



FY 2022-26

Watersheds Operations and Maintenance Plan

DRAFT

Draft FY 2022-2026 Watersheds Operation and Maintenance Plan

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TABLE OF CONTENTS

	PAGE
Executive Summary	3
Report Overview	3
Work Planning and Execution	3
Strategic Planning for Future Asset Renewal	3
Five-Year Operations Forecasts	4
I. INTRODUCTION	7
Report Overview	7
Watershed Infrastructure	8
Related Documents	9
II.OVERVIEW OF O&M ACTIVITIES	11
III.WORK PLANNING AND EXECUTION	13
Stream Maintenance Program (SMP)	13
Watersheds Asset Rehabilitation Program	13
Work Not Included	14
Work Execution	14
2022 SMP Project List	15
IV.STRATEGIC PLANNING FOR FUTURE ASSET RENEWAL: SUSTAINALBE CREEK INFRASTRUCTURE	16
V.FIVE YEAR OPERATIONS FORECASTS	18
WATERSHEDS O&M ENGINEERING SUPPORT UNIT (298)	20
WATERSHED FIELD OPERATIONS UNIT (253)	24
VEGETATION FIELD OPERATIONS UNIT (295)	30
OPERATIONS AND MAINTENANCE ENVIRONMENTAL SUPPORT UNIT (297)	36
VI.CONCLUSION	40

List of Figures

Figure I-1 Santa Clara County Watersheds	8
Figure IV-1 Strategic Planning Approach	17
Figure V-1 FY2022-26 Projected Resource Requirements for WS O&M Division	19
Figure V-2 FY2022-26 Projected Resource Requirements for Engineering Support	22
Figure V-3 FY2022-26 Projected Resource Requirements for Field Operations	29
Figure V-4 FY2022-26 Projected Resource Requirements for Vegetation Field Operations	34
Figure V-5 FY2022-26 Projected Resource Requirements for SMP Management	38

List of Tables

Table V-1 Projected Resource Requirements by Projects for Engineering Support	23
Table V-2 Additional Resource Needs (Unfunded) for Engineering Support	23
Table V-3 Projected Resource Requirements by Projects for Field Operations	29
Table V-4 Additional Resource Needs (Unfunded) for Field Operations	29
Table V-5 Projected Resource Requirements by Projects for Vegetation Field Operations	34
Table V-6 Additional Resource Needs (Unfunded) for Vegetation Field Operations	35
Table V-7 Projected Resource Requirements by Projects for SMP Management	39
Table V-8 Additional Resource Needs (Unfunded) for SMP Management	39

List of Acronyms

AMP	Asset Management Plan
AMT	Adaptive Management Team
BMP	Best Management Practice
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CIP	Capital Improvement Project
DBH	Diameter at Breast Height
FTE	Full Time Employee
LWD	Large Woody Debris
MOA	Memorandum of Agreement
O&M	Operations and Maintenance
SCI	Sustainable Creek Infrastructure (SCW Priority F8)
SCW	Safe Clean Water
SMP	Stream Maintenance Program
USACE	United States Army Corp of Engineers
USFWS	United States Fish and Wildlife Services
VHP	Valley Habitat Conservation Plan
WARP	Watersheds Asset Rehabilitation Program
WS	Watersheds

EXECUTIVE SUMMARY

Report Overview

This Watersheds Operations and Maintenance (WS O&M) Plan describes Valley Water's O&M activities and the projected funding allocated to provide continued flood protection to the community over the next five years. In addition, it discusses plans for identifying future asset renewal needs. It is a rolling plan that will be evaluated and updated annually. Specifically, this plan:

- Documents the funded and unfunded operations and maintenance project resource needs for the Watersheds Operations and Maintenance Division for the next five fiscal years, 2022 to 2026, and provides an explanation of unfunded needs, including the impact of the Safe Clean Water Program Renewal (Passing of 2020 Ballot Measure S) to unfunded needs.
- Discusses additional unfunded asset renewal projects that will be identified through Safe, Clean Water Project F8: Sustainable Creek Infrastructure for Continued Public Safety. This project will identify and prioritize infrastructure issues and develop asset management plans which will identify needed asset renewal projects.

Work Planning and Execution

Currently, the majority of stream maintenance work is conducted through the Stream Maintenance Program (SMP). In addition, some stream maintenance work is conducted through Valley Habitat Conservation Plan (VHP), Adaptive Management Team (AMT) program, or other Valley Water programs. Valley Water regularly inspects creeks and levees, develops a proposed work plan, secures state and federal regulatory agencies' approval of the work plan, and performs approved maintenance activities. Removal of sediment, management of vegetation, clearing trash and debris, and stabilization of eroded creek banks are activities performed under SMP.

To supplement O&M resources or for projects outside the scope of the SMP, corrective and/or deferred stream maintenance work may also be performed through Valley Water's Watersheds Asset Rehabilitation Program (WARP), a Small Capital Improvement Project. Projects conducted as part of the WARP are not currently included in this plan. In the future, WARP projects as well as recommendations from the Sustainable Creek Infrastructure Project discussed below may also be included in this plan.

Strategic Planning for Future Asset Renewal

While the SMP and WARP have been successful in planning and executing necessary stream maintenance projects, Valley Water recognizes the need to evaluate stream maintenance from a more strategic and holistic planning approach, as well as to assess the longevity and effectiveness of past project improvements. Consequently, Valley Water has recently initiated a new project as part of the Safe, Clean Water renewal in 2020. Project F8: Sustainable Creek

Infrastructure for Continued Public Safety will help Valley Water more efficiently plan and execute stream maintenance work as operations, small capital, or capital improvements.

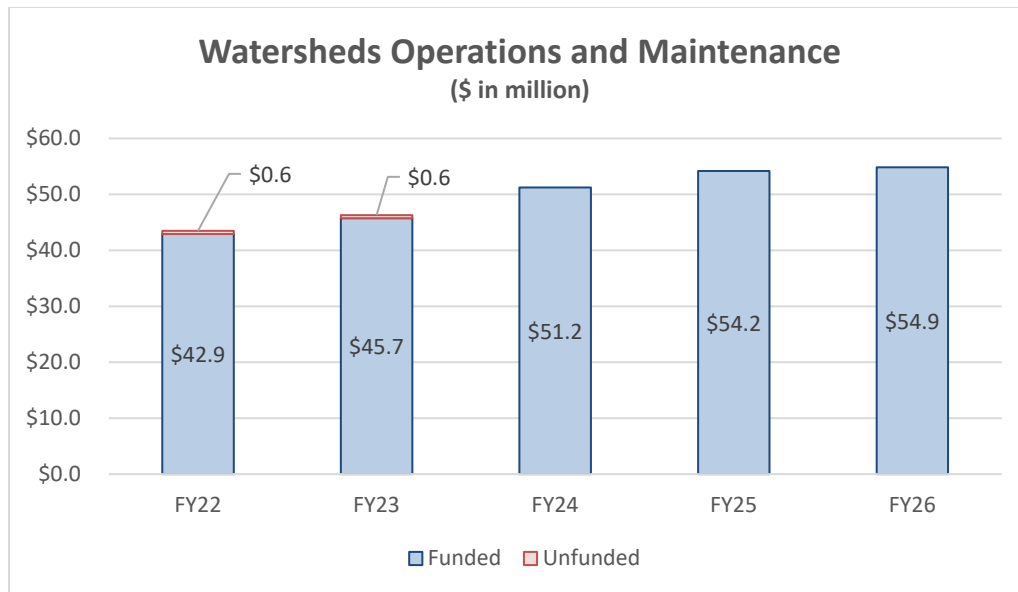
This project will identify and prioritize infrastructure issues and develop asset management plans which will identify needed asset renewal projects. Asset renewal work that will be investigated and identified as part of this program includes restoring the level of service originally intended for flood protection infrastructure, extending the life of flood protection infrastructure, and improving the reliability of flood protection infrastructure. A point of emphasis in early planning for this program is to improve our understanding of how best to address deficiencies on creek assets. This program will also assess the longevity and effectiveness of past project improvements. Staff have preliminarily identified several completed flood protection projects that need work of greater magnitude than the ongoing routine work.

Some of the asset renewal projects identified through this effort may be funded by Safe, Clean Water Project F8, which is allocated \$7.5 Million over the next 15 years, or by the Watershed Asset Rehabilitation Program (WARP) small capital improvement project, which is currently funded at approximately \$2.5 - \$3 million per year. However, the magnitude of future asset renewal work is unknown at this time and expected to exceed the available funding in F8 and the WARP project in some future years.

Five-Year Operations Forecasts

Five-year forecasts of funding for current service levels as well as future resource requirements which are not yet funded for the Watersheds Operations and Maintenance Divisions are shown in the chart below. The final financial information provided in this section is taken from the Board adopted budget for FY22, as well as the forecast data that is collected as part of the budget process. This Draft report is prepared using long term forecast data and unfunded needs requests as of December 1, 2020. The FY22 budget requests and unfunded needs are evaluated throughout the budget process through May 2021. The plan is finalized following Board adoption of Valley Water's final budget. The final plan will document the final budgeted amounts for each project for FY22 as well as any remaining unfunded needs following the budget process.

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*Data as of December 1, 2020

In total, the Watersheds O&M Division has identified a need for an additional \$1.2 Million for the next 5 years which would provide resources for the tree maintenance program. The tree maintenance program includes the removal of hazardous and drought induced trees. New permits were received in FY2021 that will increase ongoing tree removal work for FY22 and FY23.

At this time, minimal additional funding allocations are needed to fully accommodate all known and anticipated maintenance obligations. This is primarily due to two factors:

- Passing of 2020 Ballot Measure S – Safe, Clean Water and Natural Flood Protection Program (SCW) has provided funds to address work identified as unfunded in last year’s plan.
- Excluding deferred maintenance work in this O&M Plan until further progress on the Sustainable Creek Infrastructure Project. Additional details are described below.

