6.B **Municipal Financial Advisory Services: Award** **(Pg. 163)**
Accept the proposal from PFM Financial Advisors LLC, and authorize the Administering Agent/General Manager to execute a five-year professional services agreement, in the amount of $300,000, for municipal financial advisory services.

7. **BOARD COMMENTS**

8. **ADMINISTERING AGENT/GENERAL MANAGER REPORT**

9. **FUTURE AGENDA ITEMS**

10. **INFORMATION ITEMS**

10.A **Pure Water Project Advanced Water Purification Facility Production, Utilization and Augmentation** **(Pg. 222)**

11. **PUBLIC COMMENTS**

Members of the public may now address the Board of Directors ***ON MATTERS NOT APPEARING ON THE AGENDA****, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2*

12. **ADJOURNMENT**

Pursuant to Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and applicable federal rules and regulations, requests for a disability-related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting, should be made to the Executive Assistant/Clerk of the Board in advance of the meeting to ensure availability of the requested service or accommodation. Notices, agendas, and public documents related to the Board meetings can be made available in appropriate alternative format upon request.

LAS VIRGENES – TRIUNFO
JOINT POWERS AUTHORITY
MINUTES
REGULAR MEETING

5:00 PM September 5, 2023

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance to the Flag was led by Leon Shapiro.

1. CALL TO ORDER AND ROLL CALL

The meeting was called to order at **5:00 p.m.** by Chair Jane Nye in the Board Room at Las Virgenes Municipal Water District headquarters at 4232 Las Virgenes Road, Calabasas, CA 91302. Josie Guzman, Clerk of the Board, conducted the roll call.

Present: Directors Burns (arrived at 5:07 p.m.), Caspary, Coradeschi, Lewitt, Nye, Orkney, Shapiro, Tjulander, and Wall
Absent: Director Polan

2. APPROVAL OF AGENDA

Director Shapiro moved to approve the agenda. Motion seconded by Director Tjulander. Motion carried 8-0 by the following vote:

AYES: Caspary, Coradeschi, Lewitt, Nye, Orkney, Shapiro, Tjulander, Wall
NOES: None
ABSTAIN: None
ABSENT: Burns, Polan

3. PUBLIC COMMENTS

None.

4. CONSENT CALENDAR

A Minutes: Regular Meeting of August 7, 2023: Approve

B Tapia WRF 003 Outfall Rehabilitation Project: Authorization of

Additional Environmental Support

Authorize the Administering Agent/General Manager to approve Scope Change No. 3, in the amount of $18,266, for Rincon Consultants, Inc., to provide additional environmental support for the Tapia WRF 003 Outfall Rehabilitation Project.

Director Caspary moved to approve the Consent Calendar. Motion seconded by Director Orkney. Motion carried 8-0 by the following vote:

AYES: Caspary, Coradeschi, Lewitt, Nye, Orkney, Shapiro, Tjulander, Wall
NOES: None
ABSTAIN: None
ABSENT: Burns, Polan

5. ILLUSTRATIVE AND/OR VERBAL PRESENTATION AGENDA ITEMS

A Pure Water Project Las Virgenes-Triunfo: Update

Oliver Slosser, Engineering Program Manager, presented the report. He responded to questions regarding the 1211 wastewater change petition application to the State Water Resources Control Board for an amendment to the discharge limits to Malibu Creek.

B State and Federal Legislative Update

Ana Schwab, federal lobbyist for the JPA with Best Best & Krieger LLP (BBK), accompanied by Samantha Sabol, reported that Senator Alex Padilla would be leading a hearing for the Senate Committee on Environment and Public Works on the Safe Drinking Water State Revolving Fund. She noted that Congress would have until September 30th to adopt the appropriations bills.

Director Burns arrived at 5:07 p.m.

Syrus Devers, state lobbyist for the JPA with Syrus Devers Advocacy, provided an update regarding AB 1484 (Zbur) Temporary Public Employees, and AB 1594 (Garcia) Medium and Heavy Duty Zero Emissions Vehicles Public Agency Utilities. He stated that water bond bills AB 1567 (Garcia) and SB 867 (Allen) would be placed on the November 2024 ballot. He also stated that the text of AB 755 (Papan) Water, Public Entity, Water Usage Demand Analysis was amended. He responded to a question regarding AB 234 (Bauer-Kahan) Microparticles by stating that the JPA expressed support for this bill. He also responded to a question regarding AB 1572 (Friedman) Potable Water Non-functional Turf by stating that this bill would affect municipal non-functional turf and homeowners' associations common areas. He also responded to a question regarding SB 389 (Allen) State Water Resources Control Board Water Investigation of Rights by stating that the forfeiture provisions

were removed from the bill. He also responded to a question regarding SB 676 (Allen) Local Ordinances and Regulations Drought Tolerant Landscaping by stating that this bill was now being used for a different purpose.

C Per- and Polyfluoroalkyl Substances (PFAS): Policy Update and Communication Strategies

Ana Schwab, federal lobbyist for the JPA with Best Best & Krieger LLP (BBK), provided a PowerPoint presentation on actions being taken nationwide on PFAS and legal liabilities, including most commonly known PFAs; U.S. Environmental Protection Agency (EPA) Roadmap; EPA Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) rules and Superfund law; questions and concerns regarding proposed rules; Maximum Contaminant Level Goal (MCLG) and Maximum Contaminant Level (MCL); Safe Drinking Water Act MCLs for six PFAS chains; perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) limits across states; hazard index; and public water system requirements under the proposed National Primary Drinking Water Regulation.

A discussion ensued regarding the ability to test for PFAS levels, lack of science, treatment and disposal methods to implement regulations, concerns with potential impacts to the Pure Water Project Las Virgenes-Triunfo and brine disposal, and concerns with potential impacts to ratepayers.

Ms. Schwab continued the PowerPoint presentation, including monitoring requirements under the proposed rule.

Administering Agent/General Manager David Pedersen discussed the use of reverse osmosis in the Advanced Water Purification Facility to remove PFAS, issues concerning brine removal, and unknown environmental impacts due to PFAS. He noted that there were no PFOA or PFOS detected in Metropolitan Water District of Southern California's (MWD) water supplies; however, they have detected one form of PFAS which is on the list of potential compounds to be regulated.

Ms. Schwab continued the PowerPoint presentation, including impacts of proposed PFAS MCL's, concerns regarding proposed rules, and 3M and Dupont's PFAS liability.

Mike McNutt, Public Affairs and Communications Manager, provided a PowerPoint presentation regarding PFAS communication strategies, proposed action items including developing talking point for the Board, and the availability of a podcast episode regarding constituents of emerging concern and PFAS.

6. ACTION ITEMS

A Climate Action and Adaptation Plan (CAAP): Draft

Review and comment on the draft Climate Action and Adaptation Plan (CAAP).

Joe McDermott, Director of Engineering and External Affairs, presented the report and a PowerPoint presentation. He responded to questions regarding the potential use of floating solar array to reduce the amount of evaporation from water storage facilities, making the CAAP more JPA-centric, and ensuring delineation of Triunfo Water & Sanitation District boundaries on the maps.

Eric Vaughn, representing Rincon Consultants, responded to questions regarding adding "Oak Park" and the names of unincorporated areas to the maps.

7. BOARD COMMENTS

Director Shapiro noted that the quarterly tour of the Tapia Water Reclamation Facility had recently resumed after four years, which was attended by approximately 24 people. He commended Riki Clark, Public Affairs Associate II, for leading the tour.

Director Lewitt acknowledged Ana Schwab on her PFAS presentation and for organizing the Israeli Trade Delegation visit earlier in the day.

8. ADMINISTERING AGENT/GENERAL MANAGER REPORT

Administering Agent/General Manager David Pedersen stated that it was exciting to resume the wastewater tours, and staff would bring back additional information at the next meeting. He reported that flow in Malibu Creek measured 4.6 cubic feet per second (CFS), and four inches of rain was recorded during Tropical Storm Hilary. He stated that the wastewater system performed well during the storm. He also stated that staff inspected the dam and reservoir for damage following the Ojai earthquake.

9. FUTURE AGENDA ITEMS

None.

10. PUBLIC COMMENTS

None.

11. ADJOURNMENT

Seeing no further business to come before the Board, the meeting was duly adjourned at **7:12 p.m**.

Jane Nye, Chair

ATTEST:

Jay Lewitt, Vice Chair

AGENDA ITEM NO. 4.B

DATE: October 2, 2023

TO: JPA Board of Directors

FROM: Engineering and External Affairs

SUBJECT: State Legislative and Regulatory Advocacy

SUMMARY:

On September 8, 2020, the JPA Board authorized the Administering Agent/General Manager to execute a one-year professional services agreement with Best Best & Krieger LLP (BBK) for both state and federal legislative and regulatory advocacy services. Until recently, state advocacy has been provided by Syrus Devers as an employee of BBK. The contract allowed for two annual renewals that were subsequently authorized in 2021 and 2022. In July 2023, Syrus Devers amicably separated from BBK and formed his own lobbying service under the name of Syrus Devers Advocacy LLC.

The current contract for Syrus Devers will be expiring, and staff recommends authorization to execute a new one-year professional services agreement with four one-year renewal options. The proposed agreement with Syrus Devers Advocacy LLC would begin on October 1, 2023 for $6,500 per month, plus a $3,000 annual allowance for reimbursement of actual travel and direct costs, for a total annual cost of $81,000. Under the proposed agreement, Syrus Devers would continue to provide state legislative and regulatory advocacy services. Under a separate Board action, BBK is recommended to continue providing federal legislative and regulatory advocacy.

RECOMMENDATION(S):

Authorize the Administering Agent/General Manager to execute a one-year professional services agreement with Syrus Devers Advocacy LLC, in the amount of $81,000 with four one-year renewal options, for state legislative and regulatory advocacy services.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The total cost for the first year of services is not expected to exceed $81,000. Future renewal options would be adjusted for inflation based on actual changes to the September-to-

September Consumer Price Index – All Urban Consumers for Sacramento. Sufficient funds are available in the adopted Fiscal Year 2023-24 JPA Budget for the first year of services and would be proposed in future fiscal year budgets for the renewal options. The cost of the work would be allocated 70.6 percent to LVMWD and 29.4 percent to Triunfo Water & Sanitation District.

DISCUSSION:

Staff recommends authorization for the Administering Agent/General Manager to execute a new professional services agreement with Syrus Devers Advocacy LLC for state legislative and regulatory advocacy services.

The scope of services under the proposed agreement would remain similar to past years and consists of the following major tasks:

- Identify and Assist with Funding Opportunities: Utilize relationships to monitor state grant programs and other funding opportunities with a special focus on grants and low-interest loans.
- Advocacy and Updates: Represent Las Virgenes Municipal Water District (LVMWD), Triunfo Water & Sanitation District (TWSD) and the Las Virgenes-Triunfo Joint Powers Authority (JPA) before the Legislature and state agencies. Support and oppose legislation according to the interests of LVMWD, TWSD and the JPA. Keep LVMWD, TWSD and the JPA informed of current events through updates and reports to ensure they are informed of opportunities to advance legislative priorities. This includes activities such as drafting background papers, letters of support or opposition, and being prepared to attend and testify at legislative hearings.
- Relationship and Coalition Building: Set meetings with key decision-makers and build coalitions.

Since August 1, 2016, Syrus Devers has worked with the JPA to provide state lobbying services through BBK. Starting in July 2023, Syrus Devers amicably separated from BBK and became an independent contractor. Under the proposed agreement, Syrus Devers Advocacy LLC would provide state legislative and regulatory advocacy services for $6,500 per month, plus a $3,000 annual allowance for reimbursement of actual travel and direct costs, for a total annual cost of $81,000. With state lobbying services provided by Syrus Devers to-date, the JPA has substantially increased its profile on the state level and positioned itself well to receive future funding for the Pure Water Project Las Virgenes-Triunfo.

Staff is also recommending authorization for the Administering Agent/General Manager to execute up to four one-year renewal options adjusted for inflation based on actual changes to the September-to-September Consumer Price Index – All Urban Consumers for Sacramento.

GOALS:

Ensure Effective Utilization of the Public's Assets and Money

Prepared by: Jeremy Wolf, Legislative Program Manager

AGENDA ITEM NO. 4.C

DATE: October 2, 2023

TO: JPA Board of Directors

FROM: Engineering and External Affairs

SUBJECT: Federal Legislative and Regulatory Advocacy

SUMMARY:

On September 8, 2020, the JPA Board authorized the Administering Agent/General Manager to execute a one-year professional services agreement with Best Best & Krieger LLP (BBK) for federal and state legislative and regulatory advocacy services. The contract allowed for two annual renewals that were subsequently authorized in 2021 and 2022. The current contract with BBK has expired, and staff requested a proposal from BBK to continue providing legislative and regulatory advocacy services.

The new proposed professional services agreement with BBK would be for federal advocacy only. If authorized by the JPA Board, the proposed agreement with BBK would begin on October 1, 2023 for $8,500 per month, plus a $3,000 annual allowance for reimbursement of actual travel and direct costs, for a total annual cost of $105,000. Under a separate Board action, Syrus Devers Advocacy LLC is recommended to continue providing advocacy at the state level.

RECOMMENDATION(S):

Authorize the Administering Agent/General Manager to execute a one-year professional services agreement with Best Best & Krieger LLP, in the amount of $105,000 with four one-year renewal options, for federal legislative and regulatory advocacy services.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The total cost for the first year of services is not expected to exceed $105,000. Future renewal options would be adjusted for inflation based on actual changes to the September-to-September Consumer Price Index – All Urban Consumers for Washington-Arlington-Alexandria. Sufficient funds are available in the adopted Fiscal Year 2023-24 JPA Budget for the first year of services and would be proposed in future fiscal year budgets for the renewal

options. The cost of the work would be allocated 70.6 percent to LVMWD and 29.4 percent to Triunfo Water & Sanitation District.

DISCUSSION:

Staff recommends authorization for the Administering Agent/General Manager to execute a new professional services agreement with BBK for federal legislative and regulatory advocacy services.

The scope of services under the proposed agreement would remain similar to past years and consists of the following major tasks:

- Identify and Assist with Funding Opportunities: Utilize relationships to monitor federal grant programs and other funding opportunities with a special focus on grants and low-interest loans.
- Advocacy and Updates: Represent Las Virgenes Municipal Water District (LVMWD), Triunfo Water & Sanitation District (TWSD) and the Las Virgenes-Triunfo Joint Powers Authority (JPA) before Congress and federal agencies. Support and oppose legislation according to the interests of LVMWD, TWSD and the JPA. Keep LVMWD, TWSD and the JPA informed of current events through updates and reports to ensure they are informed of opportunities to advance legislative priorities. This includes activities such as drafting background papers, letters of support or opposition, and being prepared to attend and testify at congressional hearings.
- Relationship and Coalition Building: Set meetings with key decision-makers and build coalitions.

Since August 1, 2016, BBK has worked with the JPA to provide both federal and state lobbying services. Under the new proposed agreement, BBK would provide federal legislative and regulatory advocacy services for $8,500 per month, plus a $3,000 annual allowance for reimbursement of actual travel and direct costs, for a total annual cost of $105,000. The amount is approximately 13 percent higher than the cost for federal advocacy services in 2020, which tracks with inflation of approximately 3.3 percent annually for the Washington D.C. area. For the proposed agreement, BBK would only provide advocacy at the federal level. Under a separate Board action, Syrus Devers Advocacy LLC is recommended to continue providing advocacy at the state level. With the federal lobbying services provided by BBK to-date, the JPA has substantially increased its profile and positioned itself well to receive future funding for the Pure Water Project Las Virgenes-Triunfo.

In 2020, staff evaluated the federal legislative and regulatory advocacy fees paid by other agencies. Although the fees vary depending on the level of service requested by each agency, the following summary provides a basis for comparison. The data showed that the median cost of federal lobbying services was $9,000 per month at that time.

Agency	Monthly Fee
Eastern Municipal Water District	$13,500
West Basin Municipal Water District	$13,250
Irvine Ranch Water District	$10,000
Western Municipal Water District	$9,000

North San Diego County Water Agency Coalition	$9,000
Municipal Water District of Orange County	$8,000
Inland Empire Utilities Agency	$8,000
Median	**$9,000**

Staff is also recommending authorization for the Administering Agent/General Manager to execute up to four one-year renewal options adjusted for inflation based on actual changes to the September-to-September Consumer Price Index – All Urban Consumers for Washington-Arlington-Alexandria.

GOALS:

Ensure Effective Utilization of the Public's Assets and Money

Prepared by: Jeremy Wolf, Legislative Program Manager

BBK
BEST BEST & KRIEGER LLP
ATTORNEYS AT LAW

FEDERAL REPORT

Las Virgenes-Triunfo Water District

September 19, 2023

John Freshman, Ana Schwab, Lowry Crook, and Samantha Sabol

Congress

Congress Looks to Pass the Budget Before September 30th Deadline

Both the House and Senate are resuming their work in Washington D.C. following the August recess. An enormous effort will be required to secure the passage of a federal budget before the September 30th deadline. To avert a government shutdown, the most viable option appears to be a Continuing Resolution (CR), a legislative mechanism to maintain spending at the previous year's levels. Members of both the House Freedom Caucus and the Republican Main Street Caucus reached an agreement on a proposed 30-day CR that would cut 8% of all non-defense federal spending, excluding Veterans Affairs and disaster relief. Enacting this measure would allow time for House Republican leaders to advance funding bills for the Department of Defense and the Department of Homeland Security through the House. Prior to the House floor vote on this CR, several House Republicans turned to social media to openly express their dissatisfaction with the proposal. Given the slim majority in the lower chamber of Congress and numerous absences from both parties, a legislative proposal can only afford to lose four GOP votes to secure passage without the need for Democratic support. Many Senate Democrats have stated they will not support a bill that conflicts with the spending limits set as part of debt ceiling negotiations in June, and excludes additional support for Ukraine and disaster relief. Given these challenging circumstances, the chance of a government shutdown in October is only increasing.

To further complicate matters, Speaker Kevin McCarthy has decided to initiate an impeachment inquiry against President Joe Biden. This action will eliminate the prospect of Democrats offering assistance to McCarthy in the case of a government shutdown. Even within McCarthy's own party, there is reluctance to proceed with this impeachment. Individuals such as Rep. Ken Buck (R-CO-4), a House Freedom Caucus member,

characterize it as an ill-timed move, especially in light of the imminent government shutdown.

Additional Legislative Goals

Work on the 2023 Farm Bill is expected to take a backseat to Appropriations as Senate Minority Leader Mitch McConnell, a Senate Agriculture Committee member, said a resolution of the farm bill will come "not before Sept. 30." It is not uncommon for Congress to continue past the September 30th deadline without passing an extension of the Farm Bill. This last occurred in 2018, when Congress did not approve an extension, and the Farm Bill was later signed into law in December.

Senate Environment and Public Works Committee Hearing

On September 7th, the Senate Environment and Public Works Committee continued their series of hearings to examine the implementation of the Infrastructure Investment and Jobs Act in regards to drinking and wastewater. Ranking Member Shelby Moore Capito (R-WV) highlighted early on the challenges that communities, particularly smaller, rural, and disadvantaged areas lacking resources, face due to aging infrastructure and emerging contaminants such as PFAS. She noted that issues have arisen from Build America and Buy America waivers, resulting in delays and higher costs. Additionally, the absence of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability protections for water systems grappling with PFAS contamination have raised concerns about potential burdens on these systems and their ratepayers.

During a year characterized by an increase in natural disasters, Senator Alex Padilla (D-CA) steered the discussion toward disaster resilience, specifically focusing on the availability of clean drinking water and wastewater management during such crises in California. He pointed to recent difficulties, including tropical storms, atmospheric river storms, and droughts, including a recent boil water advisory in San Diego triggered by Tropical Storm Hilary. As concerns rise about the increasing frequency of such storms due to the unpredictability of climate change, it becomes evident that mitigation measures will be necessary.

Federal Budget/Appropriations

Senate Appropriations Minibus Package

The Senate is making slow progress on a $279 billion package comprised of the Military Construction-VA, Agriculture, and Transportation-HUD bills. Despite strong indications from lawmakers to bring the measure up for debate and amendments, Senator Ron Johnson of Wisconsin obstructed a unanimous consent request to bundle the three bills and initiate votes on an initial set of 10 amendments, some of which were sponsored by Republicans. Senator Johnson, along with others like Senator Rand Paul of Kentucky, argued that the Senate should focus on debating one spending bill at a time.

Biden Administration Supplemental Funding Request

The White House submitted to Congress a $44 billion emergency funding request in August for Ukraine, disaster relief and more, complicating an already contentious battle over appropriations. The proposed foreign assistance request includes approximately $24.1 billion intended for Ukraine and other countries impacted by Russian and Chinese influence.

The package also includes funds to address the rising number of natural disasters, including flooding in Vermont, wildfires in Maui, and hurricanes affecting the east coast. FEMA's disaster relief fund is already confronting a significant deficit of almost $4.3 billion. To address this, the White House proposal request would include $16 billion into the fund to close the imminent funding gap and potentially sustain it for several months. The package also includes nearly $4 billion for a variety of measures aimed at strengthening the security of the southern border.

Administration/Agency

Bureau of Reclamation Releases Summary of Public Comments on Colorado River Post 2026 Operations

The Bureau of Reclamation has released a summary of the public comments they received, in response to their solicitation for comments for the Environmental Impact Statement on current Colorado River operations. Many of the documents and agreements that currently govern Colorado River procedures and management are set to expire in 2026. These documents include the 2007 Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead, and the 2019 Drought Contingency Plans. The Bureau of Reclamation is already formulating a plan of action for reauthorization, beginning with the preparation for an Environmental Impact Statement on these operations. They held a 60-day public comment period from June 16, 2023, through August 15, 2023, and received comments from Tribes, federal agencies, non-governmental entities, the public, and others. The Bureau published a statement on the submissions they received, and plan to publish a report by the end of this year.

EPA, Army Release Amended WOTUS rule

The U.S. Environmental Protection Agency (EPA) and the U.S. Department of the Army jointly unveiled a final rule on September 8th, 2023. This rule updates the 2023 definition of "Waters of the United States" to align with the recent Supreme Court ruling in Sackett v. EPA. Notably, this is a “direct to final rule,” meaning the Agencies did not provide advanced public notice, or seek public comment on, the rule.

The Sackett Rule introduces several key clarifications regarding the jurisdiction of wetlands under the CWA. It specifies that interstate wetlands are not automatically considered part of interstate waters, and wetlands are now subject to federal jurisdiction only if they are "adjacent" to other jurisdictional waters or if they fall into the revised "additional waters" category. The term "adjacent" is redefined to mean having a continuous surface connection, departing from the previous interpretation that included wetlands separated from other WOTUS by features like dikes, berms, and dunes.

Furthermore, the Sackett Rule provides clarity on the types of aquatic features that fall under the "additional waters" category, which includes lakes and ponds. These bodies of

water must meet both the criteria of being relatively permanent and having a continuous surface connection to certain downstream waters to be considered jurisdictional under the CWA. Moving forward it will be key to monitor how the Agencies will implement the Sackett Rule and how courts will address these open questions.

Funding Opportunities

Department of Interior – Bureau of Reclamation

The Bureau of Reclamation opened Phase I of their WaterSMART: Cooperative Watershed Management Program, which will provide funding to watershed groups to foster local stakeholder collaboration. This will help address water management needs, as well as promote reliability, cooperation, and conflict reduction. This opportunity is open to states, Indian Tribes, irrigation districts, water districts, local governmental entities, non-profit organizations, Existing Watershed Groups, and local and special districts. The award ceiling is $300,000 per applicant. The first application period will close on **December 5, 2023**, and a second application period will close **September 3, 2024**. More information can be found here.

The Bureau of Reclamation opened their WaterSMART: Large-Scale Water Recycling Projects for Fiscal Years 2023 and 2024 to assist in the planning, design, and construction of large water recycling projects. This opportunity is open to states, tribes, irrigation districts, water districts, and other organizations with water or power delivery authority, that are located in the Lower Basin States, or the State of Hawaii, American Samoa, Guam, and the Northern Mariana Islands. The program has $180 million in total funding that is expected to be allocated over 2 to 10 awards. Additional projects may be funded if additional funds become available in FY24. There are three application submittal periods, ending on **November 21, 2023, March 29, 2024, and September 30, 2024** respectively. More information can be found here.

The Bureau of Reclamation opened their WaterSMART: Water Conservation Field Services Program to support projects and technology that conserve water and work to mitigate the consequences of water shortages. This opportunity is open to states, tribes, irrigation districts, water districts, and other organizations with water or power delivery authority, that are located in the Lower Basin States, or the State of Hawaii, American Samoa, Guam,

and the Northern Mariana Islands. The award ceiling is $100,000 for any one entity. The application deadline is October 13, 2023. More information can be found here.

The Bureau of Reclamation opened the WaterSMART: Aquatic Ecosystem Restoration Projects opportunity. This grant will support the study, design, and implementation of restoration projects that improve the health and ecosystem for fish, wildlife, and aquatic habitats. Applications are due January 24, 2023. More information can be found here.

The Bureau of Reclamation opened their funding opportunity for WaterSMART: Planning and Project Design. This grant opportunity is available to assist in improving water management operations, and planning activities related to water supply. This includes water access for disadvantaged communities, project-specific design elements, and comprehensive drought contingency plans. Proposals received prior before Tuesday, October 17, 2023, at 4:00 p.m. (MT) will be considered for FY 2023 funding. Proposals received after October 17, 2023, and before April 2, 2024, at 4:00 p.m. (MT) will be considered for FY 2024 funding, contingent on appropriations. More information can be found here.

The Bureau of Reclamation opened the funding opportunity for the WaterSMART Drought Response Program. This opportunity is available to increase water management resiliency, and to address the impacts of water supply shortages. Projects should increase reliability of water supply, improve water management, or construction of water supply projects. Applications are due October 31, 2023. More information can be found here.

Environmental Protection Agency

The Environmental Protection Agency opened the funding opportunity for the Drinking Water System Infrastructure Resilience and Sustainability Program. This will go towards assisting underserved, small, and disadvantaged communities for the purpose of increasing drinking water facility resilience to natural hazards. Approximately $19 million in funding has been allocated, with an award ceiling of $6.65 million. Applications are due on November 6, 2023. More information can be found here.

SENIOR DIRECTOR OF
GOVERNMENT AFFAIRS*
John D. Freshman
(202) 370-5301
john.freshman@bbklaw.com
Washington, D.C.

*Not admitted to the practice of law

DIRECTOR OF
GOVERNMENT AFFAIRS
Ana D. Schwab
(202) 370-5311
ana.schwab@bbklaw.com
Washington, D.C.

PARTNER
Lowry A. Crook
(202) 370-5328
lowry.crook@bbklaw.com
Washington, D.C.

ASSISTANT DIRECTOR OF
GOVERNMENT AFFAIRS*
Samantha Sabol
(202) 991-5833
samantha.sabol@bbklaw.com
Washington, D.C.

*Not admitted to the practice of law

September 2023 Bill Tracking Matrix

Legislation	Summary	Status	Cosponsors	# of Cosponsors
H.R. 186 Water Supply Permitting Coordination Act	To authorize the Secretary of the Interior to coordinate Federal and State permitting processes related to the construction of new surface water storage projects on lands under the jurisdiction of the Secretary of the Interior and the Secretary of Agriculture and to designate the Bureau of Reclamation as the lead agency for permit processing, and for other purposes.	01/09/2023 Introduced by Rep. Tom McClintock (R-CA-4) 2/21/2023 Referred to the Subcommittee on Water, Wildlife, and Fisheries.	**Rep. Doug LaMalfa (R-CA-1); Rep. David Valadao (R-CA-21);** Rep. Cliff Bentz (R-OR-2); Rep. Burgess Owens (R-UT-4); Rep. Pete Stauber (R-MN-8);	5
H.R. 215 WATER for California Act	To provide long-term water supply and regulatory reliability to drought-stricken California, and for other purposes.	1/09/2023 Introduced by Rep. David Valadao (R-CA-21) 4/28/2023 Subcommittee on Water, Wildlife, and Fisheries Discharged.	**Rep. Ken Calvert (R-CA-42); Rep. John Duarte (R-CA-13); Rep. Mike Garcia (R-CA-25); Rep. Darrell Issa (R-CA-50); Rep. Kevin Kiley (R-CA-3); Rep. Young Kim (R-CA-39); Rep. Doug LaMalfa (R-CA-1); Rep.**	11
H.R. 250 Clean Water SRF Parity Act	This bill expands the state revolving fund established under the Clean Water Act, including by allowing low-interest loans to be given to privately owned treatment works to address wastewater. Currently, loans are given to wastewater systems that are publicly owned.	01/10/2023 Introduced by Rep. John Garamendi (D-CA-8) 02/01/2023 Referred to the Subcommittee on Water Resources and Environment.	Rep. Mike Bost (R-IL-12); Rep. Donald Norcross (D-NJ-1); Rep. Abigail Spanberger (D-VA-7)	3
H.R. 369 NIST Wildland Fire Communications and Information Dissemination Act	To require the National Institute of Standards and Technology to conduct research on public safety communication coordination standards among wildland firefighters and fire management response officials.	01/17/2023 Introduced by Rep. Young Kim (R-CA-40) 06/21/2023 Committee Consideration and Mark-up Session Held	**Rep. Mike Garcia (R-CA-25)**; Rep. Teresa Leger Fernandez (D-NM-3); Rep. Joe Neguse (D-CO-2); Rep. Melanie Ann Stansbury (D-NM-1)	4
S. 64 Water Rights Protection Act of 2023	A bill to prohibit the conditioning of any permit, lease, or other use agreement on the transfer of any water right to the United States by the Secretary of the Interior and the Secretary of Agriculture, and for other purposes.	01/25/2023 Introduced by Senator John Barrasso (R-WY) 01/25/2023 Referred to the Committee on Energy and Natural Resources.	Sen. Mike Crapo (R-ID); Sen. James Risch (R-ID)	2
S. 188 Wildfire Emergency Act of 2023	A bill to direct the Secretary of Agriculture to select and implement landscape-scale forest restoration projects, to assist communities in increasing their resilience to wildfire, and for other purposes.	01/31/2023 Introduced by Senator Dianne Feinstein (D-CA) 01/31/2023 Referred to the Committee on Energy and Natural Resources.	**Sen. Alex Padilla (D-CA)**; Sen. Steve Daines (R-MT); Sen. Ron Wyden (D-OR)	3
H.J.Res 27 Providing for congressional disapproval under chapter 8 of title 5, United States Code, of the rule submitted by the Department of the Army, Corps of Engineers, Department of Defense and the Environmental Protection Agency relating to 'Revised Definition of 'Waters of the United States''.	This joint resolution nullifies the rule titled Revised Definition of "Waters of the United States," which was submitted by the U.S. Army Corps of Engineers and the Environmental Protection Agency on January 18, 2023. The rule specifies which bodies of water fall under the scope of the Clean Water Act and are thereby under federal jurisdiction and protected. For example, the definition in the 2023 rule includes certain wetlands and ephemeral waters (e.g., waters that flow intermittently). The 2023 rule replaced the 2020 Navigable Waters Protection Rule that included a narrower definition of waters of the United States.	02/02/2023 Introduced by Rep. Sam Graves (R-MO-06). 04/18/2023 The Chair directed the Clerk to notify the Senate of the action of the House.	**Rep. Ken Calvert (R-CA-42); Rep. John Duarte (R-CA-13); Rep. Mike Garcia (R-CA-25); Rep. Darrell Issa (R-CA-50); Rep. Kevin Kiley (R-CA-3); Rep. Doug LaMalfa (R-CA-1); Rep. Tom McClintock (R-CA-4); Rep. David Valadao (R-CA-21);** Rep. Robert Aderholt (R-AL-4); Rep. Mark Alford (R-MO-4); Rep. Rick Allen (R-GA-12); Rep. Mark Amodei (R-NV-2); Rep. Kelly Armstrong (R-ND-1); Rep. Jodey	170
S.J. Res. 7 A joint resolution providing for congressional disapproval under chapter 8 of title 5, United States Code, of the rule submitted by the Department of the Army, Corps of Engineers, Department of Defense and the Environmental Protection Agency relating to 'Revised Definition of 'Waters of the United States''.	This joint resolution nullifies the rule titled Revised Definition of "Waters of the United States," which was submitted by the U.S. Army Corps of Engineers and the Environmental Protection Agency on January 18, 2023. The rule specifies which bodies of water fall under the scope of the Clean Water Act and are thereby under federal jurisdiction. The 2023 rule replaced a 2020 rule that included a narrower definition of waters of the United States.	02/02/2023 Introduced By Senator Shelley Moore Capito (R-WV). 02/13/2023 Star Print ordered on the joint resolution.	Sen. John Barrasso (R-WY); Sen. Marsha Blackburn (R-TN); Sen. John Boozman (R-AR); Sen. Mike Braun (R-IN); Sen. Katie Britt (R-AL); Sen. Ted Budd (R-NC); Sen. Bill Cassidy (R-LA); Sen. Susan Collins (R-ME); Sen. John Cornyn (R-TX); Sen. Thomas Cotton (R-AR); Sen. Kevin Cramer (R-ND); Sen. Mike Crapo (R-ID); Sen. Ted Cruz (R-TX); Sen. Steve Daines (R-MT); Sen. Joni Ernst (R-IA);	49

H.R. 872 FISH Act	This bill gives the Fish and Wildlife Service (FWS) the sole authority to protect endangered or threatened species that are anadromous species (species of fish that spawn in fresh or estuarine waters and that migrate to ocean waters) or catadromous species (species of fish that spawn in ocean waters and migrate to fresh or estuarine waters). Currently, the FWS shares this authority with the National Marine Fisheries Service.	02/08/23 Introduced by Rep. Ken Calvert (R-CA-41) 02/21/23 Referred to the Subcommittee on Water, Wildlife, and Fisheries.	**Rep. Jim Costa (D-CA-16); Rep. Darrell Issa (R-CA-50); Rep. Doug LaMalfa (R-CA-1); Rep. Tom McClintock (R-CA-4); Rep. Jay Obernolte (R-CA-8); Rep. Michelle Steel (R-CA-48);** Rep. Mike Simpson (R-ID-2);	7
H.R. 873 Water Quality and Environmental Innovation Act	To authorize the Administrator of the Environmental Protection Agency to award grants and contracts for projects that use emerging technologies to address threats to water quality, and for other purposes.	02/08/2023 Introduced by Rep. Byron Donalds (R-FL-19) Referred to the Committee on Transportation and Infrastructure, and in addition to the Committees on Energy and Commerce, and Science, Space, and Technology.	Rep. Josh Gottheimer (D-NJ-5)	1
H.R.934 To require the Secretary of Agriculture to carry out activities to suppress wildfires, and for other purposes	This bill would require the Secretary of Agriculture to carry out activities to suppress wildfires, and for other purposes	02/09/2023 Introduced by Rep. Tom McClintock (R-CA-5) 05/23/2023 Subcommittee Hearings Held	**Rep. Ken Calvert (R-CA-42); Rep. John Duarte (R-CA-13); Rep. Darrell Issa (R-CA-50); Rep. Doug LaMalfa (R-CA-1); Rep. Jay Obernolte (R-CA-8);** Rep. Daniel Newhouse (R-WA-4)	6
H.R. 1049 Protecting Airport Communities from Particle Emissions Act	To direct the Administrator of the Federal Aviation Administration to conduct a study relating to ultrafine particles, and for other purposes.	02/14/2023 Introduced by Rep. Adam Smith (D-WA-9) 02/24/23 Referred to the Subcommittee on Environment, Manufacturing, and Critical Materials.	Rep. Suzan DelBene (D-WA-1); Rep. Pramila Jayapal (D-WA-7); Rep. Grace Meng (D-NY-6); Rep. Eleanor Norton (D-DC-1)	4
S.466 Federal PFAS Research Evaluation Act	The bill requires the National Science Foundation (NSF) to enter into an agreement with the National Academies of Sciences, Engineering, and Medicine (NASEM) to conduct a two-phase study and report on the research and development needed to advance human exposure estimation and toxicity hazard estimation of individual or total PFAS.	02/16/2023 Introduced by Sen. Gary Peters (D-MI) 02/16/2023 Read twice and referred to the Committee on Commerce, Science, and Transportation	Sen. Richard Durbin (D-IL); Sen. Jerry Moran (R-KS); Sen. Jeanne Shaheen (D-NH)	3
H.R.1142 - To amend the Endangered Species Act of 1973 to require consideration of economic impact in making a listing decision with respect to the list of threatened and endangered species, and for other purposes.	This bill would amend the Endangered Species Act of 1973 to require consideration of economic impact in making a listing decision with respect to the list of threatened and endangered species, and for other purposes.	02/21/2023 Introduced by Rep. August Pfluger (R-TX-11) 03/22/2023 Referred to the Subcommittee on Water, Wildlife, and Fisheries.	**Rep. Tom McClintock (R-CA-4);** Rep. Ronny Jackson (R-TX-13); Rep. Tracey Mann (R-KS-1); Rep. Greg Steube (R-FL-17)	4
H.R. 1152 Water Quality Certification and Energy Project Improvement Act of 2023	This bill would amend the Federal Water Pollution Control Act to make changes with respect to water quality certification, and for other purposes.	02/24/2023 Introduced by Rep. David Rouzer (R-NC-7) 03/17/2023 Reported by the Committee on Transportation and Infrastructure. H. Rept. 118-10.	Rep. Garret Graves (R-LA-6); Rep. Scott Perry (R-PA-10)	2
H.R. 1181 To amend the Federal Water Pollution Control Act with respect to permitting terms, and for other purposes.	This bill extends the maximum term for certain permits issued under the National Pollutant Discharge Elimination System (NPDES) program. Specifically, the bill extends the maximum term for NPDES permits issued to states or municipalities from 5 to 10 years. Under the program, the Environmental Protection Agency issues permits to discharge pollutants from point sources, such as pipes, into waters of the United States.	02/24/2023 Introduced by Rep. John Garamendi (D-CA-8) 02/27/2023 Referred to the Subcommittee on Water Resources and Environment.	**Rep. Eric Swalwell (D-CA-15); Rep. Ken Calvert (R-CA-42);** Rep. Andre Carson (D-IN-7); Rep. Garret Graves (R-LA-6);	4
H.R. 1430 Determination of NEPA Adequacy Streamlining Act	This bill would direct the Secretary of the Interior and the Secretary of Agriculture to use certain previously completed environmental assessments and environmental impact statements to satisfy the review requirements of the National Environmental Policy Act of 1969, and for other purposes.	03/07/2023 Introduced by Rep. David Valadao (R-CA-21) 04/25/2023 Referred to the Subcommittee on Forestry.		0
H.R.1517 Relief for Farmers Hit with PFAS Act	This bill would authorize the Secretary of Agriculture to provide grants to States, territories, and Indian Tribes to address contamination by perfluoroalkyl and polyfluoroalkyl substances on farms, and for other purposes.	03/09/2023 Introduced by Rep. Chellie Pingree (D-ME-1) 03/09/2023 Referred to the House Committee on Agriculture	Rep. Teresa Leger Fernandez (D-NM-3); Rep. Jared Golden (D-ME-2); Rep. Marie Perez (D-WA-3); Rep. Elissa Slotkin (D-MI-8)	4

S.747 Relief for Farmers Hit with PFAS Act	This bill would authorize the Secretary of Agriculture to provide grants to States, territories, and Indian Tribes to address contamination by perfluoroalkyl and polyfluoroalkyl substances on farms, and for other purposes.	03/09/2023 Introduced by Sen Susan Collins (R-ME) 03/09/2023 Read twice and referred to the Committee on Agriculture, Nutrition, and Forestry	Sen. Tammy Baldwin (D-WI); Sen. Kirsten Gillibrand (D-NY); Sen. Maggie Hassan (D-NH); Sen. Angus King (I-ME); Sen. Ben Lujan (D-NM); Sen. Bernie Sanders (I-VT); Sen. Jeanne Shaheen (D-NH)	7
H.R. 1586 Forest Protection and Wildland Firefighter Safety Act of 2023	This bill would allow the Secretary of the Interior and the Secretary of Agriculture to use a fire retardant, chemical, or water for fire suppression, control, or prevention activities.	3/14/2023 Introduced by Rep. Doug LaMalfa (R-CA-1) 05/17/2023 Ordered to be Reported - House Committee on Natural Resources	**Rep. Jay Obernolte (R-CA-8); Rep. David Valadao (R-CA-21); Rep. Ken Calvert (R-CA-42); Rep. Jim Costa (D-CA-16); Rep. Rick Crawford (R-AR-1); Rep. John Duarte (R-CA-13); ; Rep. John Garamendi (D-CA-3);**	30
H.R. 1 Lower Energy Costs Act	To lower energy costs by increasing American energy production, exports, infrastructure, and critical minerals processing, by promoting transparency, accountability, permitting, and production of American resources, and by improving water quality certification and energy projects, and for other purposes.	03/14/2023 Introduced by Rep. Steve Scalise (R-LA-1) 03/30/2023 The Clerk was authorized to correct section numbers, punctuation, and cross references, and to make other necessary technical and conforming corrections in the engrossment of H.R. 1.	**Rep. Tom McClintock (R-CA-4);** Rep. Robert Aderholt (R-AL-4); Rep. Rick Allen (R-GA-12); Rep. Kelly Armstrong (R-ND-1); Rep. Troy Balderson (R-OH-12); Rep. Lauren Boebert (R-CO-3); Rep. Michael Burgess (R-TX-26); Rep. Kat Cammack (R-FL-3); Rep. Mike Carey (R-OH-15); Rep. Buddy Carter (R-GA-1); Rep. Dan Crenshaw (R-TX-2); Rep. John	49
S. 820 Protecting Consumers from PFAS Act	This bill would require the Consumer Product Safety Commission (CPSC) to be added to the Administration interagency work group that coordinates federally funded PFAS research and development.	03/15/2023 Introduced by Sen. Gary Peters (D-MI) 06/14/2023 Committee on Homeland Security and Governmental Affairs. Ordered to be reported with an amendment favorably.	Burgess (R TX-26) **R**e Sen. Susan Collins (-ME); Sen. Cynthia Lummis (R-WY); Sen. Peter Welch (D-VT)	3
H.R.1729 Water Affordability, Transparency, Equity, and Reliability Act	This bill would establish a trust fund to provide for adequate funding for water and sewer infrastructure, and for other purposes.	03/22/2023 Introduced by Rep. Bonnie Watson Coleman (D-NJ-12) 04/25/2023 Referred to the Subcommittee on Commodity Markets, Digital Assets, and Rural Development.	**Rep. Kevin Mullin (D-CA-15); Rep. Jimmy Panetta (D-CA-20); Rep. Ro Khanna (D-CA-17); Rep. Barbara Lee (D-CA-13); Rep. Ted Lieu (D-CA-33); Rep. Doris Matsui (D-CA-6); Rep. Sara Jacobs (D-CA-53); Rep.**	75
H.R. 1740 To amend the Water Infrastructure Finance and Innovation Act of 2014 to establish payment and performance security requirements for projects, and for other purposes.	To amend the Water Infrastructure Finance and Innovation Act of 2014 to establish payment and performance security requirements for projects, and for other purposes.	3/23/2023 Introduced by Rep. Mike Bost (R-IL-12). 03/31/2023 Referred to the Subcommittee on Environment, Manufacturing, and Critical Materials.	Rep. Troy Balderson (R-OH-12); Rep. Stephen Lynch (D-MA-8); Rep. Chris Pappas (D-NH-1); Rep. Donald Payne (D-NJ-10); Rep. Daniel Webster (R-FL-10)	5
S. 1022 Define WOTUS Act of 2023	This bill would amend the Federal Water Pollution Control Act to modify the definition of navigable waters, and for other purposes.	03/29/2023 Introduced by Sen. Mike Braun (R-IN) 03/29/2023 Read twice and referred to the Committee on Environment and Public Works.	Sen. Joni Ernst (R-IA); Sen. Chuck Grassley (R-IA)	2
H.R. 2419 Canal Conveyance Capacity Restoration Act	This bill would provide financial assistance for projects to address certain subsidence impacts in the State of California, and for other purposes.	03/30/2023 Introduced by Rep. Jim Costa (D-CA-16) 05/08/2023 Referred to the Subcommittee on Water, Wildlife, and Fisheries.	**Rep. John Garamendi (D-CA-3); Rep. Josh Harder (D-CA-10)**	2
H.R.2670 National Defense Authorization Act for Fiscal Year 2024	This bill authorizes FY2024 appropriations and sets forth policies for Department of Defense (DOD) programs and activities, military construction, and the national security programs of the Department of Energy (DOE). The bill authorizes appropriations, but does not provide budget authority, which is provided by appropriations legislation.	04/18/2023 Introduced by Rep. Mike Rogers (R-AL-3) 07/14/2023 On passage Passed by the Yeas and Nays: 219 - 210	Rep. Adam Smith (D-WA-9)	1

H.R. 2735 Coastal State Climate Preparedness Act of 2023	This bill directs the Department of Commerce to establish a coastal climate change adaptation preparedness and response program. Under the program, Commerce must (1) assist coastal states with voluntarily developing coastal climate change adaptation plans, and (2) provide financial and technical assistance as well as training for coastal states to implement the adaptation plans.	04/20/2023 Introduced by Rep. Salud Carbajal (D-CA-24) 05/22/2023 Referred to the Subcommittee on Water, Wildlife, and Fisheries	**Rep. Ted Lieu (D-CA-33);** Rep. Brian Fitzpatrick (R-PA-1);	2
H.R. 2787 To amend the Consolidated Farm and Rural Development Act to modify provisions relating to rural decentralized water systems grants.	This bill would amend the Consolidated Farm and Rural Development Act to modify provisions relating to rural decentralized water systems grants.	04/20/2023 Introduced by Rep. Terri Sewell (D-AL-7) 05/15/2023 Referred to the Subcommittee on Commodity Markets, Digital Assets, and Rural Development.	Rep. Mike Rogers (R-AL-3)	1
H.R. 2811 Limit, Save, Grow Act of 2023	This bill increases the federal debt limit and decreases spending. It also repeals several energy tax credits, modifies the permitting process and other requirements for energy projects, expands work requirements for the Supplemental Nutrition Assistance Program (SNAP) and other programs, and nullifies regulations for the cancellation of federal student loan debt.	04/25/2023 Introduced by Rep. Jodey Arrington (R-TX-19) 05/04/2023 Committee on the Budget. Hearings held.	**Rep. Rep. Tom McClintock (R-CA-4)**; Rep. Stephanie Bice (R-OK-5); Rep. Michael Burgess (R-TX-26); Rep. Buddy Carter (R-GA-1); Rep. James Comer (R-KY-1); Rep. Chuck Edwards (R-NC-11); Rep. Virginia Foxx (R-NC-5); Kay Granger (R-TX-12); Rep. Sam	19
S.1360 PFAS Exposure Assessment and Documentation Act	This bill would require DOD to ensure that any periodic health assessment, physical assessment for recently separated members, pre-deployment medical examination, post-deployment medical examination, and post-deployment health reassessment provided to a member of the Armed Forces includes an evaluation of whether the member has been exposed to PFAS or was based or stationed at a military installation with a known or suspected release of PFAS during the period the member was there.	04/27/2023 Introduced by Sen. Jeanne Shaheen (D-NH) 04/27/2023 Read twice and referred to the Committee on Armed Services		0
H.R.3027 Reclamation Climate Change and Water Program Reauthorization Act	This bill would reauthorize funding for the Reclamation Climate Change and Water Program.	04/28/2023 Introduced by Rep. Katie Porter (D-CA-47) 06/14/2023 Subcommittee Hearings Held	**Rep. Sydney Kamlager (D-CA-37); Rep. Mike Levin (D-CA-49); Rep. Zoe Lofgren (D-CA-19); Rep. Grace Napolitano (D-CA-32)**; Rep. Melanie Ann Stansbury (D-NM-1); Rep. Earl	8
S.1427 Agriculture PFAS Liability Protection Act	This bill would exempt certain entities from liability under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 with respect to releases of perfluoroalkyl and polyfluoroalkyl substances, and for other purposes.	05/03/2023 Introduced by Sen. Cynthia Lummis (R-WY) 05/03/2023 Read twice and referred to the Committee on Environment and Public Works.	Sen. John Boozman (R-AR); Sen. Kevin Cramer (R-ND); Sen. Lindsey Graham (R-SC); Sen. Markwayne Mullin (R-OK); Sen. Pete Ricketts (R-NE); Sen. Dan Sullivan (R-AK); Sen. Roger Wicker (R-MS)	7
S. 1429 Resource Management PFAS Liability Protection Act	This bill would exempt certain entities from liability under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 with respect to releases of perfluoroalkyl and polyfluoroalkyl substances, and for other purposes.	05/03/2023 Introduced by Sen. Cynthia Lummis (R-WY) 05/03/2023 Read twice and referred to the Committee on Environment and Public Works.	Sen. John Boozman (R-AR); Sen. Kevin Cramer (R-ND); Sen. Lindsey Graham (R-SC); Sen. Markwayne Mullin (R-OK); Sen. Pete Ricketts (R-NE); Sen. Dan Sullivan (R-AK); Sen. Roger Wicker (R-MS)	7
S. 1430 Water Systems PFAS Liability Protection Act	This bill would exempt certain entities from liability under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 with respect to releases of perfluoroalkyl and polyfluoroalkyl substances, and for other purposes.	05/03/2023 Introduced by Sen. Cynthia Lummis (R-WY) 05/03/2023 Read twice and referred to the Committee on Environment and Public Works.	Sen. John Boozman (R-AR); Sen. Kevin Cramer (R-ND); Sen. Lindsey Graham (R-SC); Sen. Markwayne Mullin (R-OK); Sen. Pete Ricketts (R-NE); Sen. Dan Sullivan (R-AK); Sen. Roger Wicker (R-MS)	7
S.1432 Fire Suppression PFAS Liability Protection Act	This bill would exempt certain entities from liability under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 for the release of certain perfluoroalkyl or polyfluoroalkyl substances, and for other purposes.	05/03/2023 Introduced by Sen. Cynthia Lummis (R-WY) 05/03/2023 Read twice and referred to the Committee on Environment and Public Works	Sen. John Boozman (R-AR); Sen. Kevin Cramer (R-ND); Sen. Lindsey Graham (R-SC); Sen. Markwayne Mullin (R-OK); Sen. Pete Ricketts (R-NE); Sen. Dan Sullivan (R-AK); Sen. Roger Wicker (R-MS)	7

S.1433 Airports PFAS Liability Protection Act	This bill would exempt certain aviation entities from liability under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 for the release of certain perfluoroalkyl or polyfluoroalkyl substances, and for other purposes.	05/03/2023 Introduced by Sen. Cynthia Lummis (R-WY) 05/03/2023 Read twice and referred to the Committee on Environment and Public Works	Sen. John Boozman (R-AR); Sen. Kevin Cramer (R-ND); Sen. Lindsey Graham (R-SC); Sen. Markwayne Mullin (R-OK); Sen. Pete Ricketts (R-NE); Sen. Dan Sullivan (R-AK); Sen. Roger Wicker (R-MS)	7
S. 1449 RESTART Act	This bill seeks to improve the environmental review process, and for other purposes.	05/04/2023 Introduced by Sen. Shelley Capito (R-WV) 05/04/2023 Read twice and referred to the Committee on Environment and Public Works.	Sen. John Barrasso (R-WY); Sen. John Boozman (R-AR); Sen. Kevin Cramer (R-ND); Sen. Lindsey Graham (R-SC); Sen. James Lankford (R-OK); Sen. Cynthia Lummis (R-WY); Sen. Pete Ricketts (R-NE); Sen. James Risch (R-ID); Sen. Dan Sullivan (R-AK); Sen. Roger Wicker (R-MS)	10
S.1456 SPUR Act	This bill would provide for certain energy development, permitting reforms, and for other purposes.	05/04/2023 Introduced by Sen. Joh Barrasso (R-WY) 05/04/2023 Read twice and referred to the Committee on Energy and Natural Resources.	Sen. Shelley Capito (R-WV); Sen. Bill Cassidy (R-LA); Sen. Steve Daines (R-MT); Sen. Josh Hawley (R-MO); Sen. John Hoeven (R-ND); Sen. Cindy Hyde-Smith (R-MS); Sen. James Lankford (R-OK); Sen. Mike Lee	10
H.R.3192 PFAS Registry Act	This bill would require the Secretary of Veterans Affairs to establish and maintain a registry for certain individuals who may have been exposed to per- and polyfluoroalkyl substances due to the environmental release of aqueous film-forming foam on military installations.	05/10/2023 Introduced by Rep. Chris Pappas (D-NH-1) 05/26/2023 Referred to the Subcommittee on Health	Rep. Brian Fitzpatrick (R-PA-1); Rep. Ann Kuster (D-NH-2); Rep. Mike Lawler (R-NY-17)	3
H.R.3389 Emergency Wildfire Fighting Technology Act	This bill would require the Secretary of Agriculture, acting through the Chief of the Forest Service, and the Secretary of the Interior to conduct an evaluation with respect to the use of the container aerial firefighting system (CAFFS), and for other purposes.	05/16/2022 Introduced by Rep. David Valadao (R-CA-22) 06/23/2023 Referred to the Subcommittee on Forestry	**Rep. Jim Costa (D-CA-16); Rep. Mike Garcia (R-CA-25); Rep. Josh Harder (D-CA-10); Rep. Darrell Issa (R-CA-50); Rep. Kevin Kiley (R-CA-3)**; Rep. Doug Lamborn (R-CO-5); Rep. Daniel Newhouse (R-WA-4); Rep. Mark	9
H.R.3396 To require the standardization of reciprocal fire suppression cost share agreements, and for other purposes.	This bill would require the standardization of reciprocal fire suppression cost share agreements, and for other purposes.	05/17/2023 Introduced by Rep. Josh Harder (D-CA-10) 05/23/2023 Subcommittee Hearings Held	**Rep. Doug LaMalfa (R-CA-1);** Rep. John Curtis (R-UT-3); Rep. Chris Stewart (R-UT-2)	3
H.R.3439 - To direct the Secretary of Agriculture to select and implement landscape-scale forest restoration projects, to assist communities in increasing their resilience to wildfire, and for other purposes	This bill would direct the Secretary of Agriculture to select and implement landscape-scale forest restoration projects, to assist communities in increasing their resilience to wildfire, and for other purposes.	05/17/2023 Introduced by Rep. Jimmy Panetta (D-CA-20) 05/22/2023 Referred to the Subcommittee on Federal Lands	**Rep. Adam Schiff (D-CA-28); Rep. Mike Thompson (D-CA-5); Rep. Salud Carbajal (D-CA-24); Rep. Jim Costa (D-CA-16); Rep. Mark DeSaulnier (D-CA-11); Rep. John Garamendi (D-CA-3); Rep. Barbara Lee (D-CA-13);** Rep. Andrea Salinas (D-OR-6);	8
H.R.3457 SUPERSAFE Act	This bill would direct the Administrator of the Environmental Protection Agency to establish a consortium relating to exposures to toxic substances and identifying chemicals that are safe to use.	05/18/2023 Introduced by Rep. Zoe Lofgren (D-CA-18) 05/18/2023 Referred to the House Committee on Energy and Commerce		0
H.R.3499 Direct Hire to Fight Fires Act	This bill would amend title 5, United States Code, to provide direct hire authority to appoint individuals to Federal wildland firefighting and firefighting support positions in the Forest Service or the Department of the Interior, and for other purposes.	05/18/2023 Introduced by Rep. Darrell Issa (R-CA-50) 05/23/2023 Subcommittee Hearings Held	**Rep. Doug LaMalfa (R-CA-1)**	1
S.1715 Wildfire Emergency Act of 2023	This bill would direct the Secretary of Agriculture to select and implement landscape-scale forest restoration projects, to assist communities in increasing their resilience to wildfire, and for other purposes.	05/18/2023 Introduced by Sen. Dianne Feinstein (D-CA) 05/18/2023 Read twice and referred to the Committee on Agriculture, Nutrition, and Forestry	**Sen. Alex Padilla (D-CA)**; Sen. Steve Daines (R-MT); Sen. Ron Wyden (D-OR)	

H.R.3675 Western Water Accelerated Revenue Repayment Act	amend the Water Infrastructure Improvements for the Nation Act to extend certain contract prepayment authority.	05/25/2023 Introduced by Rep. Lauren Boebert (R-CO-3) 06/14/2023 Subcommittee Hearings Held	**Rep. Tom McClintock (R-CA-4)**; Rep. Paul Gosar (R-AZ-4); Rep. Harriet Hageman (R-WY-1); Rep. Doug Lamborn (R-CO-5); Rep. Mike Lawler (R-NY-17); Rep. Troy Nehls (R-TX-22); Rep.	9
H.R. 3746 Fiscal Responsibility Act of 2023	This bill would provide for a responsible increase to the debt ceiling.	05/29/2023 Introduced by Rep. Patrick McHenry (R-NC-10) 06/03/2023 Became Public Law No: 118-5.		0
H.R.3871 Research for Healthy Soils Act	This bill would amend the Food, Agriculture, Conservation, and Trade Act of 1990 to include as a high-priority research and extension area research on microplastics in land-applied biosolids on farmland.	06/06/2023 Introduced by Rep. Marie Perez (D-WA-3) 06/06/2023 Referred to the House Committee on Agriculture	**Rep. Young Kim (R-CA-39)**	1
H.R.4018 Headwaters Protection Act	This bill would amend the Healthy Forests Restoration Act of 2003 to reauthorize and improve the Water Source Protection Program, and for other purposes.	06/12/2023 Introduced by Rep. Jim Costa (D-CA-21) 06/12/2023 Referred to the Committee on Agriculture, and in addition to the Committee on Natural Resources	**Rep. David Valadao (R-CA-21)**; Rep. Earl Blumenauer (D-OR-3); Rep. Brittany Pettersen (D-CO-7); Rep. Kim Schrier (D-WA-8); Rep. Melanie Ann Stansbury (D-NM-1)	5
H.R.4052 National Infrastructure Bank Act	facilitate efficient investments and financing of infrastructure projects and new job creation through the establishment of a National Infrastructure Bank, and for other purposes.	06/13/2023 Introduced by Rep. Danny Davis (D-IL-7) 06/13/2023 Referred to the Subcommittee on Highways and Transit	**Rep. Barbara Lee (D-CA-13); Rep. Eric Swalwell (D-CA-15)**	2
H.R.4235 Wildfire Technology Demonstration, Evaluation, Modernization, and Optimization Act	This bill would direct the Secretary of Agriculture and the Secretary of the Interior to establish a wildfire technology testbed pilot program, and for other purposes.	06/21/2023 Introduced by Rep. Young Kim (R-CA-40) 6/21/2023 Referred to the Committee on Natural Resources, and in addition to the Committee on Agriculture	**Rep. John Duarte (R-CA-13)**; Rep. Lori Chavez-DeRemer (R-OR-5); Rep. Jason Crow (D-CO-6); Rep. Doug Lamborn (R-CO-5); Rep. Mike Lawler (R-NY-17); Rep. James Moylan (R-GU-1)	6
H.R.4247 To direct the Secretary of the Army to establish a task force on the California snowpack and flood mitigation, and for other purposes.	This bill would direct the Secretary of the Army to establish a task force on the California snowpack and flood mitigation, and for other purposes.	06/21/2023 Introduced by Rep. Josh Harder (D-CA-9) 06/22/2023 Referred to the Subcommittee on Water Resources and Environment.	**Rep. Barbara Lee (D-CA-13); Rep. Zoe Lofgren (D-CA-19)**	2
S.2102 A bill to provide for drought preparedness and improved water supply reliability.	This bill would provide for drought preparedness and improved water supply reliability.	06/21/2023 Introduced by Sen. Ron Wyden (D-OR) 07/19/2023 Committee on Energy and Natural Resources Subcommittee on Water and Power. Hearings held	Sen. Jeff Merkley (D-OR)	1
S.2127 Military Construction, Veterans Affairs, and Related Agencies Appropriations Act, 2024	This bill provides FY2024 appropriations for military construction, the Department of Veterans Affairs (VA), and related agencies. *This is the Senate counterpart to H.R. 4366.*	06/22/2023 Introduced by Sen. Patty Murray (D-WA) 06/22/2023 Placed on Senate Legislative Calendar under General Orders. Calendar No. 110		0
S.2130 A bill to require community engagement and reporting relating to activities of the Department of Defense with respect to perfluoroalkyl substances and polyfluoroalkyl substances, and for other purposes.	This bill would require community engagement and reporting relating to activities of the Department of Defense with respect to perfluoroalkyl substances and polyfluoroalkyl substances, and for other purposes.	06/22/2023 Introduced by Sen. Jeanne Shaheen (D-NH) 06/22/2023 Read twice and referred to the Committee on Armed Services		0

S.2161 A bill to provide financial assistance for projects to address certain subsidence impacts in the State of California, and for other purposes.	This bill would provide financial assistance for projects to address certain subsidence impacts in the State of California, and for other purposes. *This bill is the Senate companion to H.R. 2419.*	06/22/2023 Introduced by Sen. Dianne Feinstein (D-CA) 07/19/2023 Committee on Energy and Natural Resources Subcommittee on Water and Power. Hearings held		0
S.2162 A bill to support water infrastructure in Reclamation States, and for other purposes.	This bill would support water infrastructure in Reclamation States, and for other purposes.	06/22/2023 Introduced by Sen. Dianne Feinstein (D-CA) 07/19/2023 Committee on Energy and Natural Resources Subcommittee on Water and Power. Hearings held	Sen. Mark Kelly (D-AZ); Sen. Kyrsten Sinema (I-AZ)	2
S.2203 A bill to require the conduct of winter season reconnaissance of atmospheric rivers on the West Coast of the United States, and for other purposes.	This bill would require the conduct of winter season reconnaissance of atmospheric rivers on the West Coast of the United States, and for other purposes.	06/22/2023 Introduced by Sen. Alex Padilla (D-CA) 06/22/2023 Read twice and referred to the Committee on Armed Services		0
H.R.4366 Military Construction, Veterans Affairs, and Related Agencies Appropriations Act, 2024	This bill provides FY2024 appropriations for military construction, the Department of Veterans Affairs (VA), and related agencies. *This is the House counterpart to S.2127.*	06/27/2023 Introduced by Rep. John Carter (R-TX-31) 09/14/2023 Motion by Senate Majority Leader Schumer to commit to Senate Committee on Appropriations		0
H.R.4385 To extend authorization of the Reclamation States Emergency Drought Relief Act of 1991	This bill would extend authorization of the Reclamation States Emergency Drought Relief Act of 1991.	06/27/2023 Introduced by Rep. Joe Neguse (D-CO-2) 06/27/2023 Referred to the House Committee on Natural Resources	Rep. Juan Ciscomani (R-AZ-6)	1
H.R.4584 To improve the Federal effort to reduce wildland fire risks, and for other purposes.	This bill would improve the Federal effort to reduce wildland fire risks, and for other purposes.	07/12/2023 Introduced by Rep. Zoe Lofgren (D-CA-18) 07/13/2023 Referred to the Subcommittee on Economic Development, Public Buildings, and Emergency Management	Rep. Suzanne Bonamici (D-OR-1)	1
S.2272 - Wildland Firefighter Paycheck Protection Act	This bill would amend title 5, United States Code, to provide for special base rates of pay for wildland firefighters, and for other purposes.	07/12/2023 Introduced by Sen. Kyrsten Sinema (I-AZ) 07/19/2023 Committee on Homeland Security and Governmental Affairs	**Sen. Alex Padilla (D-CA)**; Sen. John Barrasso (R-WY); Sen. Steve Daines (R-MT); Sen. Joe Manchin (D-WV); Sen. Jon Tester (D-MT)	5
H.R.4717 To amend the Healthy Forests Restoration Act of 2003 with respect to third-party contracts for wildfire hazard fuel removal, to amend the National Forest Management Act with respect to the threshold for advertised timber sales, and for other purposes.	This bill would amend the Healthy Forests Restoration Act of 2003 with respect to third-party contracts for wildfire hazard fuel removal, to amend the National Forest Management Act with respect to the threshold for advertised timber sales, and for other purposes.	07/18/2023 Introduced by Rep. Doug Lamborn (R-CO-5) 07/18/2023 Referred to the Committee on Agriculture, and in addition to the Committee on Natural Resources	**Rep. Jim Costa (D-CA-16); Rep. Doug LaMalfa (R-CA-1)**; Rep. Lauren Boebert (R-CO-3)	3
H.R.4866 Fire Weather Development Act	This bill would direct the Administrator of the National Oceanic and Atmospheric Administration to establish a program to improve fire weather and fire environment forecasting, detection, and local collaboration, and for other purposes.	07/25/2023 Introduced by Rep. Mike Garcia (R-CA-27) 07/27/2023 Ordered to be Reported (Amended) by the Yeas and Nays: 33 - 2	**Rep. Young Kim (R-CA-39)**; Rep. Yadira Caraveo (D-CO-8)	2
H.R 4890 Urban Waters Federal Partnership Act	This bill would require the Administrator of the Environmental Protection Agency, the Secretary of the Interior, and the Secretary of Agriculture to maintain the Urban Waters Federal Partnership Program, and for other purposes.	07/25/2023 Introduced by Rep. Greg Stanton (D-AZ-4) 07/26/2023 Referred to the Subcommittee on Water Resources and Environment	Rep. Brian Fitzpatrick (R-PA-1)	1

H.R.4908 Expedited Federal Permitting for California Act	This bill would amend title 23, United States Code, to make eligible airport-related projects and port development projects eligible for approval under State environmental laws and regulations instead of the National Environmental Policy Act of 1969, and for other purposes.	07/26/2023 Introduced by Rep. John Garamendi (D-CA-8) 07/27/2023 Referred to the Subcommittee on Aviation	**Rep. Eric Swalwell (D-CA-15)**	1
H.R.4920 To provide for cost-share waivers for projects carried out in response to wildland fires caused by certain Government actions, and for other purposes.	This bill would provide for cost-share waivers for projects carried out in response to wildland fires caused by certain Government actions, and for other purposes.	07/26/2023 Introduced by Rep. Teresa Leger Fernandez (D-NM-3) 07/26/2023 Referred to the Committee on Agriculture, and in addition to the Committee on Natural Resources		0
H.R.4956 Farmer-Informed WOTUS Act of 2023	This bill would establish an advisory committee to inform Congress of the impact of Waters of the United States regulations on United States agriculture, and for other purposes.	07/27/2023 Introduced by Rep. Rudy Yakym (R-IN-2) 07/28/2023 Referred to the Subcommittee on Water Resources and Environment	Rep. Tracey Mann (R-KS-1)	1
S.2587 Department of Defense Appropriations Act, 2024	This bill provides FY2024 appropriations to the Department of Defense (DOD) for military activities.	07/27/2023 Introduced by Sen. John Tester (D-MT) 07/27/2023 Placed on Senate Legislative Calendar under General Orders. Calendar No. 181		0
S.2605 Department of the Interior, Environment, and Related Agencies Appropriations Act, 2024	Making appropriations for the Department of the Interior, environment, and related agencies for the fiscal year ending September 30, 2024, and for other purposes.	07/27/2023 Introduced by Sen. Jeff Merkley (D-OR) 07/27/2023 Placed on Senate Legislative Calendar under General Orders. Calendar No. 186		0
H.R.5153 To direct the Secretary of Veterans Affairs to carry out a pilot program to employ veterans in certain wildland firefighting activities	This bill would direct the Secretary of Veterans Affairs to carry out a pilot program to employ veterans in certain wildland firefighting activities.	08/04/2023 Introduced by Rep. Joe Neguse (D-CO-2) 08/24/2023 Referred to the Subcommittee on Economic Opportunity	Rep. John Rutherford (R-FL-4)	1
H.R.5259 PFAS Exposure Assessment and Documentation Act	This bill would direct the Secretary of Defense to include in periodic health assessments of members of the Armed Forces an evaluation of whether the member has been exposed to perfluoroalkyl substances and polyfluoroalkyl substances, and for other purposes.	08/22/2023 Introduced by Rep. Elissa Slotkin (D-MI-7) 08/22/2023 Referred to the House Committee on Armed Services	Rep. Bill Posey (R-FL-8); Rep. Michael Turner (R-OH-10)	2
H.R.5260 PFAS Free Military Purchasing Act	This bill would amend the National Defense Authorization Act for Fiscal Year 2021, to modify the prohibition on the acquisition by the Department of Defense of certain items containing a perfluoroalkyl substance or polyfluoroalkyl substance.	08/22/2023 Introduced by Rep. Elissa Slotkin (D-MI-7) 08/22/2023 Referred to the House Committee on Armed Services	Rep. Bill Posey (R-FL-8)	1
H.R.5261 PFAS Training For DoD Providers and Servicemembers Act	This bill would direct the Secretary of Defense to provide to each health care provider of the Department of Defense training regarding the potential health effects of perfluoroalkyl or polyfluoroalkyl substances.	08/22/2023 Introduced by Rep. Elissa Slotkin (D-MI-7) 08/22/2023 Referred to the House Committee on Armed Services	Rep. Jack Bergman (R-MI-1); Rep. Bill Posey (R-FL-8); Rep. Michael Turner (R-OH-10)	3
H.R.5262 DoD PFAS Cleanup Transparency Act	This bill would require the Secretary of Defense to publish information regarding the status of certain cleanup efforts of the Department of Defense, and for other purposes.	08/22/2023 Introduced by Rep. Elissa Slotkin (D-MI-7) 08/22/2023 Referred to the House Committee on Armed Services	Rep. Jack Bergman (R-MI-1); Rep. Chrissy Houlahan (D-PA-6); Rep. Bill Posey (R-FL-8)	3

H.R.5263 PFAS Strictest Standard Act	This bill would direct the Secretary of Defense to ensure that removal and remedial actions relating to PFAS contamination result in levels meeting or exceeding certain standards, and for other purposes.	08/22/2023 Introduced by Rep. Elissa Slotkin (D-MI-7) 08/23/2023 Referred to the Subcommittee on Water Resources and Environment	**Rep. Ro Khanna (D-CA-17)**; Rep. Bill Posey (R-FL-8)	2
H.R.5329 Wildfire Smoke Emergency Declaration Act	This bill would authorize the President to declare a smoke emergency, and for other purposes.	09/01/2023 Introduced by Rep. Josh Harder (D-CA-9) 09/05/2023 Referred to the Subcommittee on Economic Development, Public Buildings, and Emergency Management	**Rep. Ted Lieu (D-CA-33); Rep. Zoe Lofgren (D-CA-19); Rep. Kevin Mullin (D-CA-15); Rep. Mark Takano (D-CA-41); Rep. Mike Thompson (D-CA-5); Rep. Juan Vargas (D-CA-51)**	6
S.2749 Wildfire Resilient Communities Act	This bill would provide mandatory funding for hazardous fuels reduction projects on certain Federal land, and for other purposes.	09/07/2023 Introduced by Sen. Jeff Merkley (D-OR) 09/07/2023 Read twice and referred to the Committee on Agriculture, Nutrition, and Forestry	**Sen. Dianne Feinstein (D-CA); Sen. Alex Padilla (D-CA);** Sen. Ron Wyden (D-OR)	3
H.R.5355 Save Our Airports Reporting Act	This bill would require the Administrator of the Federal Aviation Administration to submit to Congress progress reports on the development and implementation of a national plan to transition to the use of a fluorine-free firefighting foam, and for other purposes.	09/08/2023 Introduced by Rep. Salud Carbajal (D-CA-24) 09/11/2023 Referred to the Subcommittee on Aviation	Rep. Mike Lawler (R-NY-17); Rep. Derrick Van Orden (R-WI-3)	2
H.R.5356 PFAS Act	This bill would require the Secretary of Transportation to establish a PFAS replacement program at certain airports, and for other purposes.	09/08/2023 Introduced by Rep. Salud Carbajal (D-CA-24) 09/11/2023 Referred to the Subcommittee on Aviation	Rep. Mike Lawler (R-NY-17); Rep. Derrick Van Orden (R-WI-3)	2

SDA

Government Relations

To:	Las Virgenes - Triunfo JPA
From:	Syrus Devers Advocacy LLC
Date:	September 26th, 2023
Re:	State Legislative Report

Legislative Report

It is a bit too soon for an end-of-session wrap up since Governor Newsom still has just short of three weeks to sign or veto bills as of the day this report was prepared, but below is a preview of the expected outcome. Something to keep in mind is that California does not have a "pocket veto". Newsom must either sign or veto a bill by October 14th. If he does nothing, the bill automatically takes effect on January 1st. Another is that there is a process after a bill leaves the Legislature and before it lands on the Governor's desk for consideration. Even though session ended on September 14th, most of the bills that passed on the last night of session were not available to the Governor for action until about a week later, which is only a few days before the date of this report.

