



Valley Water

FY 2021–25

# Water Utility Enterprise Operations & Maintenance Plan



# ACKNOWLEDGEMENTS

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# EXECUTIVE SUMMARY



The purpose of this plan is to provide an overview of Valley Water operations and maintenance activities conducted by the Water Utility Enterprise in support of Ends Policy E-2, ***There is a reliable, clean water supply for current and future generations***; and the expected operations expenditures related to those activities for the next five fiscal years. This plan also discusses unfunded operations activities that are expected to be needed in the next five fiscal years but are not currently budgeted.

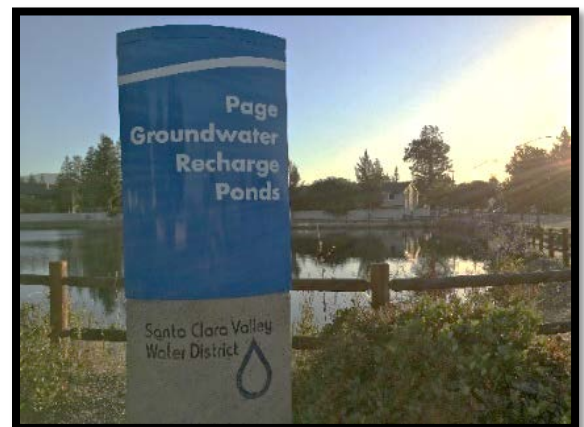
This is a rolling five-year plan and will be updated annually. ***It covers operations projects budgeted in the Water Utility Enterprise Fund (Fund 61). It does not cover capital projects or other Valley Water funding sources<sup>1</sup>***. This plan is organized similar to the budget document, by functional organizational division and unit. The plan includes a summary page for each division and unit that identifies the operations projects

undertaken by that division or unit, as well as unfunded activities expected in the coming years.

The operations activities Valley Water conducts in support of E-2 that are funded through the Water Utility Enterprise Fund (Fund 61) are outlined below and detailed in the chapters of this plan.

- Monitor and protect the groundwater basin.
- Identify, plan for, protect and secure sufficient local and imported water supplies to meet current and future demands for Santa Clara County.
- Advance water re-use and conservation in Santa Clara County.
- Convey local and imported source water to water treatment plants, recharge facilities, and streams.
- Treat and deliver water to retail customers.
- Maintain the infrastructure needed to conduct the above listed activities.
- Ensure services are carried out in way that protects the environment.

This plan does not capture all Water Utility maintenance work. The Water Utility publishes a separate maintenance work plan (MWP) that identifies asset rehabilitation and replacement projects for water utility infrastructure. Most maintenance projects identified in the five-year MWP are included in Valley Water's five-year Capital Improvement Program. Non-capital activities identified in the MWP such as testing and inspections, as well as routine preventive maintenance activities are included in the project budgets presented in this plan. The Fiscal Year (FY) 2020-2024 MWP was provided to the Board during the annual



<sup>1</sup> Four allocated projects and one general fund project are included in this plan; however, these projects are only partially funded by Fund 61. In addition, one safe, clean water funded (Fund 26) project is included which is not funded by Fund 61. These projects have been included because they are managed by water utility operational units.

Asset Management Program Update on July 23, 2019. The FY2021-2025 MWP will be provided to the Board in July 2020.

The financial information provided in this report is taken from the Board adopted budget for FY21, as well as the forecast data that is collected as part of the budget process. The Draft report was prepared using long term forecast data and unfunded needs requests as of December 2020. The FY21 budget requests and unfunded needs were evaluated throughout the budget and groundwater charge (rate) setting processes through May 2020. This plan was finalized following Board adoption of Valley Water’s final budget and groundwater production charges on May 26, 2020 and represents a 0% rate increase due to the COVID-19 epidemic, though most impacts of the 0% rate increase were realized through reductions to the capital program, which is not included in this plan. The final plan documents the final budgeted amounts for each project for FY21 as well as any remaining unfunded needs following the budget and groundwater charge setting process.

The tables and chart below provide a summary of expected operations expenses and unfunded operations resource needs for the Water Utility for fiscal years 21-25. A brief discussion of unfunded needs follows.

**Total Water Utility Operations Projects Resource Requirements for Current Service Levels\***

Division	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
402 - Office of COO	\$8,721	\$7,502	\$9,037	\$8,888	\$9,386	\$9,819	\$10,124
408 - Raw Water Division	\$27,472	\$29,923	\$32,150	\$33,648	\$35,920	\$37,427	\$38,884
415 - Water Supply Division	\$71,606	\$87,096	\$93,170	\$108,770	\$108,930	\$106,807	\$108,605
515 - Treated Water Division	\$39,557	\$43,132	\$47,751	\$49,785	\$54,525	\$55,248	\$56,382
<b>TOTALS</b>	<b>\$147,356</b>	<b>\$167,653</b>	<b>\$182,108</b>	<b>\$201,091</b>	<b>\$208,761</b>	<b>\$209,301</b>	<b>\$213,995</b>

\*In thousands. Data as of June 2020.

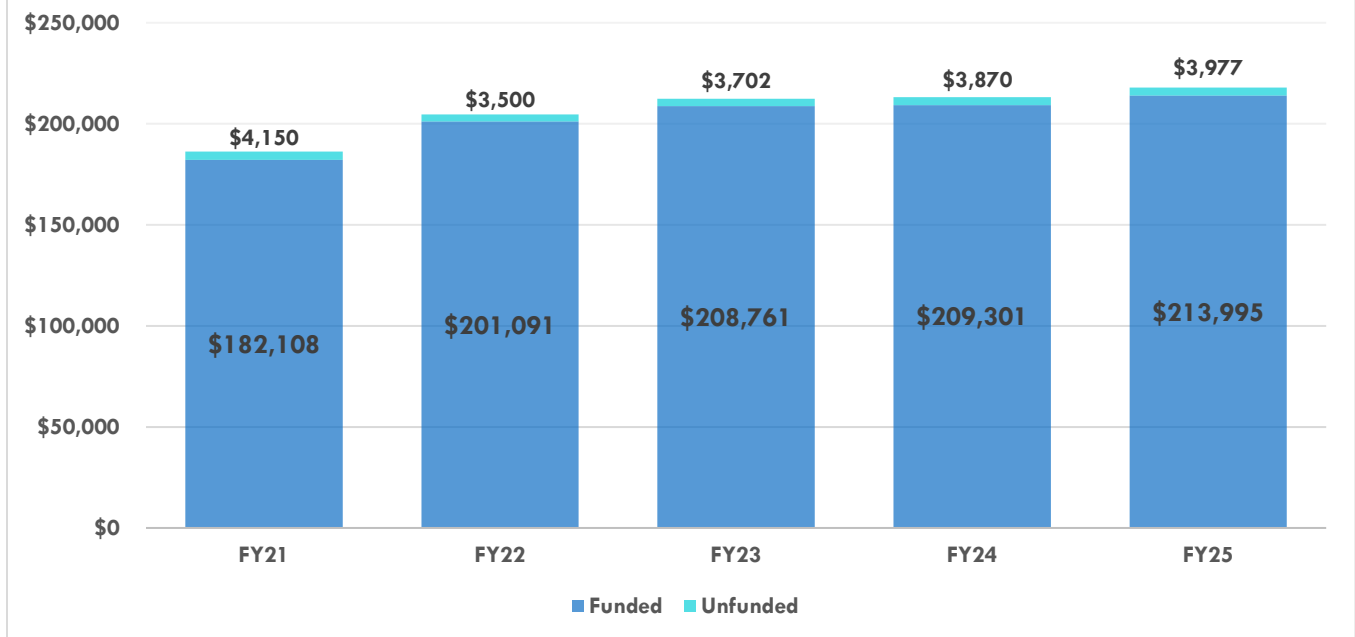
**Total Water Utility Operations Projects Additional Resource Needs (Unfunded)\***

Division	FY21	FY22	FY23	FY24	FY25
402 - Office of COO	\$0	\$0	\$0	\$0	\$0
408 - Raw Water Division	\$1,043	\$797	\$846	\$887	\$914
415 - Water Supply Division	\$1,258	\$1,087	\$1,141	\$1,183	\$1,206
515 - Treated Water Division	\$1,849	\$1,616	\$1,715	\$1,800	\$1,857
<b>TOTALS</b>	<b>\$4,150</b>	<b>\$3,500</b>	<b>\$3,702</b>	<b>\$3,870</b>	<b>\$3,977</b>

\*In thousands. Data as of June 2020.



## WATER UTILITY OPERATIONS PROJECTS 5-YEAR PROJECTION (\$ IN THOUSANDS)




Data as of June 2020.

### Overview of Operations Unfunded Needs

In total, the Water Utility has identified a need for an additional \$4.2 million for Fiscal Year 2021. These resources would provide the following services:

- Achievement of the Board approved conservation goal of 110,000 acre-feet-year by 2040 and additional support in implementing water conservation programs. Without additional resources, the programs and goals may be delayed.
- Development of an updated Pipeline Maintenance Program and related Programmatic EIR. Not updating these programs may impact Valley Water’s ability to perform routine pipeline maintenance activities or to continue the 10-year Pipeline Rehabilitation Capital Program.
- Operations modeling and implementation of new rule curves during the FAHCE implementation phase using a state-of-the-art new software model, HEC-ResSim. The model and additional resources will help ensure the rules developed under the FAHCE program are implemented successfully and that Valley Water can operate the reservoirs in accordance with the rules.
- Implementation and monitoring of additional metrics for the Asset Management Program as well as initiating predictive condition assessment tools and programs for major pump systems.
- Water quality and compliance activities continue to get more complex and demanding as regulations tighten and treatment plants continue to age. Additional resources would provide support for mandated compliance activities related to algal toxins, PFAS, as well as operational optimization and operator process training.
- Additional support for the Countywide Recycled Water Master Planning effort
- Investigation of new out-of-county groundwater storage opportunities. Additional resources are needed for this effort, and to support the Imported Water Unit in interactions with owners



and managers of potential groundwater banks to arrive at suitable options for capital investment and/or long-term contractual arrangements and managers of potential groundwater banks to arrive at suitable options for capital investment and/or long-term contractual arrangements.

The unfunded needs for Water Utility operations help address new or more stringent regulations and ensure existing service levels are met. Valley Water's Watershed business area has identified increased maintenance resource needs as a result of new capital improvement projects. The Water Utility business area does not currently share the same need. Most recent Water Utility capital improvements were rehabilitation and replacement of existing infrastructure, and therefore do not require additional resources. However, as new facilities are constructed or expanded, Water Utility operations and maintenance costs will increase. Two examples of new or expanded facilities currently being planned in the Water Utility capital program are recycled water facilities and Pacheco dam and reservoir expansion. These new or expanded facilities will increase Water Utility operations costs; however, these facilities will not come online in the next five years and fall outside the window of this plan. Increases in operations and maintenance costs resulting from these new facilities will be included in future plans.



# CHAPTER 1: INTRODUCTION

## Report Overview

The Water Utility Enterprise is primarily responsible for carrying out the core services related to Ends Policy E-2: ***There is a reliable, clean water supply for current and future generations.*** The purpose of this plan is to provide an overview of Water Utility Enterprise operations and maintenance activities in support of Ends Policy E-2, and the expected operations expenditures related to those activities for the next five fiscal years. This plan also discusses unfunded operations activities that are expected to be needed in the next five fiscal years but are not currently budgeted.

This is a rolling five-year plan and will be updated annually. ***It covers operations projects budgeted in the Water Utility Enterprise Fund (Fund 61). It does not cover capital projects or other Valley Water funding sources<sup>2</sup>.*** This plan is organized similar to the budget document, by functional organizational division and unit. The plan includes a summary page for each division and unit that identifies the operations projects undertaken by that division or unit, as well as unfunded operations activities expected in the coming years. Additional information on Fund 61 is available in Valley Water’s Budget Document, which can be found at the following link:

<https://www.valleywater.org/how-we-operate/financebudget>

The financial information provided in this report is taken from the Board adopted budget for FY21, as well as the long-term forecast data that is collected as part of the budget process. The Draft report was prepared using long term forecast data and unfunded needs requests as of December 2020. The FY21 budget requests and unfunded needs were evaluated throughout the budget and groundwater charge (rate) setting processes through May 2020. The plan was finalized following Board adoption of Valley Water’s final budget and groundwater production charges on May 12, 2020 and represents a 0% rate increase due to the COVID-19 epidemic, though most impacts of the 0% rate increase were realized in the Capital program, which is not included in this plan. The final plan documents the final budgeted amounts for each project for FY21 as well as any remaining unfunded needs following the budget and groundwater charge setting process. ***Also note that all costs are presented in thousands throughout this report.***

## Related Documents

Documents related to this plan include:

- Protection and Augmentation of Water Supplies (PAWS): The PAWS report is produced each year in accordance with requirements in the District Act section 26.5, and documents the activities undertaken to provide a reliable, clean water supply for the coming fiscal year as a basis for the proposed maximum groundwater production charges. It provides an overview of both operations and capital expenses for the next fiscal year while this plan provides an overview of only operations expenses for the next five fiscal years.
- Water Utility FY21-25 Maintenance Work Plan (MWP): The five-year MWP is a rolling five-year plan that identifies asset rehabilitation and replacement projects for the coming five fiscal years. Non-capital activities identified in that plan such as testing, and inspections are included in the project budgets presented in this

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<sup>2</sup> Four allocated projects and one general fund project are included in this plan; however, these projects are only partially funded by Fund 61. In addition, one safe, clean water funded (Fund 26) project is included which is not funded by Fund 61. These projects have been included because they are managed by water utility operational units.





plan. Capital asset rehabilitation and replacement projects identified in the five-year MWP are included in the five-year CIP described below. The final FY 21 to 25 MWP will be completed in July 2020.

- **FY21 Operating and Capital Budget:** Valley Water’s budget is produced each year to identify the planned operations and capital expenditures and funding sources for the coming fiscal year. It provides an overview of both operations and capital expenses, as well as revenues, for the next fiscal year, whereas this O&M plan provides an overview of only operations expenses and extends out five fiscal years.
- **FY21-25 Capital Improvement Program (CIP):** The CIP is a rolling five-year plan that identifies major water utility capital improvements. Some significant capital improvements for the water utility in the next five years include: Rinconada Water Treatment Plant Improvements Project and the Almaden Valley Pipeline Replacement Project. Additional detail on these and other water utility capital projects can be found in the FY 21-25 CIP which was finalized in June 2020.
- **FY21-25 Watersheds Operations and Maintenance Plan:** The Watersheds Operations and Maintenance Plan is a rolling five-year plan that describes operations and maintenance activities for the Watershed Operations and Maintenance Division for the next five years. It is similar to this plan; however, this plan is comprehensive of all water utility divisions.

## Valley Water History

Valley Water is the primary water resources agency for Santa Clara County. It began in 1929 as the Santa Clara Valley Water Conservation District, formed to respond to over-pumping of Santa Clara Valley’s groundwater. In the 1930s the water district began an ambitious project to construct large “conservation” reservoirs to capture rainfall and begin replenishing the underground aquifer through managed groundwater recharge. In 1938, construction began on the first six reservoirs: Calero, Almaden, Guadalupe, Vasona, Coyote and Stevens Creek.

From 1940 to 1950, Santa Clara County’s population jumped from 30,000 to 291,000. This explosive post-war growth, combined with a major drought from 1940 to 1946, put a severe strain on local water resources. Groundwater levels continued to drop due to increased agriculture, industry and residential construction, and land subsidence worsened due to over-pumping. In response, voters passed bonds to construct two more large dams: Lexington and Anderson.

By 1960, the county's population had risen to 642,000. In 1965, the state of California began delivering water to Santa Clara County via the South Bay Aqueduct. In 1968, the Santa Clara Valley Water Conservation District merged with the county’s Flood Control and Water Conservation District, forming the Santa Clara Valley Water District (Valley Water), to manage the water supply and flood programs for most of the county. The addition of imported water to local recharge efforts finally halted land subsidence by 1969, and by 1987, the federal Central Valley Project began delivering imported water to the county from San Luis Reservoir.

For more than 80 years, Valley Water’s strategy has been to maximize water supply reliability through the integrated management of groundwater and surface water. Valley Water’s local storage, groundwater recharge and water importation have resulted in long-term groundwater sustainability and effectively addressed historic overdraft and permanent land subsidence.

