



Valley Water

FY 2024-28

Watersheds Operations & Maintenance and Asset Renewal Plan

FY 2024-2028

Watersheds Operations & Maintenance and Asset Renewal Plan

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List of Acronyms

AMP	Asset Management Plan
BMP	Best Management Practice
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CIP	Capital Improvement Program
DBH	Diameter at Breast Height
LWD	Large Woody Debris
MOA	Memorandum of Agreement
NPW	Notice of Proposed Work
NRCS	Natural Resources Conservation Service
O&M	Operations and Maintenance
SMP	Stream Maintenance Program
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VHP	Valley Habitat Conservation Plan
WARP	Watersheds Asset Rehabilitation Program
WS	Watersheds

EXECUTIVE SUMMARY

Report Overview

This Watersheds Operations & Maintenance and Asset Renewal Plan (WS O&M and AR Plan) describes Valley Water's Watersheds O&M activities and the projected funding allocated for these activities over the next five years. In addition, it discusses planning for future asset rehabilitation needs. It is a rolling plan that will be evaluated and updated annually. Specifically, this plan:

- Documents the baseline and unfunded operations and maintenance project resource needs for the Watersheds Operations and Maintenance Division (WS O&M Division) for the next five fiscal years, 2024 to 2028, and explains unfunded needs.
- Discusses planning for additional asset rehabilitation projects identified through Project F8: Sustainable Creek Infrastructure for Continued Public Safety (Project F8) under the renewed Safe, Clean Water and Natural Flood Protection (Safe, Clean Water) Program.

Throughout the plan, the term 'baseline' refers to activities that provide current service levels and are assumed to be funded in fund forecasts prepared by Valley Water's Financial Planning and Management Services Division.

Work Planning and Execution

Currently, the majority of Valley Water's stream maintenance work is conducted under the Stream Maintenance Program (SMP). Valley Water regularly inspects creeks, floodwalls, and levees, and on an annual basis, develops a proposed work plan for stream maintenance activities, secures state and federal regulatory agencies' approval of the work plan, and performs approved maintenance activities. Sediment removal, vegetation management, trash and debris clearing, bank stabilization and mitigation activities are performed under the SMP. This work is included in the five-year operations forecasts presented in Section V of this plan.

To supplement O&M resources or for projects outside the scope of the SMP, 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 included in the financial charts in this plan, as they are included in Valley Water's five-year Capital Improvement Program (CIP).

Strategic Planning for Future Asset Rehabilitation

While work conducted as part of the SMP and WARP has been successful in planning and executing necessary stream maintenance projects, Valley Water recognized the need to evaluate stream maintenance from a more strategic and holistic planning approach, as well as to identify asset rehabilitation needs for past flood protection projects. Consequently, Valley Water initiated a new project as part of the renewed Safe, Clean Water Program, approved by voters in 2020.

Under Project F8, the Sustainable Creek Infrastructure project, Valley Water is working to identify, prioritize, and implement needed creek asset rehabilitation projects. Asset rehabilitation work being identified 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.

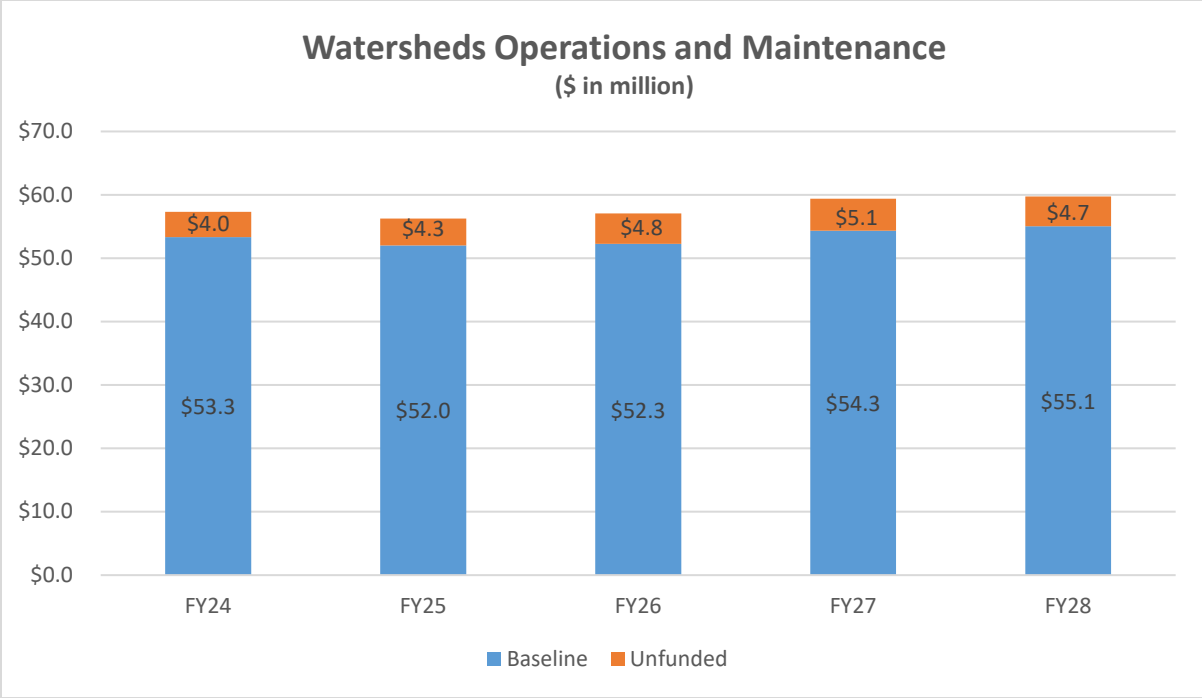
Over the past two years, Valley Water has analyzed approximately 85 creeks to identify creek asset rehabilitation needs and has further evaluated approximately 20 individual creeks to determine how to best address those needs, either through routine maintenance, a small capital project through WARP, or as a new capital project. For approximately eight (8) creeks where a solution is not clear, or the creek could benefit from a holistic planning approach, the project will develop asset management plans to help identify the most effective rehabilitation strategy.

Based on analysis so far, the magnitude of future Watersheds' asset rehabilitation work is estimated at \$372 million. This estimated cost is preliminary and will be refined over the next few years. The work may be phased over 10 to 30 years as funding becomes available. Some of the asset rehabilitation projects identified through this effort may be funded by Project F8, which is allocated \$15 million over 15 years (FY22-36) (half funded by Safe, Clean Water Fund and half by the Watershed and Stream Stewardship Fund), and/or by the WARP small capital improvement project, which is currently funded at approximately \$7.5 - \$8 million per year. Valley Water will also be pursuing available grant funding. It is likely that in some future years, the magnitude of work will exceed available funding.