The passing of 2020 Ballot Measure S, the Safe, Clean Water (SCW) Program Renewal significantly reduced unfunded needs for the Watershed O&M Division. These additional funds from the SCW Program Renewal provide resources to manage and maintain a projected 600 in-stream acres and 200 acres of mitigation sites as result of the SCW Capital Improvement Projects. It is anticipated that in next year’s O&M plan, an additional two positions will be reflected to support SCW’s new Priority, “F.1 - Vegetation Control and Sediment Removal for Capacity” (formerly, Priorities E1.3 and E.3.3), which will be funded by the renewal as well.

Last year, the 5-year O&M plan included a cost estimate for the deferred maintenance of approximately \$22 million as unfunded in the 5-year forecast. This work includes preventative and corrective maintenance that has been postponed to a future period for various reasons, such as limited availability of resources, receipt of or compliance with regulatory permits, or managing volume of public requests. This year the deferred maintenance costs have been

removed from the 5 year O&M plan, as the cost estimate was not informed by the strategic planning effort under development, and can be misleading if not understood in this broader context, as looking at these projects through a more holistic lens is anticipated to reduce overall costs to the District. However, as a high-level rough estimate, staff anticipates multiple millions of dollars per year in the future to address deferred maintenance and other improvements identified in the Sustainable Creek Infrastructure project.

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I. INTRODUCTION

Report Overview

This Watersheds Operations and Maintenance Plan (WS O&M Plan) describes Valley Water's O&M activities and the projected funding allocated to provide continued flood protection to the community over the next five years. In addition, it discusses plans for identifying future asset renewal needs. It is a rolling plan that will be evaluated and updated annually. Specifically, this plan:

- Documents the funded and unfunded operations and maintenance project resource needs for the Watersheds Operations and Maintenance Division for the next five fiscal years, 2022 to 2026, and provides an explanation of unfunded needs, including the impact of the Safe Clean Water Program Renewal (Passing of 2020 Ballot Measure S) to unfunded needs.
- Discusses additional unfunded asset renewal projects that will be identified through Safe, Clean Water Project F8: Sustainable Creek Infrastructure for Continued Public Safety. This project will identify and prioritize infrastructure issues and develop asset management plans which will identify needed asset renewal projects.

WS O&M activities are carried out to meet the following Board of Directors' (Board) Ends Policies:

- Ends Policy E-3: There is a healthy and safe environment for residents, businesses, and visitors, as well as for future generations; and
- Ends Policy E-4: There is water resources stewardship to protect and enhance watersheds and natural resources and to improve the quality of life in Santa Clara County.

The WS O&M Division achieves the Board's Ends Policies by:

- Maintaining the flow conveyance capacity of channels, streams, or other flood management facilities to the designed conveyance capacity
- Maintaining the structural and functional integrity of Valley Water facilities
- Fulfilling regulatory permit obligations
- Meeting Safe, Clean Water and Natural Flood Protection Program obligations
- Avoiding, minimizing, or mitigating impacts on the environment by identifying when maintenance work is necessary and incorporating stream stewardship measures to reduce potential impacts further and enhance conditions where possible
- Complying with city and county codes or state and federal regulations (e.g., Endangered Species Act)
- Ensuring public safety

Copies of past years' reports are available on the Valley Water intranet on the asset management web site at <http://www.aqua.gov/asset-management-library>.

The Santa Clara Valley Water District (Valley Water) manages an integrated water resources system that includes the supply of clean, safe water, flood protection, and stewardship of streams in Santa Clara County (County). Valley Water oversees five distinct watersheds within the County and is responsible for overall stewardship of these geographic areas, namely Coyote, Guadalupe, Lower Peninsula, Uvas/Llagas, and West Valley watersheds (see Figure 1.1).

Valley Water's Watershed infrastructure includes the following:

- ### Figure I-1 Santa Clara County Watersheds



Related Documents

Documents related to this plan include:

- FY22-26 Capital Improvement Program (CIP): The CIP is a rolling five-year plan that identifies major capital improvements. This WS O&MWP discusses maintenance needs for improvements identified in the CIP.
- FY22-26 Water Utility Operation and Maintenance Work Plan: The Water Utility Operations and Maintenance Plan is a rolling five-year plan that describes operations and maintenance activities for the Water Utility Operations and Maintenance Divisions for the next five years. It is similar to this WS O&M Plan.
- FY22-32 Long-Term Forecast: The long-term forecast is prepared as the first step of the budget process each year to forecast future funding needs for operations projects. The operations project five-year forecasts provided in this report are taken from the long-term forecast data. The draft report is prepared using long-term forecast data and unfunded needs requests as of December. The budget requests and unfunded needs are further evaluated throughout the budget processes through May.
- FY22 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. This WS O&MWP identifies operations expenditures that are included in the Operating Budget.
- 2016 Watersheds Asset Management Plan (AMP): The Watersheds AMP is a comprehensive plan that documents the current state and future needs of Valley Water's watershed assets with a 100-year forecast which includes expanded management strategies based on the established levels of service. The plan is to be updated every 5 years.
- Stream Maintenance Program (SMP) Manual: The SMP Manual describes the framework that balances effective and efficient maintenance of Valley Water's waterways with anticipated impacts on the environment. The manual defines the overall maintenance program and describes the authorized avoidance measures, best management practices (BMPs), mitigation activities, and program management actions, and therefore, impacts the design, schedule, cost, and labor for each O&M project.
- Safe Clean Water (SCW) Program (Measure B [2012], Measure S [2020]): The SCW is a long-term strategy to ensure uninterrupted water resources services in Santa Clara County. Measure B, approved in 2012, was developed through more than 18 months of community collaboration, with input from more than 16,000 residents and stakeholders, to prepare the schedule sunset of Clean, Safe Creeks and Natural Flood Protection Funding. In 2012 and 2020, Santa Clara County voters passed the Safe, Clean Water ballot measures which will extend funding with adjustments of parcel tax rates to ensure a seamless continuation of critical water related services to Santa Clara County.

- Safe Clean Water (SCW) Program Annual Reports: These reports describe the SCW program status towards accomplishing Key Performance Indicators (KPIs) and the targets in the 5-year Implementation Plan.

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II. OVERVIEW OF O&M ACTIVITIES

There are more than 800 miles of creeks on the county valley floor, 275 miles of which are owned by Valley Water. Under Valley Water's Stream Maintenance Program (SMP), WS O&M staff maintain creek sections where modifications have occurred from flood protection projects. The SMP, which authorizes routine work needed to preserve flood conveyance capacity, is a 10-year program approved in 2013 by seven state and federal regulatory agencies.

Maintenance of constructed and improved channels is a top priority for Valley Water, and in instances in which a facility does not have a designed capacity or the capacity is unknown or uncertain, Valley Water aims to manage the creek or facility to minimize the risk of flooding. Valley Water also conducts some activities to manage Valley Water properties outside the limits of a constructed project, and these may be performed for maintenance access, water quality, fire code compliance, and mitigation purposes.

Watersheds O&M work in improved facilities includes:

- Sediment removal
- Bank erosion repair
- Levee maintenance
- Vegetation management
- Mitigation site maintenance
- Riparian planting
- Invasive plant management
- Trash and debris removal
- Access road maintenance
- Weir, grade control structure maintenance
- Large woody debris management
- Fence repairs and graffiti removal
- Fish ladder maintenance
- Inspections, monitoring and condition assessment
- Concrete channel lining repair

Valley Water identifies stream maintenance work in three main categories: preventive, corrective, and deferred. Valley Water gives high priority to service requests that are generally preventive or corrective in nature. While maintenance resources and schedules strive to balance community requests with other required corrective and preventive work activities, resource limitations and other factors often lead to deferrals and delays in planned maintenance. The three categories of maintenance are described below.

Preventative Maintenance: This is routine planned maintenance work to keep an asset at a required level of service and to reduce the likelihood of failure. It includes the maintenance of completed capital improvement program (CIP) flood protection projects. Preventive maintenance is guided by project-specific maintenance guidelines or manuals. In some instances, these manuals are developed in partnership with project sponsors, such as the Natural Resources Conservation Service (NRCS) and the U.S. Army Corps of Engineers (USACE). For example, the Uvas Creek Operations, Maintenance, Repair, Replacement and Rehabilitation Manual, issued by USACE, provides O&M staff the information, guidance, and requirements for the proper operation and maintenance of the project.

Non-capital project preventive maintenance includes maintenance of all SMP mitigation sites (riparian planting and invasive plant management), and routine maintenance required for instream flow conveyance, maintenance access, and fire code compliance.

Preventive maintenance responsibilities are projected to increase as more flood protection capital projects and updated maintenance guidelines are completed and turned over to the WS O&M Division. In addition, it will likely increase after deferred maintenance projects have been addressed under WARP or the Sustainable Creek Infrastructure Project.

Corrective Maintenance: This is non-routine or unplanned maintenance from the perspective that such work cannot be anticipated to the degree necessary to be included as preventive maintenance. Under corrective maintenance, infrastructure is repaired or replaced after malfunction or breakdown due to unexpected failure or slower deterioration. Examples of corrective maintenance include repairing a creek bank or levee damaged from winter storms, removal of fallen trees or trash and debris, maintenance of Valley Water access roads to design conditions, and repair or replacement of damaged Valley Water fences, gates, and signs.

Often, weather events may prompt the need to perform corrective maintenance work. During heavy storms, vegetation and sediment washed down from areas upstream can restrict the flow of water, and in some areas, cause a back-up, increasing the risk of flooding and/or bank erosion. WS O&M regularly monitors known “hot spots” for vegetation and debris buildups, and where needed and safe to do so, takes action to remove these blockages and reduce the threat of localized flooding.