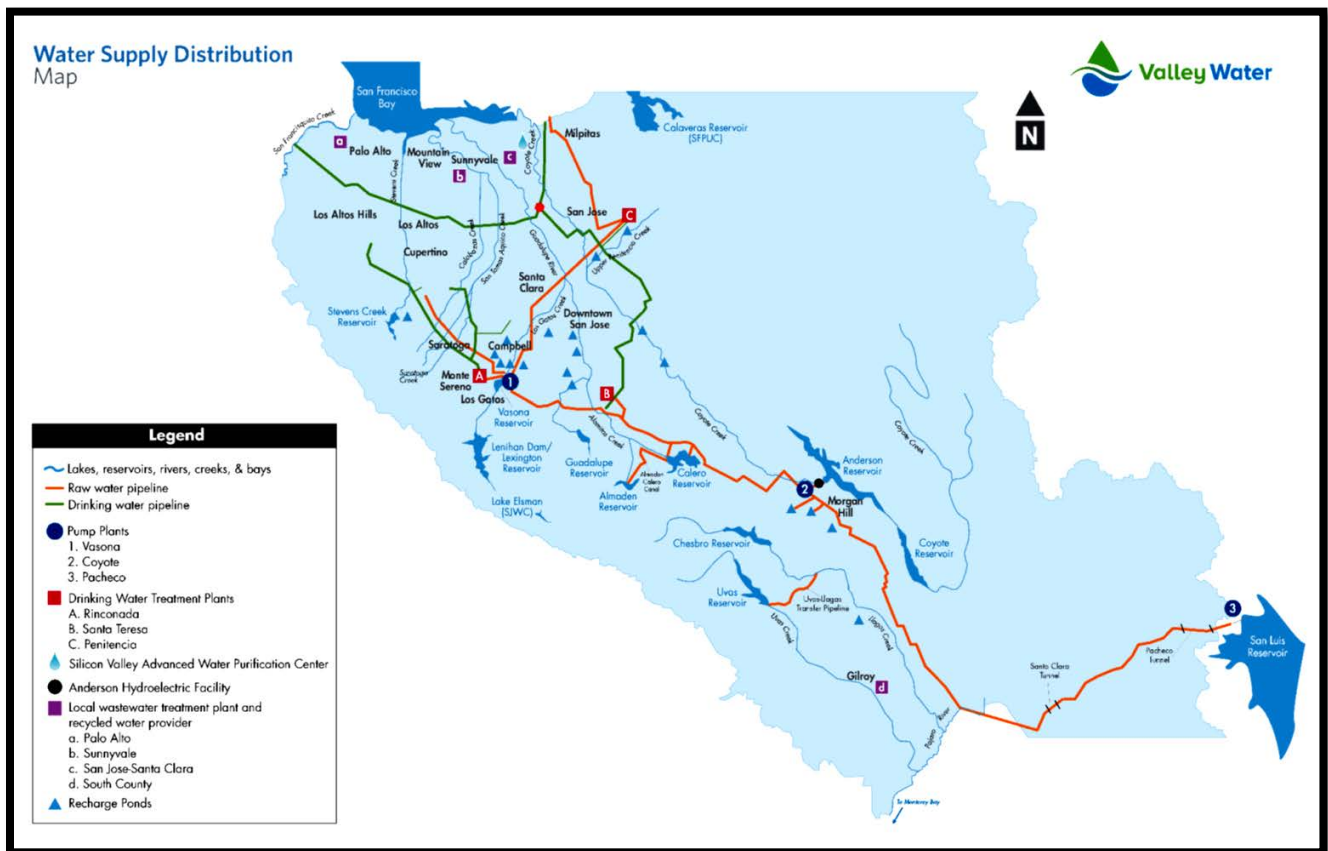
## Overview of Water Utility Operations and Maintenance Activities

Valley Water operates and maintains complex infrastructure and integrates natural and constructed systems to capture, treat and convey raw and treated water for a reliable water supply. Valley

Water's system delivers about 300 million gallons of raw water and 200 million gallons of treated drinking water every day (subject to water demand and hydrologic changes).


Valley Water's water supply and distribution system includes the following major facilities, shown on the map below:

- 10 surface water reservoirs.
- 169,000 acre-feet total reservoir storage capacity.
- 17 miles of raw surface water canals.
- 393 acres of groundwater recharge ponds.
- 91 miles of controlled in-stream recharge.
- 142 miles of pipelines.
- 3 pumping stations.
- 3 drinking water treatment plants and the Silicon Valley Advanced Water Purification Center.



Valley Water major water supplies include surface water from our 10 local reservoirs, water imported from the federal Central Valley Project (CVP) and State Water Project (SWP), and recycled water. These supplies are:

- used to replenish the local groundwater basins, which are pumped for use by individual well owners, and by municipal and retail water providers.
- sent to the Valley Water's drinking water treatment plants for purification.
- supplied directly to retail water users.

- 
- released to meet environmental needs and regulations.
  - recycled water to provide a growing source of supply for non-potable irrigation and industrial uses and directly offset the demand on drinking water supplies that comes either from the groundwater basins or from the drinking water treatment plants.

Non-Valley Water supplies include private water rights; water from the San Francisco Public Utilities Commission's Hetch Hetchy system, and Bay Area watersheds

Additional information on water supplies and demands are available in Valley Water's Urban Water Management Plan and 2040 Water Supply Plan, available at the links below.

Urban Water Management Plan:

<https://www.valleywater.org/your-water/water-supply-planning/urban-water-management-plan>

Water Supply Master Plan 2040:

<https://www.valleywater.org/your-water/water-supply-planning/water-supply-master-plan>

## CHAPTER 2: OFFICE OF THE WATER UTILITY CHIEF OPERATING OFFICER



### OVERVIEW

The Water Utility Chief Operating Officer's (COO) office oversees all activities of the Water Utility and provides strategic direction as well as budget and administrative support to Water Utility operations. 402 is the office's organizational unit and consists of the Chief Operating Officer, a Senior Management Analyst and one Executive Assistant. In addition, the following Unit reports directly to the COO:

#### **Water Utility Business Planning and Analysis (Unit 416)**

The Water Utility Business Planning and Analysis Unit manages strategic operations and capital projects that span multiple divisions of the water utility and that require direct input at the executive management level. The duties of this unit vary depending on the overall business needs of the Water Utility. Examples of projects currently being managed by this unit include development of this five-year O&M plan, procurement and implementation of a capital project management information system, coordination with regional agencies on South Bay Aqueduct reliability and future use, and coordination with Valley Water retailers on preparedness for system outages. The Unit also manages the technical training program for the Water Utility, providing training for required certifications to maintenance, operations, and engineering staff; and will be leading capital infrastructure master planning efforts in the coming years.

This Office manages the following projects to provide the services described above:

- 95001090 – Unscoped Projects – Budget Only
- 95061038 – WUE Administration
- 95061047 – WUE Technical Training Program (Managed by Unit 416)

Note that these projects support the entire water utility, not just the direct reports in the Office of the COO. These projects capture expenses such as training, conferences, travel, and professional memberships, as well as administrative activities such as budgeting and hiring for the entire water utility enterprise. These projects are monitored and managed by the Office of the COO.

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Unit	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
95001090 – Unscoped Projects – Budget Only	\$0	\$100	\$100	\$100	\$100	\$100	\$100
95061038 – WUE Administration	\$7,975	\$6,874	\$8,439	\$8,140	\$8,603	\$9,005	\$9,288
95061047 – WUE Technical Training Program	\$746	\$528	\$498	\$648	\$683	\$714	\$736
<b>TOTALS</b>	<b>\$8,721</b>	<b>\$7,502</b>	<b>\$9,037</b>	<b>\$8,888</b>	<b>\$9,386</b>	<b>\$9,819</b>	<b>\$10,124</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Complete performance evaluations, mid-year reviews, and goal setting process on time.
- Develop unit budgets and meet budgeting deadlines.
- Provide quarterly performance and budget/actual expenditures reporting.
- Ensure staff receives appropriate training.
- District-wide efforts, project efficiency, recruitment, process improvement, training, and high level management support.
- Procure a Project Management Information System.
- Prepare the FY22-26 WUE Operations and Maintenance Plan.

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)

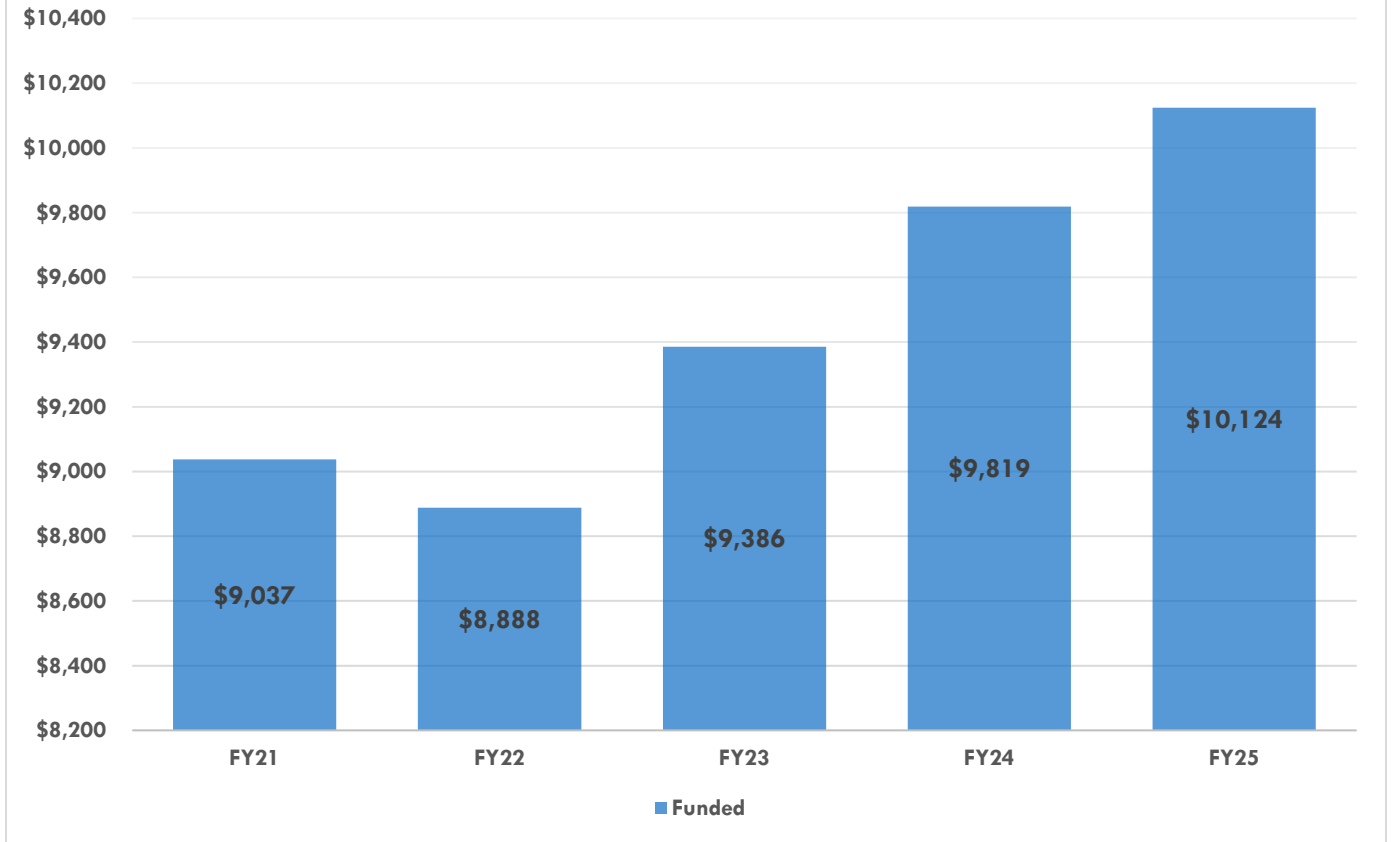
None.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The unit is currently fully funded.

## FIVE YEAR PROJECTION – SUMMARY

## OFFICE OF COO - 402 (\$ IN THOUSANDS)



Data as of June 2020.

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# CHAPTER 3: WATER SUPPLY DIVISION



## OVERVIEW

The Water Supply Division has primary responsibility for ensuring that the water supply is reliable to meet both the current and future needs of the community and the environment. The Division achieves these Ends through planning and implementation of a family of integrated water supply management programs.

Unit 415 is this Division’s organizational unit and consists of a Deputy Operating Officer, an Assistant Operating Officer, and one administrative assistant. The following Units are included in this Division:

### **Recycled and Purified Water Program (Unit 410)**

The Recycled and Purified Water (R&PW) Unit supports expansion and development of recycled and purified water in Santa Clara County by collaborating, negotiating and executing long-term agreements with various partners, and by leading various planning and research studies such as the Reverse Osmosis (RO) Concentrate Management Plan and the Countywide Water Reuse Master Plan.

### **Imported Water (Unit 425)**

The Imported Water Unit protects, manages, and develops Valley Water’s imported water supplies, which make up approximately half of Santa Clara County’s water supply on average. The Unit provides policy oversight, strategic planning and technical support for the development and management of Valley Water’s imported water supplies. This includes developing and maintaining imported water contracts and protecting and promoting Valley Water’s rights and benefits under those contracts through effective representation in administrative, regulatory, and legal processes that could impact the reliability, quality and cost of Valley Water’s imported water supplies.

### **Water Supply Planning & Conservation (Unit 445)**

The Water Supply Planning and Conservation Unit evaluates water supplies and demands, leads the development of the long-term water supply strategy that guides future water supply investments, and implements over 20 different conservation programs to ensure a reliable water supply for Santa Clara

County now and in the future. The Unit’s goal is to align and integrate Water Utility’s water supply and infrastructure planning efforts and to achieve 110,000 acre-feet of water conservation savings by 2040.

**Groundwater Management (Unit 465)**

The Groundwater Management Unit helps ensure continued groundwater sustainability by providing accurate and timely information on current and forecasted groundwater conditions; ensuring Valley Water compliance with California Water Code Sustainable Groundwater Management Act (SGMA) requirements; and implementing programs to protect groundwater resources. These efforts support Board objective 2.1.1: “Aggressively protect groundwater from the threat of contamination and maintain and develop groundwater to optimize reliability and to minimize land subsidence and saltwater intrusion.”

**Wells and Water Measurement (Unit 475)**

The Wells and Water Measurement Unit is responsible for Valley Water’s Well Ordinance Program and the Water Use Measurement Program. Implementation of the well ordinance includes well permitting, well inspection, well data management, and violation enforcement for all wells located in Santa Clara County. The Water Use Measurement Program provides accurate and dependable water measuring devices for determining water production at over 1,000 groundwater, treated water, and raw water sites throughout the county and provides accurate and timely meter reading and field surveillance data.

Funding for current service levels as well as future resource requirements which are not yet funded for this Division are included in the tables below. The resource requirements and unfunded needs are summarized by unit. Detailed information on each unit’s projects can be found in each unit’s section of this report.

**RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\***

Unit	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
410 – Recycled and Purified Water Program	\$5,520	\$5,879	\$5,938	\$7,077	\$7,419	\$7,727	\$7,966
425 – Imported Water	\$53,005	\$63,289	\$69,237	\$74,449	\$72,755	\$73,802	\$74,578
445 – Water Supply Planning and Conservation	\$5,993	\$9,767	\$9,147	\$17,994	\$18,998	\$15,056	\$15,516
565 – Groundwater Management	\$3,973	\$4,503	\$5,031	\$5,225	\$5,490	\$5,748	\$5,929
575 – Wells and Water Measurement	\$3,115	\$3,658	\$3,817	\$4,025	\$4,268	\$4,474	\$4,616
<b>TOTALS</b>	<b>\$71,606</b>	<b>\$87,096</b>	<b>\$93,170</b>	<b>\$108,770</b>	<b>\$108,930</b>	<b>\$106,807</b>	<b>\$108,605</b>

\*\$ in thousands. Data as of June 2020.

**KEY MILESTONES FOR CURRENT SERVICE LEVELS**

- Complete the Countywide Water Reuse Master Plan and develop the pertinent programmatic EIR by December 2021.
- Complete evaluation of Reverse Osmosis Concentrate (ROC) management alternatives by December 2020.
- Identify potential sources of supplemental water by January 1, 2021 and provide timely support for the annual water supply planning process.
- Submit initial State Water Project and Central Valley Project delivery schedules by December of each year.





- Achieve approximately 77,687 acre-feet per year of indoor and outdoor long-term water conservation savings in FY21.
- Implement nearly 20 different water conservation programs including incentives and rebates; water waste inspector, water wise survey, and leak repair programs; workshops, and outreach at community events to promote water conservation.
- Prepare the 2021 Monitoring and Assessment Plan in support of the Water Supply Master Plan 2040.
- Complete the Bay Area Regional Reliability (BARR) Shared Water Access Program Pilot Project.
- Measure groundwater elevation in 200 wells and complete monthly Groundwater Condition Reports.
- Submit groundwater elevation data to DWR quarterly.
- Update Valley Water’s SGMA alternative and support San Benito County Water District efforts to prepare a Groundwater Sustainability Plan for the North San Benito Subbasin by January 2022.
- 95% of well permit applications (approximately 1,600 annually) are processed within 10 working days.
- 100% of well construction/destruction activities (approximately 1,300 annually) are inspected.
- 100% of well enforcement actions are completed according to tracking deadlines.
- 100% of 26 treated water meters at active treated water turnouts are read on a weekly basis (completed by Friday of each week).