Below are the bills that the water community at-large focused on, not just the bills on which LVMWD and Triunfo took positions. The "we" in the section below, therefore, refers to the collective efforts of the lobbyists in Sacramento who represent public water agencies. In other words, this is what we actually spent time working on. There were several other good bills that passed without opposition, which is good, but we did not spend time working on them. An example is AB 557 (Hart) on open meetings. The bill passed with unanimous support despite our lack of effort.

Prediction: all of the bills in this report that made it to the Governor will be signed into law.

The Good:

We stopped or amended every water policy bill we opposed. This year started as the most significant year in Legislation in a decade, but it all went up in a legislative bonfire the first two weeks in July.

The water rights bills: SB 389 (Allen), AB 460 (Bauer-Kahan), and AB 1337 (Wicks). Although a lot of effort went into AB 460 and AB 1337, both were held in Senate Natural Resources & Water. SB 389 went on better success after Sen. Allen agreed to remove the most objectionable parts of the bill. ACWA went neutral at the end and the bill awaits action by the Governor.

The Resource Bonds: SB 867 (Allen) and AB 1567 (Garcia) make the good list despite not being finished. There was an initial push to finish a bond bill this year and have it on the March ballot, but that came to nought and all work stopped rather abruptly. A resource bond will be on the November ballot;

the final product to be worked out early next year. The critical variable is how large of a bond the Governor will support. There were many budget cuts in anticipation of funding through the bonds. Keep in mind that other areas did significantly worse in the 2023 budget than water. Transportation, in particular, took a huge hit. That all plays into what the Governor will support in each of the bonds. Do not be surprised if the final resource bond is smaller than anticipated. Newsom has opined that California can handle about $26 billion in new debt. The total of all bond bills exceeds $100 billion, although there is significant overlap. Nonetheless, the subset of water policy lobbyists working on the bonds did get a warm reception from legislators. The cynics among us believe they want Newsom to be the bad cop and, therefore, said "yes" to most requests.

SB 687 (Eggman): We stopped another Delta Conveyance killer bill.

The Bad:

We scored 100% on water policy legislation, but took some losses on broader issues affecting municipal entities.

AB 1484 (Zbur): this bill makes it more costly and difficult to utilize temporary employees. We tried, but it had organized labor support and we got beat.

AB 735 (Berman): this bill would have created a pipeline of future utility workers through education and job placement assistance. Good bill, but we could not get it off the dreaded Suspense File.

The Ugly:

We cannot stop all the bad bills or get all the good ones through. On some we have to compromise and roll with the punches. The result is usually a bill that we do not like, but we can hold our nose and tolerate it. Here are the top ugly compromises.

AB 1572 (Friedman): Nonfunctional turf–a lot of people would like to go a long time without hearing that phrase again. The water community wanted to kill this bill, but MWD came from nowhere and sponsored the bill. That pretty much ruled out stopping the bill in committee. The resulting negotiation consumed hundreds of hours of staff time, and the final result is questionably drafted and, in places, vague.

SB 366 (Caballero): Few bills started with more fanfare and grand expectations, but the end was ignominious. This bill aspired to rewrite the California Water Plan and pave the way to an expanded water supply. Much money was spent. But a funny thing happened on the way to its demise in the Assembly Water, Parks & Wildlife Committee, which is chaired by Assm. Bauer-Kahan and staffed by Pablo Garza. After the water community killed Bauer-Kahan's AB 460, which Garza staffed, Garza was tasked with getting the other water right bill through–AB 1337. But we killed that bill too. After which,

SB 366 was set for a hearing, in Bauer-Kahan's committee, and analyzed by…Pablo Garza. It was not pretty. Amendments forced on the author were so severe that the decision was made to just drop the bill.

AB 755 (Papan): This started off as a perfectly awful bill that would have required water agencies to estimate the marginal cost of providing water to major water users and publish that estimate (guess, really) in a rate study. Nobody liked the bill, but our attention was elsewhere and it slipped out of the Assembly with bipartisan votes. It was then set for a hearing in the Senate right after the water rights bills had just been held. The stage was set for a serious loss. Members had been worked hard the previous week and were not amenable to being lobbied hard again. Fortunately, Irvine Ranch Water District took the lead and spent significant time working out a set of amends that blunted the worst parts of the bill. The final bill makes the ugly list because no one liked it, but it was far better than what could have happened if the bill had made it out of committee without amendments–which it almost certainly would have. But not everyone saw it this way and the bill was put to three votes and numerous motions in the ACWA State Legislative Committee, which in the end remained neutral.

Las Virgenes-Triunfo JPA

Bill Matrix- September 26th, 2023

A. Priority Support/Oppose

AB 234 **(Bauer-Kahan D) Microparticles.**
Status: 4/28/2023-Failed Deadline pursuant to Rule 61(a)(2). (Last location was NAT. RES. on 3/23/2023)(May be acted upon Jan 2024)
Summary: Would enact the Synthetic Polymer Microparticles in Cosmetic and Cleaning Products Prevention Act. The bill would prohibit a synthetic polymer microparticle from being placed on the market in this state as a substance on its own or, where the synthetic polymer microparticles are present to confer a sought-after characteristic, in mixtures in a concentration equal to or greater than 0.01% by weight. The restriction would apply on and after specified dates depending on the type of product, as described, except as otherwise provided. The bill would specify the screening tests and pass criteria to be used for purposes of determining compliance with this prohibition. The bill would make a person who violates this prohibition liable for a civil penalty not to exceed $5,000 per day for each violation, in addition to any other penalty established by law. The bill would authorize the civil penalty to be assessed and recovered in a civil action brought by a city attorney, a district attorney, a county counsel, or the Attorney General in any court of competent jurisdiction.

Position	Priority
Watch	A. Priority Support/Oppose

AB 249 **(Holden D) Water: schoolsites: lead testing.**
Status: 9/20/2023-Enrolled and presented to the Governor at 4 p.m.
Summary: Existing law, the California Safe Drinking Water Act, requires the State Water Resources Control Board to administer provisions relating to the regulation of drinking water to protect public health. The act requires the state board to establish a grant program, in consultation with the State Department of Education, to award grants to local educational agencies for the purposes of improving access to, and the quality of, drinking water in public schools serving kindergarten or any of grades 1 to 12, inclusive, and preschools and child daycare facilities located on public school property. This bill would require a community water system that serves a schoolsite, as defined, to test for lead in the potable water system outlets of the schoolsite before January 1, 2027, except as provided. This bill contains other related provisions and other existing laws.

Position	Priority
Watch	A. Priority Support/Oppose

AB 460 **(Bauer-Kahan D) State Water Resources Control Board: water rights and usage: interim relief: procedures.**
Status: 7/14/2023-Failed Deadline pursuant to Rule 61(a)(10). (Last location was N.R. & W. on 6/7/2023)(May be acted upon Jan 2024)
Summary: Current law authorizes the State Water Resources Control Board to investigate all streams, stream systems, lakes, or other bodies of water, take testimony relating to the rights to water or the use of water, and ascertain whether

water filed upon or attempted to be appropriated is appropriated under the laws of the state. Current law requires the board to take appropriate actions to prevent waste or the unreasonable use of water. This bill would authorize the board, in conducting specified investigations or proceedings to inspect the property or facilities of a person or entity, as specified. The bill would authorize the board, if consent is denied for an inspection, to obtain an inspection warrant, as specified, or in the event of an emergency affecting public health and safety, to conduct an inspection without consent or a warrant.

Position	Priority
Opposition	A. Priority Support/Oppose

AB 682 **(Mathis R) State Water Resources Control Board: online search tool: funding applications.**
Status: 9/20/2023-Enrolled and presented to the Governor at 4 p.m.
Summary: Current law establishes the State Water Resources Control Board (state board) to exercise the adjudicatory and regulatory functions of the state in the field of water resources. Current law establishes the Safe and Affordable Drinking Water Fund in the State Treasury to help water systems provide an adequate and affordable supply of safe drinking water in both the near and long terms. This bill would require, by January 1, 2025, the state board to update the state board's online search tool for funding applications to include a description of the additional information the state board needs from a water system to continue processing the water system's application and a description of the typical steps that must be completed before a funding agreement can be executed after receipt of a complete application, among other information, as specified.

Position	Priority
Support	A. Priority Support/Oppose

AB 754 **(Papan D) Water management planning: water shortages.**
Status: 9/1/2023-Failed Deadline pursuant to Rule 61(a)(11). (Last location was APPR. SUSPENSE FILE on 8/21/2023)(May be acted upon Jan 2024)
Summary: Current law requires an urban water management plan to quantify past, current, and projected water use, identifying the uses among water use sectors, including, among others, commercial, agricultural, and industrial. Current law requires every urban water supplier to prepare and adopt a water shortage contingency plan as part of its urban water management plan. Current law requires the water shortage contingency plan to include the procedures used in conducting an annual water supply and demand assessment, including the key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year. Current law requires the key data inputs and assessment methodology to include specified information, including, among other things, a description and quantification of each source of water supply. This bill would require a water shortage contingency plan to include, if, based on a description and quantification of each source of water supply, a single reservoir constitutes at least 50% of the total water supply, an identification of the dam and description of existing reservoir management operations, as specified, and if the reservoir is owned and operated by the urban water supplier, a description of operational practices and approaches, as specified.

Position	Priority
Opposition	A. Priority Support/Oppose

AB 755 **(Papan D) Water: public entity: water usage demand analysis.**
Status: 9/19/2023-Enrolled and presented to the Governor at 4 p.m.
Summary: Current law authorizes a public entity that supplies water at retail or wholesale within its service area to adopt, in accordance with specified procedures, and enforce a water conservation program. This bill would require a public entity, as defined, to conduct a water usage demand analysis, as defined, prior to completing, or as part of, a cost-of-service analysis conducted to set fees and charges for water service that are consistent with applicable law. The bill would require a public entity to identify, within the water usage demand analysis, the costs of water service for the highest users, as defined, incurred by the public entity, and the average annual volume of water delivered to high water users.

Position	Priority
Opposition	A. Priority Support/Oppose

Notes 1: Major reasons for opposition removed in Sen policy committee

AB 838 **(Connolly D) California Water Affordability and Infrastructure Transparency Act of 2023.**
Status: 5/19/2023-Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. SUSPENSE FILE on

4/19/2023)(May be acted upon Jan 2024)
Summary: The California Safe Drinking Water Act requires the State Water Resources Control Board to administer provisions relating to the regulation of drinking water to protect public health. Current law declares it to be the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. The act prohibits a person from operating a public water system unless the person first submits an application to the state board and receives a permit to operate the system, as specified. The act requires a public water system to submit a technical report to the state board as a part of the permit application or when otherwise required by the state board, as specified, and to submit the report in the form and format and at intervals specified by the state board. This bill would require, beginning January 1, 2025, and thereafter at intervals determined by the state board, public water systems to provide specified information and data related to customer water bills and efforts to replace aging infrastructure to the state board.

Position	Priority
Watch	A. Priority Support/Oppose

AB 1211 **(Mathis R) Safe Drinking Water State Revolving Fund: internet website information: updates.**
Status: 7/14/2023-Failed Deadline pursuant to Rule 61(a)(10). (Last location was E.Q. on 5/10/2023)(May be acted upon Jan 2024)
Summary: The Safe Drinking Water State Revolving Fund Law of 1997, administered by the State Water Resources Control Board, establishes the Safe Drinking Water State Revolving Fund to provide grants or revolving fund loans for the design and construction of projects for public water systems that will enable those systems to meet safe drinking water standards. Current law requires the board, at least once every 2 years, to post information on its internet website regarding implementation of the Safe Drinking Water State Revolving Fund Law and expenditures from the Safe Drinking Water State Revolving Fund, as specified This bill would require the board to post the information at least annually.

Position	Priority
Support	A. Priority Support/Oppose

AB 1337 **(Wicks D) State Water Resources Control Board: water diversion curtailment.**
Status: 7/14/2023-Failed Deadline pursuant to Rule 61(a)(10). (Last location was N.R. & W. on 6/7/2023)(May be acted upon Jan 2024)
Summary: Under existing law, the diversion or use of water other than as authorized by specified provisions of law is a trespass, subject to specified civil liability. This bill would expand the instances when the diversion or use of water is considered a trespass. This bill contains other related provisions and other existing laws.

Position	Priority
Opposition	A. Priority Support/Oppose

AB 1484 **(Zbur D) Temporary public employees.**
Status: 9/21/2023-Enrolled and presented to the Governor at 3:30 p.m.
Summary: This bill would impose specified requirements with respect to the temporary employees of a public employer who have been hired to perform the same or similar type of work that is performed by permanent employees represented by a recognized employee organization, subject to limited exceptions. In this regard the bill would require those temporary employees to be automatically included in the same bargaining unit as the permanent employees if the requested classification of temporary employees is not presently within the unit. The bill would further require the public employer to promptly participate in collective bargaining to establish certain employment conditions for the newly added temporary employees if the parties' current memorandum of understanding does not address them, as specified. The bill would also require a public employer to, upon hire, provide each temporary employee with their job description, wage rates, and eligibility for benefits, anticipated length of employment, and procedures to apply for open, permanent positions. By imposing new duties on local agencies that employ temporary employees, the bill would impose a state-mandated local program. The bill would require complaints alleging a violation of its provisions to be processed as unfair practice charges under the act. The bill would additionally include the same findings and declarations as set forth above. This bill contains other related provisions and other existing laws.

Position	Priority
Opposition	A. Priority Support/Oppose

AB 1567 **(Garcia D) Safe Drinking Water, Wildfire Prevention, Drought Preparation, Flood Protection, Extreme Heat**

Mitigation, Clean Energy, and Workforce Development Bond Act of 2024.
Status: 6/14/2023-Referred to Coms. on N.R. & W. and GOV. & F.
Summary: Would enact the Safe Drinking Water, Wildfire Prevention, Drought Preparation, Flood Protection, Extreme Heat Mitigation, Clean Energy, and Workforce Development Bond Act of 2024, which, if approved by the voters, would authorize the issuance of bonds in the amount of $15,995,000,000 pursuant to the State General Obligation Bond Law to finance projects for safe drinking water, wildfire prevention, drought preparation, flood protection, extreme heat mitigation, clean energy, and workforce development programs.

Position	Priority
Watch	A. Priority Support/Oppose

AB 1572 **(Friedman D) Potable water: nonfunctional turf.**
Status: 9/20/2023-Enrolled and presented to the Governor at 4 p.m.
Summary: Would make legislative findings and declarations concerning water use, including that the use of potable water to irrigate nonfunctional turf is wasteful and incompatible with state policy relating to climate change, water conservation, and reduced reliance on the Sacramento-San Joaquin Delta ecosystem. The bill would direct all appropriate state agencies to encourage and support the elimination of irrigation of nonfunctional turf with potable water.

Position	Priority
Watch	A. Priority Support/Oppose

AB 1594 **(Garcia D) Medium- and heavy-duty zero-emission vehicles: public agency utilities.**
Status: 9/21/2023-Enrolled and presented to the Governor at 3:30 p.m.
Summary: Current law establishes the Air Quality Improvement Program that is administered by the State Air Resources Board for purposes of funding projects related to, among other things, the reduction of criteria air pollutants and improvement of air quality, and establishes the Medium- and Heavy-Duty Zero-Emission Vehicle Fleet Purchasing Assistance Program within the Air Quality Improvement Program to make financing tools and nonfinancial supports available to operators of medium- and heavy-duty vehicle fleets to enable those operators to transition their fleets to zero-emission vehicles. This bill would require any state regulation that seeks to require, or otherwise compel, the procurement of medium- and heavy-duty zero-emission vehicles to authorize public agency utilities to purchase replacements for traditional utility-specialized vehicles that are at the end of life when needed to maintain reliable service and respond to major foreseeable events, including severe weather, wildfires, natural disasters, and physical attacks, as specified. The bill would define a public agency utility to include a local publicly owned electric utility, a community water system, a water district, and a wastewater treatment provider, as specified.

Position	Priority
Support	A. Priority Support/Oppose

Notes 1: Clean fleets bill - CMUA sponsored - possible support

SB 23 **(Caballero D) Water supply and flood risk reduction projects: expedited permitting.**
Status: 5/19/2023-Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. SUSPENSE FILE on 5/15/2023)(May be acted upon Jan 2024)
Summary: Current law prohibits an entity from substantially diverting or obstructing the natural flow of, or substantially changing or using any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, except under specified conditions, including requiring the entity to send written notification to the Department of Fish and Wildlife regarding the activity in the manner prescribed by the department. This bill would require a project proponent, if already required to submit a notification to the department, to submit to the department the certified or adopted environmental review document, as applicable, for the activity in the notification. The bill would require the department, under prescribed circumstances, to take certain actions within specified timelines, or within a mutually agreed-to extension of time.

Position	Priority
Support	A. Priority Support/Oppose

SB 48 **(Becker D) Building Energy Savings Act.**
Status: 9/21/2023-Enrolled and presented to the Governor at 4 p.m.
Summary: Current law requires each utility to maintain records of the energy usage data of all buildings to which they provide service for at least the most recent 12 complete calendar months, and to deliver or otherwise provide that

aggregated energy usage data for each covered building, as defined, to the owner, as specified. Current law requires the State Energy Resources Conservation and Development Commission (Energy Commission) to adopt regulations providing for the delivery to the Energy Commission and public disclosure of benchmarking of energy use for covered buildings, and specifies that this requirement does not require the owner of a building with 16 or fewer residential utility accounts to collect or deliver energy usage information to the Energy Commission. This bill would additionally specify that the requirement does not require the owner of a building with less than 50,000 square feet of gross floor space to collect or deliver energy usage information to the Energy Commission.

Position	Priority
Watch	A. Priority Support/Oppose

SB 366 **(Caballero D) The California Water Plan: long-term supply targets.**
Status: 7/14/2023-Failed Deadline pursuant to Rule 61(a)(10). (Last location was W.,P. & W. on 6/8/2023)(May be acted upon Jan 2024)
Summary: Current law requires the Department of Water Resources to update every 5 years the plan for the orderly and coordinated control, protection, conservation, development, and use of the water resources of the state, which is known as "The California Water Plan." Current law requires the department to include a discussion of various strategies in the plan update, including, but not limited to, strategies relating to the development of new water storage facilities, water conservation, water recycling, desalination, conjunctive use, water transfers, and alternative pricing policies that may be pursued in order to meet the future needs of the state. Current law requires the department to establish an advisory committee to assist the department in updating the plan. This bill would revise and recast certain provisions regarding The California Water Plan to, among other things, require the department to instead establish a stakeholder advisory committee and to expand the membership of the committee to include tribes, labor, and environmental justice interests. The bill would require the department to coordinate with the California Water Commission, the State Water Resources Control Board, other state and federal agencies as appropriate, and the stakeholder advisory committee to develop a comprehensive plan for addressing the state's water needs and meeting specified long-term water supply targets established by the bill for purposes of The California Water Plan. The bill would require the plan to provide recommendations and strategies to ensure enough water supply for all beneficial uses.

Position	Priority
Support	A. Priority Support/Oppose

SB 389 **(Allen D) State Water Resources Control Board: investigation of water right.**
Status: 9/20/2023-Enrolled and presented to the Governor at 4:30 p.m.
Summary: Current law provides generally for the appropriation of water. Existing law authorizes the State Water Resources Control Board to investigate bodies of water, to take testimony in regard to the rights to water or the use of water, and to ascertain whether or not water is appropriated lawfully, as provided. Under current law, the diversion or use of water other than as authorized by specified provisions of law is a trespass, subject to specified civil liability. This bill would instead authorize the board to investigate and ascertain whether or not a water right is valid. The bill would authorize the board to issue an information order in furtherance of an investigation, as executed by the executive director of the board, as specified. The bill would authorize a diversion or use of water ascertained to be unauthorized to be enforced as a trespass, as specified.

Position	Priority
Watch	A. Priority Support/Oppose

SB 676 **(Allen D) Local ordinances and regulations: drought-tolerant landscaping.**
Status: 9/20/2023-Enrolled and presented to the Governor at 4:30 p.m.
Summary: Current law prohibits a city, including a charter city, county, and city and county, from enacting or enforcing any ordinance or regulation that prohibits the installation of drought-tolerant landscaping, synthetic grass, or artificial turf on residential property, as specified. This bill would instead prohibit a city, including a charter city, county, or city and county from enacting or enforcing any ordinance or regulation that prohibits the installation of drought-tolerant landscaping using living plant material on residential property. The bill would specify that drought-tolerant landscaping does not include the installation of synthetic grass or artificial turf. By establishing new requirements for local agencies, this bill would impose a state-mandated program.

Position	Priority
Support	A. Priority Support/Oppose

SB 687 **(Eggman D) Water Quality Control Plan: Delta Conveyance Project.**
Status: 5/19/2023-Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. SUSPENSE FILE on 5/8/2023)(May be acted upon Jan 2024)
Summary: Would require the State Water Resources Control Board to adopt a final update of the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, as provided, before the board may consider a change in point diversion or any other water rights permit or order for the Delta Conveyance Project. The bill would also, if, after completing the update of the plan and in compliance with existing law, the board approves a change in point of diversion or any other water rights permit or order associated with the Delta Conveyance Project, prohibit the operation of the Delta Conveyance Project unless and until the updated plan is fully implemented. The bill would specify that these provisions do not constitute an authorization for or approval of funding for the Delta Conveyance Project or any other project that includes isolated Delta conveyance facilities, and do not reduce any statutory or other regulatory conditions or permit requirements for Delta conveyance projects.

Position	Priority
Watch	A. Priority Support/Oppose

SB 867 **(Allen D) Drought, Flood, and Water Resilience, Wildfire and Forest Resilience, Coastal Resilience, Extreme Heat Mitigation, Biodiversity and Nature-Based Climate Solutions, Climate Smart Agriculture, Park Creation and Outdoor Access, and Clean Energy Bond Act of 2024.**
Status: 7/6/2023-July 10 hearing postponed by committee.
Summary: Would enact the Drought, Flood, and Water Resilience, Wildfire and Forest Resilience, Coastal Resilience, Extreme Heat Mitigation, Biodiversity and Nature-Based Climate Solutions, Climate Smart Agriculture, Park Creation and Outdoor Access, and Clean Energy Bond Act of 2024, which, if approved by the voters, would authorize the issuance of bonds in the amount of $15,500,000,000 pursuant to the State General Obligation Bond Law to finance projects for drought, flood, and water resilience, wildfire and forest resilience, coastal resilience, extreme heat mitigation, biodiversity and nature-based climate solutions, climate smart agriculture, park creation and outdoor access, and clean energy programs.

Position	Priority
Support	A. Priority Support/Oppose

B. Watch

AB 30 **(Ward D) Atmospheric rivers: research: reservoir operations.**
Status: 9/1/2023-Approved by the Governor. Chaptered by Secretary of State - Chapter 134, Statutes of 2023.
Summary: Current law establishes the Atmospheric Rivers: Research, Mitigation, and Climate Forecasting Program in the Department of Water Resources. Current law requires the department, upon an appropriation for purposes of the program, to research climate forecasting and the causes and impacts that climate change has on atmospheric rivers, to operate reservoirs in a manner that improves flood protection, and to reoperate flood control and water storage facilities to capture water generated by atmospheric rivers. This bill would rename that program the Atmospheric Rivers Research and Forecast Improvement Program: Enabling Climate Adaptation Through Forecast-Informed Reservoir Operations and Hazard Resiliency (AR/FIRO) Program. The bill would require the department to research, develop, and implement new observations, prediction models, novel forecasting methods, and tailored decision support systems to improve predictions of atmospheric rivers and their impacts on water supply, flooding, post-wildfire debris flows, and environmental conditions.

Position	Priority
Watch	B. Watch

AB 62 **(Mathis R) Statewide water storage: expansion.**
Status: 5/19/2023-Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. SUSPENSE FILE on 5/10/2023)(May be acted upon Jan 2024)
Summary: Current law establishes within the Natural Resources Agency the State Water Resources Control Board and

the California regional water quality control boards. Current law requires the work of the state board to be divided into at least 2 divisions, known as the Division of Water Rights and the Division of Water Quality. This bill would establish a statewide goal to increase above- and below-ground water storage capacity by a total of 3,700,000 acre-feet by the year 2030 and a total of 4,000,000 acre-feet by the year 2040. The bill would require the Department of Water Resources, in consultation with the state board, to take reasonable actions to promote or assist efforts to achieve the statewide goal, as provided. The bill would require the department, beginning July 1, 2027, and on or before July 1 every 2 years thereafter until January 1, 2043, in consultation with the state board, to prepare and submit a report to the Legislature on the progress made to achieve the statewide goal.

Position	Priority
Watch	B. Watch

AB 66 **(Mathis R) Natural Resources Agency: water storage projects: permit approval.**
Status: 5/19/2023-Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. SUSPENSE FILE on 4/19/2023)(May be acted upon Jan 2024)
Summary: Current law establishes the Natural Resources Agency, composed of departments, boards, conservancies, and commissions responsible for the restoration, protection, and management of the state's natural and cultural resources. Current law establishes in the agency the Department of Water Resources, which manages and undertakes planning with regard to water resources in the state. This bill would require the agency, and each department, board, conservancy, and commission within the agency, to take all reasonable steps to approve the necessary permits for specified projects that meet certain employment conditions within 180 days from receiving a complete permit application.

Position	Priority
	B. Watch

AB 277 **(Rodriguez D) Extreme Weather Forecast and Threat Intelligence Integration Center.**
Status: 9/1/2023-Failed Deadline pursuant to Rule 61(a)(11). (Last location was APPR. SUSPENSE FILE on 8/21/2023)(May be acted upon Jan 2024)
Summary: Current law establishes the Atmospheric Rivers: Research, Mitigation, and Climate Forecasting Program within the department to, upon appropriation of special fund moneys, research climate forecasting and the causes and impacts that climate change has on atmospheric rivers, to operate reservoirs in a manner that improves flood protection in the state, and to reoperate flood control and water storage facilities to capture water generated by atmospheric rivers. This bill would establish the State-Federal Flood Operations Center within the Department of Water Resources and would authorize the department to administer the center in the department's divisions, offices, or programs. The bill would provide that the purpose of the center is to function as the focal point for gathering, analyzing, and disseminating flood and water-related information to stakeholders and would authorize the center to take specified actions for that purpose, including to function during emergency situations to enable the department to centrally coordinate statewide emergency responses.

Position	Priority
Watch	B. Watch

AB 305 **(Villapudua D) California Flood Protection Bond Act of 2024.**
Status: 6/14/2023-Referred to Coms. on N.R. & W. and GOV. & F.
Summary: Would enact the California Flood Protection Bond Act of 2024 which, if approved by the voters, would authorize the issuance of bonds in the amount of $4,500,000,000 pursuant to the State General Obligation Bond Law for flood protection projects, as specified. The bill would provide for the submission of these provisions to the voters at the November 5, 2024, statewide general election.

Position	Priority
Watch	B. Watch

AB 338 **(Aguiar-Curry D) Fuel reduction work.**
Status: 9/20/2023-Enrolled and presented to the Governor at 4 p.m.
Summary: Existing law establishes the Department of Forestry and Fire Protection in the Natural Resources Agency and establishes the State Board of Forestry and Fire Protection within the department. Existing law requires the department to administer fire prevention programs and activities and requires the state board to adopt regulations implementing minimum fire safety standards. This bill would, commencing July 1, 2026, require fuel reduction work, done under contract and paid for in whole or in part out of public funds, as specified, to meet several standards, including that all workers performing work within an apprenticeable occupation in the building and construction trades be paid at least the general prevailing rate of per diem wages. The bill would authorize the Labor Commissioner to enforce the requirement to pay prevailing wages. The bill would exempt from these requirements, among other things, contracts in the amount of $500,000 or less. This bill contains other related provisions and other existing laws.

Position	Priority
Watch	B. Watch

AB 340 **(Fong, Vince R) California Environmental Quality Act: grounds for noncompliance.**
Status: 4/28/2023-Failed Deadline pursuant to Rule 61(a)(2). (Last location was NAT. RES. on 2/9/2023)(May be acted upon Jan 2024)
Summary: The California Environmental Quality Act (CEQA) prohibits an action or proceeding from being brought in a court to challenge the approval of a project by a public agency unless the alleged grounds for noncompliance are presented to the public agency orally or in writing by a person during the public comment period provided by CEQA or before the close of the public hearing on the project before the issuance of the notice of determination. This bill would require the alleged grounds for noncompliance with CEQA presented to the public agency in writing be presented at least 10 days before the public hearing on the project before the issuance of the notice of determination. The bill would prohibit the inclusion of written comments presented to the public agency after that time period in the record of proceedings and would prohibit those documents from serving as basis on which an action or proceeding may be brought.

Position	Priority
Watch	B. Watch

AB 557 **(Hart D) Open meetings: local agencies: teleconferences.**
Status: 9/15/2023-Enrolled and presented to the Governor at 4 p.m.
Summary: The Ralph M. Brown Act allows for meetings to occur via teleconferencing subject to certain requirements, particularly that the legislative body notice each teleconference location of each member that will be participating in the public meeting, that each teleconference location be accessible to the public, that members of the public be allowed to address the legislative body at each teleconference location, that the legislative body post an agenda at each teleconference location, and that at least a quorum of the legislative body participate from locations within the boundaries of the local agency's jurisdiction. The act provides an exemption to the jurisdictional requirement for health authorities, as defined. Current law, until January 1, 2024, authorizes the legislative body of a local agency to use teleconferencing without complying with those specified teleconferencing requirements in specified circumstances when a declared state of emergency is in effect. Those circumstances are that (1) state or local officials have imposed or recommended measures to promote social distancing, (2) the legislative body is meeting for the purpose of determining whether, as a result of the emergency, meeting in person would present imminent risks to the health or safety of attendees, or (3) the legislative body has previously made that determination. If there is a continuing state of emergency, or if state or local officials have imposed or recommended measures to promote social distancing, existing law requires a legislative body to make specified findings not later than 30 days after the first teleconferenced meeting, and to make those findings every 30 days thereafter, in order to continue to meet under these abbreviated teleconferencing procedures. This bill would revise the authority of a legislative body to hold a teleconference meeting under those abbreviated teleconferencing procedures when a declared state of emergency is in effect.

Position	Priority
Watch	B. Watch

AB 676 **(Bennett D) Water: general state policy.**
Status: 9/15/2023-Enrolled and presented to the Governor at 4 p.m.
Summary: Would specify that the use of water for domestic purposes includes water use for human consumption, cooking, sanitary purposes, care of household livestock, animals, and gardens, fire suppression and other safety purposes, and a purpose determined to be a domestic purpose as established by the common law.

Position	Priority
Watch	B. Watch

AB 735 **(Berman D) Workforce development: utility careers.**
Status: 5/19/2023-Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. SUSPENSE FILE on 5/10/2023)(May be acted upon Jan 2024)
Summary: Would establish the High Road Utility Careers (HRUC) program, to be administered by the California Workforce Development Board, to connect existing resources with individuals interested in careers in the utility sector and ensure a continued reliable workforce for California utilities. The bill would require the board to administer the HRUC program through partnerships with statewide water, wastewater, and energy utility associations and to coordinate the program with existing and future programs and initiatives administered by the board, including high road training partnerships, in order to align interested individuals with available resources. The bill would require the HRUC program, upon appropriation by the Legislature, to dedicate funding and resources toward accomplishing specified goals, including connecting workers to high-quality jobs or entry-level work with defined routes to advancement and increasing

skills and opportunities while expanding pipelines for low-income populations.

Position	Priority
Watch	B. Watch

AB 759 **(Grayson D) Sanitary districts.**
Status: 6/29/2023-Approved by the Governor. Chaptered by Secretary of State - Chapter 19, Statutes of 2023.
Summary: Current law authorizes the formation of a sanitary district, pursuant to specified requirements. Current law authorizes a sanitary district to acquire, plan, construct, reconstruct, alter, enlarge, lay, renew, replace, maintain, and operate garbage dumpsites and garbage collection and disposal systems, sewers, drains, septic tanks, and sewerage collection, outfall, treatment works and other sanitary disposal systems, and storm water drains and storm water collection, outfall and disposal systems, and water recycling and distribution systems, as the deemed necessary and proper by the governing board of the district. Current law generally authorizes the district to expend money only upon written order of the board. Current law also authorizes a district board, as an alternative to the functions of the treasurer, to elect to disburse district funds upon resolution of the board and the filing of a certified copy with the treasurer. Under current law, the treasurer is then required to deliver all district funds to the district, which can only be withdrawn by written order of the district boards, signed by the president and secretary. Current law requires the district board to appoint a treasurer responsible for the deposit and withdrawal of district funds. This bill would instead authorize funds to be withdrawn by a district treasurer or expended by a treasurer upon approval by the board, signed by the president and secretary.

Position	Priority
Watch	B. Watch

AB 1072 **(Wicks D) Water conservation and efficiency: low-income residential customers.**
Status: 5/19/2023-Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. SUSPENSE FILE on 5/17/2023)(May be acted upon Jan 2024)
Summary: Would declare the policy of the state that all residents have access to water conservation and efficiency programs. The bill would also set forth related findings including that reaching the state's environmental justice goals and commitments requires designing climate adaptation programs so that all households may participate.

Position	Priority
Watch	B. Watch

AB 1205 **(Bauer-Kahan D) Water rights: sale, transfer, or lease: agricultural lands.**
Status: 9/14/2023-Failed Deadline pursuant to Rule 61(a)(14). (Last location was INACTIVE FILE on 9/11/2023)(May be acted upon Jan 2024)
Summary: Current law declares that, because of the conditions prevailing in this state, the general welfare requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable, that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of the water is to be exercised with a view to the reasonable and beneficial use of the water in the interest of the people and for the public welfare. This bill would require the State Water Resources Control Board to, on or before January 1, 2027, conduct a study and report to the Legislature and appropriate policy committees on the existence of speculation or profiteering by an investment fund in the sale, transfer, or lease of an interest in any surface water right or groundwater right previously put to beneficial use on agricultural lands, as specified. The bill would repeal this provision on January 1, 2031.

Position	Priority
Watch	B. Watch

AB 1563 **(Bennett D) Groundwater sustainability agency: groundwater extraction permit: verification.**
Status: 7/14/2023-Failed Deadline pursuant to Rule 61(a)(10). (Last location was GOV. & F. on 6/22/2023)(May be acted upon Jan 2024)
Summary: Current law authorizes any local agency or combination of local agencies overlying a groundwater basin to decide to become a groundwater sustainability agency for that basin and imposes specified duties upon that agency or combination of agencies, as provided. Current law authorizes a groundwater sustainability agency to request of the county, and requires a county to consider, that the county forward permit requests for the construction of new groundwater wells, the enlarging of existing groundwater wells, and the reactivation of abandoned groundwater wells to the agency before permit approval. This bill would instead require a county to forward permit requests for the construction of new groundwater wells, the enlarging of existing groundwater wells, and the reactivation of abandoned groundwater wells to the groundwater sustainability agency before permit approval.

Position	Priority
Watch	B. Watch

AB 1573 **(Friedman D) Water conservation: landscape design: model ordinance.**
Status: 9/14/2023-Failed Deadline pursuant to Rule 61(a)(14). (Last location was INACTIVE FILE on 9/7/2023)(May be acted upon Jan 2024)
Summary: The Water Conservation in Landscaping Act provides for a Model Water Efficient Landscape Ordinance that is adopted and updated at least every 3 years by the Department of Water Resources, unless the department makes a specified finding. Current law requires a local agency to adopt the model ordinance or to adopt a water efficient landscape ordinance that is at least as effective in conserving water as the updated model ordinance, except as specified. Current law specifies the provisions of the updated model ordinance, as provided. Current law includes a related statement of legislative findings and declarations. This bill would require the updated model ordinance to include provisions that require that plants included in a landscape design plan be selected based on their adaptability to climatic, geological, and topographical conditions of the project site, as specified. The bill would also exempt landscaping that is part of a culturally specific project, as defined, ecological restoration projects that do not require a permanent irrigation system, mined-land reclamation projects that do not require a permanent irrigation system, and existing plant collections, as part of botanical gardens and arboretums open to the public, from the model ordinance. The bill would require the updated model ordinance to include provisions that, among other changes, prohibit the use of traditional overhead sprinklers on all new and rehabilitated landscapes and require that new and rehabilitated landscapes use only water efficient irrigation devices.

Position	Priority
Watch	B. Watch

AB 1637 **(Irwin D) Local government: internet websites and email addresses.**
Status: 9/21/2023-Enrolled and presented to the Governor at 3:30 p.m.
Summary: Would, no later than January 1, 2029, require a local agency, as defined, that maintains an internet website for use by the public to ensure that the internet website utilizes a ".gov" top-level domain or a ".ca.gov" second-level domain and would require a local agency that maintains an internet website that is noncompliant with that requirement to redirect that internet website to a domain name that does utilize a ".gov" or ".ca.gov" domain. This bill, no later than January 1, 2029, would also require a local agency that maintains public email addresses to ensure that each email address provided to its employees utilizes a ".gov" domain name or a ".ca.gov" domain name. By adding to the duties of local officials, the bill would impose a state-mandated local program.

Position	Priority
Watch	B. Watch

AB 1648 **(Bains D) Water: Colorado River conservation.**
Status: 4/28/2023-Failed Deadline pursuant to Rule 61(a)(2). (Last location was W.,P. & W. on 3/16/2023)(May be acted upon Jan 2024)
Summary: Would prohibit the Metropolitan Water District of Southern California and the Department of Water and Power of the City of Los Angeles from achieving a reduction in, or conservation of, Colorado River water consumption required by an agreement with specified entities through increased water deliveries or imports from other regions of California, including the San Joaquin Valley and the Sacramento-San Joaquin Delta. The bill would require the Colorado River Board of California, the Department of Water Resources, and the State Water Resources Control Board to use their existing authority to enforce these provisions. The bill would specify that these provisions apply retroactively to January 1, 2023, and apply to any agreement entered into on or after that date.

Position	Priority
Watch	B. Watch

ACA 2 **(Alanis R) Public resources: Water and Wildfire Resiliency Act of 2023.**
Status: 4/20/2023-Referred to Coms. on W., P., & W. and NAT. RES.
Summary: Would establish the Water and Wildfire Resiliency Fund within the State Treasury, and would require the Treasurer to annually transfer an amount equal to 3% of all state revenues that may be appropriated as described from the General Fund to the Water and Wildfire Resiliency Fund. The measure would require the moneys in the fund to be appropriated by the Legislature and would require that 50% of the moneys in the fund be used for water projects, as specified, and that the other 50% of the moneys in the fund be used for forest maintenance and health projects, as specified.

Position	Priority
	B. Watch

SB 3 **(Dodd D) Discontinuation of residential water service: covered water system.**
Status: 9/15/2023-Enrolled and presented to the Governor at 3 p.m.

Summary: Current law establishes the Safe Drinking Water Account to be available to the State Water Resources Control Board, upon appropriation by the Legislature, for the purpose of providing funds necessary to administer the California Safe Drinking Water Act. This bill would expand the use of available funds in the account to be used by the state board, upon appropriation by the Legislature, to include the administration of the Water Shutoff Protection Act.

Position	Priority
	B. Watch

SB 57

(Gonzalez D) Utilities: disconnection of residential service.
Status: 4/28/2023-Failed Deadline pursuant to Rule 61(a)(2). (Last location was E. U., & C. on 3/22/2023)(May be acted upon Jan 2024)
Summary: Would require an electrical corporation, local publicly owned electric utility, gas corporation, local publicly owned gas utility, water corporation, or local agency that owns a public water system to postpone the disconnection of a customer's residential service for nonpayment of a delinquent account when the temperature will be 32 degrees Fahrenheit or cooler, or 95 degrees Fahrenheit or warmer, within the utility's service area during the 24 hours after that service disconnection would occur, as specified. The bill would require each of those utilities to notify its residential ratepayers of that requirement and to create an online reporting system available through its internet website, if it has one, that enables its residential ratepayers to report when their utility service has been disconnected in violation of that requirement, as specified. The bill would require the PUC to establish a citation program to impose a penalty on an electrical corporation or gas corporation that violates that requirement, and require each local publicly owned electric utility and local publicly owned gas utility to annually report to the State Energy Resources Conservation and Development Commission the number of residential service connections it disconnected for nonpayment of a delinquent account. The bill would authorize the State Water Resources Control Board to enforce the requirement that a water corporation and local agency that owns a public water system postpone a disconnection of a customer's residential service, as specified.

Position	Priority
Watch	B. Watch

SB 66

(Hurtado D) Water Quality, Supply, and Infrastructure Improvement Act of 2014: Drinking Water Capital Reserve Fund: administration.
Status: 4/28/2023-Failed Deadline pursuant to Rule 61(a)(2). (Last location was E.Q. on 3/29/2023)(May be acted upon Jan 2024)
Summary: The Water Quality, Supply, and Infrastructure Improvement Act of 2014 bond act provides that the sum of $260,000,000 is to be available for grants and loans for public water system infrastructure improvements and related actions to meet safe drinking water standards, ensure affordable drinking water, or both, as specified. Current law requires the State Water Resources Control Board to deposit up to $2,500,000 of the $260,000,000 into the Drinking Water Capital Reserve Fund, to be available upon appropriation by the Legislature. Current law requires the state board to administer the Drinking Water Capital Reserve Fund for the purpose of serving as matching funds for disadvantaged communities and requires the state board to develop criteria to implement this provision. This bill would require the state board to provide an analysis of the criteria to implement that provision to the Senate Committee on Natural Resources and Water and Assembly Committee on Water, Parks, and Wildlife on January 1, 2025, and every 2 years thereafter.

Position	Priority
Watch	B. Watch

SB 69

(Cortese D) California Environmental Quality Act: local agencies: filing of notices of determination or exemption.
Status: 9/13/2023-Enrolled and presented to the Governor at 4 p.m.
Summary: The California Environmental Quality Act (CEQA) requires a local agency that approves or determines to carry out a project subject to CEQA to file a notice of determination with the county clerk of each county in which the project will be located, as provided. CEQA authorizes a local agency that determines that a project is not subject to CEQA to file a notice of exemption with the county clerk of each county in which the project will be located, as provided. CEQA requires the county clerk to make the notice available for public inspection and post the notice within 24 hours of receipt in the office or on the internet website of the county clerk, as specified. CEQA requires an action or proceeding challenging an act or decision of a public agency, including a local agency, on the grounds of noncompliance with CEQA to be commenced within certain time periods, as specified. This bill would require a local agency to file a notice of determination with the State Clearinghouse in the Office of Planning and Research in addition to the county clerk of each county in which the project will be located. The bill would authorize a local agency to file a notice of exemption with the State Clearinghouse in the Office of Planning and Research in addition to the county clerk of each county in which the project will be located. The bill would require the notice, including any subsequent or amended notice, to be posted both in the office and on the internet website of the county clerk and by the Office of Planning and Research on the State Clearinghouse internet website within 24 hours of receipt. The bill would specify that the posting of the notice by the Office of Planning and Research would not affect the applicable time periods to challenge an act or

decision of a local agency, as described above.

Position	Priority
Watch	B. Watch

SB 231 **(Hurtado D) Department of Water Resources: water supply forecasting.**
Status: 9/1/2023-Failed Deadline pursuant to Rule 61(a)(11). (Last location was APPR. SUSPENSE FILE on 8/23/2023)(May be acted upon Jan 2024)
Summary: Would require the Department of Water Resources, on or before December 31, 2025, to establish a formal process for annually evaluating and improving the accuracy of its water supply forecasts, adopt a new water supply forecasting model that better addresses the effects of climate change, and implement a formal policy and procedures for documenting its operational plans for the state's water supply and its rationale for its operating procedures. The bill would require the department, by December 1, 2024, to prepare, and submit to the Legislature, a report on its progress toward meeting these requirements.

Position	Priority
Watch	B. Watch

SB 272 **(Laird D) Sea level rise: planning and adaptation.**
Status: 9/18/2023-Enrolled and presented to the Governor at 3 p.m.
Summary: Would require a local government, as defined, lying, in whole or in part, within the coastal zone, as defined, or within the jurisdiction of the San Francisco Bay Conservation and Development Commission, as defined, to develop a sea level rise plan as part of either a local coastal program, as defined, that is subject to approval by the California Coastal Commission, or a subregional San Francisco Bay shoreline resiliency plan that is subject to approval by the San Francisco Bay Conservation and Development Commission, as applicable, on or before January 1, 2034, as provided. By imposing additional requirements on local governments, the bill would impose a state-mandated local program. The bill would require local governments that receive approval for a sea level rise plan to be prioritized for funding, upon appropriation by the Legislature, for the implementation of sea level rise adaptation strategies and recommended projects in the local government's approved sea level rise plan. The bill would require, on or before December 31, 2024, the California Coastal Commission, in close coordination with the Ocean Protection Council and the California Sea Level Rise State and Regional Support Collaborative, to establish guidelines for the preparation of the sea level rise plan. The bill would also require, on or before December 31, 2024, the San Francisco Bay Conservation and Development Commission, in close coordination with the California Coastal Commission, the Ocean Protection Council, and the California Sea Level Rise State and Regional Support Collaborative, to establish guidelines for the preparation of the sea level rise plan. The bill would make the operation of its provisions contingent upon an appropriation for its purposes by the Legislature in the annual Budget Act or another statute. This bill contains other related provisions and other existing laws.

Position	Priority
Watch	B. Watch

SB 315 **(Hurtado D) Groundwater: groundwater sustainability agencies: probationary basins.**
Status: 5/19/2023-Failed Deadline pursuant to Rule 61(a)(5). (Last location was APPR. SUSPENSE FILE on 5/1/2023)(May be acted upon Jan 2024)
Summary: The Sustainable Groundwater Management Act authorizes the State Water Resources Control Board to designate specified basins as probationary basins if certain conditions are met, including, but not limited to, that the Department of Water Resources, in consultation with the board, determines that a groundwater sustainability plan is inadequate or that the groundwater sustainability program is not being implemented in a manner that will likely achieve the sustainability goal. Current law requires the board, if it designates a basin as a probationary basin pursuant to specified conditions, to identify the specific deficiencies and potential remedies. Current law authorizes the board to request the department, within 90 days of the designation, to provide technical recommendations to local agencies to remedy the deficiencies and to develop an interim plan for the probationary basin one year after the designation, as specified. This bill would require any groundwater sustainability agency that hires a third-party consulting firm to ensure that the integrity of the science being used to develop a groundwater sustainability plan is protected and the data is not sold. The bill would delete the authorizations for the board to request technical recommendations from the department. The bill would additionally place various requirements on the board in working with a groundwater sustainability agency, including, among other things, requiring the board to provide clear benchmarks and guidance for groundwater sustainability agencies to improve their groundwater management plans.

Position	Priority
Watch	B. Watch

SB 504 **(Dodd D) Wildfires: defensible space: grant programs: local governments.**

Status: 7/14/2023-Failed Deadline pursuant to Rule 61(a)(10). (Last location was NAT. RES. on 5/11/2023)(May be acted upon Jan 2024)
Summary: Current law requires the Director of Forestry and Fire Protection to establish a common reporting platform that allows defensible space and home hardening assessment data, collected by the qualified entities, to be reported to the department. Current law requires the department to establish a local assistance grant program for fire prevention and home hardening education activities and provides that local agencies, among others, are eligible for these grants. Current law requires the State Fire Marshal to identify areas of the state as moderate, high, and very high fire hazard severity zones based on specified criteria. Current law requires a local agency to designate, by ordinance, moderate, high, and very high fire hazard severity zones in its jurisdiction within 120 days of receiving recommendations from the State Fire Marshal, and authorizes a local agency, at its discretion, to include areas within the jurisdiction of the local agency, not identified as moderate, high, and very high fire hazard severity zones by the State Fire Marshal, as moderate, high, and very high fire hazard severity zones, respectively. This bill would require the department, when reviewing applications for the local assistance grant program, to give priority to any local governmental entity that is qualified to perform defensible space assessments in very high and high fire hazard severity zones who reports that information using the common reporting platform, as provided.

Position	Priority
Watch	B. Watch

Dead Bill

AB 422 **(Alanis R) Natural Resources Agency: statewide water storage: tracking.**
Status: 4/28/2023-Failed Deadline pursuant to Rule 61(a)(2). (Last location was W.,P. & W. on 2/9/2023)(May be acted upon Jan 2024)
Summary: Would require the Natural Resources Agency, on or before June 1, 2024, to post on its publicly available internet website information tracking the progress to increase statewide water storage, and to keep that information updated.

Position	Priority
Watch	Dead Bill

Total Measures: 47

Total Tracking Forms: 47

AGENDA ITEM NO. 5.B

DATE: October 2, 2023

TO: JPA Board of Directors

FROM: Engineering and External Affairs

SUBJECT: Pure Water Project Las Virgenes-Triunfo: Update

SUMMARY:

On August 1, 2016, the JPA Board selected Scenario No. 4, use of Las Virgenes Reservoir for indirect potable reuse, as the preferred alternative for the Recycled Water Seasonal Storage Basis of Design Report. The selected alternative was subsequently renamed the Pure Water Project Las Virgenes-Triunfo. Staff was also directed to report back to the Board on the next steps for implementation of the project.

Staff released a request for proposals (RFP) for Owner's Advisor/Program Manager services for the Pure Water Project Las Virgenes-Triunfo on May 8, 2020. The selection of an Owner's Advisor/Program Manager to support the effort was an important next step to begin implementation of the Pure Water Program. Utilization of an Owner's Advisor/Program Manager is consistent with the approach taken by other public agencies pursuing potable reuse projects of similar scope and complexity. Among the critical elements of the proposed scope are completion of the preliminary design and environmental documentation in support of the Pure Water Program. The scope of work under the contract includes program management, preparation of preliminary design and/or alternative delivery bridging documents, preparation of all environmental studies and documentation for compliance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), preparation of studies and documents necessary to secure all required regulatory permits, and support of efforts to secure grant funding or low-interest loans.

On September 8, 2020, the JPA Board accepted a proposal from Jacobs Engineering Group, Inc., and authorized the Administering Agent/General Manager to execute a professional services agreement for Owner's Advisor/Program Manager services for the Pure Water Project Las Virgenes-Triunfo. This report serves to provide a summary of the progress to-date on the work performed by Jacobs Engineering Group, Inc., including major monthly milestones, key program accomplishments, key considerations and a look-ahead of upcoming activities.

Prepared by: Eric Schlageter, Principal Engineer

ATTACHMENTS:
Monthly Update on Pure Water Project Las Virgenes-Triunfo

To: Las Virgenes-Triunfo JPA Board of Directors

From: Jennifer Phillips, Jacobs

Date: September 25, 2023

Re: Pure Water Project JPA Board Monthly Update

Pure Water Project Overview

The Pure Water Project (PWP) is an opportunity to proactively address three major challenges facing the Las Virgenes-Triunfo JPA:

- comply with more stringent regulatory requirements for discharging to Malibu Creek,
- balance seasonal variation of recycled water demand, and
- create a valuable resource to supplement the region's water supplies, enabled by California's reservoir water augmentation requirements.

By 2030, the plan is to have an operational advanced water purification facility (AWPF) to treat tertiary effluent from the Tapia Water Reclamation Facility for indirect potable reuse, and convey the product water to the Las Virgenes Reservoir, where it will be blended with Metropolitan Water District (MWD) supply. The current phase (Phase 1) of the project provides the programmatic process to manage such a large, complicated project, focusing on the technical, regulatory, environmental, financial, and procurement strategies to provide a foundation with more cost and project delivery clarity. Each month the Project team will provide a status report to communicate major milestones, accomplishments for the previous month, planned work for the next month, and potential challenges.

Monthly Major Milestones

- Held the confidential commercial meetings with the short-listed teams for the Progressive Design-Build (PDB) procurement of the new AWPF and Reverse Osmosis Concentrate (ROC) pipeline.

Key Program Accomplishments Last Month

Following is a summary of the key September 2023 program accomplishments:

Technical:

- Continued support for the Demonstration Facility to review performance data trends and share insights.

Regulatory/Environmental:

- Met with the Regional Water Quality Control Board (RWQCB) to discuss the permitting approach for discharge of purified water to Las Virgenes Reservoir.

Financial:

- Continued development of the Water Infrastructure Finance and Innovation Act (WIFIA) loan application, which has a submittal deadline of December 31, 2023.

- Responded to questions from the Bureau of Reclamation (BOR) and Metropolitan Water District of Southern California for submitted funding applications.
- Continued tracking of funding options and supporting LVMWD staff, as needed.

Procurement:

- Held the confidential commercial meetings with the short-listed teams for the PDB procurement of the new AWPF and ROC pipeline.
- Addressed questions from the PDB proposers.

Look Ahead

The Project Team is focused on the following activities for October:

- Continue activities for the PDB procurement of the new AWPF and ROC pipeline.
- Support performance trending for the Demonstration Facility.
- Support development of funding applications.

AGENDA ITEM NO. 6.A

DATE: October 2, 2023

TO: JPA Board of Directors

FROM: Engineering and External Affairs

SUBJECT: 2023 Climate Action and Adaptation Plan: Adoption

SUMMARY:

The State of California has enacted legislation over the past several years that aims to reduce greenhouse gas emissions to mitigate the effects of climate change. On January 9, 2023, the JPA authorized the Administering Agent/General Manager to execute a professional services agreement with Rincon Consultants, Inc., for development of a Climate Action and Adaptation Plan (CAAP). Since that time, the CAAP has been under development and covers all JPA and LVMWD-only operations. The CAAP provides a roadmap for reducing greenhouse gas (GHG) emissions in alignment with State goals. It will also provide guidance for increasing the resilience of critical facilities, infrastructure, services and resources to climate change impacts.

On July 10, 2023, the JPA Board received and filed a progress report on development of the CAAP and provided staff with feedback on the effort. On September 5, 2023, the JPA Board was presented with a draft of the CAAP and provided staff with comments on the document. The comments from the JPA Board have been incorporated, and a final version of the CAAP is presented for adoption.

RECOMMENDATION(S):

Pass, approve and adopt proposed Resolution No. 32, adopting the 2023 Climate Action and Adaptation Plan.

RESOLUTION NO. 32

A RESOLUTION OF THE GOVERNING BOARD OF THE LAS VIRGENES-TRIUNFO JOINT POWERS AUTHORITY ADOPTING THE 2023 CLIMATE ACTION AND ADAPTATION PLAN

(Reference is hereby made to Resolution No. 32 on file in the JPA's Resolution Book and by this reference the same is incorporated herein.)

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

There is no financial impact associated with the recommended action. It is important to note that specific measures and actions outlined in the report pertaining to JPA facilities and operations will not be acted upon without JPA Board authorization. The CAAP provides a "roadmap" for staff to pursue future studies, which will help determine the feasibility of implementing specific measures and actions.