Five-Year Operations Forecasts

Five-year forecasts of funding for current service levels as well as future resource requirements not yet funded for the Watersheds Operations and Maintenance (WS O&M) Division are shown in the chart below. The final financial information provided in this section will be based on the Board-adopted budget for FY24 and FY25, 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, 2022. The FY24 and FY25 budget requests and unfunded needs will be evaluated throughout the budget process through May 2023. The plan will be finalized following the Board's adoption of Valley Water's budget. The final plan will document the final budgeted amounts for each project for FY24, planned budget amounts for FY25, and any remaining unfunded needs following the budget process.

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Note: Data as of December 2022

In total, the WS O&M Division has identified an additional unfunded need for \$22.8 million for the next five years to support the growing workload of vegetation field operations, encampment clean up, increased creek erosion repair work, the Saratoga Creek Hazard Tree Removal and Restoration project, SMP permit compliance, and the upcoming Valley Habitat Plan reopening and annual fees.

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I. INTRODUCTION

Report Overview

This Watersheds Operations & Maintenance and Asset Renewal Plan (WS O&M and AR Plan) describes Valley Water’s Watersheds O&M activities and the projected funding allocated for these activities over the next five years. In addition, it discusses planning for future asset rehabilitation needs. It is a rolling plan that will be evaluated and updated annually. Specifically, this plan:

- Documents the baseline and unfunded operations and maintenance project resource needs for the Watersheds Operations and Maintenance Division (WS O&M Division) for the next five fiscal years, 2024 to 2028, and provides an explanation of unfunded needs.
- Discusses planning for additional asset rehabilitation projects that are being identified through Project F8: Sustainable Creek Infrastructure for Continued Public Safety (Project F8) under the renewed Safe, Clean Water and Natural Flood Protection (Safe, Clean Water) Program.

Throughout the plan, the term ‘baseline’ refers to activities that provide current service levels are assumed to be funded in fund forecasts prepared by Valley Water’s Financial Planning and Management Services Division.

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

- Ends Policy E-3: Natural flood protection is provided to reduce risk and improve health and safety for residents, businesses, and visitors, now and into the future.
- Ends Policy E-4: Water resources stewardship protects and enhances ecosystem health.

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

- Maintaining flood protection facilities to the designed levels of protection
- 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 further reduce potential impacts and enhance conditions where possible
- Complying with city and county codes and state and federal regulations (e.g., Endangered Species Act)
- Assisting people, businesses, schools, and communities to prepare for, respond to, and recover from flooding through equitable and effective engagement
- Increasing the health and safety of residents countywide by reducing community flood risk

This plan, covering FY24-28, now includes progress updates on Project F8 and future asset rehabilitation needs; thus, the plan title is renamed to the WS O&M and AR Plan. It was previously titled, “Watersheds Operations and Maintenance Plan.” Copies of past years’ plans

are available on the Valley Water intranet on the asset management web site at <https://aqua.valleywater.org/watershed-documents>.

Watersheds Infrastructure

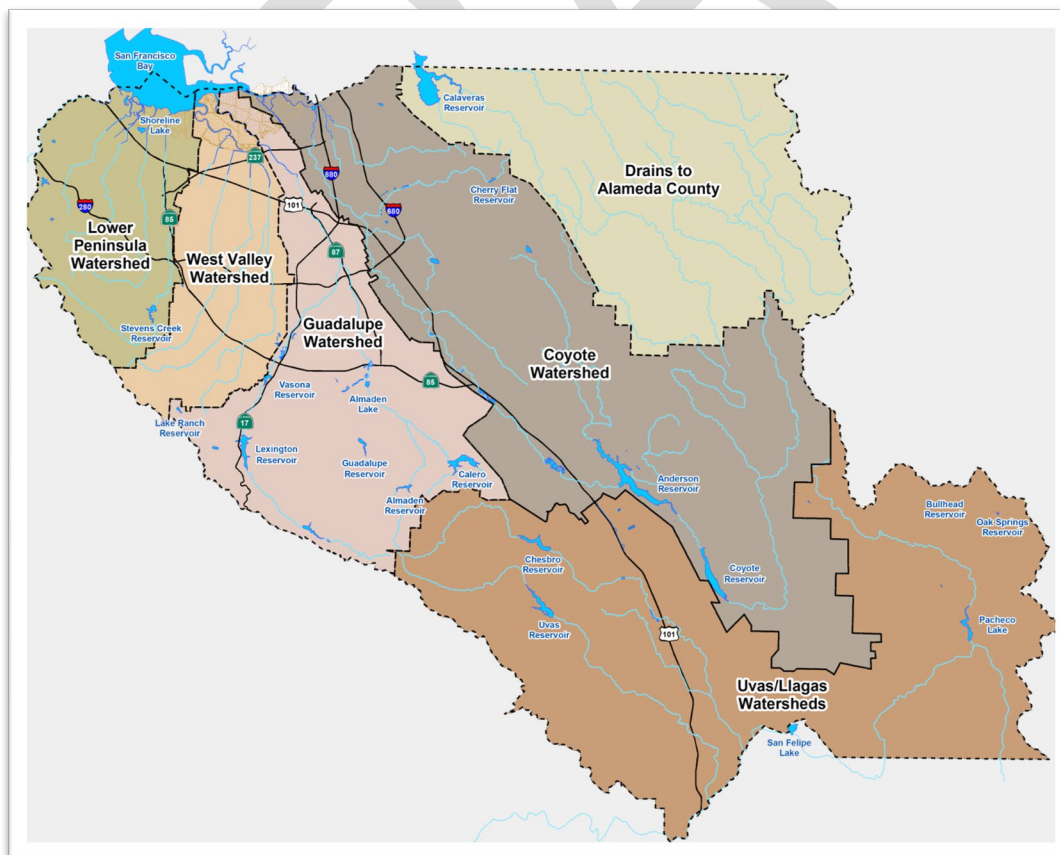
Valley Water manages an integrated water resources system that provides for the supply of clean, safe water, flood protection, and stewardship of streams in Santa Clara County (County). Valley Water oversees five distinct watersheds within the County and is responsible for the overall stream stewardship of these geographic areas, namely Coyote, Guadalupe, Lower Peninsula, Pajaro (Uvas/Llagas), and West Valley watersheds (see Figure I-1).

To fulfill its mission, Valley Water constructs flood protection projects to protect homes, businesses, and infrastructure. Once those flood protection projects are completed, Valley Water's WS O&M Division conducts inspections and maintenance to ensure those projects and associated facilities continue to function as required. This work is carried out using best management practices to avoid, minimize, or mitigate potential environmental impacts, and, where possible, enhance habitat values.