### ADDITIONAL RESOURCE NEEDS (UNFUNDED)\*

Project Name	FY21	FY22	FY23	FY24	FY25
410 – Recycled and Purified Water Program	\$356	\$387	\$410	\$430	\$444
425 – Imported Water	\$0	\$0	\$0	\$0	\$0
445 – Water Supply Planning and Conservation	\$525	\$290	\$296	\$297	\$291
565 – Groundwater Management	\$0	\$0	\$0	\$0	\$0
575 – Wells and Water Measurement	\$0	\$0	\$0	\$0	\$0
<b>TOTALS</b>	<b>\$881</b>	<b>\$677</b>	<b>\$706</b>	<b>\$727</b>	<b>\$735</b>

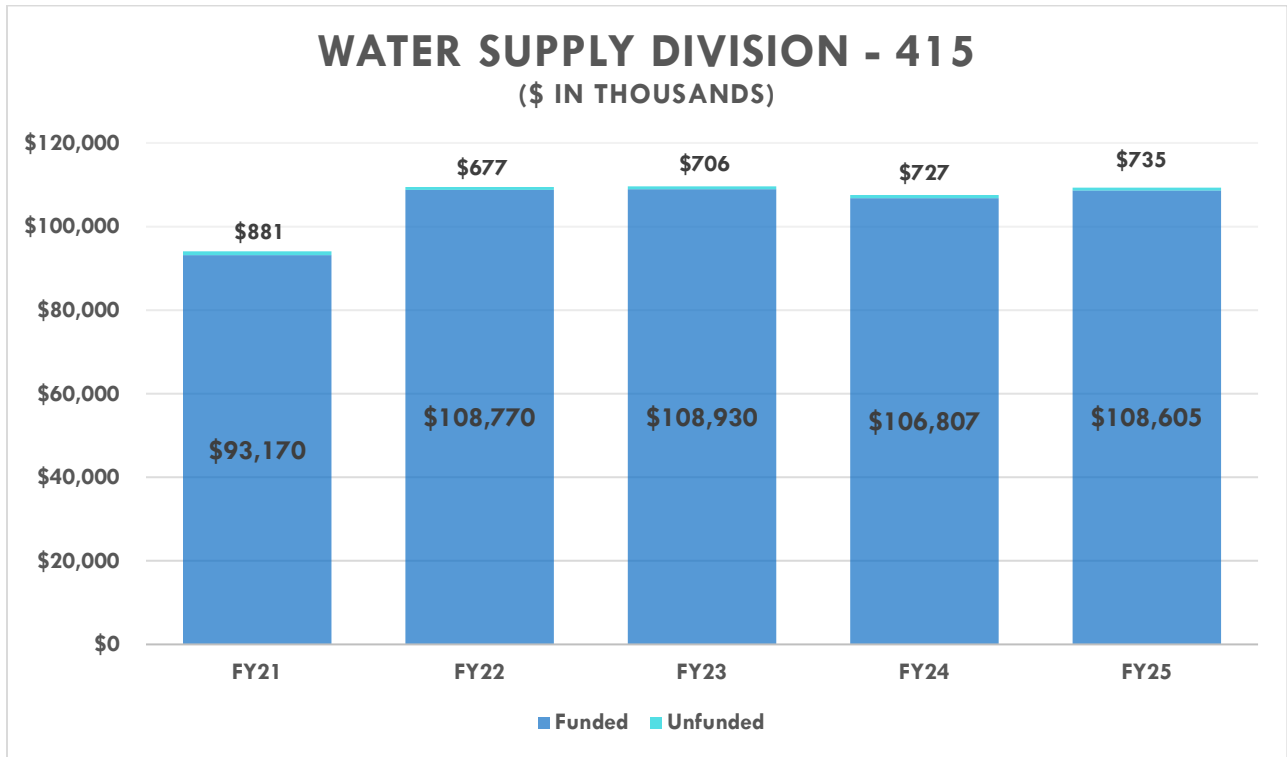
\*\$ in thousands. Data as of June 2020.

### DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The Division is requesting a total of \$760,000 in FY21 to support conservation programs and water supply planning. Impacts of not funding these requests are described below.

- Challenges in achieving the board approved conservation goal of 110,000 acre-feet-year by 2040 and delays in implementation of some water conservation programs.
- Delays in researching new out-of-county groundwater storage opportunities.

## FIVE YEAR PROJECTION – SUMMARY



Data as of June 2020.

# Unit 410 – Recycled and Purified Water Unit



## OVERVIEW

The Recycled and Purified Water (R&PW) Unit supports expansion and development of recycled and purified water in Santa Clara County by collaborating, negotiating and executing long-term agreements with various partners, and by leading various planning and research studies such as the Reverse Osmosis (RO) Concentrate Management Plan and the Countywide Water Reuse Master Plan. The R&PW Unit also works on the direct potable reuse by evaluating feasible projects and being involved in the pertinent regulatory and legislative processes. In addition, the unit conducts Potable reuse piloting and testing.

The Unit supports the District’s participation, investigation, and research in the future efforts in potential desalination of ocean and brackish waters as part of the Bay Area Regional Reliability Project and includes the actions required to plan and diversify the county’s water supplies related to desalination.

This Unit manages the following projects to provide the services described above:

- 91101004 – Recycled & Purified Water Program
- 91441003 – Ocean & Brackish Desalination

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
Recycled & Purified Water Program - 91101004	\$5,518	\$5,806	\$5,874	\$6,860	\$7,192	\$7,491	\$7,723
Ocean & Brackish - 91441003	\$2	\$73	\$64	\$217	\$227	\$236	\$243
<b>TOTAL</b>	<b>\$5,520</b>	<b>\$5,879</b>	<b>\$5,938</b>	<b>\$7,077</b>	<b>\$7,419</b>	<b>\$7,727</b>	<b>\$7,966</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Complete the Countywide Water Reuse Master Plan and develop the pertinent programmatic EIR by December 2021.
- Complete evaluation of Reverse Osmosis Concentrate (ROC) management alternatives by December 2020.

- Collaborate, negotiate, execute, and implement long-term agreements with various partners to expand recycled and purified water projects, including agreements with cities of Sunnyvale, the San Francisco Public Utilities Commission, and the Bay Area Water Supply and Conservation Agency.
- Developing information for potential feasible desalination projects.

### ADDITIONAL RESOURCE NEEDS (UNFUNDED)\*

Project Name	FY21	FY22	FY23	FY24	FY25
Recycled & Purified Water Program - 91101004	\$356	\$387	\$410	\$430	\$444
Ocean & Brackish - 91441003	\$0	\$0	\$0	\$0	\$0
<b>TOTAL</b>	<b>\$356</b>	<b>\$387</b>	<b>\$410</b>	<b>\$430</b>	<b>\$444</b>

\*\$ in thousands. Data as of June 2020.

### DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

Additional resources are needed to support implementation of the Countywide Water Reuse Master Plan (CWRMP), the RO Concentrate Management Program, the Potable Reuse Piloting and Testing, and pertinent environmental evaluations and regulatory permit requirements such as CEQA and NPDES.

# Unit 425 – Imported Water Unit



## OVERVIEW

The Imported Water Unit protects, manages, and develops Valley Water’s imported water supplies, which make up approximately half of Santa Clara County’s water supply on average. The imported water sources are rain and snow in the Sierra Nevada range of northern and eastern California, draining into upstream rivers and reservoirs, and flowing through or around the Sacramento-San Joaquin River Delta before delivery to Valley Water by the State Water Project (SWP) through the South Bay Aqueduct (SBA) and by the federal Central Valley Project (CVP) through the San Felipe Division (SFD).

The Imported Water Unit provides policy oversight, strategic planning and technical support for the development and management of Valley Water’s imported water supplies. This includes developing and maintaining imported water contracts, and protecting and promoting Valley Water’s rights and benefits under those contracts through effective representation in administrative, regulatory, and legal processes that could impact the reliability, quality and cost of Valley Water’s imported water supplies. This specifically includes participation in the development of a long-term Delta solution, as well as other state-wide and regional projects and programs, state and federal regulatory proceedings, various litigations and settlements, and negotiations of contract renewals and amendments. Valley Water’s SWP and CVP costs are minimized through analysis and negotiation of project budgets, cost allocations and rate setting policies and practices.

Imported water supplies are managed and developed through water transfers, water banking, annual exchanges and rescheduling, and regional projects to support the Board’s Ends Policies and integrated Water Utility planning. The program includes internal coordination to support efficient management of the Water Utility and effective long-term water supply planning, coordination with the Office of Government Relations Unit on legislative matters, and coordination with the Office of Communications on public outreach to protect and promote Valley Water’s imported water interests.

The goal of the Imported Water Program is to ensure that Valley Water has reliable, high quality, cost-effective sources of imported water sufficient to meet its current and future needs, consistent with its water supply planning efforts and Board policies.

This Unit manages the following projects to provide the services described above:

- 91131004 – Imported Water Program
- 91131006 – IW San Felipe Division Deliveries
- 91131007 – IW South Bay Aqueduct Deliveries
- 91131008 – State Water Project Costs

- 91151013 – Water Banking Operations
- 91601001 – Delta Conveyance (formerly California WaterFix)
- 91154007 – Water Purchases Capital Project

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
Imported Water Program - 91131004	\$4,437	\$4,744	\$5,549	\$5,139	\$5,420	\$5,665	\$5,843
IW San Felipe Division Delvrs - 91131006	\$20,961	\$23,080	\$17,834	\$18,754	\$18,767	\$18,782	\$18,801
IW South Bay Aqueduct Delvrs - 91131007	\$96	\$2,536	\$757	\$3,479	\$3,583	\$3,691	\$3,801
State Water Project Costs - 91131008	\$20,892	\$25,068	\$29,636	\$30,633	\$32,165	\$33,773	\$35,462
Water Banking Operations - 91151013	\$5,489	\$2,502	\$3,816	\$3,983	\$4,102	\$4,225	\$4,352
Delta Conveyance (formerly California WaterFix) – 91601001	\$1,130	\$5,359	\$11,645	\$12,461	\$8,718	\$7,666	\$6,319
Water Purchases Capital Project – 91154007	\$53,005	\$63,289	\$69,237	\$74,449	\$72,755	\$73,802	\$74,578
<b>TOTAL</b>	<b>\$4,437</b>	<b>\$4,744</b>	<b>\$5,549</b>	<b>\$5,139</b>	<b>\$5,420</b>	<b>\$5,665</b>	<b>\$5,843</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Identify potential sources of supplemental water by January 1 of each year and provide timely support for the annual water supply planning process (ISO Process #Q710W02 Managing Water Supplies to Meet Current Demand).
- Provide monthly updates to the Board and public on imported water management agreements through the Water Tracker (EL-7.3 compliance).
- Submit initial State Water Project and Central Valley Project delivery schedules by December of each year
- Update and maintain fiscal year expenditure forecasts for State Water Project and Central Valley Project water deliveries at least quarterly.
- Process all imported water invoices per contract/agreement terms.

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)

None.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The unit is currently fully funded.

# Unit 445 – Water Supply Planning & Conservation



## OVERVIEW

The Water Supply Planning and Conservation Unit evaluates water supplies and demands, leads the development of the long-term water supply investment strategy, and water supply planning documents, and implements over 20 different conservation programs to ensure a reliable water supply for Santa Clara County now and in the future. The unit's goal is to align and integrate Water Utility's water supply and infrastructure planning efforts and to achieve 110,000 acre-feet per year of water conservation savings by 2040.

The unit's work informs investment decisions regarding water supplies, including water conservation programs, and associated infrastructure in support of Valley Water's mission to provide a clean, reliable water supply for Santa Clara County.

This Unit manages the following projects to provide the services described above:

- 00041039 – Integrated Regional Water Management
- 91151001 – Water Conservation
- 91251001 – Bethany Pipeline
- 95741001 – Water Supply Planning

Project 00041039 is an allocated project, as the project's services support multiple Valley Water business areas. The Water Utility fund recipient project for this allocated project is 95041039. The resource requirements and funding provided in the tables below are provided for the entire allocated project, though the Water Utility will only fund a portion of this amount.

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
Integrated Regional Water Management - 00041039	\$89	\$212	\$77	\$232	\$244	\$255	\$263
Water Conservation - 91151001	\$4,482	\$6,148	\$6,198	\$8,357	\$9,210	\$10,086	\$10,392
Bethany Pipeline - 91251001	\$355	\$1,940	\$1,021	\$7,170	\$7,173	\$2,227	\$2,294
Water Supply Planning - 95741001	\$1,067	\$1,467	\$1,851	\$2,235	\$2,371	\$2,488	\$2,567
<b>TOTAL</b>	<b>\$5,993</b>	<b>\$9,767</b>	<b>\$9,147</b>	<b>\$17,994</b>	<b>\$18,998</b>	<b>\$15,056</b>	<b>\$15,516</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Achieve approximately 77,687 acre-feet per year of indoor and outdoor long-term water conservation savings in FY21.
- Implement nearly 20 different water conservation programs including incentives and rebates; water waste inspector, water wise survey, and leak repair programs; workshops, and outreach at community events to promote water conservation.
- Coordinate and collaborate with the cities and water retailers in the county to implement consistent, countywide outreach and education.
- Prepare the 2021 Monitoring and Assessment Plan in support of the Water Supply Master Plan 2040.
- Complete the Bay Are Regional Reliability (BARR) Shared Water Access Program Pilot Project.
- Provide modeling and analysis support for various water utility investment decisions.
- Collaborate with retailers and land use agencies on long-term planning.
- Participate in grant funding applications.

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)\*

Project Name	FY21	FY22	FY23	FY24	FY25
Integrated Regional Water Management - 00041039	\$0	\$0	\$0	\$0	\$0
Water Conservation – 91151001	\$525	\$290	\$296	\$297	\$291
Bethany Pipeline – 91251001	\$0	\$0	\$0	\$0	\$0
Water Supply Planning – 95741001	\$0	\$0	\$0	\$0	\$0
<b>TOTAL</b>	<b>\$525</b>	<b>\$290</b>	<b>\$296</b>	<b>\$297</b>	<b>\$291</b>

\*\$ in thousands. Data as of June 2020.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The unit is requesting resources to support water conservation programs and projects. Additional resources are needed to focus on coordination with stakeholders, both internal and external, to promote and develop water conservation programs. Specifically, resources will be used to implement events and trainings (such as the Qualified Water Efficient Landscape trainings and the annual Landscape Summit) and speaking opportunities to promote conservation in the community, update conservation material and web pages, and work with other agencies to increase awareness of the water conservation programs and tools in the community. Additional resources will support development of new conservation programs that will help Valley Water reach its water savings goals.



# Unit 465 – Groundwater Management



## OVERVIEW

The Groundwater Management Unit helps ensure continued groundwater sustainability by providing accurate and timely information on current and forecasted groundwater conditions; ensuring Valley Water compliance with California Water Code Sustainable Groundwater Management Act (SGMA) requirements; and implementing programs to protect groundwater resources. These efforts support Board objective 2.1.1: “Aggressively protect groundwater from the threat of contamination and maintain and develop groundwater to optimize reliability and to minimize land subsidence and saltwater intrusion.”

The unit implements Valley Water’s comprehensive Groundwater Management Plan for the Santa Clara and Llagas Subbasins (approved by the state for SGMA compliance) and is responsible for required updates and reporting to the Department of Water Resources. The unit also supports efforts led by others to ensure SGMA compliance for the North San Benito Subbasin, which includes small portions in Santa Clara County.

To understand groundwater conditions, the unit monitors groundwater levels and quality, land subsidence, and recharge water quality. Using collected data and analytical tools, the unit evaluates and forecasts groundwater conditions, supports water supply operations and long-term planning, and identifies strategies and actions to ensure continued sustainability. The unit also oversees evaluation of groundwater benefit zones, which are geographic areas where well users are charged for pumped groundwater based on benefits from Valley Water activities. To promote groundwater resource protection, the unit engages on proposed projects, land use, legislation, and policy that may impact groundwater supply or quality, and collaborates with stakeholders and other agencies. Related data and analysis are presented in various reports like the Annual Groundwater Report, Protection and Augmentation of Water Supply Report, monthly Water Tracker reports, and monthly Groundwater Condition reports.

This unit manages the following projects to provide the services described above:

- 91041018 – Groundwater Management Program
- 60041003 – Hollister Groundwater Management
- 26061010 – Nitrate Treatment System Rebate Program

The Nitrate Treatment System Rebate Program is funded by the Safe, Clean Water fund (Fund 26), not Fund 61, though it is included in financial tables below since it is managed in this unit. The Hollister Groundwater Management project is funded by the General Fund, which is recovered through overhead partially charged to Fund 61.