DISCUSSION:

The State of California has enacted legislation over the past several years that aims to reduce greenhouse gas emissions to mitigate the effects of climate change. Signed into law by Governor Brown in 2016, Senate Bill (SB) 32 established a requirement to reduce statewide GHG emissions by 40% below 1990 levels by the year 2030. Executive Order (EO) B-55-18 set a longer-term target to achieve carbon neutrality by the year 2045. While the JPA and its members are not directly required to meet these targets, the JPA should do its part to limit its carbon footprint, while simultaneously preparing for the effects of climate change that lie ahead. Future legislation and regulations may also set mandates on water and wastewater utilities because the conveyance and treatment of water accounts for a large percentage of energy demands. Additionally, most grant and low-interest loan programs now require applicants to have an adopted CAAP to be eligible and competitive for funding. The development of the CAAP will ensure that the JPA remains competitive for grant and low interest loans, particularly those for the Pure Water Project Las Virgenes-Triunfo. A CAAP is also necessary to renew the NPDES Permit for discharges to Malibu Creek.

The Las Virgenes Municipal Water District (LVMWD) and Triunfo Water and Sanitation District (TWSD) have been "ground zero" for the current drought emergency in Southern California. The acute local impact is due in part to the location of the two service areas within the broader service territory of Metropolitan Water District of Southern California (MWD). Both districts are part of MWD's State Water Project-dependent areas that have been hit especially hard with water shortages beginning on June 1, 2022. Water conservation has been the primary near-term means of response to the current drought emergency. However, for the long-term, LVMWD and TWSD have been working together through the Las Virgenes-Triunfo Joint Powers Authority (JPA) on planning and design efforts for the Pure Water Project Las Virgenes-Triunfo. Once completed, the Pure Water Project Las Virgenes-Triunfo will diversify the water supply portfolio available to both agencies. Water supply diversification is a key strategy for climate change adaptation.

On January 9, 2023, the JPA authorized the Administering Agent/General Manager to execute a professional services agreement with Rincon Consultants, Inc., for development of a CAAP. The CAAP will provide a roadmap for reducing GHG emissions in alignment with State goals. It will also provide guidance for increasing the resilience of critical facilities, infrastructure, services, and resources to climate change impacts. Benefits include additional State funding opportunities that can assist with infrastructure and operational costs, mitigation of risks associated with future State requirements, and the identification, development and implementation of solutions for inefficiencies and vulnerabilities. JPA operations primarily consists of those associated with the Tapia Water Reclamation Facility, Rancho Las Virgenes Composting Facility and "backbone" recycled water facilities. The CAAP also incorporates LVMWD-only operations.

On July 10, 2023, the JPA Board received and filed a progress report for the CAAP and provided comments to staff. On September 5, 2023, the JPA Board provided final comments

on the draft CAAP report, which has since been finalized. At this time, it is recommended that the attached CAAP be adopted via Resolution No. 32 (also attached).

GOALS:

Construct, Manage and Maintain all Facilities and Provide Services to Assure System Reliability and Environmental Compatibility

Prepared by: Joe McDermott, Director of Engineering and External Affairs

ATTACHMENTS:
Proposed Resolution No. 32
2023 Climate Action and Adaptation Plan

RESOLUTION NO. 32

A RESOLUTION OF THE GOVERNING BOARD OF THE LAS VIRGENES – TRIUNFO JOINT POWERS AUTHORITY ADOPTING THE 2023 CLIMATE ACTION AND ADAPTATION PLAN

WHEREAS, the State of California has enacted legislation over the past several years that aims to reduce greenhouse gas (GHG) emissions to mitigate the effects of climate change;

WHEREAS, on January 9, 2023, the Governing Board of the Las Virgenes – Triunfo Joint Powers Authority (JPA) authorized the Administering Agent/General Manager to execute a professional services agreement with Rincon Consultants, Inc. for development of a Climate Action and Adaptation Plan (CAAP);

WHEREAS, the CAAP will provide a roadmap for reducing GHG emissions in alignment with State goals and guidance for increasing the resilience of critical facilities, infrastructure, services, and resources to climate change impacts;

WHEREAS, on July 10, 2023, the Governing Board of the JPA received and filed a progress report on components of the CAAP that relate to JPA facilities and operations and provided comments to staff;

WHEREAS, on September 5, 2023 a draft of the CAAP was presented to the Governing Board of the JPA to solicit final comments, which have been incorporated to the extent appropriate, and the CAAP has been finalized;

WHEREAS, unless otherwise mandated by the State or federal government, cost analysis and feasibility studies will be conducted and individual reduction and adaptation measures will be implemented only if deemed feasible and authorized by the Governing Board of the JPA for its facilities and operations; and

WHEREAS, progress reports will be provided to the Governing Board of the JPA on an annual basis and the CAAP will be updated every 5 years or as otherwise deemed necessary to include the latest GHG emissions forecast, assessment of climate change vulnerabilities, implementation status, and/or revised measures and actions related to JPA facilities and operations.

NOW THEREFORE, BE IT RESOLVED by the Governing Board of the Las Virgenes – Triunfo Joint Powers Authority that the 2023 Climate Action and Adaptation Plan, Report is hereby adopted.

PASSED, APPROVED, AND ADOPTED this____day of_____, 2023.

_____
Jane Nye, Chair

ATTEST:

_____
Leon E. Shapiro, Vice Chair

(SEAL)

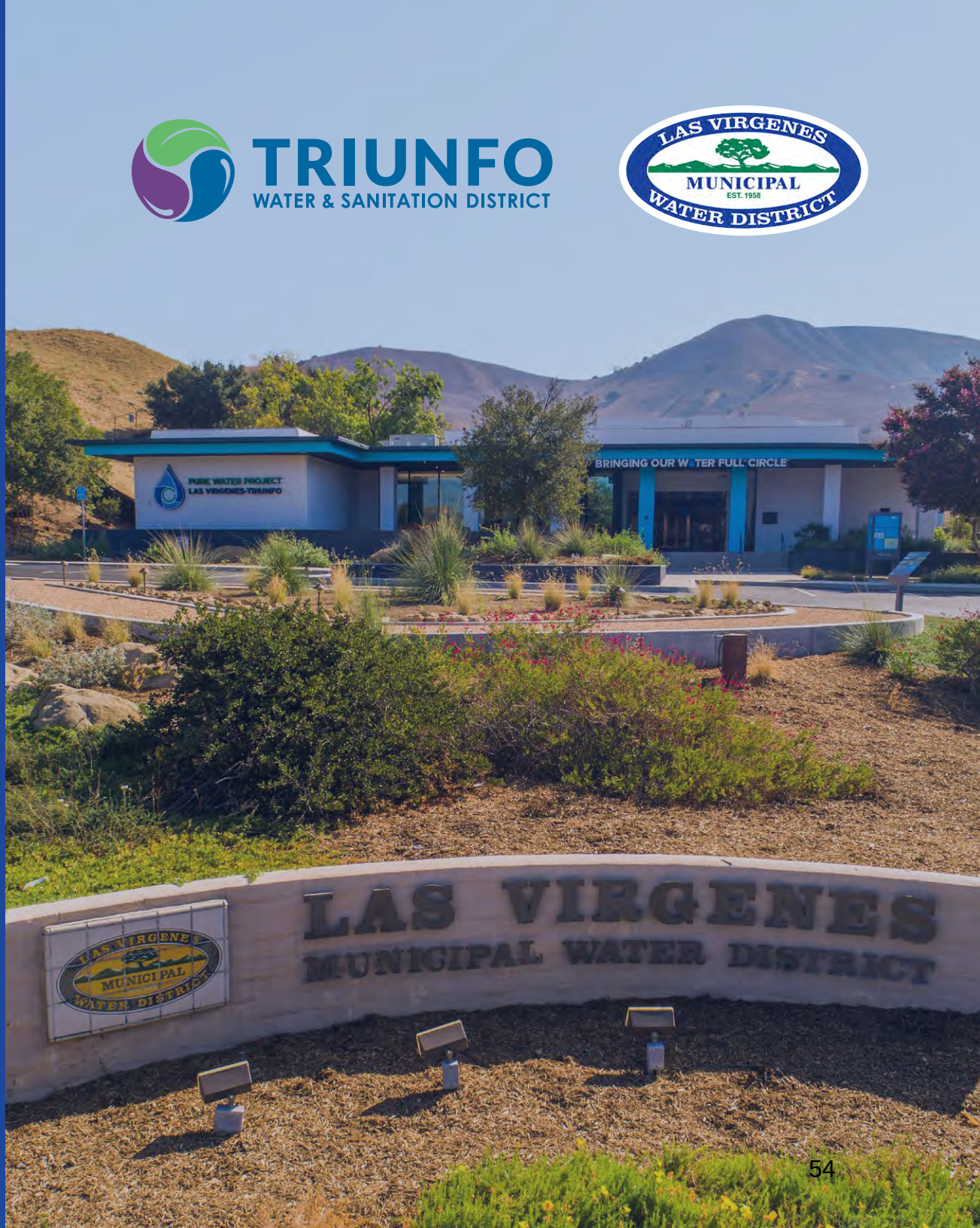
APPROVED AS TO FORM:

_____
W. Keith Lemieux, Agency Counsel

Las Virgenes Municipal Water District &
Las Virgenes-Triunfo Joint Powers Authority

Climate Action & Adaptation Plan

September 2023



ACKNOWLEDGMENTS

The CAAP was prepared by a LVMWD project team in partnership with the Triunfo JPA and with support from consultants. The following are specifically acknowledged for their contributions.

LVMWD PROJECT TEAM

Joe McDermott,
Director of Engineering
and External Affairs

John Zhao,
Director of Facilities
and Operations

Craig Jones,
Resource Conservation
Manager

Douglas Anders,
Administrative Services Coordinator

Debbie Rosales,
Financial Analyst

CONSULTANT SUPPORT

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers

Rincon Consultants, Inc.

Kennedy Jenks

Kennedy Jenks

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ACRONYMS, ABBREVIATIONS, AND GLOSSARY

A list of acronyms, abbreviations, and glossary terms used in the Climate Action and Adaptation Plan.

A

AB – Assembly Bill

Action – The act, policy, or measure that will be implemented and achieved to reduce greenhouse gases and/or increase resilience to climate change.

Adaptation – The process of adjustment to actual or expected climate and its effects, either to minimize harm or exploit beneficial opportunities. In natural systems, human intervention may facilitate adjustment to expected climate.

Anthropogenic – Made by people or resulting from human activities.

Atmosphere – The envelope of gases surrounding the earth. These gases include nitrogen (78.1%), oxygen (20.9%), and argon, helium, GHGs, ozone, and water vapor in trace amounts.

B

BAU – Business-as-Usual Forecast. This forecast estimates emissions into the future if no additional actions were taken.

Biofuels – A renewable fuel source derived from biomass such as algae or animal waste.

C

CAAP – Climate Action and Adaptation Plan

CARB – California Air Resources Board

CCA – Community Choice Aggregation. A CCA is a nonprofit electricity provider.

Carbon dioxide (CO_2) – A gas produced by burning organic compounds containing carbon and by respiration.

Carbon dioxide equivalent (CO_2e) – A metric measure used to directly compare emissions from various GHGs based on their global warming potential conversion factor.

Carbon footprint – The total emissions caused in a year by an individual, event, organization, or product, expressed in carbon dioxide equivalent.

Carbon Neutrality – Achieving a balance between emitting carbon and atmospheric carbon removal.

Cal Recycle – California Department of Resources, Recycling, and Recovery

Cascading Impact – Climate hazard-caused impacts that compromise infrastructure or disrupt critical services (i.e., power supply or water conveyance) broadening the scope of impact past a singular subject to reliant subsystems and populations.

CEQA – The California Environmental Quality Act

Climate – The usual condition of temperature, humidity, atmospheric pressure, wind, rainfall, and other meteorological elements in an area of the earth's surface over a long period of time (typically 30 years or more).

Climate Change – A change in the average conditions – such as temperature and rainfall – in a region over a long period of time.

Climate Driver – An increase in the proportion of greenhouse gases in the atmosphere is the primary human-caused driver source of change to the earth's climate.

Climate Hazard – A dangerous or potentially dangerous condition created by the effects of the local climate.

Co-benefit – The secondary benefits that occur due to implementation of a program, measure or policy.

CPA – Clean Power Alliance. A CCA in the Los Angeles region.

CWC – California Water Commission

D

Decarbonization – The reduction or removal of carbon dioxide.

DWR – California Department of Water Resources

Dry Weather Diversion – A diversion of non-stormwater and stormwater flows from the storm drain system into the sanitary sewer system.

E

EF – Emissions Factor

EO – Executive Order

Electrification – The process of generating power from electricity, and in many contexts, the transition to such power from an earlier power source.

Emissions – The release of a substance (usually a gas when referring to the subject of climate change) into the atmosphere.

EV(s) – Electric Vehicle(s)

F

FEMA – Federal Emergency Management Agency

Fossil fuel – A general term for fuel formed from decayed plants and animals that have been converted to crude oil, coal, natural gas, or heavy oils by exposure to heat and pressure in the earth's crust.

G

Greenhouse gas (GHG) – A gas that absorbs infrared radiation, traps heat in the atmosphere, and contributes to the greenhouse effect.

Greenhouse Effect – A process that occurs when gases in Earth's atmosphere traps the Sun's heat.

GWP – Global Warming Potential – total contribution to global warming resulting from the emission of one unit of that gas relative to one unit of the reference gas, carbon dioxide, which is assigned a value of 1.

H

I

ICLEI – International Council for Local Environmental Initiatives

Impact – Effects on natural and human systems including effects on lives, livelihoods, health, ecosystems, economies, societies, cultures, services, and infrastructure due to the interaction of climate hazards and the vulnerabilities of the system or asset effected.

IPCC – United Nations Intergovernmental Panel on Climate Change – prepares comprehensive Assessment Reports about the stat of scientific, technical and socio-eco nomic knowledge on climate change, its impact and future risks, and options for reducing the rate at which climate change is taking place.

J

JPA – Las Virgenes – Triunfo Joint Powers Authority

K

L

LED – Light-emitting diode

LVMWD – Las Virgenes Municipal Water District

M

Methane (CH_4) – A hydrocarbon that is a greenhouse gas that is produced through anaerobic (without oxygen) decomposition of waste in landfills, wastewater treatment plants, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Metric Ton (MT) – common international measurement for the quantity of greenhouse gas emissions – one metric ton is equal to 2,204.6 pounds or 1.1 short tons.

MT CO_2e – Metric tons of carbon dioxide equivalent is the standard units to measure GHG emissions.

MWD – Metropolitan Water District of Southern California

N

Nitrous oxide (N_2O) – A powerful greenhouse gas with a high global warming potential; major sources of nitrous oxide include soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning.

O

Offroad Equipment – Any non-stationary device powered by an internal combustion engine or electric motor used primarily off roadways such as agricultural, landscaping or construction equipment.

OPR – California Governor's Office of Planning and Research

P

PSPS – Power Safety Power Shutoffs

PV – Photovoltaic (solar energy)

Q

R

Renewable Diesel – Direct substitute for diesel fuel refined from lower carbon and renewable source material.

RCP – Representative Concentration Pathway

Resilience – The capacity of an entity (an individual a community, an organization, or a natural system) to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience.

S

SB – Senate Bill

SCE – Southern California Edision

Scope – Categorization of GHG-generating activities based on the level of the entity's operational control of the source.

Service population – Residents receiving services

SWP – State Water Project

T

TWSD – Triunfo Water & Sanitation District

TWRF – Tapia Water Reclamation Facility

U

U.S. EPA – United States Environmental Protection Agency

UWMP – Urban Water Management Plan

V

VMT – Vehicle miles traveled

Vulnerability – The propensity or predisposition to be adversely affected.

W

WBCSD – World Business Council for Sustainable Development

Wet Weather Diversion – A diversion of both non-stormwater and stormwater flows from the storm drain system into the sanitary sewer system.

Y

Z

ZEV – Zero emission vehicle

1.

INTRODUCTION

A Climate Action and Adaptation Plan (CAAP) for a municipal water district provides a strategic framework of measures and strategies designed to address the impacts of climate change on water resources, water supply, and water and wastewater infrastructure within the jurisdiction of Las Virgenes Municipal Water District (LVMWD or District) and the Las Virgenes – Triunfo Joint Powers Authority (JPA). The JPA is a long-term partnership between LVMWD and Triunfo Water and Sanitation District (TWSD). LVMWD is the Administering Agent for the JPA. The goal of this CAAP is to both mitigate contributions to climate change (climate action) and adapt operations and systems to the threats and impacts of a changing climate (climate adaptation). The CAAP will play a crucial role in ensuring a reliable and resilient water supply and wastewater services in the face of climate change challenges. It demonstrates a proactive commitment to both reducing the impacts of climate change and adapting to the changing conditions to provide safe and sustainable water and wastewater services to the community.

LVMWD AND TRIUNFO JPA MISSION AND VISION

The CAAP supports the mission of the District and the JPA to provide high-quality, reliable water and wastewater treatment services in a cost-effective and environmentally sensitive manner. This mission applies to all LVMWD and joint LVMWD/JPA activities, as they collectively provide drinking water, recycled water, wastewater services, and biosolids composting.

This CAAP has been developed to align with LVMWD and JPA goals and long-range planning efforts, with the intent to adapt District/JPA operations and infrastructure to a changing climate and reduce greenhouse gas (GHG) emissions over time. Through innovative strategies, collaborative partnerships, and responsible stewardship, LVMWD and the JPA aspire towards a sustainable, cost effective, and equitable water supply, valuing every drop and bringing water full circle. By embracing adaptive measures and progressing towards carbon neutrality, LVMWD and the JPA are dedicated to providing high-quality water and wastewater services in a cost effective and environmentally resilient manner. The following section provides an overview of the CAAPs purpose, a system/facilities overview, and the plans that the CAAP aligns with to ensure cohesion among long-range planning efforts by LVMWD and the JPA.

TRIUNFO WATER & SANITATION DISTRICT

LAS VIRGENES MUNICIPAL WATER DISTRICT

CAAP PURPOSE

The CAAP is a long-range planning document that provides LVMWD and the JPA with a roadmap for achieving long-term GHG emissions reduction and improved resilience to climate change impacts in alignment with the State of California goals, mandates, and current legislation. It includes an analysis of LVMWD and JPA operations, associated GHG emissions sources, forecasted future emissions, climate vulnerabilities, and emissions reduction and adaptation goals and strategies. This document is intended to inform future policy and planning decisions on operations, water resources, capital investments, conservation, and local resource programs. Additionally, the CAAP aligns with LVMWD and JPA long-range plans including the 2020 Las Virgenes Municipal Water District Urban Water Management Plan, 2014 Integrated Master Plan for Las Virgenes Municipal Water District and Triunfo Sanitation District (IMP), and 2019 Hazard Mitigation Plan. The CAAP will support LVMWD and JPA efforts to adjust operations as feasible in order to adapt to climate change effects and to obtain infrastructure grant/loan funding necessary for increasing resiliency.

The CAAP establishes GHG emissions reduction targets that align with those goals set by the State of California, as well as with the international consensus regarding the GHG reductions needed to avoid the most serious climate change impacts. The emissions inventory and forecast presented in Chapter 4 provide a basis for establishing targets for future GHG reductions. LVMWD and the JPA are establishing an annual reduction rate to meet the State's 2045 carbon neutrality goal, as set forth by Assembly Bill (AB) 1279. By setting a straight line to the 2045 target, LVMWD and the JPA commit to reducing mass GHG emissions 69 percent below 1990 levels by 2030, surpassing Senate Bill 32, which requires a 40 percent reduction in emissions from 1990 levels.

The CAAP creates a roadmap that will provide LVMWD and the JPA with a broad range of strategies and measures to mitigate or reduce GHG emissions in line with State goals based on operational feasibility, cost, and the availability of State and federal grant funding. It will help LVMWD and the JPA to reduce overall GHG emissions from its operations and will align them with State mandates and legislation. In addition to establishing a pathway to an emissions reduction goal of 69 percent below 1990 levels by 2030 and carbon neutrality by 2045, the CAAP:

- Incorporates legislation and guidance from State, federal, and international sources,
- Identifies cost-effective energy efficiency and decarbonization measures,
- Provides co-benefits, such as improved operational resilience and improved air quality, and
- Integrates actions to transition away from fossil fuel use in alignment with California's clean fleet goals and overall strategies to reduce GHG emissions from the transportation sector.

CAAP Intent and Use

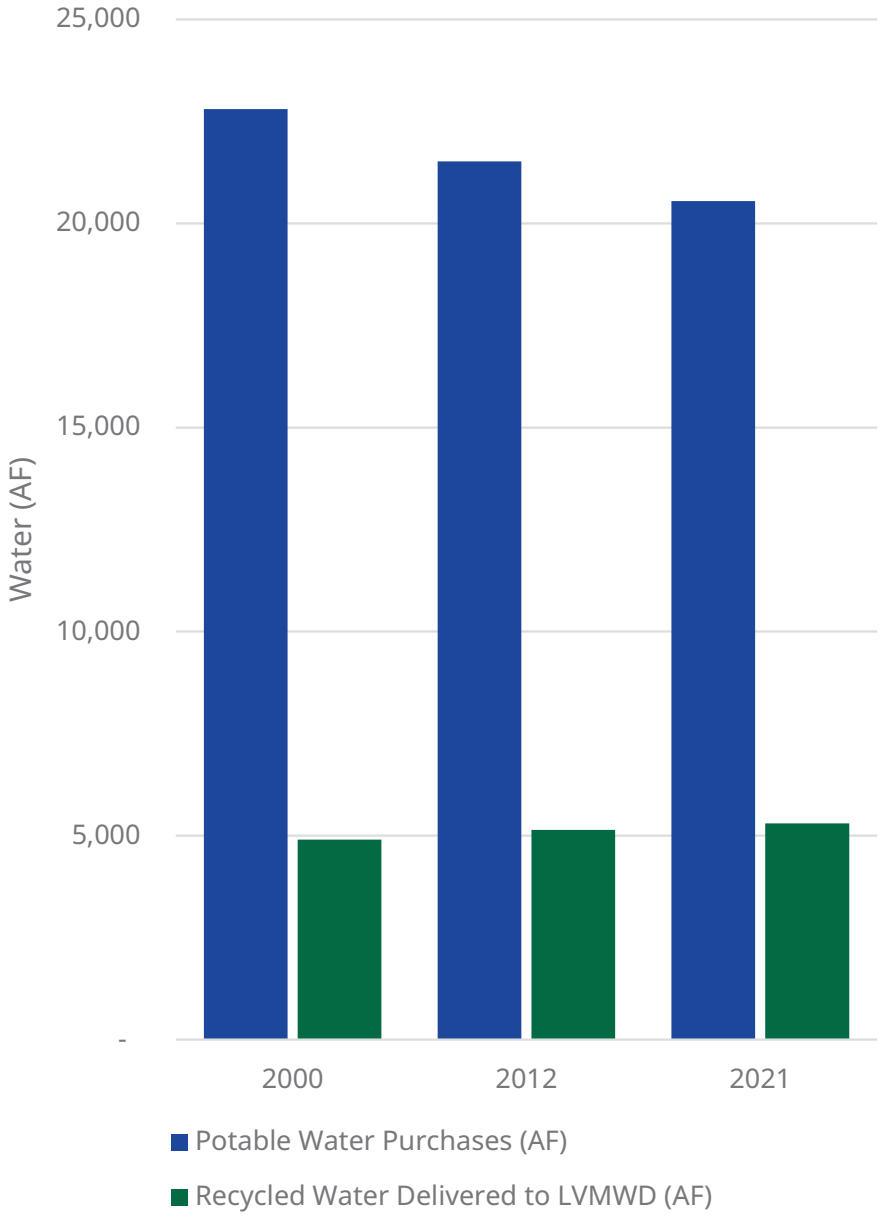
The CAAP provides a comprehensive analysis of climate threats and operational GHG emissions sources, as well as a programmatic guide for opportunities to increase resiliency and reduce GHG emissions. It is not intended to serve as a qualified GHG Reduction Plan per the California Environmental Quality Act (CEQA) requirements of Section 15183.5(b). Although the CAAP discusses climate-related impacts and provides GHG reduction strategies, it cannot be used to tier or streamline development projects as it relates to CEQA requirements. LVMWD and the JPA provide critical services to the communities they serve and are committed to implementing GHG reduction strategies to the extent they are both feasible and cost-effective. The CAAP's intent is to serve as an informative document that introduces concepts related to climate action planning and establishes a set of strategies that align with the State's GHG-reduction goals and associated legislation that can be used to implement mitigation and adaptation strategies. By defining specific reduction goals, LVMWD and the JPA can track their progress towards meeting their goals and measure the success of their CAAP strategies. LVMWD and the JPA are committed to developing new measures and strategies, leverage emerging technologies and products, and updating the CAAP in an effort to adapt to emerging climate threats and maintain progress with their established carbon neutrality target.

LVMWD/JPA System Overview

This CAAP covers LVMWD facilities and operations and JPA operations. LVMWD acts as Administering Agent for the Triunfo JPA, which is a long-term partnership between LVMWD and the Triunfo Water and Sanitation District (TWSD). The JPA co-owns, and LVMWD operates and maintains, several shared wastewater facilities, including the Tapia Wastewater Reclamation Facility, a backbone reclamation water main, the Rancho Las Virgenes Composting Facility, spray fields for seasonal disposal of excess recycled water, and a 5-megawatt solar farm. GHG emissions associated with the operation and maintenance of TWSD's infrastructure are not measured as part of the GHG inventory, as outlined in Chapter 4.

Collectively, the JPA provides wastewater treatment, recycled water, and biosolids composting to more than 100,000 residents in the cities of Agoura Hills, Calabasas, Hidden Hills, Westlake Village, unincorporated areas of western Los Angeles County, and eastern Ventura County, including Oak Park. LVMWD provides potable water services to 70,000 of its residents. LVMWD's potable water distribution system includes 25 storage tanks, 24 pump stations, and almost 400 miles of pipelines. LVMWD's recycled water system consists of 62 miles of pipelines, 3 storage tanks, 3 open reservoirs, and 4 pump stations. The potable water system serves potable retail customers, primarily residential, and the recycled water system provides water resources to irrigate parks, golf courses, roadway landscapes, commercial properties, and multi-family landscapes. Water delivered per year, in acre-feet (AF), by LVMWD in 2000, 2012, and 2021 is shown in Figure 1-1. Water deliveries for these years are shown in alignment with years included in the multi-year GHG inventory, as seen in Chapter 4. Highlighting 1990, 2000, 2012, and 2021 illustrates shifts in water deliveries over two decades of service. The GHG emissions associated with these water deliveries are primarily from the purchase and consumption of electricity used for water treatment, conveyance, and delivery of water throughout the service area, as well as emissions associated with the Tapia Water Reclamation Facility.

Figure 1-1. Water Delivered for Select Years (AF) by LVMWD



Long-Range Planning

As an urban water supplier, LVMWD is required to prepare an Urban Water Management Plan (UWMP) every 5 years in response to the requirements of the UWMP Act, California Water Code Sections (CWC) 10610 through 10656. UWMPs are required to support the long-term resource planning to ensure that adequate water supplies are available to meet existing and future water needs over a 20-year planning horizon during different climate scenarios. In July 2021, LVMWD's Board of Directors approved the most recent 2020 Urban Water Management Plan (UWMP 2021). LVMWD coordinated their planning efforts with several local water agencies to calculate demand projections, characterization of shared supplies, and planning for potential water shortages. This partnership included Calleguas Municipal Water District, Triunfo Water and Sanitation District, and The Metropolitan Water District of Southern California (MWD). To be consistent with anticipated growth in operations, water supply and demand projections are incorporated into the CAAP.

The 2014 Integrated Master Plan (IMP) for Las Virgenes Municipal Water District and Triunfo Sanitation District summarizes the findings of the Potable Water Master Plan, Sanitation Master Plan, and Recycled Water Master Plan, all adopted in 2014. The Potable Water Master Plan and Recycled Water Master Plan each evaluate historical and future water demands making several recommendations to secure water and avoid additional costs. The Sanitation Master Plan includes recommendations for specific sanitation projects for LVMWD to undertake such as refurbishment of existing assets, operation optimization, and sanitation system upgrades to allow LVMWD to plan for expansion and projected capacity needs in the future. The IMP recommends relieving demands from the potable system through specific recycled water construction projects and re-working the wastewater system to be more easily managed. Therefore, the CAAP aligns with and highlights opportunities within the IMP to reduce GHG emissions as a co-benefit.

Other long range planning documents such as the 2019 Las Virgenes Municipal Water District Hazard Mitigation Plan, have identified hazards that LVMWD is vulnerable to and recommend specific actions to minimize such vulnerabilities. This hazard mitigation plan developed by LVMWD explicitly sets a goal to increase the resiliency of LVMWD by "reducing risk from hazards by identifying resources, information, and strategies for risk reduction, while helping guide and coordinate mitigation activities." Included in the plan is a series of hazard mitigation actions to be completed by LVMWD over the next few years to address hazards. The CAAP complements the strategies and hazard mitigation actions detailed in the Hazard Mitigation Plan.

HISTORY AND CURRENT OPERATIONS

This section provides an overview of the history and operations for LVMWD and the JPA, including its water supply sources, treatment requirements, and infrastructure.

LVMWD/JPA Formation and Service Area

LVMWD was formed in 1958 to supply imported water to western Los Angeles County. The Triunfo JPA was established in 1964 to treat wastewater within the Malibu Creek watershed. The respective service areas, shown in Figures 1-2 and 1-3, are located in the cities of Agoura Hills, Calabasas, Hidden Hills, Westlake Village, unincorporated areas of western Los Angeles County, and eastern Ventura County and are within the South Coast Hydrologic region, as defined by the Department of Water Resources. Figure 1-2 also shows LVMWD's water supply sources.

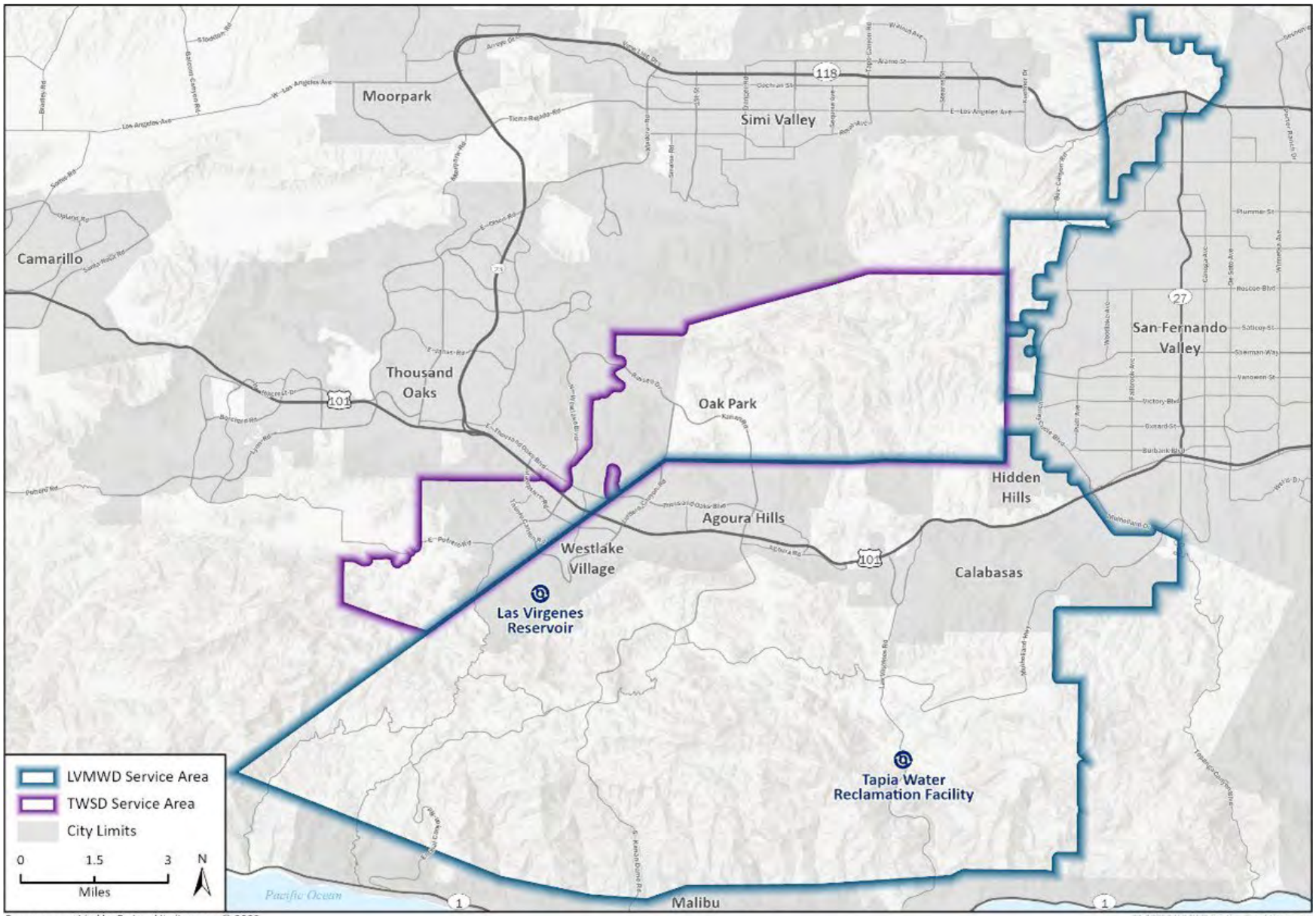
The climate of the service areas is characterized as semi-arid, with mild winters, warm summers, and moderate rainfall. The usually mild climate occasionally has periods of extremely hot weather, winter storms, or hot and dry Santa Ana winds.

Water Sources and Supply

LVMWD and the JPA obtain water from various sources, including treated, drinkable water brought in from the MWD, recycled water derived from the TWRF, groundwater from the Russell Valley Basin in Westlake Village (used to complement the TWRF), and surface runoff collected into the Las Virgenes Reservoir. The imported water originates from the State Water Project (SWP). Water resources have been carefully managed to enhance water reliability, employing a strategy that emphasizes aggressive use of recycled water, minimal reliance on groundwater to supplement recycled water supplies, and storing water in Las Virgenes Reservoir during low-demand periods in the winter to meet peak demand periods during summer months.

Figure 1-2. LVMWD/JPA Vicinity Map

Figure 1-3. LVMWD and Triunfo JPA Service Areas



Domestic Water Delivery

LVMWD serves over 70,000 residents within a service area spanning 122 square miles, offering potable water, recycled water, and sanitation services. The water distribution system comprises 22 primary pressure zones, more than 400 miles of pipelines, 24 pumping stations, 25 storage tanks, and over 75 pressure regulating stations.

Wastewater and Recycled Water

Through the JPA, LVMWD operates the TWRF, which processes an average of 9.5 million gallons per day (MGD) of wastewater and has a total capacity of 16 MGD. The TWRF employs treatment methods to purify the wastewater to a high level, enabling its use for non-potable purposes like landscape irrigation and various commercial applications. Approximately 20 percent of all water supplied by LVMWD is recycled for irrigation purposes. The solid by-products generated during the treatment process are transported through a 4-mile-long buried pipeline to the Rancho Las Virgenes composting facility. At this facility, the solids undergo anaerobic digestion, dewatering, and composting, resulting in Class A Exceptional Quality compost that is made available for use by the public. Pictured to the right is the Rancho Las Virgenes Composing Facility.

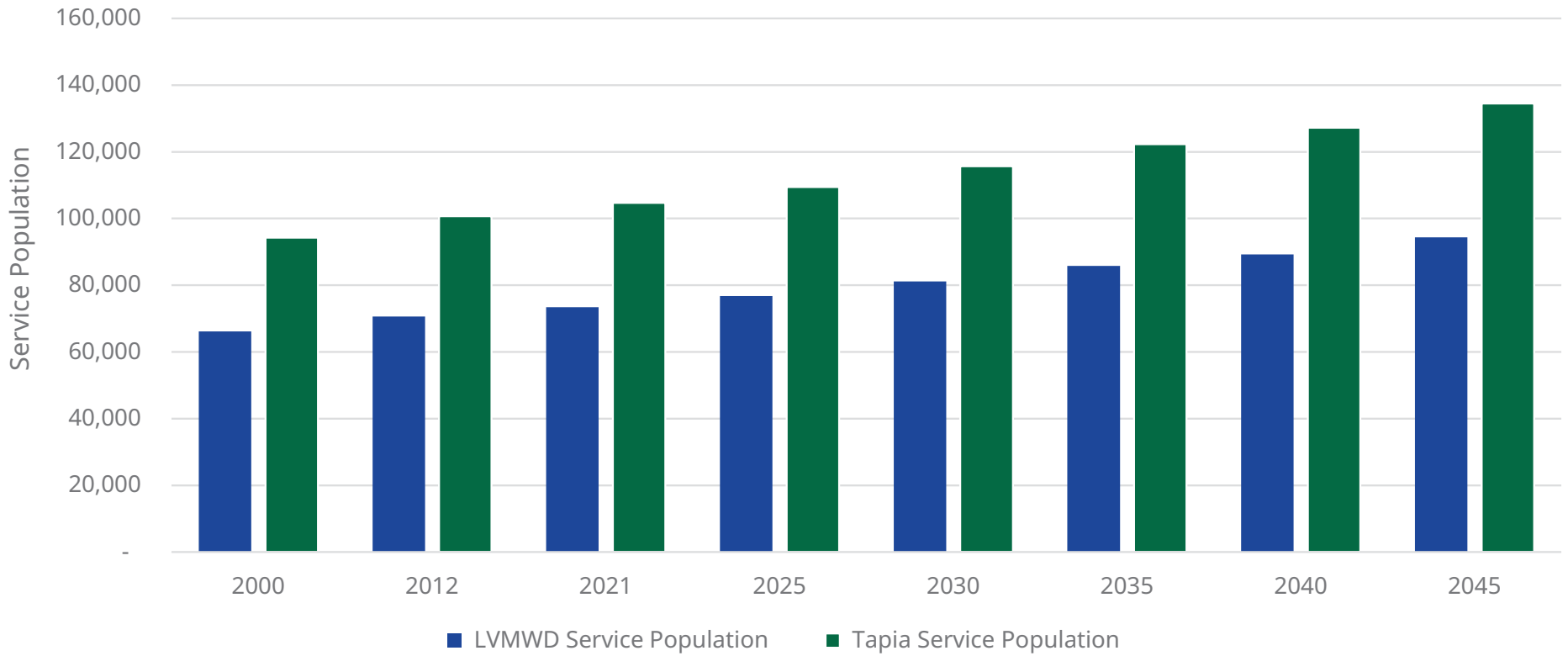
Environmental Commitment and Greenhouse Gas Reduction History

LVMWD and JPA GHG emissions are primarily related to the purchase and consumption of electricity used for operations and wastewater treatment throughout their service areas. Future GHG emissions are anticipated to increase due to planned service expansions and population increases, as estimated in the 2020 UWMP. As shown in Figure 1-4, service populations for LVMWD only (LVMWD Service Population) and for the areas served by the JPA that includes both LVMWD and Triunfo Water and Sanitation District services areas (Tapia Service Population) are estimated to grow from approximately 73,435 and 104,651 in 2021 to 94,392 and 134,516 in 2045, respectively. Chapter 4 describes LVMWD's historic, current, and forecasted emissions in further detail.

Furthermore, impacts from the changing climate such as increased frequency and severity of drought conditions are projected to potentially impact the quantity and quality of local water supplies, as well as the availability of imported water from the SWP. Chapter 3 describes exposure to climate change and vulnerabilities in further detail.

Prior to development of this CAAP, LVMWD and the JPA substantially reduced their GHG emissions through the implementation of operational efficiencies, renewable energy projects, and water conservation programs into their services. Some of these efforts and the associated effects on reducing GHG emissions are summarized below.

Figure 1-4. Historical and Forecasted Service Population by LVMWD and TWRF



Infrastructure Energy Efficiency and Renewable Energy

LVMWD and the JPA have continually invested in projects and efforts to upgrade infrastructure and improve the energy efficiency of its operations. This has included installing a solar system to reduce reliance on fossil fuels and increase energy resilience. The solar energy has resulted in lower energy costs and reduced GHG emissions over time. A back-up battery storage system under construction at the Rancho Composting Facility will provide additional resiliency. Additionally, LED upgrades have been completed at District Headquarters and TWRF, leading to increased energy efficiency, decreased electricity consumption, and reduced GHG emissions.

LVMWD contracted to buy power from a Solar Power Generation Facility (operational in 2014), which is owned and operated by Solar City at a fixed cost over a 20-year period. This facility is designed to generate peak power of approximately 1 million watts or one megawatt, which is used to pump recycled water for regional use. Solar City has estimated that over its lifetime, the solar facility will prevent more than 82 million pounds of carbon from entering the atmosphere or the equivalent of removing 750 cars from the road.[1] Operational in 2021, LVMWD's Solar Generation Project Phase II was developed to provide an additional 4 megawatts of renewable energy. At the time of development, this solar facility was projected to reduce electrical costs by an estimated $10.3 million over a 25-year period. The amount of power generated from the combined 5-megawatt solar facility is enough to operate the TWRF.[2]

Water Conservation and Reliability

LVMWD has developed strategies for water conservation through the Comprehensive Water Conservation Plan,[3] which aligns their water conservation targets with State goals. The plan outlines several water conservation programs aimed at reducing water use, reducing water costs for customers, and meeting state water conservation goals. Current LVMWD water conservation efforts include:

- Weather based Irrigation Controller Giveaway/Rebate Program
- High Water Use Account Review and One-on-One Consultations
- Rain Barrel Giveaway/Rebate Program
- Development and Implementation of a Landscape Transformation Initiative
- Improved Education and Outreach Efforts
- Advanced Water Meter Project

These efforts have led to an estimated water reduction of 421 AF per year, since 2018. As of 2023, the Weather Based Irrigation Controller Giveaway/Rebate Program has provided over 2,000 smart controllers to customers. LVMWD is actively developing additional programs to further water conservation efforts. Specifically, the Landscape Transformation Program, launched in 2023, will further efforts to promote the transformation to water efficient landscaping.

LVMWD and the JPA are committed to ensuring that its customers have access to reliable drinking water resources. The Pure Water Project Las Virgenes - Triunfo will play a critical role in providing reliable water in the future. The project, a joint effort between LVMWD and TWSD, is currently in the development stages, and will take surplus recycled water from the TWRF and further purify the water to meet or exceed drinking water standards. This effort is critical to helping ensure long-term drinking water supply reliability as LVMWD is currently reliant on imported drinking water from the State Water Project. Pure Water operations are expected to come online by no later than 2030.

1. *LVMWD. N.d. Solar Power Generation Facility.* ***https://www.lvmwd.com/our-services/wastewater-services/solar-power-generation-facility#:~:text=The%20solar%20power%20generation%20facility,recycled%20water%20for%20regional%20use.***
2. *LVMWD. N.d. Solar Generation Project Phase II.* ***https://www.lvmwd.com/the-district/departments/engineering-and-external-affairs/technical-services-planning-engineering/master-plans-and-engineering-documents/solar-generation-project-phase-ii***
3. *Comprehensive Water Conservation Plan. LVMWD. 2020.* ***https://www.lvmwd.com/home/showpublisheddocument/13413/637600622563770000***

Vehicle Fleet

LVMWD'S Advanced Meter Project[4] is minimizing fleet vehicle usage as customers with advanced meters will no longer need in-person monthly meter reads, leading to fewer LVMWD fleet vehicles on the road for meter reading. This significantly reduces fleet vehicle usage and reduces LVMWD's GHG emissions.

Wildfire Mitigation and Energy Resilience

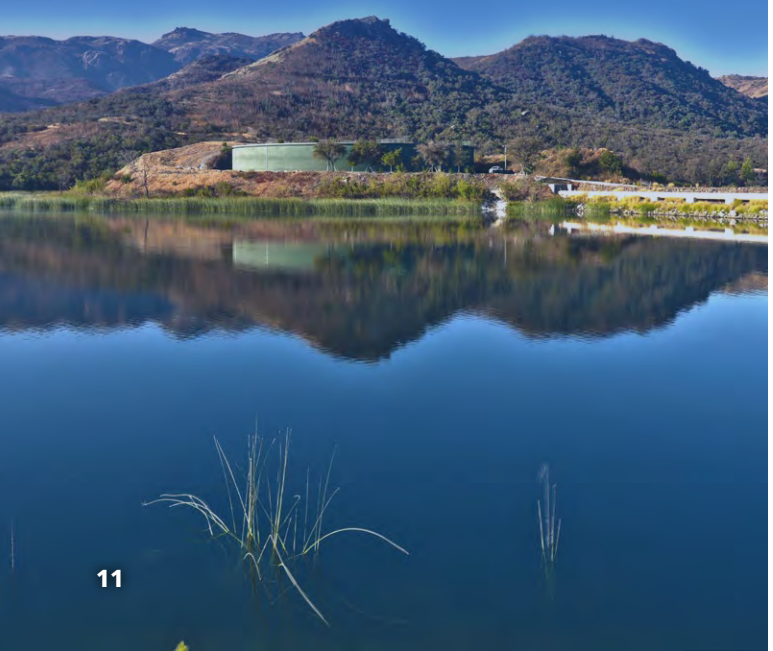
The LVMWD and JPA service areas are in high wildfire risk zones. LVMWD and the JPA are committed to implementing measures to mitigate future wildfire risk, potential damage to facilities and infrastructure, power outages, and associated service disruptions. Completed and ongoing efforts to minimize wildfire risk and increase resilience to power outages include:

- Implementing vegetation and landscape management practices that reduce the amount of flammable materials,
- Clearing brush and trimming trees around critical infrastructure,
- Conducting structure hardening upgrades to improve resilience to wildfires, and
- Completing the installation of emergency power generation systems at several facilities.

4. *LVMWD. Advanced Meter Project. 2023.* ***https://www.lvmwd.com/our-services/construction-projects/lvmwd-advanced-meter-program***

2.

SCIENTIFIC CONTEXT FOR CLIMATE CHANGE



CLIMATE CHANGE CAUSES

While the scientific understanding of climate change continues to evolve, the mechanisms driving climate change have been well understood for decades. These mechanisms include the release of GHG emissions associated with human activities into Earth's atmosphere and the effects on the global climate. This section provides an overview of the scientific context of climate change attributed to human activity.

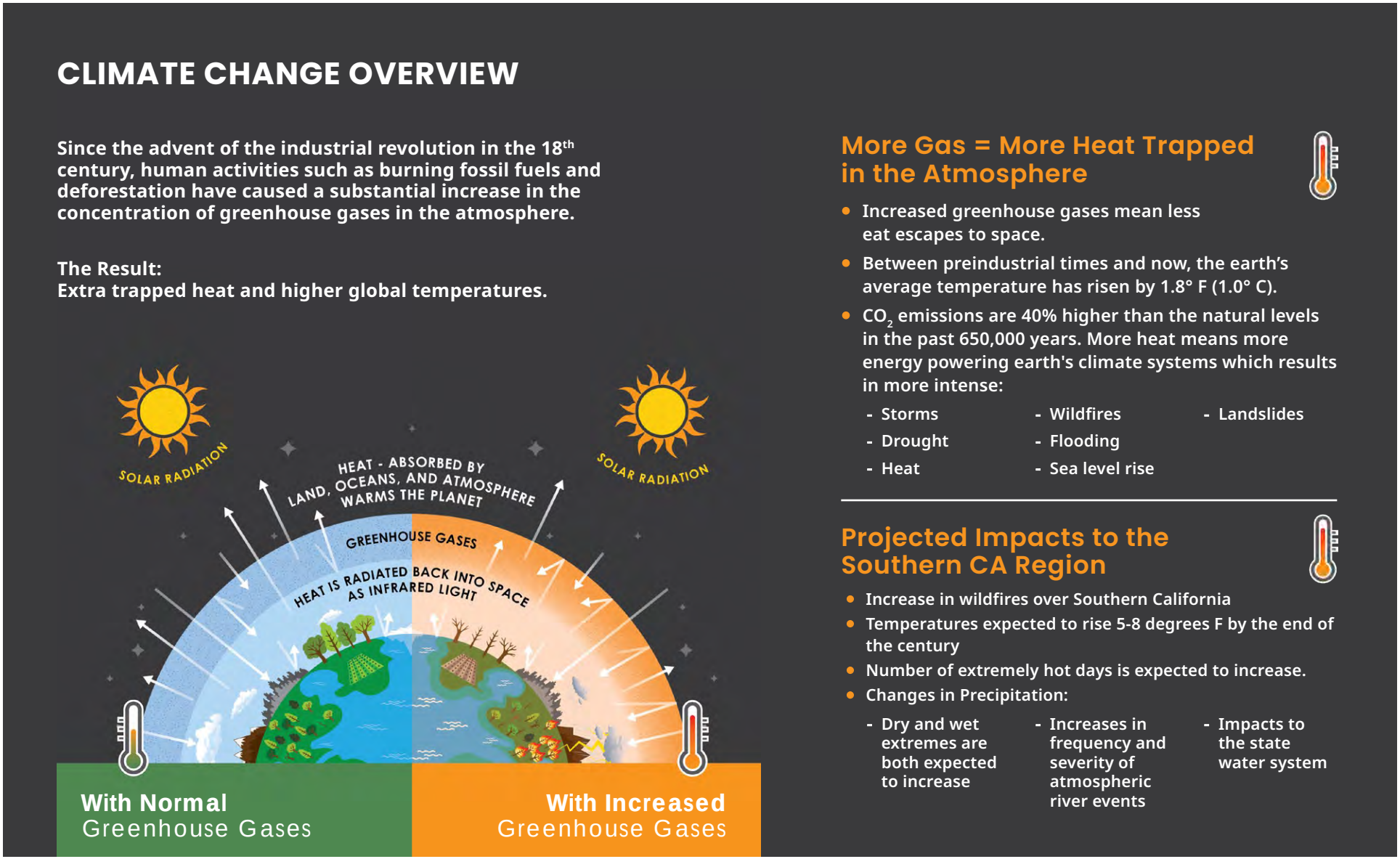
GHG Effect and Emissions Sources

Below is a discussion of the effects of GHG emissions, impacts of global warming, as well as a discussion of GHG emission sources, including those specific to LVMWD's and JPA's operations.

GHG Effect

Most of the energy that affects the Earth's climate comes from the sun. When solar radiation reaches the Earth, some fraction is absorbed by the Earth's surface, and some is reflected back into space. Gases in the Earth's atmosphere act like a blanket reducing the amount of energy radiated back into space from Earth's surface resulting in heat being trapped within the atmosphere. This is known as the "greenhouse effect" because atmospheric gases function similar to the windows in a greenhouse, which trap the Sun's rays and create a much warmer space inside the greenhouse than the outside air. The greenhouse effect regulates the Earth's climate, maintaining conditions suitable for life on Earth. However, a rapid increase of GHG emissions can cause excess heat to be trapped, affecting global temperatures and climate. More specifically, human activity, such as burning fossil fuels to generate electricity and heat, and the transportation of people and materials in vehicles has increased the amount of GHGs emitted into the atmosphere. The increase of emitted GHGs has led to an increased adsorption of infrared radiation by the Earth's atmosphere and increased temperatures near the surface. This process is depicted in Figure 2-1.

Figure 2-1. Greenhouse Gas Effect and Associated Climate Impacts[5]

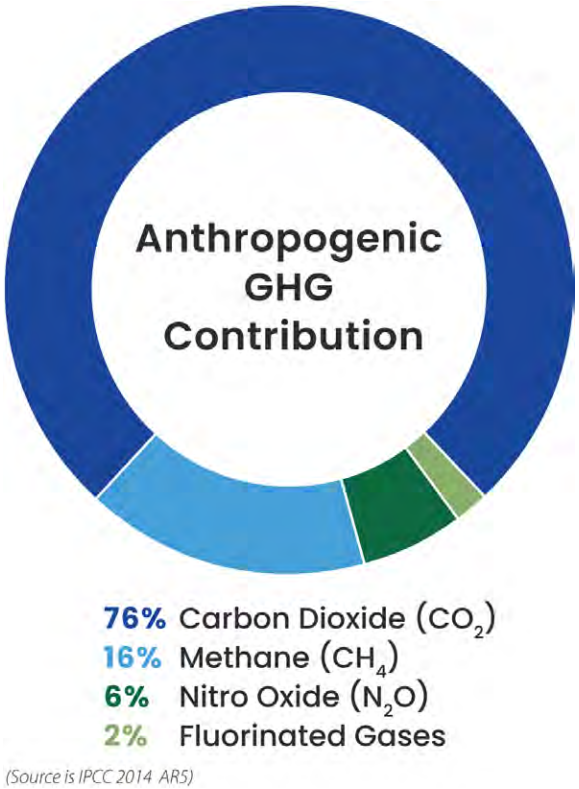


5. *Information in Figure 2-1 regarding the GHG effect was obtained from* ***https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions***

Global Warming Potential

The primary GHGs that are most responsible for the radiative greenhouse effect on Earth include carbon dioxide (CO_2), methane (CH_4), and nitrous oxides (N_2O). CO_2 contributes approximately 76 percent of total GHG emissions, largely due to combustion of fossil fuel for energy generation and fuel use. As shown in Figure 2-2, CH_4 and N_2O from agriculture and industrial activities contribute approximately 16 percent and 6 percent, respectively, to total GHG emissions. Other GHGs that are used in products and processes include fluorinated gases, which are released in small quantities that contribute about two percent of overall emissions.

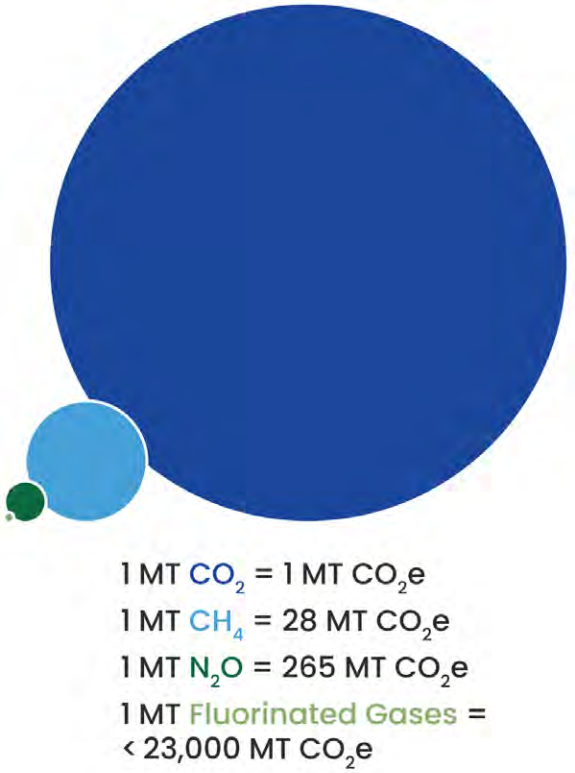
Figure 2-2. GHG Global Contribution



(Source is IPCC 2014 AR5)

Each GHG has its own global warming potential (GWP), which refers to the extent to which the GHG traps energy in the atmosphere.[6] The determination of a GHG's GWP utilizes CO_2 as a reference point and compares the potential impact of different GHGs where CO_2 has a GWP of 1. Using the latest 100-year GWP values published in the International Panel on Climate Change (IPCC) Fifth Assessment Report (IPCC 2014), CH_4 has a GWP of 28, meaning that each unit of CH_4 causes 28 times more global warming potential than 1 unit of CO_2, while N_2O has a GWP of 265.[7,8] Other GHGs include the fluorinated gases, which can have a GWP of up to 23,500. IPCC publishes Assessment Reports to update GWPs of several GHGs following advances in scientific knowledge on the radiative efficiencies and atmospheric lifetimes of GHGs. The IPCC's Fifth Assessment Report (2014) is among the most current and comprehensive peer-reviewed assessments of climate change. When individual GHGs are normalized based on their GWPs, we refer to them as carbon dioxide equivalents or CO_2e. Generally, GHG emissions are quantified in terms of metric tons (MT) CO_2e emitted per year. Figure 2-3 shows a comparison of the most common GHGs and their GWPs.

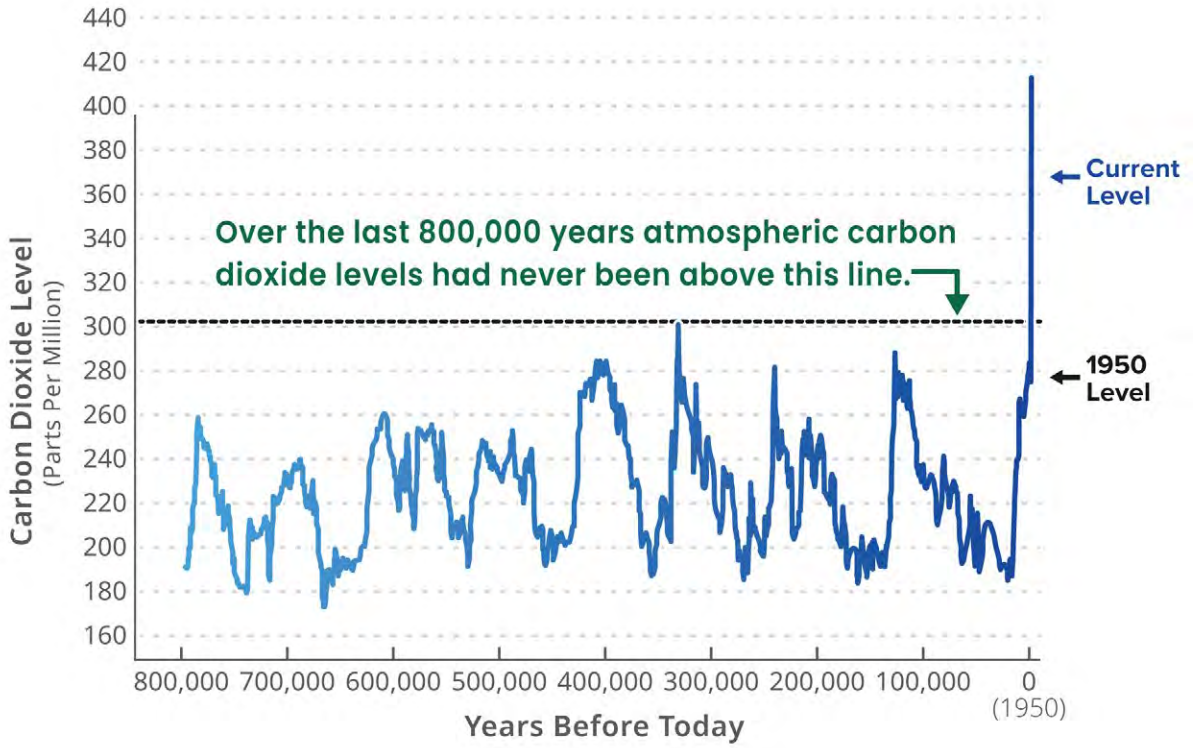
Figure 2-3. Comparison of GHG GWPs



6. *According to the United States Environmental Protection Agency, the GWP was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of one ton of a gas will absorb over a given period of time, relative to the emissions of one ton of CO_2 (EPA 2017).*
7. *International Organization for Standardization (ISO) published ISO 14064-1 in 2006 (revised 2018) to provide an international standard for the quantification and reporting of GHG emissions.*
8. *Greenhouse Gas Protocol. 2016.* ***https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf***

While CO_2 has the lowest GWP of the GHGs, it is by far the largest contributor to climate change effects due to the total mass of anthropogenic CO_2 emissions released annually; this is largely due to the combustion of fossil fuels. Since the start of the industrial revolution in the mid-nineteenth century, human activities have been emitting large quantities of GHGs into the atmosphere, enough to nearly double the amount of CO_2 from 280 parts per million to over 400 parts per million, which is 100 parts per million higher than any time in the last 800,000 years. The atmospheric concentration of CO_2 over time has been calculated by measuring the composition of air trapped in ice cores from Antarctica,[9] as shown in Figure 2-4.

Figure 2-4. Atmospheric Carbon Dioxide Levels



Source: ***https://climate.nasa.gov/evidence/***

GHG Emission Sources

Anthropogenic processes that release GHGs include: the burning of fossil fuels for transportation, heating, and electricity generation; agricultural practices that release methane, such as livestock grazing and crop residue decomposition; and industrial processes that release smaller amounts of high-GWP gases. Deforestation and land cover conversion also contribute to global warming by reducing the Earth's capacity to remove CO_2 from the air and altering the Earth's albedo,[10] or surface reflectance, allowing for absorption of additional solar radiation. According to the U.S. Environmental Protection Agency (USEPA), gross GHG emissions nationwide have increased by 1.3 percent since 1990. While the continued shift from coal to natural gas and increased use of renewables in the power sector helps to reduce GHG emissions, continued increases in population growth and industrialization can lead to further increases in GHG emissions unless technology and practices transition to low carbon alternatives.

9. *Bereiter et. al. 2008.* ***https://www.researchgate.net/publication/5370384_High-resolution_carbon_dioxide_concentration_record_650000-800000_years_before_present***
10. *Albedo refers to the amount of diffuse radiation of energy out of the total, ranging from 0 (a black body that absorbs all radiation) to 1 where no energy/radiation is absorbed. Source: National Snow & Ice Data Center (NSIDC). 2020.* ***https://nsidc.org/cryosphere/seaice/processes/albedo.html***

LVMWD and JPA GHG Emission Sources

Sources of GHG emissions associated with LVMWD and the JPA include the following:

- Electricity usage to pump groundwater, conduct water quality sampling and treatment, provide water conveyance and distribution throughout the service area, and operate LVMWD/JPA facilities such as pump stations, lift stations, water reclamation plants, and water recycling
- Combustion of fuels (such as natural gas) in buildings and stationery equipment
- Combustion of fuels (such as gasoline and diesel) for transportation (fleet vehicle internal combustion of fuel and employee commutes)
- Emissions released from the processing and treatment of wastewater (e.g., combustion of digester gas, N_2O from nitrification or denitrification, and emissions in effluent discharge)
- Waste emissions including combustion of fuels in waste collection vehicles and landfill equipment as well as emissions from the decomposition of waste generated by LVMWD/JPA operations at the landfill

A complete description of operations and associated GHG emissions are located in Chapter 4. Pictured to the right is LVMWD's Headquarters.

3.

CLIMATE CHANGE VULNERABILITIES

CLIMATE CHANGE EXPOSURE

The addition of excess GHGs to the atmosphere is responsible for trapping heat near the earth's surface, increasing the average temperatures across the globe. This increase in average temperatures is the cause of climate change and affects local health, natural resources, infrastructure, emergency response, and many other aspects of society. According to the IPCC, GHGs are now higher than they have been in the past 400,000 years, raising carbon dioxide levels from 280 parts per million to 410 parts per million in the last 150 years (IPCC 2021). The dramatic increase in GHG's is attributed to human activities beginning with the industrial revolution in the 1800s, which represented a shift from an agrarian and handicraft-based economy to one dominated by industry and machine manufacturing (IPCC 2021).

To evaluate the impact of climate change on LVMWD and JPA operations and infrastructure, future conditions were modeled using the State of California's Cal-Adapt tool.[11] These models predict that the combined service area and state water supplies are expected to experience a wide variety of impacts by the end of the century. According to California's Fourth Climate Change Assessment, the service areas will be affected by projected changes that include changes in precipitation patterns, wildfire risk, the prevalence of extreme heat events, and ocean temperatures and chemistry.

The Cal-Adapt tool provides climate data from global-scale models that have been localized (downscaled) to 3.7-mile by 3.7-mile grids (California Energy Commission [CEC] 2021). The data in Cal-Adapt specific to the combined service area is consistent with information provided by the California Fourth Climate Change Assessment, Los Angeles Regional Report (2018) to describe protected future changes for specific types of hazards. Other reports, including the California Department of Water Resource's Climate Change Vulnerability Assessment, provide information regarding climate change projections and impacts to the State Water Project and water supplies. Projections throughout this section are presented consistent with the Governor's Office of Planning and Research (OPR) using Representative Concentration Pathway (RCP) 8.5 as a conservative approach to assessing and adapting to climate change. RCP 8.5 is a high greenhouse emissions scenario in which global emissions continue to rise through the end of the twenty-first century. Additionally, projections are forecasted to mid-century (2035-2064) and end-of-century (2070-2099) as 30-year averages and are compared to a modeled historical baseline (1961-1990).