Valley Water's watersheds infrastructure includes the following:

- 294 miles of creeks (owned by Valley Water)
- 126 miles of levees (including both accredited and non-accredited levees)
- 44 miles of concrete-lined channels
- 3,000+ individual assets (e.g., drop structures, weirs, fish ladders, mitigation areas)

Figure I-1 Santa Clara County Watersheds



Related Documents

Documents related to this Plan include:

- FY24-28 Capital Improvement Program (CIP): The CIP is a rolling five-year plan that identifies major capital improvements. This WS O&M and AR Plan discusses maintenance needs for improvements identified in the CIP. This Plan also identifies improvements that are included in WARP, which is a small capital improvement project, and may identify improvements as individual capital improvement projects in the future.
- FY24-28 Water Utility Operations 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 and AR Plan.
- FY24-33 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 projects' five-year forecasts provided in this report are taken from the long-term forecast data. This draft report is prepared using long-term forecast data and unfunded needs requests as of December 2022. Budget requests and unfunded needs are further evaluated throughout the budget processes through May 2023.
- FY24-FY25 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 and subsequent fiscal years. It provides an overview of both operations and capital expenses, as well as revenues, for the next two fiscal years. This WS O&M and AR Plan 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 watersheds assets. The plan provides a high-level, 100-year forecast of asset maintenance activities, while this WS O&M and AR Plan provides more detail on the next five-year forecast. Ideally, the plan would be updated every 5 years.
- Stream Maintenance Program (SMP) Manual: The SMP Manual defines the overall routine stream maintenance program and describes the authorized avoidance measures, best management practices (BMPs), mitigation activities, and program management actions. The manual serves as a guide for performing much of the maintenance work described in this WS O&M and AR Plan, and helps inform the design, schedule, cost, and labor for O&M projects conducted under the SMP.
- Safe Clean Water Program (Measure S [2020]): The Safe, Clean Water Program is a long-term strategy to ensure continued water resources services in Santa Clara County. In November 2020, Santa Clara County voters approved Measure S, the renewed Safe, Clean Water Program and provide funding to ensure a seamless continuation of critical water resources-related services to the community. The renewed Safe, Clean Water Program provides funding, and in some instances increased funding, for various WS O&M efforts,

including vegetation control and sediment removal for capacity; vegetation management for access and fire safety; encampment cleanups; graffiti and litter removal, and management of riparian planting and invasive plant removal. It also includes funding for Project F8: Sustainable Creek Infrastructure for Continued Public Safety.

- Safe Clean Water Program 5-Year Implementation Plan for Fiscal Years 2024-2028: This plan describes how Valley Water will implement the Safe, Clean Water Program over the five-year period to deliver the Key Performance Indicators (KPIs) associated with various projects.

In addition, WS O&M and AR Plans from previous years are available starting in FY21-25 and provide additional context on the origins of this plan as well as additional detail on each WS O&M Division unit. Starting with the FY24-28 plan, the plan includes progress updates on Project F8 and future asset rehabilitation needs; thus, the plan is renamed to the WS O&M and AR Plan. It was previously titled, “Watersheds Operations and Maintenance Plan” or WS O&M Plan.

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II. OVERVIEW OF WATERSHEDS O&M ACTIVITIES

This section describes the types of Watersheds O&M activities conducted by Valley Water. There are more than 800 miles of creeks on the County valley floor; however, Valley Water only has right-of-way (ownership or easement) for 294 miles, which are maintained by Valley Water.

Valley Water has constructed flood protection projects on approximately 180 miles of creeks within the 294 miles of right-of-way. Maintaining these 180 miles of constructed and improved channels is a top priority for Valley Water. Valley Water also conducts many maintenance activities outside the limits of constructed projects but still within sections of Valley Water right-of-way. These may be performed for maintenance access, water quality, fire code compliance, erosion repair, and mitigation purposes.

Section III describes how this work is planned and executed through the Stream Maintenance Program (SMP) or as small capital improvement project work through WARP.

Watersheds O&M work includes:

- Sediment removal
- Bank erosion repair
- Levee maintenance
- Vegetation management
- Mitigation site maintenance
- Riparian planting
- Invasive plant management
- Trash and debris removal
- Installation of fisheries improvement projects
- 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
- Management of animal conflict

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

Preventive 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 CIP flood protection projects. Project-specific maintenance guidelines or manuals guide preventive maintenance. 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 with the information, guidance, and requirements for the proper operation and maintenance of the project.

Non-capital project preventive maintenance includes maintenance of all 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, preventative maintenance responsibilities will likely increase after deferred maintenance projects have been addressed under WARP or Project F8.

Preventive Maintenance Repair: This is non-routine maintenance work that is identified and addressed proactively prior to failure instead of allowing the issue to progress and having to be addressed later by corrective maintenance. This work is first identified in the field during inspections, where it has been determined that a creek's ability to meet its level of service is compromised. Under preventive maintenance repair, infrastructure is repaired or rehabilitated after an issue is identified in the field, but prior to complete failure requiring Corrective Maintenance. Examples of preventive maintenance repair include repairing a creek bank or levee, removing sediment or vegetation, and maintaining Valley Water access roads to design conditions, all of which have been identified by previous inspections.

Corrective Maintenance: This is non-routine or unplanned maintenance. Under corrective maintenance, infrastructure is repaired or replaced after unexpected failure and the asset is no longer meeting its level of service. Examples of corrective maintenance include emergency repair of a creek bank or levee damaged from winter storms, emergency removal of fallen trees or trash and debris, and repair or replacement of damaged Valley Water fences, gates, and signs.

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, constraints of existing regulatory permits, or managing the 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 the 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 or tree removal (not currently allowed under existing environmental documentation and regulatory permits) for flow conveyance, infrastructure repair and rehabilitation, and erosion repairs.

In addition to O&M activities, all units also provide O&M review of CIP flood protection projects and Community Projects Review Unit (CPRU) submittals, which may entail reviewing third-party projects adjacent to or on Valley Water right-of-way. The Watersheds Operations and

Maintenance Engineering Support Unit (298), Vegetation Field Operations Unit (295), and Watersheds Field Operations Unit (253) also provide for the creation of work orders to address identified deficiencies, and for addressing public requests made through Valley Water's online customer relationship management portal related to Watersheds' infrastructure.

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III. WORK PLANNING AND EXECUTION

This section describes the process for planning and executing the O&M activities described in Section II. The majority of Watersheds O&M activities are conducted under the Stream Maintenance Program (SMP). Some of this work is conducted as small capital projects under the WARP; depending on the nature of the work, the SMP may also provide coverage for WARP activities. It is noted the Watersheds O&M Division also provides support for Valley Water's Water Utility Enterprise (e.g., conducts maintenance work on raw water pipelines, percolation ponds, dams, canals, etc.). Additional information and corresponding funding related to this work is not included herein as this work is funded by the Water Utility Enterprise Fund.

The WARP project costs are not included in this plan as they are included in Valley Water's five-year CIP. In addition, Section IV describes recent efforts to augment these current processes and develop a program to holistically address creek maintenance needs.

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 dry winter. In addition, it is not always clear what deficient sites can be taken on as 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, stream maintenance guidelines, commitments to federal project partners (NRCS, USACE), regulatory permit requirements, code compliance (county or city codes) and Safe, Clean Water Program commitments.