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

### RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
Groundwater Management Program - 91041018	\$3,951	\$4,442	\$4,941	\$5,152	\$5,433	\$5,693	\$5,873
Hollister Groundwater Management - 60041003	\$21	\$57	\$86	\$69	\$53	\$55	\$56
Nitrate Treatment System Rebate Program - 26061010	\$1	\$4	\$4	\$4	\$4	\$0	\$0
<b>TOTAL</b>	<b>\$3,973</b>	<b>\$4,503</b>	<b>\$5,031</b>	<b>\$5,225</b>	<b>\$5,490</b>	<b>\$5,748</b>	<b>\$5,929</b>

\*\$ in thousands. Data as of June 2020.

### KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Measure groundwater elevation in 200 wells and complete monthly Groundwater Condition Reports.
- Submit annual reports on Valley Water’s Groundwater Management Plan (approved SGMA Alternative) to the California Department of Water Resources by April 1.
- Submit groundwater elevation data to the California Department of Water Resources quarterly.
- Support water supply operations planning through groundwater model simulations or other analysis quarterly or as needed.
- Conduct regional groundwater quality sampling at about 70 wells in Q2.
- Prepare groundwater quality summary for well owners in Q4.
- Update Valley Water’s SGMA alternative and support San Benito County Water District efforts to prepare a Groundwater Sustainability Plan for the North San Benito Subbasin by January 2022.

### ADDITIONAL RESOURCE NEEDS (UNFUNDED)

None.

### DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The unit is currently fully funded.

# Unit 475 – Wells and Water Measurement



## OVERVIEW

The Wells and Water Measurement Unit is responsible for two projects: The Well Ordinance Program and the Water Use Measurement Program.

The **Well Ordinance Program** helps protect the District’s groundwater resource by providing staff, services, and supplies used for the implementation of the District’s Well Ordinance (Ordinance 90-1). Implementation of the well ordinance includes well permitting, well inspection, well data management, and violation enforcement for all wells located in Santa Clara County.

In direct support of District Board Ends Policy 2.1.1, this program is implemented to protect the quality and quantity of the County’s groundwater resources by ensuring that wells are constructed, destroyed, modified, and maintained so that they do not act as vertical conduits that could allow poor quality surface or subsurface waters to move into drinking water aquifers. This program also provides important well data that is used as a foundation to other District groundwater management and monitoring programs.

The **Water Use Measurement Program** provides staff time, services, and supplies for the operation of the District’s meter test facility and for meter reading, meter installation, meter testing, and meter maintenance. The program provides accurate and dependable water measuring devices for determining water production at over 1,000 groundwater, treated water, and raw water sites throughout the District and provides accurate and timely meter reading and field surveillance data. These data are critical to the District’s revenue collection activities, as they are used as the basis for determining water production for groundwater, surface water, treated water, and recycled water billing accounts.

This Unit manages the following projects to provide the services described above:

- 91451002 – Well Ordinance Program
- 95111003 – Water Use Measurement Program

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
Well Ordinance Program - 91451002	\$1,425	\$1,835	\$1,847	\$2,007	\$2,129	\$2,232	\$2,303
Water Use Measurement Program - 95111003	\$1,690	\$1,823	\$1,970	\$2,018	\$2,139	\$2,242	\$2,313
<b>TOTAL</b>	<b>\$3,115</b>	<b>\$3,658</b>	<b>\$3,817</b>	<b>\$4,025</b>	<b>\$4,268</b>	<b>\$4,474</b>	<b>\$4,616</b>

\*\$ In thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- 95% of well permit applications (approximately 1,600 annually) are processed within 10 working days.
- 100% of well construction/destruction activities (approximately 1,300 annually) are inspected.
- 100% of well enforcement actions are completed according to tracking deadlines.
- 100% of 26 treated water meters at active treated water turnouts are read weekly (completed by Friday of each week).
- 100% of approximately 240 retailer and other large volume groundwater facilities are read monthly (completed by the end of each month).
- 100% of approximately 750 metered semi-annual groundwater facilities are read not later than June 30 and December 31.
- Perform 90 percent of preventative maintenance work orders on water measuring devices according to MAXIMO PM schedule.

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)

None.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The unit is currently fully funded.

## CHAPTER 4: RAW WATER DIVISION



### OVERVIEW

The Raw Water Division maintains and operates 142 miles of large diameter transmission pipelines including 94 miles of raw water pipelines and tunnels, three pumping plants and 99 ponds used to recharge the groundwater basin. The use of local and imported raw water supplies are maximized to meet treated water, groundwater recharge, and environmental needs.

This Division manages one project in addition to the projects described in each unit below:

- 91211005 – SFD Reach 1 Administration

Unit 408 is this Division’s organizational unit and consists of the Deputy Operating Officer and one Administrative assistant. The following Units are included in this Division:

#### **Utility Maintenance Engineering (Unit 435)**

The Utility Maintenance Engineering Unit provides civil and mechanical engineering as well as corrosion control services in support of Water Utility Operations and Maintenance Programs and Projects. The Unit also supports the 10-year pipeline rehabilitation capital project and oversees the implementation of the management strategy for large diameter water conveyance and transmission pipelines. This includes the inspection of Welded Steel and Pre-stressed Concrete Cylinder Pipe as well as the development of seismic and risk management tools for pipelines. The Unit also provides engineering support at the three treatment plants and the SVAWPC.

### Raw Water Operations (Unit 455)

The Raw Water Operations Unit performs the day-to-day operations planning and remote operations of Valley Water's Raw Water System consisting of:

- 10 water supply reservoirs with a combined restricted storage capacity of about 111,963 acre-feet.
- 3 Raw Water Pump Stations with over 37,000 combined horsepower.
- 1 hydro-electric facility.
- 94 miles of large diameter raw water pipelines and tunnels.
- 99 groundwater recharge ponds.
- 91 miles of streams managed for groundwater recharge.

The Unit also performs the required water right and regulatory compliance reporting to maintain and protect local water supply operations.

### Raw Water Field Operations and Pipeline Maintenance (Unit 585)

The Raw Water Field Operations and Pipeline Maintenance Unit is responsible for the mechanical, electrical, and control system preventive, corrective, and rehabilitative maintenance of the distribution system infrastructure which includes three pump stations (Pacheco, Coyote, and Vasona) and 142 miles of pipeline. Also included is the operation of recharge and water distribution systems for groundwater basins, reservoirs, canals, and other water supply infrastructure.

### Treatment Plant Maintenance (Unit 595)

The Treatment Plant Maintenance Unit conducts preventive, corrective and rehabilitative maintenance required to sustain operations of the Santa Teresa Water Treatment Plant, Penitencia Water Treatment Plant (PWTP), Rinconada Water Treatment Plant (RWTP), Campbell Well Field, and San Francisco Intertie to produce drinking water.

Funding for current service levels as well as future resource requirements which are not yet funded for this Division are included in the tables below. The resource requirements and unfunded needs are summarized by unit. Detailed information on each unit's projects can be found in each unit's section of this report.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Unit	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
408 – Raw Water O&M Division (Project 91211005)	\$6	\$4	\$5	\$5	\$5	\$5	\$6
435 – Utility Maintenance Engineering	\$1,333	\$3,025	\$3,633	\$4,433	\$5,164	\$5,374	\$5,541
455 – Raw Water Operations	\$4,780	\$5,540	\$6,015	\$6,826	\$7,222	\$7,561	\$8,107
585 – Raw Water Field Ops and Pipeline Maintenance	\$11,967	\$11,386	\$12,074	\$12,021	\$12,672	\$13,185	\$13,624
595 – Treatment Plant Maintenance	\$9,386	\$9,968	\$10,423	\$10,363	\$10,857	\$11,302	\$11,606
<b>TOTALS</b>	<b>\$27,472</b>	<b>\$29,923</b>	<b>\$32,150</b>	<b>\$33,648</b>	<b>\$35,920</b>	<b>\$37,427</b>	<b>\$38,884</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Complete all required corrosion control and cathodic protection monitoring and minor repair work on all utility facilities.
- Provide engineering support for both planned and unplanned work requests and monitor condition of all utility facilities.
- Operate and maintain the Almaden Valley Pipeline and Pacheco Conduit Acoustic Fiber Monitoring Systems
- Ensure pipelines are protected by operating rectifiers based upon industry established criteria per NACE SP0100-2019.
- Update raw water operations plans as water supply conditions change and operations evolve, or at least monthly.
- Submit and maintain Central Valley Project (CVP) and State Water Project (SWP) annual delivery schedules per contract requirements.
- Coordinate San Felipe Division Reach 1 Operations with the United States Bureau of Reclamation (USBR) and San Benito County Water District (SBCWD).
- Manage the untreated surface water program and prepare annual report on previous fiscal year (FY).
- Submit the annual water rights reports to State Water Resources Control Board and pay the associated fees.
- Prepare Lake or Streambed Alteration Agreement (LSAA) South County operating strategy annual compliance report and Annual Report on North County LSAA's.
- Complete identified Preventive Maintenance (PM) and Corrective Maintenance (CM) work for all water utility facilities.
- Manage operations of off stream recharge, in-stream recharge, canals, ditches, low-pressure pipelines, in-stream diversion facilities, fish screens, and fish ladders.
- Provide on-call support 24 hours per day.
- Plan and execute work projects identified in the 5-year Maintenance Work Plan.
- Perform condition assessments all water utility facilities.

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)\*

Unit	FY21	FY22	FY23	FY24	FY25
<b>408 – Raw Water Operations and Maintenance Division (Project 91211005)</b>	\$0	\$0	\$0	\$0	\$0
<b>435 – Utility Maintenance Engineering</b>	\$360	\$391	\$415	\$435	\$448
<b>455 – Raw Water Operations</b>	\$683	\$406	\$431	\$452	\$466
<b>585 – Raw Water Field Ops and Pipeline Maintenance</b>	\$0	\$0	\$0	\$0	\$0
<b>595 – Treatment Plant Maintenance</b>	\$0	\$0	\$0	\$0	\$0
<b>TOTALS</b>	<b>\$1,043</b>	<b>\$797</b>	<b>\$846</b>	<b>\$887</b>	<b>\$914</b>

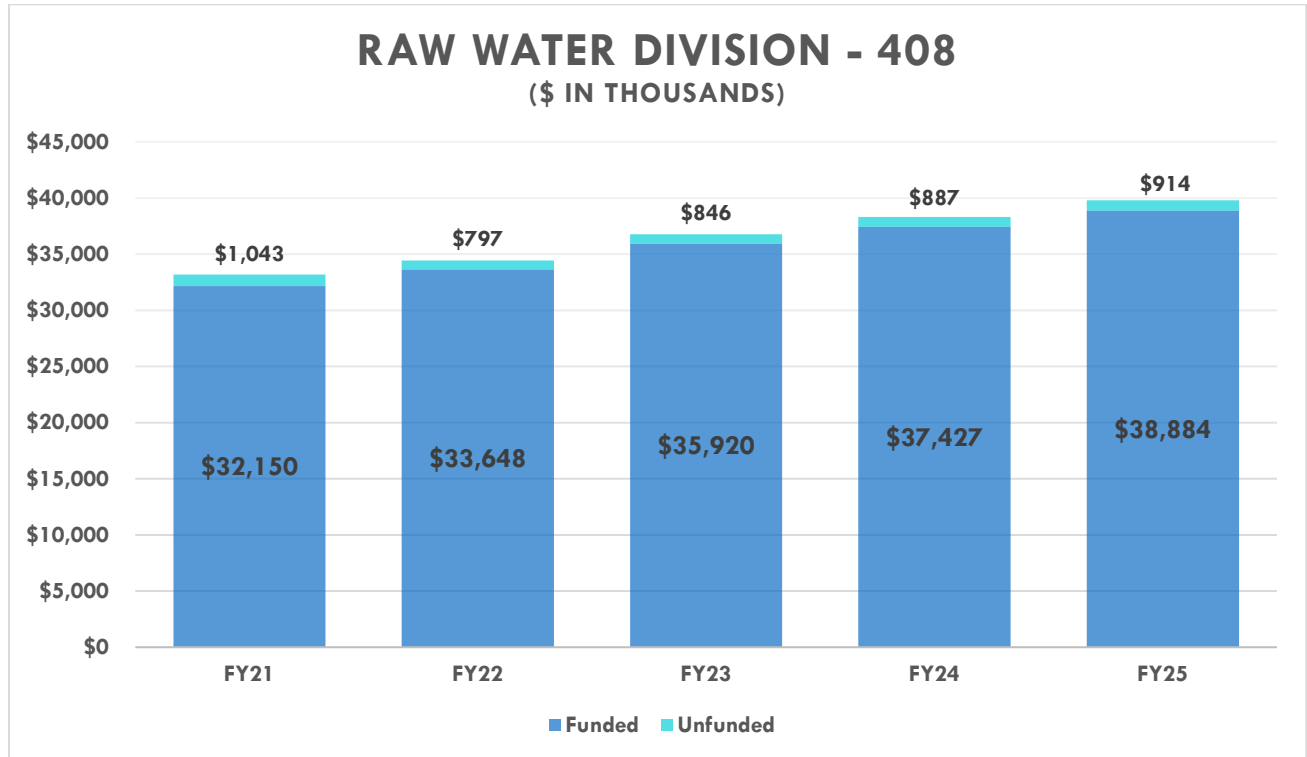
\*\$ in thousands. Data as of June 2020.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The Division is requesting resources to update the Pipeline Maintenance Program and related Programmatic EIR, and to support the operations modeling and implementation of new rule curves for the FAHCE implementation phase using a state-of-the-art new software model, HEC-ResSim, to implement the rule curves developed under the FAHCE program. Impacts of not funding these requests are described below.

- Risk of not being able to operate in accordance with phase rule curves that are developed under the FAHCE program. The modeling will improve operations ability to operate in accordance with the curves.
- Inability to perform routine pipeline maintenance activities or to continue the 10-year Pipeline Rehabilitation Capital Improvement Program due to lapse in environmental coverage.

## FIVE YEAR PROJECTION – SUMMARY



Data as of June 2020.



# Unit 435 – Utility Maintenance Engineering



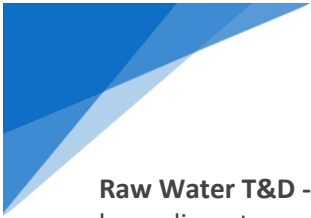
## OVERVIEW

The Utility Maintenance Engineering Unit provides civil and mechanical engineering as well as corrosion control services in support of Water Utility Operations and Maintenance Programs and Projects. The Unit also supports the 10-year pipeline rehabilitation capital project and oversees the implementation of the management strategy for large diameter water conveyance and transmission pipelines. This includes the inspection of Welded Steel and Prestressed Concrete Cylinder Pipe (PCCP) as well as the development of seismic and risk management tools for pipelines. The Unit also provides engineering support at the three treatment plants and the SVAWPC. An overview of the Unit's projects follows.

**SF Reach 1-Engineering – Other** provides civil engineering, inspection and corrosion control support for the US Bureau of Reclamation's (USBR) San Felipe System Reach 1 including the Pacheco Intake Structures and Intake Tunnel (1.8 miles), Pacheco Pump Station, Regulating Tank, Pacheco Tunnel (5.2 miles), Pacheco Sectionalizing Valve Pacheco Conduit (7.9 miles of 120 Prestressed Concrete Cylinder Pipe (PCCP)), and the Bifurcation Structure that connects to the Santa Clara Conduit and the Hollister Conduit (operated and maintained by San Benito County Water District (SBCWD)). The operation and maintenance of the Pacheco Conduit Acoustic Fiber Monitoring System is included in this project. Regular quarterly coordination meetings are held with USBR staff and SBCWD. The goal of this project is to perform mechanical engineering, civil engineering, and corrosion control services as necessary to ensure the ongoing operation and reliability of the San Felipe System Reach 1 infrastructure.

**SF Reach 2-Engineering – Other** provides civil engineering, and corrosion control support for the US Bureau of Reclamation's (USBR) San Felipe Division Reach 2 infrastructure including the Santa Clara Tunnel (1 Mile), Santa Clara Conduit (12 Miles), and Calaveras Fault Crossing (CFI/CFO) including the monitoring and surveillance for the twin 66 inch diameter barrels of the Calaveras fault crossing. The goal of this project is to perform civil engineering, and corrosion control services as necessary to ensure the ongoing operation and reliability of the San Felipe Division Reach 2 infrastructure including geologic and fault assessment studies to determine seismic vulnerability of Calaveras Fault Crossing.