Deferred Maintenance: This is preventive or corrective maintenance that has been postponed to a future period for various reasons, such as limited availability of resources, receipt of or compliance with regulatory permits, or managing volume of public requests. Deferred maintenance is required to repair, restore, or rehabilitate infrastructure, and failure to do so would contribute to asset deterioration and, ultimately, asset impairment. This work is prioritized and accomplished subject to availability of resources. Generally, a policy of continued deferred maintenance may result in higher costs, difficulty in obtaining required permits, infrastructure failure and, in some cases, health and safety implications. Deferred maintenance activities can include sediment removal, larger scale instream vegetation removal (not currently allowed under existing environmental documentation and regulatory permits) for flow conveyance, infrastructure repair and rehabilitation, and erosion repairs.

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III. WORK PLANNING AND EXECUTION

This section describes the process for planning and executing Watershed operations and maintenance activities which includes inspection, rehabilitation (aka routine removal work for conveyance) and replacement work (erosion or systemic issues). Section IV describes an opportunity for improving on these current processes, to develop a strategic planning program that will holistically evaluate creek maintenance needs, and identify the most efficient way to address those needs as operations, small capital, or capital projects.

Because of the dynamic nature of creek systems, it is challenging for Valley Water to provide specificity regarding future stream maintenance projects. For instance, an active rainy season could create more erosion- and sediment-related issues in creeks than a less active and dry winter. In addition, it is not always clear what deficient sites can be taken on as corrective maintenance projects by the WS O&M Division, or what sites might be clustered together and addressed via WARP.

Maintenance requirements and schedules are based on several factors, including Board policies, condition assessments, project maintenance guidelines, commitments to federal project partners (NRCS, USACE), regulatory permit requirements, code compliance (county or city codes) and Safe, Clean Water and Natural Flood Protection Program commitments. The projects identified in this work plan (projects to be included in final version), along with the associated projected funding allocations, are intended to support the WS O&M Division's resource planning and budgeting process.

Stream Maintenance Program (SMP)

Valley Water performs preventive, corrective and deferred maintenance activities under the SMP. WS O&M staff regularly inspects creeks and levees. In April, staff finalizes a proposed work plan for the upcoming SMP work season. From June to October, after securing state and federal regulatory agencies' approval of the work plan, WS O&M staff perform maintenance activities in streams to remove sediment, manage vegetation, clear trash and debris, and stabilize eroded creek banks. Stream maintenance work also includes an integrated vegetation management program which provides many benefits, including removal of instream vegetation to maintain flow conveyance; upland vegetation management to meet fire code compliance and sustain maintenance access; and native planting and invasive plant removal projects to improve the ecological habitat of the riparian ecosystem. While much of this work takes place in the summer, stream maintenance is a year-round effort.

Bank protection and sediment removal projects are identified and designed by the Watersheds O&M Engineering Support Unit and, in general, are carried out by the Watershed Field Operations Unit. The Vegetation Field Operations Unit performs instream vegetation removal and planting projects.

Watersheds Asset Rehabilitation Program

To supplement WS O&M Division resources or for projects outside the scope of the SMP, corrective and/or deferred stream maintenance work may also be performed through Valley Water's Watersheds Asset Rehabilitation Program (WARP). Such work is typically carried out

during the annual work season (generally, June 15 through October 15). WARP design work is led by Valley Water's Watersheds Design and Construction Unit #5, and WARP construction work is conducted by contractors (hired through competitive bidding process), overseen by Valley Water's Construction Services Unit. WARP work is conducted in close consultation with the Watersheds O&M Engineering Support Unit, and other units within the WS O&M Division.

Work Not Included

The WS O&M Plan currently does not include work conducted under Watersheds Asset Rehabilitation Program (WARP), as those projects are accounted for in Valley Water's 5-Year Capital Improvement Plan. Such work is generated by requests from the Watersheds O&M Engineering Support Unit to supplement WS O&M Division work that is routine maintenance or in response to an emergency or a threat of imminent failure. The plan also does not include all deferred vegetation management work as information related to that effort is being gathered and will require analysis.

In addition, this plan does not include O&M work recommended by the Sustainable Creek Infrastructure project, as it is in its early stages of developing a process to prioritize and analyze deficiencies within creeks with a variety of watershed units. Deficiencies include, but are not limited to, existing flood protection infrastructure not providing the level of service originally intended, potential flooding, wide-spread erosion, infeasible maintenance strategies, and near end-of-life constructed assets (i.e., 70-year-old concrete bank lining).

Since deferred maintenance work will be further evaluated and analyzed within these programs' efforts and potentially be addressed in capital units, it is also excluded from this WS O&M Plan. In addition, there are many other factors such as permitting and changes to climate and geography (such as sea level rise, droughts, increased urban development), that could affect cost estimates greatly in the next five to ten years. Based on a high-level analysis of current conditions, it is anticipated that deferred maintenance will require an additional multiple millions of dollars per year.

WS O&M staff also work to maintain Water Utility facilities, an effort funded through the Water Utility Fund. Such work is not included in this WS O&M Plan.

Work Execution

Execution of the watershed O&M projects is predominately performed through the following units, as described above:

- Watersheds Operations and Maintenance Engineering Support Unit (298)
- Operations and Maintenance Environmental Support Unit (297)
- Integrated Vegetation Management Unit (295)
- Watersheds Field Operations Maintenance Unit (253)
- Additional technical support is provided by the following units which all are involved in the Sustainable Creek Infrastructure project /WARP development:
 - Business Support and Asset Management Unit (411)
 - Water Resources Planning and Policy Unit (245)
 - Hydrology, Hydraulics and Geomorphology Unit (296)
 - Watersheds Small Capital Design and Construction Unit #5 (336)

2022 SMP Project List

The table below (to be provided in final draft of this O&M Plan) is the tentative list of bank repair, sediment removal, and instream complexity SMP projects that the WS O&M Engineering Support Unit proposes to submit to state and federal agencies for approval for FY2022. Once approved, stream maintenance work activities can begin June 15th. The list excludes more than 800 vegetation management SMP activities (more than 4,000 acres managed) that are completed each year and this information can be provided upon request. Approximately 30 SMP projects are initiated by the WS O&M Engineering Support Unit each year to adhere to the Valley Water's Board Ends Policies and SCW program. When generating this list of projects, staff also considers the current and projected resources available in the Field Operations Unit to construct within one SMP season, and ability for the Vegetation Field Operations Unit to conduct corresponding mitigation implementation and monitoring for associated impacts. The Sustainable Creek Infrastructure project described below intends to provide a proposed 5-year or longer asset renewal project list in future O&M Plans.

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IV. STRATEGIC PLANNING FOR FUTURE ASSET RENEWAL: SUSTAINABLE CREEK INFRASTRUCTURE

While the SMP and WARP have been successful in planning and executing necessary stream maintenance projects, Valley Water recognizes the need to evaluate stream maintenance from a more strategic and holistic planning approach, as well as to assess the longevity and effectiveness of past project improvements. Consequently, Valley Water has recently initiated a new project as part of the Safe, Clean Water renewal in 2020. Project F8: Sustainable Creek Infrastructure for Continued Public Safety will help Valley Water more efficiently plan and execute stream maintenance work as operations, small capital, or capital improvements. This project will identify and prioritize infrastructure issues and develop asset management plans which will identify needed asset renewal projects. Asset renewal work that will be investigated and identified as part of this program includes restoring the level of service originally intended for flood protection infrastructure, extending the life of flood protection infrastructure, and improving the reliability of flood protection infrastructure.

A point of emphasis in early planning for this program is to improve our understanding of how best to address deficiencies on creek assets. Some deficiencies are easily addressed through routine maintenance (e.g., trash and debris removal, fence and gate repairs, etc.); however, for more complex deficient issues such as erosion of a creek embankment or levee, compromised flow conveyance capacity beyond routine maintenance capabilities and/or outside of regulatory permissions, or failure of concrete infrastructure, there is less clarity on how best to address these. In these instances, routine maintenance may be a 'band-aid' solution, and not addressing the root of the problem.

This program will also assess the longevity and effectiveness of past project improvements. Staff have preliminarily identified several completed flood protection projects that need work of greater magnitude than the ongoing routine work. These include stretches of failing concrete lining at or beyond expected life expectancy, levees that do not meet current freeboard criteria, creek reaches that provide inadequate flow conveyance based on model calibration using recent high water events, past project components that were deleted or omitted, systemic deterioration of flood protection projects due to channel instability and/or rodent-related issues, and yet-to-be-determined condition of miles of underground pipes (i.e., creeks in pipe). These gaps in our flood protection systems and potential significant infrastructure failures (e.g., concrete channel walls) require remediation and recapitalization.

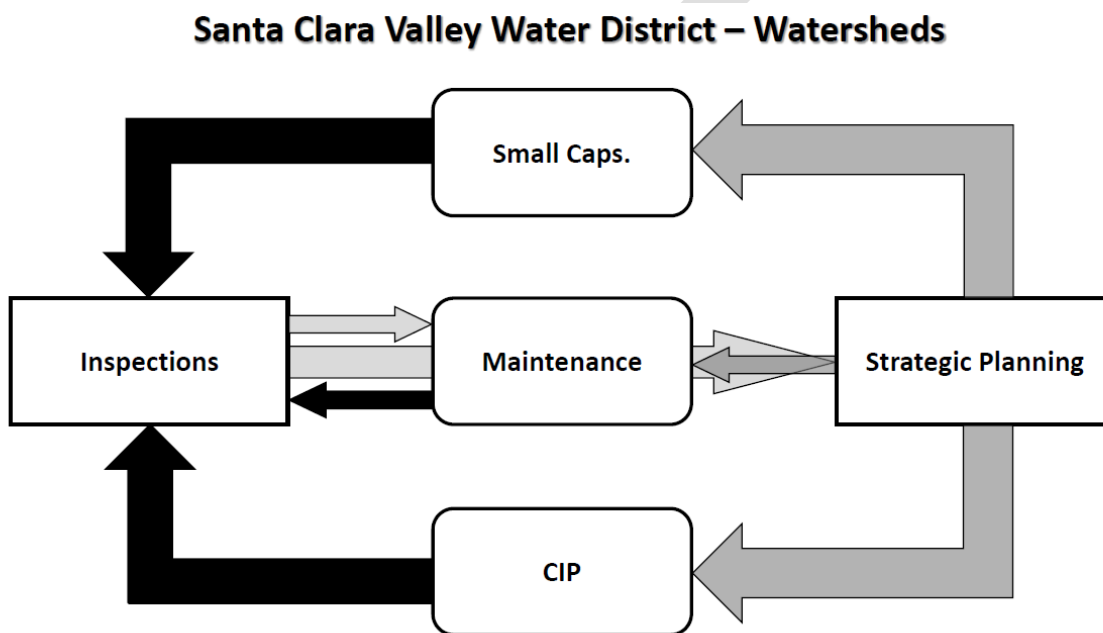
Over the past few years, a variety of approaches have been taken to address these issues as: (1) routine maintenance (e.g., bank protection projects under the SMP); (2) implementation of a WARP project by the Small Caps team (e.g., repair of failing concrete stream infrastructure assets); and/or (3) implementation of a new capital improvement project (e.g., Guadalupe River, Tasman Drive to Interstate 880). The goal of the Sustainable Creek Infrastructure effort will be not only to identify issues, but to identify how to best address the issues through one of these avenues. A visual representation of the aforementioned is depicted in Figure 2-1.