Stream Maintenance Program (SMP)

Valley Water performs preventive, corrective, preventive repair, and deferred maintenance activities under the SMP. SMP-2 is a 10-year program approved in 2013 by seven state and federal regulatory agencies and is set to expire in 2023. With a subsequent 10-year SMP program, SMP-3, currently in negotiation, Valley Water is seeking permit extensions for SMP-2 through 2026. SMP work is included in the fund forecasts in Section V.

WS O&M staff regularly inspects creeks and flood protection infrastructure such as levees, berms, and floodwalls. In April, staff finalizes a proposed work plan for the upcoming SMP work season. When generating this list of projects, staff analyzes and prioritizes hundreds of inspections/condition assessments where creek assets are at risk of not meeting their level of service. Staff also considers resource availability in the Field Operations Unit to construct within one SMP season (June to October), and ability for the Vegetation Field Operations Unit and others to conduct corresponding mitigation implementation and monitoring for associated impacts.

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 that 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 management to improve the ecological habitat of the riparian ecosystem. While much of this instream work takes place in the summer, stream maintenance is a year-round effort.

The WS O&M Engineering Support Unit designs SMP bank stabilization, sediment removal, and instream complexity mitigation projects, which are, in general, carried out by the Watersheds Field Operations Unit. The Vegetation Field Operations Unit performs instream vegetation removal, upland vegetation management, and riparian planting and invasive plant management mitigation projects.

Approximately 30 SMP bank stabilization and sediment removal projects are initiated by the WS O&M Engineering Support Unit each year. A list of proposed SMP projects for FY24 is provided in Appendix A. Vegetation-related SMP projects are not included in this list; the Vegetation Field Operations Unit performs hundreds of projects each year.

Watersheds Asset Rehabilitation Program (WARP)

To supplement WS O&M Division resources, stream maintenance work may also be performed through Valley Water's WARP, which was initiated as a small capital improvement project in Valley Water's Capital Improvement Program in 2013. With WARP, Valley Water seeks to address a backlog of asset rehabilitation projects determined to be either outside the scope of the SMP and/or identified as those which Valley Water would be better served having contractors undertake due to WS O&M Division resource limitations or the extent of work. The total project budget for WARP is approximately \$147 million (or \$177 million with inflation).

Each fiscal year, the WARP project list is reviewed and re-prioritized as needed based on field conditions and the risks associated with the consequences of watersheds asset failure. This list is included in Appendix B. As of 2022, 21 higher priority projects were completed out of 34 identified projects. WARP projects are typically carried out during the same annual work season as SMP work (generally, June 15 through October 15). Depending on the scope of a particular WARP project, the work may or may not be covered by the SMP. WARP planning and design work is led by Valley Water's Watersheds Design and Construction Unit #5, and WARP construction work is conducted by contractors. WARP work is conducted in close consultation with the WS O&M Engineering Support Unit and other units within the WS O&M Division.

While a list of WARP projects is provided for information, the WARP project costs are not included in the financial charts in this plan, as those projects are accounted for in Valley Water's Five-Year CIP.

Safe, Clean Water Project F8: Sustainable Creek Infrastructure for Continued Public Safety

To further supplement WS O&M Division resources and improve the effectiveness and cost-efficiency of current O&M management strategies, Valley Water recognized the need to address stream maintenance work from a holistic and geomorphic approach and identify asset

rehabilitation needs for past flood protection projects and creek infrastructure. This work, under Project F8, is led by the Asset Management Unit.

Some of the watershed assets currently on the deferred O&M maintenance list are within the limits of a few of the asset rehabilitation projects and therefore, may be addressed and funded by Project F8. The list of potential asset rehabilitation projects is included in Appendix C.

While a list of asset rehabilitation projects is provided for information, costs for asset rehabilitation projects are not included in the financial charts in this plan; such costs will be included after Valley Water's CIP validation process is completed for these potential projects.

Work Execution

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

- Watersheds Operations and Maintenance Engineering Support Unit (298)
- Operations and Maintenance Environmental Support Unit (297)
- Vegetation Field Operations Unit (295)
- Watersheds Field Operations Unit (253)
- Watersheds Design and Construction Unit #5 (336)

Additional technical support is provided by the following units that are all involved in the Project F8/WARP development:

- Business Support and Asset Management Unit (411)
- Watershed Stewardship and Planning Division (241)
- Hydrology, Hydraulics and Geomorphology Unit (296)

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IV. STRATEGIC PLANNING FOR FUTURE ASSET REHABILITATION: PROJECT F8 - SUSTAINABLE CREEK INFRASTRUCTURE FOR CONTINUED PUBLIC SAFETY

While the SMP and WARP have been successful in planning and executing necessary stream maintenance projects, Valley Water recognized the need to evaluate stream maintenance from a more strategic and holistic planning approach, as well as to identify asset rehabilitation needs for past flood protection projects. Consequently, Valley Water initiated a new project as part of the renewed Safe, Clean Water Program that voters approved in 2020. Under Project F8, the Sustainable Creek Infrastructure project, Valley Water is working to identify, prioritize, and implement needed asset rehabilitation projects. Asset rehabilitation work being investigated and identified as part of this project includes:

- restoring the level of service originally intended for flood protection infrastructure
- extending the life of flood protection infrastructure
- improving the reliability of flood protection infrastructure

Goal and Approach

The goal of Project F8 is to identify and prioritize asset rehabilitation needs and determine how to best address the issues through routine maintenance, small capital, or larger capital improvements. Some deficiencies are easily addressed through routine maintenance (e.g., trash and debris removal, fence and gate repairs, etc.); however, for more complex issues (e.g., erosion of a creek embankment or levee, compromised flow conveyance capacity beyond routine maintenance capabilities), addressing the root of the problem may require a small capital or capital improvement. Additionally, in many instances, the most effective solution is not clear, and a holistic planning effort or asset management plan is needed.

Similar to O&M projects, asset rehabilitation work includes restoring creek infrastructure to the level of service originally intended. The most apparent differences among O&M projects, WARP projects, and asset rehabilitation are typically the size, scope, and cost. Asset rehabilitation projects address systemic issues, restore the creek back to as-built or steady-state condition, and generally possess larger project footprints, higher costs, and longer design and construction schedules compared to conventional maintenance and WARP projects. In addition, these projects further extend the useful life of creek assets. For projects Valley Water typically identifies as needing more immediate attention, the WARP is employed. Asset rehabilitation projects are generally pursued when Valley Water determines there is time to spare for a more in-depth planning study. For an overview of the differences between WARP and Project F8, please refer to Table IV-1 below.