**SF Reach 3-Engineering – Other** provides mechanical engineering, civil engineering, and corrosion control support for the San Felipe Division Reach 3 infrastructure including 13 miles of the Santa Clara Conduit, Coyote Pump Plant (CPP), Sectionalizing Valves 1 and 2, and various Raw Water Turnouts. It also ensures corrosion control for several protected structures at CPP, maintaining corrosion test stations, monitoring the newly added CP to the conduit, and support of pump issues at CPP. The goal of this project is to perform mechanical engineering, civil engineering and corrosion control services as necessary to ensure the ongoing operation and reliability of the San Felipe Division Reach 3 infrastructure.



**Raw Water T&D - Engineering – Other** provides mechanical and civil engineering support on 55 miles of District large diameter raw water pipelines including Almaden Valley Pipeline, Anderson Force Main, Calero Pipeline, Central Pipeline, Coyote- Madrone, Cross Valley, Main Avenue, Penitential Force Main Santa Teresa Force Main, Stevens Creek and Uvas/Llagas Transfer Pipeline; and the Vasona Pump Plant. This project also manages the raw water portion of the Pipeline GIS and risk management tools, pipeline EAPs, and provides emergency mechanical and civil engineering support for leaks and/or damage to raw water pipelines. The operation and maintenance of the Almaden Valley Pipeline Acoustic Fiber Monitoring System is included in this project. The goal of this project is to perform mechanical and civil engineering services as necessary to ensure the ongoing operation and reliability of 55 miles of raw water pipelines, support Emergency Action Planning, seismic analysis, and risk assessment of raw water pipelines.

**Raw Water Corrosion Control** maintains a fully functional, state of the art corrosion control program for 55 miles of critical large diameter raw water transmission pipelines and the Vasona pump station. The program is needed to ensure and prolong the life of these critical assets which are worth approximately \$1 billion dollars. Uncontrolled corrosion would cost the District an estimated \$30 million dollars per year. Over 95% of District owned raw water pipelines have active cathodic protection systems which require regular field inspection, testing, monitoring and field maintenance. The project also provides funding for supplemental corrosion control consultant expertise and services to resolve complex and difficult corrosion protection issues especially when protecting PCCP. The goal of this project is to maintain the integrity and prolong the life of the District's Water Utility infrastructure by preventing corrosion of 55 miles of critical large diameter raw water transmission pipelines and the Vasona pump station.

**Water Treatment Plant Engineering** provides mechanical and civil engineering support for infrastructure at the Penitencia Water Treatment Plant, Rinconada Water Treatment Plant, Santa Teresa Water Treatment Plant, the Campbell Wellfield, and the Silicon Valley Advanced Water Purification Center. The project also includes systematic engineering level condition assessment of high value mechanical assets that will include vibration analysis and temperature monitoring. Corrosion Control monitoring of the existing cathodic protection system for clearwell, tanks, piping, and other structures is also included in this project. The goal of this project is to perform mechanical and civil engineering and condition assessment services as necessary to ensure the ongoing operation and reliability of water treatment plant facilities and infrastructure.

**TW T&D - Engineering – Other** provides mechanical and civil engineering support on 40 miles of District treated large diameter water pipelines including the West Pipeline, East Pipeline, Milpitas Pipeline, Parallel East Pipeline, Snell Pipeline, Mountain View Distributary, Santa Clara Distributary, Sunnyvale Distributary, and Campbell Distributary. This project also manages the raw water portion of the Pipeline GIS and risk management tools, pipeline EAPs, and provides emergency mechanical and civil engineering support for leaks and/or damage to treated water pipelines. The goal of this project is to perform mechanical and civil engineering services as necessary to ensure the ongoing operation and reliability of 40 miles of treated water pipelines.

**Treated Water T/D Corrosion** maintains a fully functional, state of the art corrosion control program for 40 miles of treated water pipelines and tank/clearwell systems. The program is needed to ensure and prolong the life of these critical assets which are worth approximately \$1 billion dollars. Uncontrolled corrosion would cost the District an estimated \$30 million dollars per year. Over 96% of the treated water pipeline system have active cathodic protection systems which require regular field inspection, testing, monitoring, and field maintenance. The project also provides funding for supplemental corrosion control consultant expertise and services to resolve complex and difficult corrosion protection issues. The goal of this project is to Maintain the integrity and prolong the life of the

District’s Water Utility infrastructure by preventing corrosion of 40 miles of treated water pipelines.

This Unit manages the following projects to provide the services described above:

- 91211085—SF Reach 1-Engineering – Other
- 91221006—SF Reach 2-Engineering – Other
- 91231085—SF Reach 3-Engineering – Other
- 92761083—Raw Water T&D - Engineering - Other
- 92781002—Raw Water Corrosion Control
- 93081009—Water Treatment Plant Engineer
- 94761005—TW T&D - Engineering - Other
- 94781001—Treated Water T/D Corrosion

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

### RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
SF Reach 1-Engineering – Other - 91211085	\$81	\$220	\$289	\$313	\$392	\$339	\$350
SF Reach 2-Engineering – Other - 91221006	\$12	\$216	\$178	\$176	\$393	\$408	\$420
SF Reach 3-Engineering – Other - 91231085	\$14	\$75	\$111	\$339	\$352	\$364	\$376
Raw Water T&D - Engineering – Other - 92761083	\$153	\$518	\$936	\$1,254	\$1,492	\$1,553	\$1,601
Raw Water Corrosion Control - 92781002	\$482	\$480	\$645	\$721	\$756	\$787	\$811
Water Treatment Plant Engineer - 93081009	\$79	\$679	\$395	\$440	\$462	\$481	\$496
TW T&D - Engineering – Other - 94761005	\$178	\$422	\$550	\$619	\$719	\$819	\$845
Treated Water T/D Corrosion - 94781001	\$334	\$415	\$529	\$571	\$598	\$623	\$642
<b>TOTAL</b>	<b>\$1,333</b>	<b>\$3,025</b>	<b>\$3,633</b>	<b>\$4,433</b>	<b>\$5,164</b>	<b>\$5,374</b>	<b>\$5,541</b>

\*\$ in thousands. Data as of June 2020.

### KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Support both planned and unplanned work requests and monitor condition of all utility facilities.
- Complete all required corrosion control and cathodic protection monitoring and minor repair work on all utility facilities.
- Operate and maintain the Almaden Valley Pipeline and Pacheco Conduit Acoustic Fiber Monitoring Systems.
- Complete a survey of CFI/CFO Fault Crossing and complete geologic and fault surveillance analysis once a year.
- Monitor the condition of CFI-CFO Access Road and Culverts.
- Develop and conduct an engineering level condition assessment of (1) CPP pump including vibration analysis and temperature monitoring each year.

- Maintain pipeline GIS platform and undertake risk and seismic vulnerability analysis based upon pipe condition and rehabilitation data.
- Create and maintain updated Pipeline Emergency Action Plans each year.
- Ensure 95% compliance with Cathodic Protection System monitoring schedule and guidelines.
- Ensure pipelines are protected by operating rectifiers based upon industry established criteria per NACE SP0100-2019.
- Ensure all remote monitoring units are fully functioning and respond within 7 days of any RMU or alarm outage.
- Maintain Corrosion Control System Remote Monitoring Software Application.
- Perform specialized detailed condition assessments on high value mechanical assets and pumps at the treatment plants, etc.
- Complete 1 multi-year on-call contract for large diameter emergency repair services.

### ADDITIONAL RESOURCE NEEDS (UNFUNDED)\*

Project Name	FY21	FY22	FY23	FY24	FY25
SF Reach 1-Engineering – Other - 91211085	\$0	\$0	\$0	\$0	\$0
SF Reach 2-Engineering – Other - 91221006	\$0	\$0	\$0	\$0	\$0
SF Reach 3-Engineering – Other - 91231085	\$0	\$0	\$0	\$0	\$0
Raw Water T&D - Engineering – Other - 92761083	\$182	\$198	\$210	\$220	\$227
Raw Water Corrosion Control - 92781002	\$0	\$0	\$0	\$0	\$0
Water Treatment Plant Engineer - 93081009	\$0	\$0	\$0	\$0	\$0
TW T&D - Engineering – Other - 94761005	\$178	\$193	\$205	\$215	\$221
Treated Water T/D Corrosion - 94781001	\$0	\$0	\$0	\$0	\$0
<b>TOTAL</b>	<b>\$360</b>	<b>\$391</b>	<b>\$415</b>	<b>\$435</b>	<b>\$448</b>

\*\$ in thousands. Data as of June 2020.

### DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The Unit is requesting additional resources to complete the below listed tasks.

- Update Pipeline Maintenance Program (PMP).
- Update PMP Programmatic Environmental Impact Report (PEIR).
- Develop and manage a dynamic raw and treated water Pipeline Risk and Seismic Vulnerability model/database based on ongoing infrastructure condition assessments for long-term strategic asset management.
- Geotechnical monitoring of the PWTP landslide.

# Unit 455 – Raw Water Operations



## OVERVIEW

The Raw Water Operations Unit ensures that local and imported water supplies are managed effectively to provide reliable supply to Valley Water’s three water treatment plants, sustain the two groundwater subbasins in Santa Clara County, maintain clean safe water in our creeks, and support healthy creek ecosystems. Unit staff operate Valley Water’s raw water transmission and distribution facilities 24 hours per day, seven days per week from the raw water systems control center. The raw water system consists of tens of miles of pipelines, three pumping plants, one hydroelectric facility, and numerous valves and turnouts. These facilities include the San Felipe Division reaches 1, 2 and 3, and many other facilities in the north side of the county.

In addition, the unit is responsible for the management, planning, coordination, analysis, and reporting on operation of Valley Water’s 10 reservoirs and five diversions. The unit also administers and manages 18 local water rights and performs the accounting of water supply operations. Finally, staff effectively manage the untreated surface water supply program.

This Unit manages the following projects to provide the services described above:

- 91041012—Water Operations Planning
- 91111001—Water Rights
- 91211004—San Felipe Reach 1 Operation
- 91221002—San Felipe Reach 2 Operation
- 91231002—San Felipe Reach 3 Operation
- 91761001—Local Reservoirs/Diversions Planning & Analysis
- 92761001—Raw Water Transmission & Distribution General Operation
- 92761012—Untreated Water Program Planning

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
Water Operations Planning - 91041012	\$474	\$677	\$633	\$786	\$833	\$873	\$901
Water Rights - 91111001	\$332	\$631	\$662	\$754	\$798	\$837	\$864
San Felipe Reach 1 Operation - 91211004	\$609	\$756	\$641	\$859	\$911	\$955	\$985
San Felipe Reach 2 Operation - 91221002	\$59	\$142	\$63	\$158	\$167	\$175	\$181
San Felipe Reach 3 Operation - 91231002	\$108	\$302	\$330	\$334	\$354	\$370	\$382
Local Reservoirs/Diversions Planning & Analysis - 91761001	\$1,606	\$1,411	\$1,688	\$2,000	\$2,116	\$2,216	\$2,587
Raw Water Transmission & Distribution General Operation - 92761001	\$1,541	\$1,512	\$1,602	\$1,817	\$1,918	\$2,005	\$2,073
Untreated Water Program Planning - 92761012	\$51	\$109	\$396	\$118	\$125	\$130	\$134
<b>TOTAL</b>	<b>\$4,780</b>	<b>\$5,540</b>	<b>\$6,015</b>	<b>\$6,826</b>	<b>\$7,222</b>	<b>\$7,561</b>	<b>\$8,107</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Update operations plans as water supply conditions change and operations evolve, or at least monthly.
- Submit and maintain Central Valley Project (CVP) and State Water Project (SWP) annual delivery schedules per contract requirements.
- Prepare Quarterly Reports to Water Retailers and meet with Water Supply and Groundwater subcommittees, and other subcommittees if requested.
- Manage and conduct ongoing operations of Reach 1 of the San Felipe Division to meet or exceed contractual, regulatory and safety requirements.
- Coordinate San Felipe Division Reach 1 Operations with the United States Bureau of Reclamation (USBR) and San Benito County Water District (SBCWD).
- In addition to the San Felipe Division facilities, comprehensively manage all other Valley Water's raw water distribution and conveyance system for the delivery of water supplies to meet water supply objectives.
- Manage the untreated surface water program and prepare annual report on previous fiscal year (FY) production by Q1.
- Complete annual water accounting for previous calendar year by Q4.
- Submit the annual water rights reports to State Water Resources Control Board by Q3 and pay the associated water rights fees by Q2.
- Prepare Lake or Streambed Alteration Agreement (LSAA) South County operating strategy annual compliance report for previous CY by Q4.
- Prepare the Annual Report on North County LSAs by Q4.
- Planning and execution of work projects identified in the 5-year Maintenance Work Plan by Q4 (Target 80%).
- Performance of condition assessments of pre-determined facilities by the scheduled quarter.

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)\*

Project Name	FY21	FY22	FY23	FY24	FY25
Water Operations Planning – 91041012	\$0	\$0	\$0	\$0	\$0
Water Rights – 91111001	\$0	\$0	\$0	\$0	\$0
San Felipe Reach 1 Operation – 91211004	\$0	\$0	\$0	\$0	\$0
San Felipe Reach 2 Operation -91221002	\$0	\$0	\$0	\$0	\$0
San Felipe Reach 3 Operation – 91231002	\$0	\$0	\$0	\$0	\$0
Local Reservoirs/Diversion Planning & Analysis – 91761001	\$631	\$406	\$431	\$452	\$466
Raw Water Transmission & Distribution General Operation – 92761001	\$52	\$0	\$0	\$0	\$0
Untreated Water Program Planning - 92761012	\$0	\$0	\$0	\$0	\$0
<b>TOTAL</b>	<b>\$683</b>	<b>\$406</b>	<b>\$431</b>	<b>\$452</b>	<b>\$466</b>

\*\$ in thousands. Data as of June 2020.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

- Resources are needed to develop a reservoir simulation software model in FY 21. The model will help ensure Valley Water can operate the reservoirs in accordance with the FAHCE rule curves developed under the FAHCE program.
- Additionally, resources are needed to manage HEC-ResSim and implement reservoir operations in accordance with FAHCE rule curves. Additional resources will help ensure the rules developed under the FAHCE program are implemented successfully.

# Unit 585 – Raw Water Field Operations and Pipeline Maintenance



## OVERVIEW

The Raw Water Field Operations and Pipeline Maintenance Unit is responsible for the mechanical, electrical and control system preventive, corrective, and rehabilitative maintenance of distribution system infrastructure which includes three pump stations (Pacheco, Coyote and Vasona) and 142 miles of pipeline. Also included is the operation of recharge and water distribution systems for groundwater basins, reservoirs, canals, diversion dams and other water supply infrastructure.


**San Felipe Reaches 1, 2 and 3 General Maintenance** provides the general maintenance to sustain operations of the United States Bureau of Reclamation (USBR) San Felipe Division Reaches 1, 2 and 3 infrastructure, which includes the Pacheco Pumping Plant, Pacheco Switching Yard, Pacheco Tunnel, Pacheco Pipeline, Bifurcation Vault, Santa Clara Conduit, Santa Clara Pipeline, and Calaveras Fault Crossing Structures, Coyote Pumping Plant, and the Coyote Valve and Switching Yards.

**Vasona Pump Station General Maintenance** provides for mechanical, control system and electrical maintenance work at the Vasona Pumping Station to maintain operational readiness to ensure that Vasona pump plant is available to pump State Water Project (SWP) water to meet annual SWP allotment delivery objectives, carryover delivery objectives and emergency delivery objectives.

**Recycled Water T & D General Maintenance** provides for work associated with the maintenance and operation of the South County Recycled Water Project. The goal of this project is to ensure reliable operability of the District's South County recycled water facilities through effective management of contracted and District maintenance work.

**Recharge/Raw Water Field Operations** provides for operating groundwater recharge and other raw water facilities including ponds, streams, diversion structures, canals, and the San Tomas Injection Well. Activities include daily monitoring and regulation of flows and inspection of facilities, coordination of operations regarding California Department of Fish and Game, and agreements for flashboard dams. This project also provides for operating the District's ten reservoirs and five diversions which supply approximately 35 billion gallons of water annually. This project also provides for the delivery, measurement, reporting, customer coordination, new customer registration and field inspections of untreated surface water delivery facilities. The goal of this project is to effectively manage





local water supply programs and provide reliable supplies to meet current demands and sustain the groundwater basins.

**Recharge and Raw Water Field Facility Maintenance** provides for maintenance necessary to conduct groundwater recharge operations at 64 recharge and raw water facilities, which include recharge ponds, canals, pipelines, fish ladders, and diversion facilities. Maintenance activities include preventive and corrective maintenance and replacement of facility components. Vegetation management, fencing and other property management services are also included.

**Raw Water T&D General Maintenance** provides for the general maintenance of the District's raw water transmission and distribution facilities which includes the Central, Stevens Creek, Cross Valley, and Almaden Valley pipelines. The goal of this project is to maintain the mechanical, electrical, and control systems of the District's raw water transmission and distribution facilities to allow the delivery of raw water to the District's treatment plants, groundwater recharge facilities, and other uses.