11. Cal-Adapt 2.0 is an online tool that presents historic and modeled projections based on 10 different global climate models. The tool was developed and is maintained by the University of California, Berkeley Geospatial Innovation Facility with funding and oversight by the CEC. This tool was used to present projection data related to minimum and maximum temperature, precipitation, extreme heat, warm nights, drought, and wildfire.

TRIUNFO WATER & SANITATION DISTRICT

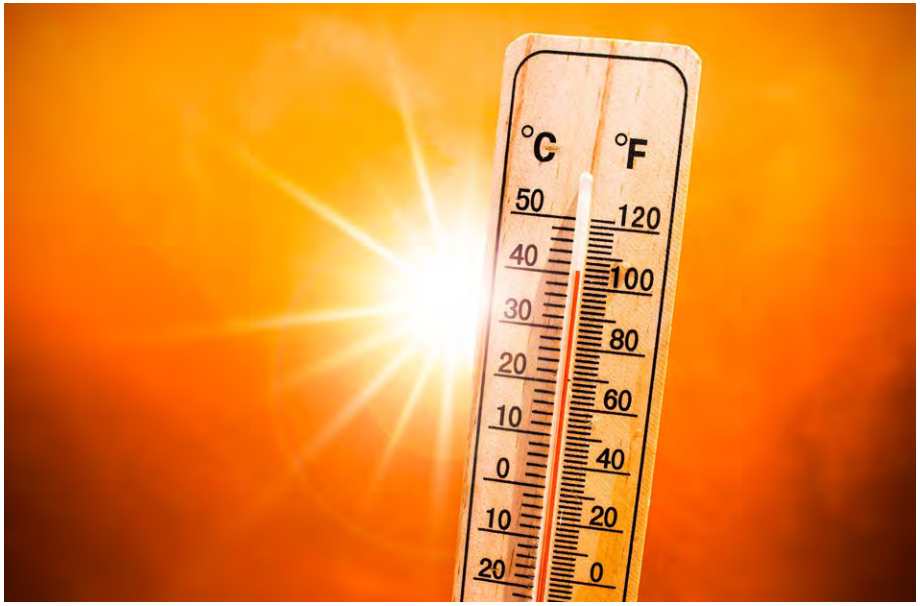
LAS VIRGENES MUNICIPAL WATER DISTRICT EST. 1958

Climate Drivers

The climate drivers of concern include temperature and precipitation.

Temperature

Average maximum temperatures are expected to increase in the combined service area. Compared to the observed baseline (1961-1990), average maximum temperatures in Calabasas (District Headquarters) are expected to rise between 4.3 °F and 8.1 °F by the end of the century. According to "Our Climate Crisis: A Guide for SoCal Communities in the Wildland Urban Interface" prepared by the Malibu Foundation, the cities of Calabasas, Agoura Hills, and Hidden Hills, will face the highest temperature increases in the Santa Monica Mountains region. Temperature increases influence extreme heat, drought, and wildfire, as discussed further in this Chapter.



Precipitation and Drought

Precipitation in the combined service area is highly variable from year to year. According to California's Fourth Climate Change Assessment, Los Angeles Region Report (2018), typically about five storms each year generate approximately 50 percent of total precipitation in the Los Angeles region. Model projections are inconsistent, however, small changes in average annual precipitation compared to the region's historic baseline are expected.[12]

Increased intensity of precipitation events is expected for the greater Los Angeles Area, including the combined service area, through the end of the century. Both dry and wet extremes are expected to occur in the future. By the end of the century, the wettest day of the year is expected to increase across most of the Los Angeles region, with some locations experiencing 25-30 percent increases. Maximum 1-day precipitation is projected to increase between 0.3 and 0.4 inch by the end of the century. Extremely dry years are expected to increase in the Los Angeles region, potentially doubling or more in frequency by the end of the century. The maximum length of dry spell currently has a 158-day average in the combined service area and is projected to increase between 8 and 16 days by the end of the century.[13]

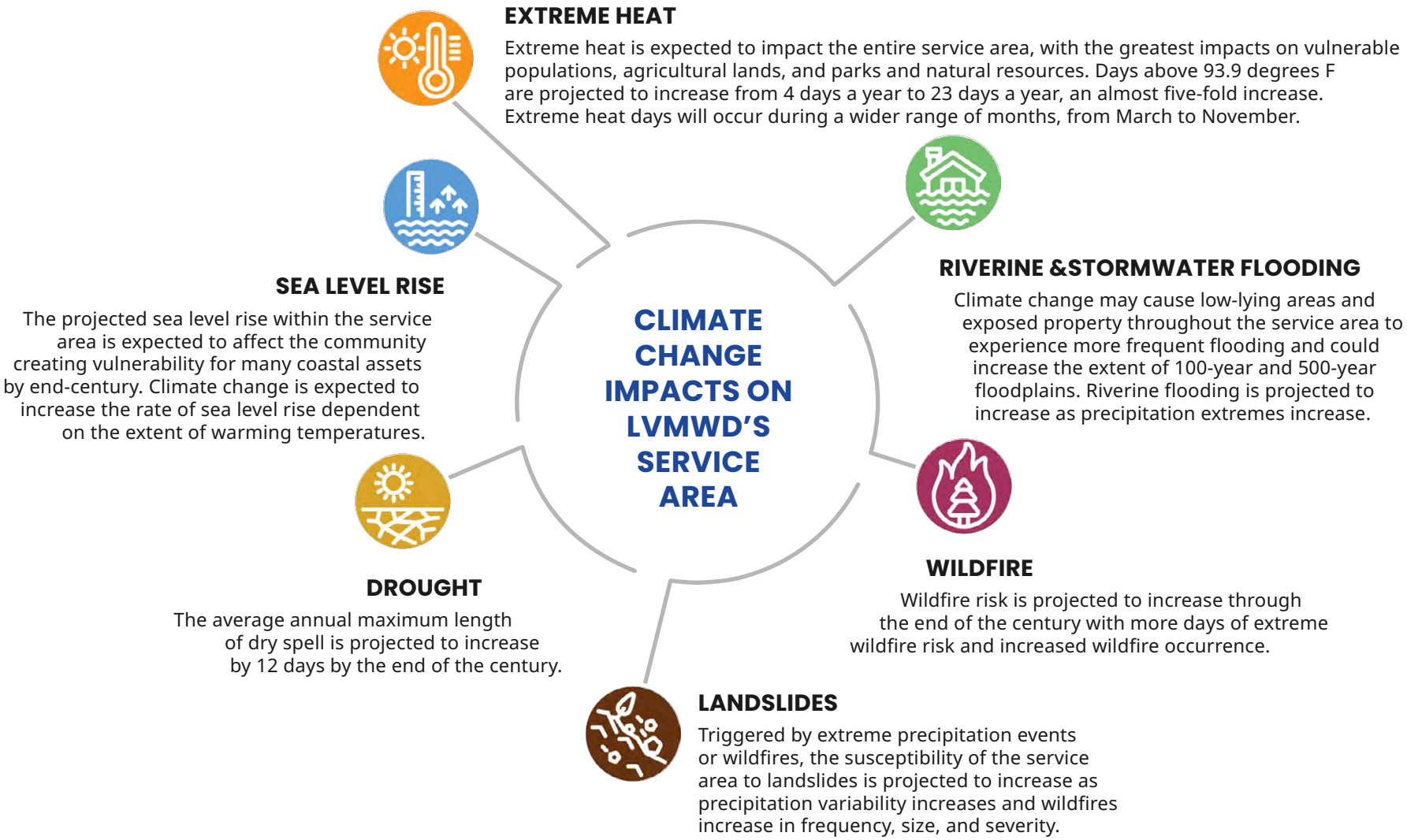
12. *Hall et al. 2018. Los Angeles Region Report: California's Fourth Climate Change Assessment.* ***https://www.energy.ca.gov/sites/default/files/2019-11/Reg%20Report-%20SUM-CCCA4-2018-007%20LosAngeles_ADA.pdf****. Accessed July 2023*

13. *California Energy Commission (CEC). 2023. Cal-Adapt.* ***https://cal-adapt.org/tools/local-climate-change-snapshot****. Accessed July 2023*

Regional Climate Hazards

LVMWD and JPA infrastructure, facilities and water supplies are exposed to climate hazards including drought, wildfire, extreme heat, extreme storms/precipitation events, floods, and landslides. A summary of climate change impacts is shown in Figure 3-1.

Figure 3-1. Climate Change Impacts on the Combined (LVMWD and JPA) Service Area



Wildfire

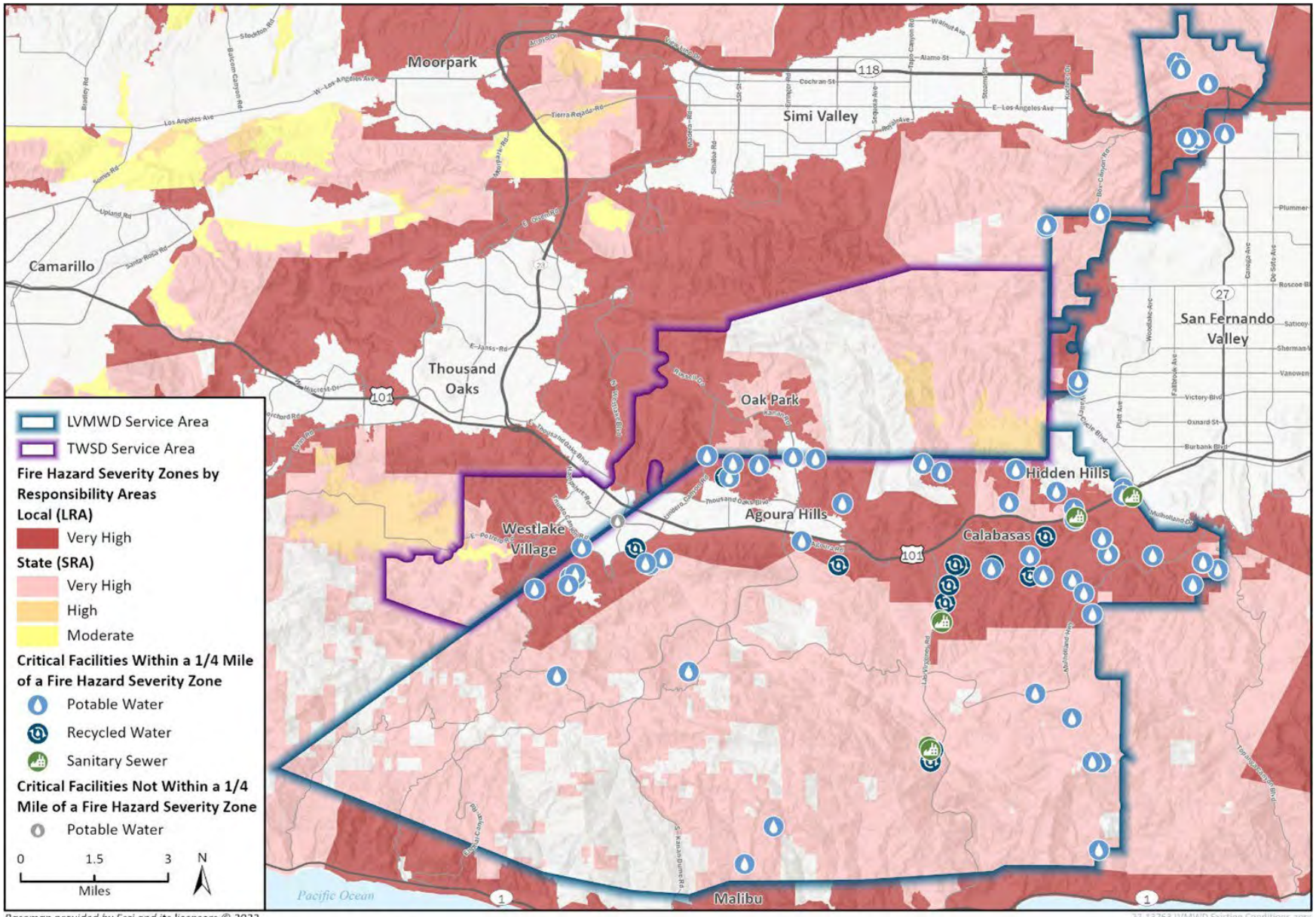
Wildfires in California have occurred with increased frequency and intensity over the past two decades. There are many areas in the combined service area designated by CAL FIRE as High and Very High Fire Hazard Severity Zones, with the greatest risk in the Santa Monica Mountains and Simi Hills. Additionally, many of the critical facilities in the potable, recycled, and sanitary water systems, are in Fire Hazard Severity Zones, as seen in Figure 3-2. Critical potable water, recycled water, and sanitary sewer facilities located within a ¼ mile of a fire hazard severity zone are highlighted in the figure. The combined service area is projected to experience increasing wildfire risk through the end of the century due to a variety of factors including an increase in temperatures and prevalence of drought conditions. The decadal probability of wildfire is projected to increase from the historical baseline of 10 percent to 30 percent by the end of the century.[14]

On November 8, 2018, the Woolsey Fire broke out in Ventura County and spread into combined service area, due to large amount of flammable vegetation and the influence of Santa Ana winds. On November 11, LVMWD's Board declared a state of emergency for the service area due to the significant impacts of the fire, authorizing response and recovery efforts and actions. LVMWD critical facilities and services were damaged and disrupted, including the Calabasas Headquarters. By November 9, LVMWD and the JPA lost power to nearly all of their critical facilities and backup generators were utilized to keep pump stations and other equipment operational. The Woolsey Fire footprint and location of LVMWD and JPA critical facilities are shown in Figure 3-3.

Photo credit: Peter Buschmann/U.S. Forest Service

14. California Energy Commission (CEC). 2023. Cal-Adapt. ***https://cal-adapt.org/tools/local-climate-change-snapshot****. Accessed July 2023*

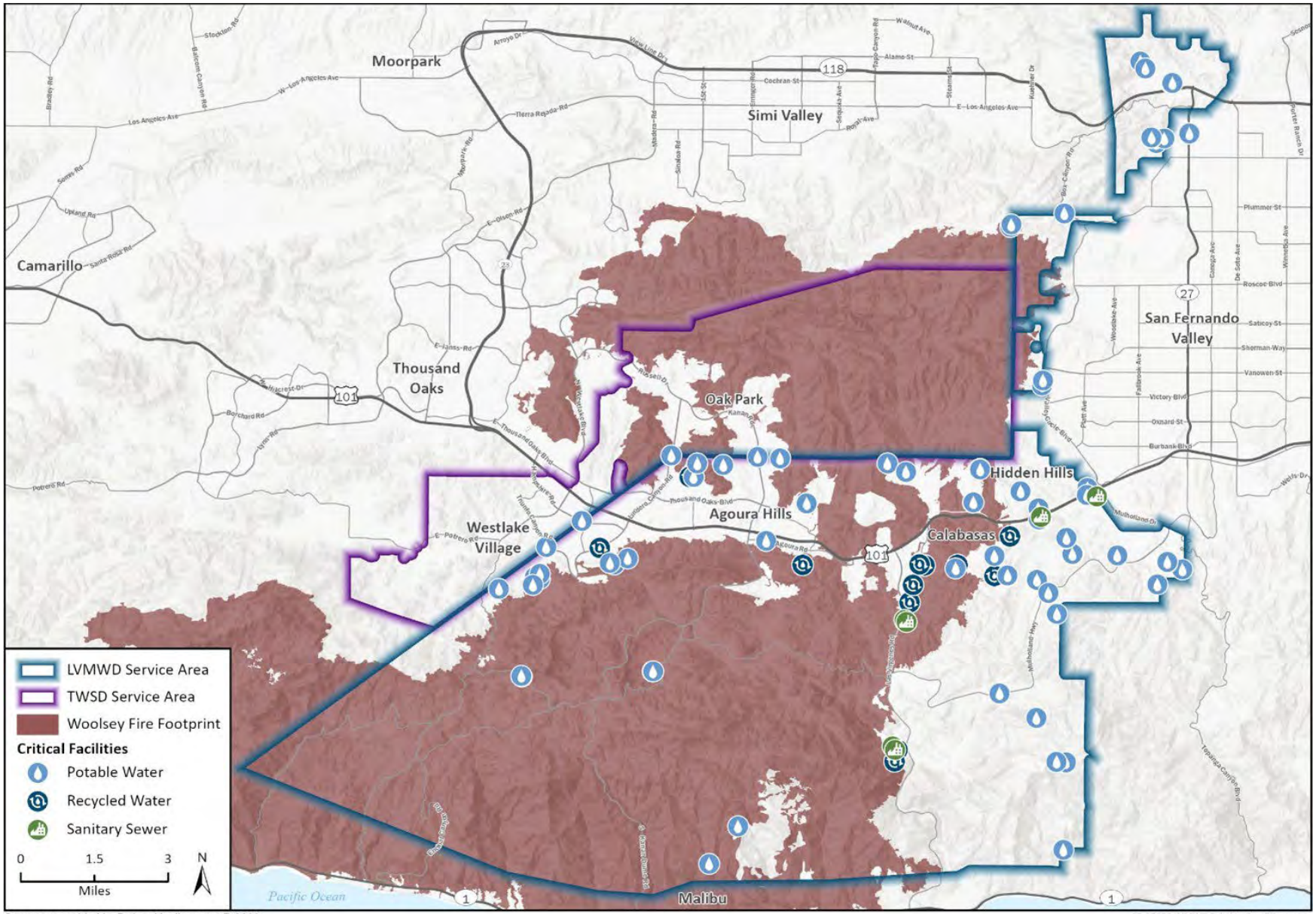
Figure 3-2. Fire Hazard Severity Zones and Critical Facilities



Basemap provided by Esri and its licensors © 2023.
Additional data provided by LVMWD, 2023; CAL FIRE, SRA 2007, LRA 2010 & 2012.

22-13763 LVMWD Existing Conditions.aprx
Fig 1 Fire Hazard Severity Zones and Critical Facilities

Figure 3-3. Woolsey Fire and Critical Facilities



Basemap provided by Esri and its licensors © 2023.
Additional data provided by LVMWD, 2023; CAL FIRE, FRAP, 2022.

27-13763 LVMWD Existing Conditions.aprx
Fig 2 Woolsey Fire and Critical Facilities

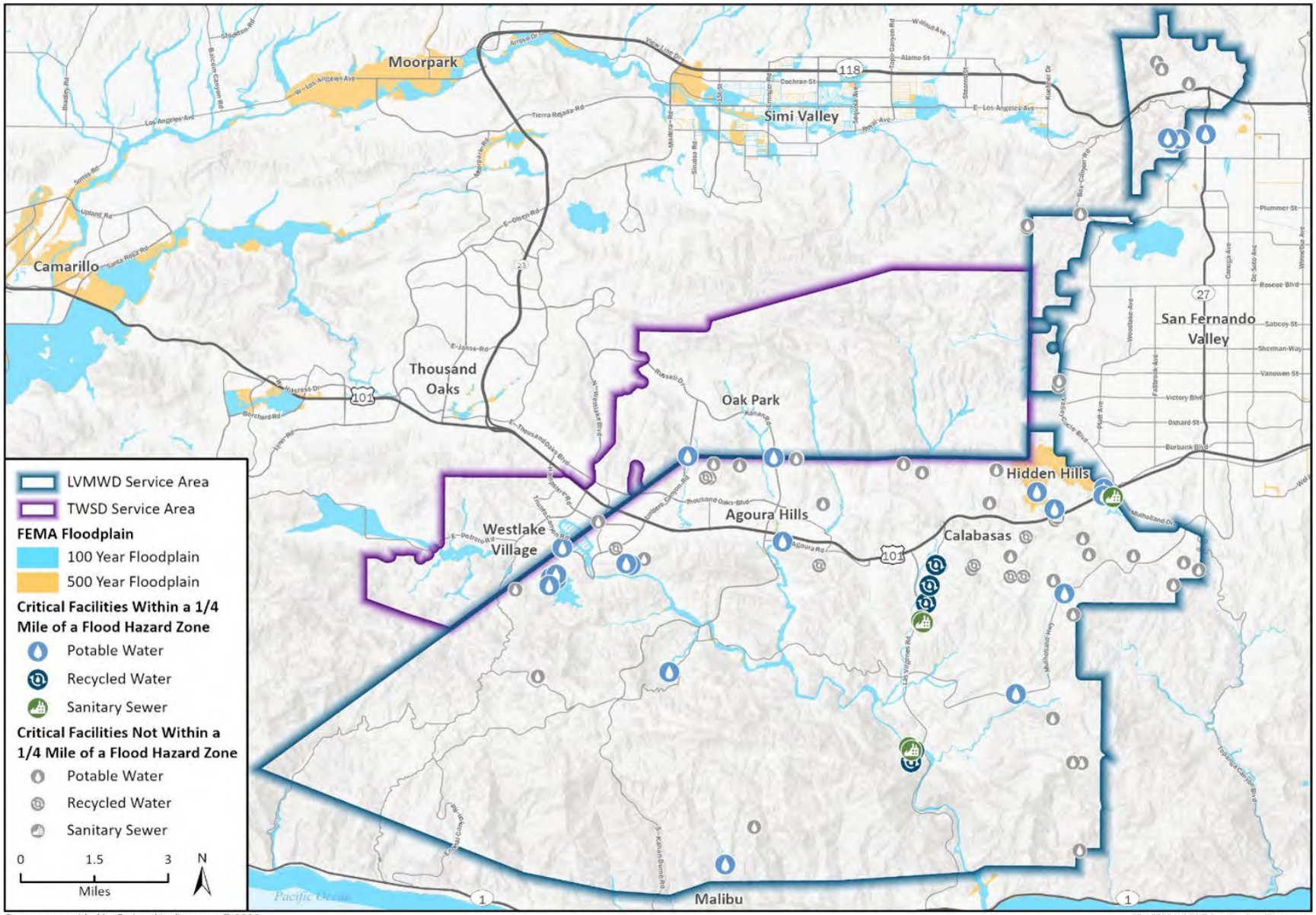
Flooding and Extreme Storms

Low-lying areas in the combined service area are expected to experience more frequent flooding as a result of climate change. Riverine flooding is expected to increase as precipitation extremes increase. Waterways including the Malibu Creek are particularly susceptible to riverine flooding. Extreme precipitation events often produce large and high velocity flows, which may overwhelm stormwater systems, causing localized flooding. Climate models project that the frequency of atmospheric river/large storm events may increase in the future. Additionally, the peak season of atmospheric rivers is projected to lengthen, which may extend the flood-hazard season in Southern California.[15] The combined service area contains both 100-year and 500-year FEMA floodplains, with several critical facilities located in or near those floodplains, as seen in Figure 3-4. Critical potable water, recycled water, and sanitary sewer facilities located within a ¼ mile of a flood hazard zone are highlighted in Figure 3-4.

Photo credit: USFWS Pacific Southwest Region

15. Hall et al. 2018. Los Angeles Region Report: California's Fourth Climate Change Assessment. ***https://www.energy.ca.gov/sites/default/files/2019-11/Reg%20Report-%20SUM-CCCA4-2018-007%20LosAngeles_ADA.pdf***. Accessed July 2023

Figure 3-4. FEMA Flood Zones and Critical Facilities



Basemap provided by Esri and its licensors © 2023.
Additional data provided by LVMWD, 2023; FEMA, 2021.

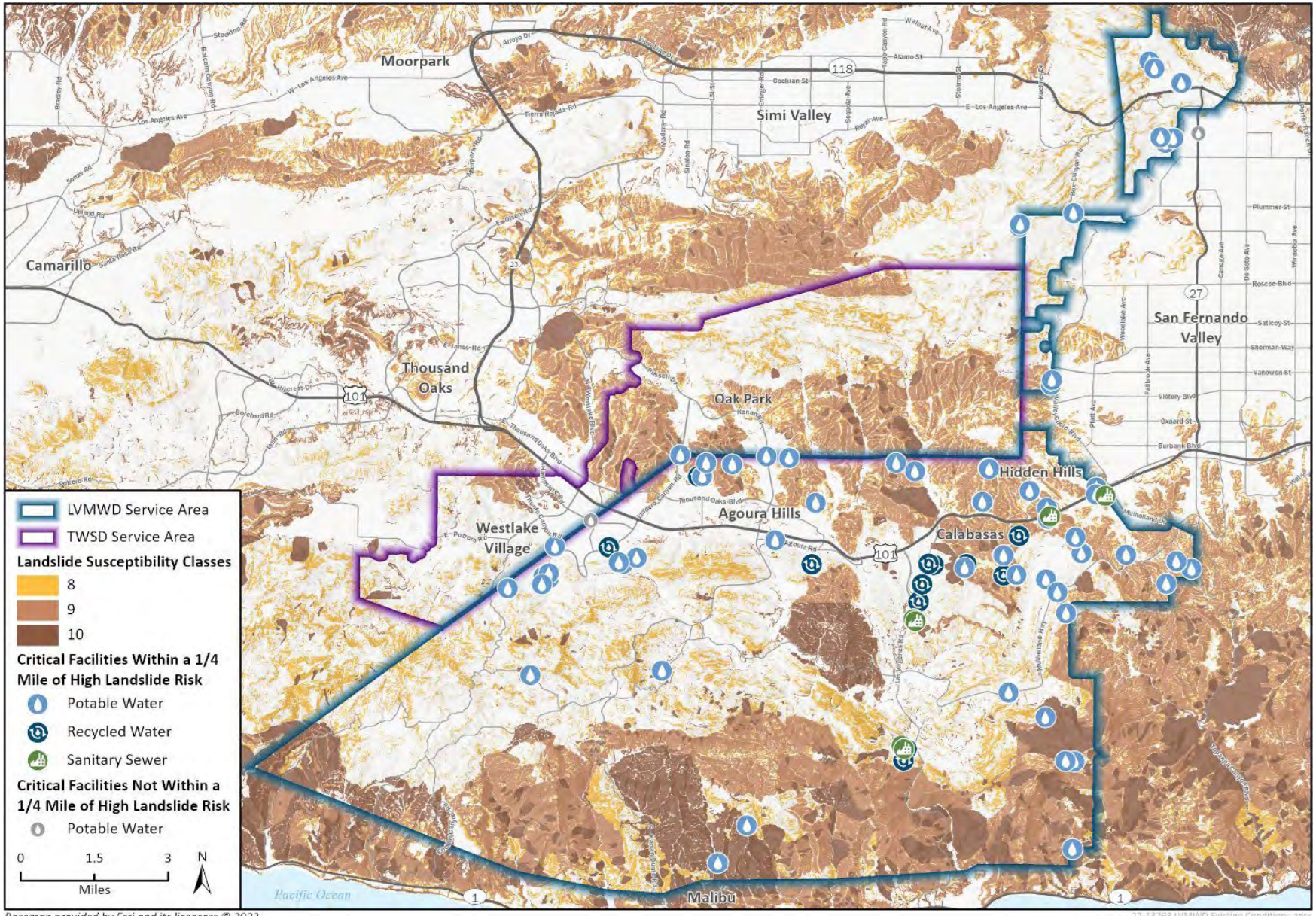
22-13763 LVMWD Existing Conditions.aprx
Fig 3 Flood Zones and Critical Facilities

Landslides

Increased frequency and intensity of extreme precipitation events and wildfires may contribute to increased landslide susceptibility in the combined service area. Landslide susceptibility is typically highest in areas with unstable soils, weak rocks, and steep slopes. Landslide susceptibility in the combined service area is based on a range from 1 to 10, with 10 being the highest susceptibility. As seen in Figure 3-5, susceptibility levels of 8 to 10, are common throughout the combined service area, particularly in the Santa Monica Mountains and Simi Hills. Critical potable water, recycled water, and sanitary sewer facilities located within a ¼ mile of a high landslide susceptibility area are highlighted in the figure. Areas impacted by recent fires, including the 2018 Woolsey Fire, are especially prone to debris flow. Debris flow events are particularly dangerous because they often have little warning during severe storm events and are fast moving. Post-wildfire debris flows are likely to occur in burn scar for between 2-5 years after a wildfire, during significant rainfall events.[16]

16. U.S. Geological Survey (USGS). 2018. Emergency Assessment of Post-Fire Debris Flow Hazards. **https://www.usgs.gov/programs/landslide-hazards/science/emergency-assessment-post-fire-debris-flow-hazards**. Accessed July 2023

Figure 3-5. Landslide Susceptibility Areas and Critical Facilities



Basemap provided by Esri and its licensors © 2023.
Additional data provided by LVMWD, 2023; CGS, Map Sheet 58, 2018.

22-13763 LVMWD Existing Conditions.aprx
Fig 4 Landslide Susceptibility and Critical Facilities

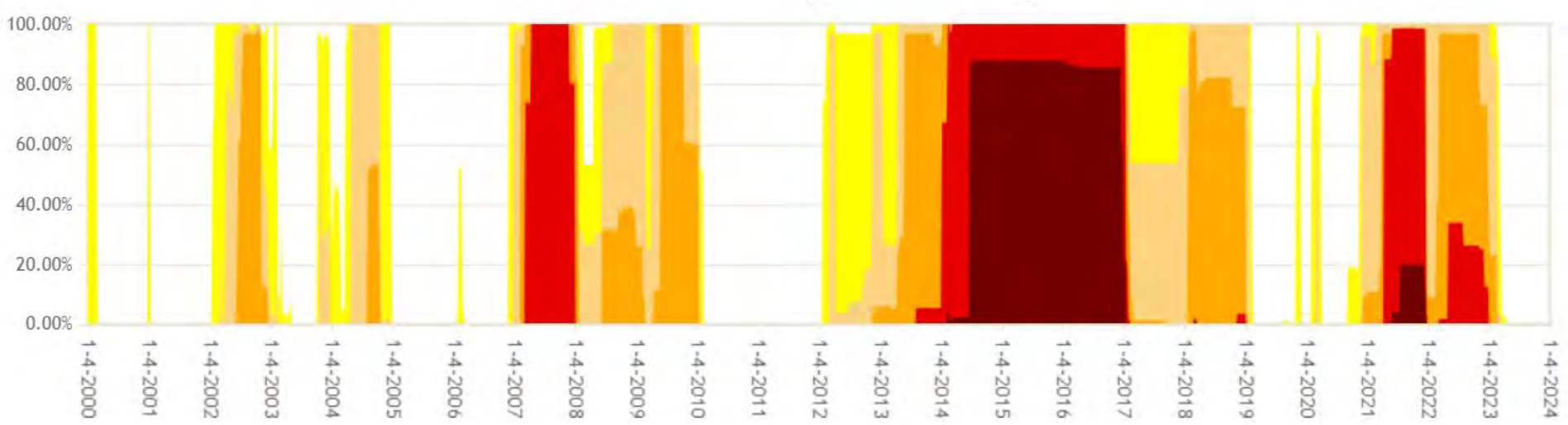
Extreme Heat

The number of extreme heat days per year is expected to increase in the combined service area. In this area, an extreme heat day occurs when the maximum temperature exceeds 97.4 °F. Historically, the area experiences three extreme heat days per year on average. By the end of the century, extreme heat days are expected to increase to between 16 and 34 days.[17]

Droughts

Climate change will increase the likelihood that low-precipitation years will coincide with above-average temperature years. Warming temperatures increase seasonal dryness and the likelihood of drought due to decreased supply of moisture and increased atmospheric demand for moisture as evaporation from bare soils and evapotranspiration from plants increases. Extremely dry years are projected to increase over Southern California, potentially doubling or more in frequency by the late-twenty-first century.[18] The U.S. Drought Monitor characterizes areas within LVMWD as Abnormally Dry (D0) and Moderate Drought (D1), as of May 2023. Drought intensity ranges from None to Exceptional Drought (D4). [19] The drought status of Los Angeles County for the past 23 years is shown in Figure 3-6. The county experienced moderate to exceptional drought periods in 2002, 2004-2005, 2007-2010, 2011-2019, and 2021-2023. Drought exposure will have a more prominent impact on LVMWD and the JPA through the SWP, as described below, than on local water sources, as a majority of its water supply is imported.

Figure 3-6. A Recent History of Drought Conditions in Los Angeles County



Source: U.S. Drought Monitor Los Angeles County CA. 2023. ***https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?fips_06037***

17. California Energy Commission (CEC). 2023. Cal-Adapt. ***https://cal-adapt.org/tools/local-climate-change-snapshot****. Accessed July 2023*

18. Hall et al. 2018. Los Angeles Region Report: California's Fourth Climate Change Assessment. ***https://www.energy.ca.gov/sites/default/files/2019-11/Reg%20Report-%20SUM-CCCA4-2018-007%20LosAngeles_ADA.pdf****. Accessed July 2023*

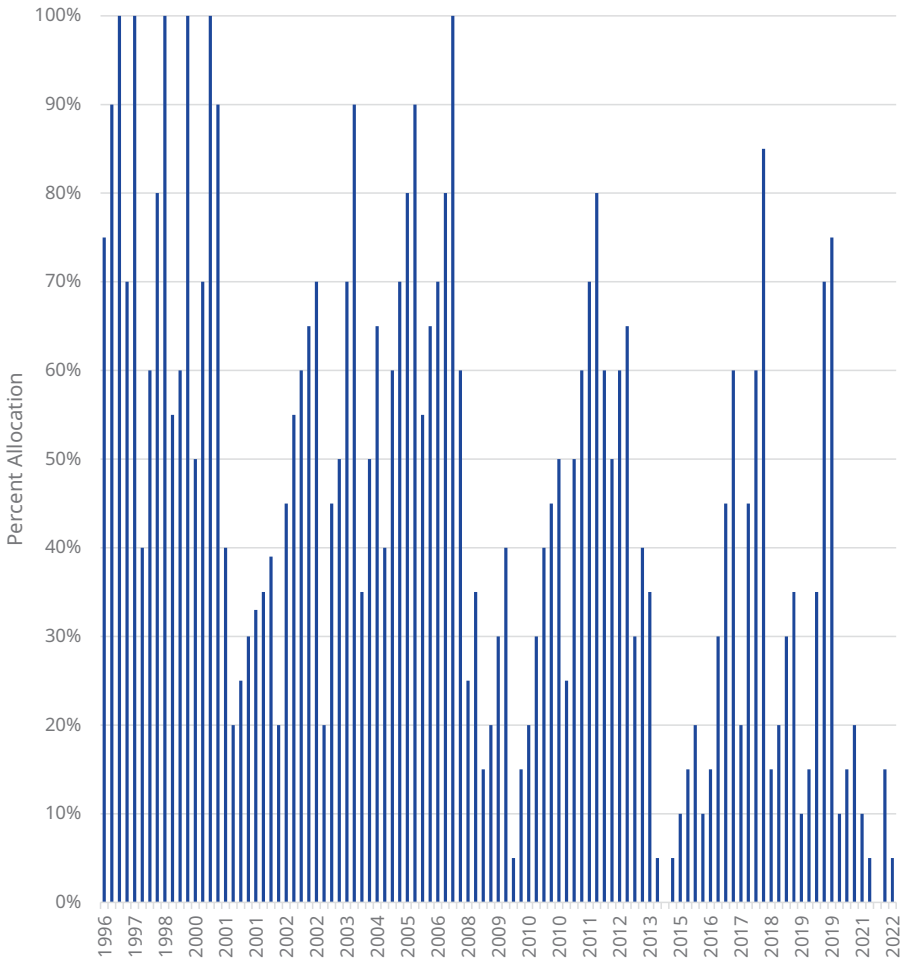
19. National Drought Mitigation Center at the University of Nebraska-Lincoln et al. 2023. U.S. Drought Monitor. ***https://droughtmonitor.unl.edu/****. Accessed July 2023*

State Water Project and California Department of Water Resources Climate Hazards

LVMWD primarily relies on potable water supplies provided by MWD. MWD receives water allocations from the SWP, a state water management project supervised by the California Department of Water Resources (DWR). As much as 10 percent of California's existing water supply could diminish by 2040 due to hotter and drier weather. Through the twenty-first century, there is expected to be increased evaporation, less snowfall, and increased consumption of water by soil, vegetation, and the atmosphere itself.[20] Over the past 40 years, there has been a clear downward trend in SWP (Table A) allocations (See Figure 3-7). In this context, imported water supply from the SWP is projected to be significantly impacted by climate change through the end of century. Several key reasons for SWP impacts include higher temperatures and shorter winters leading to reduction in Sierra Nevada and Colorado River Basin snowpack volume and increased evapotranspiration of watersheds from heightened temperatures. Smaller snowpack results in decreased flows in the Colorado River and greatly impacts SWP sourced water, which is designed to capture and store winter and spring runoff to prevent downstream flooding and deliver stored water during summer and fall months when it is needed. However, a diminished snowpack would result in larger volumes of runoff entering reservoirs during the winter and early spring and less runoff arriving in late spring and early summer, when it is needed. A reduced snowpack from increased temperatures also creates less retainable water and more surface water flowing to the ocean. This would lead to higher downstream flow during flood events and reduced late summer storage levels. Climate change is projected to bring about longer and more frequent periods of drought for the entire region. This prolonged drought occurrence may further impact LVMWD and the JPA as SWP allocations are likely to be reduced during such periods. These factors collectively pose significant challenges for water management and availability in the region.

California Department of Water Resources (DWR) analysis projects that there is a 22 percent probability that long-term average annual SWP deliveries will fall to approximately 50 percent of maximum allocations.[21]

Figure 3-7. State Water Project Table A Allocations



20. *California Natural Resources Agency et al. 2022. California's Water Supply Strategy: Adapting to a Hotter, Drier Future.* ***https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Water-Resilience/CA-Water-Supply-Strategy.pdf****. Accessed July 2023*

21. *California Department of Water Resources (DWR). 2019. Climate Action Plan, Phase 3: Climate Change Vulnerability Assessment.* ***https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/All-Programs/Climate-Change-Program/Climate-Action-Plan/Files/CAP-III-Vulnerability-Assessment.pdf****. Accessed July 2023*

As DWR manages and oversees the SWP, LVMWD is reliant on its infrastructure and operations. DWR infrastructure are also exposed to various climate hazards that may have downstream impacts on LVMWD. With anticipated climate hazards, DWR faces an elevated exposure to increased short-term extreme hydrologic events. Several critical DWR facilities are particularly susceptible to flood hazards, potentially affecting SWP deliveries and overall operational continuity.

Furthermore, certain assets owned and managed by DWR are situated in wildfire hazard areas, making them vulnerable to damage or disruption. Additionally, all DWR locations are projected to experience more extreme heat days and higher average maximum temperatures due to climate change. Moreover, sea level rise is projected to increase the Sacramento-San Joaquin Delta's salinity, requiring extra Delta outflow to dilute the increasingly brackish Delta water to meet environmental standards. The extra Delta outflow comes at a cost of reducing Delta exports, meaning less water is available for distribution through the California Aqueduct to water suppliers and users located south of the Delta, including LVMWD. This scenario poses a challenge for water availability and management in the region, impacting various communities and water-related operations.[22]

22. California Department of Water Resources. 2019. Climate Action Plan, Phase 3: Climate Change Vulnerability Assessment. ***https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/All-Programs/Climate-Change-Program/Climate-Action-Plan/Files/CAP-III-Vulnerability-Assessment.pdf***. *Accessed July 2023*

CLIMATE CHANGE IMPACTS

Climate Change Impacts in the Combined Service Area

LVMWD and the JPA face significant risks associated with climate change impacts from the climate hazards described above. Their vulnerability increases when critical facilities, assets, and infrastructure are not designed, operated and/or maintained to function effectively under more extreme weather conditions or can be damaged by more extreme weather conditions. Critical facilities that are sensitive to climate hazards include pump stations, treatment facilities, LVMWD Headquarters, and other buildings and equipment associated with potable, recycled, and sanitary water systems.

LVMWD and JPA staff, with support from a consultant team, hosted a Climate Action and Adaptation Plan Strategy Workshop in March 2023 to assess climate risks to facilities, operations, and resources. As part of the workshop, a climate risk matrix was developed to assign a numerical risk score for each water sub-system based on each climate exposure. The matrix ranked each water sub-system from 1 to 9, with 1 indicating a system less impacted by a certain climate risk and 9 indicating a system most impacted by a certain climate risk. LVMWD's and JPA systems and sub-systems included in the matrix are seen below:

Potable Water

- MWD Imported Water
- Potable Distribution System
- Las Virgenes Reservoir
- Westlake Filtration Plant

Wastewater

- Sewer Collection System
- Tapia Wastewater Reclamation Plant
- Biosolids Composting (Rancho Las Virgenes Composting Facility)

Recycled/Pure Water

- Recycled Water Distribution
- Pure Water

Headquarters

- Central Operations and Administration

TWRF Aeration Basin

Wildfire

Table 3-1. Wildfire – Climate Risk Matrix Scoring

System	Sub-System	Climate Risk Score
Potable Water	MWD Imported Water	3
	Potable Water Distribution System	**8**
	Las Virgenes Reservoir	**8**
	Westlake Filtration Plant	**9**
Wastewater	Sewer Collection System	5
	Tapia Water Reclamation Plant	**7**
	Biosolids Composting	**8**
Recycled/ Pure Water	Recycled Water Distribution	6
	Pure Water	**7**
Headquarters	**Operations, Administration & Finance**	**8**

Staff ranked the potable water distribution system, Las Virgenes Reservoir, Westlake Filtration Plant, Rancho Las Virgenes Composting Facility, Tapia Water Reclamation Plant, Pure Water Las Virgenes-Triunfo, and District Headquarters at high risk to wildfire impacts, as seen in Table 3-1. All of these facilities are located in CAL FIRE Moderate, High, or Very High Fire Hazard Severity Zones and are susceptible to impacts from wildfire. During the Woolsey Fire, the Westlake Filtration Plant sustained damage to both the building itself and surrounding property. While the Plant still faces significant risk to future wildfire, the area around the building has been rehabilitated and now features a restored, water wise and more fire-resistant landscape.[23]

Wildfire can create risk of injury or death, damage to properties, critical facilities, and infrastructure, and need for evacuation. It can also trigger cascading impacts of worsened air quality, power outages and other service disruptions. During a wildfire event, LVMWD's water pipes, both underground and above-ground, may burn due to the heat from a wildfire. This may lead to contaminated drinking water which may threaten local public health and disrupt the District's service continuity. Wildfire may threaten the safety of LVMWD and JPA employees and customers and impede access to assets in need of repair or maintenance. Water supply availability may be disturbed if LVMWD supplies water for fighting fires. Additionally, sedimentation rates may increase in the Las Virgenes Reservoir if there is a large and/or frequent fire in the area surrounding the reservoir. Recent research conducted by the United States Geological Survey, shows that an increase in magnitude and frequency of wildfires is expected to double the rates of sedimentation in one-third of the West's large watersheds, reducing reservoir storage and affecting water supplies. Increased sedimentation can result in lost reservoir storage and decrease water quality. LVMWD may face additional challenges treating water from the reservoir if it is contaminated with ash, sediments, and contaminates created by active burning.[24]

Utility providers may temporarily shut off power to the combined service areas when wildfire risk is particularly high; this is referred to as a Public Safety Power Shutoff (PSPS). If a PSPS event lasts several days and involves the entire grid serving the District's water systems, service continuity may be disrupted, and staff may not be able to provide all its customers with water. Wildfire can also lead to smoke and associated air toxins which can lead to worsening air quality, creating or exacerbating respiratory issues for sensitive customers and employees and impact indoor areas without adequate air filtration systems.

23. LVMWD. 2020. Westlake Filtration Plant. ***https://www.lvmwd.com/our-services/drinking-water/facilities-infrastructure/westlake-filtration-plan****. Accessed July 2023*

24. Bland. 2017. The West's Wildfires Are Taking a Toll on Reservoirs. ***https://static1.squarespace.com/static/55dc9bade4b05820bf02d414/t/5a149cfe53450a59dc531297/1511300351736/Watershed1%28NewsDeeply%29.pdf****. Accessed July 2023*

Extreme Heat

Table 3-2. Extreme Heat – Climate Risk Matrix Scoring

System	Sub-System	Climate Risk Score
Potable Water	**MWD Imported Water**	**7**
	Potable Water Distribution System	4
	Las Virgenes Reservoir	**7**
	Westlake Filtration Plant	**7**
Wastewater	Sewer Collection System	3
	Tapia Water Reclamation Plant	4
	Biosolids Composting	5
Recycled/ Pure Water	**Recycled Water Distribution**	**7**
	Pure Water	5
Headquarters	Operations, Administration & Finance	4

Various infrastructure, equipment, and resources can be damaged, strained, or diminished during extreme heat events. Staff ranked MWD Imported Water, the Las Virgenes Reservoir, Westlake Filtration Plant, and Recycled Water Distribution at high risk to extreme heat, as seen in Table 3-2. As average maximum temperatures and extreme heat days, both in the combined service area and throughout California, are projected to increase through the century, evaporation of imported water and water in the Las Virgenes Reservoir is expected to increase. This may lead to or exacerbate future water scarcity issues.[25] Extreme heat and increased average maximum temperatures can lead to harmful algal blooms which can contaminate water supplies and require increased water treatment capacities.[26] Additionally, certain types of algal blooms produce dangerous toxins that can sicken people and wildlife. The overgrowth of algae consumes oxygen and blocks sunlight from underwater plants, potentially leading to the die off of aquatic life.[27]

Additionally, the ambient operating temperature within which the equipment operates is a significant factor in the equipment's lifespan. High ambient operating temperatures may lead to a reduction of the lifespan for motors and related equipment within LVMWD and JPA systems. LVMWD and the JPA may face increased costs associated with the additional cooling required for certain facilities and assets.[28] LVMWD has historically faced pump operating issues due to extreme heat impacts. During an extreme heat event, electricity utilities may turn off power in a PSPS in order to mitigate wildfire risk. If a PSPS event lasts several days and involves the entire grid serving LVMWD's and the JPA's systems, service continuity may be disrupted, and service disruptions may result to some or all customers. Future extreme heat events may pose significant health risk to LVMWD and JPA employees and customers who may suffer from heat stroke, heat exhaustion, or dehydration. Extreme heat may also lead to vegetation die-off, which can exacerbate wildfire risk in areas surrounding LVMWD and JPA facilities.

25. *Friedrich et al. 2018. Reservoir Evaporation in the Western Unites States: Current Science, Challenges, and Future Needs.* ***https://journals.ametsoc.org/view/journals/bams/99/1/bams-d-15-00224.1.xml****. Accessed July 2023*
26. *EPA. 2013. Impacts of Climate Change on the Occurrence of Harmful Algal Blooms.* ***https://www.epa.gov/sites/default/files/documents/climatehabs.pdf*** *Accessed July 2023*
27. *EPA. The Effects: Dead Zones and Harmful Algal Blooms.* ***https://www.epa.gov/nutrientpollution/effects-dead-zones-and-harmful-algal-blooms#:~:text=Dead%20zones%20are%20areas%20of,excess%20nutrients%20from%20upstream%20sources****.. Accessed July 2023*
28. *Water Utility Climate Alliance and Association of Metropolitan Water Agencies. 2020. It's Hot and Getting Hotter: Implications of Extreme Heat on Water Utility Staff and Infrastructure, and Ideas for Adapting.* ***https://www.amwa.net/system/files/linked-files/Heat%20Impacts%20copy.pdf*** *Accessed July 2023*

Drought

Table 3-3. Drought – Climate Risk Matrix Scoring

System	Sub-System	Climate Risk Score
Potable Water	**MWD Imported Water**	**9**
	Potable Water Distribution System	3
	Las Virgenes Reservoir	**9**
	Westlake Filtration Plant	6
Wastewater	Sewer Collection System	4
	Tapia Water Reclamation Plant	**8**
	Biosolids Composting	6
Recycled/ Pure Water	**Recycled Water Distribution**	**8**
	Pure Water	**9**
Headquarters	**Operations, Administration & Finance**	**9**

LVMWD and JPA staff ranked MWD Imported Water, the Las Virgenes Reservoir, Pure Water, and District Headquarters at high risk to drought impacts, as seen in Table 3-3. Warming temperatures combined with more frequent dry years will exacerbate drought impacts. Drought can lead to vegetation stress and die-off, which may exacerbate wildfire risk in the combine service area. Extended drought conditions may lead to a loss of District revenue and increased water rates which may disproportionally impact under-resourced populations. Drought can also impact the reliability of local water resources. While LVWMD's primary water supplies are imported from MWD, it also sources some groundwater supplies from the Russell Valley Basin, which is used to supplement recycled water system.[29] During periods of drought, local groundwater sources may run dry if there is not enough consistent reliable recharge from precipitation. Drought conditions may also have impacts to water stored in Las Virgenes Reservoir, which stores treated potable water from MWD. Specific drought impacts to imported water supplies is discussed below in the Climate Change Impacts to Imported Potable Water Supplies section.

29. LVMWD. 2020. Urban Water Management Plan. ***https://www.lvmwd.com/home/showpublisheddocument/13459/637616788962730000*** *Accessed July 2023*

Flood and Extreme Precipitation

Table 3-4. Flood and Extreme Precipitation – Climate Risk Matrix Scoring

System	Sub-System	Climate Risk Score
Potable Water	MWD Imported Water	5
	Potable Water Distribution System	5
	Las Virgenes Reservoir	3
	Westlake Filtration Plant	3
Wastewater	**Sewer Collection System**	**7**
	Tapia Water Reclamation Plant	5
	Biosolids Composting	3
Recycled/ Pure Water	Recycled Water Distribution	3
	Pure Water	2
Headquarters	Operations, Administration & Finance	5

LVMWD and JPA staff ranked the sewer collection system at high risk to flooding and extreme precipitation impacts, as seen in Table 3-4. During extreme precipitation events, power conveyance and distribution infrastructure can be damaged by wind and heavy rain which may cause service disruptions. Electrical equipment, operational, and administrative assets can be vulnerable if exposed to water damage. During heavy precipitation events, localized flooding may occur if storm-drain infrastructure or Malibu Creek in the combined service area becomes overwhelmed. Localized flooding may damage or inundate properties, structures, infrastructure, and other assets. It may also close streets and inhibit mobility of certain locations. Heavy rainfall may increase pollutant runoff and sedimentation into Las Virgenes Reservoir and other potable water sources. Contaminated runoff and sedimentation may require extra treatment capacities which may increase costs to LVMWD and the JPA.[30] Severe flooding may cause erosion issues near sewer lines and may lead to increased risks of flooding impacts to the sewer collection system. As of 2014, only two of the four pumps in the sewer collection system are equipped with variable pumping capacity (variable frequency drives) and have limited abilities for handling peak storm flows. Flooding and increased precipitation may lead to greater flows into Malibu Creek which may increase turbidity, contamination, and erosion. Extreme precipitation events may also oversaturate spray fields, overwhelming them and potentially impacting operations of water disposal.[31]


Photo credit: USFWS Pacific Southwest Region

30. EPA. 2023. Climate Adaptation and Source Water Impacts. ***https://www.epa.gov/arc-x/climate-adaptation-and-source-water-impacts***

31. LVMWD and Triunfo Sanitation District. 2014. Sanitation Master Plan. ***https://www.lvmwd.com/home/showpublisheddocument/4321/635392121338370000*** *Accessed July 2023*

Landslide

Table 3-5. Landslide – Climate Risk Matrix Scoring

System	Sub-System	Climate Risk Score
Potable Water	MWD Imported Water	2
	Potable Water Distribution System	6
	Las Virgenes Reservoir	4
	Westlake Filtration Plant	3
Wastewater	Sewer Collection System	6
	Tapia Water Reclamation Plant	2
	Biosolids Composting	2
Recycled/ Pure Water	Recycled Water Distribution	2
	Pure Water	6
Headquarters	Operations, Administration & Finance	3

LVMWD and JPA staff ranked the potable water distribution system, sewer collection system, and Pure Water at risk to landslides, as seen in Table 3-5. Landslides may damage critical facilities, structures, and infrastructure. This can cause service disruptions, impact community members, and isolate certain areas if roadways are compromised. Landslides can directly damage buildings and facilities by disrupting structural foundations either by deforming the ground on which an asset is located or by physically impacting an asset. [32] Facilities and infrastructure in and adjacent to the Woolsey Fire footprint are particularly susceptible to debris flows. Debris flows and landslides can negatively impact the sewage conveyance system and Tapia Wastewater Reclamation Facility by sending more sediment and debris into the system than the plant can take out. Landslides may also increase sedimentation in potable water sources and the Virgenes Reservoir, which may lead to lost reservoir storage and water quality impacts.

32. USGS. 2008. The Landslide Handbook – A Guide to Understanding Landslides. ***https://pubs.usgs.gov/circ/1325/pdf/C1325_508.pdf****. Accessed July 2023*

Climate Change Impacts to Imported Potable Water Supply

Long-term persistent hydrologic changes in California, including increases in the frequency, duration, and severity of dry periods and earlier Sierra Nevada snowmelt-based runoff, may significantly impact the operations of the SWP. Hydrologic changes can affect water quantity and quality, and therefore the ecosystems supported by the Sierra Nevada watersheds SWP relies on. Recent DWR analysis predicts that SWP delivery performance is at risk of climate change and will most likely fall short in the future. As outlined above in the SWP Climate Hazards section, there is a 22 percent probability that long-term average annual SWP deliveries will fall to approximately 50 percent maximum allocations. As imported water from the SWP is LVMWD's primary water source and supplies virtually all potable water demands, decreases in future allocations may lead to water shortages and loss of revenue to LVMWD. LVMWD and the JPA are moving forward with the construction and implementation of the Pure Water Project Las Virgenes-Triunfo, which will take recycled water from the Tapia Water Reclamation Facility and treat it to provide up to 30 percent of LVMWD's future potable water needs, locally. As future imported water supply becomes more volatile and unpredictable, the Pure Water Project will mitigate imported water reliability concerns by providing a long-term local potable water supply.[33] Wildfire, flooding, and landslides in the Sierra Nevada's or in other areas adjacent to SWP infrastructure and supplies, may lead to water quality impacts (i.e. from ash, contaminants, or sediments), which may have downstream impacts to imported water supplies. Severe flooding, extreme storms, and wildfire events may physically damage infrastructure, potentially disrupting SWP services statewide, including those to LVMWD.[34] Pictured below is the 5 million gallon tank at Las Virgenes Reservoir.

33. LVMWD. 2022. Pure Water Project Achieves Major Milestone. **https://www.lvmwd.com/Home/Components/News/News/5988/22**. Accessed July 2023

34. California Department of Water Resources (DWR). 2019. Climate Action Plan, Phase 3: Climate Change Vulnerability Assessment. **https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/All-Programs/Climate-Change-Program/Climate-Action-Plan/Files/CAP-III-Vulnerability-Assessment.pdf**. Accessed July 2023

4.

GHG EMISSIONS INVENTORY AND FORECAST

LVMWD AND JPA OPERATIONAL BOUNDARY AND GHG EMISSIONS SOURCES

As part of the LVMWD and JPA CAAP development process, a multi-year inventory of operational GHG emissions was prepared for 2000, 2012 and 2021. The inventory provides a measurement of GHG emissions associated with the operation and maintenance of LVMWD and JPA infrastructure, including buildings, facilities, fleet, equipment, as well as emissions from wastewater, waste streams, and employee commutes.[35]

Conducting a GHG inventory is an important component of the CAAP development process, as it allows LVMWD, the JPA, and their stakeholders to understand which activities contribute substantially to their GHG emissions footprint. The inventory also provides the groundwork for forecasting future GHG emissions and developing GHG emissions reduction targets.

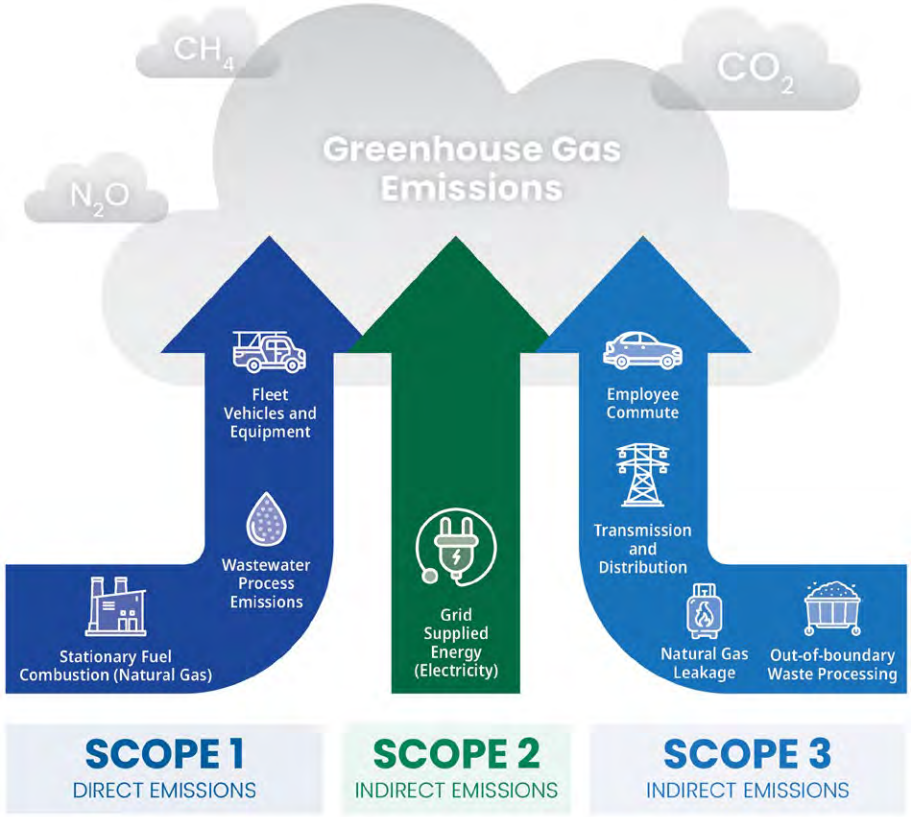
35. LVMWD acts as Administering Agent for the JPA, a long-term partnership between LVMWD and the Triunfo Water and Sanitation District (TWSD). The JPA co-owns, and LVMWD operates and maintains, several shared wastewater facilities, including the Tapia Wastewater Reclamation Facility, a backbone reclamation water main, the Rancho Las Virgenes Composting Facility, spray fields for seasonal disposal of excess recycled water, and a 5-megawatt solar farm. GHG emissions associated with the operation and maintenance of TWSD's infrastructure are not measured as part of this inventory.

The LVMWD and JPA GHG emissions inventory is consistent with standard reporting protocols from the World Resources Institute (WRI), World Business Council for Sustainable Development (WBCSD), and the International Council for Local Environmental Initiatives (ICLEI).[36,37] The WBCSD and WRI's Corporate Standard GHG Protocol requires that an inventory quantify emissions from all GHG-generating activities that fall under some level of the entity's operational control.[38] GHG-generating activities are categorized into three "scopes" which separate GHG emissions under an organization's operational control into direct and indirect GHG emissions.

- **Scope 1** consists of all direct GHG emissions that occur from sources that are controlled by the organization. For LVMWD and the JPA, these sources include natural gas consumption, vehicle fleet and equipment usage, and wastewater processing.
- **Scope 2** consists of indirect GHG emissions associated with the consumption of purchased or acquired electricity, steam, heat, or cooling. For LVMWD and the JPA, these emissions sources include the consumption of purchased of electricity.
- **Scope 3** consists of all other indirect GHG emissions not covered under Scope 2, such as emissions resulting from the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, outsourced activities, and waste disposal. For LVMWD and the JPA, these emissions sources include natural gas leakage,[39] transmission and distribution losses,[40] employee commute, and solid waste disposal.[41]

GHG-generating activities that were included in the inventory are categorized by scope as shown in Figure 4-1. These activities include natural gas combustion, wastewater process emissions, vehicle fleet and equipment usage, electricity usage, out-of-boundary waste processing, electricity transmission and distribution, natural gas leakage, and employee commute. Activities include both LVMWD-only and JPA facilities and operations.

Figure 4-1. LVMWD and JPA GHG Emissions by Scope



36. *WRI and WBCSD. The Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (GHG Protocol). Revised Edition. Accessed at* ***https://ghgprotocol.org/corporate-standard****.*
37. *ICLEI - Local Governments for Sustainability. Local Government Operations Protocol (May 2010). Version 1.1. Accessed at* ***https://s3.amazonaws.com/icleiusaresources/lgo_protocol_v1_1_2010-05-03.pdf****.*
38. *An organization has operational control over an operation when they have the full authority to introduce and implement its operating policies at the operation. Operational control can be established by wholly owning an operation or having full authority to introduce and implement GHG or non-GHG related policies.*
39. *Natural gas consumption is associated with some amount of leakage as a result of moving natural gas from the location where it was generated to the facility where it is used. These are GHG emissions that occur upstream and outside of LVMWD's operational control.*
40. *Electricity usage is associated with some amount of transmission and distribution losses as a result of moving electricity from the location where it was generated to the facility where it is used. These are GHG emissions that occur upstream and outside of LVMWD's operational control.*
41. *GHG emissions associated with solid waste disposal include those GHG emissions associated with, fuel combustion for landfill equipment, and waste decomposition emissions once landfilled.*

Conducting the multi-year inventory for LVMWD and JPA operations consisted of collecting summary data on each GHG-generating activity shown in Figure 4-1 for each year (2000, 2012, 2021), then converting the activity data to GHG emissions using GHG emissions factors such as those from the U.S. Environmental Protection Agency (EPA), ICLEI, and local utilities (e.g., Southern California Edison). Water districts can produce fluctuating GHG emissions year to year depending on the source of water delivered and the extent of water deliveries and wastewater treatment services provided, as well as environmental conditions. To address this variability, LVMWD and the JPA elected to conduct a multi-year inventory over two decades, rather than a single-year inventory. This multi-year inventory captures some of variability and provides an understanding of LVMWD and the JPA GHG emissions over a broader time period. Developing historic and current GHG inventories also allows LVMWD and the JPA to memorialize all the projects it has completed over the last 10 years that have reduced GHG emissions but have not been individually tracked. The following sections detail the progress LVMWD and the JPA have made on reducing GHG emissions through projects including energy efficiency improvements and solar panel installations.

The 2000 GHG inventory reflects conditions before recent GHG-reduction projects were implemented and serves as a baseline. The 2012 GHG inventory reflects conditions during the implementation of GHG-reduction projects. The 2021 GHG inventory is based on the most recent year in which data is completely available and reflects conditions after recent GHG-reduction projects have been completed.

HISTORIC AND CURRENT GHG EMISSIONS

In 2000, major sources of emissions associated with LVMWD and the JPA were electricity usage (79 percent of total emissions) and natural gas usage (7 percent of total emissions). All other sources were less than 5 percent of total emissions. In 2000, 22,804 AF of potable water and 4,904 AF of recycled water were delivered. The results of the 2000 GHG emissions inventory for LVMWD and the JPA are shown in Table 4-1.

In 2012, major sources of emissions associated with LVMWD and the JPA were electricity usage (82 percent of total emissions) and natural gas usage (5 percent of total emissions). All other sources were 5 percent or less of total emissions. These results show GHG emissions remained relatively constant between 2000 and 2012. While most emissions sources did not experience significant changes, GHG emissions from natural gas and natural gas leakage decreased by about 38 percent. This was primarily due to decreased natural gas usage, as staff had previously been procuring additional natural gas for an on-site fuel cell that was discontinued in the early 2000s. In 2012, 21,519 AF of potable water and 5,136 AF of recycled water were delivered. The results of the 2012 GHG emissions inventory for LVMWD and the JPA are shown in Table 4-2.