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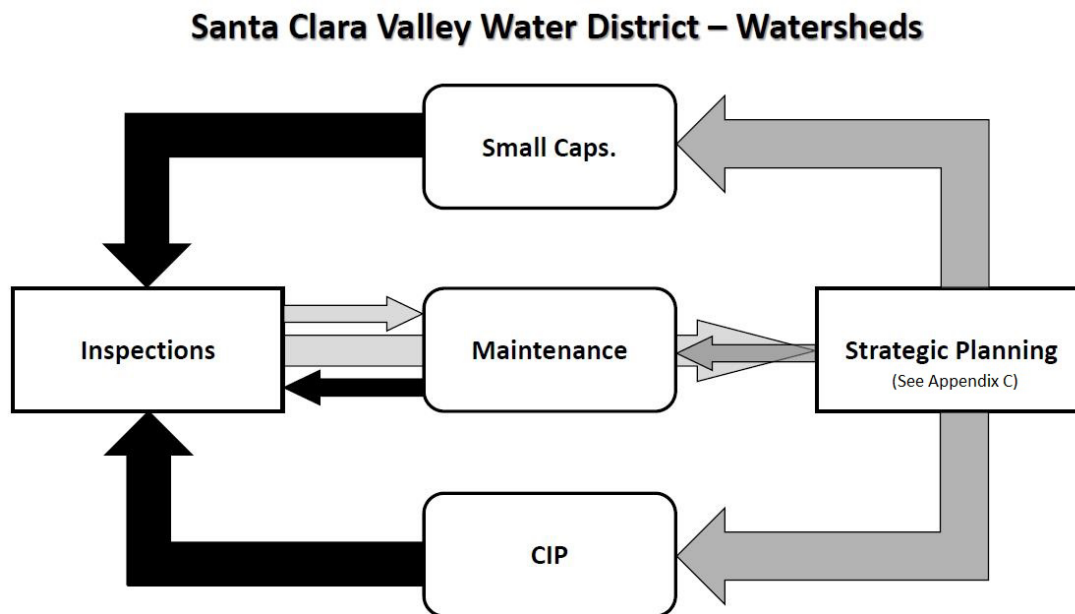
Table IV-1 Comparison of WARP and Project F8: Sustainable Creek Infrastructure for Continued Public Safety

Blue shaded boxes indicate a key purpose of the program	WARP	F8
O&M work beyond SMP limits	Yes	Yes
Asset Rehabilitation	Yes	Yes
Restoration of Existing Flood Level of Service (LOS)	Yes	Yes
Asset Management Plan or Planning Study	No	Yes
New Flood Protection LOS or Environmental Enhancement	No	No
Timing/Urgency	Quickest solution: Ideal for high-risk or already failed assets	Few years to construction: Ideal for moderate to high-risk assets that would benefit from a planning study
Typical Cost	\$1-\$19M	Over \$20M
Total Program Cost (uninflated)	Currently \$147M	\$372M, with \$60M potentially going to WARP

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The Project F8 approach is described further in the following Figure IV-1, as well as a draft workflow that includes detailed steps of strategic planning (box shown in Figure IV-1) provided in Appendix C.

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.

Work Completed

Over the past two years, Valley Water has analyzed approximately 85 creeks to identify creek asset rehabilitation needs and has further evaluated 20 individual creeks to determine how to best address those needs, either through routine maintenance, a small capital project through the WARP program, or as a new capital project. For approximately eight (8) creeks where the solution is not clear, or the creek could benefit from a holistic planning approach, Valley Water will develop asset management plans to help identify the most effective rehabilitation strategy.

An initial analysis for each creek was done using inspection records from the last five years and prioritized based on business risk exposure (BRE). BRE is a standard asset management metric used to quantify the nature and level of exposure an organization is likely to confront through a potential failure of an asset or group of assets. The BRE score is a product of an asset's probability of failure and the consequence of failure. The probability of failure score is

determined during inspections based on the asset's maintenance guidelines and the consequence of failure score is based on the asset's level of service, adjacent properties and geography, financial impact, environmental impact, and safety.

Following the initial analysis, which resulted in a prioritized list of high-risk creek reaches, a more detailed analysis of each creek is being conducted to determine if issues can be addressed through maintenance, or if a more substantial small or individual capital project is needed. Valley Water has conducted this more detailed analysis on 20 creeks, and the preliminary results are discussed below. Analysis of the remaining creeks is ongoing.

The initial and following detailed creek analysis was conducted through regular meetings of staff from the Watersheds Operations and Maintenance Engineering Support Unit (298), Vegetation Field Operations Unit (295), Hydrology, Hydraulics, and Geomorphology Unit (296), Watersheds Stewardship and Planning Division (241), Environmental Mitigation and Monitoring Unit (244), Watersheds Small Capital Design and Construction Unit #5 (336), and Asset Management Unit (411). During these regular project meetings, the workflow discussed above and provided in Appendix C was used to help the team determine if a creek asset (or group of assets) is due for capital improvement, rehabilitation, maintenance, and/or an updated asset management plan.

Preliminary Results

A working list (draft) of asset rehabilitation work identified so far through Project F8 is provided in Appendix D. This list is preliminary and will continue to be refined over time.

Based on analysis so far, the magnitude of future watersheds asset rehabilitation work is estimated at \$372 million. This estimated cost is preliminary and will be refined over the next few years. The work may be phased over 10 to 30 years as funding becomes available. Some of the asset rehabilitation projects identified through this effort may be funded by Project F8, which is allocated \$15 million over 15 years (FY22-36) (half funded by the Safe, Clean Water Fund and half by the Watershed and Stream Stewardship Fund), and/or by the WARP small capital improvement project, which is currently funded at approximately \$7.5 - \$8 million per year. Valley Water will also be pursuing available grant funding. It is likely that the magnitude of future work will exceed available funding in some future years.

To this end, some next steps have been taken, as listed below:

- A business case report was submitted to the capital improvement program to initiate new capital projects for San Tomas Creek Aquino Creek to address high-priority issues.
- A decision was made to develop a business case report to create a new F8 implementation capital project in which work resulting from Project F8 analyses can be executed.
- Evaluating small capital improvement options for Regnart, Randol, Adobe, and Barron creeks to be undertaken under WARP.
- An asset management plan is in progress for Stevens Creek.
- It was determined that asset management plans will be beneficial prior to asset rehabilitation project planning for 7 creeks: Matadero Creek, Sunnyvale East and West Channels, Calabazas, Permanente, San Francisquito, and Thompson creeks.