**Treated Water T & D General Maintenance** provides for the general maintenance of the District's treated water transmission and distribution facilities which include the West and East pipelines, Snell pipeline, and various distributary pipelines that supply treated water to seven retailers throughout the county.

**Anderson Hydroelectric Facility Maintenance** provides for the maintenance of Valley Water's sole Hydroelectric Facility located at the base of Anderson Reservoir. This goal of this project is to ensure reliable operability of the Anderson Hydroelectric Facility and associated equipment and instruments.

This Unit manages the following projects to provide the services described above:

- 91211099 – San Felipe Reach 1 General Maintenance
- 91221099 – San Felipe Reach 2 General Maintenance
- 91231099 – San Felipe Reach 3 General Maintenance
- 92261099 – Vasona Pumping Station General Maintenance
- 92761008 – Recycled Water General Maintenance
- 92761009 – Recharge & Raw Water Field Operations
- 92761010 – Recharge & Raw Water Field Facility Maintenance
- 92761085 – Anderson Hydroelectric Facility Maintenance
- 92761099 – Raw Water Transmission and Distribution General Maintenance
- 94761099 – Treated Water Transmission and Distribution General Maintenance

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
San Felipe Reach 1 General Maintenance - 91211099	\$674	\$876	\$856	\$951	\$1,003	\$1,048	\$1,081
San Felipe Reach 2 General Maintenance - 91221099	\$211	\$154	\$162	\$147	\$152	\$156	\$159
San Felipe Reach 3 General Maintenance - 91231099	\$683	\$1,052	\$1,048	\$997	\$1,050	\$1,096	\$1,130
Vasona Pumping Station General Maintenance - 92261099	\$72	\$200	\$140	\$204	\$231	\$223	\$248
Recycled Water General Maintenance - 92761008	\$126	\$289	\$282	\$392	\$409	\$424	\$437
Recharge & Raw Water Field Operations - 92761009	\$4,434	\$3,173	\$3,325	\$3,338	\$3,510	\$3,660	\$3,772
Recharge & Raw Water Field Facility Maintenance - 92761010	\$2,675	\$2,064	\$2,281	\$2,198	\$2,299	\$2,390	\$2,464
Anderson Hydroelectric Facility Maintenance - 92761085	\$74	\$163	\$168	\$130	\$150	\$143	\$162
Raw Water Transmission and Distribution General Maintenance - 92761099	\$1,998	\$2,078	\$2,326	\$2,339	\$2,472	\$2,587	\$2,668
Treated Water Transmission and Distribution General Maintenance - 94761099	\$1,020	\$1,337	\$1,486	\$1,325	\$1,396	\$1,458	\$1,503
<b>TOTAL</b>	<b>\$11,967</b>	<b>\$11,386</b>	<b>\$12,074</b>	<b>\$12,021</b>	<b>\$12,672</b>	<b>\$13,185</b>	<b>\$13,624</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Perform scheduled condition assessments of equipment.
- Complete identified Preventive Maintenance (PM) and Corrective Maintenance (CM) work.
- Complete identified maintenance modification activities.
- Operate and maintain all distribution facilities from the point of connection to its end user meter.
- Implement daily facility regulations, facility operations inventory, and coordination with raw water systems control operator.
- Manage operations of off stream recharge, in-stream recharge, canals, ditches, low-pressure pipelines, in-stream diversion facilities, fish screens, and fish ladders.
- Provide on-call support 24 hours per day.
- Coordinate facility operations to accommodate internal/external projects and maintenance activities.
- Maintain records, intellectual asset management, and Computerized Maintenance Management System (CMMS).

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)

None.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The unit is currently fully funded; however, it is foreseeable to predict a shortfall of maintenance staff as Valley Water's assets expand and existing infrastructure ages.

# Unit 555 – Treatment Plant Maintenance



## OVERVIEW

Water treatment plant maintenance is supported by a multi-disciplinary team of maintenance, engineering and environmental services staff. Maintenance staff includes journey level mechanics, electricians, control system technicians, and maintenance planners who perform preventative maintenance, corrective maintenance, and planned equipment/instrument replacement/refurbishment. A variety of complex local, state, and federal laws and codes govern the daily operations and maintenance of drinking water facilities. The complexity of Valley Water facilities requires highly skilled craft maintenance staff, service contracts, parts, and equipment to sustain operations of the Rinconada WTP, Santa Teresa WTP, Penitencia WTP, San Francisco Intertie, and Campbell Well Field.

In addition to addressing routine and unplanned corrective maintenance work activities, water utility maintenance staff performs complete planned work activities which are replacement and refurbishment of major assets identified in the 5-Year Maintenance Work Plan prescribed by the Asset Management Long Term Forecast. This long-term forecast model provides a means to determine long-range budgeting needs for the treatment plants.

This Unit manages the following projects to provide the services described above:

- 93291099 – Rinconada WTP General Maintenance
- 93281099 – Santa Teresa WTP General Maintenance
- 93231099 – Penitencia WTP General Maintenance
- 93761099 – SF/SCVWD Intertie General Maintenance
- 93761005 – Campbell Well Field Maintenance

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
Rinconada WTP General Maintenance (93291099)	\$3,054	\$3,722	\$3,648	\$3,612	\$3,797	\$3,886	\$4,007
Santa Teresa WTP General Maintenance (93281099)	\$3,025	\$3,244	\$3,465	\$3,577	\$3,766	\$3,932	\$4,055
Penitencia WTP General Maintenance (93231099)	\$2,938	\$2,491	\$3,086	\$2,905	\$3,059	\$3,194	\$3,293
SF/SCVWD Intertie General Maintenance (93761099)	\$298	\$417	\$112	\$152	\$113	\$163	\$120
Campbell Well Field Maintenance (93761005)	\$71	\$94	\$112	\$117	\$122	\$127	\$131
<b>TOTALS</b>	<b>\$9,386</b>	<b>\$9,968</b>	<b>\$10,423</b>	<b>\$10,363</b>	<b>\$10,857</b>	<b>\$11,302</b>	<b>\$11,606</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Plan and execute work projects identified in the 5-year Maintenance Work Plan by Q4 (Target 80%).
- Perform corrective maintenance work (which includes emergency maintenance) per assigned schedules through Q4 (Target for CM Completion all crafts 80%).
- Perform preventative maintenance per assigned schedules through Q4 (Target for PM completion for all crafts is 90%).
- Perform Emergency Maintenance work as required through Q4 (Target completion is 100%).
- Perform condition assessments of pre-determined facilities by the scheduled quarter.

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)

None.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The unit is currently fully funded.

# CHAPTER 5: TREATED WATER DIVISION



## OVERVIEW

The Treated Water Division manages Valley Water’s three potable water treatment plants, providing a reliable high-quality drinking water supply to Santa Clara County. In addition, the Division operates the Campbell Well Field to provide backup supply to the treated water system, and the Silicon Valley Advanced Water Purification Center to advance the quality and use of recycled water in the county. The Division provides laboratory, asset management, and SCADA and electrical engineering support across the water utility divisions, and Valley Water as a whole.

This Division manages one project in addition to the projects described in each unit below:

- 95061043 – Treated Water Division Administrative Support

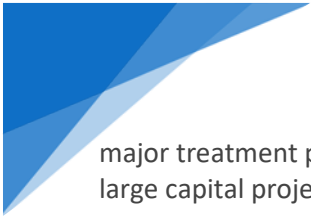
Unit 515 is this Division’s organizational unit and consists of the Deputy Operating Officer, one Assistant Operating Officer, a Senior Management Analyst and one Administrative assistant. The following Units are included in this Division:

### **Districtwide Asset Management (Unit 411)**

The District-Wide Asset Management Unit implements a comprehensive asset management program to optimize infrastructure investment strategies and enhance related financial planning of Valley Water assets. The Department manages the water utility, watershed, and administration asset management programs, and supports the users of Valley Water’s Computerized Maintenance Management System (CMMS), Maximo.

### **Treatment Plant Process and Commissioning (Unit 516)**

The Treatment Plant Process & Commissioning Unit leads the commissioning and start-up activities at Valley Water’s treatment facilities and treated water pipelines, and the implementation of



major treatment process changes. This unit is a dedicated team that supports and implements the integration of large capital projects during all phases of a capital project to our treatment facilities and treated water pipelines.

**Water Quality (Unit 525)**

The Water Quality Unit is responsible for providing water quality operational, process and project support directly to the treated water managers and Water Treatment Plant supervisors and operators. In addition, the unit also oversees Source Water Quality Management and Invasive Mussel Prevention Programs.

**Laboratory Services (Unit 535)**

The Laboratory Services Unit is responsible for providing analytical and sampling services to the Water Utility Enterprise. Our state-of-the-art laboratory is certified with the California Environmental Laboratory Accreditation Program (ELAP) and tests water produced from each of our drinking water treatment plants, the Silicon Valley Advanced Water Purification Center, surface water reservoirs and groundwater basins.

**Utility Electrical and Control Systems Engineering (Unit 545)**

The Unit provides electrical, control systems, and Supervisory Control and Data Acquisition (SCADA) engineering services, including direct technical services, in support of the utility’s critical infrastructure and systems used in the day-to-day, 24x7x365 operations and maintenance of the district’s complex countywide water conveyance system (including pump stations and pipelines), three drinking water treatment plants, and one advanced purified water processing plant.

**North Water Treatment Operations (Unit 565)**

The North Water Treatment Operations unit provides safe and high-quality drinking water to Valley Water’s three (3) treated water retailers along East/Milpitas Pipelines, including San Jose Water Company, City of San Jose, and City of Milpitas. The unit is responsible for safe and cost-effective operations (24 hours a day, 7 days a week) and management of the Penitencia Water Treatment Plant (PWTP), the joint San Francisco Public Utilities Commission (SFPUC)-Valley Water (VW) intertie facility, as well as the East/Milpitas Pipeline turnouts. The unit is responsible for cost-effective operations and maintenance of the Silicon Valley Advanced Water Purification Center (SVAWPC).

**South Water Treatment Operations (Unit 566)**

The South Water Treatment Operations unit provides safe, healthy and high-quality drinking water and a backup supply of drinking water to Valley Water’s seven (7) treated water retailers, and ultimately to the residents of the Santa Clara County. The unit is responsible for providing a safe and cost-effective operations (24 hours a day, 7 days a week) and management of the Santa Teresa Water Treatment Plant (STWTP), the Rinconada Water Treatment Plant (RWTP), the Campbell Well Field, and the West and Snell/East Pipeline turnouts.

Funding for current service levels as well as future resource requirements which are not yet funded for this Division are included in the tables below. The resource requirements and unfunded needs are summarized by unit. Detailed information on each unit’s projects can be found in each unit’s section of this report.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Unit	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
515 – Treated Water O&M Division (Project 95061043)	\$884	\$3,591	\$3,334	\$3,753	\$3,978	\$4,171	\$4,303
411 – Districtwide Asset Management	\$4,100	\$3,248	\$3,641	\$3,833	\$5,026	\$4,142	\$4,272
516 – Treatment Plant Process and Commissioning	\$0	\$0	\$387	\$0	\$0	\$0	\$0
525 – Water Quality	\$2,814	\$3,191	\$3,734	\$4,173	\$4,514	\$4,431	\$4,627
535 – Laboratory Services	\$5,030	\$5,096	\$5,519	\$5,995	\$6,347	\$6,656	\$6,881
545 – Utility Electrical and Control Systems Engineering	\$4,071	\$4,681	\$4,502	\$4,635	\$4,769	\$4,903	\$5,039
565 – North Water Treatment Operations	\$9,241	\$9,659	\$10,990	\$11,601	\$13,379	\$13,783	\$13,575
566 – South Water Treatment Operations	\$13,417	\$13,666	\$15,644	\$15,795	\$16,512	\$17,162	\$17,685
<b>TOTALS</b>	<b>\$39,557</b>	<b>\$43,132</b>	<b>\$47,751</b>	<b>\$49,785</b>	<b>\$54,525</b>	<b>\$55,248</b>	<b>\$56,382</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- 100% of the treated water delivered to customers meets and/or surpasses all applicable primary drinking water quality regulatory standards.
- Provide cost-effective service to our retailers ensuring that the annually contracted volume of treated water is delivered effectively and efficiently.
- Supply recycled water, up to 8-million gallons per day, to reach a target of 500+/- 50 mg/L for total dissolved solids into the South Bay Water Recycling distribution system.
- Provide water to SFPUC through the Intertie as needed ensuring that the amount of water is traded, and any net loss/gain is kept to a minimum.
- Maintain state certification through the California Environmental Laboratory Accreditation Program (CA ELAP) for all fields of testing, through the successful completion of on-site audits, proficiency testing studies, and payment of applicable fees.
- Develop the Water Utility Maintenance Work Plan annually.
- Complete a pilot of continuous condition monitoring trial for critical pumps.
- Provide technical expertise and leadership for all commissioning-related work to improve overall safety, quality and reliability upon handover to Operations & Maintenance.
- Actively track drinking water regulations and provide annual updates on the status of regulations.
- Provide regular communications and annual check-in with the Department of Drinking Water.
- Completing the implementation of backup SCADA communications via radio or satellite to all remaining single-communications raw and treated water transmission and distribution sites.
- Provide SCADA and electrical engineering support to all water utility project.
- Prepare yearly electrical power and natural gas usage data to support the District’s effort in addressing global climate change.

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)\*

Unit	FY21	FY22	FY23	FY24	FY25
515 – Treated Water O&M Division	\$0	\$0	\$0	\$0	\$0
411 – Districtwide Asset Management	\$1,119	\$823	\$874	\$917	\$946
516 – Treatment Plant Process and Commissioning	\$0	\$0	\$0	\$0	\$0
525 – Water Quality	\$730	\$793	\$841	\$883	\$911
535 – Laboratory Services	\$0	\$0	\$0	\$0	\$0
545 – Utility Electrical and Control Systems Engineering	\$0	\$0	\$0	\$0	\$0
565 – North Water Treatment Operations	\$0	\$0	\$0	\$0	\$0
566 – South Water Treatment Operations	\$0	\$0	\$0	\$0	\$0
<b>TOTALS</b>	<b>\$1,849</b>	<b>\$1,616</b>	<b>\$1,715</b>	<b>\$1,800</b>	<b>\$1,857</b>

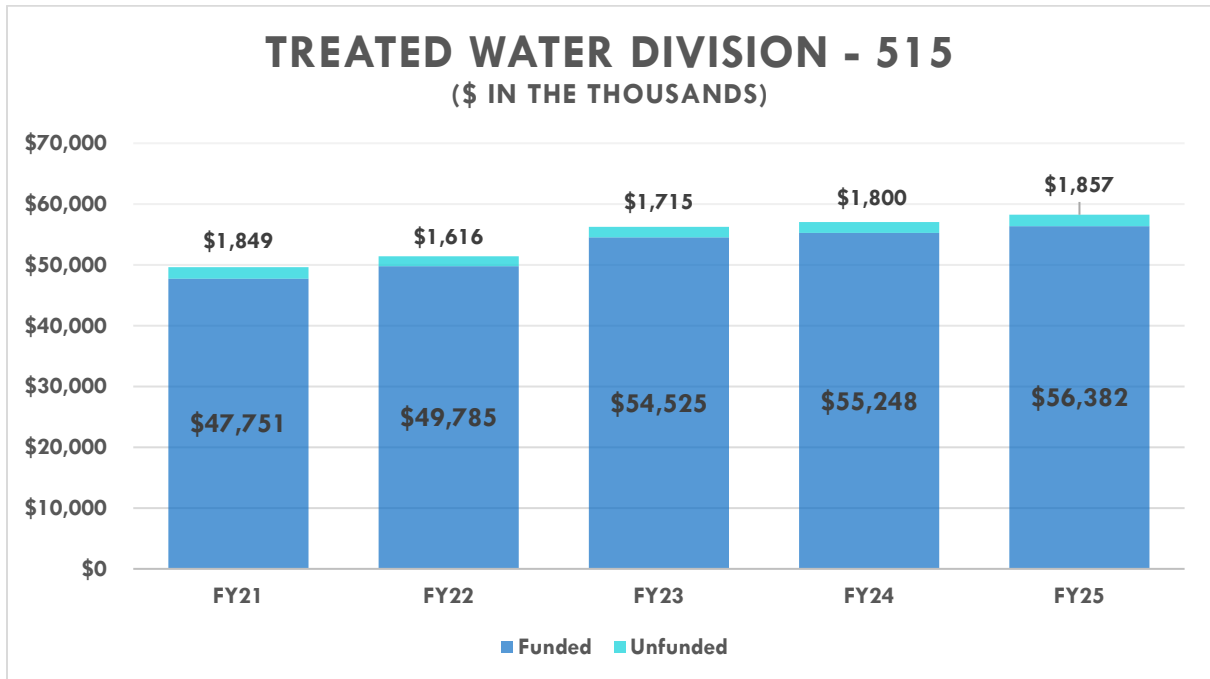
\*\$ in thousands. Data as of June 2020.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The Division is requesting additional resources to support asset management and water quality programs. Impacts of not funding these requests are described below.