Table 4-1. LVMWD and JPA 2000 GHG Emissions Inventory

GHG-Generating Activity	Scope	2000	Average % Contribution to Total
Vehicle Fleet & Equipment	Scope 1	330	2%
Natural Gas	Scope 1	1,088	7%
Wastewater	Scope 1	253	2%
Electricity	Scope 2	11,643	79%
Electricity T&D Losses	Scope 3	563	4%
Natural Gas Leakage	Scope 3	305	2%
Employee Commute	Scope 3	322	2%
Waste	Scope 3	143	1%
Total in Metric Tons CO_2e		**14,647**	**100%**

Table 4-2. LVMWD and JPA 2012 GHG Emissions Inventory

GHG-Generating Activity	Scope	2012	Average % Contribution to Total
Vehicle Fleet & Equipment	Scope 1	323	2%
Natural Gas	Scope 1	679	5%
Wastewater	Scope 2	221	2%
Electricity	Scope 3	12,028	82%
Electricity T&D Losses	Scope 3	693	5%
Natural Gas Leakage	Scope 3	190	1%
Employee Commute	Scope 3	444	3%
Waste	Scope 3	143	1%
Total in Metric Tons CO_2e		**14,721**	**100%**

In 2021, major sources of emissions associated with LVMWD and the JPA were electricity usage (78 percent of total emissions) and employee commute (5 percent of total emissions). All other sources were less than 5 percent of total emissions. These results show a trend of decreasing GHG emissions since 2012, primarily due to decreasing GHG emissions from electricity. Emissions reductions from electricity were driven by an increase in carbon free electricity procured by LVMWD and the JPA's electricity provider in response to California's Renewable Portfolio Standard (RPS), which has reduced emissions in the electricity sector since 2012.[42] LVMWD and the JPA have brought online two solar fields since 2012, one megawatt in February 2014 and a 4-megawatt expansion in January 2021. These solar fields generated over 9,000 megawatt hours of solar in 2021, offsetting the electricity use of the Tapia Water Reclamation Facility. LVMWD and the JPA have also made energy efficiency improvements from 2012 to 2021, that have contributed to the decrease in electricity emissions. Improvements included the conversion of lights at several facilities including Headquarters to LEDs and upgrading aging air blowers and an air diffusion system at the Tapia Water Reclamation Facility. The 2021 GHG emissions inventory also showed nearly a 60 percent decrease in natural gas emissions compared to 2012. In 2021, 20,546 AF of potable water and 5,300 AF of recycled water were delivered. Water supply and service population were not significantly variable between 2000 and 2021. LVMWD and JPA service population grew by 11 percent and total water deliveries decreased by 7 percent. LVMWD's operational personnel nearly tripled from 2000 to 2021 to accommodate growing services and operations. The results of the 2021 GHG emissions inventory for LVMWD and the JPA are shown in Table 4-3.

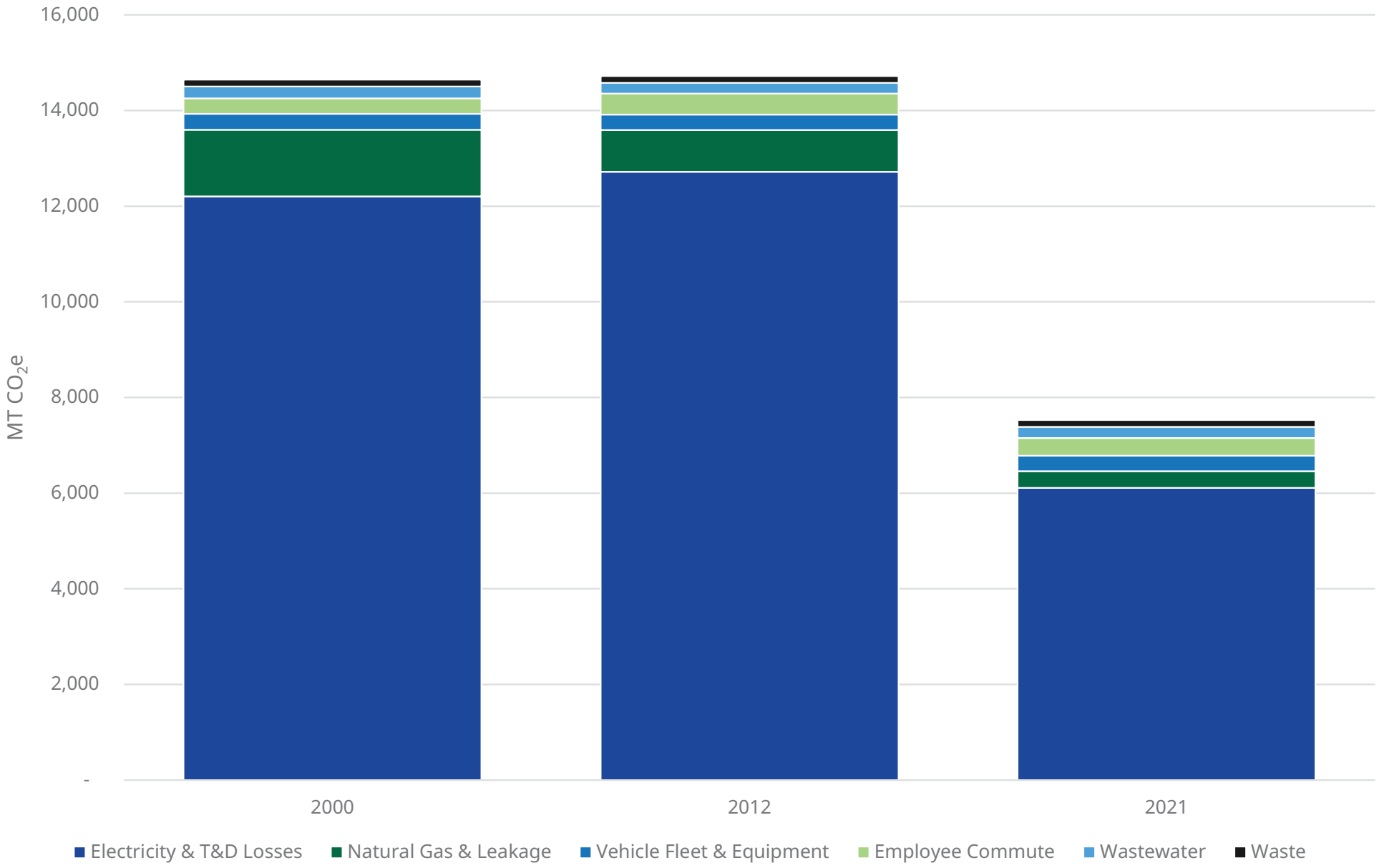
Table 4-3. LVMWD and JPA 2021 GHG Emissions Inventory

GHG-Generating Activity	Scope	2021	Average % Contribution to Total
Vehicle Fleet & Equipment	Scope 1	323	4%
Natural Gas	Scope 1	273	4%
Wastewater	Scope 2	232	3%
Electricity	Scope 3	5,853	78%
Electricity T&D Losses	Scope 3	258	3%
Natural Gas Leakage	Scope 1	76	1%
Employee Commute	Scope 3	371	5%
Waste	Scope 3	143	2%
Total in Metric Tons CO_2e		**7,528**	**100%**

GHG emissions have decreased by nearly 49 percent from 2012 to 2021, primarily due to significant decreases in natural gas and electricity consumption due mainly to utilizing carbon-free electricity from development of the 5 MW solar project. GHG emissions from 2000, 2012, and 2021 inventories are shown by sector in Figure 4-2.

42. California's RPS requires all retail electricity providers in California to procure 50 percent of their electricity supply from carbon-free resources by 2026, 60 percent by 2030, 90 percent by 2035, 95 percent by 2040 and 100 percent by 2045. This will effectively reduce the GHG emissions intensity of electricity across the state, including the electricity LVMWD purchases from Southern California Edison.

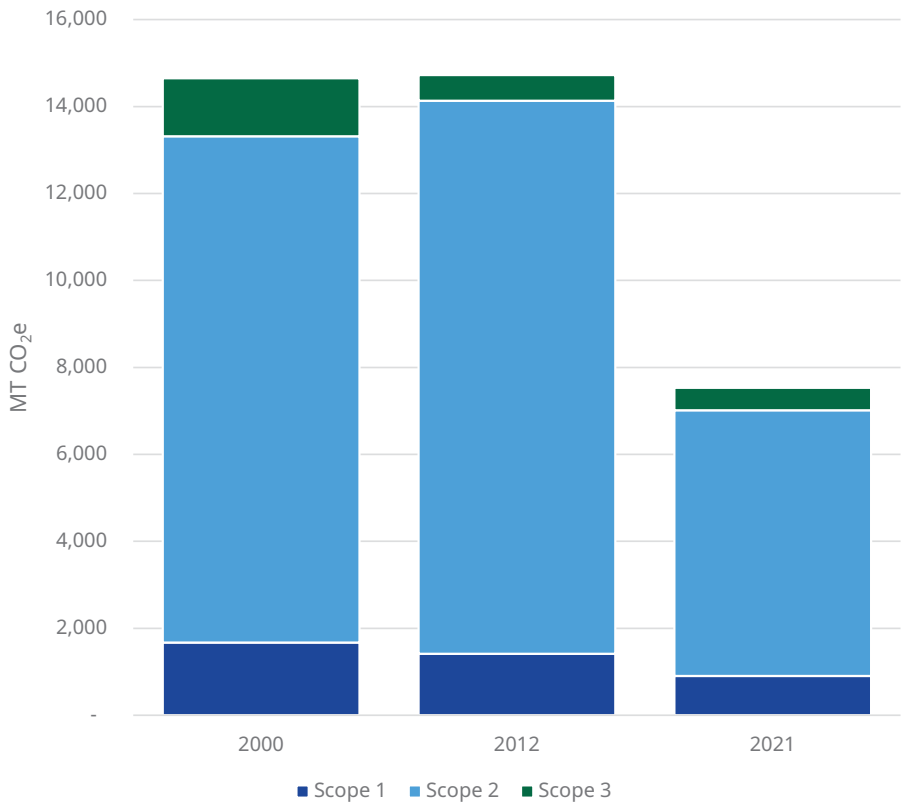
Figure 4-2. LVMWD and JPA GHG Emissions Inventory by Sector



GHG Emissions by Scope

In 2021, the majority of GHG emissions occur under Scope 2 (78 percent of total emissions), followed by Scope 1 (11 percent of total emissions) and Scope 3 (11 percent of total emissions). As such, the largest portion of GHG emissions generated by LVMWD and the JPA (i.e., Scope 1 and Scope 2 emissions) are under their operational control. The largest source of emissions – Scope 2 emissions associated with electricity usage – will continue to decrease over time as electricity sources become carbon free due to the California's RPS.4 GHG emissions by scope (1- direct emissions, 2- indirect emissions, and 3- indirect emissions) are shown in Figure 4-3 for 2000, 2002, and 2021.

Figure 4-3. LVMWD and JPA GHG Emissions Inventory by Scope



Scope 1 – Direct Emissions

Scope 1 GHG emissions associated with LVMWD and the JPA include emissions from vehicle fleet, combustion of natural gas in their facilities, and from the treatment of wastewater. Natural gas usage is the largest contributor to Scope 1 in 2000, 2012, and 2021.

Scope 1 emissions remained relatively steady between 2000 and 2012. However, Scope 1 emissions decreased between 2012 and 2021 due to decreased natural gas usage, as noted above. Vehicle fleet and equipment emissions and wastewater emissions remained relatively similar between 2000, 2012, and 2021, as operations did not change significantly over these time periods.

Scope 2 – Indirect Emissions

Scope 2 GHG emissions are 100 percent attributable to electricity purchased from Southern California Edison (SCE) and used by LVMWD and the JPA for their buildings and facilities. LVMWD and the JPA use electricity primarily for water pumping and wastewater treatment. In 2021, the Tapia Water Reclamation Facility's electricity consumption accounted for 44 percent of all electricity used at LVMWD and JPA facilities, although this was offset by renewable energy generated by the on-site solar power facility and other improvements such as replacement of Tapia Water Reclamation Facility's aging and inefficient air blowers and diffusion system. Scope 2 emissions have decreased between 2000 and 2021 due to the increased requirements for carbon free electricity procurement on SCE from California's RPS and energy efficiency improvements made by LVMWD and the JPA.

Scope 3 – Indirect Emissions

Scope 3 GHG emissions include employee commuting, electricity transmission and distribution, natural gas leakage, and waste disposal. Electricity transmissions and distribution and natural gas leakage decreased from 2000 to 2021, as reducing electricity and natural gas consumption lead to proportionate decreases in leakage of natural gas and electricity transmission and distribution losses. Employee commute emissions and waste emissions remained relatively similar between 2000, 2012, and 2021, as operations and staffing did not change significantly over these time periods. However, a per capita decrease in employee commute emissions was experienced in 2021, as less staff worked in person due to the COVID-19 pandemic.

HISTORICAL GHG EMISSIONS

The GHG emissions inventory helps LVMWD, the JPA, and other interested parties understand the relative magnitude of GHG emissions arising from each GHG-generating activity associated with current operations. This inventory also aided in the development of GHG emissions targets consistent with State goals. As described in Chapter 1 the State goals included in SB 32 and AB 1279, are based on reductions from the 1990 level of emissions. Because LVMWD and the JPA do not have a GHG emissions inventory for 1990, 1990 emission levels associated with their operations were estimated by back casting from the 2012 inventory. The methods used to develop a back-cast to their 1990 emissions level is described in the following section. LVMWD and JPA adopted emissions targets are based on 1990 levels and are discussed in more detail in Chapter 5.

Back-Cast to 1990

To aid in determining LVMWD's 2030 GHG emissions target, a back-cast of GHG emissions to 1990 was developed based on the 2012 inventory results. The 2012 GHG emission inventory was selected for the back-cast because the 2012 operations are like present day operations, and this is prior to the current GHG emissions reduction projects that came online. The 2012 GHG inventory also has the latest and most complete dataset. The 1990 back-cast assumes that LVMWD's emissions have followed approximately the same trajectory as the state's emissions such that for a given year, emissions for LVMWD and the state have increased or decreased approximately the same percentage relative to 1990. For example, the State experienced a four percent decrease in GHG emissions between 1990 and 2012; therefore, LVMWD's 1990 emissions were assumed to be about four percent higher than the 2012 emissions levels quantified in the 2012 GHG emissions inventory. Table 4-4 shows this calculation in more detail.

Table 4-4. LVMWD's 1990 GHG Emissions Back-Cast

Emissions	Total
State of CA 1990 Emissions (MMT CO_2e)	303
State of CA 2012 Emissions (MMT CO_2e)	291
1990 Change Factor (%)	(4.03%)
2012 Emissions (MT CO_2e)	14,721
1990 LVMWD Emissions (MT CO_2e)	15,314

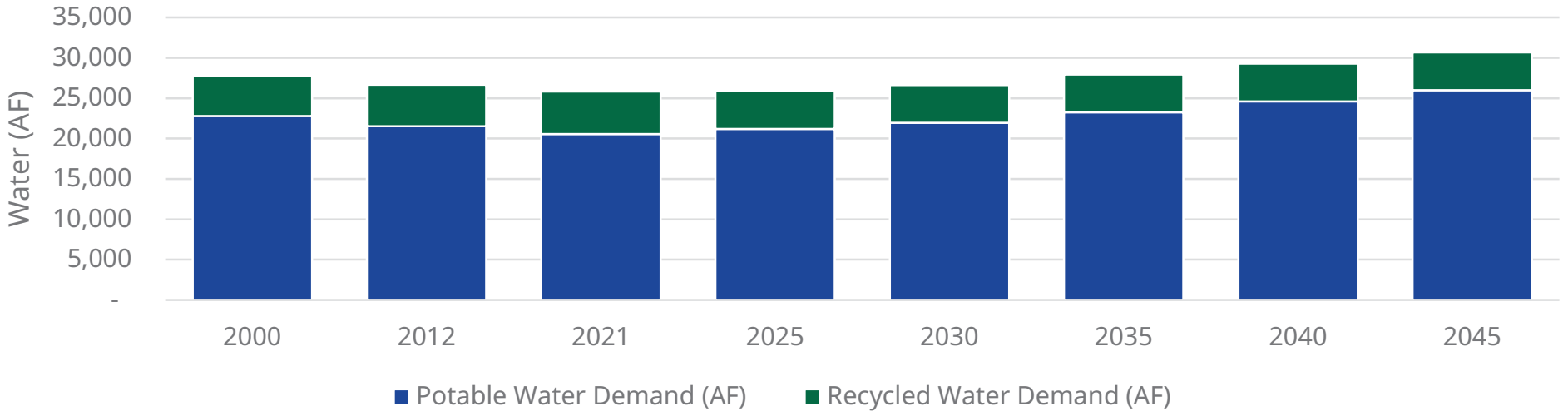
Notes: State-level GHG emissions values used for the 1990 back-cast were sourced from CARB,[43] and exclude emissions from the industrial, agricultural, and high-GWP emissions sectors, for better comparison to LVMWD's 2012 emissions inventory, which also excludes these sectors. Parathesis indicate a negative number.

43. California Air Resources Board (2022). California Greenhouse Gas Emission Inventory - 2022 ***https://ww3.arb.ca.gov/cc/inventory/data/data.htm****. Accessed July 2023*

LVMWD AND JPA GHG EMISSIONS FORECAST

Using the 2021 inventory, future operational GHG emissions were forecasted for LVMWD and the JPA. The forecast provides an estimate for how GHG emissions will look in the future, based primarily on projected services over time. These projections were derived from LVMWD's UWMP. Electricity usage by LVMWD and the JPA is expected to increase in future years consistent with increased recycled water operations via the Pure Water Project, which is expected to come online in 2030. Projections used to forecast GHG emissions are based on the UWMP's 5-consecutive-year drought scenario which provides a conservative estimate of future water deliveries as a reflection of the driest 5-year historical sequence. This scenario is considered conservative as it included the largest water demand through 2045, compared to the other scenarios in the UWMP. Pure Water operations emissions are forecasted based on the CEQA documentation outlining expected future GHG emissions associated with amortized construction emissions, emergency engines, electricity use, fleet vehicles, and employee commute.[44] This forecast allows LVMWD and the JPA to estimate how GHG emissions will change based on expected water demand, and how much LVMWD and the JPA will need to reduce emissions in order to meet GHG reduction targets for 2030 and 2045. Historical and projected water demand[45] is shown in Figure 4-4. Potable water demand is expected to increase by up to 27 percent between 2021 and 2045, in accordance with the 2020 UWMP projected population growth in the combined service area. The actual increase in potable water demand may be less due to more recent efforts to reduce water demands in the wake of the 2020-2022 drought along with implementing new conservation regulations. With conservation efforts, recycled water demand is expected to decrease by approximately 12 percent between 2021 and 2045, as recycled water used for landscape irrigation and golf course irrigation is projected to decrease through 2045. Recycled water consumption may be reduced by as much as 20 percent if conservation efforts are prioritized. Limited opportunities for developing substantial new recycled water demands and LVMWD encouraging conservation are expected to influence future decreases in recycled water demand.[46]

Figure 4-4. Historical and Projected Water Demand



44. LVMWD. Appendix A Emissions Calculations. ***https://www.lvmwd.com/home/showdocument?id=14540***

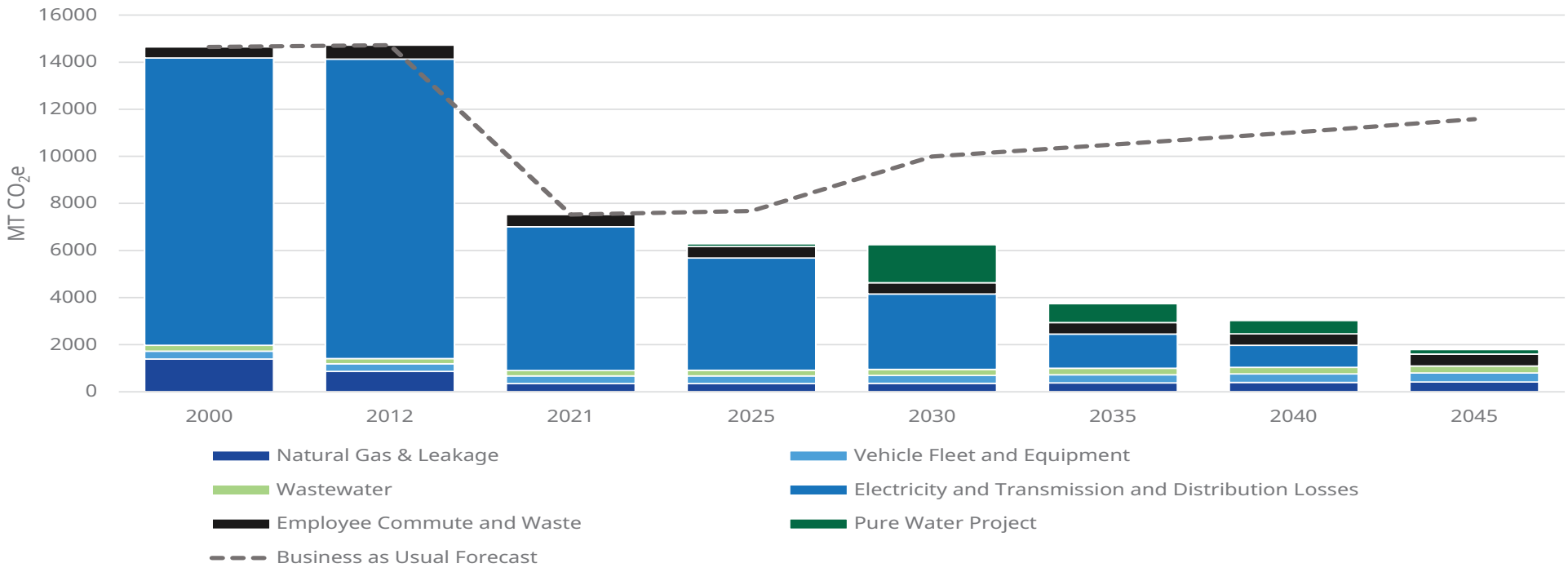
45. Projected water deliveries were used as a proxy for all LVMWD's future services, with the assumption that LVMWD operations scale approximately with water delivery to customers. Accessed July 2023

46. LVMWD. 2020 Urban Water Management Plan. ***https://www.lvmwd.com/home/showpublisheddocument/13459/637616788962730000****. Accessed July 2023*

To clearly demonstrate how LVMWD and JPA emissions will look in the future, two forecasts were developed – a business-as-usual (BAU) forecast, and an adjusted forecast. The BAU forecast shows what LVMWD's emissions would look like based on water delivery projections alone. The adjusted forecast adjusts the BAU forecast to account for State-level implementation of policies and programs that will help California reduce its emissions through 2045. The adjusted forecast includes the California RPS,[47] which will significantly reduce LVMWD and JPA GHG emissions from electricity through 2045 due to the requirements on utility providers to be entirely renewable and carbon-free by 2045. Based on review of other State legislation intended to reduce GHG emissions, such as Title 24 and the Advanced Clean Cars program, they were found to have limited impact on LVMWD and JPA operations and therefore were not included in the adjusted forecast.

Incorporating State-level policies and programs in the adjusted forecast creates a more realistic picture of what LVMWD and JPA emissions will look like in the future. The BAU forecast is useful for comparison with the adjusted forecast, to show the extent to which State-level policies and programs will help to reduce GHG emissions at LVMWD (Figure 4-5). Under the BAU forecast, overall emissions are projected to increase steadily through 2045, as service population and water services continue to grow, and as the Pure Water Project comes online in 2030. However, in the adjusted forecast, electricity emissions will significantly decrease through 2045, decreasing total emissions over time. The numerical results of the forecast are included in Table 4-5.

Figure 4-5. LVMWD and JPA GHG Emissions Forecast



47. Adopted in September 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the State's RPS Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Table 4-5. LVMWD and JPA GHG Emissions Forecast

Emissions Source	2025	2030	2035	2040	2045
Forecast Summary (MT CO_2e)					
BAU Forecast	7,681	9,996	10,499	11,018	11,579
Adjusted Forecast	6,287	6,249	3,740	3,028	2,260
Legislative Reductions	1,395	3,747	6,758	7,989	9,319
Adjusted Forecast Detail (MT CO_2e)					
Vehicle Fleet & Equipment	323	332	348	365	383
Natural Gas	273	281	295	309	324
Natural Gas Leakage	76	79	82	86	91
Wastewater	242	256	271	281	298
Electricity	4,564	3,069	1,400	898	0
T&D Losses	201	135	62	40	0
Employee Commute	347	330	324	324	336
Waste	143	147	154	162	170
Pure Water	117	1,619	805	563	197

5.

CLIMATE ACTION TARGETS

INTERNATIONAL CONTEXT

Climate change is a global phenomenon and a major driver for GHG reduction activities which have continued to evolve on the international level. The United Nations Framework Convention on Climate Change (UNFCC) is an international environmental treaty, signed by 154 states at the United Nations Earth Summit in June 1992. The Framework established responsibilities for participating countries to reduce their anthropogenic emissions and return to 1990 emissions levels. The treaty was superseded in 2016 by the Paris Agreement, which established a goal to keep the rise in global average temperatures below 2 °C with efforts to limit increases to 1.5 °C by reducing global GHG emissions to carbon neutrality by mid-century.[48] The Paris Agreement has been ratified by 191 members of the UNFCC.[49]

To assist in achieving these ambitious goals, the United Nations developed Sustainable Development Goals (SDG) intended to be achieved by the year 2030. The SDGs are a collection of 17 interlinked global goals designed to guide sustainable development. These international frameworks have become the drivers for many of California's own climate related legislation.

48. IPCC. Special Report. ***https://www.ipcc.ch/sr15/****. Accessed July 2023*

49. UN Climate Change. Paris Agreement. ***https://unfccc.int/process/the-paris-agreement/status-of-ratification****. Accessed July 2023*

CLIMATE ACTION AT THE STATE LEVEL

California has become a global leader in climate change action, having established extensive legislation, policies, and programs to reduce GHG emissions within the state over the last decade. The primary drivers of climate action at the state level are Assembly Bill (AB) 32, Senate Bill (SB) 32, and AB 1279. These regulations chart a path towards a carbon neutral California by 2045, as explained below.

Assembly Bill 32 – Codified the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires the California Air Resources Board (CARB) to prepare a Scoping Plan that outlines the main strategies the State will employ to meet the 2020 target. The AB 32 Scoping Plan was adopted in 2014.

Senate Bill 32 – The successor to AB 32 and requires the State of California to achieve a statewide reduction in GHG emissions of 40 percent below 1990 levels by 2030. The SB 32 Scoping Plan was adopted in 2017.

Assembly Bill – AB 1279, adopted in 2022, codifies the statewide carbon neutrality goal into a legally binding requirement for California to achieve carbon neutrality no later than 2045 and ensure 85 percent GHG emissions reduction under that goal. AB 1279 builds upon Executive Order B-55-18 which originally established California's 2045 goal of carbon neutrality.

Programs and policies that support the goals established in the above bills and which will impact GHG emissions for LVMWD and the JPA include the California Renewable Portfolio Standard (RPS), which, through SB 1020 and SB 100, requires electricity providers to procure 100 percent of electricity from renewable and carbon-free sources by 2045.[50] The Advanced Clean Fleets rule will also support the goals by requiring LVMWD to transition to a 100 percent zero-emission capable utility fleet by 2045. LVMWD and the JPA may choose to purchase only ZEVs beginning in 2024 and remove internal combustion engine vehicles at the end of their useful life or elect to meet the State's ZEV milestone targets as a percentage of the total fleet starting with vehicle types that are most suitable for electrification.[51]

50. As part of California's RPS program SB 100 signed in 2018 mandated that electricity providers increase GHG-free sources to 100 percent of total procurement by 2045. Furthering RPS requirements, SB 1020 established additional requirements that procurement from eligible renewable energy resources increase to 90 percent of total procurement by 2035 and 95 percent of total procurement by 2040.

51. CARB. Advanced Clean Fleets. ***https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets****. Accessed July 2023*

LVMWD AND JPA CLIMATE ACTION TARGETS

While LVMWD and the JPA are not beholden to AB 32, SB 32, or AB 1279, and currently faces no legislative requirements to reduce their GHG emissions, the State recognizes water agencies as one of the largest contributors to energy emissions in California, primarily due to the large quantities of electricity used to pump water. It is also anticipated that as California works towards the 2045 carbon neutrality goal, additional legislation and regulations will be established in the future that may require LVMWD and the JPA to adopt low-carbon practices and operations. As part of the process of developing a CAAP, LVMWD and the JPA have elected to establish climate action targets that align with the State's goals to serve as targets for their facilities and operations going forward and provide a framework for achieving voluntary GHG emissions reductions in future years. LVMWD and the JPA have already taken numerous steps to reduce emissions, conserving resources, and reduce energy use; the CAAP builds on those existing efforts.

The CAAP establishes a 2030 GHG emissions target in alignment with the annual reduction rate needed to eventually meet the State's 2045 carbon neutrality goal, as set forth by AB 1279. By setting a straight line from 2021 emissions levels to the AB 1279 target, the 2030 target will surpass the SB 32 goal of a 40 percent reduction in GHG emissions from 1990 level by 2030 and will put LVMWD on a pathway to achieving carbon neutrality by 2045.52 LVMWD and JPA climate action targets are shown in Table 5-1, along with the 1990 back-cast emissions level from the 2012 inventory,[53] adjusted forecast emissions, percent reduction from 1990 levels and the emissions gap (the difference between the AB 1279 absolute target pathway and adjusted forecast emissions). The target emissions trajectory in absolute emissions is shown in Figure 5-1. Figure 5-1 also shows the BAU forecast, adjusted forecast, and the 1990 baseline inventory back-cast.

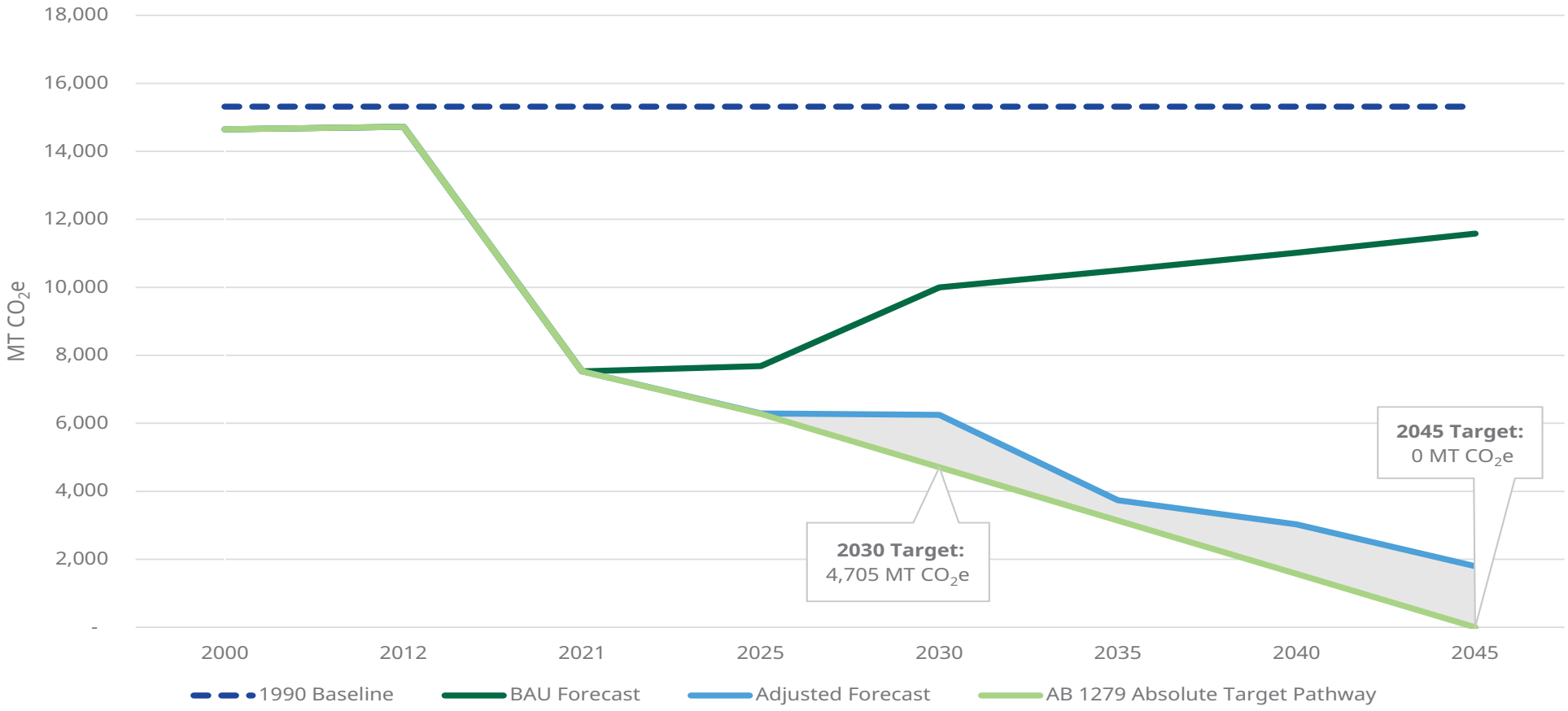
Table 5-1. LVMWD and JPA Climate Action Targets

	2025	2030	2035	2040	2045
1990 Baseline	15,314	15,314	15,314	15,314	15,314
Adjusted Forecast	6,287	6,249	3,740	3,028	2,260
Target Pathway developed from 1990 Levels					
AB 1279 Absolute Target Pathway	6,273	4,705	3,136	1,568	0
Percent Reduction from 1990 Levels	59%	69%	80%	90%	100%
Emissions Gap	14	1,544	604	1,460	2,260

52. Carbon neutrality refers to achieving net-zero CO_2e emissions, such that any GHG emissions created are offset by GHG emissions sequestering activities.

53. A back-cast of GHG emissions to 1990 was developed based on the 2012 inventory results, as the 2012 GHG emission levels are before current GHG emissions reduction projects came online and 2012 operations were closer to the current operations than 2000 operations.

Figure 5-1. LVMWD and JPA Forecast and Climate Action Targets



GHG Emissions Gap

As shown in Figure 5-1, a gap remains between the projected emissions (blue line) and the target emissions (green line), even after accounting for reductions that will result from state legislation. This gap is equal to 1,544 MT CO_2e in 2030 and 2,260 MT CO_2e in 2045. This gap is how much LVMWD and the JPA will need to reduce their GHG emissions to meet the target of carbon neutrality by 2045.

LVWMD and the JPA aim to close this gap by implementing the GHG measures presented in Chapter 6. Several of these measures, along with the climate adaptation specific measures, will also increase their resilience to climate change in the coming years.

6.

GHG EMISSIONS REDUCTION AND ADAPTATION MEASURES

LVMWD and the JPA have developed GHG emissions mitigation and adaptation measures that support the reduction of GHG emissions to levels that align with the State's GHG emissions reduction goals and reduce climate risks to their operations, infrastructure, and natural resources. Collectively, these measures will reduce the gap between LVMWD and JPA forecasted GHG emissions and their reduction targets. While the measures do not fully achieve the 2045 GHG emissions reduction target identified in Chapter 5, they provide for substantial progress towards LVMWD's and the JPA's carbon neutrality target, with the expectation that additional legislation, technology, and measures shall be identified in the future to achieve further reductions. As discussed in Chapter 1, a primary benefit of adopting proactive plans with quantifiable progress towards CAAP goals is the identification of clear measures that with funding shall reduce GHG emissions and reduce climate risks. This Plan aligns with many of the goals and requirements of State and federal grant funding.

Table 6-1 summarizes each GHG reduction and adaptation measure and details the potential GHG emission reductions that can be achieved through full implementation of quantifiable measures. As shown in Table 6-1, implementation of these measures can significantly reduce GHG emissions and improve the operational resilience of LVMWD and JPA facilities. Through implementation of GHG quantifiable measures and actions, LVMWD and the JPA can achieve the 2030 GHG emissions reduction target, as seen in Table 6-1.

Unless otherwise mandated by the State or federal government, cost analysis and feasibility studies will be conducted, and individual reduction and adaptation measures will be implemented only if authorized by the Board of Directors for LVMWD and the JPA. Services provided by LVMWD and the JPA will need to remain affordable to customers. The Board of Directors for LVMWD and the JPA will have discretion in deeming the feasibility of implementing individual measures.

Table 6-1. GHG Reduction and Adaptation Measures by Sector

Measure Code	Mitigation/ Resilience	GHG Reduction Measure	2030 GHG Reduction Potential (MT CO_2e)	2045 GHG Reduction Potential (MT CO_2e)
Infrastructure				
I-1	Mitigation	Utilize carbon-free electricity for 100% of electricity needs by 2030.	453	0
I-2	Mitigation	Electrify new and existing stationary equipment to reduce natural gas consumption 75% by 2030 and 100% by 2045.	219	415
I-3	Mitigation	Utilize renewable diesel and alternative fuels to bridge the technology gap and decarbonize stationary equipment to reduce diesel consumption by stationary equipment 100% by 2030.	36	41
I-4	Mitigation, Resilience	Increase energy storage at facilities and buildings.	GHG Emissions Not Quantified	GHG Emissions Not Quantified
I-5	Mitigation	Improve energy efficiency at facilities and buildings.	GHG Emissions Not Quantified	GHG Emissions Not Quantified
I-6	Mitigation	Reduce process and fugitive GHG emissions associated with wastewater treatment.	5	6
I-7	Resilience	Maximize backup power facilities for all critical assets, in alignment with Measure I-4.	GHG Emissions Not Quantified	GHG Emissions Not Quantified
I-8	Resilience	Support the regional development of dry and wet weather stormwater diversions as a supplementary source for recycled potable water.	GHG Emissions Not Quantified	GHG Emissions Not Quantified
I-9	Resilience	Improve the Supervisory Control and Data Acquisition system.	GHG Emissions Not Quantified	GHG Emissions Not Quantified
I-10	Mitigation, Resilience	Require the incorporation and identification of mitigation and adaptation features into new capital projects.	GHG Emissions Not Quantified	GHG Emissions Not Quantified
I-11	Mitigation, Resilience	Implement the Pure Water Project Las Virgenes Triunfo.	GHG Emissions Not Quantified	GHG Emissions Not Quantified

Measure Code	Mitigation/ Resilience	GHG Reduction Measure	2030 GHG Reduction Potential (MT CO_2e)	2045 GHG Reduction Potential (MT CO_2e)
Operations				
O-1	Mitigation	Electrify or otherwise decarbonize the vehicle fleet such that 75% of the vehicle fleet are ZEV by 2030 and 100% of the vehicle fleet are ZEV by 2045.	102	342
O-2	Mitigation	Increase employee commute ZEV adoption to 25% by 2030 and 50% by 2045.	48	136
O-3	Mitigation	Reduce employee commute VMT by 15% by 2030 and 30% by 2045.	GHG Emissions Not Quantified	GHG Emissions Not Quantified
O-4	Mitigation	Develop a net zero waste program such that waste sent to the landfill is reduced by 90% by 2030 and maintain through 2045.	133	153
O-5	Mitigation, Resilience	Increase water conservation by reducing demands by at least 20% by 2030 and maintain through 2045.	855	0
O-6	Resilience	Develop resource programs and protocols to protect staff from climate extremes.	GHG Emissions Not Quantified	GHG Emissions Not Quantified
O-7	Resilience	Maximize operational flexibility and redundancies, including water transfer agreements, interties, flexible exchanges, additional system interconnections, and points of delivery.	GHG Emissions Not Quantified	GHG Emissions Not Quantified

Measure Code	Mitigation/ Resilience	GHG Reduction Measure	2030 GHG Reduction Potential (MT CO_2e)	2045 GHG Reduction Potential (MT CO_2e)
Natural Resources				
NR-1	2,3	Investigate and implement carbon capture and sequestration opportunities to offset all Water Reclamation Facility fugitive emissions by 2045.	6	48
NR-2	2	Catalog and improve the stability of hillside monitoring and stabilization efforts after heavy rain events in areas at risk of landslides and debris flows to minimize impacts to District infrastructure and equipment.	GHG Not Emissions Quantified	GHG Emissions Not Quantified
NR-3	2	Protect the Las Virgenes Reservoir from sedimentation associated with extreme climate events.	GHG Emissions Not Quantified	GHG Emissions Not Quantified
NR-4	2,4,5	Develop and implement a wildfire abatement and response policy.	GHG Emissions Not Quantified	GHG Emissions Not Quantified
GHG Emissions Reduction Summary				
Total GHG reduction potential with full implementation of all measures			**1,857**	**1,140**
Total GHG reductions needed to meet LVMWD's Reduction Goals3			**1,544**	**1,797**
GHG reductions remaining			**-313**	**657**

GHG = greenhouse gas; LVMWD = Las Virgenes Municipal Water District; MT CO_2e = metric tons of carbon dioxide equivalent; VMT = vehicle miles traveled; ZEV/EV = zero emission vehicle/electric vehicle
I = Infrastructure; O = Operations; NR = Natural Resources
1 As described in Chapter 5, LVMWD established GHG reduction goals in alignment with AB 1279 Absolute Target pathway.

MEASURE ORGANIZATION

CAAP measures include specific goals that LVMWD and the JPA will work towards to reduce GHG emissions and improve resilience to climate change. As vital service providers to their customers, LVMWD and the JPA expect to balance the implementation of climate action and adaptation measures with the cost of water and wastewater services to ratepayers. Increased rates could have equity and other impacts if not thoughtfully considered, thus, each measure can only be implemented once it is deemed financially feasible or when funding/financing has been identified. However, LVMWD and the JPA also understand that failing to prepare for climate change could substantially increase costs in the future, so care must be taken to strike the right balance. Therefore, consistent with LVMWD's and the JPA's overall mission, measures that could result in a significant increase in costs were removed from consideration. Measures are organized by asset, and consist of a suite of actions that support each measure:

1. **ASSET:** Measures are categorized into three asset categories:
    a. **Infrastructure**
    Infrastructure includes various components of its water and wastewater system that pump, transport, divert, store, treat and deliver water.
    b. **Operations**
    Operations include the staff, equipment, and systems that keep day-to-day operations and services running.
    c. **Natural Resources**
    Natural resources include materials and natural substances such as water, soil, vegetation, and wildlife.
2. **MEASURES:** Measures define quantitative and qualitative goals within each asset category that will contribute to reducing GHG emissions and/or increase resilience.
3. **ACTIONS:** Actions consist of the specific activities that will be completed in support of each measure, which together accomplish each measure's goal.

Some CAAP measures and their actions include quantifiable GHG emissions (i.e., with clearly defined GHG emissions reduction potential). Other actions are not quantifiable, and either contribute to the realization of GHG remissions reduction potential of other measures or actions or increase the resilience of LVMWD and the JPA to climate change. An example of a quantifiable action is purchasing a specific amount of carbon-free electricity, while a supportive (not quantifiable) action is conducting an annual return on investment analysis of carbon-free electricity packages. Measures and actions that seek to increase resilience to climate change are not considered quantifiable in this CAAP, as the quantified metric being considered is GHG emissions. Together, the CAAP measures and their actions establish a foundational pathway to make substantial progress towards achieving 2030 and 2045 GHG reduction goals and increasing resilience to climate change. Measures and actions will be tracked and re-evaluated on a regular basis to help ensure achievement of the projected reductions.

OBJECTIVES

The CAAP measures and actions were developed in alignment with LVMWD's strategic objectives, as outlined in the 2022 LVMWD Strategic Plan. LVMWD's strategic objectives are:

1. Develop a strategy to maintain a highly effective workforce,
2. Improve LVMWD's water supply reliability,
3. Support customers to meet water-use efficiency standards,
4. Eliminate the discharge of pollutants to Malibu Creek and preserve the natural beauty of the Watershed,
5. Achieve a high credit rating for LVMWD's three enterprises,
6. Reduce LVMWD's carbon footprint,
7. Keep customers, city officials and other stakeholders well-informed and provide new/improved customer tools to enhance service delivery,
8. Develop a process to act on efficiency improvement suggestions, and
9. Enhance LVMWD's asset management programs.

The strategic objectives were assessed and used to guide the development of a set of five CAAP objectives that connect the CAAPs goals of reducing GHG emissions and increase resilience to climate change and the overall strategic goals of LVMWD. The CAAP's objectives are outlined and described below.

OBJECTIVE 1: Enhanced Water Supply Diversification

Investments in a diverse water supply portfolio will allow LVMWD and the JPA to manage the associated projected climate risks and uncertainties. Efforts to increase dry (sanitary sewer) and wet weather (stormwater) diversions, minimize reliance on imported water, and develop reliable local water sources will strengthen and increase the resilience of the water supply portfolio.

OBJECTIVE 2: Better Protected Water Resources

Implementing natural resources, land, and ecosystem management efforts will protect water resources from climate risks. CAAP measures that align with this objective reduce the pressure on local natural resources by allowing more space for trees and native habitats, preserving natural water supplies and increasing resilience of water resources.

OBJECTIVE 3: Increased Operational Efficiency and Resource Management

Implementing programs that manage resource demand will allow LVMWD and the JPA to continue to provide high-quality water sustainably. Increasing operational efficiencies often contributes to reductions in resource consumption and cost savings.

To maintain a long-range, transparent, stable, and well-planned financial condition, resulting in current and future water users receiving fair and equitable rates, it will be important to implement projects and programs that reduce financial risk through resource management and increased operational efficiencies.

OBJECTIVE 4: Improved Operational Flexibility and Reliability

Retaining a reliable water supply and operations is at the heart of LVMWD's mission. Developing climate solutions and planning for issues such as energy shortages, power safety shutoffs, and drought allows LVMWD to make its operations more resilient and continue to provide water reliably and affordably to the community.

OBJECTIVE 5: Better Connected People and Water

Prioritizing projects that engage LVMWD's and the JPA's customers, community, and partners will facilitate increased community support and involvement in climate action and adaptation efforts. LVMWD and the JPA will continue to support programming that enhances existing relationships and better connects the community with efforts to conserve water and mitigate climate change impacts on LVMWD's and the JPA's service area, employees, and customers.

INFRASTRUCTURE MEASURES

MEASURE I-1: Utilize carbon-free electricity for 100% of electricity needs by 2030.

Electricity consumption is the single largest emission source for LVMWD and the JPA. While SB 100 drives the conversion of retail electricity to 100% renewable by 2045, procuring carbon-free electricity now expedites this timeline and will provide significant reductions in GHG emissions. By opting into a renewable electricity tier through the electricity provider, LVMWD and the JPA have the opportunity to achieve most of its GHG emissions reduction's goal. Furthermore, switching to low-carbon or carbon-free electricity will make other measures more impactful by further reducing GHG emissions. For example, electrification of buildings, equipment and vehicles will achieve a greater GHG emission reduction if the electricity sourced is low-carbon or carbon neutral. LVWMD and the JPA currently receive electricity from Southern California Edison (SCE). SCE offers a 50 percent green rate option and 100 percent green rate option to its customers. LVMWD and the JPA can also procure electricity from Clean Power Alliance (CPA), a community choice aggregation (CCA) entity providing customers in Los Angeles and Ventura counties carbon-free electricity. CPA provides options of 40 percent, 50 percent, and 100 percent carbon-free electricity. In addition to changing its electricity procurement strategy, developing additional on-site solar and pairing with battery storage (Measures I-4 and I-7), will both reduce GHG emissions and increase resilience to disturbances such as power outages.

Actions

- **Action I-1.1:** Install 1 MW of solar PV at Rancho Sprayfield by 2025.
- **Action I-1.2:** Conduct a feasibility study to understand the potential for installing up to 15 megawatt (MW) of floating solar photovoltaics at Las Virgenes Reservoir, including potential costs, payback periods, and resilience impacts.
- **Action I-1.3:** Conduct an assessment to identify the solar capacity needed to support the additional electricity demand for vehicle fleet and employee commuter fleet EV adoption.
- **Action I-1.4:** Identify partners to assess and pursue floating solar photovoltaics, such as firms that specialize in power purchase agreements (PPA) and SCE. Work with partners to pursue funding opportunities and tax credits for the installation of floating solar photovoltaics such as opportunities through the Department of Energy (DOE) Solar Energy Technologies Office (SETO and the federal Investment Tax Credit and Production Tax Credit.
- **Action I-1.5:** Based on the results of the studies and if deemed feasible, install up to 15 MW of floating solar photovoltaics at Las Virgenes Reservoir and additional on-site solar generation.
- **Action I-1.6:** Incorporate design elements into the Pure Water Project Las Virgenes – Triunfo to minimize GHG emissions to the greatest extent feasible. This should include energy efficient processes, identification of alternative fuels or technologies for processes that cannot be electrified, developing the project to be electricity ready where feasible, opportunities to directly link to on-site renewables and battery storage, and identification of the energy source to offset indirect electricity emissions, such as using the Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) tariff for renewable energy generation from other District sites where on-site renewables will not offset the emissions.
- **Action I-1.7:** Identify if the JPA/LVMWD can source electricity from Clean Power Alliance (CPA) and conduct an annual return on investment (ROI) analysis of carbon-free electricity packages available from SCE and CPA to determine which would be more cost-effective. Analysis should include a cost evaluation of switching all electricity accounts to 100 percent carbon-free electricity to ensure electricity consumption not covered by on-site solar will be 100 percent carbon-free.
- **Action I-1.8:** Depending on the results of the ROI analysis and if deemed feasible, switch some or all electricity accounts to 100 percent carbon-free electricity from with SCE "Green Rate" or to a CPA "100% Green Power".
- **Action I-1.9:** Conduct a study to identify what amount of pumping that can be scheduled utilizing a high level of renewable energy and offset the remaining amount with battery stored solar energy.

Target Metrics

- 100 percent carbon-free electricity by 2030
- Install additional on-site solar fields

GHG Emissions Reductions

- 453 MT CO_2e in 2030

Objectives

- Increased Operational Efficiency & Resource Management
- Improved Operational Flexibility & Reliability

MEASURE I-2: Electrify new and existing stationary equipment to reduce natural gas consumption 75% by 2030 and 100% by 2045.

Infrastructure electrification is promoted by several State-level programs, including SB 350[54] and AB 3232,[55] which require reductions in energy usage in buildings and a transition to a low-carbon building stock. SB 350 requires that the State double the energy efficiency savings in natural gas usage by 2030. AB 3232 requires the California Energy Commission (CEC) evaluate strategies to reduce the State's building stock GHG emissions by 40 percent below 1990 levels by 2030. The CEC's Building Energy Efficiency Standards (Title 24 Parts 6 and 11) includes building standards and codes that support decarbonization efforts through requiring improvements in energy efficiency of building equipment to occur at time of new construction and upgrades.

By phasing out natural gas equipment for electric equipment, while using carbon-free electricity, LVMWD's and the JPA's GHG emissions associated with this equipment will fall to zero. Replacing natural gas equipment should be completed over time as existing natural gas infrastructure needs to be replaced. When replacing items like hot water heaters and Heating, Ventilation, and Air Conditioning (HVACs) units, LVMWD and the JPA will look to replace natural gas combustion units with heat pumps that can operate at nearly 400 percent increased efficiency.[56] Replacing fossil fuel combustion equipment with electric alternatives will align with the State policies and Title 24 requirements. Phasing out natural gas backup generators is a lower priority in the near term, as they provide critical resilience benefits.

Actions

- **Action I-2.1:** Conduct a survey of existing natural gas operated equipment and identify operationally and financially viable electric alternatives. By 2025, establish a schedule to replace existing natural gas-consuming equipment with electric or carbon neutral alternatives (i.e., e-fuels).
- **Action I-2.2:** Develop and implement a policy requiring new equipment to be electric or carbon neutral. Require an infeasibility waiver to be submitted and approved when new equipment cannot be electrified. The infeasibility waiver process shall identify other opportunities to decarbonize the new stationary equipment (e.g., use of renewable diesel/e-fuel).
- **Action I-2.3:** Explore rebate, grant, or partnership opportunities to fund the replacement of natural gas-consuming equipment like HVAC and hot water heaters with electric-powered equivalents like heat pumps.
- **Action I-2.4:** Educate staff of the electrification requirement and implement the schedule to replace non-emergency use natural gas-consuming equipment with electric-powered equivalents to reduce natural gas consumption.

Target Metrics

- 75 percent reduction in natural gas by 2030
- 100 percent reduction in natural gas by 2045

GHG Emissions Reductions

- 219 MT CO_2e in 2030
- 415 MT CO_2e in 2045

Objectives

- Increased Operational Efficiency & Resource Management
- Improved Operational Flexibility & Reliability

54. CEC. Clean Energy and Pollution Reduction Act – SB 350. **https://www.energy.ca.gov/rules-and-regulations/energy-suppliers-reporting/clean-energy-and-pollution-reduction-act-sb-350**. Accessed July 2023

55. CEC. Assembly Bill 3232 and the California Building Decarbonization Assessment. **https://www.energy.ca.gov/sites/default/files/2021-08/AB3232_Building_Decarbonization_Assessment_Factsheet_ADA.pdf**

56. Tri-State. 2021. Advantages of Energy Efficient Heat Pumps. **https://tristate.coop/advantages-heat-pumps-energy-efficiency#:~:text=What's%20the%20efficiency%20performance%20of,coefficient%20of%20performance%2C%20or%20COP**. Accessed July 2023.

MEASURE I-3: Utilize renewable diesel and alternative fuels to bridge the technology gap and decarbonize stationary equipment to reduce diesel consumption by stationary equipment 100% by 2030.

LVMWD and the JPA currently use a combination of gasoline and diesel to fuel its fleet vehicles and stationary equipment, including backup emergency power generators. While zero-emission heavy-duty vehicles are not currently market-ready, using low-carbon intensity fuels like renewable diesel in existing vehicles and equipment does not require substantive equipment alterations and helps reduce GHG emissions over the short term. The use of alternative fuels allows for additional time to fully vet and/or pilot the new zero-emission technology before infrastructure investments are made, which could help improve the return on investment. The State's Low Carbon Fuel Standard (LCFS) regulation is driving the market to increase the availability and decrease the cost of alternative fuels that may offer a return-on-investment benefit to switch to alternative fuels now in equipment and fleet vehicles that do not need technology changes. Using renewable diesel in existing vehicles can decrease the costs of maintaining equipment over traditional diesel due to a decreased need for diesel particulate filter services, as renewable diesel has less impurities such as sulfur, oxygen, and other aromatic compounds.[57]

Actions

- **Action I-3.1:** Conduct a feasibility study to assess opportunities to decarbonize LVMWD's and the JPA's existing back-up generators using drop-in renewable diesel. As part of the assessment, determine a timeline for the renewable diesel transition, the quantity of renewable diesel needed, and any additional costs incurred from the transition. Include potential impacts of new renewable diesel equipment.
- **Action I-3.2:** Identify partners for a reliable source of renewable diesel and fuel (e.g., Diamond Green Diesel).
- **Action I-3.3:** Based on the feasibility study, develop a policy to transition all generators to renewable fuels.
- **Action I-3.4:** Develop and distribute educational materials to relevant staff members on the renewable diesel policy requirement and associated air quality and health benefits of the transition outlines in Action I-3.3.
- **Action I-3.5:** Pursue and monetize LCFS credits associated with renewable fuel conversions in vehicles.

Target Metrics

- 100 percent replacement of diesel with renewable diesel by 2030

GHG Emissions Reductions

- 36 MT CO_2e in 2030
- 41 MT CO_2e in 2045[58]

Objectives

- Increased Operational Efficiency & Resource Management
- Improved Operational Flexibility & Reliability

*57. Neste. Fueling Renewed Trust in Public Fleets. **https://www.neste.us/neste-my-renewable-diesel/industries/public-fleets**. Accessed July 2023.*

58. GHG emissions reductions are projected to increase by 2045 as forecasted fleet and equipment GHG emissions are projected to increase.

MEASURE I-4: Increase energy storage at LVWMD and JPA facilities and buildings.

Energy storage systems are a proven strategy to maximize use of renewable energy by storing the energy produced during peak renewable generation periods. By storing renewable energy, LVMWD and the JPA will increase their energy residence and reduce GHG emissions by charging the battery system during times of low grid emissions and discharging them during periods of high emission electricity. The batteries can also be used to conduct rate arbitrage, by charging during times when electricity is cheapest and offsetting the peak (most expensive) power periods through use of stored energy. Power loss can lead to operational failure as key facilities and systems, including pumps and the water reclamation facility, may not be able to operate. Battery storage systems will also add increased operational resilience by allowing facilities to operate for periods of time without power from the grid.

Actions

- **Action I-4.1:** Conduct an assessment to identify existing battery storage capacity and priority locations for battery storage installation.
- **Action I-4.2:** Conduct a feasibility study to evaluate the opportunities for charging on-site batteries with on-site solar. Based on the study, require the design of the Pure Water Project Las Virgenes – Triunfo to identify battery storage solutions to mitigate impacts from power outages in addition to back-up generators powered by renewable fuel.
- **Action I-4.3:** Explore funding opportunities to obtain and install a combined total of 5 MW battery storage at critical facilities. Identify opportunities through the Inflation Reduction Act of 2022 incentives including Energy Infrastructure Reinvestment Financing and the Solar Investment Tax Credit.
- **Action I-4.4:** Continue time of use program that identifies and establishes permanent shifts of high-electricity use to times when renewable energy is plentiful through educational programs on energy and thermal storage, load timing/controls, pre-cooling/pre-heating, and other time-energy demand measures.

Target Metrics

- Energy storage solutions implemented
- Assessments completed
- Funding obtained
- 5 MW battery storage installed

GHG Emissions Reductions

- GHG Emissions Not Quantified[59]

Objectives

- Increased Operational Efficiency & Resource Management
- Improved Operational Flexibility & Reliability

59. GHG emissions were not quantified for Measure I-4 as energy storage systems in themselves do not lead to reductions in GHG emissions, however they do support GHG reductions associated with on-site renewable energy sources.

MEASURE I-5: Improve energy efficiency at LVMWD and JPA facilities and buildings.

Improving pump efficiency, installing LED lighting, and installing energy recovery systems will all reduce the total demand for electricity from LVMWD's and the JPA's systems, saving money and reducing GHG emissions. Improving equipment efficiency also aligns with the California Building Energy Efficiency Standards (Title 24).

Actions

- **Action I-5.1:** Identify aging equipment due for replacement throughout JPA and LVMWD facilities and identify energy efficient alternatives to use for the replacement (e.g., EnergyStar certifications). Prioritize energy efficient electric equipment over natural gas and diesel equipment, where feasible. Include a return on an investment analysis as part of the replacement process that evaluates the capital investment for an energy efficient alternative piece of equipment, cost savings associated with improved energy efficiency, and identifies any grants or rebates associated with such equipment replacement. For equipment identified in Action I-2.2 that received the infeasibility waiver, ensure energy efficiency alternatives are selected.
- **Action I-5.2:** Develop and implement a policy requiring new equipment to achieve EnergyStar Certification, where feasible.
- **Action I-5.3:** Conduct energy audits every 5 years and implement top energy recommendations. As part of CAAP monitoring, track energy improvements due to implementation of energy audit recommendations annually.
- **Action I-5.4:** Expand the utilization of automated lighting controls for indoor/outdoor lighting for JPA and LVMWD facilities pursuant to the current CEC Building Energy Efficiency Standards (Title 24, Part 6 and 11).
- **Action I-5.5:** Pursuant to the CEC 2022 Building Energy Efficiency Standards (Title 24, Part 6 and 11), require all new construction and building upgrades utilize light emitting diode (LED) lighting technology only.
- **Action I-5.6:** Continue to explore opportunities to employ artificial intelligence (AI) and machine learning (ML) to better optimize treatment processes and to increase energy efficiency.
- **Action I-5.7:** Require the implementation of cool roofs in the construction of all new and upgraded JPA and LVMWD facilities, to minimize absorption of solar energy and reduce building energy use.

Target Metrics

- Energy conserved
- Energy efficiency systems and upgrades implemented

GHG Emissions Reductions

- GHG Emissions Not Quantified

Objectives

- Increased Operational Efficiency & Resource Management
- Improved Operational Flexibility & Reliability

MEASURE I-6: Reduce process and fugitive GHG emissions associated with wastewater treatment.

Because technology for reducing methane emissions from wastewater treatment plants can be expensive and requires advanced planning, this measure is focused on preliminary feasibility analysis and investigating funding opportunities for future implementation. Technology is advancing and programs such as LCFS may provide cost-effective opportunities to convert captured methane to biofuel for electricity generation or vehicle fleet use. It is anticipated that wastewater emissions will become a major focus of California for reducing GHG emissions in the future, at which point additional incentives for this work are expected to become available. Additionally, implementation of the Pure Water Project Las Virgenes-Triunfo, will divert and treat effluent from the Tapia Water Reclamation Facility for potable reuse. The project will eliminate the need to discharge unused recycled water to Malibu Creek, minimizing associated fugitive GHG emissions to nearly zero.[60]

Actions

- **Action I-6.1:** Conduct a feasibility and cost analysis on the pathways to eliminate emissions associated with the biogas generated at Tapia Water Reclamation Facility through either biogas utilization, disposal or sale. The study should include an assessment evaluating the cost for upgrading the anaerobic digesters, opportunities for upgrading the biogas to pipeline quality biomethane, and opportunities for partnerships with other nearby biogas producers to sell the biogas to entities such as SCG looking to meet SB 1440.
- **Action I-6.2:** Investigate potential partnerships with entities looking to obtain biogas for fuel production for which LVMWD and the JPA could be a source.
- **Action I-6.3:** In alignment with the implementation of the Pure Water Project Las Virgenes - Triunfo, evaluate and track reductions in total Nitrogen to identify the amount of reduced fugitive emissions.

Target Metrics

- 97 percent reduction in fugitive emissions by 2030
- 97 percent reduction in fugitive emissions by 2045

GHG Emissions Reductions

- 5 MT CO_2e in 2030
- 6 MT CO_2e in 2045

Objectives

- Increased Operational Efficiency & Resource Management
- Improved Operational Flexibility & Reliability

60. EPA. Pure Water Project Las Virgenes-Triunfo. ***https://www.epa.gov/wifia/pure-water-project-las-virgenes-triunfo****. Accessed July 2023*

MEASURE I-7: Maximize backup power facilities for all critical assets.

As outlined for Measure I-4, procuring energy storage solutions to support LVMWD's and the JPA's facilities and buildings can support GHG emission reductions and mitigate impacts from power outages. Water utilities are one of the major electricity consumers in California. With future electricity demand forecasted to grow, water utilities are particularly at risk of localized energy shortages. Backup power facilities can provide resilience and redundancy to mitigate service disruptions during power outages.[61] This measure will reduce the potential impact of future power disruptions on key facilities and operations to provide future continuity of services across a wider range of conditions. New backup power facilities should be located outside of hazard areas or provided with adequate protection to mitigate potential damage and disruption.

Actions

- **Action I-7.1:** Catalogue fixed and mobile backup power requirements for all LVMWD and JPA facilities and develop design criteria/minimum requirements.
- **Action I-7.2:** Establish backup power policy/requirements that cover fixed and mobile solutions, staging, and procurement.
- **Action I-7.3:** Secure Hazard Mitigation Grant Program, California Governor's Office of Emergency Services (CAL OES), and other grant funding for battery energy storage solutions and renewable diesel.
- **Action I-7.4:** If deemed feasible, secure battery energy storage systems and new generators that use renewable fuel (e.g., renewable diesel, biodiesel, etc.) for Tapia Reclamation Facility, the Westlake Filtration Plant, Rancho Composting Facility, and future facilities such as the Advanced Water Purification Facility.

Target Metrics

- Assessments developed
- Battery storage solutions installed

GHG Emissions Reductions

- GHG Emissions Not Quantified

Objectives

- Improved Operational Flexibility & Reliability

MEASURE I-8: Support the regional development of dry and wet weather stormwater diversions as a supplementary source for recycled potable water.