Some of the asset renewal projects identified through this effort may be funded by Safe, Clean Water Project F8, which is allocated \$7.5 Million over the next 15 years, or by the Watershed Asset Rehabilitation Program (WARP) small capital improvement project, which is currently

funded at approximately \$2.5 - \$3 million per year. However, the magnitude of future asset renewal work is unknown at this time and expected to exceed the available funding in F8 and the WARP project in some future years.

Given staff's push toward strategic planning and asset management, as part of this FY22-26 Watersheds O&M Plan, staff is moving away from the practice of identifying a list of sites and corresponding estimated costs, as such an approach is not informed by the strategic planning effort under development, and can be misleading if not understood in this broader context.

Figure IV-1 Strategic Planning Approach



1. Light grey arrows (to the right): Inspections lead to maintenance (much of which is routine), but can or should also lead to strategic planning.
2. Dark grey arrows (to the left): Strategic planning, including identification and prioritization of assets, and preparation of implementable asset management plans, should result in recommendations that would either lead to conducting work via routine maintenance, small caps., or a new CIP.
3. Black arrows (to the left): Once any of these three efforts (maintenance, small caps, CIP) are done, inspections should be undertaken.

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V. FIVE YEAR OPERATIONS FORECASTS

This section provides an overview of the expected operations expenses and unfunded needs for the operations and maintenance activities conducted by the Watersheds Operations & Maintenance Division for the next five fiscal years. The types of activities budgeted in the projects presented in this section are described in Section II.

The final financial information provided in this section is taken from the Board-adopted budget for FY22, as well as the forecast data that is collected as part of the budget process. The Draft report is prepared using long term forecast data and unfunded needs requests as of December 1, 2020. The FY22 budget requests and unfunded needs are evaluated throughout the budget process through May 2021. The plan is finalized following Board adoption of Valley Water's final budget. The final plan documents the final budgeted amounts for each project for FY22 as well as any remaining unfunded needs following the budget process.

The sections below provide an overview of the Watershed O&M Division Units, as well as tables and charts which summarize expected operations expenses and unfunded operations resource needs for fiscal years 22-26.

At this time, minimal additional funding allocations are needed to fully accommodate all known and anticipated maintenance obligations. This is primarily due to two factors:

- Passing of 2020 Ballot Measure S – Safe, Clean Water and Natural Flood Protection Program (SCW) has provided funds to address work identified as unfunded in last year's plan.
- Excluding deferred maintenance work in this O&M Plan until further progress on the Sustainable Creek Infrastructure Project.

Although there are minimal unfunded needs at this time, it is important to note that there is a remaining list of deferred maintenance that includes a plethora of watershed assets with conditions that are a potential threat to levels of service. In addition, Valley Water recognizes an opportunity to further analyze all watershed assets to effectively maintain existing and new infrastructure through the development of the WARP and Sustainable Creek Infrastructure project. Examples of deferred maintenance work and anticipated funding necessary for such work are described below:

Deferred maintenance work:

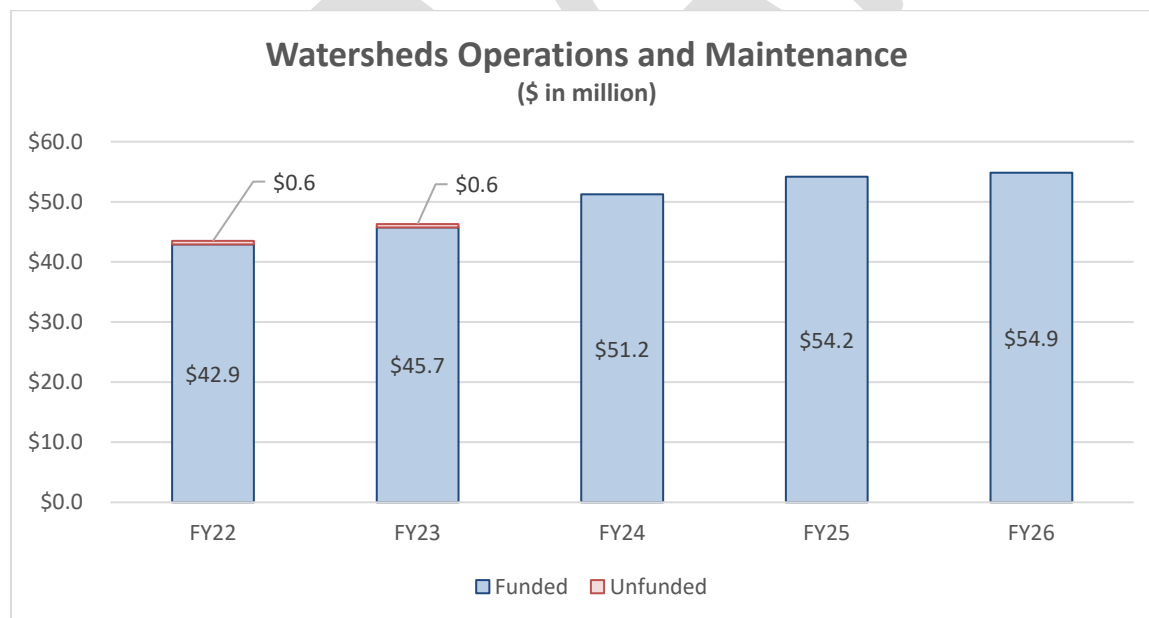
- Over the next five fiscal years, staff estimates that deferred maintenance needs for vegetation management will average 15,000 labor hours per year and require \$1.2 million per year in services and supplies
- Multiple millions of dollars per year are anticipated for additional engineering support and construction services to analyze and address portions of creek with poor conditions and/or systemic issues with an holistic approach potentially through the WARP (Small Capital Projects) or Sustainable Creek Infrastructure projects (SCW Priority F8) and therefore can be implemented in capital budgets.
- Until deferred maintenance needs can be serviced adequately, the cycle of vegetation growing beyond the limitations of Stream Maintenance Program 2 (SMP) environmental

documentation and permits will continue. For example, if Valley Water is not proactive in removing trees that are compromising flow conveyance or inhibiting visual inspections of levees or other key assets prior to them reaching 12 inches diameter at breast height (dbh), Valley Water will need to obtain separate permits for their removal, as trees greater than 12 inches dbh are not permitted for removal under current SMP permits.

- Addressing systemic issues such as lack of sediment transport that causes wide-spread erosion throughout the channel and compromises the stability of banks and levees adjacent to public and private properties. Currently Valley Water repairs a few small sections (band-aid repairs) when crucial.
- Limited vegetation management work until new environmental review (compliance with California Environmental Quality Act, CEQA) and regulatory permitting processes have been employed.
- Mitigation to offset significant impacts of deferred maintenance would likely result in significant costs, whether it be acquiring land to be able to mitigate, installing mitigation plantings, conducting the consequent mitigation site maintenance and monitoring, and/or pursuing habitat conservation planning solutions.

A summary of the five-year forecasts of funding for current service levels as well as future resource requirements which are not yet funded for the Watersheds Operations and Maintenance Divisions is shown in the chart below. Unit-specific information is provided in the following sections.

Figure V-1 FY2022-26 Projected Resource Requirements for WS O&M Division



*Data as of December 2020

In total, the Watersheds O&M Division has identified a need for an additional \$1.2 million for the next 5 years which would provide resources for the tree maintenance program. The tree maintenance program includes the removal and pruning of hazardous and drought-stressed

trees. New permits were received in FY2021 that will increase ongoing tree removal work for FY22 and FY23.

The passing of 2020 Ballot Measure S, the Safe, Clean Water (SCW) Program Renewal has significantly reduced unfunded needs for the Watershed O&M Division since last year. These additional funds from the SCW Program Renewal provide resources to manage and maintain a projected 600 in-stream acres and 200 acres of mitigation sites as result of the SCW Capital Improvement Projects. It is anticipated that in next year's O&M plan, an additional two positions will be reflected to support SCW's new Priority, "F.1 - Vegetation Control and Sediment Removal for Capacity" (formerly, Priorities E1.3 and E.3.3), which will be funded by the renewal as well.

Last year, the 5-year O&M plan included a cost estimate for the deferred maintenance of approximately \$22 million as unfunded in the 5-year forecast. This work includes preventative and corrective maintenance that has been postponed to a future period for various reasons, such as limited availability of resources, receipt of or compliance with regulatory permits, or managing volume of public requests. This year the deferred maintenance costs have been removed from the 5 year O&M plan, as the cost estimate was not informed by the strategic planning effort under development, and can be misleading if not understood in this broader context, as looking at these projects through a more holistic lens is anticipated to reduce overall costs to the District. However, as a high-level rough estimate, staff anticipates multiple millions of dollars per year in the future to address deferred maintenance and other improvements identified in the Sustainable Creek Infrastructure project.