V. FIVE YEAR OPERATIONS FORECASTS

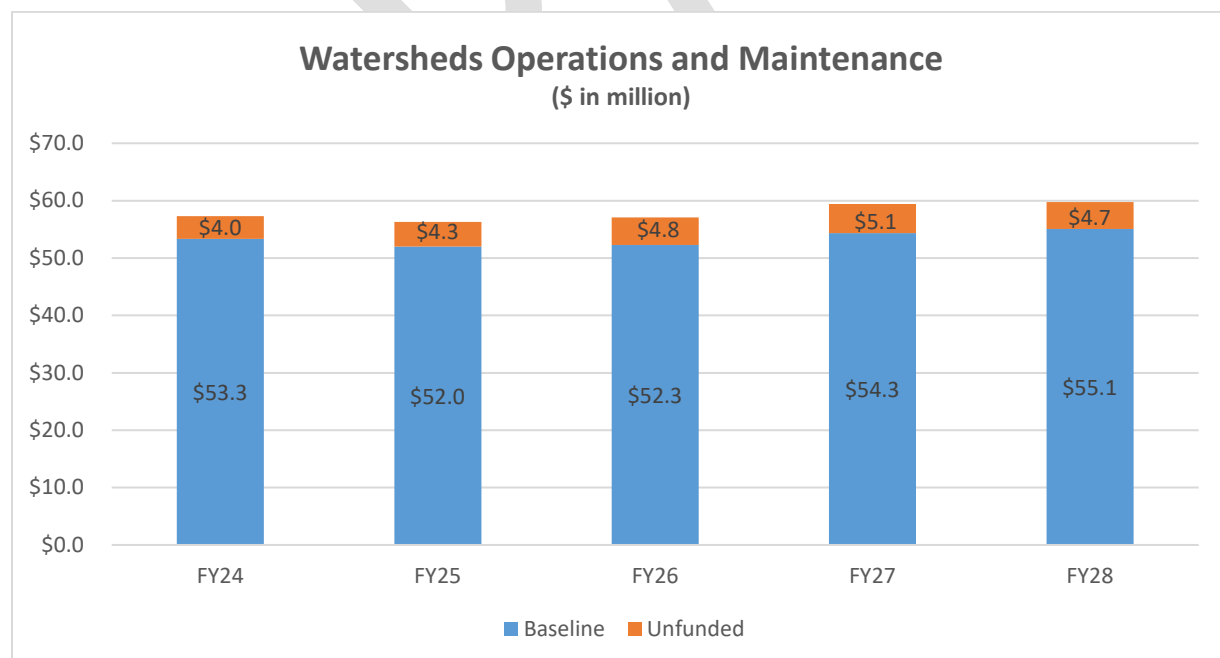
This section provides an overview of the expected operations expenses and unfunded needs for the operations and maintenance activities conducted by the WS O&M Division for the next five fiscal years. The types of activities budgeted in the projects presented in this section are described in Section II. Note that the forecasts do not include O&M activities conducted under WARP.

The financial information provided in this section was taken from the forecast data for FY24 and FY25 collected as part of the budget process. The FY24 and FY25 budget requests and unfunded needs will be evaluated throughout the budget process through May 2023. The plan is finalized following the Board adoption of Valley Water's budget. The final plan will document the budgeted amounts for each project for FY24, planned amounts for FY25, as well as any remaining unfunded needs following the budget process.

The sections below provide an overview of the WS O&M Division units, as well as tables and charts that summarize expected operations expenses and unfunded operations resource needs for FY24-28. The term 'baseline' refers to activities that provide current service levels and are assumed to be funded in fund forecasts prepared by Valley Water's Financial Planning and Management Services Division.

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 WS O&M Division is shown in the chart below. Unit-specific information is provided in the following sections.

Figure V-1 FY2024-28 Projected Resource Requirements for WS O&M Division



Note: Data as of December 2022

The WS O&M Division has identified additional unfunded needs of \$22.8 million for the next five years to support the growing workload of vegetation field operations, encampment clean up, increased creek erosion repair work, the Saratoga Creek Hazard Tree Removal and Restoration project, SMP permit compliance, and the upcoming Valley Habitat Plan reopening and associated fees. It is important to note that in addition to these unfunded needs, additional asset rehabilitation needs identified through Project F8 are not funded. As a high-level estimate, staff estimates the current list of projects will cost \$372 million, which will be further refined through Project F8 as described in Section IV.

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Watersheds O&M Engineering Support Unit (298)

The WS O&M Engineering Support Unit is responsible for conducting creek and levee inspections, preparing work orders, and providing engineering support for operations and maintenance activities for streams, levees, and other watersheds assets within Santa Clara County over which Valley Water has responsibility. This work supports the flood protection and watersheds stewardship components of Valley Water's mission.

This unit updates stream maintenance guidelines and carries 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 the original construction of the facility and to ensure the functionality of designed project elements.

Engineering and inspection support includes preliminary development of 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). This unit also supports the watersheds strategic planning and analysis efforts as part of Project F8, and this is reflected in the long-term forecast.



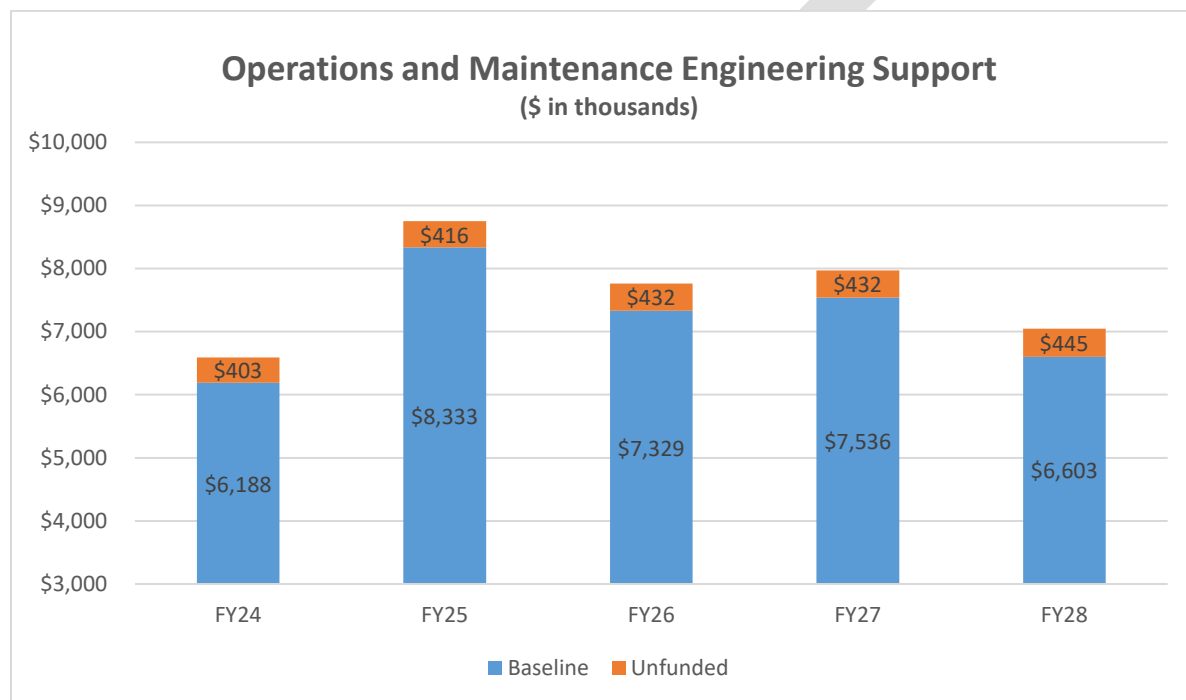
Staff measuring extent of bank erosion along Calabazas Creek

In addition, this unit provides for regular inspection and documentation of watersheds infrastructure, such as flood protection structures (such as levees, floodwalls, berms), streams, and banks, to determine maintenance required and ensure those assets are safe and maintained to their design conditions. The unit inspects 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 for flood protection.