- Delays in implementing asset management metrics and predictive condition assessment programs. Pump condition monitoring tools and programs will improve pump maintenance efficiency. Pump rebuild frequency may decrease due to better knowledge and analytics of pump condition.
- Delays in implementing a facilities asset management program.
- Limited water quality support for Valley Water’s treatment plants.
- Delays and challenges in implementing new Algal Toxin and PFAS monitoring program and communication, as well as challenges implementing a new PI database, and new and ongoing training (regulatory, WQ, etc.) to Operations and Maintenance.

## FIVE YEAR PROJECTION – SUMMARY



Data as of June 2020.



# Unit 411 – District-Wide Asset Management



## OVERVIEW

The District-Wide Asset Management Unit implements a comprehensive asset management program to optimize infrastructure investment strategies and enhance related financial planning of Valley Water (VW) assets. The Department manages the VW’s water utility, watershed, and administration asset management programs, and supports the users of the VW’s Computerized Maintenance Management System (CMMS): Maximo. Each program includes detailed asset inventories, operation and maintenance tasks, and long-range financial planning. The District-Wide Asset Management Unit implements and continually improves asset management standards and information systems based on industry best practices. The Department’s goal is to minimize the total cost of owning and operating these assets while delivering the desired service levels and reducing unplanned asset failures or service outages as well as the economic, social, or environmental consequences of these failures.

This Unit manages the following projects to provide the services described above:

- 00061045—Asset Management Program

This is an allocated project, as the unit’s services support all Valley Water business areas. The Water Utility fund recipient project for this allocated project is 95061045. The resource requirements and funding provided in the tables below are provided for the entire allocated project, though the Water Utility will only fund a portion of this amount.

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
Asset Management Program - 00061045	\$4,100	\$3,248	\$3,641	\$3,833	\$5,026	\$4,142	\$4,272
<b>TOTAL</b>	<b>\$4,100</b>	<b>\$3,248</b>	<b>\$3,641</b>	<b>\$3,833</b>	<b>\$5,026</b>	<b>\$4,142</b>	<b>\$4,272</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Complete the FY22-26 Water Utility Maintenance Work Plan by June 30, 2021.
- Complete a pilot for continuous condition monitoring of critical pumps by June 30, 2021.
- Complete Maximo Watershed integration with SMP by June 30, 2021.
- Complete Maximo Mobile implementation for Raw Water and Watersheds business functions by June 30, 2021.
- Complete Maximo and Maximo mobile draft instructions manual for Phase 1 implementation by June 30, 2021.

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)\*

Project Name	FY21	FY22	FY23	FY24	FY25
Asset Management Program – 00061045	\$1,119	\$823	\$874	\$917	\$946
<b>TOTAL</b>	<b>\$1,119</b>	<b>\$823</b>	<b>\$874</b>	<b>\$917</b>	<b>\$946</b>

\*\$ in thousands. Data as of June 2020.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The Unit is requesting additional resources to develop a more robust condition-based asset rehabilitation/replacement program including a pump monitoring system so Valley Water can implement a condition-based pump rebuild program; and to develop asset-specific management plans for critical water utility assets including pumps, pipelines and tanks, among others. If implemented correctly, these site-specific asset management plans will result in effective planned maintenance as well as significant cost savings for the Water Utility over time. The unit has started developing these programs; however, it is difficult to complete these plans and accurately quantify associated cost savings with current resources.

In addition, resources are being requested to support the administration asset management program and/or watershed asset management program. These resources would therefore not be funded by Water Utility Enterprise funds; however, are included in this report since the work is managed by water utility staff. There is a need to improve the asset registries for the Asset Management Administration program which manages assets related to buildings, IT, and fleet. The Facilities Unit has a strong interest in improving their asset registries, developing a unique Maximo site, and developing a maintenance work plan similar to the Water Utility maintenance work plan. There are currently no available resources for this work.

In 2023, additional resources will be needed to update the Districtwide Asset Management Plan, the last study was completed in 2014 and should be updated every 5 years. 2023 is the soonest staff will have availability to manage the update due to other plans including a Pipeline Asset Management Plan.

# Unit 516 – Treatment Plant Process & Commissioning



## OVERVIEW

The Treatment Plant Process & Commissioning Unit leads the commissioning and start-up activities at Valley Water’s treatment facilities and treated water pipelines, and the implementation of major treatment process changes. This unit is a dedicated team that supports and implements the integration of large capital projects during all phases of a capital project to our treatment facilities and treated water pipelines.

The Unit provides process support in the areas of operations, water quality, electrical, mechanical, and controls during capital projects on behalf of the Treated Water division. The unit also leads the development of the water treatment plant master plan and provides support to other master plan efforts related to water treatment plants and distribution systems.

This Unit manages the following projects to provide the services described above:

- 93081002 – Treatment Plant Process and Commissioning

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below. This is a new unit, and five-year projections have not yet been determined but will be included in future plans.


## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
Treatment Plant Process and Commissioning - 93081002	N/A	N/A	\$387	TBD	TBD	TBD	TBD
<b>TOTAL</b>	<b>N/A</b>	<b>N/A</b>	<b>\$399</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Provide technical expertise and leadership for all commissioning-related work to improve overall safety, quality and reliability upon handover to the client (Operations & Maintenance (O&M)).
- Enhance the overall coordination and communication between Design, O&M, and Construction.
- Provide process design review on capital projects and promote continuous design improvements by sharing lessons learned.

- 
- Lead the development of the water treatment plant master plan (Capital Project).
  - Provide support for the development of the SCADA master plan and the distribution system master plan (Capital Projects).

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)

None.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The unit is currently fully funded.

# Unit 525 – Water Quality



## OVERVIEW

The Water Quality Unit (WQU) is responsible for providing water quality operational, process and project support directly to the Treated Water Operations and Maintenance Managers, Water Treatment Plant Supervisors and Water Treatment Plant Operators. In addition, WQU also oversees Source Water Quality Management and Invasive Mussel Prevention Programs.

The unit also provides support to each water treatment plant to stay current with regulations and changes in treatment processes. The WQU has the responsibility to work with the Water Utility Capital Division and the Operations staff to prepare and submit any water treatment permit amendments required by modifications to the treatment plants.

This Unit manages the following projects to provide the services described above:

- 91451005 – Source Water Quality Management
- 91451011 – Invasive Mussel Prevention
- 93081008 – WT General Water Quality

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
Source Water Quality Management-91451005	\$328	\$363	\$700	\$440	\$465	\$487	\$502
Invasive Mussel Prevention - 91451011	\$616	\$609	\$618	\$857	\$935	\$1,020	\$1,109
WT General Water Quality - 93081008	\$1,870	\$2,219	\$2,416	\$2,876	\$3,114	\$2,924	\$3,016
<b>TOTAL</b>	<b>\$2,814</b>	<b>\$3,191</b>	<b>\$3,734</b>	<b>\$4,173</b>	<b>\$4,514</b>	<b>\$4,431</b>	<b>\$4,627</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Analyze source water quality data and source blends and provide regular Water Quality Reports to Treated Water Operations to aid with water treatment decisions.

- Maintain an ongoing mussels prevention program at Valley Water reservoirs. Review and update the Mussel Prevention Plan annually.
- Manage and support consultant in preparing 5-year Sanitary Survey for Valley Water local reservoirs.
- Review annually and update as needed, the Water Quality Management Plan (WQMP).
- Initiate and participate in the review of the Water Treatment Plants Operations Plans for Rinconada, Santa Teresa, and Penitencia, Campbell Well Field, Silicon Valley Advanced Water Purification Center by February of each year and update as needed and submit to DDW by June of each year.
- Actively track drinking water regulations and provide annual updates on the status of regulations by February 15 of each year regulatory analysis within 30 days of promulgation of new regulations.
- Provide regular communications with the DDW on pertinent water quality activities and conduct annual check-in meeting with them by October each year and provide DDW with requested information.
- Provide regular communications with the retailers on pertinent water quality issues (taste and odor, distribution system water quality), conduct at least quarterly Water Quality Subcommittee meetings, and receive an average of good or better rating in the annual retailer surveys.
- Work with Operations to support DDW’s annual inspections of the treatment plants.
- Conduct annual taste and odor training to prepare treatment plants for the taste and odor season.
- Manage a Technical Services consultant to commission studies for specific unexpected issues as they arise (e.g. as pipe loop study at Intertie, contaminant of emerging concern or new regulations, filter or manganese issues at treatment plants).
- Manage a consultant for implementation of upgrade and/or replacement of Operations Data Management System (ODMS) web-portal with different software.

### ADDITIONAL RESOURCE NEEDS (UNFUNDED)\*

Project Name	FY21	FY22	FY23	FY24	FY25
Source Water Quality Management-91451005	\$0	\$0	\$0	\$0	\$0
Invasive Mussel Prevention -91451011	\$0	\$0	\$0	\$0	\$0
WT General Water Quality -93081008	\$730	\$793	\$841	\$883	\$911
<b>TOTAL</b>	<b>\$730</b>	<b>\$793</b>	<b>\$841</b>	<b>\$883</b>	<b>\$911</b>

\*\$ in thousands. Data as of June 2020.

### DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

Water Quality Unit is taking on additional tasks related to increasing source water quality issues and more regulatory requirements, development and implementation of new programs (e.g. Algal Toxin Response Program, PFAS monitoring program and new database program—PI, etc.) and additional support to Operations and Maintenance to provide water quality and regulatory training.

Resources are needed to provide full coverage of treatment process optimization and troubleshooting as well regulatory compliance support for all four treatment facilities. Resources are also needed to lead the implementation and management of a new database program which is critical to Operations support for process optimization and troubleshooting, to implement new and ongoing training support (regulatory, WQ, etc.) to Operations and Maintenance, and to implement the newly established Algal Toxin and PFAS monitoring program and communication effort. The implementation of these new programs will be impacted if not funded.

# Unit 535 – Laboratory Services



## OVERVIEW

The Laboratory Services Unit is responsible for providing analytical and sampling services to the Water Utility Enterprise. Our state-of-the-art laboratory is certified with the California Environmental Laboratory Accreditation Program (ELAP) and tests water produced from each of our drinking water treatment plants, the Silicon Valley Advanced Water Purification Center, surface water reservoirs and groundwater basins. The laboratory provides service functions for compliance monitoring of source and treated water, operational support for treatment plant operations, individual water quality related studies, and monitoring the development of new analytical requirements proposed by regulatory agencies.

This Unit manages the following project to provide the services described above:

- 93401002 - Water District Laboratory

This project provides for the operation of Valley Water’s Water Quality Laboratory, including the purchase of all necessary laboratory supplies and equipment to meet water quality monitoring requirements. The project supports all sampling and analysis of surface and treated water, transmission and distribution systems, recycled water, process control for treatment plants, local groundwater basins, and groundwater recharge facilities, for State regulatory compliance and voluntary monitoring efforts. Maintaining laboratory certification with the California State Water Resources Control Board - Division of Drinking Water (DDW), Environmental Laboratory Accreditation Program as also covered under this project.

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
Water District Laboratory – 93401002	\$5,030	\$5,096	\$5,519	\$5,995	\$6,347	\$6,656	\$6,881
<b>TOTAL</b>	<b>\$5,030</b>	<b>\$5,096</b>	<b>\$5,519</b>	<b>\$5,995</b>	<b>\$6,347</b>	<b>\$6,656</b>	<b>\$6,881</b>

\*\$ in thousands. Data as of June 2020.



## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Submit operational and compliance reports to the Division of Drinking Water, Valley Water’s Retailers, Raw & Treated Water Operations, Regional Water Quality Control Board, City of San Jose, Water Quality Unit, and other project managers, as requested.
- Maintain environmental compliance for the laboratory facility by timely and proper removal of hazardous waste, and ensuring all environmental health and safety related inspections are completed
- Maintain state certification through the California Environmental Laboratory Accreditation Program (CA ELAP) for all fields of testing, through the successful completion of on-site audits, proficiency testing studies, and payment of applicable fees.
- Maintain laboratory equipment in good condition and acquire proper laboratory instrumentation as needed for analysis of regulated chemicals, and chemicals of emerging concern.
- Successfully pass all laboratory performance test samples.

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)

None.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The unit is currently fully funded.



# Unit 545 – Utility Electrical & Control Systems Engineering



## OVERVIEW

The Unit provides electrical, control systems, and Supervisory Control and Data Acquisition (SCADA) engineering services, including direct technical services, in support of the utility’s critical infrastructure and systems used in the day-to-day, 24x7x365 operations and maintenance of the district’s complex countywide water conveyance system (including pump stations and pipelines), three drinking water treatment plants, and one advanced purified water processing plant.

Raw water operations depend on the reliable supply of power and the timely and accurate execution of SCADA command and control signals for managing the flows from the district’s ten reservoirs and ensuring the delivery of water to the district’s drinking water treatment plants, recharge ponds, and managed creeks and streams. Unreliable electrical distribution and/or SCADA systems could result in disruptions of vital water deliveries, disruptions in flood releases from reservoirs, and creek dry-backs which can adversely affect the habitat for some protected species.

Treated and purified water operations depend on the reliable supply of power and the timely and accurate execution of SCADA command and control signals for coordinating the operations of complex plant systems and for ensuring the delivery of water to our retail customers. Unreliable electrical distribution and/or SCADA systems could result in disruptions of vital water deliveries and water quality violations.

Major elements of the Electrical & Control Systems Engineering program include operations and maintenance engineering support, equipment asset management, sustaining engineering and systems administration, and maintenance and capital projects support.

The Unit is also responsible for managing the supply, use, and cost of District electrical power, including participation in managing the Power and Water Resources Pooling Authority, or PWRPA (a Joint Powers Authority consisting of irrigation and water districts established to pool electrical power resources). Staff also participates in energy efficiency and energy management programs to enable the procurement of reliable, cost effective and renewable electrical power and provides technical assistance to other district units for utility coordination and in support of the Board’s Ends Policy on greenhouse gas emissions.

This Unit manages the following projects to provide the services described above:

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- 00021008 - Energy Management
- 00761013 - SCADA Systems Upgrades
- 91211084 - San Felipe Reach 1 Control and Electrical Engineering
- 91231084 - San Felipe Reach 3 Control and Electrical Engineering
- 92761082 - Raw Water T&D Control and Electrical Engineering
- 93761006 - Treated Water Control and Electrical Engineering

Energy Management and SCADA Systems Upgrades projects are allocated projects, as these support multiple business areas. The resource requirements and funding provided in the tables below are provided for the entire allocated project, though the Water Utility will only fund a portion of these amounts.

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

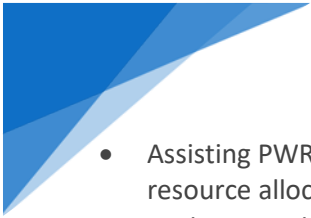
## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
Energy Management (00021008)	\$298	\$299	\$471	\$485	\$499	\$513	\$528
SCADA Systems Upgrades (00761013)	\$66	\$763	\$722	\$744	\$765	\$787	\$809
San Felipe Reach 1 Control and Electrical Engineering (91211084)	\$341	\$413	\$316	\$325	\$335	\$344	\$354
San Felipe Reach 3 Control and Electrical Engineering (91231084)	\$221	\$233	\$314	\$323	\$332	\$341	\$350
Raw Water T&D Control and Electrical Engineering (92761082)	\$725	\$656	\$567	\$584	\$601	\$618	\$635
Treated Water Control and Electrical Engineering (93761006)	\$2,420	\$2,317	\$2,112	\$2,174	\$2,237	\$2,300	\$2,363
<b>TOTAL</b>	<b>\$4,071</b>	<b>\$4,681</b>	<b>\$4,502</b>	<b>\$4,635</b>	<b>\$4,769</b>	<b>\$4,903</b>	<b>\$5,039</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- Preparing and providing quarterly program performance reports.
- Updating and maintaining electrical and control systems engineering QEMS documents.
- Updating and maintaining electrical and control systems equipment technical specifications.
- Completing the implementation of backup SCADA communications via radio or satellite to all remaining single-communications raw and treated water transmission and distribution sites.
- Upgrading the HMI servers and software for all raw and treated water systems.
- Supporting annual maintenance work plan projects.
- Supporting electrical master plan projects implementation.
- Supporting SCADA master plan updating and projects implementation.
- Monitoring power and water scheduling twice per week through the PWRPA website and prepare quarterly reports comparing scheduled power versus metered power.