WATERSHEDS O&M ENGINEERING SUPPORT UNIT (298)

Maintenance Guidelines Updates and Engineering and Inspection Support

The Engineering Support Unit provides for updating stream maintenance guidelines and carrying out general engineering planning to support the watersheds operation and maintenance activities throughout the county. Stream maintenance guidelines are vital to ensuring that Valley Water continues to provide flood protection to the community while complying with regulatory permits. The guidelines inform when a modified creek facility requires routine maintenance work, such as sediment removal, vegetation management, rodent control measures, and road repairs, among other work activities, to provide the levels of service intended by original construction of the facility and to ensure functionality of designed project elements. As part of the SMP, the San Francisco Bay Regional Water Quality Control Board requires that Valley Water update the guidelines. Maintenance guidelines' development includes gathering and identifying data gaps; reviewing as-built information and existing vegetation management practices and inspection data; defining levels of service; and conducting hydraulic modeling with various scenarios including sediment and vegetation.

Engineering and inspection support includes preliminary development of or planning for projects, working with municipalities and other entities, pre-project planning, developing environmental documentation and acquiring permits for non-Stream Maintenance Program (non-SMP) projects, and managing Pond A8 activities resulting from requirements under an agreement with the U.S. Fish and Wildlife Service (USFWS).



Staff measuring extent of bank erosion along Calabazas Creek

Key performance indicators:

- i. Update 40 stream maintenance guidelines over a 10-year year period, beginning 2014.
- ii. Develop list of annual SMP projects by January.
- iii. Develop and maintain schedule for completing all engineering service requests in support of SMP.

Facility/Infrastructure Condition Assessments

This operation provides for regular inspection of watersheds infrastructure, such as flood protection levees, streams, and banks, to determine maintenance required and ensure those assets are safe and maintained to their design conditions. It includes inspecting USACE-constructed flood protection projects along sections of Guadalupe River, Coyote Creek, and Uvas Creek, and the NRCS-constructed Lower Llagas Creek Flood Protection Project. As the local sponsor for these projects, Valley Water is responsible for maintaining these facilities.

This effort entails conducting inspections and preparing reports documenting conditions under various categories, such as erosion, sediment accumulation, debris blockages, vegetation, burrowing rodent activity, trash, graffiti, encampments, sign installations, and damage to fences and gates. For the USACE-constructed projects, Valley Water conducts semi-annual inspections, identifies and conducts corrective measures, and submits annual reports to USACE. For the NRCS-constructed project, Valley Water conducts inspections, identifies and conducts corrective measures, and submits annual reports to NRCS.

This operation also provides for addressing public requests made through Valley Water's online customer relationship management portal regarding Watersheds infrastructure, and for the creation of work orders to address identified deficiencies.

Creek inspection work is expected to grow in the coming years as capital flood protection projects are completed and turned over to the WS O&M Division for inspection and

maintenance. Capital projects scheduled that have been recently completed and/or are anticipated to be completed during the next five years are:

1. Upper Berryessa Creek
2. Lower Silver Creek
3. San Francisquito Creek
4. Permanente Creek
5. Lower Penitencia Creek
6. Upper Llagas Creek
7. Lower Berryessa Creek
8. Upper Guadalupe River Reach 10B & Reach 12
9. Cunningham Flood Detention Basin

USACE-sponsored projects include strict inspection requirements that are included in their operation and maintenance manuals.

Key performance indicators:

- i. Complete semi-annual inspections on USACE-constructed Guadalupe River, Coyote Creek, and Uvas Creek flood protection projects by November 1 and May 1.
- ii. Finalize and transmit to the USACE the pre-inspection report for the USACE-constructed projects before August 1.

Projected Resource Requirements

Figure V-2 FY2022-26 Projected Resource Requirements for Engineering Support

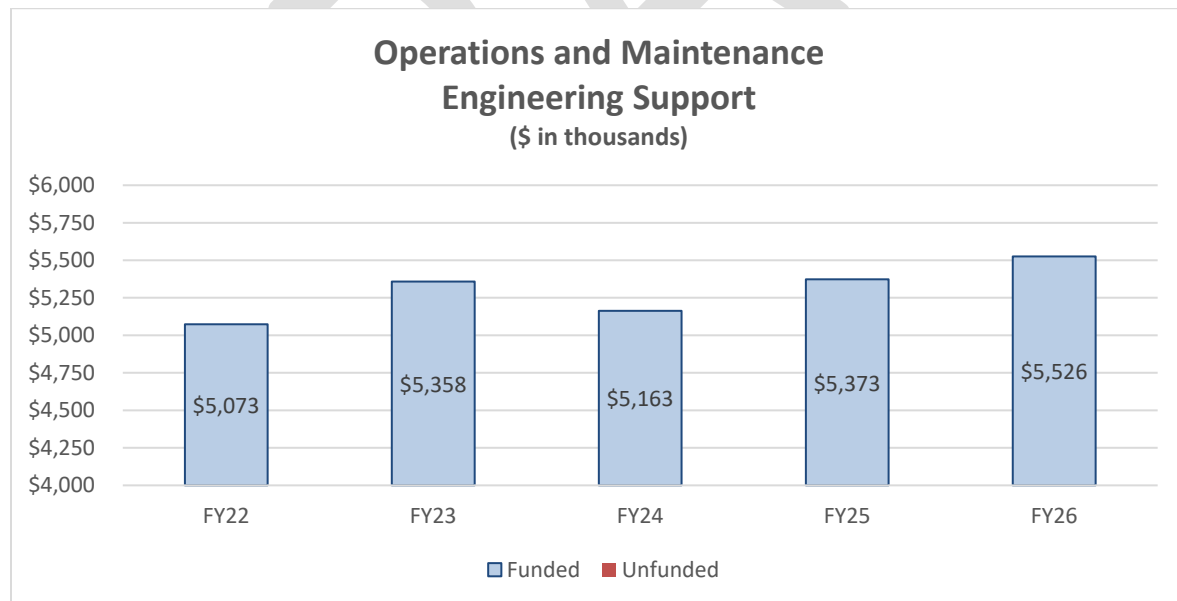


Table V-1 Projected Resource Requirements by Projects for Engineering Support

Operations and Maintenance Engineering Support (\$ in thousand)								
Program	Project Number(s)	FY20 (Actuals)	FY21 (Adopted)	FY22	FY23	FY24	FY25	FY26
Maintenance Guidelines Updates and Engineering and Inspection Support	62021009 62042050	\$1,332	\$1,934	\$2,606	\$2,734	\$2,367	\$2,451	\$2,521
Infrastructure Condition Assessment	62761024 62761074	\$1,761	\$2,196	\$2,467	\$2,624	\$2,797	\$2,921	\$3,005
		\$3,093	\$4,130	\$5,073	\$5,358	\$5,163	\$5,373	\$5,526

Table V-2 Additional Resource Needs (Unfunded) for Engineering Support

None.

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WATERSHED FIELD OPERATIONS UNIT (253)

Maintaining Flood Protection Project Design Capacity

Valley Water conducts operations to maintain the design capacity of flood protection projects and allow stormwater to flow through the creeks as designed. High and/or sustained flows can cause extensive damage to creek banks or levees, while sediment buildup can restrict the flow of water, increasing the risk of flooding. To allow water to flow through the creeks as designed, Valley Water removes sediment, manages vegetation, and repairs banks and levees. These operations are expected to grow as new capital flood protection projects are completed and turned over to the WS O&M Division for inspection and maintenance. Sediment removal, levee repair, and erosion protection operations are detailed below.



Pictured: Sediment removal activities

Sediment Removal Management

Valley Water conducts routine and emergency sediment removal/management from creeks to reduce flood risk by restoring or maintaining design conveyance capacity of flood protection projects.

Sediment removal projects are identified during inspections and by utilizing criteria provided in existing maintenance guidelines. Though rare, sediment removal is also conducted where guidelines or level of service documentation do not exist, at sites where historical practices or deeded obligations are used to prioritize projects, and where sediment is redirecting flows causing erosion in a creek banks or levee. The effort also helps ensure that Valley Water meets the requirements identified in the Safe, Clean Water Program Priority E1 (Vegetation Control and Sediment Removal for Flood Protection).

Key performance indicators:

- i. Maintain 90% of improved channels at design capacity (SCW E1.1).
- ii. Complete 80% of sediment removal projects submitted annually under the NPW as part of the SMP-2 by November 1.

Erosion Protection

This operation provides for on-going routine and emergency stream bank stabilization to maintain improved facilities and ensure they continue to function as designed and reduce threats to public health and safety and prevent environmental degradation.

Work involves repairing channel banks that are weakened, unstable or failing, causing or threatening to cause damage to property, become a flood hazard or public safety concern, create problems with roads, transportation or access, cause instream sedimentation or affect water quality and beneficial uses.

Valley Water uses a wide range of common biotechnical engineering techniques to provide the “softest” feasible solution to stabilize and restore stream banks and to improve vegetation and habitat values.

Key performance indicators:

- i. Complete 80% of the planned work submitted in the NPW by November 1.
- ii. Ensure that project sites are annually winterized by November 1.
- iii. Repair 100% of stream bank erosion on Valley Water property sites that pose an imminent threat to public safety.

Watershed Levee Maintenance

This operation provides for the maintenance of levees throughout the county to ensure the levees remain or are restored to their design dimensions and standards to provide for public health and safety.

Levee maintenance includes high-risk erosion repair, damage-prevention efforts such as burrowing rodent control, capacity restoration and activities to respond to emergencies. Inspection, maintenance, and reporting activities meet all regulatory agency permit guidelines.

Key performance indicators:

- i. Complete non-USACE annual routine levee inspections by June 15.
- ii. Complete San Francisquito and Palo Alto Airport annual levee inspection reports by February 15.
- iii. Correct deficiencies such as road surface damage, rodent holes, damaged levees, and elevation maintenance identified during inspections by June 15.