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.

In addition, the unit assists with reviews of flood-related emergency action plans and is integral in overseeing related field information team (FIT) efforts.

Figure V-2 FY2024-28 Projected Resource Requirements for Watersheds O&M Engineering Support



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Table V-1 Projected Resource Requirements by Projects for Watersheds O&M Engineering Support

Operations and Maintenance Engineering Support (\$ in thousand)
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Program	Project Number(s)	FY22 (Actuals)	FY23 (Adopted)	FY24	FY25	FY26	FY27	FY28
Watersheds O&M Engineering and Inspection Support	62021009	\$1,820	\$1,839	\$2,013	\$2,505	\$2,597	\$2,677	\$2,756
Watersheds Maintenance Guideline Update	62042050	\$737	\$974	\$984	\$0	\$0	\$0	\$0
Watershed Facility Condition Assessment	62761024	\$2,015	\$2,559	\$2,754	\$2,890	\$2,991	\$3,098	\$3,184
Non SMP Vegetation Removal for Conveyance	62761080	\$6	\$328	\$437	\$2,937	\$1,741	\$1,762	\$662
		\$4,577	\$5,699	\$6,188	\$8,333	\$7,329	\$7,536	\$6,603

Table V-2 Additional Resource Needs (Unfunded) for Watersheds O&M Engineering Support

Operations and Maintenance Engineering Support (\$ in thousand)						
Program	Project Number(s)	FY24	FY25	FY26	FY27	FY28
Watersheds O&M Engineering and Inspection Support	62021009	\$403	\$416	\$432	\$432	\$445
		\$403	\$416	\$432	\$432	\$445

The projected additional resource needs over the next five years FY24-28 are estimated at \$2.1 million for a Senior Engineer position to better understand, prioritize, and manage the growing workload of vegetation field operations work. For the past several years, the need for vegetation management within Valley Water's creeks and watersheds has significantly increased due to higher turnover of CIP projects to O&M and an overall increased workload. In addition to updated environmental permits and regulations, the removal of vegetation has required more engineering analysis and justification to determine the best approach to remove vegetation of specific sizes and species, to continue to meet levels of service, and minimize damage to infrastructure. To keep up with the growth of other units within this division, this position will ensure engineering justification for the work is more completely implemented, work moves smoothly, and resources are allocated effectively when performing vegetation management.

This position will also assist with O&M review of CIP flood protection projects and CPRU submittals.

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Watersheds Field Operations Unit (253)

The Watersheds Field Operations Unit is responsible for the coordination and management of field construction and O&M activities (noted in section II) within the WS O&M Division, coordination of emergency response services, and monitoring of safety procedures.

One of the many O&M activities that this unit is responsible for is maintaining all Watersheds assets to design capacity to 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. This effort also helps ensure that Valley Water meets the requirements identified in the Safe, Clean Water Program's Project F1: Vegetation Control and Sediment Removal for Capacity. When specific criteria are met, the removed sediment may also be reused to support the South Bay Salt Pond Restoration project or other environmental enhancement and restoration projects under the Safe, Clean Water Program's Project D3: Sediment Reuse to Support Shoreline Restoration. 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.

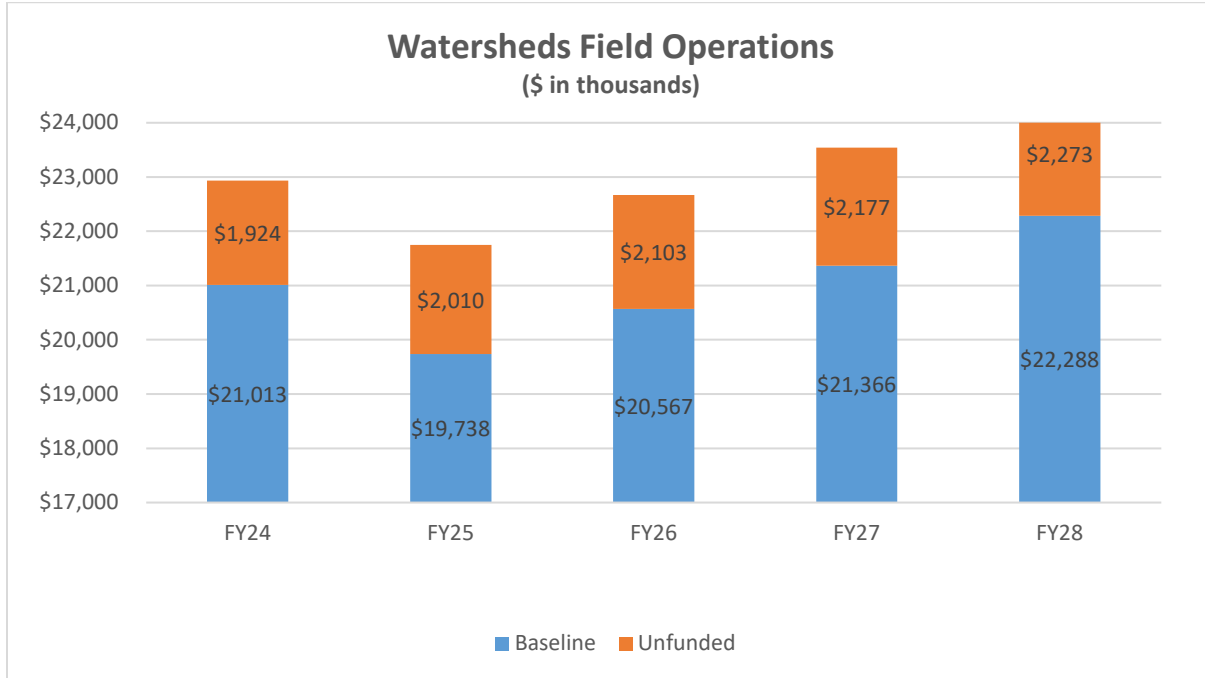


Sediment removal activities

In addition to maintaining WS projects, this unit is also responsible for several other programs and general maintenance of Valley Water properties and facilities under watersheds such as debris removal, encampment clean up (supported by the Safe, Clean Water Project F5: Good Neighbor Program: Encampment Cleanup), Pond A4 operations, graffiti and litter removal (supported by the Safe, Clean Water Program's Project F6: Good Neighbor Program: Graffiti and

Litter Removal and Public Art), and other general field maintenance such as access road repairs, fence repair and installation, and sign installation.