- 
- Assisting PWRPA and WAPA by providing district electrical data including long-term power forecast for yearly resource allocations.
  - Updating and maintaining Anderson hydro power production and hydro revenue data monthly and preparing quarterly reports.
  - Preparing and providing annual solar and hydro performance and revenue reports.
  - Preparing and providing yearly electrical power and natural gas usage data to support the District's effort in addressing global climate change.
  - Providing annual Board updates on Global Climate Change - Mitigation pertaining to energy management.

## **ADDITIONAL RESOURCE NEEDS (UNFUNDED)**

None.

## **DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING**

The Unit is currently fully funded.

# Unit 565 – North Water Treatment Operations



## OVERVIEW

The North Water Treatment Operations unit provides safe and high-quality drinking water to Valley Water’s three (3) treated water retailers along East/Milpitas Pipelines, including San Jose Water Company, City of San Jose, and City of Milpitas. The unit is responsible for safe and cost-effective operations (24 hours a day, 7 days a week) and management of the Penitencia Water Treatment Plant (PWTP), the joint San Francisco Public Utilities Commission (SFPUC)-Valley Water (VW) intertie facility, as well as the East/Milpitas Pipeline turnouts.

The unit also provides highly purified water to blend with tertiary-treated recycled water to improve the water quality and enhance beneficial use of recycled water while protecting groundwater basins within the Santa Clara County. The unit is responsible for cost-effective operations and maintenance of the Silicon Valley Advanced Water Purification Center (SVAWPC), which demonstrates several state-of-art technologies for potable reuse – microfiltration (MF), reverse osmosis (RO), and ultraviolet (UV) disinfection.

This Unit manages the following projects to provide the services described above:

- 93231009 – PWTP General Operations
- 93761001 – SFPUC/VW Intertie General Operations
- 91281007 – SVAWPC General Operations
- 91281008 – SVAWPC Facility Maintenance

**PWTP General Operations** provides for the on-going operation of the Penitencia Water Treatment Plant (PWTP) and the East/Milpitas Pipeline turnouts, including but not limited to: staffing the plant 24 hours a day, 7 days a week and paying for chemicals, sludge management and disposal, gas and electric utilities, and other miscellaneous services and supplies required to run the plant. PWTP capacity is 40 million gallons per day (MGD). In the last five years, the plant produced an average of eight billion gallons or 24,778 acre-feet of drinking water a year.

**SFPUC/VW Intertie Operations** provides funds to operate the San Francisco Public Utilities Commission (SFPUC)-Valley Water (VW) Intertie safely and effectively, including but not limited to: staffing the facility when making and taking deliveries and for paying for chemicals, gas and electric utilities, and other miscellaneous services and supplies required to run the facility.

**SVAWPC Facility Operations** provides the on-going operation of the Silicon Valley Advanced Water Purification Center (SVAWPC). The plant has a net production capacity of 8.0 MGD. The facility is operated in accordance with Agreements between the District and City of San Jose and in coordination with the San Jose/Santa Clara Regional Wastewater Facility (RWF).

**SVAWPC Facility Maintenance** provides for the on-going maintenance to sustain operations of the Silicon Valley Advanced Water Purification Center (SVAWPC). Work is done in accordance of the Operations and Maintenance (O&M) Agreement between the District and the City of San Jose and coordinated with the San Jose/Santa Clara Regional Wastewater Facility (RWF) and the South Bay Water Recycling system.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- 100% of the treated water delivered to customers meets and/or surpasses all applicable primary drinking water quality regulatory standards.
- Supply approximately 57,760 acre-feet of treated water jointly with Santa Teresa Water Treatment Plant by contract annually to San Jose Water Company, City of San Jose, and City of Milpitas.
- Supply water to SFPUC through the Intertie during emergency situations or when needed for maintenance activities and receive water from SFPUC for same reasons, ensuring any net loss/gain of water traded is kept to a minimum.
- Complete monthly operations reports summarizing operational parameters and chemical usages and distribute reports by the end of the month for the prior month.
- Supply recycled water that has been treated by microfiltration, reverse osmosis and ultraviolet disinfection as requested by the City of San Jose, up to 8-million gallons per day, to reach a target of 500+/- 50 mg/L for total dissolved solids into the South Bay Water Recycling distribution system.
- Complete monthly Regulatory Reports for submittal to Regional Water Quality Control Board by the end of the following month.
- Complete SVAWPC monitoring reports as agreed upon by both District and the City of San Jose.
- Complete monthly chemical report summarizing chemical usages by the end of the month for the prior month.
- For SVAWPC, Complete 90% of assigned preventative maintenance work orders, 100% of assigned emergency maintenance work orders, and 80% of assigned corrective maintenance work.
- For SVAWPC, plan and execute work projects identified in the 5-Year Maintenance Work Plan by Q4: (Target 80%).

## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
PWTP General Operations - 93231009	\$5,151	\$5,225	\$5,869	\$6,197	\$6,507	\$6,780	\$6,989
SFPUC/VW Intertie General Operations - 93761001	\$30	\$220	\$227	\$222	\$230	\$237	\$244
SVAWPC General Operations - 91281007	\$2,164	\$2,429	\$2,515	\$2,775	\$2,899	\$3,012	\$3,104
SVAWPC Facility Maintenance - 91281008	\$1,896	\$1,785	\$2,379	\$2,407	\$3,743	\$3,754	\$3,238
<b>TOTALS</b>	<b>\$9,241</b>	<b>\$9,659</b>	<b>\$10,990</b>	<b>\$11,601</b>	<b>\$13,379</b>	<b>\$13,783</b>	<b>\$13,575</b>

\*\$ in thousands. Data as of June 2020.

## ADDITIONAL RESOURCE NEEDS (UNFUNDED)

None.

## DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING

The unit is currently fully funded.

# Unit 566 - South Water Treatment Operations



## OVERVIEW

The South Water Treatment Operations unit provides safe, healthy and high-quality drinking water and a backup supply of drinking water to Valley Water’s seven (7) treated water retailers, and ultimately to the residents of the Santa Clara County. The unit is responsible for providing a safe and cost-effective operations (24 hours a day, 7 days a week) and management of the Santa Teresa Water Treatment Plant (STWTP), the Rinconada Water Treatment Plant (RWTP), the Campbell Well Field, and the West and Snell/East Pipeline turnouts.

This Unit manages the following projects to provide the services described above:

- 93281005 -STWTP- General Operations
- 93291012 -RWTP - General Operations
- 93761004- Campbell Well Field Operations

Funding for current service levels as well as future resource requirements which are not yet funded are included in the tables below.

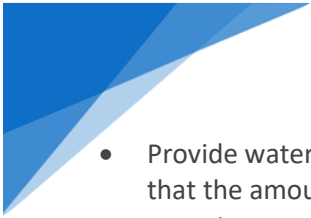
## RESOURCE REQUIREMENTS FOR CURRENT SERVICE LEVELS\*

Project Name	FY 19 Actuals	FY 20 Adopted	FY21 Adopted	FY22	FY23	FY24	FY25
STWTP- General Operations - 93281005	\$5,635	\$5,272	\$6,476	\$6,311	\$6,621	\$6,896	\$7,108
RWTP - General Operations - 93291012	\$7,695	\$8,307	\$9,064	\$9,371	\$9,774	\$10,144	\$10,452
Campbell Well Field Operations - 93761004	\$87	\$87	\$104	\$113	\$117	\$122	\$125
<b>TOTAL</b>	<b>\$13,417</b>	<b>\$13,666</b>	<b>\$15,644</b>	<b>\$15,795</b>	<b>\$16,512</b>	<b>\$17,162</b>	<b>\$17,685</b>

\*\$ in thousands. Data as of June 2020.

## KEY MILESTONES FOR CURRENT SERVICE LEVELS

- 100 % of the treated water delivered to customers meets and/or surpasses all applicable primary drinking water quality regulatory standards.
- Provide cost-effective service to our retailers ensuring that the annually contracted volume of treated water is delivered effectively and efficiently.

- 
- Provide water to SFPUC through the Intertie as needed (jointly with Penitencia water Treatment Plant) ensuring that the amount of water is traded, and any net loss/gain is kept to a minimum.
  - Complete monthly Surface Water Treatment Rule Monitoring Report by the 10th of each month for submittal to Division of Drinking Water.
  - Complete monthly operations report summarizing operational and chemical usage parameters and distribute report to key stakeholders by the end of the month.

### **ADDITIONAL RESOURCE NEEDS (UNFUNDED)**

None.

### **DESCRIPTION OF SERVICES TO BE PROVIDED WITH ADDITIONAL FUNDING**

The Unit is currently fully funded.

## CHAPTER 6: WATER UTILITY SUPPORT SERVICES

The other major Valley Water business areas provide ongoing support to water utility operations and maintenance. The Information Technology and Administrative Services Office provides support services including emergency management, security, IT support, facilities, procurement, fleet, warehouse, business support, and health and safety programs. The Office of External Affairs provides legislative support, communications, and civic engagement programs in support of water utility projects and programs. The Office of Talent and Inclusion provides human resources support for all water utility units. The Financial Planning and Management Division supports budget development, accounting, and the water utility groundwater charge setting process. The water utility could not operate without the support of these other major business areas. Many of these support services are funded by overhead, which is funded through the Water Utility Fund 61.

In addition, the Watershed business area provides support to several water utility funded projects and programs. An overview of these is provided below.

### **Dam Safety Program and Project Delivery Unit (Unit 595)**

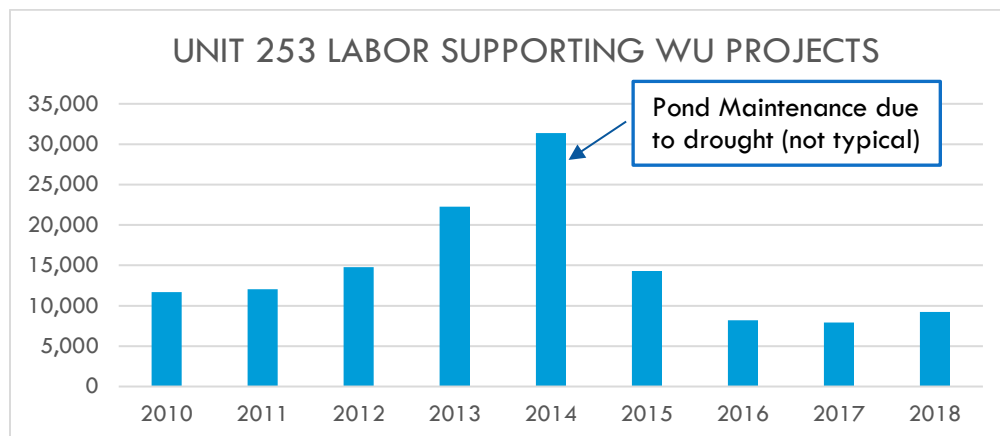
The majority of the projects conducted by the Dam Safety Program and Project Delivery Unit are large capital investments to improve the seismic reliability of Valley Water’s Dams throughout the county. There are two operations projects managed in the unit that are funded by Water Utility Fund 61:

- 91081007 – Dam Safety Program
- 91761009 – Dams/Reservoir General Maintenance

These projects provide for preventive and corrective Dam maintenance, as well as ensuring Valley Water maintains a required Dam Safety Program.

### **Watersheds Field Operations Unit (Unit 253)**

Watershed maintenance crews provide civil maintenance support such as trenching, hauling, and other earthwork for water utility dam, pipeline, canal, and pond system maintenance projects. Data from Maximo presented in the table below indicates that total Watershed Field Operations Unit hours supporting water utility projects has slightly decreased over the past 3 years.



This unit primarily has hours budgeted in the following projects:

**WATER UTILITY FY21-25 OPERATIONS & MAINTENANCE PLAN**



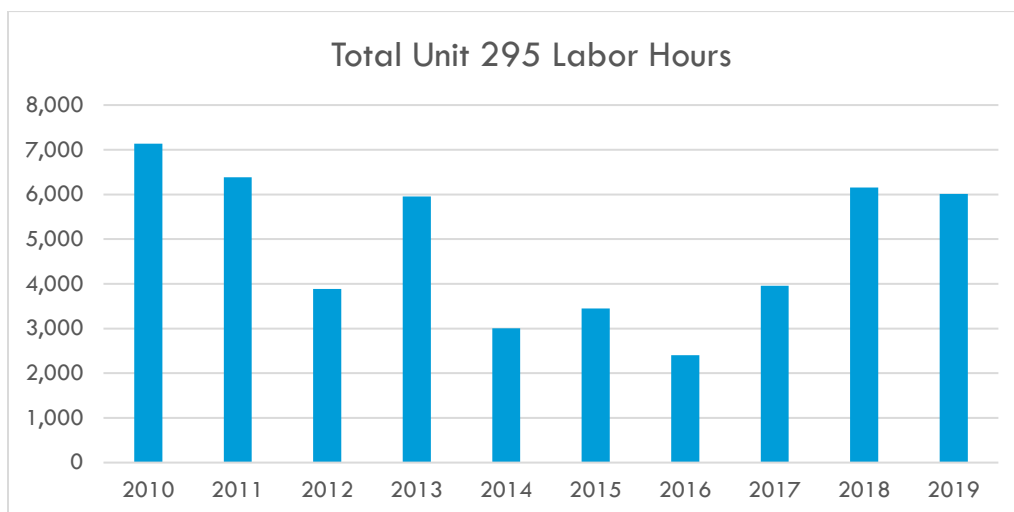
- 91211099 – San Felipe Reach 1 General Maintenance
- 91221099 – San Felipe Reach 2 General Maintenance
- 91231099 – San Felipe Reach 3 General Maintenance
- 92761009 – Recharge & Raw Water Field Operations
- 92761010 – Recharge & Raw Water Field Facility Maintenance
- 92761099 – Raw Water Transmission and Distribution General Maintenance
- 94761099 – Treated Water Transmission and Distribution General Maintenance
- 91761009 – Dams/Reservoir General Maintenance

The total support is not expected to increase in the next five years, though as new infrastructure such as Pacheco Dam and additional recycled water pipelines are added, there is a potential for additional support needs. It is also important to note that these labor hours have been fully funded in the past; however, the watershed field operations unit has not always had enough staff available to provide the support when needed.

Because of this, and because water utility infrastructure requires ongoing civil maintenance, the water utility requested a field maintenance crew last fiscal year so that the maintenance for utility infrastructure could be appropriately prioritized and managed within the utility. Since these labor hours were already funded by water utility projects it was not an additional funding request. A field crew to support water utility maintenance was approved, and that crew is housed in the watershed field operations unit. The addition of the new crew should resolve the issue of watershed maintenance staff availability for water utility projects.


**Vegetation Field Operations Unit (Unit 295)**

Vegetation management services are required to maintain access to pipeline and canal right of way, for percolation pond maintenance, dam face maintenance, and to maintain mitigation plantings. Data from Maximo presented in the table below indicates that total Vegetation Field Operations Unit hours supporting water utility projects dropped in 2014 – 2016 but has since increased back to near historical levels.



This unit has hours budgeted in the following projects, as well as others:

- 91211099 – San Felipe Reach 1 General Maintenance
- 91221099 – San Felipe Reach 2 General Maintenance

- 
- 91231099 – San Felipe Reach 3 General Maintenance
  - 92761009 – Recharge & Raw Water Field Operations
  - 92761010 – Recharge & Raw Water Field Facility Maintenance
  - 92761099 – Raw Water Transmission and Distribution General Maintenance
  - 94761099 – Treated Water Transmission and Distribution General Maintenance
  - 91761009 – Dams/Reservoir General Maintenance

The total support is not expected to increase in the next five years, though as new infrastructure projects such as Pacheco Dam and Anderson Dam Seismic Retrofit are completed, new mitigation sites for these projects will require significant vegetation maintenance. It is also important to note that these labor hours have been fully funded in the past; however, vegetation maintenance unit has not always had enough staff resources available to provide the support when needed. Because of this, water utility is working to establish a comprehensive vegetation management program for some of its infrastructure, namely pipelines and ponds, that can be contracted out to a landscaping vendor.

### **Environmental Planning Support**

Several Watershed Units provide critical services and support to water utility operations in obtaining the necessary permits and environmental clearances to operate and maintain water utility facilities. The units currently providing these services are listed below:

Unit 244 – Environmental Mitigation and Monitoring Unit

Unit 247 – Environmental Planning Unit

Unit 412 – Water Supply and Special Projects Unit

Unit 297 – Stream Maintenance Program Unit

The Water Utility cannot continue to operate or maintain its infrastructure without the important services provided by these units. The labor hours and services and supplies provided by these units are budgeted throughout the many water utility operations projects described in this report.



Madrone Channel  
Water you see here  
replenishes South County's  
groundwater supplies.



# Valley Water

Clean Water • Healthy Environment • Flood Protection

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