Watershed General Field Maintenance

This operation provides for small construction projects, repairs and maintenance needed to maintain flood protection infrastructure.

Routine activities include access road repair work, fence repair and installation, sign installation, minor construction and general maintenance of Valley Water property and facilities under Watersheds.

Key performance indicators:

- i. Evaluate and repair all “E” rated Valley Water assets after inspection or notification of failure within 5 (five) days, if possible.
- ii. Annually evaluate and create access road repair plan by December 31.
- iii. Repair or replace fences and signs per annual condition assessment by June 15.

Watershed Debris Removal

This operation provides for conducting routine and emergency debris removal, including trash/litter and fallen trees, to allow stormwater to flow through the streams and protect healthy creek and bay ecosystems while meeting large woody debris mitigation requirements. Debris removal is performed at critical locations such as bridge piers, trash racks and fish ladders before, during and after major storm events. To address the impacts of removing sediment and large woody debris from certain streams, Valley Water also performs instream habitat improvement work. This can include adding gravel and logs or root wads to create more habitat complexity for fish and other species.



Pictured: Tree removal at Los Gatos Creek

Key performance indicators:

- i. All significant debris identified during condition assessments shall be remedied by December 15.
- ii. Remove debris on bridge piers, trash racks and fish ladders by December 15 as well as before, during and after major storm events.
- iii. Install permit-required woody debris mitigation by November 1.

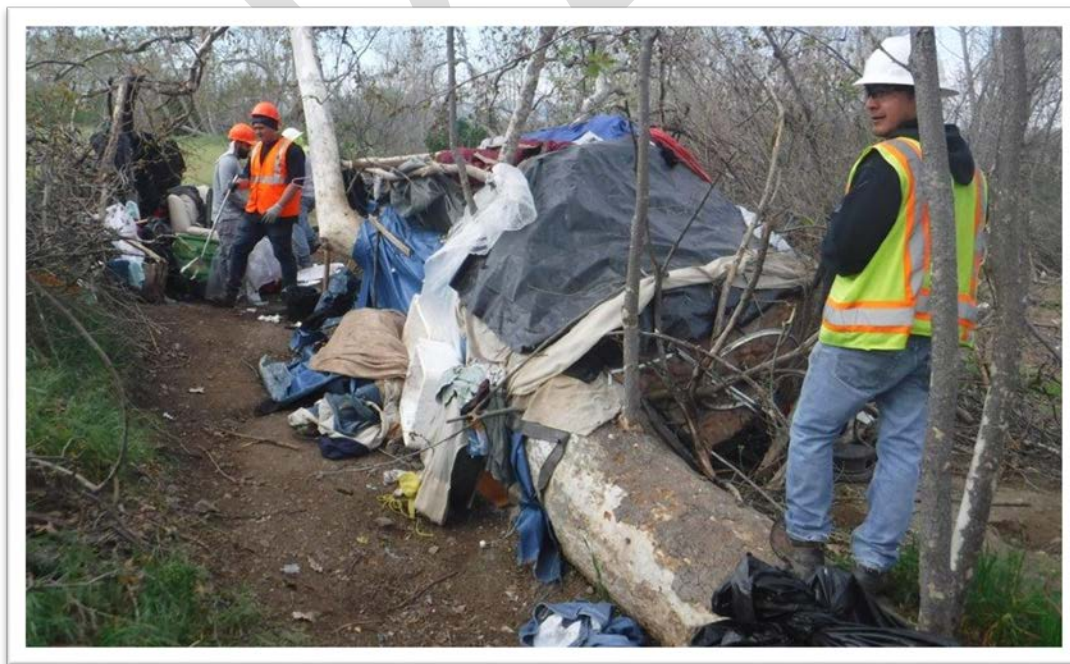
Homeless Encampment Cleanup

This operation provides for Valley Water to conduct homeless encampment cleanups in coordination with cities and agencies to reduce the amount of trash and pollutants entering local waterways and protect water quality, wildlife and riparian habitat, and minimize flood risks by protecting Valley Water infrastructure. Additionally, encampment cleanups also improve the aesthetics of creeks in neighborhoods and parks.

The program is carried out in partnership with local cities, agencies, and non-profits. In addition, Valley Water participates in the Joint Trash Team (JTT), along with the City of San José, other partner agencies and non-profit organization, which meets monthly to plan and schedule services that are required for cleanup events, such as social services, law enforcement and volunteer support.

The project ensures Valley Water meets the requirements identified in the Safe, Clean Water Program Priority B4 (Good Neighbor Program: Encampment Cleanup). In response to increasing demand for encampment cleanups from cities and the community, Valley Water has been carrying out encampment cleanups far in excess of the required 52 annual cleanups. Since 2014, Valley Water's encampment cleanups have increased fivefold. As a result, the limited Safe, Clean Water funding for cleanups is being supplemented by dollars from the Watershed and Stream Stewardship Fund (Fund 12).

Since the Covid-19 pandemic began in Santa Clara County in March of 2020, homeless encampment cleanups were placed on hold and therefore it is anticipated that the list of cleanup projects will increase in FY2022 (and potentially additional fiscal years). This is not reflected in the projected 5-year forecast at this time.



Pictured: Encampment cleanup

Key performance indicator:

- i. Conduct encampment cleanups annually based upon the funding available, approximately 200-250 cleanups a year, including 52 cleanups funded by Safe, Clean Water Program.

Watershed Good Neighbor Maintenance

This operation allows Valley Water to respond to complaints about illegal dumping, trash and graffiti on Valley Water property and rights-of-way.

Activities include removing trash from streams; removing graffiti from headwalls, concrete embankments, signs and other Valley Water structures; installing and maintain fences and gates so that Valley Water infrastructure remains safe and clean; and supporting Valley Water's Adopt-a-Creek Program.

Efforts also include quarterly cleanups of problem sites to help reduce waterway pollution and keep creeks and riparian areas free of debris. These quarterly cleanups are focused on problem sites 150 feet upstream and downstream from bridges, culverts and/or pier noses where Valley Water has property rights.

The operation ensures Valley Water meets the requirements identified in the Safe, Clean Water Program Priority B6 (Good Neighbor Program: Remove Graffiti and Litter).

Key performance indicators:

- i. Conduct 60 cleanup events over the life of the 15-year Safe, Clean Water Program (four per year).
- ii. Respond to requests of litter or graffiti within five working days.
- iii. Remove trash from the two trash booms after the "first flush" (first storm event).

Pond A4 Operations

This operation maintains and operates Pond A-4 as stipulated by the Memorandum of Agreement (MOA) with USFWS. On-going facility maintenance and improvements such as levee repair, road grading, pump operation, fencing and signage are also a component of this project. The pond's water quality is monitored and maintained to prevent potentially significant adverse environmental consequences and to preserve the current ecological values of the pond. Furthermore, this project maintains the pond's levee, which provides the current level of tidal flood benefit.

Key performance indicators:

- i. Record pond and intake readings twice each month.
- ii. Complete annual identified appurtenance and non-engineered levee maintenance repairs and identified levee road resurfacing by October 15.
- iii. Complete annual pump maintenance/repair work by December 30.

Projected Resource Requirements

Figure V-3 FY2022-26 Projected Resource Requirements for Field Operations

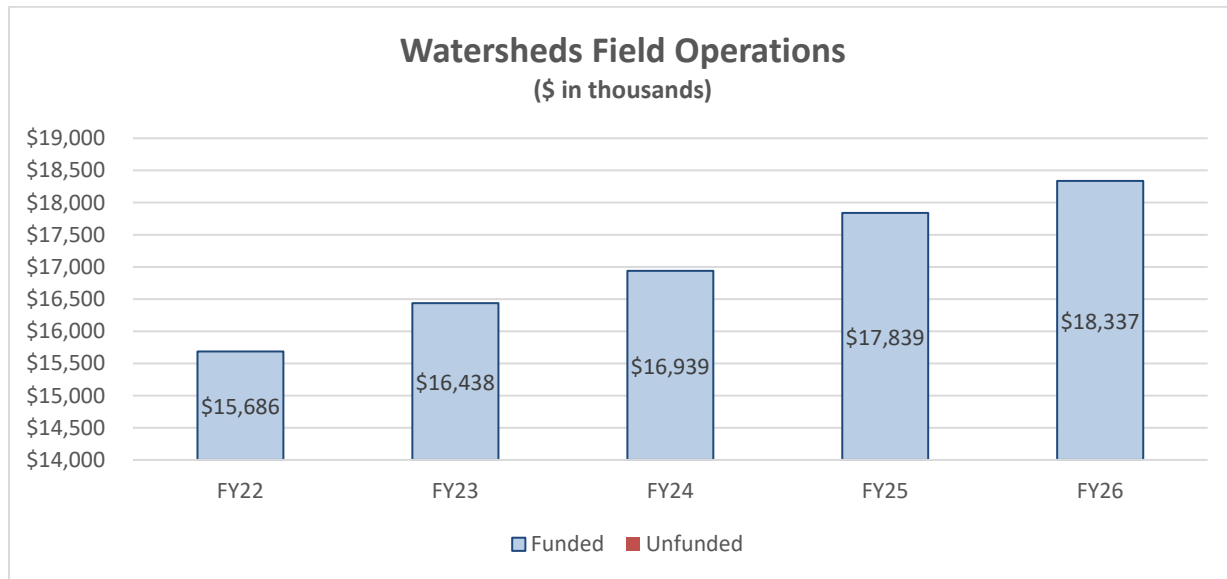


Table V-3 Projected Resource Requirements by Projects for Field Operations

Watersheds Field Operations (\$ in thousand)								
Program	Project Number(s)	FY20 (Actuals)	FY21 (Adopted)	FY22	FY23	FY24	FY25	FY26
Maintaining Project Design Capacity	00761023 26761079 62761027 62761028	\$8,974	\$9,848	\$9,628	\$10,050	\$10,354	\$11,035	\$11,342
General Field Maintenance	62761025	\$1,659	\$1,841	\$1,950	\$2,058	\$2,121	\$2,191	\$2,253
Watershed Debris Removal	62761026	\$1,563	\$1,222	\$1,593	\$1,685	\$1,737	\$1,795	\$1,845
Encampment Cleanup	26771027	\$845	\$922	\$998	\$1,049	\$1,081	\$1,117	\$1,149
WS Good Neighbor Maintenance	00761022	\$1,817	\$1,761	\$1,421	\$1,498	\$1,544	\$1,595	\$1,640
Pond A4 Operations	62761009	\$73	\$158	\$95	\$99	\$102	\$105	\$108
		\$14,931	\$15,752	\$15,686	\$16,438	\$16,939	\$17,839	\$18,337

Table V-4 Additional Resource Needs (Unfunded) for Field Operations

None.