Climate change exposures, such as an increase in prolonged periods of multi-year drought, are projected to increase the risk of reduced SWP and Colorado River deliveries. There is also an indication that more rain will fall from extreme weather events, which would increase the potential value of stormwater capture. LVMWD and the JPA will focus on developing and enhancing regional capabilities to increase dry and wet weather (stormwater) diversions as a supplementary source for recycled potable water.

Actions

- **Action I-8.1:** Partner with neighboring jurisdictions to identify opportunities to develop dry and wet weather diversions to reduce imported water.
- **Action I-8.2:** Position for funding programs, such as LA County Measure W, to fund design work to increase dry and wet weather diversions.
- **Action I-8.3:** Conduct an assessment to identify developing regulatory compliance issues associated with wet weather diversions and outline potential solutions.

Target Metrics

- Acre-feet of diversions
- Funding identified and obtained
- Assessment conducted

GHG Emissions Reductions

- GHG Emissions Not Quantified

Objectives

- Enhanced Water Supply Diversification

61. EPA. Climate Impacts on Water Utilities. ***https://www.epa.gov/arc-x/climate-impacts-water-utilities#tab-3****. July 2023*

MEASURE I-9: Improve the Supervisory Control and Data Acquisition (SCADA) System.

A projected increase in the frequency and severity of climate hazards, such as extreme heat and extreme precipitation, will stress the ability of staff to react and respond. A more capable SCADA system will enable more efficient reactions and responses to changing conditions and potentially reduce GHG emissions associated with water loss. A SCADA system provides LVMWD and the JPA with automation and redundant control capabilities. An improved SCADA system can connect employees to monitoring equipment that can provide information on flooding hazards, water quality, drainage levels, and much more, in real time. The SCADA system can report on maintenance issues and alert employees of critical issues that may be impacting water and wastewater operations.[62]

Actions

- **Action I-9.1:** Conduct an assessment to identify opportunities to upgrade or add field instrumentation hardware including sensors, actuators, relays, control units, and samplers such as for automatic leak detection throughout the distribution system. Utilize artificial intelligence (AI) and machine learning (ML) to automate SCADA data collection and analysis to provide additional operational improvements and achieve energy efficiency.
- **Action I-9.2:** Based on the assessment, procure field instrumentation hardware to adequately monitor and control all water system processes.
- **Action I-9.3:** Explore potential funding opportunities to finance SCADA system upgrades and improvements.
- **Action I-9.4:** Establish procedures to regularly conduct maintenance of SCADA systems to identify potential improvements and operational inefficiencies.
- **Action I-9.5:** Implement setpoint optimization techniques using AI and ML at Tapia Water Reclamation Facility, Lift Stations 1 and 2, and Rancho Las Virgenes Composting Facility.

Target Metrics

- Field instrumentation hardware procured
- Funding obtained
- Procedures established
- Setpoint optimization techniques implemented

GHG Emissions Reductions

- GHG Emissions Not Quantified

Objectives

- Increased Operational Efficiency & Resource Management
- Improved Operational Flexibility & Reliability
- Better Connected People and Water

62. *LVMWD. Phase 2 White Paper: Tapping into Available Capacity in Existing Infrastructure to Create Water Supply and Water Quality Solutions.* ***https://www.mwdh2o.com/media/3uyc3rvk/las-virgenes_phase-2_final-report.pdf***

MEASURE I-10: Require the incorporation and identification of mitigation and adaptation features into new capital projects.

Climate change is projected to increase the variability of precipitation, the extent of wildfire risk, the frequency and amount of extreme precipitation, the susceptibility of landslides, the frequency and duration of extreme heat events, and the length and frequency of power outages. The Infrastructure Investment Plan and other master planning documents should consider the vulnerability of facilities, infrastructure, and water resources to relevant climate change impacts.[63] This measure will guide future capital development to be designed with these future climate conditions and risks in consideration.

Actions

- **Action I-10.1:** Develop a process to prioritize when to apply and implement climate change-informed design criteria for flooding, extreme heat, landslides, wildfire and liquefaction.
- **Action I-10.2:** Integrate and regularly update best available climate science and projections into relevant planning documents and programs including the Urban Water Management Plan, Infrastructure Investment Plan, Hazard Mitigation Plan, Potable Water Master Plan, Recycled Water Mast Plan, Integrated Master Plan, and Sanitation Master Plan.
- **Action I-10.3:** Develop protocols to improve monitoring capabilities to ensure ongoing identification of vulnerable critical District assets in need of upgrades or retrofits.

Target Metrics

- Design criteria development and implemented
- Planning documents and programs updated

GHG Emissions Reductions

- GHG Emissions Not Quantified

Objectives

- Better Protected Water Resources
- Increased Operational Efficiency & Resource Management
- Improved Operational Flexibility & Reliability

63. EPA. Climate Impacts on Water Utilities. ***https://www.epa.gov/arc-x/climate-impacts-water-utilities#tab-3****. Accessed July 2023*

MEASURE I-11: Implement the Pure Water Project Las Virgenes-Triunfo.

Implementing the Pure Water Project Las Virgenes – Triunfo is key to providing reliable potable water and reducing dependence on imported water in the future. The project will eliminate discharges to Malibu Creek, minimizing contaminants into the creek and fugitive GHG emissions. In 2022, the JPA Board of Directors approved the Programmatic Environmental Impact Reports for the Pure Water Project, providing a path forward for construction of the Advanced Water Purification Facility.[64] To guide the development of this facility in a climate resilient manner that minimizes GHG emissions, LVMWD and the JPA will work with developers and a consultant team to incorporate climate projections and potential impacts into the design process. Energy efficient equipment and fixtures at Pure Water Project facilities will also be installed and opportunities will be explored to implement additional on-site renewable and battery storage to increase operational resilience and mitigate GHG emissions.

Actions

- **Action I-11.1:** Continue with efforts to partner with a design/build team to design, construct, test, commission, and obtain governmental approval for the Advanced Water Purification Facility.
- **Action I-11.2:** Require the consultant team to review and integrate future climate projections and potential impacts into the design of the Advanced Water Purification Facility.
- **Action I-11.3:** Obtain funding for additional advising services to study and mitigate climate risks and GHG emissions specifically to the Pure Water Project Las Virgenes - Triunfo, through the EPA's Water Infrastructure Finance and Innovation Act, State of California's Clean Water and Drinking Water State Revolving Fund (SRF) programs, and Metropolitan's Local Resources Program (LRP).
- **Action I-11.4:** In alignment with Action I-36, conduct a feasibility study to identify the future energy needs of the Pure Water Project Las Virgenes – Triunfo and identify opportunities to minimize GHG emissions through energy efficiency, on-site renewables, and low-carbon and carbon-free electricity procurement.

Target Metrics

- Climate projection and potential impacts integrated into design
- Feasibility study completed
- Funding obtained

GHG Emissions Reductions

- GHG Emissions Not Quantified

Objectives

- Enhanced Water Supply Diversification
- Increased Operational Efficiency & Resource Management
- Improved Operational Flexibility & Reliability

64. LVMWD. Pure Water Project Achieves Major Milestone. 2022. ***https://www.lvmwd.com/Home/Components/News/News/5988/22****. Accessed July 2023*

OPERATIONS MEASURES

MEASURE O-1: Electrify or otherwise decarbonize the vehicle fleet such that 75% of the vehicle fleet are zero-emission vehicles (ZEV) by 2030 and 100% of the vehicle fleet are ZEV by 2045.

California has developed a robust set of clean transportation policies and goals to decarbonize the transportation sector through implementation of ZEV technology, where feasible, and the use of low-carbon intensity fuels everywhere else. The Advanced Clean Cars II regulation requires that by 2035 all new passenger cars, trucks, and SUVs sold in California be zero emissions.[65]The Advanced Clean Fleets rule requires that fleets, businesses, and public entities that own or direct the operation of medium- and heavy-duty vehicles in California must transition to 100 percent zero-emission capable utility fleets by 2045. Under the regulation, LVMWD and the JPA may choose to purchase only ZEVs beginning in 2024 and remove internal combustion engine vehicles at the end of their useful life or elect to meet the State's ZEV milestone targets as a percentage of the total fleet starting with vehicle types that are most suitable for electrification.[66]

Transitioning fleet vehicles to either EVs powered by carbon-free electricity or other zero-emission technology has the potential to bring this source to zero over time. The State also has several incentive and funding programs to support vehicle replacement and to promote infrastructure development. By beginning to implement the Advanced Clean Fleet Rule, LVMWD and the JPA can access early action incentives. Transitioning to ZEV heavy-duty vehicles will be prioritized closer to 2045, as options become technologically and financially feasible.

Actions

- **Action O-1.1:** Conduct a study of the existing vehicle fleet to develop a schedule and policy to replace existing vehicles with EV/ZEV alternatives such that 75 percent of vehicles are replaced with EV/ZEV's by 2030 and 100 percent by 2045. Consider vehicle function, associated costs, available incentives, and ROI from potential fuel and maintenance savings when identifying vehicles for replacement and their EV/ZEV alternatives.
- **Action O-1.2:** For vehicles not identified for replacement by 2030 and/or vehicles that do not have EV/ZEV options available:
  - Evaluate options to reduce the weight of vehicles and integrate technology that monitors vehicle idleness, integrating efficient, smaller diesel engines before they can be electrified or otherwise decarbonized.
  - Consider partnering with heavy-duty EV companies to conduct pilots and facilitate advancements in technology for such vehicles.
  - Continue monitoring EV/ZEV availability and updating the vehicle replacement schedule to transition such vehicles by 2045.
- **Action O-1.3:** Complete an EV infrastructure plan to analyze charging needs through 2045 and beyond. As part of plan, create a prioritized list of EV charging/fueling infrastructure at specific locations.
- **Action O-1.4:** Partner with SCE's Charge Ready Program to plan and fund electric vehicle charger installations and panel upgrades at JPA and LVMWD facilities in alignment with the EV infrastructure plan.

Target Metrics

- 75 percent fleet conversion to ZEV by 2030
- 100 percent fleet conversion to ZEV by 2045

GHG Emissions Reductions

- 102 MT CO_2e in 2030
- 342 MT CO_2e in 2045

Objectives

- Increased Operational Efficiency & Resource Management
- Improved Operational Flexibility & Reliability

65. CARB. Advanced Clean Cars II. ***https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii***. *Accessed July 2023*

66. CARB. Advanced Clean Fleets. ***https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets***. *Accessed July 2023*

MEASURE O-2: Increase employee commute ZEV adoption to 25% by 2030 and 50% by 2045.

Providing educational information on available Zero Emission Vehicle (ZEV) incentives/rebates and preferential parking for ZEVs in support of California's ZEV goals will further lower LVMWD's carbon footprint associated with employee commutes. The increase of Electric Vehicles (EVs) and ZEV use by employees for commuting is inevitable with the establishment of Zero-Emission Vehicle Regulation, which requires auto manufacturers to provide more ZEVs for sale in California to achieve the State's goal of 100 percent of sales of new passenger vehicles to be ZEV by 2035.[67] Programs like LCFS and the Clean Transportation Program (AB 118) provide credits or funding, for developing ZEV fueling infrastructure to incentivize the development of necessary ZEV infrastructure to support the new ZEVs on the road. Furthermore, CARB established a rebate program for individuals to replace their vehicles with a ZEV. As such, it is anticipated that California's goals and incentives will lead to an increased use of ZEVs by LVMWD employees.

Current estimates indicate that approximately 40 percent of EV owners charge at work.[68] Given this fact, LVMWD and the JPA will install EV charging stations at its facilities for employees. Implementing this measure will encourage LVMWD employees to invest in personal EVs by reducing range anxiety, one of the leading reasons individuals opt to not switch to an EVs. This measure will also allow employees who live further away to commute via EV without worrying about making to work and back on a single charge.

Actions

- **Action O-2.1:** Install 30 additional EV chargers to support at least a 25 percent transition of employee-owned commuter vehicles to EV's or ZEV's (i.e., hydrogen fuel cell) by 2030. Locations should best serve commuters that report to different JPA and LVMWD facilities and optimize use of on-site solar generation.
- **Action O-2.2:** Identify partnerships and funding opportunities such as enrollment in the LCFS program for credit generation, federal tax credit under 30C Alternative Fuel Infrastructure Tax Credit, and SCE rebates and partnerships to offset the costs to install EV charging infrastructure for commuters.
- **Action O-2.3:** When feasible, incentivize employee conversion to ZEVs by offering discounted vehicle charging or fueling for commuters (charge for electricity only and not capital recovery for charging stations).
- **Action O-2.4:** Promote employee use of EV's or ZEVs by providing educational materials on the benefits of EV's and ZEVs, available federal and state tax credits, and ROI for employees given free workplace charging.

Target Metrics

- 25 percent transition to ZEV among employees by 2030 and 50 percent transition by 2045.

GHG Emissions Reductions

- 48 MT CO_2e in 2030
- 136 MT CO_2e in 2045

Objectives

- Increased Operational Efficiency & Resource Management

67. CARB. Zero-Emission Vehicle Regulation. **https://ww2.arb.ca.gov/our-work/programs/zero-emission-vehicle-program/about**. Accessed July 2023
68. Idaho National Laboratory. **https://avt.inl.gov/sites/default/files/pdf/arra/PluggedInSummaryReport.pdf**. Accessed July 2023

MEASURE O-3: Reduce employee commute Vehicle Miles Traveled (VMT) by 15% by 2030 and 30% by 2045.

While LVMWD and the JPA do not have direct control over the manner in which its employees travel to and from their jobs, they can facilitate alternative commute strategies, including use of active and shared/subsidized transit and continuing with implementation of a telework program. Working remotely during the COVID-19 pandemic has reduced commuter vehicle miles traveled at LVMWD and the JPA. Currently office workers, one third of staff, telework up to 2 days a week. LVMWD and the JPA have implemented a policy allowing for continued remote work in perpetuity, which will both prevent an increase in GHG emissions and reduce commuter vehicle miles travelled (VMT) for employees. LVMWD and the JPA will expand and provide benefits to employees who utilize alternative forms of transportation for their commute. Rideshare incentives, pre-tax benefits, and other solutions like commuter competitions can be implemented over time in support of the goal of achieving a reduction in employee commutes.

Actions

- **Action O-3.1:** Allow for continued benefits of a full or partial work-from-home policy where employees telecommute or utilize flexible schedule to reduce transit time, VMT, and GHG emissions.
- **Action O-3.2:** Identify opportunities to fund rideshare incentives to employees who carpool. Offer other incentives to employees to use an alternative mode of transportation to commute (e.g., public transportation, bikes).
- **Action O-3.3:** Provide preferred parking for carpooling vehicles to incentivize carpooling by employees. Evaluate opportunities for other incentives to offer to employees for carpooling or lower VMT.
- **Action O-3.4:** Promote employee use of carbon-free and low carbon transportation by providing educational materials on the benefits of commute options including public transportation, EV/ZEV options, and vanpools.

Target Metrics

- 15 percent reduction of VMT by 2030
- 30 percent reduction of VMT by 2045

GHG Emissions Reductions

- GHG Emissions Not Quantified

Objectives

- Increased Operational Efficiency & Resource Management

MEASURE O-4: Develop a net zero waste program such that waste sent to the landfill is reduced by 90% by 2030 and maintain through 2045.

Waste generation contributes a small amount to the overall GHG emissions from LVMWD and JPA operations. Except when there are equipment outages at the Rancho Composting Facility, biosolids are already diverted by being converted into compost for reuse on landscapes. A majority of the GHG emissions resulting from waste sent to the landfill are caused by decomposition of organic material under anaerobic conditions.[69] The remainder of the emissions come from inorganic wastes, such as plastic, which have both upstream and downstream emissions. Therefore, increasing the diversion of organic and inorganic waste streams is a primary measure to reduce waste related GHG emissions. In alignment with SB 1383[70] and AB 341[71], LVMWD and the JPA will develop and implement a waste diversion plan to reduce organic waste sent to the landfill by 75 percent using 2014 levels as a baseline and strive to achieve zero-waste sent to landfills by 2045. This would include but not be limited to organic waste from employee break rooms. Additionally, LVMWD and the JPA will report biosolid quantity and destination to CalRecycle in compliance with AB 901.[72]

Actions

- **Action O-4.1:** Implement a program to separate organic waste from other materials. Contract with local waste disposal companies to route organic waste to food recovery centers, anaerobic digestion, or composting facilities such that 75 percent of organics generated from JPA and LVMWD operations is collected and diverted from the landfill by 2025.
- **Action O-4.2:** Conduct a waste assessment, including records examinations, facility walk-throughs, and waste sorting, across all facilities to identify waste sources generated, identify purchasing and management practices, examine current waste reduction practices and their effectiveness, and prioritize the most effective waste reduction efforts on an area and materials-focused basis.
- **Action O-4.3:** Investigate funding opportunities to develop an organics program and deploy organic waste bins at all JPA and LVMWD facilities.
- **Action O-4.4:** Pursuant to AB 901, report the quantity and destination of disposed biosolids from wastewater treatment plants to CalRecylcle quarterly.
- **Action O-4.5:** Host staff training sessions to provide educational information on waste reduction practices to increase waste diversion at JPA and LVMWD facilities.

Target Metrics

- 75 percent organic waste reduction by 2025 compared with 2014 baseline73

GHG Emissions Reductions

- 133 MT CO_2e in 2030
- 153 MT CO_2e in 2045

Objectives

- Increased Operational Efficiency & Resource Management

69. *According to the Local Governments for Sustainability (ICLEI) U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Appendix E – Solid Waste Emission Activities and Sources, GHG emissions are generated by non-biologic wastes only if they are combusted.*
70. *CalRecycle. California's Short-Lived Climate Pollutions Reduction Strategy.* ***https://calrecycle.ca.gov/organics/slcp/****. Accessed July 2023*
71. *CalRecycle. Mandatory Commercial Recycling.* ***https://calrecycle.ca.gov/recycle/commercial/****. Accessed July 2023*
72 *"Grit" that is collected at the TWRF and hauled to the landfill is not included in the GHG inventory since little to no GHG emissions are associated with this component.*
73. *SB 1383, effective 2022, sets statewide emissions reduction targets to 40 percent below 2013 levels by 2030 for methane, 75 percent reduction in organic material disposed in landfills from 2014 levels by 2025 and required jurisdictions to adopt ordinances or other enforceable mechanisms to impose penalties for non-compliance. LVMWD will be required to comply with local jurisdictions ordinances established to meet SB 1383 requirements.*

MEASURE O-5: Increase water conservation by reducing demands by at least 20% by 2030 and maintain through 2045.

LVMWD has a long history of promoting water conservation, which has resulted in measurable reduction in retail water usage and indirectly reduces GHG emissions. LVMWD has had a number of successful water conservation programs such as providing indoor rebates for water efficient appliances, landscape rebate programs, practicing and promoting water-efficient irrigation and low water usage planting, and developing education programs for customers. LVMWD achieved a 20 percent reduction in per capita water use as required by the Water Conservation Act of 2009 as a direct result of these programs. LVMWD will expand these water conservation efforts to achieve further reductions in per capita water use that will align with new state regulations. Reduced per capita water consumption allows LVMWD to meet the water demands of a growing population, reduce operational emissions, and increase resilience to future drought impacts. A 20 percent reduction by 2030 will be based on 2020 consumption levels.

Actions

- **Action O-5.1:** Continue water conservation and recycling efforts and programs by implementing the Potable Master Plan, Integrated Regional Water Management Plan, Recycled Water Master Plan, Urban Water Management Plan, Water Shortage Contingency Plan, and Flow Restrictor Program.
- **Action O-5.2:** Implement the Pure Water Project Las Virgenes – Triunfo (Measure I-11) to reduce dependence on imported water and help ensure long-term water supply reliability.
- **Action O-5.3:** Continue to reduce recycled water use for irrigation by 25 percent and potable water by 20 percent by 2030 compared to 2020 consumption levels.
- **Action O-5.4:** Continue outreach and engagement efforts to increase registration to 80 percent and use of the WaterSmart Portal to aid customers in managing usage and identifying leaks.
- **Action O-5.5:** Expand programs which educate customers on water conservation initiatives through workshops and speaking engagements. Continue to host and expand participation in the LVMWD Landscape Workshop Series providing information on drought-tolerant landscaping, available rebates for water retrofits, and water efficiency strategies in new and existing single-family residences and commercial/multi-family accounts.
- **Action O-5.6:** Continue with efforts to implement a landscape management plan for the JPA and LVMWD that consolidates and expands upon the goals and policies for landscaping at JPA and LVMWD properties. Identify whether and where there are additional resource-consumptive landscapes on property that can be changed out to more water-conserving, slower growth plants that require less maintenance. Continue to implement potable water conservation strategies in landscape design and maintenance (such as replacing water intensive areas with drought-resilient native plants. using low-flow water fixtures, installing sophisticated irrigation software to control water, investing in systems to monitor pipe leakage, and limiting turf development).
- **Action O-5.7:** Require new and redeveloped LVMWD/JPA owned properties to be low water use through landscaping with climate appropriate plants, permeable paving, green infrastructure, and incorporating other low-impact development design features to allow for increased infiltration, even in heavy rains.
- **Action O-5.8:** Continue to implement and expand on successful water conservation rebate programs (e.g., high efficiency toilets and clothes washers, weather-based irrigation controller, etc.) with a focus on providing opportunities for outdoor water efficiency improvements such as rotating sprinkler heads, in alignment with the current Statewide water conservation goals.
- **Action O-5.9:** Develop and adopt a schedule for installation of water meters in existing buildings and irrigation zones to establish a water consumption baseline at JPA and LVMWD owned properties with the Facilities Division. Reduce JPA and LVWMD water consumption per capita at facilities in alignment with the current statewide goals.
- **Action O-5.10:** Explore methods such as the deployment of a floating solar array to reduce the rate of evaporation from water storage facilities (e.g., Las Virgenes Reservoir).

- **Action O-5.11:** Investigate new advanced technology systems to maximize the ground-water recovery wells in Westlake Village to maintain local water supply. Invest in such technology as it becomes feasible and cost-effective. Consider other innovative ideas such as maximizing the storage potential of the Russel Valley Basin by installing injection wells to store excess water for later extraction.
- **Action O-5.12:** Update rates and modify fixed fees as needed so that the majority of fixed costs for water and wastewater services continue to be captured regardless of the amount of water consumption and wastewater collection and treatment.

Target Metrics

- Reduced water consumption by 20 percent by 2030 and maintain through 2045

GHG Emissions Reductions

- 855 MT CO_2e in 2030
- 0 MT CO_2e in 2045[74]

Objectives

- Increased Operational Efficiency & Resource Management
- Improved Operational Flexibility & Reliability

74. Senate Bill 100 requires all electricity providers in the state to provide 100 percent carbon free electricity by 2045; therefore, no GHG emissions reductions can be gained from water conservation measures in 2045, since the emissions factor for electricity will be zero.

MEASURE O-6: Develop resource programs and protocols to protect staff from climate extremes.

Climate change is projected to increase regional wildfire risk which is expected to contribute to worsened air quality from wildfire smoke and associated toxins. LVMWD and the JPA are expected to experience an increase in the number of extreme heat days per year and an increase in overall average maximum temperature. Extreme heat events and wildfire smoke events can create or exacerbate health conditions of vulnerable District staff members. This measure seeks to reduce the potential health impacts to District staff. The first step for LVMWD and the JPA is to educate employees of the health and safety risks associated with climate extremes and to conduct outreach to understand employee concerns. Development and implementation of specific protocols that align with California's Division of Occupations Safety and Health's (Cal/OSHA) standards and protocols will help protect LVMWD employees.[75]

Actions

- **Action O-6.1:** Develop and distribute a survey to staff to identify climate change impacts that pose health and safety risks to employees. As part of the survey, ask employees which existing policies and programs adequately provide them with resources to mitigate impacts and ask what potential programs and policies may provide additional resources to limit health and safety concerns associated with climate hazards.
- **Action O-6.2:** Develop internal protocols for employees working under extreme heat conditions and air quality emergencies, in alignment with Cal/OSHA heat illness and prevention guidance.
- **Action O-6.3:** Develop protocols for wildfire emergencies and host annual practice/drills to ensure service continuity and employee safety.
- **Action O-6.4:** Provide employees with educational materials on relevant climate hazards and associated health and safety impacts (i.e., extreme heat induced health impacts) to increase awareness of risks and share best practices to increase adaptive capacity.

Target Metrics

- Develop and distribute survey to staff
- Develop protocols
- Develop and share education materials

GHG Emissions Reductions

- GHG Emissions Not Quantified

Objectives

- Better Connected People and Water

75. State of California Department of Industrial Relations. Heat Illness Prevention. https://www.dir.ca.gov/dosh/heatillnessinfo.html. *Accessed July 2023*

MEASURE O-7: Maximize operational flexibility and redundancies, including water transfer agreements, interties, flexible exchanges, additional system interconnections, and points of delivery.

Climate change is projected to increase the intensity, duration, and frequency of extreme heat and extreme weather events, which will increase the probability of power and water service disruptions. Additionally, LVMWD's potable water system is largely dependent on imported water supplies that may be subject to scheduled and unscheduled water delivery interruption that may impact the ability to deliver potable water. This measure seeks to increase redundancies and operational flexibilities to protect service continuity during emergency/hazard scenarios and potable water disruptions. LVMWD and the JPA have a history of fostering strong partnerships with local and regional entities including Calleguas Municipal Water District, Los Angeles Department of Water and Power (LADWP), and neighboring jurisdictions.[76] Developing interties, water transfer agreements, and other redundancies will improve future reliability.

Actions

- **Action O-7.1:** Partner with neighboring water providers, starting with District 29, to develop additional emergency water system interties to ensure water service continuity and reliability.
- **Action O-7.2:** Continue partnering with Calleguas Municipal Water District and LAWDP to improve connectivity with Metropolitan Water District's Colorado River Aqueduct (CRA) system via the East-West Feeder, Sepulveda Pass and other opportunities.
- **Action O-7.3:** Continue to coordinate with neighboring jurisdictions to ensure adequate water availability and peak load water supply for fire suppression efforts in alignment with CAL FIRE's recommendations.
- **Action O-7.4:** As necessary, increase storage capacity where feasible at water system facilities to prepare for wildfire and drought periods.

Target Metrics

- Agreements, interties, system interconnections and other redundancies developed

GHG Emissions Reductions

- GHG Emissions Not Quantified

Objectives

- Enhanced Water Supply Diversification
- Improved Operational Flexibility & Reliability
- Better Connected People and Water

76. *LVMWD. Las Virgenes-Calleguas Interconnection Project.* ***https://www.lvmwd.com/our-services/construction-projects/construction-projects-completed/las-virgenes-calleguas-interconnection-project****. Accessed July 2023*

NATURAL RESOURCES MEASURES

MEASURE NR-1: Investigate and implement carbon sequestration opportunities to offset all Water Reclamation Facility fugitive emissions by 2045.

This measure provides opportunities for negative emissions through carbon sequestration on natural and working lands (e.g., rangeland, forests, woodlands, wetlands and coastal areas, grasslands, shrubland, farmland, riparian areas, and urban green space). Carbon sequestration programs will be an important tool to mitigate some of LVMWD's and the JPA's emissions. While carbon sequestration programs can require a large investment up-front, this cost could be mitigated through credit generation opportunities based on CARB's "Carbon Capture and Sequestration protocol" adopted in 2018 as well as through other voluntary and Federal carbon markets.[77]

Actions

- **Action NR-1.1:** Conduct an assessment to identify the potential capacity for planting new trees, identify a timeframe for implementation, outline a management plan for existing trees, and establish a tracking system to assess progress towards an annual benchmark.
- **Action NR-1.2:** Partner with TreePeople or other organizations to develop and host an annual employee tree planting day.
- **Action NR-1.3:** Increase carbon sequestration by planting and supporting 25 new trees annually through 2030 to sequester carbon and create shade to reduce heat island effect.
- **Action NR-1.4:** Explore grant funding opportunities for tree planting. Identify and apply for applicable federal (e.g., USDA) and state (e.g., California ReLeaf, Affordable Housing and Sustainable Communities Program [AHSC], Urban and Community Forestry Program) available grants for Tree Planting projects.
- **Action NR-1.5:** As part of the Landscape Transformation Initiative, develop landscape guidance materials that include information regarding flora CO_2 sequestration potential to promote the incorporation of landscape plants that are both climate resilient and CO_2 sequestering. Climate resilient species have characteristics of drought tolerance, low water use, pest and disease resistance, fire-retardant or fire-resistance, and salinity tolerance. Consider vegetative options with higher CO_2 sequestration potential for JPA and LVMWD facilities landscaping.

Target Metrics

- 25 new trees planted annually through 2030

GHG Emissions Reductions

- 6 MT CO_2e in 2030
- 48 MT CO_2e in 2045

Objectives

- Better Protected Water Resources
- Increased Operational Efficiency & Resource Management

77. *CARB. 2023. Carbon Capture and Sequestration Protocol.* ***https://ww2.arb.ca.gov/resources/documents/carbon-capture-and-sequestration-protocol-under-low-carbon-fuel-standard#:~:text=California%20Air%20Resources%20Board,-Main%20navigation&text=The%20Carbon%20Capture%20and%20Sequestration,(CO2%2D%20EOR)****. Accessed July 2023*

MEASURE NR-2: Catalog and improve the stability of hillside monitoring and stabilization efforts after heavy rain events in areas at risk of landslides and debris flows to minimize impacts to infrastructure and equipment.

Climate change is projected to increase the frequency and intensity of extreme precipitation events and wildfires, which can increase landslides and debris flow susceptibility. This measure seeks to implement mitigation efforts to minimize infrastructure and equipment vulnerability to landslides and debris flows. Implementing landslide monitoring equipment can report critical data regarding slope stability/hillside movement and precipitation measurements. Equipment may also provide automated warming and alarms in advance of a potential hazard scenario.[78]

Actions

- **Action NR-2.1:** Conduct a landslide risk vulnerability assessment of critical assets to identify which assets are most vulnerable to damage from landslides and debris flows.
- **Action NR-2.2:** Install landslide monitoring equipment in landslide susceptibility areas that are adjacent to critical assets.
- **Action NR-2.3:** Based on the vulnerability assessment, conduct hardening upgrades to critical JPA and LVMWD assets that are most vulnerable to damage from landslides and debris flows.

Target Metrics

- Assets upgraded
- Monitoring equipment installed

GHG Emissions Reductions

- GHG Emissions Not Quantified

Objectives

- Better Protected Water Resources

78. Call&Nicholas Instruments, Inc. Real-Time Slope Monitoring. ***https://www.slideminder.com/****. Accessed July 2023*

MEASURE NR-3: Protect Las Virgenes Reservoir from sedimentation associated with extreme climate events.

Climate change is projected to increase the frequency and intensity of extreme precipitation and wildfires, which may trigger erosion and landslides, increasing sediment levels in Las Virgenes Reservoir which can lead to water quality impacts.[79] This measure seeks to protect Las Virgenes Reservoir from increased sedimentation through various sediment control management efforts that are focused to minimize erosion, remove sediment, and increase treatment capabilities.

Actions

- **Action NR-3.1:** Develop procedures to regularly measure reservoir sedimentation volume to determine the varying rates and patterns of potential storage loss.
- **Action NR-3.2:** Implement strategies to mitigate reservoir sedimentation including sediment removal by dredging or flushing.
- **Action NR-3.3:** Develop a vegetation and erosion management strategy to mitigate fire risk around Las Virgenes Reservoir to minimize potential post-fire soil erosion impacts on reservoir sedimentation.
- **Action NR-3.4:** Increase wastewater treatment capabilities to manage potential future sediment levels from future stormwater, landslide, wildfire, and erosion impacts.

Target Metrics

- Sediment level reduced

GHG Emissions Reductions

- GHG Emissions Not Quantified

Objectives

- Better Protected Water Resources

79. EPA. Climate Adaptation and Erosion and Sedimentation. ***https://www.epa.gov/arc-x/climate-adaptation-and-erosion-sedimentation****. Accessed July 2023*

MEASURE NR-4: Develop and implement a wildfire abatement and response policy.

Climate change is projected to increase the frequency and intensity of wildfire in the District's service area. LVMWD and JPA assets and infrastructure located in High, and Very High Fire Hazard Severity Zones are at greatest risk to impacts from wildfire. Wildfire can create risk of injury or death, damage to properties, critical facilities, infrastructure, and need for evacuation. Cascading impacts may also include worsened air quality, contaminated water supplies, power outages, and other service disruptions. This measure seeks to mitigate wildfire risk and potential future impacts through strategies that reduce vegetation and structural ignition, harden infrastructure and assets, and increase fire suppression capabilities. Relocating critical infrastructure and facilities outside of Fire Hazard Severity Zones should be considered if retrofits and upgrades are not feasible or provide adequate protection from potential fires.[80]

Actions

- **Action NR-4.1:** In the development of a wildfire abatement and response policy, develop strategies to mitigate risk from wildfire through defensible space, fire-safe landscaping, reduction of structural ignition, fire resistant retrofitting, fire suppression water flow, and vegetation management, in alignment with CAL FIRE guidance, standards, and building codes.
- **Action NR-4.2:** Develop criteria for future structure and facility developments to reduce vulnerability to ember ignition.
- **Action NR-4.3:** Dedicate staff time to identify funding (e.g., CAL FIRE or FEMA) to implement upgrades or retrofits to mitigate wildfire risk.
- **Action NR-4.4:** Conduct hardening upgrades to structures and facilities (i.e., reservoirs, pump structures, treatment facilities, and administrative offices) that are in CAL FIRE High and Very High Fire Hazard Severity Zones.
- **Action NR-4.5:** When retrofits and upgrades are not adequate or feasible, develop plans to relocate critical assets outside of CAL FIRE High and Very High Fire Hazard Severity Zones to the extent practicable.
- **Action NR-4.6:** Develop a schedule and monitor vegetative management efforts and defensible space relative to critical assets at risk.
- **Action NR-4.7:** Coordinate with CAL Fire, Los Angeles County Fire Department, and surrounding property owners to ensure adequate fire road access to critical JPA and LVMWD facilities.

Target Metrics

- Wildfire abatement and response policy development and implementation
- Facilities and structures retrofitted, upgraded, or relocated

GHG Emissions

- GHG Emissions Not Quantified

Objectives

- Better Protected Water Resources
- Improved Operational Flexibility & Reliability
- Better Connected People and Water

80. UC ANR et al. 2021. Wildfire & Water Supply in California. ***https://innovation.luskin.ucla.edu/wp-content/uploads/2021/12/Wildfire-and-Water-Supply-in-California.pdf****. Accessed July 2023*

7.

IMPLEMENTATION AND MONITORING STRATEGY

CAAP IMPLEMENTATION

This CAAP outlines specific measures and actions to achieve GHG emissions reduction and improve the resilience of LVMWD's and the JPA's operations to climate change. Implementation of the CAAP is planned to occur between 2023 and 2045. Due to the long implementation time-period of the CAAP, measures and actions may evolve over time as LVMWD and the JPA track progress, new technologies and legislation emerge, and funding opportunities for additional GHG emissions reduction and climate adaptation opportunities are identified. This section details an implementation plan for the CAAP, which will include transforming measures and actions into on-the-ground policies, programs, and projects. Implementation of this CAAP is grounded in science, best available data, and current best practices in climate action and adaptation planning.

Steps for Implementation: Action Prioritization

The CAAP will take a phased approach to action implementation.

- **Phase 1** will occur in the near-term (beginning of 2023–2026).
- **Phase 2** will include the implementation of mid-term actions (2026–2029).
- **Phase 3** will include the implementation of long-term actions (2029–2045).

Near-term actions with the greatest return for the least amount of investment, such as energy efficiency projects, water efficiency projects, and protocols/policies, often provide opportunities for early GHG reductions and climate adaptation from which future capital or time-intensive actions can build. Feasibility studies and surveys can often be completed in the near-term to set a foundation for long-term capital investments or infrastructure developments that will provide LVMWD and the JPA with significant GHG emissions reduction, lifecycle cost savings, and long-term resilience to the impacts of climate change.

Table 7-1 provides a summary of the priority measures and actions, as well as their identified phase, responsible department, and metrics for tracking. The CAAP primarily focuses on Phase 1 and 2 measures and actions. Over time additional actions may need to be adopted to achieve the long-term goal of carbon neutrality and further adapt to climate change. New technologies and approaches should be monitored and incorporated into future planning initiatives.

TRIUNFO WATER & SANITATION DISTRICT

LAS VIRGENES MUNICIPAL WATER DISTRICT

RESPONSIBLE PARTIES

Planned CAAP implementation and monitoring is central to the success of any CAAP in achieving GHG reduction targets and increasing resilience to climate change. Implementation planning involves identifying responsible parties for implementation. Several divisions within LVMWD and the JPA will play a key role in the CAAP's implementation and monitoring. Responsible parties are listed and described below.[81]

Facilities

The Facilities Division is responsible for the maintenance, regulatory compliance, and replacement needs of the District Headquarters, potable water, recycled water, and sanitation facilities. The Division will play a critical role in implementing waste, energy, and other resource reduction measures, carbon capture and sequestration measures, and several climate hazard mitigation measures at LVMWD and JPA facilities. The maintenance team will also be responsible for identifying opportunities to increase energy efficiency and to decarbonize vehicles, stationary equipment, and facilities.

Water Systems

The Water Systems Division is responsible for the day-to-day operations, and regulatory compliance of the potable water distribution, storage and treatments facilities and the recycled water storage and conveyance system. . The Division will play a key role in future implementation and operations of the Advanced Water Purification Facility for the Pure Water Project Las Virgenes - Triunfo, maximizing operational flexibility and redundancies, and increasing regional dry and wet weather diversions.

Water Reclamation

The Water Reclamations Division is responsible for the day-to-day operations and regulatory compliance of the Tapia Water Reclamation Facility. The Division will play a key role in efforts to reduce GHG emissions associated with wastewater treatment, increase wastewater treatment capabilities, and manage future battery storage systems at water system facilities.

Finance

The Finance Division is responsible for managing the purchasing processes, financing options, and cost-effectiveness of the District's operations. In collaboration with other departments and divisions, the Division will play a major role in identifying and administering funding and financing opportunities to support the implementation of CAAP actions, especially those that require significant capital investments including solar photovoltaics, EV chargers, and battery storage solutions.

*81. LVMWD. 2023. Management. **https://www.lvmwd.com/the-district/departments**. Accessed July 2023*

Human Resources

The Human Resources Division provides guidance and support to all departments for recruitment, selection, classification/salary structures, employee benefits, employee relations, employee training, labor negotiations, performance evaluations, employee development, safety and other personnel programs and processes. The Division will play a critical role in leading efforts to implement protocols and programs to protect staff from climate extremes and promoting continued efforts to support the teleworking program and other potential programs such as rideshares.

Information Systems

The Information Systems Division supports a local area network with servers, software applications, desktop computers, laptops, wireless access points, firewalls, switches, and closed-circuit television (CCTV) cameras. The Division also manages the SCADA system, web services, Multiprotocol Label Switching (MPLS) network, Voice Over Internet Protocol (VOIP) telephony, Geographic Information Systems (GIS) and many real-time IP based communications systems, such as security video applications. The Division will play a critical role in improving the SCADA system to increase operational efficiency, optimization, and control.

Engineering and Technical Services

The Engineering and Technical Servies Division is primarily responsible for project engineering and management, construction, and inspections. The Division will play a key role in conducting feasibility studies and assessments and managing capital improvement projects, such as onsite renewables, batter storage systems, and facility hardening upgrades.

Public Affairs and Communications

The Public Affairs and Communications Division manages external communications and works closely with local partners, including schools and community organizations to promote water awareness, water conservation, and environmental stewardship. The Division often supports and participates in local community events around these topics. The Division will play a key role in continuing and developing new outreach and engagement efforts around water conservation and climate resilient landscaping.

Resource Conservation

The Resource Conservation Division is responsible for the management of water resources and conservation efforts. The Division administers LVMWD's rebate programs including but not limited to the Weather-Based Irrigation and the Rain Barrel Giveaway/Rebate programs and the Landscape Transformation Program. The Division will play a key role in implementing CAAP efforts related to increasing water conservation, expanding rebate programs, and supporting the conversion from water intensive landscaping.

Customer Service

The Customer Service Division is responsible for customer billing, water meter installations and maintenance, water meter data management, the installation of flow restrictors and service shut-offs associated with wasteful water use, and other customer-centric tasks.

Table 7-1. Implementation Timeline by CAAP Action

Measure/ Action	Phase	Primary Implementing Divisions	Implementation Metric
Measure I-1 Utilize carbon-free electricity for 100% of electricity needs by 2030.			
I-1.1	2-3	Engineering and Technical Services, Facilities	MW of solar installed
I-1.2	1	Engineering and Technical Services, Facilities	Feasibility study completed
I-1.3	1	Engineering and Technical Services, Facilities	Assessment completed
I-1.4	1-2	Engineering and Technical Services, Facilities, Finance	Funding identified
I-1.5	2-3	Engineering and Technical Services, Facilities	MW of solar installed
I-1.6	1-2	Engineering and Technical Services, Facilities	Incorporate design elements to minimize GHG emissions
I-1.7	1	Engineering and Technical Services, Facilities, Finance	Analysis completed
I-1.8	1	Facilities	Switch to low carbon or carbon-free electricity
I-1.9	1	Engineering and Technical Services, Facilities	Study completed
Measure I-2 Electrify new and existing stationary equipment to reduce natural gas consumption 75% by 2030 and 100% by 2045.			
I-2.1	1	Engineering and Technical Services, Facilities	Survey completed
I-2.2	1	Facilities, Finance	Policy implemented
I-2.3	1-2	Facilities, Finance	Funding and partnership opportunities identified
I-2.4	1-3	Facilities	Schedule implemented
Measure I-3 Utilize renewable diesel and alternative fuels to bridge the technology gap and decarbonize stationary equipment to reduce diesel consumption by stationary equipment 100% by 2030.			
I-3.1	1	Facilities	Feasibility assessment completed
I-3.2	1-2	Facilities	Partners identified
I-3.3	1	Facilities, Finance	Policy implemented
I-3.4	1	Facilities	Educational materials developed
I-3.5	1-3	Facilities, Finance	LCFS credits monetized

Measure/ Action	Phase	Primary Implementing Divisions	Implementation Metric
Measure I-4 Increase energy storage at facilities and buildings.			
I-4.1	1	Engineering and Technical Services, Facilities	Assessment completed
I-4.2	1	Engineering and Technical Services, Facilities	Feasibility study completed; battery storage identified
I-4.3	1-2	Facilities, Finance	Funding opportunities identified
I-4.4	1-3	Facilities	Time of use program documentation
Measure I-5 Improve energy efficiency at facilities and buildings.			
I-5.1	1	Facilities, Water Systems, Water Reclamation	Equipment due for replacement identified; ROI analysis completed
I-5.2	1-3	Facilities, Water Systems, Water Reclamation	Policy developed and implemented
I-5.3	1-3	Facilities, Water Systems, Water Reclamation	Energy audits conducted; Energy recommendations implemented
I-5.4	1-3	Facilities, Water Systems, Water Reclamation	Automated lighting controls implemented
I-5.5	1-3	Facilities, Water Systems, Water Reclamation	Requirement implemented
I-5.6	1-3	Facilities, Water Systems, Water Reclamation	Electricity usage reduced
I-5.7	1-3	Engineering and Technical Services, Facilities	Cool roofs implemented
Measure I-6 Reduce process and fugitive GHG emissions associated with wastewater treatment.			
I-6.1	1-2	Engineering and Technical Services, Water Reclamation	Feasibility and cost analysis completed
I-6.2	1-2	Engineering and Technical Services, Water Reclamation	Partnerships identified
I-6.3	2-3	Engineering and Technical Services, Water Reclamation	Total nitrogen reduced
Measure I-7 Maximize backup power facilities for all critical assets, in alignment with Measure I-4			
I-7.1	1	Engineering and Technical Services, Facilities	Backup power facilities identified
I-7.2	1	Engineering and Technical Services, Facilities	Requirement established and implemented
I-7.3	1-2	Engineering and Technical Services, Facilities, Finance	Funding secured
I-7.4	1-2	Engineering and Technical Services, Facilities	Battery energy storage system procured; generators procured

Measure/ Action	Phase	Primary Implementing Divisions	Implementation Metric
Measure I-8 Support the regional development of dry and wet weather stormwater diversions as a supplementary source for recycled potable water.			
I-8.1	1	Engineering and Technical Services, Facilities, Water Reclamation, Water Systems	Acre-feet of diversions
I-8.2	1-2	Engineering and Technical Services, Facilities, Water Reclamation, Water Systems, Finance	Funding programs identified
I-8.3	1	Engineering and Technical Services, Facilities, Water Reclamation, Water Systems	Assessment conducted
Measure I-9 Improve the Supervisory control and data acquisition (SCADA) system.			
I-9.1	1	Information Systems, Water Systems, Water Reclamation	SCADA design criteria revised
I-9.2	1-2	Information Systems, Water Systems, Water Reclamation, Finance	Field instrumentation hardware procured
I-9.3	1-2	Information Systems, Water Systems, Water Reclamation, Finance	Funding obtained
I-9.4	1-2	Information Systems, Water Systems, Water Reclamation	Procedures established
I-9.5	1	Information Systems, Water Systems, Water Reclamation	Setpoint optimization techniques implemented
Measure I-10 Require the incorporation and identification of mitigation and adaptation features into new capital projects.			
I-10.1	1	Engineering and Technical Services, Facilities, Water Systems, Water Reclamation	Design criteria developed and implemented
I-10.2	1-3	Engineering and Technical Services, Facilities, Water Systems, Water Reclamation	Planning documents and programs updated
I-10.3	1	Engineering and Technical Services, Facilities, Water Systems, Water Reclamation	Protocols developed
Measure I-11 Implement the Pure Water Project Las Virgenes Triunfo.			
I-11.1	1-2	Engineering and Technical Services, Water Systems, Facilities, Finance	Advanced Water Purification Facility developed
I-11.2	1-2	Engineering and Technical Services, Water Systems, Facilities, Finance	Climate projections and potential impacts integrated into design
I-11.3	1-2	Finance	Funding obtained
I-11.4	1-2	Engineering and Technical Services, Water Systems, Finance	Feasibility study completed

Measure/ Action	Phase	Primary Implementing Divisions	Implementation Metric
Measure O-1 Electrify or otherwise decarbonize the vehicle fleet such that 75% of the vehicle fleet are zero-emission vehicles (ZEV) by 2030 and 100% of the vehicle fleet are ZEV by 2045.			
O-1.1	1	Facilities Maintenance, Finance	Study completed
O-1.2	1-2	Facilities	Pilots conducted
O-1.3	1	Engineering and Technical Services, Facilities	EV infrastructure plan completed
O-1.4	1-2	Engineering and Technical Services, Facilities, Finance	EV charger installations funded; Panels upgraded
Measure O-2 Increase employee commute ZEV adoption to 25% by 2030 and 50% by 2045.			
O-2.1	1-2	Facilities Maintenance	EV chargers installed
O-2.2	1-2	Facilities Maintenance, Finance and Accounting	Partnerships and funding opportunities identified
O-2.3	1	Facilities Maintenance, Finance and Accounting	Vehicle charging/fueling discounted
O-2.4	1	Facilities Maintenance	Education materials developed and disseminated
Measure O-3 Reduce employee commute VMT by 15% by 2030 and 30% by 2045.			
O-3.1	1-3	Human Resources	Employee commute VMT reduced
O-3.2	1-3	Facilities, Finance	Funding opportunities identified
O-3.3	1-3	Human Resources, Facilities, Finance	Preferred parking spots developed; Incentives offered
O-3.4	1-3	Human Resources, Finance, Public Affairs and Communications	Educational materials developed and disseminated
Measure O-4 Develop a net zero waste program such that waste sent to the landfill is reduced by 90% by 2030 and maintain through 2045.			
O-4.1	1	Resource Conservation, Facilities	Organic waste separation program implemented
O-4.2	1	Resource Conservation, Facilities	Waste assessment conducted
O-4.3	1-2	Resource Conservation, Facilities	Funding opportunities identified
O-4.4	1-3	Resource Conservation, Facilities	Quarterly reports completed
O-4.5	1-3	Resource Conservation, Facilities	Staff training sessions hosted

Measure/ Action	Phase	Primary Implementing Divisions	Implementation Metric
Measure O-5 Increase water conservation by reducing demands by at least 20% by 2030 and maintain through 2045.			
O-5.1	1-3	Resource Conservation, Customer Service, Public Affairs and Communications	Programs and plans implemented; Water conserved
O-5.2	2	Engineering and Technical Services, Facilities, Finance	Pure Water Project implemented
O-5.3	1-2	Resource Conservation, Customer Service, Public Affairs and Communications	Recycled water use reduced; Potable water use reduced
O-5.4	1-3	Customer Service	WaterSmart Portal Registrants
O-5.5	1-3	Resource Conservation	Workshops hosted
O-5.6	1	Resource Conservation	Landscape Management Plan prepared
O-5.7	1-3	Resource Conservation	Policy implemented
O-5.8	1-3	Resource Conservation	Water conservation rebates provided
O-5.9	1	Customer Service	Schedule developed; Water meters installed
O-5.10	1-2	Engineering and Technical Services, Facilities	Water evaporation rate reduced
O-5.11	1-2	Engineering and Technical Services, Facilities, Water Systems	Technology procured
O-5.12	1	Finance	Rate structure changes implemented
Measure O-6 Develop resource programs and protocols to protect staff from climate extremes.			
O-6.1	1	Human Resources	Survey developed and distributed
O-6.2	1	Human Resources	Protocols developed
O-6.3	1	Human Resources	Protocols developed; Practice/drills hosted
O-6.4	1	Human Resources, Public Affairs and Communications	Educational materials developed and disseminated

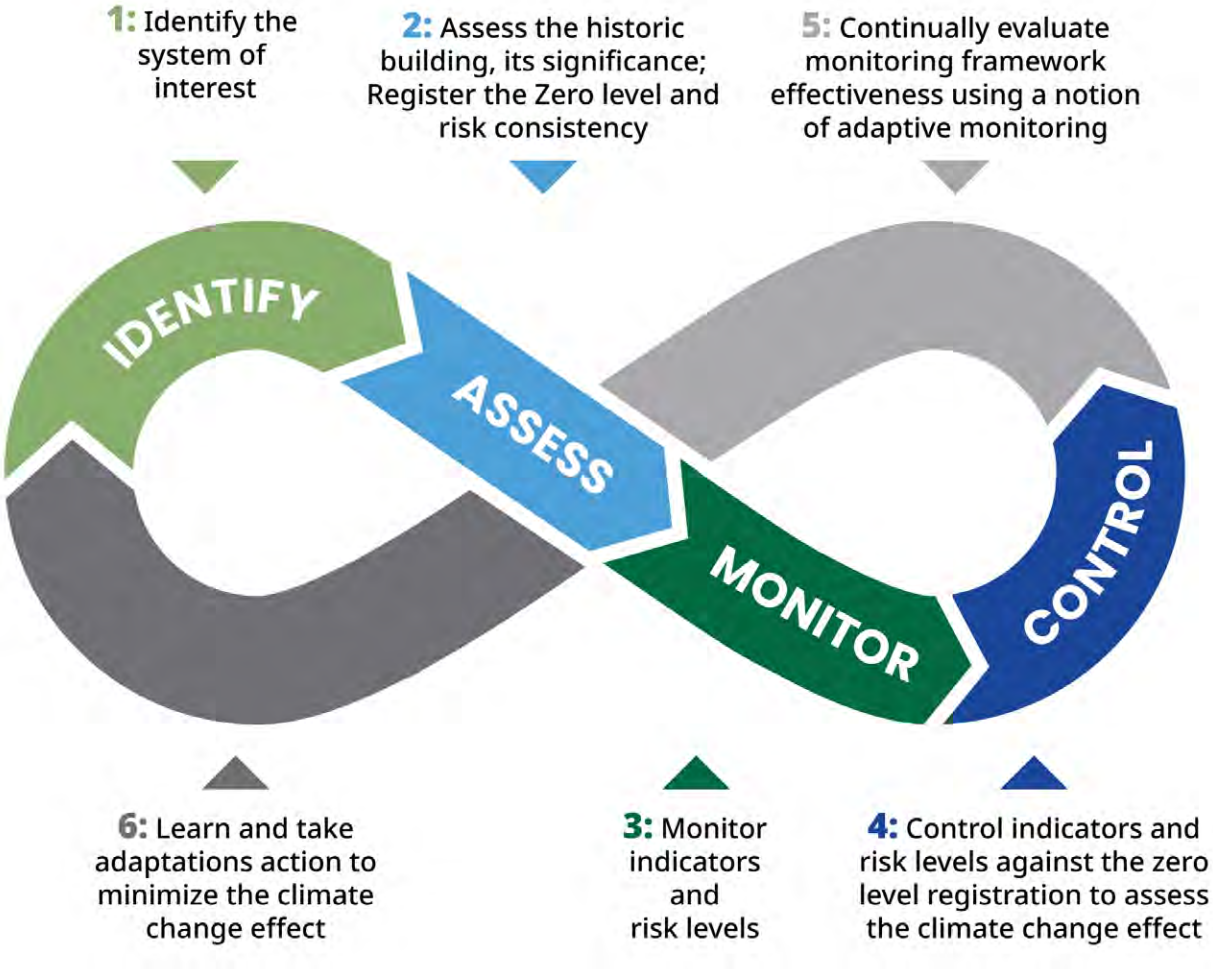
Measure/ Action	Phase	Primary Implementing Divisions	Implementation Metric
Measure O-7 Maximize operational flexibility and redundancies, including water transfer agreements, interties, flexible exchanges, additional system interconnections, and points of delivery.			
O-7.1	1-2	Engineering and Technical Services, Water Systems	Interties developed
0-7.2	1-3	Engineering and Technical Services, Water Systems	Connectivity improved
O-7.3	1-3	Engineering and Technical Services, Water Systems	Peak load water supply requirement met
O-7.4	1-2	Engineering and Technical Services, Water Systems	Water storage facilities developed
Measure NR-1 Investigate and implement carbon sequestration opportunities to offset all Water Reclamation Facility fugitive emissions by 2045.			
NR-1.1	1	Engineering and Technical Services, Resource Conservation	Assessment conducted
NR-1.2	1-3	Resources Conservation	Annual employee tree planting day hosted
NR-1.3	1-2	Resource Conservation	Trees planted
NR-1.4	1-2	Engineering and Technical Services, Resource Conservation, Finance	Funding opportunities identified and secured
NR-1.5	1	Resource Conservation	Landscape guidance materials developed and disseminated
Measure NR-2 Catalog and improve the stability of hillside monitoring and stabilization efforts after heavy rain events in areas at risk of landslides and debris flows to minimize impacts to District infrastructure and equipment.			
NR-2.1	1	Engineering and Technical Services	Vulnerability assessment completed
NR-2.2	1-3	Engineering and Technical Services	Landslide monitoring equipment installed
NR-2.3	1-3	Engineering and Technical Services	Assets upgraded
Measure NR-3 Protect the Las Virgenes Reservoir from sedimentation associated with extreme climate events.			
NR-3.1	1	Engineering and Technical Services, Water Systems	Procedures developed and implemented
NR-3.2	1-3	Engineering and Technical Services, Water Systems	Sediment removed
NR-3.3	1-2	Engineering and Technical Services, Water Systems	Vegetation and erosion management strategy developed and implemented
NR-3.4	1-2	Engineering and Technical Services, Water Systems	Sediment level reduced

Measure/ Action	Phase	Primary Implementing Divisions	Implementation Metric
Measure NR-4 Develop and implement a wildfire abatement and response policy.			
NR-4.1	1	Engineering and Technical Services, Facilities, Finance	Policy developed
NR-4.2	1	Engineering and Technical Services, Facilities, Finance	Criteria developed
NR-4.3	1-2	Engineering and Technical Services, Facilities, Finance	Funding identified and secured
NR-4.4	1-3	Engineering and Technical Services, Facilities, Finance	Structured and facilities upgraded
NR-4.5	2-3	Engineering and Technical Services, Facilities, Finance	Relocation plans developed
NR-4.6	1-3	Engineering and Technical Services, Facilities, Finance	Schedule developed
NR-4.7	1-3	Engineering and Technical Services, Facilities, Finance	Adequate fire road access maintained

CAAP MONITORING AND REPORTING ON PROGRESS

The climate action and adaptation planning process is infinitely iterative, as shown in Figure 7-1. As strategies and actions are implemented, it is imperative to assess success by tracking emissions reductions and variables such as cost and additional benefits achieved through implementation in order to understand the overall impact of each strategy. While substantial evidence suggests that the mitigation and adaptation measures and actions outlined in this CAAP have a high level of probability to achieve the 2030 target, consistent with SB 32, and increase resilience to climate change, uncertainty increases over time. If LVMWD and the JPA determine that implementation of specific strategies is not achieving the anticipated emissions reductions or resilience improvement, the strategy may have to be revised or replaced in order to establish a path forward to meet their ultimate goal of carbon neutrality by 2045.

Figure 7-1. CAAP Implementation and Monitoring Process



LVMWD CAAP Update Timeline

The Director of Engineering and External Affairs will report results on monitoring and implementation of each action, develop an updated GHG inventory, and report findings to LVMWD's and the JPA's Board of Directors annually. Every 5 years, the CAAP should be updated to include a revised GHG emissions forecast, assessment of climate change vulnerabilities, implementation status, and/or revised measures and actions. Technology, State legislation, funding, and operational changes over time may impact the rate of implementation and need for modification of the CAAP measures and actions. Therefore, the Director of Engineering and External Affairs will work with responsible department and division leaders to re-evaluate climate action and adaptation progress and factors influencing implementation. Through the evaluation process, LVMWD and the JPA may consider revising measures and actions in future CAAP updates.

Targets will be re-evaluated and assessed on a periodic basis to gauge progress made, address new regulations, and best practices, and evaluate LVMWD's and the JPA's ability to achieve GHG emissions reduction through the measures and actions outlined in Chapter 6. Additionally, climate change projections and potential impacts should be updated, as part of the Climate Change Vulnerability chapter (Chapter 3), in alignment with best available climate science. Measures and actions should be adjusted as more data and information become available to LVMWD and the JPA. They should also be tracked congruently with future State GHG reduction and climate adaptation legislation to ensure alignment.

Monitoring and Reporting Timeline

The CAAP implementation metrics will be monitored on an annual basis to track climate action and adaptation progress. The Director of Engineering and External Affairs will prepare an update on the implementation status of the CAAP's Measures (Table 7-1) on an annual basis, starting in 2024. As new technologies become available and new State mandates are adopted, LVMWD and the JPA may need to develop new or updated measures and actions. Re-evaluation of the CAAP's measures and actions will occur approximately every 5 years or more frequently. The Director of Engineering and External Affairs will report implementation monitoring results for each action, GHG inventory update results, and CAAP re-evaluation results to the LVMWD and JPA Board of Directors on an annual basis. Pictured below is the 5-megawatt solar field.

A.

APPENDIX

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Regulatory Context

As the impacts of climate change are becoming clearer, strategies to address climate change are emerging at all levels of government. This section provides an overview of the regulatory context at the international, state, and local levels relative to LVMWD's and the JPA's actions toward reducing GHG emissions.

International Climate Action Guidance

1992 United Nations Framework Convention on Climate Change

The primary international regulatory framework for GHG reduction is the United Nations Framework Convention on Climate Change Paris Agreement (UNFCCC). The UNFCCC is an international treaty adopted in 1992 with the objective of stabilizing atmospheric GHG concentrations to prevent disruptive anthropogenic climate change. The framework established non-binding limits on global GHG emissions and specified a process for negotiating future international climate-related agreements.[1]

1997 Kyoto Protocol

The Kyoto Protocol is an international treaty that was adopted in 1997 to extend and operationalize the UNFCCC. The protocol commits industrialized nations to reduce GHG emissions per county-specific targets, recognizing that they hold responsibility for existing atmospheric GHG levels. The Kyoto Protocol involves two commitment periods during which emissions reductions are to occur, the first of which took place between 2008-2012 and the second of which has not entered into force. [2]

2015 The Paris Agreement

The Paris Agreement is the first-ever universal, legally binding global climate agreement that was adopted in 2015 and has been ratified by 189 countries worldwide.[3] The Paris Agreement establishes a roadmap to keep the world under 2° C of warming with a goal of limiting an increase of temperature to 1.5° C. The agreement does not dictate one specific reduction target, instead relying on individual countries to set nationally

1 United Nations Framework Convention on Climate Change (UNFCCC). United Nations Framework Convention on Climate Change. https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf
2 UNFCCC. What is the Kyoto Protocol? https://unfccc.int/kyoto_protocol
3 UNFCCC. Paris Agreement - Status of Ratification. https://unfccc.int/process/the-paris-agreement/status-of-ratification

determined contributions (NDCs) or reductions based on GDP and other factors. According to the International Panel on Climate Change (IPCC) limiting global warming to 1.5° C will require global emissions to reduce through 2030 and hit carbon neutrality by mid-century.[4]

California Regulations and State GHG Targets

California remains a global leader in the effort to reduce GHG emissions and combat climate change through its mitigation and adaptation strategies. With the passage of Assembly Bill (AB) 32 in 2006, California became the first state in the United States to mandate GHG emission reductions across its entire economy. To support AB 32, California has enacted legislation, regulations, and executive orders (EO) that put it on course to achieve robust emission reductions and address the impacts of a changing climate. The following is a summary of executive and legislative actions most relevant to the CAP Update.

2002 Senate Bill 1078

In 2002, SB 1078, established the California Renewables Portfolio Standards (RPS) Program and was accelerated in 2006 by SB 107, requiring that 20 percent of retail electricity sales be composed of renewable energy sources by 2010. EO S-14-08 was signed in 2008 to further streamline California's renewable energy project approval process and increase the State's RPS to the most aggressive in the nation at 33 percent renewable power by 2020.

2002 Assembly Bill 1493

In 2002, AB 1493, also known as the Pavley Regulations, directed the California Air Resources Board (CARB) to establish regulations to reduce GHG emissions from passenger vehicles to the maximum and most cost-effective extent feasible. CARB approved the first set of regulations to reduce GHG emissions from passenger vehicles in 2004, with the regulations initially taking effect with the 2009 model year.

2005 Executive Order S-3-05

Executive Order (EO) S-3-05 was signed in 2005, establishing Statewide GHG emissions reduction targets for the years 2020 and 2050. The EO calls for the reduction of GHG emissions in California to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050. The 2050 emission reductions target would put the State’s emissions in line with the worldwide reductions needed to reach long-term climate stabilization as concluded by the IPCC *2007 Fourth Assessment Report*.

4 IPCC. Global Warming of 1.5 C. https://www.ipcc.ch/sr15/

2006 Assembly Bill 32

California's major initiative for reducing GHG emissions is outlined in AB 32, the "California Global Warming Solutions Act of 2006," which was signed into law in 2006. AB 32 codifies the Statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of Statewide GHG emissions.

Based on this guidance, CARB approved a 1990 Statewide GHG baseline and 2020 emissions limit of 427 million metric tons of CO_2 equivalent (MMT CO_2e). The Scoping Plan was approved by CARB on December 11, 2008, and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards,[5] and Cap-and-Trade) have been adopted since approval of the Scoping Plan.

In May 2014, CARB approved the first update to the AB 32 Scoping Plan. The 2014 Scoping Plan update defined CARB's climate change priorities for the next five years and set the groundwork to reach post-2020 Statewide goals. The update highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the State's longer-term GHG reduction strategies with other State policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

2007 Executive Order S-1-07

Also known as the Low Carbon Fuel Standard, EO S-1-07, issued in 2007, established a Statewide goal that requires transportation fuel providers to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. EO S-1-07 was readopted and amended in 2015 to require a 20 percent reduction in carbon intensity by 2030, the most stringent requirement in the nation. The new requirement aligns with California's overall 2030 target of reducing climate changing emissions 40 percent below 1990 levels by 2030, which was set by Senate Bill 32 and signed by the governor in 2016.

2007 Senate Bill 97

Signed in August 2007, SB 97 acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Natural Resources Agency adopted amendments to the State CEQA Guidelines for

5 On September 19, 2019, the National Highway Traffic Safety Agency (NHTSA) and the US Environmental Protection Agency (EPA) issued a final action entitled the One National Program on Federal Preemption of State Fuel Economy Standards Rule. This action finalizes Part I of the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule. This rule states that federal law preempts State and local tailpipe greenhouse gas (GHG) emissions standards as well as zero emission vehicle (ZEV) mandates. The SAFE Rule withdraws the Clean Air Act waiver it granted to California in January 2013 as it relates to California's GHG and zero emission vehicle programs.

the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and climate change impacts.

2008 Senate Bill 375

SB 375, signed in August 2008, enhances the State's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. In addition, SB 375 directs each of the State's 18 major Metropolitan Planning Organizations (MPOs), including the Metropolitan Transportation Commission (MTC), to prepare a "sustainable communities' strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the MPO's Regional Transportation Plan (RTP).

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035.

2009 California Green Building Code

The California Green Building Standards Code (CALGreen) is Part 11 of the California Building Standards Code or Title 24 and is the first Statewide "green" building code in the nation. The purpose of CALGreen is to improve public health, safety, and general welfare by enhancing the design and construction of buildings. Enhancements include reduced negative impact designs, positive environmental impact designs, and encouragement of sustainable construction practices. The first CALGreen Code was adopted in 2009 and has been updated in 2013, 2016, and 2019. The CALGreen Code will have subsequent, and continually more stringent, updates every three years.

2009 Senate Bill X7-7

In 2009, SB X7-7, also known as the Water Conservation Act, was signed, requiring all water suppliers to increase water use efficiency. This legislation sets an overall goal of reducing per capita urban water use by 20 percent by2020.

2011 Senate Bill 2X

In 2011, SB 2X was signed, requiring California energy providers to buy (or generate) 33 percent of their electricity from renewable energy sources by 2020.

2012 Assembly Bill 341

AB 341 directed the California Department of Resources Recycling and Recovery (CalRecycle) to develop and adopt regulations for mandatory commercial recycling. As of July 2012, businesses are required to recycle, and jurisdictions must implement a program that includes education, outreach, and monitoring. AB 341 also set a Statewide goal of 75 percent waste diversion by the year 2020.

2014 Assembly Bill 32 Scoping Plan Update

In 2014, CARB approved the first update to the Scoping Plan. This update defines CARB's climate change priorities and sets the groundwork to reach the post-2020 targets set forth in EO S-3-05. The update highlights California's progress toward meeting the near-term 2020 GHG emissions reduction target, defined in the original Scoping Plan. It also evaluates how to align California's longer-term GHG reduction strategies with other Statewide policy priorities, such as water, waste, natural resources, clean energy, transportation, and land use.

2014 Assembly Bill 1826

AB 1826 was signed in 2014 to increase the recycling of organic material. GHG emissions produced by the decomposition of these materials in landfills were identified as a significant source of emissions contributing to climate change. Therefore, reducing organic waste and increasing composting and mulching are goals set out by the AB 32 Scoping Plan. AB 1826 specifically requires jurisdictions to establish organic waste recycling programs by 2016, and phases in mandatory commercial organic waste recycling over time.

2015 Senate Bill 350

SB 350, the Clean Energy and Pollution Reduction Act of 2015, has two objectives: to increase the procurement of electricity from renewable sources from 33 percent to 50 percent by 2030 and to double the energy efficiency of electricity and natural gas end users through energy efficiency and conservation.

2015 Executive Order B-30-15

In 2015, EO B-30-15 was signed, establishing an interim GHG emissions reduction target to reduce emissions to 40 percent below 1990 levels by 2030. The EO also calls for another update to the CARB Scoping Plan.

2016 Senate Bill 32

On September 8, 2016, the governor signed SB 32 into law, extending AB 32 by requiring the State to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). The bill charges CARB to adopt the regulation so that the maximum technologically feasible emissions reductions are achieved in the most cost-effective way.

2016 Senate Bill 1383

Adopted in September 2016, SB 1383 requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels

- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

SB 1383 also requires CalRecycle, in consultation with CARB, to adopt regulations that achieve specified targets for reducing organic waste in landfills. The bill further requires 20% of edible food disposed of at the time to be recovered by 2025.

2017 Scoping Plan Update

On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 goal set by SB 32. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted policies, such as SB 350 and SB 1383.

The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2014 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with Statewide per capita goals of six metric tons (MT) CO_2e by 2030 and two MT CO_2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, subregional, or regional level), but not for specific individual projects because they include all emissions sectors in the State.

2018 Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the State's Renewables Portfolio Standard Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

2018 Executive Order B-55-18

Also, on September 10, 2018, the governor issued Executive Order B-55-18, which established a new Statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing Statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

2020 Advanced Clean Trucks Regulation

The Advanced Clean Trucks Regulation was approved on June 25, 2020. The regulation establishes a zero-emissions vehicle sales requirement for trucks or on-road vehicles over 8,500 lbs gross vehicle weight and set a one-time reporting requirement for large entities and fleets. Under the

regulation, manufacturers who certify Class 2b-8 chassis or complete vehicles with combustion engines are required to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. By 2035, zero-emission truck/chassis sales need to be 55% of Class 2b – 3 truck sales, 75% of Class 4 – 8 straight truck sales, and 40% of truck tractor sales. Additionally, the regulation established a one-time reporting requirement for large entities and fleets where fleet owners, with 50 or more trucks, are required to report about their existing fleet operations by March 15, 2021.

2022 Senate Bill 1020

Adopted in September 2022, SB 1020 advances the state's trajectory to 100 percent clean energy procurement by 2045 by creating clean energy targets of 90 percent by 2035 and 95 percent by 2040. SB 1020 builds upon SB 100, which accelerated the state's RPS, which requires electricity providers to increase procurement from eligible renewable energy resources to 60 percent by 2030 and 100 percent by 2045.

2022 Assembly Bill 1279

Adopted in September 2022, AB 1279, codifies the statewide carbon neutrality goal into a legally binding requirement for California to achieve carbon neutrality no later than 2045 and ensure 85 percent GHG emissions reduction under that goal. AB 1279 builds upon EO B-55-18 which originally established California's 2045 goal of carbon neutrality.

2022 Scoping Plan Update

In November 2022, CARB adopted the 2022 Scoping Plan, which provides a framework for achieving the 2045 carbon neutrality goal set forth by AB 1279. The 2022 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently approved legislation, such as AB 1279.

The 2022 Scoping Plan includes, for the first time, a robust discussion of the Natural and Working Lands (NWL) sectors as both sources of emissions and carbon sinks. The Plan also centers equity when outlining state climate investments and climate mitigation strategies. As with the 2014 and 2017 Scoping Plans, the 2022 Scoping Plan does not provide project-level thresholds for land use development.

2022 Advanced Clean Cars II

The Advanced Clean Cars II regulation was adopted in August 2022. The regulation amends the Zero-emission Vehicle Regulation to require an increasing number of zero-emission vehicles, and relies on advanced vehicle technologies, including battery electric, hydrogen fuel cell electric and plug-in hybrid electric-vehicles, to meet air quality, climate change emissions standards, and Executive Order N-79-20, which requires that all new passenger vehicles sold in California be zero emissions by 2035. The regulation also amends standards for gasoline cars and heavier passenger trucks to continue to reduce smog-forming emissions.

2023 Advanced Clean Fleet

Approved by CARB on April 28, 2023, the Advanced Clean Fleets Regulation requires fleets, businesses, and public entities that own or direct the operation of medium- and heavy-duty vehicles in California to transition to 100 percent zero-emission capable utility fleets by 2045. Under the regulation, fleet operators may choose to purchase only ZEVs beginning in 2024 and remove internal combustion engine vehicles at the end of their useful life or fleet operators may elect to meet the State's ZEV milestone targets as a percentage of the total fleet starting with vehicle types that are most suitable for electrification.

LAS VIRGENES MUNICIPAL WATER DISTRICT EST. 1958

Las Virgenes
Municipal Water District

4232 Las Virgenes Rd
Calabasas, CA 91302

(818) 251-2100

www.lvmwd.com

AGENDA ITEM NO. 6.B

DATE: October 2, 2023

TO: JPA Board of Directors

FROM: Finance and Administration

SUBJECT: Municipal Financial Advisory Services: Award

SUMMARY:

On August 8, 2023, the JPA circulated a Request for Proposals (RFP) for municipal financial advisory services. Proposals were received from seven firms and evaluated based on criteria outlined in the RFP. Based on the evaluation, staff recommends accepting the proposal from PFM Financial Advisors LLC due to their extensive experience with debt financing, expertise in providing financial advisory services and experience supporting similar water districts.

RECOMMENDATION(S):

Accept the proposal from PFM Financial Advisors LLC, and authorize the Administering Agent/General Manager to execute a five-year professional services agreement, in the amount of $300,000, for municipal financial advisory services.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The total cost of this action is approximately $300,000 to provide assistance with financing options for the Pure Water Project Las Virgenes-Triunfo through the Water Infrastructure and Innovation Act (WIFIA), State Revolving Funds (SRF), iBank and other potential funding sources, including but not limited to, interim financing.

DISCUSSION:

The JPA has a long-standing financial practice that favors a pay-as-you-go strategy for funding capital improvements. The JPA has no outstanding debt obligations. Additionally, each partner agency is responsible for paying its proportional share of annual capital expenditures. Recognizing the size and scope of the Pure Water Project Las Virgenes-Triunfo, the JPA and its member agencies recently approved the formation of the Las Virgenes-Triunfo Public Financing Authority that was officially filed with the California Secretary of the State on

September 12, 2023.

The financing of the Pure Water Project Las Virgenes-Triunfo will require significant services from a municipal financial advisor to provide assistance with the following items:

- As-needed financial advice regarding market conditions and trends, financial products, credit analysis, alternative financing, State or Federally subsidized loan programs, and other specialty financing.
- Providing strategies for managing future debt.
- Developing and recommending financing structuring options, including the development of financial plans.
- Managing the implementation of approved Pure Water financing strategies. The work includes, but is not limited to, advising and supporting selection of members of the financing team, as appropriate, for the selected financing instrument. This may include assisting with the preparation of Requests for Proposals, assisting with the selection process by serving on the evaluation committee, and contract negotiations with bond counsel, underwriters, and other team members as appropriate for the type of financing selected. The municipal advisor will be responsible for ensuring the performance of the entire term and deliverables. The municipal advisor will also be responsible for arranging for any needed future reporting and maintenance activities.
- Conducting independent analyses of all financing options for the Pure Water Project Las Virgenes-Triunfo.
- Providing other financial services as required.

Consultant Selection:

On August 8, 2023, the District circulated a Request for Proposals (RFP) for municipal financial advisory services and advertised the RFP on the California Society of Municipal Finance Officers (CSMFO) and District websites. Seven proposals were received timely and evaluated by staff of LVMWD and TWSD based on technical qualifications, experience and hourly rates. Based on the results of the evaluation, the team recommends selection of PFM Financial Advisors LLC to serve as the JPA’s municipal financial advisor.

PFM and its proposed team have extensive experience with public financing for water and wastewater agencies, the State Revolving Fund Program (SRF), Water Infrastructure Finance and Innovation Act (WIFIA), debt issuance and other financial advisory services. The team has provided financial services to numerous state and local water agencies within California and throughout the U.S. In addition, the team has demonstrated expertise in current financing trends and the ability to successfully accomplish the scope of work.

Proposed Contract Structure:

Due to the nature of financial advisory services, the benefits of having continuity through project planning and debt issuance and to ensure that continuing disclosures and other bond covenants are met, it is recommended that the agreement for the municipal advisor be for a five-year term. If at any time the selected firm fails to fulfill the terms of the agreement or meet the JPA's needs, the contract can be terminated by the JPA. The level-of-effort to complete the scope of work is largely dependent on the JPA's selection of financing strategies. As a result, the amount of the initial term of the agreement is recommended to be set at $300,000 for budgetary purposes. As specific financing strategies are developed, additional funding for

implementation and execution of the strategies may be required.

GOALS:

Ensure Effective Utilization of the Public's Assets and Money

Prepared by: Donald Patterson, Director of Finance and Administration

ATTACHMENTS:
Proposal by PFM Financial Advisors LLC

Las Virgenes Municipal Water District
& Las Virgenes – Triunfo Joint Powers Authority

Request for Proposal for Municipal Advisory Services

September 1, 2023

PFM Financial Advisors LLC
44 Montgomery Street, 3rd Floor
San Francisco, CA 94104
(415) 982-5544
www.pfm.com

Contact: Darren Hodge
Managing Director
hodged@pfm.com
(480) 318-1284

September 1, 2023

Las Virgenes Municipal Water District & Las Virgenes – Triunfo Joint Powers Authority

Request for Proposal for Municipal Advisory Services

Table of Contents

PFM Financial Advisors LLC

44 Montgomery Street
3rd Floor
San Francisco, CA
94104

415.982.5544
www.pfm.com

ABOUT PFM

This material is for general information purposes only and is not intended to provide specific advice or a specific recommendation.

Financial advisory services are provided by PFM Financial Advisors LLC, a registered municipal advisor with the Securities and Exchange Commission (SEC) and the Municipal Securities Rulemaking Board (MSRB) under the Dodd-Frank Act of 2010. Swap advisory services are provided by PFM Swap Advisors LLC which is registered as a municipal advisor with both the MSRB and SEC under the Dodd-Frank Act of 2010, and as a commodity trading advisor with the Commodity Futures Trading Commission. Additional applicable regulatory information is available upon request.

Consulting services are provided through PFM Group Consulting LLC. PFM Solutions LLC provides a financial modeling platform for strategic forecasting. A web-based platform for municipal bond information is provided through Munite LLC.

All services are provided through separate agreements with each company.

For more information regarding PFM's services or entities, please visit www.pfm.com.

Case studies throughout are provided for informational purposes only and do not represent an endorsement or testimonial by clients of PFM's financial advisory services. The results that PFM's financial advisory business obtained for the client illustrated was dependent upon client's circumstances and market conditions at the time of the transactions, and should not be viewed as a guarantee of future performance results.

September 1, 2023

Donald Patterson
Director of Finance & Administration
Las Virgenes Municipal Water District
4232 Las Virgenes Road
Calabasas, CA 91302

Dear Mr. Patterson,

PFM Financial Advisors LLC ("PFM") is pleased to provide our response to the Las Virgenes Municipal Water District ("District") and Las Virgenes – Triunfo Joint Powers Authority ("JPA") Request for Proposals for Municipal Advisory Services. We believe PFM is uniquely qualified to serve as the District and JPA's independent municipal advisor. We summarize some of the key reasons below:

pfm

44 Montgomery Street
3rd Floor
San Francisco, CA 94104
415.982.5544

pfm.com

- **National Experience and Local Knowledge –** PFM advises municipalities across the nation and in 2022 was the #1 ranked financial advisor in the industry.[1] This national footprint allows us to provide our clients with innovative financing solutions and best practices utilized from entities around the country. In addition, our in-State activity and presence keeps us attuned to the unique local operating environment and associated challenges faced by California water utilities. This combination of national presence and local expertise allows us to better understand our clients' needs and offer them relevant and innovative financing solutions.

- **Leading FA in Water Finance –** PFM is the leading FA in the water and wastewater utility sector having advised on $8.4 billion of bonds in 2022[2], making us the #1 ranked advisor in the space nationally. This provides us tremendous insight on and experience with the various forms of finance available to entities such as the JPA and District. In addition to "traditional" long-term financings, our firm has extensive experience with "alternative" forms of finance including short-term financing instruments, WIFIA and SRF loans, among others. Along with this transaction experience, we have assisted numerous water utilities with their long-term financial planning efforts including pro-forma model development, scenarios analysis and plan optimization. Further, we are well versed with the issues facing California water agencies, such as water diversity and drought resilience. This knowledge and experience allow us to better tailor our presentations to the rating agencies, provide thoughtful comments to disclosure documents and provide better overall advice and service to our clients.

- **Understanding of Special District Financing in California –** PFM works with many special districts in the California water sector. As such, we understand the limitations placed on special districts as it relates to debt financing of projects. Further, we are experienced in the ways to address the restrictions placed on special districts relating to new money financings, how to structure the transaction in a way which provides flexibility, eliminates market confusion and provides ease of use with future borrowings. We note that the JPA's financing will not be subject to these restrictions, however, we recognize

[1] *Source: Ipreo, as of December 31, 2022. Based on par amount and number of transactions.*
[2] *Source: Ipreo, as of December 31, 2022. Based on par amount and number of transactions.*

that the RFP also pertains to MA services directly to the District and therefore, this experience may be relevant in this respect.

- **Experience with WIFIA Loan Financing –** PFM is well versed in assisting our clients in analyzing, applying for and closing WIFIA loans. Since the program's inception in 2017, PFM has advised clients on 43 WIFIA loans and/or applications totaling over $7.4 billion. The proposed team for this engagement has closed WIFIA loans for Coachella Valley Water District, Inland Empire Utilities Agency, Sacramento County Water Authority and the City of Santa Cruz. This team is further in the LOI or application phases of three additional loans on behalf of clients.

- **Experience with SRF Loans –** PFM is experienced in assisting our clients in analyzing the benefits and considerations of SRF loans as well as analyzing the terms and conditions of such loans to ensure fit and applicability within our clients' debt portfolios. While SRF loans have historically been cost-effective, there are considerations that borrowers should be aware of going into an SRF loan so as not to be caught by surprise in the future. We will work closely with both the District and JPA as well as legal counsel in reviewing these considerations and loan agreements.

- **Rating Agency Expertise –** Being in the market more than any other financial advisor[3], PFM keeps abreast of changes with the rating agencies in terms of evolving rating agency criteria, germane topics of concern/interest, as well as successful rating strategies. As outlined in our response, over the last several years of drought and pandemic, PFM has assisted several of our utility clients in achieving upgrades (most recently with Contra Costa Water District's upgrade to AAA/AA+ in August 2023), effectively lowering the cost of their borrowings. We are skilled at helping our clients prepare for and present their credit to the rating agencies. We further recognize that the JPA may be in the process of (or may have already received) an indicative rating from Kroll. This is an important step in the WIFIA process and one that PFM can assist in finalizing as part of the loan execution (of which the final public rating is due within 30 days prior to loan execution – with some leeway in our experience given the uncertainty of EPA's readiness to close).

- **Market Leading Resources –** Along with our experience, we believe PFM's wide array of resources will prove beneficial to the District. In our view, PFM maintains many of the same resources and capabilities as the largest investment banks (other than underwriting bonds) to provide our clients access to the same information as the banks, but while serving as a fiduciary agent – providing comfort that the information and advice is provided independently, without bias and without conflicts of interest. These specialized resources include a dedicated Pricing Group, Quantitative Strategies Group, and a Marketing / Research Group. Furthermore, under separate contract, PFM also offers our clients Treasury Consulting, Management and Budget Consulting, Synario Financial modeling software, among others.

This will be a priority engagement for PFM, and the District and JPA should rest assured that the full resources of the firm will be available throughout the duration of our engagements. Further, while we have not proposed with a sub-consultant, PFM is happy to work with the District's existing consultants, particularly given the status and timing of the WIFIA loan, to ensure a seamless and

[3] *Source: Ipreo.*

successful closing. We thank you for your consideration and look forward to the opportunity of working for the District and the JPA.

This proposal is a firm and irrevocable offer for 90 days. Darren Hodge, Managing Director, is authorized to bind the firm contractually.

Sincerely,

PFM Financial Advisors LLC

Darren Hodge
Managing Director
1820 East Ray Road
Chandler, AZ 85225
hodged@pfm.com
(480) 318-1284

Jaime Trejo
Senior Managing Consultant
44 Montgomery Street, 3rd Floor
San Francisco, CA 94104
trejoj@pfm.com
(415) 393-7254

Firm Overview

PFM was founded in 1975[4] with the mission of providing independent financial advice to state and local governments, and governmental agencies and authorities in the debt issuance process or undertaking capital planning and budgeting. Today, PFM has one of the largest financial advisory teams in the public finance industry, maintaining an expansive national presence. PFM currently has more than 350 employees located in 32 offices and locations across the United States.

Darren Hodge, Managing Director, will lead PFM's team and is authorized to answer questions and to bind the firm. Darren will primarily be supported by a team located in our San Francisco office. While our proposed team also includes experts from around the nation, our presence in California allows us greater insight into the ongoings within the State as to legislative changes, fiscal challenges, new revenue sources, etc. In essence, we believe our team will bring the best of both worlds to the District: the resources, perspectives and expertise of a national firm with the presence and knowledge of a local firm.

PFM Financial Advisors LLC and its affiliates are indirect wholly-owned subsidiaries of a holding company known as PFM II, LLC. This holding company is 100% owned by the firm's 54 Managing Directors, who set the firm's strategic direction and manage specific practice areas. Services provided by affiliates of PFM's business are offered pursuant to separate engagement and fees.

Engagement Manager
Darren Hodge, Managing Director
1820 East Ray Road
Chandler, AZ 85225
480.318.1284; hodged@pfm.com

[4] *PFM's financial advisory business consists of PFM Financial Advisors LLC ("PFM") currently and also included former affiliate Public Financial Management Inc. ("PFM, Inc.") through December 6, 2021. PFM commenced operations on June 1, 2016. The registered municipal advisory services historically offered through former affiliate PFM, Inc. are now offered through PFM Financial Advisors LLC ("PFM").*

- **PFM Financial Advisors LLC:** advises on debt management and portfolio optimization, transaction structuring and execution, capital and financial planning, credit analysis, policy development, and investor relations strategies, among other services. PFM Financial Advisors LLC is a registered municipal advisor with the Securities and Exchange Commission ("SEC") and the Municipal Securities Rulemaking Board ("MSRB").
- **PFM Swap Advisors LLC ("PFMSA"):** PFMSA includes professionals dedicated to advising clients on initiating and managing interest rate swaps, and other derivative products in order to help manage the risk profile of their debt portfolio. PFMSA is registered as a municipal advisor with both the MSRB and SEC under the Dodd-Frank Act of 2010, and as a commodity trading advisor with the Commodity Futures Trading Commission.
- **PFM Group Consulting LLC:** PFM Group Consulting LLC's Management and Budget Consulting practice ("MBC") provides a broad range of services, including multi-year financial planning, consolidating and shared-services analysis, operational and program analysis, revenue maximization, fleet management, workforce analysis, and pension and other post-employment benefits ("OPEB") review and strategies.
- **PFM Solutions LLC:** PFM Solutions LLC provides innovative services and solutions to our clients, such as **Synario®**, a flexible financial modeling platform designed to produce dynamic, multi-year financial projections to facilitate strategic planning for various industry sectors.

Key Personnel

Describe the staffing model your firm will use to fulfill the Scope of Work. Provide resumes of all key personnel who will be assigned to the District. Any changes to the key personnel must be approved by the District prior to award.

PFM has assembled a uniquely qualified team of highly experienced professionals to best meet the District and JPA's needs. The project team will make serving the District and JPA a priority and will have the time, availability, and resources to provide the highest quality financial advisory services. The District and JPA can rest assured that it will have the presence and expertise of a local firm while also benefitting from the resources, capabilities and wide range of experience of a national firm.

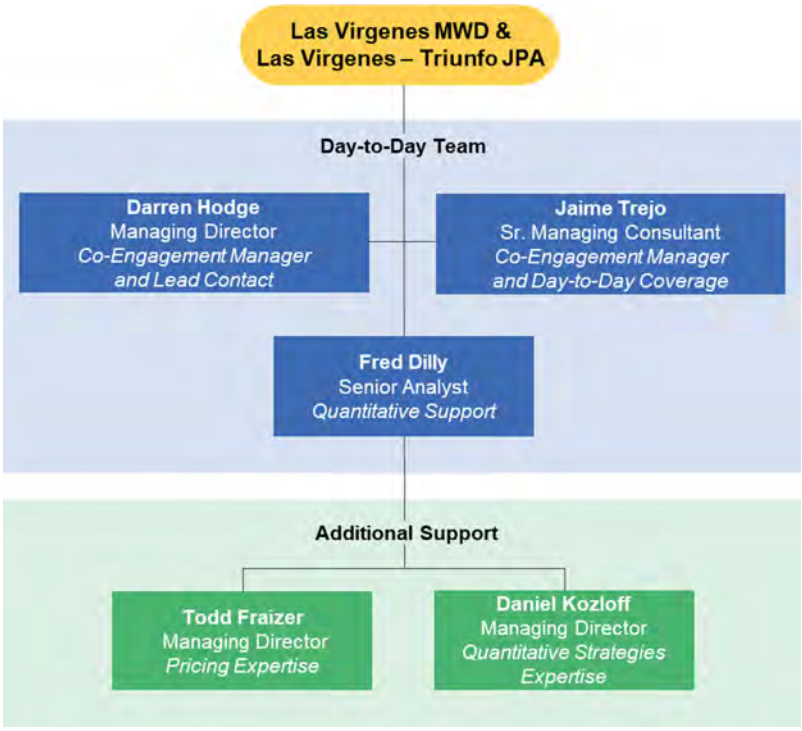
Darren Hodge, Managing Director, and Jaime Trejo, Senior Managing Consultant, will serve as co-engagement managers and primary points of contact for PFM's general relationship with the District and JPA. As a Managing Director, Darren is able to commit resources of the firm for the benefit of our clients to ensure their needs are met.

Darren Hodge, Managing Director, will provide expertise on water and wastewater finance, and focus on the District and JPA's long-term financial plan, overall financing issues, centralized resource management, accountability, and day-to-day coverage. Darren leads our California water and wastewater efforts and is well versed in working with utilities and special districts through the State. Darren has assisted his clients in the pertinent aspects of the RFP's scope of work including development of long-range financial plans, developing borrowing strategies, applying for and executing WIFIA loans and analyzing other financing sources such as SRF loans. **Jaime Trejo, Senior Managing Consultant,** will provide additional senior day-to-day coverage and rating agency expertise. **Fred Dilly, Senior Analyst**, will provide analytical support.

PFM's team includes our Quantitative Strategies Group, managed and operated by **Daniel Kozloff, Managing Director**. PFM's Quantitative Strategies Group provides primary technical, new product, transactional and modeling solutions to PFM's clients.

PFM also offers the District and JPA something no other independent financial advisory firm has—an expansive Pricing Group dedicated to supplying real-time market intelligence to the firm and its clients. **Todd Fraizer, Managing Director,** heads our Pricing Group and is involved in nearly every negotiated transaction for which PFM is financial advisor – several hundred annually.

We present our organization chart to the right. It is important to note that while PFM proposes a team with expansive resources and expertise, we will work with an eye towards cost maintenance. We realize that costs are always a consideration and as such, will only bring in additional support / expertise when it is beneficial to a specific effort. In this way we are able to provide the District and JPA market-leading service while maintaining an eye towards cost control.



Darren Hodge, Managing Director: Prior to joining PFM in 2015, Darren served as a municipal investment banker for 11 years at several large investment banks. He has experience in virtually every sector of municipal credits including utility revenue bonds, certificates of participation, lease revenue bonds, general obligation, and excise/sales taxes among others. This includes experience

in all aspects of executing transactions including developing finance plans, crafting rating agency strategies, implementing marketing programs, pricing bonds and accessing the capital markets through various means. Furthermore, Darren has assisted numerous of his clients in developing long-term financial plans and the related models – including Contra Costa Water District, Coachella Valley Water District, Inland Empire Utilities Agency and Zone 7 Water Agency, among others. He has assisted Coachella Valley Water District, Inland Empire Utilities Agency and Sacramento County Water Agency in closing WIFIA loans and is in the process of advising on three other potential loans which are in the LOI or application phases. Darren leads PFM's advisory services for many of our California water and wastewater clients and currently works with, among others, the Contra Costa Water District, Alameda County Water District, Atascadero Mutual Water Company, Metropolitan Water District of Southern California, Eastern Municipal Water District, Western Municipal Water District, Riverside Public Utilities, Inland Empire Utilities Agency, West Basin Municipal Water District, Zone 7 Water Agency and Coachella Valley Water District, among others.

Jaime Trejo, Senior Managing Consultant: Jaime joined PFM in 2016 and provides financial advisory services to cities throughout California. Jaime has advised scores of clients, both large and small, on debt transactions, and in the past five years, he has advised on over $1.5 billion in debt. Jaime specializes in transaction management, including debt structuring, credit rating strategy and legal document review. Jaime recently served as municipal advisor to the City of Santa Cruz in connection with their WIFIA loan. Jaime brings key quantitative knowledge and unique expertise of the credit process, previously completing over 300 credit ratings as a municipal credit analyst at Standard & Poor's Rating Services. Jaime has advised Central Marin Sanitation Agency and the water and wastewater utilities of the cities of Belmont, Pleasanton, and Santa Cruz.

Fred Dilly, Senior Analyst: Fred Dilly joined PFM in 2020 and currently works out of the San Francisco office. Fred provides technical and quantitative support for multiple utility and local government clients, but he also has experience with a variety of other public sector entities, including transportation agencies and bond banks. Most recently, he has been involved in transactions for the Contra Costa Water District, Inland Empire Utilities Agency, Coachella Valley Water District, Eastern Municipal Water District, Santa Margarita Water District, and the Metropolitan Water District of Southern California. In addition, Fred was a part of the municipal advisory team that assisted the Inland Empire Utilities Agency in connection with their 2022 WIFIA loan. In addition to his issuance experience, Fred specializes in creating sophisticated planning models to assist his clients in the financial planning process including building pro-forma models for the Contra Costa Water District, the Coachella Valley Water District, Inland Empire Utilities Agency and the Zone 7 Water Agency.

Please see **Appendix A** for full resumes.

References

List a minimum of three (3) references for whom comparable services were provided. Provide names and contact information as well as a summary of key results achieved.

PFM References	
Client Contact	**Description of Services**
Metropolitan Water District of Southern California Sam Smalls (213) 217-7863 ssmalls@mwdh2o.com 700 North Alameda St. Los Angeles, CA 90012	PFM currently serves as co-financial advisor to MWD and in 2021 advised on the Series 2021A fixed rate bonds, the remarketing of the 2017C, D & E SIFMA FRNs and two SBPA replacements on outstanding VRDBs. In 2022, PFM advised MWD on three refundings, the Series 2022A, 2022B and 2022C (taxable VRDBs) bonds. In 2023 PFM assisted Metropolitan with its Series 2023A new money bonds. In addition, PFM also maintains MWD's debt portfolio and assisted MWD in analyzing its comprehensive debt portfolio, preparing a full debt profile, analyzing assumptions and confirming calculations.
Contra Costa Water District CCWD Herman Williams (925) 688-8212 hwilliams@ccwater.com Celia Cheung (925) 688-8047 ccheung@ccwater.com 1331 Concord Ave. Concord, CA 94520	PFM has served as financial advisor to CCWD for well over a decade. Over this time we have assisted CCWD through numerous facets of finance, including: • New money bonds • Refunding bonds • Extendable Municipal Commercial Paper • Debt policy review and amendments In addition to transaction related elements, PFM has also assisted the District with its long range planning efforts. In 2021, the District contracted PFM to develop a financial model analyzing the impact of the potential $1 billion Canal Modernization Project. PFM maintains this model, providing requested updates to CCWD.
Inland Empire Utilities Agency Kristine Day (909) 993-1638 kday@ieua.org 6075 Kimball Avenue Chino, CA 91708	• Assisted in the process of procuring the 2020 WIFIA Loan. This includes preparing the Agency's WIFIA financial model and reviewing WIFIA loan documents and term sheets. • Assisted with issuing the Series 2020A Refunding Revenue Bonds, which refunded the Series 2008B Variable Rate Demand Revenue Refunding Bonds, Series 2010A Refunding Revenue Bonds, and certain Clean Water State Revolving Fund Financing Agreements from the California State Water Resources Control Board. • Assisted with issuing the Series 2020B Revenue Notes to provide interim financing for the 2020 WIFIA loan. • Assisted in the process of procuring the 2022 WIFIA Loan. This includes preparing the Agency's WIFIA financial model and reviewing WIFIA loan documents and term sheets. • Assisted IEUA in amending the definition of Projects within its 2022 WIFIA loan.

West Basin Municipal Water District Mary-Ann Rexrod (310) 660-6224 maryannr@westbasin.org 17140 S. Avalon Blvd Suite 210 Carson, CA 90746	PFM has served as municipal advisor to West Basin for nearly a decade. During this time we have advised on: • New money bonds; • Refundings; • Creation of an interim financing program; • Financial policy review; and • Developing strategies for the District's outstanding swap portfolio. In addition, PFM regularly assists the District in preparing financial strategies and plans for its annual budget meetings and assists the District in analyzing and developing finance plans for the District's CIP needs.

Qualifications and Experience

Describe your firm's qualifications to complete this Scope of Work. Explain why your firm is the best to deliver this Scope of Work and provide examples of your firm's work. Including experience providing services related to various financing strategies identified within this RFP. Please also include verification of registration as a Municipal Advisor with MSRB and SEC.

Top Financial Advisor

PFM's Financial Advisory business' national reputation and consistent growth are evident in our ranking as the nation's top financial advisor in terms of number of transactions and par amount for 28 straight years (source: Ipreo). In fact, in 2022, PFM served as financial advisor on over 650 transactions with a combined par value exceeding $59.8 billion[5]. While our top ranking is noteworthy, we believe it is also indicative of the depth of experience and the quality of services that our financial advisory team provides and the reputation of the firm in the market.

2022 Full Year Overall Long Term Municipal New Issues
Municipal Financial Advisory Ranking - Full Credit to Each Financial Advisor
Source: Ipreo

	# issues	$ in millions
PFM	**652**	**59,813**
Public Resources	145	46,856
Hilltop Securities	614	26,350
Frasca & Associates	46	20,803
Acacia Fin Group	108	13,970
Estrada Hinojosa	53	11,679
Piper Sandler	186	8,672
Backstrom McCarley	22	7,402
Montague DeRose	27	7,036
Sycamore Advisors	13	6,259

Water and Wastewater Experience

Specific to the District, PFM is one of the nation's leading financial advisors to water and wastewater issuers.[6] Our clients run the size spectrum from moderately-sized districts and cities that have periodic or one-time debt financing needs to the largest issuers that are in the market several times each year.

2022 Full Year Water Sewer & Gas Long Term Municipal New Issues
Municipal Financial Advisory Ranking - Full Credit to Each Financial Advisor
Source: Ipreo

	# issues	$ in millions
PFM	**62**	**8,439**
Municipal Cap Mkts	16	5,867
Hilltop Securities	64	5,248
Public Resources	11	2,315
Frasca & Associates	6	1,963
Lamont Financial	5	1,956
Montague DeRose	5	901
Baird	82	790
Piper Sandler	8	691
Hobbs, Ong	4	648

Since 2018, PFM has served as financial advisor for 354 issues in water and sewer financings totaling more than $28 billion in par.[7] In addition to debt issuance, PFM has served water and sewer issuers nationwide, providing a full range of advisory services including debt and investment management, strategic financial planning, and privatization analysis. The chart above reviews PFM's 2022 results, where PFM was a top ranked Water, Sewer & Gas financial advisor (62 Water, Sewer & Gas bond transactions totaling over $8.4 billion).[8]

We believe our level of transactional experience is without comparison, but it is important to note that PFM's expertise goes beyond debt financing. We routinely advise on strategic matters, such as long-term financial planning, financial policies, and credit matters.

In California, we maintain a similarly strong presence with water and sewer clients across the State having advised on over 56 different financings with a combined par amount exceeding $3.6 billion (of which 13 transactions, $1.4

[5] *Source: Ipreo, as of December 31, 2022. Based on par amount and number of transactions.*
[6] *Source: Ipreo, as of December 31, 2022. Based on par amount and number of transactions.*
[7] *Source: Ipreo, as of December 31, 2022. Based on par amount and number of transactions.*
[8] *Source: Ipreo, as of December 31, 2022. Based on par amount and number of transactions.*

billion in par, occurred in 2022).[9] In the last 12 months alone, we have worked with our California water clients on a variety of engagements including debt financing, analyzing/applying for WIFIA, policy review and updates, assisting with budget presentation materials and analysis, analyzing IIJA opportunities, and developing comprehensive financial planning models to analyze the financial feasibility of capital projects, among others.

PFM internal database, as of June 30, 2023

We currently work with numerous California water and wastewater agencies including Alameda County Water District, Contra Costa Water District, Metropolitan Water District of Southern California, Inland Empire Utilities Agency, Central Contra Costa Sanitary District, Sacramento County Water Authority, San Francisco Public Utilities Commission, West Basin Municipal Water District, Eastern Municipal Water District, and Western Municipal Water District, among others.

Below, please find brief case studies on a sampling of our work with several of these clients over the last several years.

PFM's Representative Projects	
Client	**Experience**
Contra Costa Water District CCWD	***Water Revenue Refunding Bonds Series 2023: $80.2 million (Fitch: AA+, S&P: AAA)*** ***Canal Modernization Long-Term Financial Plan*** In August 2023, PFM advised CCWD on the issuance of its $80mm Series 2023 bonds. Prior to the Series 2023 bonds, CCWD had issued under bond documents drafted in 1987 which contained outdated and restrictive provisions. PFM recommended that CCWD develop new documents to issue the Series 2023 bonds and future issuances under. PFM worked with CCWD and bond counsel in developing legal provisions that provided important flexibility for future CIP needs while also providing sufficient bondholder protection. PFM recommended that the existing senior lien be closed and this new "working lien" be placed on a subordinate lien. As part of the Series 2023 bonds, PFM continued our multi-year ratings strategy in pursuit of rating upgrades from both S&P and Fitch. Highlighting continued strong financial performance and successful navigation of the recent drought led to upgrades by S&P to AAA and by Fitch to AA+. Since 2021, PFM has also assisted CCWD in its financial planning efforts around the Canal Modernization Project ("CMP"). For this undertaking, PFM developed a comprehensive Excel-based financial planning model which was utilized to analyze financial feasibility under a variety of scenarios (operational and financial). These analyses were then presented to the Board and utilized to make decisions as to proceeding with the project scope.

[9] *PFM internal data as of December 31, 2022.*

Inland Empire Utilities Agency	***2020 WIFIA Loan/ 2022 WIFIA Loan*** ***Chino Basin Regional Financing Authority Revenue Notes, Series 2020B: $196.44 million (Moody's: Aa2, S&P: AA+)*** PFM assisted in the process of procuring the 2020 WIFIA Loan secured by Wastewater System Revenues. This included preparing the Agency's WIFIA financial model, negotiated the desired financing structure with EPA and reviewing WIFIA loan documents and term sheets. Given market conditions near the time of closing for the WIFIA loan, PFM identified a potential opportunity to issue fixed rate notes to provide interim financing during construction (with the intent of drawing on the WIFIA loan to pay-off the notes at their maturity). Fixed rate notes provided IEUA several advantages, primarily: i) the ability to accelerate funding, ii) funding construction costs at a net savings versus drawing on the WIFIA loan and iii) preserving the ability to refinance the WIFIA loan rate in the future. At pricing, PFM negotiated with the underwriter to tighten its pre-pricing spreads, going out flat to AAA MMD and based on the order book, improve another 2 basis points for a final spread of -2 to AAA MMD. Ultimately the Notes were priced at a TIC of 0.58% reducing IEUA's overall borrowing cost on the RP-5 Project by an additional $4.9 million. In 2022 PFM advised IEUA on a second WIFIA loan for four projects. Building off the closing of the 2020 WIFIA loan, the 2022 WIFIA loan was closed in a more expeditious manner, saving both time and money. This loan was locked in at a rate of 2.61%. On an ongoing basis, PFM assist IEUA with updating its long-range financial plan and are expecting to begin working on model "revamps" in 2023 to enhance the functionality of the model to incorporate new financing needs.
Metropolitan Water District of Southern California	***Water Revenue Bonds, 2022 Series A: $279.57 million (Moody's: Aa1, S&P: AAA)*** ***Water Revenue Bonds, 2022 Series B: $253.37 million (Moody's: Aa1, S&P: AAA)*** ***Water Revenue Bonds, 2022 Series C: $276.1 million (Fitch: AA+/F-1+, S&P: AAA/A-1+)*** ***Water Revenue Bonds, 2023 Series A: $258.4 million (Moody's: Aa1, S&P: AAA)*** ***2023 Long Range Financial Plan*** In June and July 2022, PFM advised MWD on the issuance of the Series 2022A, B and C refunding bonds. The Series 2022A Bonds were issued as fixed rate bonds, and were used to refund all or portions of MWD's 2012 Series A, 2012 Series F, and 2012 Series G Bonds, as well as redeem certain parity notes issued by MWD to refund a portion of the Subordinate 2017 Series B Bonds. The Series 2022B Bonds were issued as fixed rate bonds and were issued to refund all or portions of MWD's 2000B-3, 2016B-1&2, 2017 Authorization Series A, and 2018A-1&2 Bonds. The Series 2022C Bonds were issued as taxable variable rate demand bonds and were used to advance refund portions of the 2015A Authorization Series A and Series 2016A Bonds. As part of this issuance, PFM assisted MWD in securing two SBPA's for the Series 2022C taxable VRDBs. In June 2023, PFM advised Metropolitan on the issuance of its Series 2023A new money bonds which provided funding for new money projects as well as refinanced a portion of Metropolitan's outstanding bonds. This pricing was particularly unique in that it occurred in the midst of tremendous market upheaval relating debt ceiling uncertainty / resolution as well as investor concerns related to Fed actions and economic health. PFM worked aggressively with the underwriter to price the Series 2023A Bonds well through levels at which comparable transactions had priced in the weeks prior. Further, PFM is also currently finalizing its work with MWD with its first long-range financial plan in almost 20 years. This plan will include a multi-phased approach to analyzing the affordability of certain water supply projects under a variety of scenarios to help inform Board and executive management and guide future budget and capital plans.

Water Infrastructure Finance and Innovation Act (WIFIA) Loan Experience

The WIFIA program is a financing program which can provide certain benefits over traditional financing methods including lower borrowing rates (in certain markets) as well as flexible construction draws and repayment. PFM has assisted numerous water and wastewater clients in applying for, negotiating and executing WIFIA loans. Furthermore, we have also assisted several of our clients with further leveraging the benefit of the WIFIA loan program through the use of interim short-term notes which can lower the overall cost of financing for the project and also preserve future rate refinancing flexibility. Since the program's inception in 2017, PFM has advised clients on 43 WIFIA loans and/or applications totaling over $7.4 billion.

Source: PFM internal database, as of January 2023

Over the last two years, in Southern California alone, PFM has closed over $350 million of WIFIA loans for the Inland Empire Utilities Agency ("IEUA") and the Coachella Valley Water District ("CVWD"). Furthermore, in 2020 we assisted IEUA with selling interim short-term notes with the intent of utilizing the WIFIA loan to refund the notes at their maturity. The benefit of this note financing was to lower IEUA's cost of borrowing during the construction period and avoid drawing on the WIFIA loan to preserve future refinancing abilities (EPA allows the WIFIA loan rate to be refinanced once, as long as the loan has not yet been drawn upon). Below, please find case studies highlighting some of our California WIFIA loan experience.

Inland Empire Utilities Agency 2020 WIFIA Loan and Series 2020 WIFIA Interim Notes

IEUA's RP-5 Plant Expansion Project ("RP-5") is a $450 million project to expand treatment facilities and capacities for IEUA customers. As IEUA's financial advisor, PFM assisted IEUA in the creation of its financing plan and related Excel-based financial model. Key objectives for IEUA with funding of this project were to: i) minimize impacts on rates, ii) preserve fund balance, iii) provide sufficient future financial flexibility and capacity for known future CIP projects and iv) provide for flexible draws and funding during the construction period. PFM ran a variety of financing scenarios, including WIFIA funding, SRF funding, public debt, and pay-go funding.

Given flexibility was important for IEUA, PFM developed a financial plan which took advantage of the flexibilities within the WIFIA program, structuring its loan with a realistic draw schedule, but also providing for the ability to utilize interim financing should IEUA need funds on a more expedited basis (or if it was economically advantageous to utilize interim financing). Another reason IEUA desired flexibility was that it had previously applied for an SRF loan, approval of which was being delayed. While IEUA will ultimately likely receive the SRF loan, the timing of when the loan will be received is unknown. Within the financial plan, the SRF loan is expected to be drawn down in equal amounts from 2021 – 2025. However, with the delay in the SRF loan approval, the availability of funds in 2021 was unknown.

The final finance plan funded the project with approximately 49% of Project costs funding through WIFIA, 23% through an SRF loan and 28% through pay-go funding. The funding plan delayed debt service costs until after substantial completion of the project reducing near-term pressure on rates while the SRF and WIFIA loans both spread the costs of the project over 30 and 35 years, respectively, further reducing the need for large near-term rate increases. The pay-go funding was specifically set at a level which ensured that post funding, IEUA's cash position would still remain sufficient and above its minimum policy levels.

During the WIFIA loan negotiation process in March/April 2020, IEUA learned that closing of the SRF loan had been delayed several months. Given the concern as to the timing of these receipts, the decision was made to utilize interim financing. PFM analyzed numerous interim financing alternatives including revolving line of credit, commercial paper and short-term fixed rate notes. Fixed rate notes provided IEUA several advantages, primarily: i) the ability to accelerate funding, ii) funding construction costs at a net savings versus drawing on the WIFIA loan and iii) eliminating interest rate risk during construction. As such, PFM assisted IEUA in a procurement process for underwriters on the notes.

Given IEUA anticipated taking advantage of interest rates to refund certain of its outstanding bonds and SRF loans, PFM recommended that IEUA combine the two transactions processes to save on administrative time. PFM and several other working group members (including the rating agencies) also lowered our fees given we would only need a single rating agency process and the legal and offering documents for the two transactions would be largely the same. As such, the combined transaction allowed IEUA to lower its issuance costs even further for the benefit of its ratepayers.

PFM strategically timed the sale of the WIFIA Notes the day after the pricing of the Series 2020 Refunding Bonds. The reason being that given the size of the notes, it was likely there would be a "size premium" with the pricing and we did not want investors to focus on the size premium and use those spreads as the basis for the refunding bonds. In addition, we believed it better to lead with the smaller refunding, build investor interest and to the extent the sale was oversubscribed, use that excess demand to help sell the Notes. This strategy proved successful and based on the success of the Series 2020 Refunding bond sale, PFM was able to convince the underwriter to tighten its pre-pricing spreads, going out flat to AAA MMD and based on the order book, improve another 2 basis points for a final spread of -2 to AAA MMD (approximately 10 basis points higher in spread that the Refunding Bonds due to the size premium). Ultimately the Notes were priced at a TIC of 0.58% reducing IEUA's overall borrowing cost on the RP-5 Project by an additional $4.9 million.

In 2021 and 2022, PFM assisted IEUA in procuring a follow-up WIFIA loan, this time to fund a basket of different projects including RP-1 Solids, Philly Force Main, Carbon Canyon Water Recycling Facility as well as the inclusion of $50 million of costs due to cost overruns on the RP-5 project. The 2022 WIFIA loan for these projects was based

largely on the WIFIA loan closed in 2020. As such, the process was able to be expedited from a document review and negotiation process. Ultimately IEUA was able to lock in low costs of financing for the 35-year loan at 2.61%. Higher than those achieved two years prior, but still low from an overall borrowing perspective.

Coachella Valley Water District 2020 WIFIA Loan

In 2018, CVWD submitted LOIs for two projects within its Stormwater Fund, the Stormwater Channel Improvement Project and the North Indio Regional Flood Control Project. PFM assisted CVWD during the application phase developing the financial plan as well as securing preliminary ratings required as part of the application. As part of this process PFM also assisted CVWD in creating a complete financial plan involving WIFIA funding for the two Projects. With the primary source of funding for the Stormwater Fund (and security for the WIFIA loans) is a dedicated property tax, key objectives of the finance plan were to develop the right mix of leverage and pay-go funding to ensure: i) sufficient fund balance after completion of the project, ii) maintenance of strong debt service coverage and iii) ensuring the Fund was not overleveraged so as to retain sufficient financial flexibility for future CIP needs. As part of the financial planning process, PFM created an Excel based pro-forma model which provided for scenario analysis, but also served as the model submitted to WIFIA during the application.

In order to meet CVWD's financial objectives, PFM analyzed numerous funding options involving pay-go, WIFIA, local debt and interim debt, short-term notes, among others. Ultimately, the finance plan decided upon chose to structure the WIFIA loan with an initial draw in 2022 (rather than allowing for immediate draws) to lower the average life and thus the borrowing rate and utilize either funds on hand or draws on CVWD's revolving line of credit to pay construction costs through the initial draw. The decision on whether cash on hand or draws on the revolving line of credit would be utilized would ultimately be dependent on the interest rate of draws at that time, providing flexibility for the District to take the approach most beneficial at that time. As estimated interest on interim financing is allowable as an Eligible Project Cost, CVWD was able to increase the overall size of its WIFIA loan to provide further low-cost funding.

During the negotiation of the WIFIA loan agreement, PFM, CVWD and bond counsel spent significant time with EPA and its advisors describing the strength of the property tax pledge as the credits they were accustomed to seeing were system net revenue pledges, for the most part. These discussions included the historical authorizing legislation dedicating the property tax revenues solely to the Stormwater Fund, providing substantial credit strength.

EPA requires that borrowers secure two investment grade ratings on their WIFIA loans. CVWD did not have publicly issued debt outstanding (instead funding project needs on a pay-go basis or borrowing through the SRF program). As such, PFM developed a customized ratings strategy for the District outlining not only the credit strengths of the Stormwater Fund, but also the credit strengths of the District as a whole (the credit strengths of the District are particularly important for Fitch given their concern of organizational default and bankruptcy). PFM's strategy resulted in CVWD's first public ratings being AAA from Fitch and AA+ from S&P.

Ultimately CVWD closed its loan on January 27, 2020 at a rate of 1.96% with a final maturity of 35 years. Debt service will be deferred until after substantial completion of the project and in June 2020, CVWD made its first draw on its revolving line of credit funding interim construction costs given low short-term interest rates at that time.

State Revolving Fund (SRF) Loan Experience

Historically the SRF loan program has been a cost-effective means of borrowing for certain eligible projects. While the SRF loan program remains cost-effective from an interest rate standpoint, we have recently seen the terms and provisions of SRF loans becoming more onerous. Terms such as the inability to refunding/pay-off the loans at any time as well as a rate covenant of 5-years MADS have made these loans somewhat more challenging from the perspective of future financial flexibility. In most situations, terms and covenants in the public markets (i.e., bonds) can be more flexible and advantageous.

Another consideration with SRF loans relates to the timing of reimbursement. Under the SRF program, borrowers must make the expenditure and submit an invoice for reimbursement to the State. The timing for the State to process

the invoice has been up to 4 months in recent experience and numerous other factors can lead to further delays. As such, if timing of receipt of reimbursement is an issue, the SRF program may present challenges as to its feasibility.

While these more onerous terms may not be a reason to not utilize SRF funding, it is important for borrowers to understand these limitations to avoid unexpected surprises in the future. PFM can assist the District in analyzing its options when it comes to determining the most appropriate means of borrowing to ensure that its financial decisions make sense not only today but also years from now.

PFM's Recent SRF Loan Experience				
Inland Empire Utilities Agency	Coachella Valley Water District	West Basin Municipal Water District	City of Belmont	City of Santa Cruz Water Department

Long-Term Financial Planning

PFM is adept at assisting our clients in reviewing, updating and executing their long-term finance plans. Particularly in today's environment characterized by rising construction costs, labor challenges and rising interest rates, a long-term financial plan is critical to ensuring projects are prioritized in an efficient manner and that funding is available (and affordable) for those projects. Additionally, with significant funding available through the federal infrastructure bills, a long-term financial plan can help identify funding gaps, prepare for future grant NOFOs and integrate funds into the existing financial plan to determine its impact on other CIP plans.

PFM is also able to assist our clients in building (or modifying existing) financial planning models. Members of PFM's proposed teams have built and regularly update complex financial planning models for several of our water and wastewater clients. Providing this service to our clients not only frees up their time, but better integrates the municipal advisory team into the strategic long-term planning conversations, providing us a more thorough understanding of our clients' needs and therefore allows us to better tailor our financial recommendations to their needs.

These models have been approved by EPA to conform to the standards needed for WIFIA loan pro-formas. In addition, PFM is able to incorporate within these planning models a WIFIA sizing module to size WIFIA loans' Eligible Project Costs, loan size and loan repayment structure.

Below, please find a case study detailing a long-range financial planning model that PFM built for Contra Costa Water District in 2021 in support of its Canal Modernization Project.

Contra Costa Water District - Canal Modernization Project Financial Planning Model

In 2021, CCWD began analysis of the financial feasibility of its potential Canal Modernization Project ("CMP"). The Canal Modernization Project is a potential project that will address several important District goals: increased community safety, replacement and repair of aging infrastructure related to the existing canal, and improved quality of water currently conveyed through the open-air canal. With total project costs in excess of $1 billion, CCWD contracted PFM—its municipal advisor—to examine the financial feasibility of the CMP.

As a part of this effort, CCWD contracted PFM to develop a comprehensive pro-forma model to analyze the impact of the project on the District's long-term financial performance. PFM created an Excel based pro-forma model which allowed the District to analyze the impact of the project on the District's financial metrics, specifically CCWD's debt service coverage ratio and days cash on hand. The model created is highly flexible, allowing the user to adjust District rates, operating revenues and expenditures, other capital projects, and other items.

Due to certain environmental pressures in California, namely the presence of drought, PFM developed a scenario builder within the model, which allowed CCWD to analyze the impact of different scenarios on the financial feasibility of the project. The scenario builder includes numerous scenarios outside of the "base case", each scenario examining a different drought scenario, with different impacts on water usage and revenues. This scenario builder also allows

the District to customize their own scenarios of interest, and cycle through the different scenarios in order to analyze the impact of drought on the project's feasibility. The model also includes an output tab, containing charts comparing the results of different scenarios, allowing for easy comparison.

After reviewing the model and scenarios with the District, PFM prepared a presentation discussing the model's findings with CCWD's Board. The presentation contained an overview of the project, a summary of the model and assumptions, and the results of the various scenarios analyzed. Darren Hodge, the day-to-day lead contact for CCWD, presented the model's findings to the District's board.

PFM currently maintains and updates the model on behalf of the District. PFM also continues to adjust certain assumptions and selected scenarios in order to more accurately reflect current conditions. PFM meets with the District periodically in order to keep them informed of potential changes to the project's financial feasibility.

Licenses and Registrations

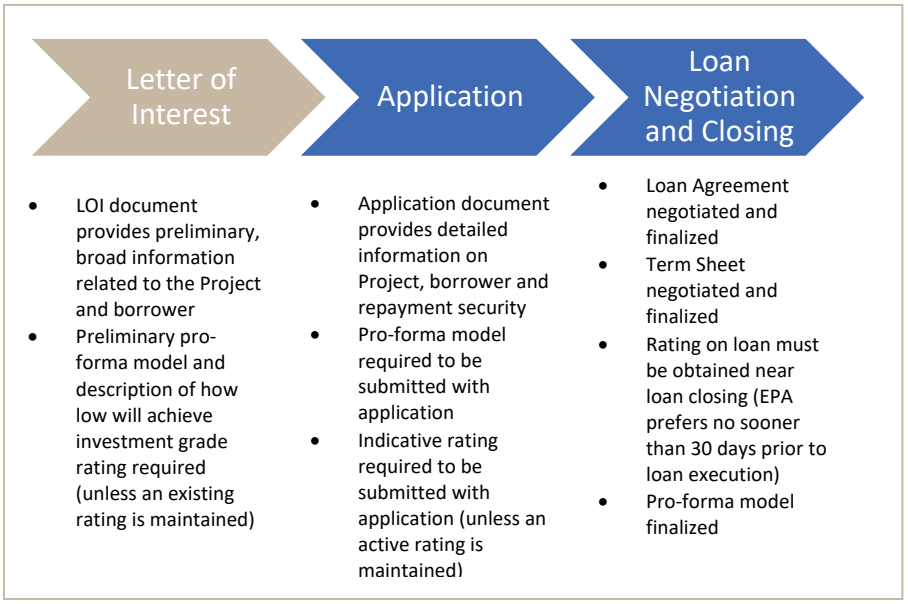
PFM and all assigned key professional staff are properly licensed to practice in California. PFM Financial Advisors LLC is a registered municipal advisor with the Securities and Exchange Commission ("SEC") and the Municipal Securities Rulemaking Board ("MSRB"). PFM Financial Advisors LLC's SEC file number is 867-02030; the MSRB ID number is K1162. Provided below is a link to the SEC EDGAR system where both the Form MA (for the Firm) and Form MA-I's (for individual Registered Reps) can be retrieved.

https://www.sec.gov/cgi-bin/browse-edgar?company=pfm+financial+advisors+llc&owner=exclude&action=getcompany

Please see **Appendix B** for copies of our registrations.

Detailed Proposal / Approach to the Scope of Work

The RFP is understandably broad in its Scope of Services within Section II and we will respond to our approach to providing these services below. However, we would like to specifically address our approach to the near-term WIFIA loan financing more specifically upfront. Based on our review of the JPA's Board Agendas for the past 12 months, the JPA submitted an LOI on October 12, 2022 and was invited to submit an application on December 21, 2022. The invitation outlined a deadline for application submittal by December 2023. Given the Board's approval to pay for an indicative Kroll rating during its May 2023 meeting, we assume that the JPA is well along in the process of preparing the WIFIA application.



Given our limited understanding of the specifics as it pertains to the status of the WIFIA application, we will outline our general approach to application preparation and submittal as well as loan agreement / term sheet negotiation more broadly and be prepared to tailor our approach based on the actual status of the JPA's loan if we are fortunate enough to be hired.

Application. Within the application, there are several sections:

- Section A is the Key Applicant and Loan Information which is relatively straightforward and is based on data largely pulled from the LOI.
- Section B is the Applicant Background which contains more detailed and in-depth information about the borrower, its (or "their" in the case of a JPA) financial history, legal authority to borrow, capital and financial planning processes and budgets, as well as overall information as to the status and health of the utility system. PFM assists our clients in preparing this information by gathering data from publicly available sources such as recent ACFRs and budgets. Section B also contains information on the benefits of the of the Project from environmental, societal and qualify of life perspectives. While this information is included within the LOI, it is worth highlighting these aspects again as they are important elements within the overall scoring. PFM works with our clients in detailing these benefits by holistically thinking about the Project and the immediate and longer-term benefits provided to customers, the environment and the region as a whole.
- Section C is the Financing Plan and contains information on the Sources and Uses of Funds for the Project, the proposed legal repayment and source of repayment, legal flow of funds, rate setting process (and the JPA Payment/Participation Agreement, if applicable) as well as the financial pro-forma.
    - In the development of the sources and uses of funds, PFM will work with the JPA to identify all sources of Eligible Project Costs. Within the definition of Eligible Project Costs, EPA allows borrowers

to include not only the project design and construction costs, but also costs associated with interest on interim financing obligations, issuance expenses, legally required reserves, etc. Another important element which has become increasingly relevant in today's construction environment is the inclusion of contingency amounts in case project costs exceed estimates due to construction inflation and/or delays. We have seen / heard of contingency amounts of 30% or more in recent history. By increasing the Eligible Project Cost amount, the borrower is effectively increasing the amount of overall WIFIA loan funding which can be obtained given WIFIA can fund up to 49% of Eligible Project Costs.

  - It is important to note within this section whether the JPA is anticipating utilizing interim financing. Given today's WIFIA loan rates, we recommend that our clients consider inclusion of this request as it allows for the potential refinancing of the WIFIA loan in the future if rates decline.
  - The financial pro-forma is another aspect in which PFM assists our clients. For borrowers such as the JPA without pre-existing public ratings, it is likely that the pro-forma model was submitted as part of the LOI process. As such, the pro-forma model may need to be updated as part of the application process. For other borrowers with outstanding ratings, the application is the period during which the pro-forma model will need to be created/updated/finalized. PFM is well versed in the development of financial models which are accepted by EPA and can work with the JPA in finalizing its pro-forma as part of the application. PFM is also happy to work with the JPA's existing consultant to this end as well.
  - Given the JPA may have already secured an indicative rating from Kroll, we assume that this step of the application is complete. However, to the extent that the JPA still needs to secure the indicative rating, PFM is able to develop a ratings strategy, prepare a ratings presentation and assist in procuring an indicative rating for purposes of the application.

- Section D relates to Federal Requirements Compliance and is often completed by the project manager. PFM can assist in this section where applicable.
- Section E is an area that PFM will work closely with the JPA and its project manager to gather the information necessary.

Loan Agreement and Term Sheet. Once EPA has reviewed and approves the application, the JPA will then move to the loan agreement and term sheet negotiation stage (the final stage). Prior experience with WIFIA is critically important in this stage as EPA will begin with a form of loan agreement and term sheet which is most favorable to EPA. Given our experience in reviewing and negotiating WIFIA loans we are familiar with the terms and provisions where EPA has been amenable to modifying in borrowers' favor and as such, we will work closely with the JPA's bond counsel (Stradling, who has vast experience with EPA as well) to review the loan agreement and term sheet to negotiate favorable terms for the JPA. EPA will also request that the formal public rating be provided within 30 days prior to close. PFM will lead the process with Kroll to finalize the rating and ensure that the rating is provided near the loan execution date (while EPA requests the rating within 30 days prior to close, in our experience they have been flexible in allowing the rating to be provided ahead of that time period given the uncertainty as to the exact closing date of the WIFIA loan). PFM will also coordinate with the WIFIA underwriter to ensure that the loan process remains on schedule – this is important to ensure funding is received on time.

Within the loan agreement there are several key important elements to consider and negotiate:

- Expected Substantial Completion Date. The Expected Substantial Completion Date is that upon which the project is reasonably expected to be complete. The challenge in today's construction environment is that projects have regularly been delayed due to supply chain issues, cost overruns, etc. It is important the Expected Substantial Completion Date be set realistically as it is the date by which another important date (described below) is set. EPA has been flexible in providing some amount of timing cushion for this date.
- Development Default Date. The Development Default Date is the date by which the project must be complete or else EPA has the right to default the loan. Defaulting the loan would essentially require the borrower to immediately repay all drawn amounts under the loan. The Development Default Date is typically set to 18

months after the Expected Substantial Completion Date. Given issues surrounding the COVID pandemic, many borrowers experienced material delays in the delivery of their projects which has resulted in many borrowers needing to return to EPA to negotiate / determine ways in which they can avoid violating the Development Default Date. While EPA has been amenable to reasonable changes in certain situations, there is no guarantee of such cooperation nor requirement on their part and as such, these dates are incredibly important to carefully consider.

- Use of Interim Financing. Within the loan agreement, if the borrower wishes to utilize the WIFIA loan as takeout funding for interim financing, it must be explicitly stated. The use of interim financing for construction funding in-lieu of drawing on the WIFIA loan is advantageous for several reasons. The first is that in many markets, the rate on short-term financing (such as a 5-year note) may have an interest rate lower than that of the WIFIA loan. As such, delaying drawing on the WIFIA loan at the higher rate may provide an economic benefit. Secondly, EPA will allow a one-time refinancing of the WIFIA loan rate under certain conditions, the most important of which being that the loan not be drawn upon. Given today's rate for WIFIA loans (approximately 4.50%), this refinancing flexibility may be cost effective in the future. However, to provide funding without drawing on the WIFIA loan, an interim source of financing must be obtained, hence the interim financing. This interim financing can take the form of short-term notes and/or commercial paper or revolving lines of credits. PFM has utilized both in connection with WIFIA loans and can assist the JPA in analyzing the benefits and considerations of all approaches.

Structuring Strategies for WIFIA. In connection with the WIFIA loan there are several structuring considerations which the District and JPA should consider:

- Use of interim financing;
- Timing of loan repayment commencement; and
- Structuring of loan repayment.