VEGETATION FIELD OPERATIONS UNIT (295)

Revegetation Project Management

This operation provides for the maintenance and management of existing and future revegetation projects throughout the county to ensure that Valley Water meets its regulatory requirements. Revegetation sites provide mitigation to compensate for impacts to habitat from flood protection and maintenance projects.

Currently, WS O&M maintains and manages over 400 acres (on about 200 sites) of revegetation projects. Completion of new capital flood protection projects will add to the number of mitigation sites required to be maintained. With the completion of nine more flood protection projects in the next five years and ongoing mitigation needs for the SMP-2, a minimum of additional 225 acres of revegetated sites will need to be managed and maintained.

Significant activities include site inspections, irrigation, plant installation, herbicide applications, pruning, mulching and weed abatement, etc. Examples of success criteria include plant survival rates, percent of native vegetative cover on sites, health and vigor of plants and establishment criteria (how well a site can survive without supplemental watering, etc.). Before carrying out mitigation site maintenance, Valley Water personnel conduct pre-construction biological surveys to minimize environmental impacts.

The operation helps Valley Water meet the requirements identified in the Safe, Clean Water Program Priority D1 (Management of Revegetation Projects).

Key performance indicators:

- i. Maintain a minimum of 300 acres of revegetation projects annually through the year 2028.
- ii. Provide for the maintenance of future revegetation sites.

Invasive Plant Management

This program provides for removing non-native invasive plants to mitigate for temporary impacts generated from SMP activities on various riparian corridors throughout the county. It is a required mitigation condition of USACE, USFWS, and California Department of Fish and Wildlife (CDFW) permits for the SMP, which is critical to preserving the flood conveyance capacity as well as maintaining the integrity of Valley Water's flood protection projects and the health of the stream corridors.

Invasive plant management activities include comprehensive countywide mapping of a broad range of invasive plants identified as part of the permit negotiations, invasive vegetation control and five years of retreatment and monitoring of areas as necessary. Significant activities include site inspections, invasive plant removal, herbicide applications, mulching and weed abatement etc.



Pictured: Invasive species removal along Coyote Creek in San José

Examples of success criteria include percent of invasive vegetative cover on sites and percent of native vegetative cover on sites. Before carrying out invasive vegetation control, Valley Water personnel conduct pre-construction biological surveys to minimize environmental impacts. The growing resource requirement for this operation is driven primarily by the obligation to support 10 acres of invasive plant management annually to mitigate for SMP-2 impacts. It would also help undertake the countywide *Arundo donax* removal program and to help build resiliency in streams to reduce future risks of climate change.

Key performance indicator:

- i. Meet SMP-2 mitigation conditions by maintaining invasive plant management sites.

In-stream Vegetation Removal for Flow Conveyance

Under this operation, Valley Water conducts ongoing in-stream vegetation control activities to maintain the design flow conveyance capacity of flood protection projects.

By FY25, nine newly completed flood protection and stream stewardship projects are expected to be turned over to the WS O&M Division to maintain to design capacity. This will result in the management of an additional estimated 205 acres of mitigation site maintenance. The capital projects scheduled to be completed and required to be maintained during the five-year plan period are:

1. Upper Berryessa Creek
2. Lower Silver Creek
3. San Francisquito Creek
4. Permanente Creek
5. Lower Penitencia Creek
6. Upper Llagas Creek

7. Lower Berryessa Creek
8. Upper Guadalupe River Reach 10B & Reach 12
9. Cunningham Flood Detention Basin

This operation also includes conducting vegetation control activities for in-stream flow conveyance on jurisdictional properties.

Significant annual activities under this operation include conducting biological pre-construction surveys to minimize environmental impacts, application of aquatic herbicides, pruning, tree removal and hand removal of vegetation. This project helps meet the Safe, Safe, Clean Water Program Priorities E1.1 (Vegetation Control Capacity and E1.3 (Maintenance of Newly Improved Creeks).

Key performance indicators:

- i. Help maintain 90% of improved channels at design capacity.
- ii. Maintain newly improved creeks.

Vegetation Management for Access and Fire Code

This operation provides for over 2,720 acres of upland vegetation management to provide maintenance access and fire code compliance. Of this total acreage, 15% of the annual completed work is funded by Safe, Clean Water Program for a 15-year total goal of 6,120 acres.

Key work activities in this project include a variety of integrated vegetation control methods including hand weed abatement, mechanical mowing, pruning and post and pre-emergent herbicide application.

The effort also meets the Safe, Clean Water Program Priority E1.4 (Vegetation Management for Access).

Key performance indicator:

- i. Provide vegetation management for over 2,720 acres along levee and maintenance roads annually.

Watersheds Hazard Tree Removal Program

Under this operation, Valley Water removes and trims hazard trees on Valley Water property. This project improves public safety by reducing the risk of tree failures that could potentially harm life and property.

Key activities under this program include ongoing hazardous tree assessments, preparation of CEQA documents, permit application, and pruning or removal to mitigate hazards associated with trees. In addition, Watersheds O&M is also responsible for the Drought-Induced Tree Removal Program.

Based on past trends, staff estimates that on average, Valley Water would remove 60 to 80 hazard trees annually for the next five years.



Key performance indicator:

- i. On an average remove 60-80 hazard trees in a year.

Sandbag Program

Valley Water provides filled sandbags or sand and empty bags for public use during winter storm events. Sandbags are the first line of defense against flooding during heavy rains. As part of this program, Valley Water keeps its five sandbag sites fully stocked during the October through April months.

Key activities under this program include the production of filled sandbags, delivery of bags and sand to sites, maintenance of sites and replenishment of sites on an as needed basis through the season, and production of education materials regarding the proper usage of sandbags. During the 2013-2017 period, nearly 602,000 sandbags were provided at these sites.

Key performance indicator:

- i. 40,000 sandbags stocked by November 30 annually.

Projected Resource Requirements

Figure V-4 FY2022-26 Projected Resource Requirements for Vegetation Field Operations

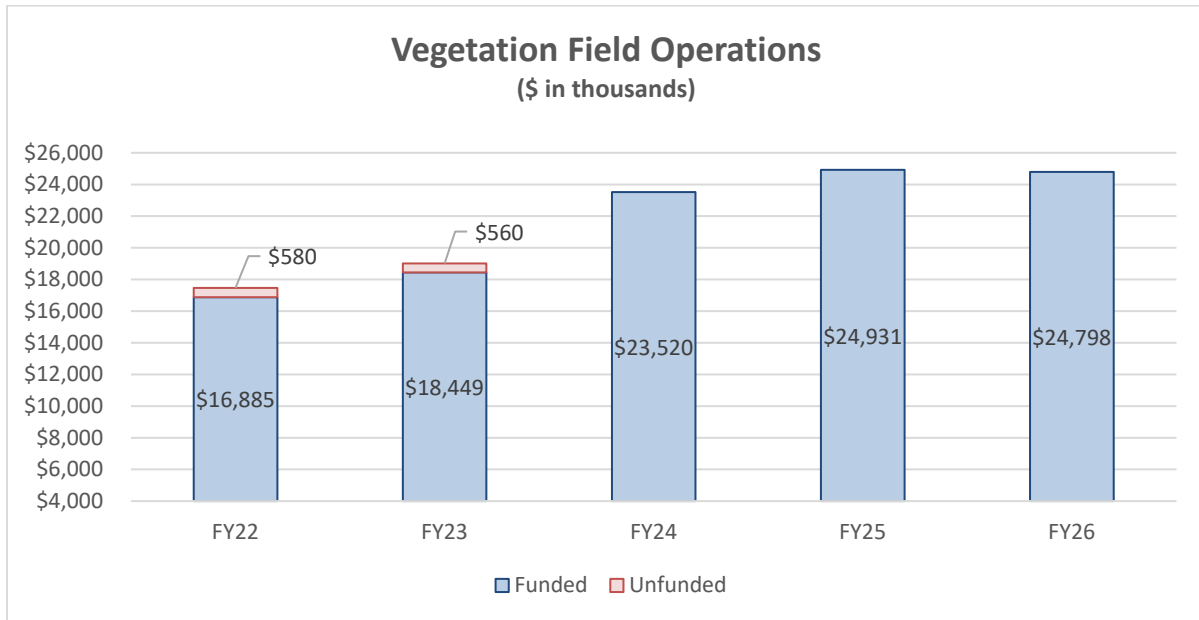


Table V-5 Projected Resource Requirements by Projects for Vegetation Field Operations

Vegetation Field Operations (\$ in thousand)								
Program	Project Number(s)	FY20 (Actuals)	FY21 (Adopted)	FY22	FY23	FY24	FY25	FY26
Revegetation Project Management	761075	\$1,551	\$1,871	\$2,759	\$3,763	\$5,012	\$7,221	\$6,988
Invasive Plant Management	62761006	\$2,208	\$2,184	\$2,627	\$2,758	\$2,841	\$2,934	\$3,017
Instream Vegetation Removal for Flow Conveyance	26771067 26771068 62761080	\$2,973	\$2,851	\$3,921	\$3,993	\$7,506	\$6,514	\$6,641
Vegetation Management for Access	761078	\$3,590	\$3,848	\$4,684	\$4,919	\$5,070	\$5,239	\$5,387
Tree Maintenance Program	762011 60061058	\$1,808	\$2,196	\$2,236	\$2,331	\$2,384	\$2,294	\$2,014
Sandbag Program	62761008	\$487	\$615	\$659	\$686	\$707	\$729	\$750
		\$12,618	\$13,564	\$16,885	\$18,449	\$23,520	\$24,931	\$24,798

Table V-6 Additional Resource Needs (Unfunded) for Vegetation Field Operations

Vegetation Field Operations (\$ in thousand)						
Program	Project Number(s)	FY22	FY23	FY24	FY25	FY26
Revegetation Project Management	00761075	\$0	\$0	\$0	\$0	\$0
Invasive Plant Management	62761006	\$0	\$0	\$0	\$0	\$0
Instream Vegetation Removal for Flow Conveyance	26771067 26771068 62761080	\$0	\$0	\$0	\$0	\$0
Vegetation Management for Access	00761078	\$0	\$0	\$0	\$0	\$0
Tree Maintenance Program	00762011 60061058	\$580	\$560	\$0	\$0	\$0
Sandbag Program	62761008	\$0	\$0	\$0	\$0	\$0
		\$580	\$560	\$0	\$0	\$0

In total, the Vegetation Field Operations Unit has identified a need for an additional \$1.1 Million for the next 5 years which would provide resources for the tree maintenance program. The tree maintenance program includes the removal and pruning of hazardous and drought-stressed trees. New permits were received in FY2021 that will increase ongoing tree removal work for FY22 and FY23.