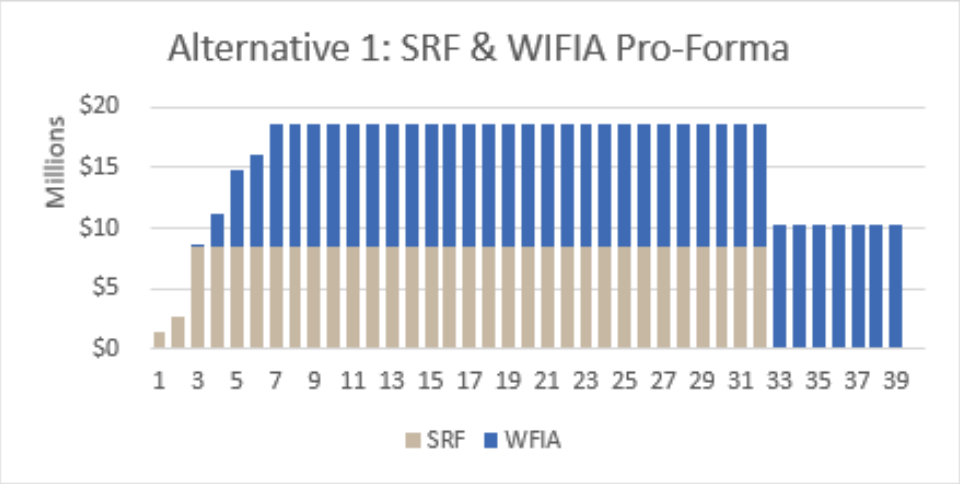
Interim financing. As described above, the use of interim financing can be advantageous in certain situations. In the current market, given the overall level of comparable taxable rates (approximately 4.50%), the use of interim financing could allow the JPA to avoid drawing on the loan during construction and thus retain the ability to refinance the loan rate if interest rates decline in the future. PFM can assist in analyzing the benefits and considerations of this strategy with the JPA and District.

Timing of loan repayment commencement. WIFIA allows repayment of the loan to be delayed as long as 5-years after substantial completion of the Project. At this point loan repayment must begin (although we note that principal payment can be further delayed). To the extent that the JPA desires some level of near-term debt service relief, this flexibility can be incorporated within the loan agreement.

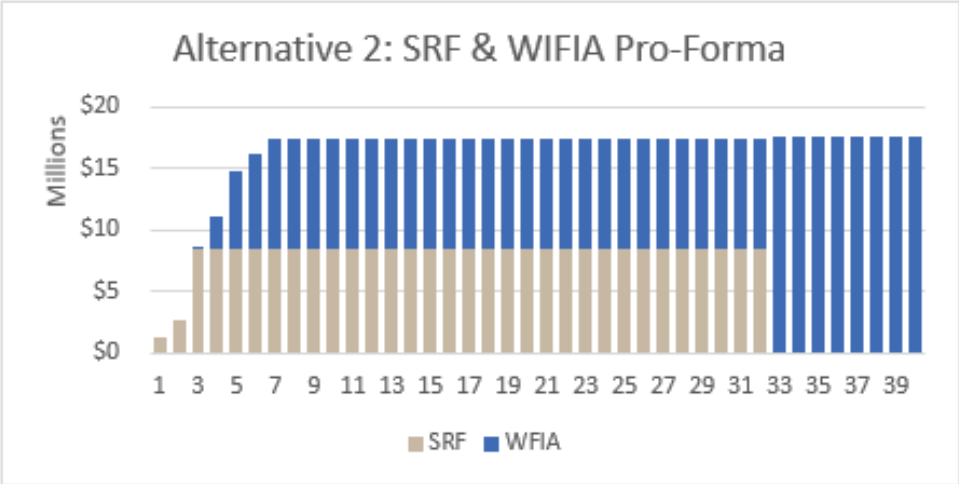
Structuring of loan repayment. WIFIA loans can be customized in their repayment structure (i.e., principal "amortization" of the loan can be structured as level debt, backloaded debt, frontloaded or anything in between). One way in which WIFIA loans can be structured is "around" other Project debt. As WIFIA can only finance 49% of Eligible Project Costs, the other 51% must be financed in other ways (SRF loans, public debt, pay-go, etc.). In the RFP the JPA indicates the likelihood of SRF loans to finance the other 51%. In this situation, given SRF loans are typically limited to a 30-year final maturity and level annual repayments, there is an opportunity to structure the WIFIA loan such that the combined loan repayments (WIFIA and SRF) are, in aggregate, level. This will result in a longer average life for the WIFIA loan given it will see some of its principal moved later in the life of the loan, but the resulting aggregate level repayment structure of both loans combined may be worthwhile from a budgeting standpoint for the JPA members.

Compute sizing and design structure of the proposed debt issue. For this analysis, we structured 2 different scenarios (Level-Individual and Level-Wrap Around) for SRF and WIFIA loans for the $364 million Pure Water project. The scenarios structured are as follows:

- Alternative 1: Level-Individual
- Alternative 2: Level Aggregate



Alternative 1	
Total Debt Service	$610 Million
Maximum Annual Debt Service	$18.61 Million
WIFIA Repayment Term (from loan execution date)	40 Years



Alternative 2	
Total Debt Service	$649 Million
Maximum Annual Debt Service	$17.60 Million
WIFIA Repayment Term (from loan execution date)	40 Years

We structured these scenarios to provide cash flow relief in the early years for the District. The general assumptions used for the scenarios are:

- Project cost of $364 million
- Six-year draw schedule
- Utilization of SRF loan in years 1-3
- Utilization of WIFIA loan in years 3-6
- WIFIA loan funds 49% of project cost, SRF funds 51% (we note that WIFIA could fund more than 49% of construction costs with the inclusion of other Eligible Project Costs – but for this preliminary analysis we do not include additional Eligible Project Costs)

There a number of ways the loans can be structured for the benefit of the District and its stakeholders. Both scenarios show a ramp up in debt service over the first seven years of the program. Debt can be moved forward or back to achieve the objectives of the District.

In addition, it is worth noting that in today's market, taxable yields are inverted on the long end of the curve meaning that interest rates actually decline the longer the average life of the loan. As such, a WIFIA loan structured to provide level aggregate debt service would actually have a lower interest rate than that of a shorter average life WIFIA loan structured to provide individual level debt service.

As it relates to our overall approach to providing municipal advisory services, below we discuss how we approach providing advisory services to our clients.

Overall Approach to Providing Financial Advisory Services

- Develop **long-term relationships with our clients**
- Serve as an **extension of staff**
- **Team-oriented approach** providing best-in-class service to the District
- **Leverage resources and experience** of PFM professionals throughout the nation to address challenging problems
- **Holistic approach to providing financial advisory services** ensures advice and recommendations meet the District's objectives and policies both today as well as in the future
- **Proactive approach** to providing financial advisory services

Our goal in providing financial advisory services while nuanced in its implementation, at the end of the day, is always about one thing: doing what's best for our clients. Whether it be assisting the District with understanding new municipal debt regulations, developing finance plans for capital project funding needs, analyzing pension funding strategies or advising on complex capital markets borrowings, everything we do is with this goal in mind.

In achieving this goal, we will take a team-oriented approach to developing a long-term relationship with the District and delivering services which are planned, analyzed and implemented in a holistic manner.

- **Developing long-term relationships:** In our experience, we have found that the best financial advisory experiences are those not viewed as "engagements," but rather long-term relationships; one in which PFM works as an extension of staff. This allows for better implementation of long-term financial plans and execution of individual transactions. We will work to develop a deep and thorough understanding of the District's way of doing business, policies, objectives and challenges. We will utilize this understanding to help tailor our advice to the District.
- **Team-oriented approach:** While our relationship with the District will be managed and led by Darren Hodge, a compliment of PFM financial advisory professionals will join in working with the District depending on the specific nature of each project or request. We believe this approach ensures that communication with the District is streamlined while also efficiently and seamlessly leveraging the full resources of PFM and expertise of the individual team members while paying attention to costs. We also look forward to working in tandem with the District's other consultants in achieving the District's objectives and goals.
- **Taking a holistic approach:** Given the long-term and wide-ranging implications of the financial decisions that will be made by the District, PFM will take a holistic approach when analyzing financial strategies. This

is because we recognize that while a financial decision must make sense today, it is equally important that it make sense years down the road as well.

PFM takes a proactive approach to serving our clients including outside of "live" transactions. A characteristic of PFM's approach is that we are proactive in providing financial advisory services to our clients. When issues of interest come to our attention, we believe it is important that this information be passed to our clients in a timely manner. In addition to monitoring topics of interest and other information, we provide numerous other services to our clients, such as those in the adjacent table.

Sample of Ongoing FA Services
Monitor and provide updates on debt portfolio
Identify and advise on refinancing opportunities
Assist with long-term CIP planning
Monitor and provide input on general District financial condition
Debt policy review and updates
Rating agency relationships and strategies
Board presentations to keep District management informed
Provide financial training to District staff
Keep the District apprised of relevant municipal market news
Monitoring of legislative and regulatory measures
Debt affordability and capacity analyses

PFM will provide advice and recommendations related to the issuance of debt to the District and JPA. When developing finance plans, our goal is always to minimize the issuance of debt when possible. Ways that we seek to minimize debt issuance include working with our clients to incorporate estimates for grant funding and looking for potential State and federal funding opportunities. Once all forms of non-debt funding have been identified, PFM and the District will discuss and evaluate possible financing options. After which PFM will provide a recommendation to the District regarding what we deem to be the optimal recommended structure. Our recommendation will include advice on the appropriate financing amount, the optimal financing vehicle, credit structure, redemption provisions, and other items, all tailored with the goal of achieving the lowest cost of borrowing for the District and JPA.

We are confident that we can provide the Scope of Services in a manner that not only meets but exceeds the District and JPA's expectations for quality of services.

Approach to Accomplishing Scope of Services

The detailed proposal should follow the order in Section II – Scope of Services and should provide sufficient detail to understand how the scope will be accomplished.

Please see below for PFM's approach to accomplishing Scope of Services items 1-6 from RFP Section II.

PFM will provide as-needed financial advice regarding financial products and alternative financing. As a leading financial advisor in the country, PFM has worked with a variety of financial products. Within PFM we have many team members who have had long careers in finance and a number come from banking backgrounds, providing exposure to a wide range of financial products, including many new offerings. We assist our clients in analyzing numerous products and strategies to lower our clients' debt costs. Some examples include: tender/exchange refundings, stepped coupon bonds, extendible commercial paper, Cinderella refundings, TIFIA loan funding, and WIFIA loan funding.

In addition to the public forms of funding, PFM can also assist the District in analyzing bond issuances versus State and federal loan alternatives. PFM is well versed in these various alternatives and we understand the pros and cons of these various funding programs. From our experience, we understand that interest rate is not the sole determinant of whether one avenue is the correct approach. Rather, the decision must be made on interest rate, loan terms/covenants as well as future flexibility. These various forms of funding each have their own set of terms and covenants that the lender is willing to accept and as such, care must be taken that the terms of the obligation are advantageous and do not conflict with those of existing bonds/obligations.

See our response regarding State and Federally subsidized loan programs in the prior section.

PFM will provide strategies for managing the District's current and future debt. As advisor to the District and JPA, PFM will assist in managing the District's debt portfolio. This entails developing what we call a "debt paint" which is essentially a database of the District and JPA's outstanding debt obligations (both public and private). The debt paint contains the pertinent characteristics of the debt obligations such as the par amount, interest rate, optional

redemption features, amortization, etc. This allows us to monitor opportunities for refinancing and prepare for key dates in the future well in advance.

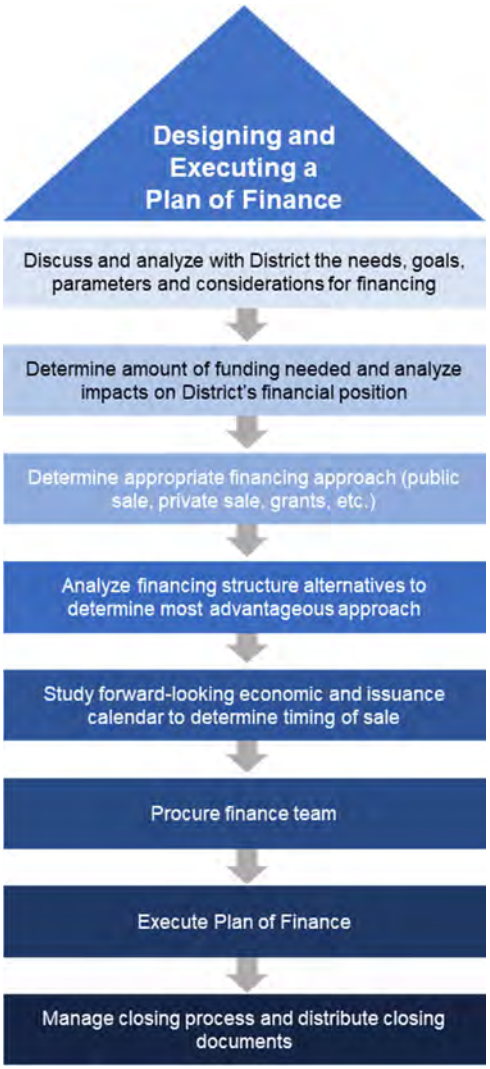
PFM will provide transaction management. We take pride in our organized coordination of financing teams and efficient execution of financings. Our decades of experience supports our pro-active management of transactions, special district process and timing supports an efficient execution. At every step of the way from coordinating with team members to developing financing plans to drafting documents to pricing and closing bonds, we provide pertinent, insightful considerations while leading the team at the District's s direction to meet the District's goals for its financing. In the following sections, we describe in detail how we manage the implementation of the approved financing strategies.

In connection with any debt issuances or debt restructurings, PFM takes a thorough and defined approach to our clients' transactions.

Approach to Transaction Management

- Manage transaction process on behalf of the District
- Design a plan of finance only after understanding the District's needs and goals for every transaction
- Manage and execute the plan of finance in an efficient, detailed and seamless manner
- Keep the working group on schedule and on task
- Ensure that the District is kept apprised and educated during every step of the transaction
- Aggressively negotiate the lowest interest rate possible

PFM's approach to transaction management is in line with our broader approach to providing financial advisory services. In the chart to the right and below we outline the details of the approach we take in designing and implementing finance plans. **Finance plans must be customized to the specific characteristics and needs of the District and each individual transaction. They must be holistic in perspective but also molded to market conditions at the time of the sale to ensure that the District receives the lowest cost of borrowing with advantageous terms and conditions.**



1. The first step in any finance plan is reviewing and understanding the District's needs, goals and restrictions in connection with any borrowing as well as ensuring compliance with all policies in the District's financial policies. This is, in part, an ongoing process through continual interactions with District management and staff to ensure a complete understanding of the District's financial position, long-term capital improvement plan and long-term management plans.

2. Determining the amount of financing needed. Working with the District, we will analyze the project or asset being funded to determine the borrowing amount required. This will include analyzing funding alternatives to determine if borrowing can ultimately be avoided or reduced. During this stage, we will also model out what impact this borrowing will have on the District's fiscal position. "How much will debt service cost, what is the impact on the repayment stream, is it affordable?" are all questions that will be answered.

3. Determining the appropriate financing approach is dependent on market conditions as well as the characteristics of the contemplated borrowing. PFM does not subscribe to the idea that one-size-fits-all when it comes to determining the appropriate method of sale. Whether it is most advantageous to fund through a negotiated or competitive sale, a private

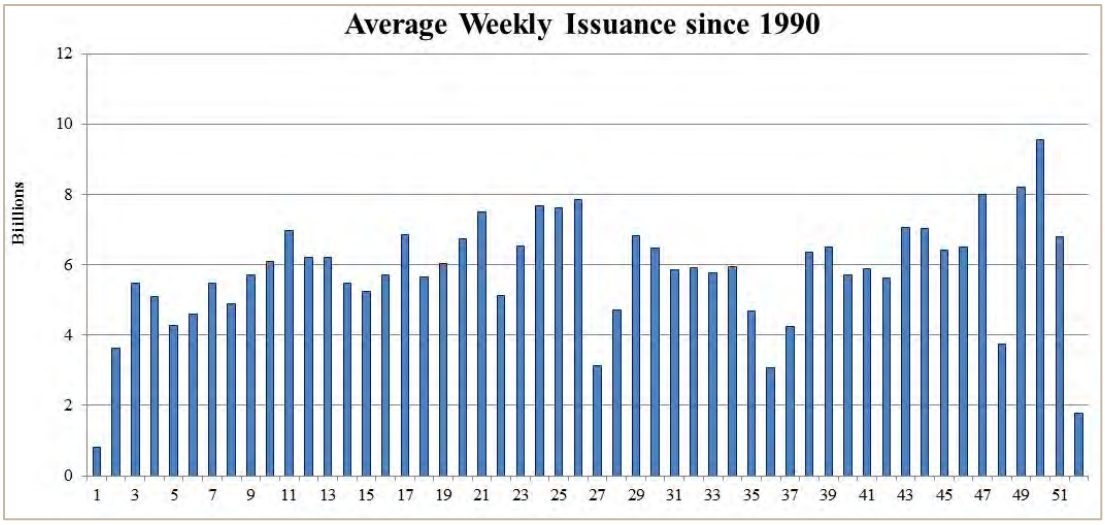
placement, direct purchase, an asset lease, long-term debt vs. short-term debt, etc., is dependent on a number of factors including the District's preferences, market conditions, investor demand, bank demand, interest rates, size of the borrowing and ratings.

As part of the discussions surrounding method of sale, we will outline the benefits and considerations of various approaches and the long-term implications of each to ensure the District is informed and not surprised in any way in the future. The following table provides an example of the general benefits and considerations of four types of borrowing methods most common in the market.

	Negotiated Sale	Competitive Sale	Direct Purchase/Private Placement	Federal/State Loans
Description:	Public offering of bonds through an underwriter-managed pricing process	Public offering of bonds through a competitive bidding process	Private sale of bonds to a private entity, typically a bank or institutional investor	Loan from State or Federal Agency (e.g., WIFIA, SRF)
Benefits:	• Banks provide underwriting capability in volatile markets • Marketing process assists in generating investor demand for lower rated credits • Ability to re-price to achieve lower spreads • Ability to customize couponing at pricing	• Competitive bidding process provides maximum pricing transparency • Pricing historically more competitive than negotiated sales on a TIC basis	• No POS/OS • Efficient transaction execution timing • No need for ratings in many cases • Lowest issuance costs	• Low interest rate • Flexible structuring
Considerations:	• Pricing levels can be higher than competitive sales on a TIC basis • RFP process for underwriting team adds time to financing schedule	• Lack of underwriting support in volatile markets • Less structuring flexibility than negotiated sales • No formal marketing period	• Terms and covenants may be more restrictive than public sale • Availability subject to bank/investor demand and market conditions	• Not all projects are eligible • Terms can be restrictive or less borrower friendly • Lengthy issuance timeline • Potential impacts of "federalizing" project

4. PFM will help analyze alternatives to determine the most advantageous financing structure. Given our experience advising municipalities nationwide, PFM is well versed in the myriad of financing structures and products. Analyzing the use (or need) for tax-exempt and taxable bonds, use of long-term debt vs short-term borrowings, call features, as well as the repayment structure are all critical considerations that we will model and discuss with the District to determine the desired structure. These discussions will also involve the benefits and downsides of each structure, from both the legal and fiscal perspectives.

5. As the old adage goes, timing is everything; PFM will leverage our knowledge of the market and all available resources to advise the District on the appropriate timing for its borrowing. Market conditions can affect borrowing costs in meaningful ways depending on interest rates, economic releases, the amount of bonds being sold in a given week, timing of holidays, etc. Strategic timing decisions such as whether to borrow before or after a specific Fed meeting and knowing which weeks and months are historically heavy periods of primary market issuance can be important factors. For example, the week following certain holidays are often periods of light issuance, and in our experience, can often be opportune times to access the capital markets as competition for investors' attention, time and capital is lessened. With proper planning and advanced marketing, taking advantage of these times often results in more favorable pricing conditions.



6. PFM will assist the District in developing and reviewing proposals for the finance team. Given PFM's familiarity with the firms active in the municipal market, from underwriters to verifications agents, we are able to assist the District and its procurement department with developing and procuring the appropriate finance team for each individual transaction. We will assist in drafting and distributing the RFPs on the District's behalf. Upon receipt of proposals from an RFP or RFQ process, we perform a thorough analysis of each response and then prepare a summary matrix with which the District can use to compare each responder. We will then assist the District in final negotiations with the proposed team including fees, roles and responsibilities, etc.

7. PFM will manage the financing process to ensure each team member accomplishes their assigned tasks, keeping the transaction on schedule in order to effectuate an efficient and cost-effective process. In addition, throughout the pricing process we will ensure that the District is comfortable with and understands each step and is informed of the potential implications of decisions and we will advise on courses of action. During the course of the transaction we will manage each of the tasks outlined in the District's required services. This includes, among other tasks:

- Creating and maintaining the financing schedule and distribution list,
- Assisting in the preparation and review of legal and marketing documents including the Preliminary Official Statement and Official Statement,
- Coordinating the publishing of all transaction-related documents and advertisements,
- Managing the rating agency process including scheduling calls/meetings and preparation of materials,
- Analyzing credit enhancement alternatives,
- Continually analyzing structuring alternatives such as short-calls, amortization terms, couponing alternatives, etc.,
- Coordinating the pricing process

  i. Prepare analyses supporting recommendations on structuring, pricing and spreads,
  ii. Distribute bid notice for competitive sales,
  iii. Assist with and advise on marketing strategies,
  iv. Assist with responses to investor inquiries,
  v. Prepare independent views on pricing and spreads well in advance of pricing; provide a pre-pricing book to the District in advance of pricing including relevant pricing comparisons of recent sales,
  vi. Schedule pricing calls,
  vii. Manage and coordinate day of pricing activities,
  viii. Negotiate final terms and pricing levels for negotiated transactions, and
  ix. Review final pricing levels or bids and finalize cashflows.

8. Rating Agency Relationships and Strategy. One of the areas of the plan of finance which has become more important over the years is maintaining relationships with the rating agencies and also creating long-term rating strategies. Since the decline of the monoline bond insurers, ratings are arguably the single-most important factor on pricing levels and have become an increasingly important aspect of investors' decision-making processes. As a result, it is critically important that the District's rating agency strategy and approach be customized to each individual credit.

Given the importance of ratings in today's market, we often serve as our clients' point of first contact with the rating analysts. This includes answering questions and responding to requests for information as well as ensuring analysts are kept abreast of positive news relating to our clients. This takes all forms from periodic calls, to assisting our clients in drafting correspondence to highlight credit improvements and turnarounds.

PFM is also active in customizing rating strategies on behalf of our clients. Our rating strategies are designed to specifically address two important topics: i) which rating agencies to approach for each bond sale and ii) crafting the rating agency presentation to specifically address the methodology with which that agency rates the District's bonds.

9. PFM's Pricing Group will work with the financing team to ensure the District achieves the lowest possible cost of borrowing on its issuance. PFM's Pricing Group provides pricing resources and negotiation support for PFM's clients nation-wide – continually enhancing, expanding and centralizing the firm's bond pricing expertise. The Pricing Group is unique among financial advisory firms and is in the market more than any financial advisor, pricing on average of 8 transactions each week[10]. Our Pricing Group is intimately involved in our negotiated bond sales, serving as our clients' "desk" by monitoring the market, developing independent market views and negotiating pricing levels with the underwriters. Below please find additional detail on PFM's Pricing Group.

- We use high-level quantitative analysis to develop our own price views, independent of the underwriters. We analyze historical and comparable transactions on a maturity-by-maturity basis using a variety of analytical methods including our proprietary Option Adjusted Spread model. Beyond developing an interest-rate scale, we analyze different couponing structures, bond amortizations, and call features.
- We communicate early and often with the underwriting team, to specifically discuss pre-sale marketing efforts and strategies to reach target investors, offer our own separate retail and institutional coupon and re-offer yield targets, and ensure that all parties are on the same page.
- During the order period, we actively monitor the sale of the debt, discuss the orders and pricing strategy with the underwriting team, and provide constant feedback to the District. When negotiating with underwriters, our suggested levels are based on real data and real market information to ensure that we are not "chasing" the market later. Because the PFM Pricing Group often has several transactions in the market, we are receiving up to the minute market feedback and are communicating with multiple investment banks. Therefore, the District is not relying solely upon its senior manager. This positions us to know which firms are putting their capital to work, what strategies they prefer, and how to ensure they will effectively price the District's bonds.

[10] *Source: Ipreo, as of December 31, 2022.*

10. Post-pricing, PFM will manage the closing process to ensure all tasks are completed on schedule. PFM can prepare a closing memo outlining the responsibilities of each party required to effectuate a successful close and will coordinate these activities. We will also prepare a post-pricing book for the District summarizing the entirety of the transaction. The post-pricing book includes a review of the transaction itself, details of market conditions at sale, summaries of the ratings process, reasoning behind certain decisions as well as a full review of the pricing itself including pricing results, investor participation, pricing improvements, underwriter participation and final take-aways.

7) Attend meetings with staff and the Board of Las Virgenes Municipal Water District and Triunfo Water and Sanitation District, the boards of the Las Virgenes – Triunfo JPA and the JPA's Financing Authority and potentially the Calleguas – Las Virgenes Public Financing Authority.

Our team members have significant experience preparing materials and presenting to councils and boards. PFM will be available to meet with District staff, consultants, and the Board of Directors in order to discuss and explain any debt related issues. PFM will be available to attend any meetings of the District, JPA as well as the Calleguas – Las Virgenes Public Financing Authority as requested.

8) Provide other financial services as required.

PFM also offers our clients the following services.

Policy Development

PFM has assisted numerous clients prepare or amend debt management policies. Our debt management policies are drafted to provide clear and comprehensive guidelines for the issuance and financial management of debt.

All of our policies conform to meet SB 1029, signed into law in 2016, requiring local agencies that issue debt to adopt a comprehensive debt policy that promotes the professional management of debt.

Specifically, SB 1029 requires an adopted debt policy that includes:

a. The purposes for which debt proceeds may be used.

b. The types of debt that may be issued.

c. The relationship of the debt to, and integration with, the issuer's capital improvement program.

d. Policy goals related to the issuer's planning goals and objectives.

e. The internal control procedures that the issuer has implemented, or will implement, to ensure that the proceeds of the proposed debt issuance will be directed to the intended use.

Additionally, our policies are developed in accordance with practices recommended by the Government Finance Officers Association for the purpose of providing a framework for debt management and capital planning. Lastly, our policies take into consideration Standard and Poor's' ("S&P") Financial Management Assessment ("FMA") methodology that outlines good debt management practices. Incorporating the quantitative metrics outlined in S&P's FMA can lead to better credit rating outcomes.

DEBT MANAGEMENT POLICY
GFOA Checklist

1. Debt Limits	
Legal Restrictions	
State Law	✓
Public Policy	
Purpose	✓
Types	✓
Relationship to Cap Impr Program	✓
Financial Restrictions	
Direct debt	✓
Revenue Debt	✓
Conduit Debt	✓
Short-term debt	✓
Variable rate debt	✓
2. Debt Structure Practices	
Maximum term	✓
Average maturity	✓
Debt service pattern	✓
Use of optional redemption	✓
Use of variable rate or fixed rate	✓
Other structuring practices	✓
3. Debt Issuance Practices	
Selection of professionals	✓
Method of sale	✓
Criteria for refundings	✓
Credit ratings	✓
4. Debt Management Practices	
Ongoing market relations	✓
Investment of bond proceeds	✓
Market disclosures	✓
Arb rebate	✓
5. Use of Derivatives	
Use of derivatives	✓

Publications and Client Education

In addition to our frequent involvement in the market representing clients, PFM has committed resources that research and relay information on the municipal market and the factors surrounding it. PFM not only strives at staffing the best informed and current professionals, it also strives to keep its clients apprised of market activity and pricing levels. In pursuit of the aforementioned goals, PFM publishes several in-house research reports and white papers that serve to detail market conditions, pricing information and industry developments. The PFM team makes it our responsibility to remain informed regarding market events and activity and is very comfortable providing market updates and answering questions regarding changes in the market.

Client Training

The District will have access to a wide network of educational training sessions offered by our PFM platform, as we believe that the best client is an informed client. We think that the most successful clients are the ones that know what their financial advisor does and why we do it. In this regard, annually we offer (free of charge) what has traditionally consisted of an intensive week-long training course for our clients, although recently has been delivered via a webinar series over several weeks. During this series of courses, finance directors, treasurers and other senior staff from around the nation get together (in-person or virtually) and spend full sessions learning the intricacies of bond math, the pricing of bonds, and investment techniques. While we do not expect our clients to serve as their own financial advisors, we do feel that the most effective clients are those that understand how we operate and know how to use PFM to add value to their operations.

Furthermore, we also regularly hold “Bonds 101” training (virtual or in-person) as requested by our clients. These presentations are tailored to the audience (i.e., technical for finance, higher level for engineering) and are designed to provide an educational review of the bond financing process, key steps, options, considerations and “deciphering the bond language.”

Legal Issues and Potential Conflicts of Interest

The proposal must provide and pending investigations of the firm and any enforcement, settlement, or disciplinary actions taken within the last five years against the firm or any proposed key personnel.

Neither PFM, nor to its knowledge, any proposed key personnel of PFM Financial Advisors LLC has been subject to any investigation, enforcement, settlement, or disciplinary actions within the last five years.

The firm's relationship or affiliation with any broker-dealer.

PFM Financial Advisors LLC is an independent financial services firm not engaged in the trading or underwriting of municipal bonds. PFM Financial Advisors LLC does not have selling group, syndicate, brokerage or other business arrangements with other financial institutions that may be underwriters of the issuer's debt or that of any other government issuer.

Any fee structure or payments resulting from potential or current relationships that may present a real of perception of a conflict of interest.

From time to time, we may be compensated by a municipal advisory fee that is or will be set forth in an agreement with the client to be, or that has been, negotiated and entered into in connection with a municipal advisory service. Payment of such fee may be contingent on the closing of the transaction and the amount of the fee may be based, in whole or in part, on a percentage of the principal or par amount of municipal securities or municipal financial product. While this form of compensation is customary in the municipal securities market, it may be deemed to present a conflict of interest since we may appear to have an incentive to recommend to the client a transaction that is larger in size than is necessary.

PFM serves as municipal advisor to many municipal entities and public utilities in California. While we do not foresee a conflict of interest given the nature of our work but do wish to ensure the District is aware nonetheless.

Registration with appropriate regulators.

We confirm that PFM is properly registered with the Municipal Securities Rulemaking Board (the "MSRB"). Please see **Appendix B** for copies of our registrations.

Costs

Present a concise list of the scope of services and the work products that your firm proposes to provide. Given your proposed scope of services and work products, discuss your proposed fee arrangement.

Below we provide a breakdown of our proposed fees. We believe these fees to be fair and equitable with respect to the level of service that PFM provides our clients. However, we do not wish fees alone to preclude our selection as the District's municipal advisor and are therefore willing to discuss these fees if the District so requests.

Fees for Current WIFIA Loan

As we understand the JPA's current status within the WIFIA loan process, the JPA is currently in the process of submitting its application. Assuming the JPA is nearing completion of its application (requiring no more than 25 hours of time to complete), PFM would propose charging a fixed fee for both the application submittal and loan negotiation / closing phases equal to the below transaction fee table. To the extent the application submittal will require greater than 25 hours, we would be open to discussions with the JPA and District as to whether additional compensation is warranted.

We would note that we also recognize the JPA and District may have existing consultants participating in the WIFIA loan process, to the extent there is a division of work, PFM is happy to work with said consultant and also discuss with the JPA and District how such cooperation would potentially result in a lower fee for the WIFIA loan.

Fees for Transaction Services

All work pertaining to the issuance of bonds will be covered with a fixed transaction fee as shown in the table to the right. This covers, and is not limited to, the planning work, execution of the transaction, and follow-up post-closing work related to the transaction. The fixed transaction fee begins covering work performed after the "kick-off" call for the bonds/loans with an agreed upon plan of finance and schedule. Prior to this time, fees for work performed will be governed by hourly fees. PFM's fees are subject to annual escalation based on CPI.

Bond Proceeds	Fee
Up to and including $50.0 million	$60,000
$50.0 million up to and including $100.0 million	$75,000
Over $100.0 million	$85,000

Fees for Non-Transaction Services

For general advisory work and special projects not related to a transaction, such as the development of a financial model or project negotiations/development work, the District and PFM could negotiate a separate fixed fee arrangement or use the hourly rates shown here (PFM does not charge for administrative time logged by Senior Associates and Associates) as agreed to by both the District and PFM. To the extent necessary to provide a reasonable estimate of cost before work begins, PFM will work with the District to establish a budget based on the rates shown in the table, and utilize these rates for final project billing based on actual hours required for the task. Significant variance between estimate and final cost of greater than 10% will require added approvals and explanation prior to payment. PFM's hourly fees would be subject to annual escalation based on CPI.

Title	Hourly Rate
Managing Director	$400
Director	$375
Senior Managing Consultant	$350
Senior Analyst	$325
Analyst	$300

Fees for SRF Loans

Given the nature of SRF loans and our experience in the varying degree of participation our clients need/request of PFM in connection with these loans, fees for each loan are agreed upon on a case-by-case basis. If minimal time / involvement is requested, we often bill on an hourly basis. If more time / involvement is requested, then a fixed fee may be more appropriate. The amount of the fixed fee would be discussed with the JPA and District based on the specifics of the anticipated loan.

Reimbursable Expenses

In addition to our fees noted above, we would expect to be reimbursed for our out-of-pocket expenses, including data, travel, mileage, technology fees associated with pricing, parking and meals, as necessary. Appropriate expense documentation and third-party receipts would be provided with each invoice.

Appendices

A. PFM Resumes

Darren Hodge

Managing Director
PFM Financial Advisors LLC

Darren joined PFM in 2015 and serves as financial advisor to municipal entities in the Western U.S. focusing on public utility, state and local governments and transportation finance. Darren's experience includes assisting his clients in the development and execution of long-term financial plans as well as assisting his clients in accessing both the private and public capital markets involving fixed and floating rate securities, interim financing products, and derivatives, among others.

Over his career he has worked with a variety of sectors including mass transit, public power, state and local governments, public power and water and wastewater, including others. Darren is also familiar with federal loan and grant programs having assisted his clients in securing low-cost financing through programs such as TIFIA and WIFIA. Darren has also assisted his clients in developing cost-effective interim financing solutions from commercial paper and lines of credit, to bank bridge financings and TIFIA Bond Anticipation Notes.

Before joining PFM, Darren spent over a decade as an investment banker, completing over $30 billion of transactions including public utility revenue bonds, sales tax revenue bonds, general obligation bonds, certificates of participations, tax and revenue anticipation notes, variable rate bonds.

Contact

1820 East Ray Road
Chandler, AZ 85225

hodged@pfm.com
855.885.9621 x2 office

Specialties
Financial Advisory

Public Power, Transportation, State & Local Governments

Education
B.S. in Computer Science
University of California, Santa Barbara

M.A. in Economics
University of California, Santa Barbara

Professional Designations or Licenses
Municipal Advisor Representative (Series 50)

Started with PFM: 2015

Started in the Field: 2004

Jaime B. Trejo

Senior Managing Consultant
PFM Financial Advisors LLC

Jaime Trejo is a senior managing consultant in PFM's San Francisco office. Jaime specializes in transaction management, including debt structuring, credit rating strategy and pricing. He works with cities, special districts, and school and community college districts across California and Arizona. Jaime has worked with both large and small issuers on various forms of financings, including wastewater revenue bonds, CFD bonds, certificates of participation, general obligation bonds, pension obligation bonds, bond anticipation notes and other short-term cash flow borrowings.

Prior to joining PFM, Jaime was an associate director at Standard & Poor's Global Ratings, where he served as the primary analyst on general obligation, appropriation, special tax, and special assessment debt credit ratings. While at S&P, he was the portfolios lead for the State of New Mexico and covered cities, counties, and school districts in Arizona, California, and Nevada.

Contact

44 Montgomery Street
3rd Floor
San Francisco, CA 94104

trejoj@pfm.com
415.393.7254 office

Specialties
Financial Advisory

K-12 Schools

Education
B.A. in History
University of California, Berkeley

M.P.P.
Harvard University

Professional Designations or Licenses
Municipal Advisor Representative (Series 50)

Fred Dilly

Senior Analyst

PFM Financial Advisors LLC

Fred Dilly joined PFM in 2020 and currently works out of the San Francisco office. Fred provides technical and quantitative support for multiple utility and local government clients, but he also has experience with a variety of other public sector entities, including water districts, transportation agencies and bond banks. Most recently, he has been involved in transactions for the Contra Costa Water District, Inland Empire Utilities Agency, the Coachella Valley Water District, and the Eastern Municipal Water District. In addition to his issuance experience, Fred specializes in creating sophisticated planning models to assist his clients in the financial planning process including building pro-forma models for the Contra Costa Water District and the Coachella Valley Water District.

Contact
44 Montgomery Street
3rd Floor
San Francisco, CA 94115

dillyf@pfm.com
213.415.1640 office

Specialties
Financial Advisory

Education
B.A. in Economics
University of California, Los Angeles

Professional Designations or Licenses
Series 50

Started with PFM: 2020

Started in the Field: 2020

Todd Fraizer, CFA

Managing Director
PFM Financial Advisors LLC

Todd Fraizer is a managing director in the firm's Charlotte office. He leads PFM's Pricing Group, which provides pricing resources and negotiation support for clients nationwide. He has assisted in pricing more than 3,000 transactions totaling more than $750 billion of municipal bonds for PFM issuer clients.

Prior to joining PFM, Todd was the vice president of finance for the Kansas Development Finance Authority. In this role, he served as the primary project manager for more than $2 billion of general purpose, higher education, pension obligation, transportation, and state revolving fund transactions. Before that, he gained futures and options trading experience while at the Kansas City Board of Trade.

Contact

Calhoun Building
11605 North Community House Road
Suite 500
Charlotte, NC 28277

fraizert@pfm.com
704.319.7921 office

Specialties
Financial Advisory

Education
B.A. in English Literature
University of Kansas

MBA in Finance
University of Missouri-Kansas City

Professional Designations or Licenses
Chartered Financial Analyst (CFA)

Municipal Advisor Representative (Series 50)

Started with PFM: 2005

Started in the Field: 1998

Daniel H. Kozloff

Managing Director
PFM Financial Advisors LLC

Dan is a managing director in PFM's Philadelphia office and manager of the Quantitative Strategies Group, providing primary technical, new product, transactional and modeling solutions for clients and developing proprietary analytical tools used throughout PFM's various business practices. Dan also oversees PFM's training programs, including comprehensive sessions for new hires, current employees, lateral hires, and clients. Dan manages PFM's Municipal Advisory Research Group, leads PFM's Tobacco Securitization Group and is a co-leader of PFM's Center for Retirement Finance.

Additionally, Dan co-leads PFM's municipal investor relations platform. Munite® is a one-stop shop investor relations platform that bridges the gap between the municipal issuer and investor communities, helping to ensure that issuers are optimizing their investor relations outreach when accessing the capital markets to secure funding for critical public projects.

Dan has provided primary transactional support on various complex issuances for the Commonwealth of Pennsylvania (the Commonwealth); the States of Michigan, Ohio, New York, New Jersey, Washington, Iowa, Nevada as well as New York City, Philadelphia and Sacramento County. He was involved in the comprehensive restructuring of the Commonwealth's Public Education Funding System and state-wide tax reform to supplement the Commonwealth's Education Funding. Dan has advised the Commonwealth on over $27 billion of debt issuance since 2003.

Dan serves as financial advisor to Philadelphia-area governments and institutions, including Montgomery County, Radnor Township,

Contact

1735 Market Street
42nd Floor
Philadelphia, PA 19103

kozloffd@pfm.com
215.557.1412 office

Specialties
Financial Advisory, Specialized Services

State & Local Governments, Higher Education

Education
B.A. in Political Science
University of Pennsylvania

Professional Designations or Licenses
Municipal Advisor Representative (Series 50)

Municipal Advisor Principal (Series 54)

Started with PFM: 1999

Started in the Field: 1999

pfm

Girard Estate and College, Moore College of Art & Design, the Public Health Management Corporation, as well as Centre County and Pennsylvania State University.

B. SEC, MSRB and State of California Registrations

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

OFFICE OF
THE SECRETARY

May 4, 2016

IN THE MATTER OF:

PFM Financial Advisors LLC
Two Logan Square, Suite 1600
18th & Arch Streets
Philadelphia, PA 19103-2700

SEC FILE NO.: 867-02030
Application Completion Date: May 3, 2016

ORDER GRANTING
REGISTRATION PURSUANT
TO SECTION 15B(a)(2) OF
THE SECURITIES EXCHANGE
ACT OF 1934

The above-named Applicant has completed its application with the Commission for registration as a municipal advisor pursuant to Section 15B(a)(2) of the Securities Exchange Act of 1934 (the "Act") on the above-referenced application completion date.

The Commission finds that the application contains the information prescribed under Section 15B(a)(2) of the Act and the rules thereunder. The Commission has not passed on the accuracy or adequacy of the information, and the effectiveness of Applicant's registration does not imply Commission approval or disapproval of Applicant's registration.

Accordingly, it is ORDERED, pursuant to Section 15B(a)(2) of the Act, that the Applicant's registration be, and hereby is, granted, effective forthwith.

For the Commission, by the Office of Compliance Inspections and Examinations, pursuant to delegated authority.

Brent J. Fields,
Secretary

MSRB Registration - Form A-12: Preview

FIRM/SOLE PROPRIETORSHIP IDENTIFIERS

MSRB ID: K1162
Firm Name: PFM Financial Advisors LLC
Municipal Advisor SEC ID: 867-02030
CRD Number:
Legal Entity Identifier:

BUSINESS INFORMATION

Firm Address: 1735 Market Street, 42nd Floor
City: Philadelphia State: PA Zip: 19103
Firm Website: www.pfm.com

TYPE OF ORGANIZATION

Organization Type: Limited Liability Company (LLC) City: Wilmington State: DE

BUSINESS ACTIVITIES

Municipal Advisor

- Issuance Advice
- Guaranteed Investment Contracts Advice
- Investment Advice - Proceeds of Municipal Securities
- Investment Advice - Funds of Municipal Entity
- Municipal Derivatives Advice
- Solicitation of Business - Investment Advisory
- Municipal Escrow Investment Advice
- Municipal Escrow Investment Brokerage
- Solicitation of Business - Other than Investment Advisory
- Municipal Advisor/Underwriter Selection Advice

DESIGNATED CONTACTS

Master Account Administrator

Name	Phone	Email
Gloria Wells	(717) 232-2723	wellsg@pfm.com

Primary Regulatory Contact

Name	Phone	Email
Daniel Hartman	(215) 567-6100	hartmand@pfm.com

Billing Contact

Name	Phone	Email
Alfreda Twyman	(215) 557-1928	ComplianceGroup@pfm.com

Compliance Contact

Name	Phone	Email
Cheryl D. Maddox	(215) 567-6100	maddoxc@pfm.com

Primary Data Quality Contact

Name	Phone	Email
Gloria Wells	(717) 232-2723	wellsg@pfm.com

Optional Regulatory Contact

Name	Phone	Email
Rosemarie Hoslyn	(215) 567-6100	hoslynr@pfm.com

Optional Data Quality Contact
No contact designated.

Optional Technical Contact
No contact designated.

State of California
Secretary of State

CERTIFICATE OF REGISTRATION

I, ALEX PADILLA, Secretary of State of the State of California, hereby certify:

That on the **21st** day of **June**, **2016**, **PFM FINANCIAL ADVISORS LLC**, complied with the requirements of California law in effect on that date for the purpose of registering to transact intrastate business in the State of California; and further purports to be a limited liability company organized and existing under the laws of **Delaware** as **PFM FINANCIAL ADVISORS LLC** and that as of said date said limited liability company became and now is duly registered and authorized to transact intrastate business in the State of California, subject, however, to any licensing requirements otherwise imposed by the laws of this State.

IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of the State of California this day of June 25, 2016.

ALEX PADILLA
Secretary of State

SW

201617710003

LLC-5 Application to Register a Foreign Limited Liability Company (LLC)

To register in California an LLC from another state, country or other place, fill out this form, and submit for filing along with:

- A **$70** filing fee, and
- A certificate of good standing, issued within the last six (6) months by the agency where the LLC was formed.
- A separate, non-refundable **$15** service fee also must be included, if you **drop off** the completed form.

Important! LLCs in California may have to pay a minimum $800 yearly tax to the California Franchise Tax Board. For more information, go to https://www.ftb.ca.gov.

Registered LLCs cannot provide in California "professional services," as defined by California Corporations Code sections 13401(a) and 13401.3.

FILED
Secretary of State
State of California
JUN 21 2016

This Space For Office Use Only

For questions about this form, go to *www.sos.ca.gov/business/be/filing-tips.htm*

LLC Name to be used for this LLC in California

① a. PFM FINANCIAL ADVISORS LLC
LLC Name — List the LLC name you use now (exactly as listed on your certificate of good standing)

b. _____
Alternate Name — If the LLC name in item 1a does not comply with California Corporations Code section 17701.08; list an alternate name to be used in California exactly as it is to appear on the records of the California Secretary of State. The alternate name must include: LLC, L.L.C., Limited Liability Company, Limited Liability Co., Ltd. Liability Co. or Ltd. Liability Company; and may not include: bank, trust, trustee, incorporated, inc., corporation, or corp., insurer, or insurance company. For general entity name requirements and restrictions, go to www.sos.ca.gov/business/be/name-availability.htm.

LLC History

② a. Date your LLC was formed *(MM, DD, YYYY)*: 01/15/2016

b. State, country or other place where your LLC was formed: Delaware

c. Your LLC currently has powers and privileges to conduct business in the state, country or other place listed above.

Service of Process (List a California resident or a California registered corporate agent that agrees to be your initial agent to accept service of process in case your LLC is sued. You may list any adult who lives in California. You may not list an LLC as the agent. Do not list an address if the agent is a California registered corporate agent as the agent's address for service of process is already on file.)

③ a. Registered Agent Solutions, Inc.
Agent's Name

b. _____ CA _____
Agent's Street Address (if agent is not a corporation) - Do not list a P.O. Box | *City (no abbreviations)* | *State* | *Zip*

If the agent listed above has resigned or cannot be found or served after reasonable attempts, the California Secretary of State will be appointed the agent for service of process for your LLC.

LLC Addresses

④ a. 1735 Market Street 43rd Floor Philadelphia, PA 19103
Street Address of Principal Executive Office - Do not list a P.O. Box | *City (no abbreviations)* | *State* | *Zip*

b. _____ CA _____
Street Address of Principal Office in California, if any - Do not list a P.O. Box | *City (no abbreviations)* | *State* | *Zip*

c. _____
Mailing Address of Principal Executive Office, if different from 4a or 4b | *City (no abbreviations)* | *State* | *Zip*

Read and sign below:

I am authorized to sign this document under the laws of the state, country or other place where this LLC was formed.

Sign here	Steve Boyle	Manager
	Print your name here	*Your business title*

Make check/money order payable to: **Secretary of State**

Upon filing, we will return one (1) uncertified copy of your filed document for free, and will certify the copy upon request and payment of a $5 certification fee.

By Mail	***Drop-Off***
Secretary of State Business Entities, P.O. Box 944228 Sacramento, CA 94244-2280	Secretary of State 1500 11th Street., 3rd Floor Sacramento, CA 95814

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "PFM FINANCIAL ADVISORS LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE FOURTEENTH DAY OF JUNE, A.D. 2016.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "PFM FINANCIAL ADVISORS LLC" WAS FORMED ON THE FIFTEENTH DAY OF JANUARY, A.D. 2016.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL FRANCHISE TAXES HAVE BEEN ASSESSED TO DATE.

Jeffrey W. Bullock, Secretary of State

5937280 8300

SR# 20164460089

You may verify this certificate online at corp.delaware.gov/authver.shtml

Authentication: 202491526

Date: 06-14-16

C. Exceptions to the Professional Services Agreement

Exceptions to the Professional Services Agreement

PFM Financial Advisors LLC respectfully requests the opportunity to negotiate the below modifications in any resulting Agreement.

Professional Services Agreement Page 5

2. TERMS.

2.5 Indemnification.

To the fullest extent permitted by law, Consultant shall immediately indemnify and hold the Agency, its directors, officials, officers, employees, volunteers, and agents free and harmless from any and all claims, demands, causes of action, costs, expenses, liability, loss, damage, or injury of any kind, in law or equity, to property or persons, including wrongful death, in any manner arising out of, pertaining to, or incident to any ~~alleged~~ **negligent or intentionally wrongful** acts, errors, or omissions of Consultant, its officials, officers, employees, subcontractors, consultants, or agents in connection with the performance of the Consultant's Services, the Project, or this Agreement, including without limitation the payment of all ~~consequential damages,~~ attorneys' fees and costs, including expert witness fees. Notwithstanding the foregoing, to the extent Consultant's Services are subject to Civil Code Section 2782.8, the above indemnity shall be limited, to the extent required by Civil Code Section 2782.8, to claims that arise out of, pertain to, or relate to the negligence, recklessness, or ~~willful~~ **intentionally wrongful** misconduct of the Consultant.

Explanation: PFM Financial Advisors LLC respectfully requests the opportunity to negotiate the indemnification language in any resulting agreement so that PFM Financial Advisors LLC's obligation to indemnify is limited to circumstances in which its performance has been wrongful, which would include negligent or intentionally wrongful acts.

Professional Services Agreement Page 9

2. TERMS.

2.8 Ownership of Materials and Confidentiality.

2.8.2 Confidentiality. All Documents & Data, either created by or provided to Consultant in connection with the performance of this Agreement, shall be held confidential by Consultant. All Documents & Data shall not, without the prior written consent of Agency, be used or reproduced by Consultant for any purposes other than the performance of the Services. Consultant shall not disclose, cause, or facilitate the disclosure of the Documents & Data to any person or entity not connected with the performance of the Services or the Project **unless disclosure is required by law or judicial or regulatory process**. Nothing furnished to Consultant that is otherwise known to Consultant or is generally known, or has become known, to the related industry shall be deemed confidential. Consultant shall not use Agency's name or insignia, photographs of the Project, or any publicity pertaining to the Services or the Project in any magazine, trade paper, newspaper, television, or radio production, or other similar medium without the prior written consent of Agency.

Explanation: PFM Financial Advisors LLC respectfully requests the opportunity to negotiate the confidentiality language in any resulting agreement to allow PFM Financial Advisors LLC to disclose confidential information if PFM Financial Advisors LLC is required to do so by law or regulatory or judicial process. If PFM Financial Advisors LLC is served with a subpoena requiring the production of the confidential information, we need to be able to comply with the subpoena, without that compliance constituting a breach of any resulting agreement.

Insurance

PFM is able to comply with the District's insurance requirements, but would like to note that PFM's professional liability policy is written on a claims-made basis rather than per occurrence. Please see the following pages for our proof of insurance.

Inclusion of PFM's Standard Financial Advisory Provisions

If PFM Financial Advisors LLC is awarded the engagement, we respectfully request the inclusion of certain provisions in the resulting contract that are regulatory requirements driven by our status as a municipal advisor registered with the Securities and Exchange Commission ("SEC") and with the Municipal Securities Rulemaking Board ("MSRB") (e.g., municipal advisor description; the scope of MA services, form and basis of compensation, termination or withdrawal of the client relationship, conflicts of interest disclosure, and our disclosure of any legal and disciplinary events).

Insurance Statement

PFM Financial Advisors LLC (“PFM”) has a complete insurance program, including property, casualty, general liability, automobile liability and workers compensation. PFM maintains professional liability and fidelity bond coverages which total $5 million and $5 million single loss/ $10 million aggregate, respectively. PFM also carries a $5 million cyber liability policy.

Our Professional Liability policy is a “claims made” policy and our General Liability policy claims would be made by occurrence.

Deductibles/SIR:
Automobile $100 comprehensive & $1,000 collision
Cyber Liability $100,000
General Liability $0
Professional Liability (E&O) $200,000
Financial Institution Bond $50,000

Insurance Company & AM Best Rating
Professional Liability (E&O). .....Lloyds of London; (A; Stable)
.....AXIS Surplus Insurance Company; (A; Stable)
Financial Institution Bond. .....Berkley Regional Insurance Company; (A+; Stable)
Cyber Liability. .....Greenwich Insurance Company (A+; Stable)
General Liability.....Valley Forge Insurance Company; (A Stable)
Automobile Liability. .....Continental Insurance Company; (A Stable)
Excess /Umbrella Liability.....Continental Insurance Company; (A Stable)
Workers Compensation.....Continental Insurance Company; (A Stable)
& Employers Liability

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 12/2/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Janice Boland	
Alliant Insurance Services, Inc 32 Old Slip 29th Fl New York, NY 10005	PHONE (A/C, No, Ext): (212) 603-0202	FAX (A/C, No):
	E-MAIL ADDRESS: Janice.Boland@alliant.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : Valley Forge Insurance Company	20508
INSURED	INSURER B : Continental Insurance Company	35289
PFM Financial Advisors, LLC 1735 Market Street, 42nd Floor Philadelphia, PA 19103	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT X LOC OTHER:	X	X	7018019790	12/7/2022	12/7/2023	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 1,000,000 $ 15,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
B	AUTOMOBILE LIABILITY ANY AUTO OWNED AUTOS ONLY / SCHEDULED AUTOS X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY			7018019806	12/7/2022	12/7/2023	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
B	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED X RETENTION $ 0			7018019840	12/7/2022	12/7/2023	EACH OCCURRENCE AGGREGATE	$ 20,000,000 $ 20,000,000
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WC718019823	1/1/2023	1/1/2024	X PER STATUTE / OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

General Liability - Additional Insured, Primary and Non-Contributory, Waiver of Subrogation included per written contract or agreement

30 Days Notice of Cancellation / 10 Days Non-Payment

CERTIFICATE HOLDER

EVIDENCE OF COVERAGE

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/30/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Crystal IBC, LLC 32 Old Slip 29th Fl New York NY 10005 License#: BR-1359321	**CONTACT NAME:** Brian Rozynski **PHONE (A/C, No, Ext):** 212-504-1882 **FAX (A/C, No):** **E-MAIL ADDRESS:** brian.rozynski@alliant.com
INSURED PFM Financial Advisors LLC 1735 Market Street, 42nd Floor Philadelphia PA 19103 PFMIILL-01	**INSURER(S) AFFORDING COVERAGE** / **NAIC #** **INSURER A :** Lloyd's Syndicate 1084 (Chauce / 0 **INSURER B :** AXIS Surplus Insurance Company / 26620 **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** 1872411999 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
	☐ OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	☐ **UMBRELLA LIAB** ☐ OCCUR						EACH OCCURRENCE	$
	☐ **EXCESS LIAB** ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						☐ PER STATUTE ☐ OTH-ER	
	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ **(Mandatory in NH)**	N / A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
A B	Professional Liability (E&O)			HMPL22-0291 ENN604632	12/7/2022 12/7/2022	12/7/2023 12/7/2023	Limit of Liability:	$5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Evidence of coverage only.

CERTIFICATE HOLDER

To Whom It May Concern

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

AGENDA ITEM NO. 10.A

DATE: October 2, 2023

TO: JPA Board of Directors

FROM: Engineering and External Affairs

SUBJECT: Pure Water Project Advanced Water Purification Facility Production, Utilization and Augmentation

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SUMMARY:

The Pure Water Project Las Virgenes-Triunfo (PWP) is an indirect potable reuse program that is first and foremost driven by more stringent regulations for discharges to Malibu Creek from the Tapia Water Reclamation Facility (WRF). Though regulatory compliance is the primary driver, the PWP elements were developed through a multi-year, stakeholder-driven process for the added benefit of creating a new, local and sustainable supply of potable water for the 100,000 customers served by the Las Virgenes-Triunfo Joint Powers Authority (JPA). As a compliance-driven project, the capacity of the Advanced Water Purification Facility (AWPF) is dictated by the amount of water to be diverted from discharge to Malibu Creek when there is a surplus of recycled water, as well as other physical limitations of the existing potable and recycled water systems. The JPA's goal is to maximize use of the facility through identification of augmentation sources and the pursuit of regional partnerships that will allow for the facility to operate throughout the entire year

DISCUSSION:

Seasonal Imbalance:

One of the challenges the PWP seeks to address is the seasonal imbalance between recycled water supply and demand. The Tapia WRF produces a relatively steady supply of Title 22-compliant recycled water for non-potable uses throughout the year, typically around 6 to 7 million gallons per day (MGD). However, the demand for recycled water is seasonal with use peaking in the summer months and declining during the winter. Currently, all the recycled water supply from Tapia WRF is used during the summer months when discharges to Malibu Creek from the Tapia WRF are prohibited, April 15th through November 15th. During the non-prohibition period, there is typically excess recycled water supply that would need additional treatment to be discharged to the creek after November 2030. The PWP will create a new demand for the recycled water, which will allow the JPA to treat all the excess water via indirect potable reuse. Because of the imbalance and need for compliance with the upcoming nutrient limits for Malibu Creek, the AWPF must be sized to accommodate the anticipated surplus during the non-prohibition period. This also means that during the prohibition period and the “shoulder months” (typically October/November and March/April) there will be little or no excess recycled water to send to the AWPF as all of water will be required to meet non-potable demands.

Planning for Expansion:

For indirect potable reuse programs that are driven primarily by developing a new water supply and compliance projects with a constant yearly supply, an AWPF can be sized relative to the supply of water anticipated and run at a constant and relatively high utilization rate throughout the entire year. In these instances, future expansion of the AWPF must be considered in terms of ultimate plant capacity, as the facility would be close to full utilization throughout the year. Because of the seasonal nature of the JPA's PWP, the opportunity for expansion lies first in identifying additional sources of water during the summer and shoulder months when it is anticipated there will not be sufficient water from the Tapia WRF to run the AWPF at full or even partial capacity. Flow augmentation is a more economical solution to creating additional potable water and should be pursued before additional capacity is added to the AWPF.

Anticipating Flows for the AWPF:

The ultimate production of the AWPF once it goes into service in 2028 is unknown and dependent on a number of factors including the following:

- The available supply of recycled water produced at Tapia WRF;
- The demands on the Title-22 recycled water system at the time of operation of the AWPF; and
- The success and timing of augmentation sources directed to the AWPF or Tapia WRF.

Each of these factors have their own subset of influences that would affect the ultimate production of the AWPF. Available supply of water being produced at the Tapia WRF depends on the amount of groundwater infiltration and inflow into the sewer collection system, the amount of wastewater produced by customers, and the amount of precipitation that ends up in the sewer system. Demands on the Title-22 recycled water system, conservation, time of use, and the capacity of infrastructure such as pipelines and pump stations also dictate how much water will be available. Lastly, the timing and amount flow augmentation sources and contributions from regional partnerships will further determine the volume of water that is ultimately treated at the AWPF.

Staff have developed projections for the production and utilization of the AWPF when it begins operation in 2028 that are reasonable given the various factors. To project production into the future, staff set reasonable and achievable goals for the development of augmentation sources. Reasonable projections must be made, so the JPA can maximize funding while mitigating the risk of falling short of those targets. The following table summarizes some of the flow assumptions made for future production of the AWPF, a description of how those values were determined, and where they are reported. While it is impossible to predict exactly how much water will be treated at the AWPF, these values represent staff's best estimate of the volumes that may be available and achieved through a robust program of flow augmentation.

Yearly Production (AFY)	Description	Source(s)
2,100	Initial Capacity of the AWPF based on historical surplus of Title-22 water from Tapia. This number fluctuates from year to year based on precipitation, conservation, and recycled water demand, and represents an average based on the historical data. However, it does not take into account the lower indoor water efficiency standards that have been adopted by the State but assumes that the JPA will be successful in its efforts to receive more “credit” for recycled water through regulatory changes.	• Title XVI grant application with BOR (2030 goal) • WIFIA Letter of Intent (LOI) • SRF Application • MWD LRP Application
3,100	2035 goal for AWPF production based on 2,100 AFY of base surplus from Tapia and additional sources of flow augmentation (i.e. Los Robles Groundwater from Thousand Oaks).	• Title XVI grant application with BOR (2035 goal) • SRF Application • MWD LRP Application
5,000		• Title XVI grant application with BOR (2040 goal) • WIFIA LOI • SRF Application • MWD LRP Application
6,730	This is the theoretical capacity of a 6 MGD plant running at 100% capacity for a full year. This value is not seen as an achievable goal, due to the need for plant maintenance, water quality variations, changing influent water, and other logistical considerations. This is presented simply to show what the theoretical limit of the AWPF is based on the current facility sizing.	• Calculated • Referenced in Title XVI, WIFIA, and SRF applications

Constraints to Expansion:

The 6 MGD production capacity of the AWPF was determined through careful study, and the identification of constraints to building a larger facility. It is important to plan for a facility that is right-sized for the JPA's specific drivers and constraints, so as not to create a stranded or underutilized asset. A capacity above 6 MGD would likely lead to equipment that is not used throughout the year, which would increase maintenance costs. Also, reverse osmosis membranes perform best under constant use, and if they are not processing water for an extended amount of time, they must be flushed and "pickled" using a special solution to prevent scaling and fouling. This is a time consuming and costly process and can lead to a shorter useful life of the membranes.

Another issue limiting expansion is the proposed site for the AWPF. The JPA seeks to maintain some of the open space available at the site, and due to topography and local planning guidelines, development of the entire site is not feasible. Given the amount of space available for development after the site is graded, a larger facility is not possible.

The PWP employs existing infrastructure to achieve indirect potable reuse through reservoir augmentation. The existing pump stations and pipelines of the recycled water system will be utilized to convey treated effluent from the Tapia WRF to the AWPF. To meet regulations for indirect potable reuse, Las Virgenes Reservoir will be utilized as the environmental buffer.

Expansion of the AWPF beyond 6 MGD would require upgrades to the pump stations and pipelines that would add significant cost to the project and exacerbate the risk of creating stranded assets. Also, if the AWPF were to produce more than 6 MGD, it is likely that the project would not be able to achieve the required detention time and mixing in the reservoir. Since the reservoir cannot be expanded, a larger facility would also trigger the need for additional treatment at the AWPF that would not be feasible due to space constraints.

Staff considered the possibility of direct potable reuse (DPR) in the future, which would negate the need to send the purified water to the reservoir. California is currently developing regulations for DPR and recently released a public review draft of the standards. While DPR is something staff will continue to monitor, the draft regulations indicate the need for significantly higher levels of treatment and additional processes that would be infeasible.

Also, eliminating the proposed environmental buffer would pose additional challenges associated with garnering public acceptance for the project.

The exhaustive pre-planning process the JPA has undertaken in conjunction with Jacobs Engineering as the Program Manager/Owner's Advisor has largely focused on identifying the project elements that are appropriate for project-specific drivers and constraints. The process included identifying a facility that is properly sized and designed to achieve the goals of the PWP. Through review of historical flows, existing infrastructure, current regulations and standards, and available technology, a 6 MGD facility was determined to be the best solution to meet the JPA's regulatory obligations and maximize use of surplus recycled water from the Tapia WRF. The opportunity to create more water for the JPA currently lies in identifying and developing additional sources of augmentation water and maximizing the utilization of the 6 MGD facility that will soon be undergoing final design. Creating a water supply strategy that will keep the AWPF at close to full capacity year-round will take careful planning and robust regional partnerships and is the best opportunity to create a long-lasting and significant source

of local water that maximizes the benefit of the significant investment.

GOALS:

Construct, Manage and Maintain all Facilities and Provide Services to Assure System Reliability and Environmental Compatibility

Prepared by: Oliver Slosser, Engineering Program Manager