The passing of 2020 Ballot Measure S, the Safe, Clean Water (SCW) Program Renewal, provided additional resources to manage and maintain a projected 600 in-stream acres and 200 acres of mitigation sites in result of the Safe Clean Water Capital Improvement Projects and additional projects from Capital and SMP. These resources would provide the following services:

- Routine instream flow conveyance maintenance (such as applying aquatic herbicide and instream hand removal of vegetation)
- Management of individual Mitigation and Monitoring plans to ensure areas meets its success criteria and adhere to fire and access codes
- Management of vegetation management projects on jurisdictional creeks throughout Santa Clara County

In FY2021, five additional full-time staff (FTE) were approved to maintain the projected vegetation maintenance work for the next 5 years. Due to the Covid-19 pandemic, these positions were placed on hold and therefore were included again initially as unfunded.

Fortunately, the passing of the Safe Clear Water (SCW) Program Renewal will fund three of these new positions will be funded through Priority D1, “Management of Riparian Planting and Invasive Plant Removal” and the other two positions will be funded under “F.1. Vegetation Control and Sediment Removal for Capacity” (formerly Priorities E1.3 and E3.3) which been reflected in the chart above. It is anticipated that in next year’s O&M plan, an additional two positions will be reflected in the forecast to support the new elements of Priority D1, “Countywide Arundo Donax Removal and Opportunistic Invasive Plan Removal” that will be funded by the renewal as well.

OPERATIONS AND MAINTENANCE ENVIRONMENTAL SUPPORT UNIT (297)

Stream Maintenance Program Management

This operation is to manage and coordinate routine maintenance activities, including sediment removal, vegetation management and bank protection. The goal is to ensure that the activities are carried out in compliance with various regulatory permits and in a manner that minimizes environmental impact to the stream systems.

The work entails preparing and submitting reports to regulatory agencies, overall program management, meeting with regulatory agencies and conducting best management practices (BMP) training.

With the current SMP program (SMP2) set to end in 2023, staff will be working on developing SMP-3 during FY 2021 through to FY 2023. This will require additional resources to undertake various efforts, such as preparing a programmatic EIR. Furthermore, as new capital projects are completed and turned over to the Watersheds O&M Division, additional resources will be required for increased monitoring activities.

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Pictured: Stevens Creek streambed restoration

Key performance indicators:

- i. Submit to regulatory agencies an annual initial Notice of Proposed Work (NPW) report by April 15, and second submittal, if proposed, by August 1.
- ii. Conduct annual BMP training by June 15.
- iii. Submit the Annual Summary Report to regulatory agencies by January 31.
- iv. Complete the annual post-season lessons-learned workshop by November 1.

Instream Habitat Complexity

This operation allows Valley Water to address the impacts of carrying out stream maintenance work that require removing large woody debris or other features that provide habitat for steelhead and salmon by performing instream habitat improvement work. Under SMP-2, Valley Water is required to conduct gravel augmentation and/or large woody debris (LWD) projects in each of the five watersheds--Coyote, Guadalupe, Lower Peninsula, Uvas/Llagas and West Valley. Valley Water has completed a project each in the Lower Peninsula and Guadalupe Watersheds.

Activities include adding gravels and logs or root wads to streams to create more habitat complexity for fish and other species and, subsequently, monitoring the project to ensure its success.

Key performance indicator:

- i. Install one (1) or more projects in each watershed.

Field Operations Support

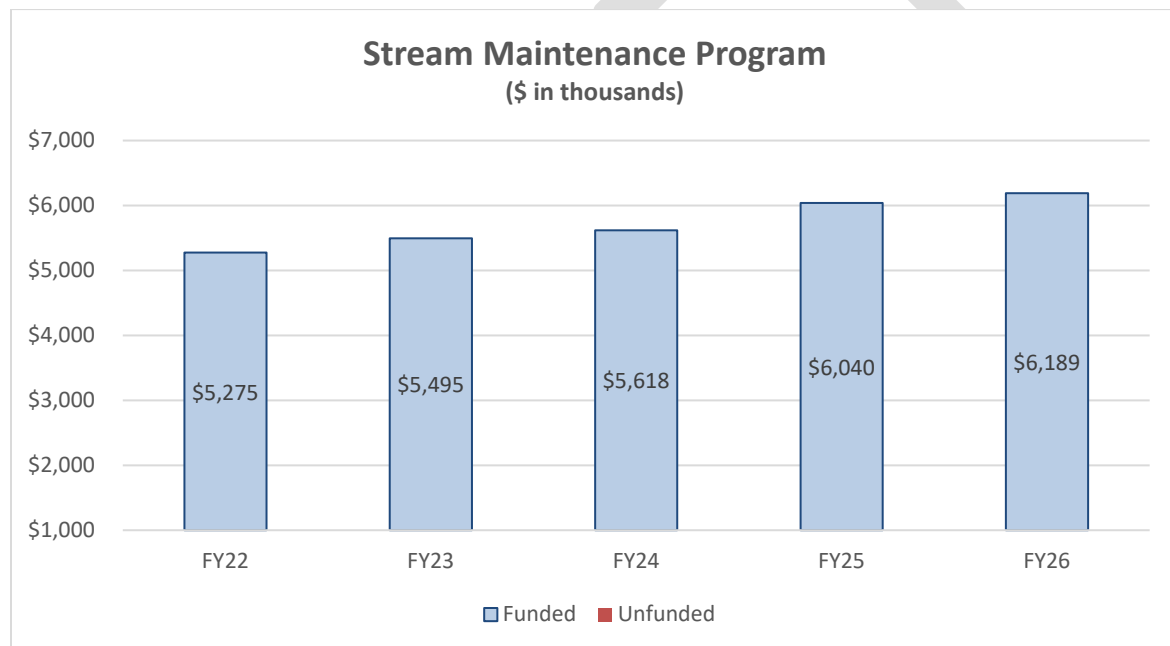
This operation ensures the availability, coordination and timely delivery of equipment, materials and labor services for field operations and provides for validation and processing of related invoices and payments for those services.

Key performance indicators:

- i. Complete the annual assessment of operations equipment, materials, and services requirements by January 1.
- ii. Complete annual development or update of contracts specifications and terms and conditions by February 1.

Projected Resource Requirements

Figure V-5 FY2022-26 Projected Resource Requirements for SMP Management



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Table V-7 Projected Resource Requirements by Projects for SMP Management

Stream Maintenance Program (\$ in thousand)								
Program	Project Number(s)	FY20 (Actuals)	FY21 (Adopted)	FY22	FY23	FY24	FY25	FY26
Stream Maintenance Program Management	00041022	\$3,482	\$5,066	\$4,432	\$4,696	\$4,844	\$5,238	\$5,386
Instream Habitat Complexity	62181006	\$483	\$259	\$176	\$88	\$41	\$42	\$22
Field Operations Support	62061029	\$502	\$607	\$666	\$711	\$733	\$760	\$781
		\$5,264	\$7,944	\$7,547	\$7,802	\$7,999	\$8,506	\$8,723

Table V-8 Additional Resource Needs (Unfunded) for SMP Management

None.

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VI. CONCLUSION

Since last year's WS O&M Plan, the Watersheds O&M Divisions has been provided additional funding through the successful renewal of the SCW Program to perform necessary vegetation maintenance work in result of completed capital improvement projects. Only an immediate need was identified for an additional \$1.2 million that would provide resources for the tree maintenance program in the Integrated Vegetation Unit.

In the previous 5-year O&M Plan for FY21-25, deferred maintenance was included as unfunded costs of approximately \$20 million. This year, deferred maintenance was excluded as unfunded costs since the development of WARP and Sustainable Creek Infrastructure Project is to determine whether these maintenance activities can and/or should be addressed with a more holistic approach. Such an approach could result in small capital or large capital projects being the most cost-effective and sustainable solution in the long term.

Although this 5-year forecast has indicated minimal unfunded needs due to the renewal of the SCW Program, it is important to note that there is a remaining list of deferred maintenance projects that include watershed assets with conditions that are a potential threat to their levels of service. In addition, Valley Water recognizes an opportunity to further analyze all watershed assets to effectively maintain existing and new infrastructure (i.e., improvements from flood control projects) and address the root cause of any physical deficiencies such as excessive vegetation growth, sediment build up, and/or erosion in a waterway system. Once WARP and the Sustainable Creek Infrastructure project has been thoroughly established and obtained their respective budgets, projects and recommendations can be implemented into future 5-year O&M plans for a more complete picture of potential O&M needs.



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