Figure V-3 FY2024-28 Projected Resource Requirements for Watersheds Field Operations



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

Watersheds Field Operations (\$ in thousand)								
Program	Project Number(s)	FY22 (Actuals)	FY23 (Adopted)	FY24	FY25	FY26	FY27	FY28
WS Good Neighbor Maintenance	00761022	\$1,692	\$2,059	\$1,864	\$1,422	\$1,480	\$1,536	\$1,592
Watershed Sediment Removal	00761023	\$3,798	\$6,778	\$6,878	\$6,931	\$7,248	\$7,567	\$8,025
D3 SCW Sediment Reuse to Support Shoreline	26441003	\$202	\$277	\$284	\$237	\$244	\$251	\$259
Encampment Cleanup Program	26771027	\$2,218	\$2,407	\$2,626	\$2,646	\$2,761	\$2,846	\$2,961
Pond A4 Operations	62761009	\$38	\$107	\$126	\$108	\$113	\$142	\$123
General Field Maintenance	62761025	\$2,709	\$3,655	\$2,917	\$2,434	\$2,521	\$2,598	\$2,675
Watershed Debris Removal	62761026	\$1,523	\$1,797	\$1,615	\$1,632	\$1,695	\$1,751	\$1,808
Watershed Erosion Protection	62761027	\$4,472	\$4,052	\$3,881	\$3,516	\$3,661	\$3,800	\$3,941
Watershed Levee Maintenance	62761028	\$1,138	\$844	\$821	\$812	\$843	\$873	\$904
		\$17,789	\$21,975	\$21,013	\$19,738	\$20,567	\$21,366	\$22,288

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

Watersheds Field Operations (\$ in thousand)						
Program	Project Number(s)	FY24	FY25	FY26	FY27	FY28
Encampment Cleanup Program	26771027	\$1,267	\$1,321	\$1,379	\$1,417	\$1,475
Watershed Erosion Protection	62761027	\$656	\$689	\$724	\$760	\$798
		\$1,924	\$2,010	\$2,103	\$2,177	\$2,273

The projected additional resource needs over the next five years FY24-28 are estimated at \$2.27 million. Part of this need will support encampment trash and debris clean up, and thus, reduce the number of public complaints and minimize the amount of trash and debris entering our waterways. The unfunded needs also include requests for additional labor and resources to repair erosion issues within creeks throughout the county and the increased costs for sediment removal dumping costs as testing standard for reuse on site have become much more restricted.

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Vegetation Field Operations Unit (295)

The Vegetation Field Operations Unit is responsible for the coordination and management of integrated vegetation management programs, riparian planting and invasive plant management mitigation projects, hazard tree program, and the sandbag program county-wide, including capital projects and water utility sites.

This unit supports Valley Water meeting the requirements identified in the Safe, Clean Water Program's Project D1: Management of Riparian Planting and Invasive Plant Removal. This project 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.

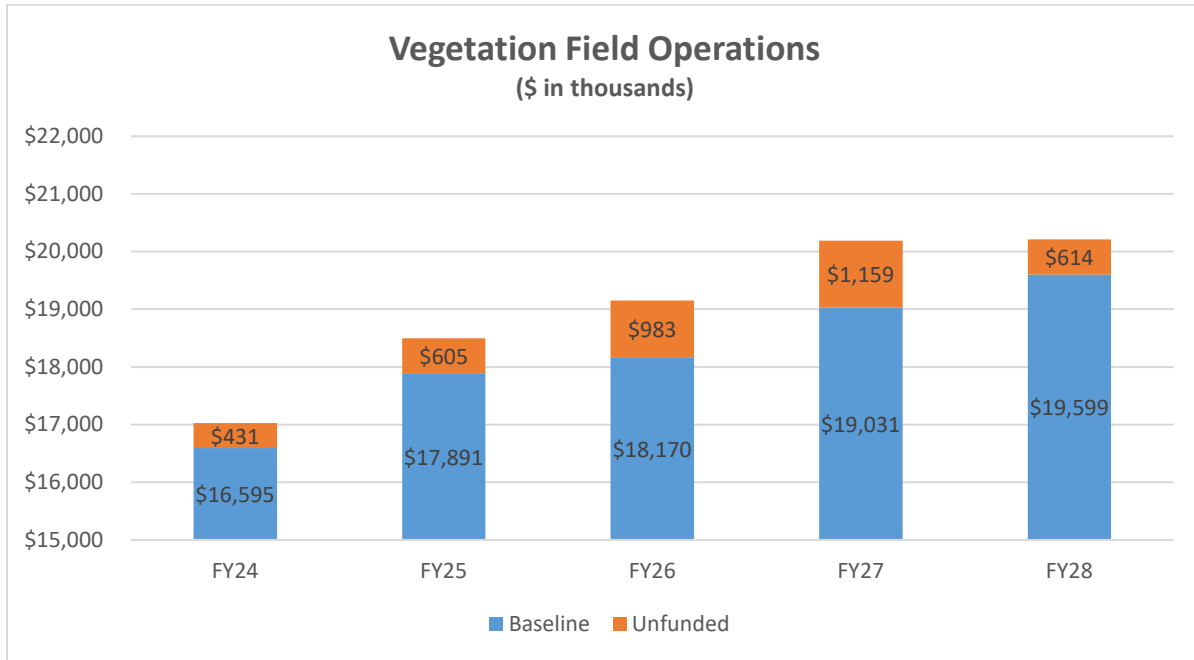
In addition, Project D1 provides for removing non-native invasive plants to mitigate for temporary impacts generated from SMP activities on various riparian corridors throughout the county. It is a required mitigation condition of USACE, USFWS, and California Department of Fish and Wildlife (CDFW) permits 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.

The Vegetation Field Operations Unit also supports a variety of other programs that include instream vegetation removal for flow conveyance, vegetation maintenance for access and fire safety (supported by Safe Clean Water Program's projects F1: Vegetation Control & Sediment Removal for Capacity and F4: Vegetation Management for Access and Fire Safety), watersheds hazard tree removal, and sandbags.



Pictured: Invasive species removal along Coyote Creek in San José

Figure V-4 FY2024-28 Projected Resource Requirements for Vegetation Field Operations



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

Vegetation Field Operations (\$ in thousand)								
Program	Project Number(s)	FY22 (Actuals)	FY23 (Adopted)	FY24	FY25	FY26	FY27	FY28
Revegetation Project Management	761075	\$2,361	\$3,818	\$3,545	\$4,123	\$4,293	\$4,875	\$5,136
Invasive Plant Management	62761006	\$1,296	\$2,424	\$2,460	\$2,562	\$2,650	\$2,730	\$2,811
Stream Capacity Vegetation Con	26771067	\$2,206	\$3,344	\$3,306	\$3,693	\$3,819	\$3,936	\$4,053
Vegetation Management for Access	00761078	\$4,889	\$4,421	\$4,453	\$4,687	\$4,849	\$4,998	\$5,123
Tree Maintenance Program	00762011	\$820	\$1,148	\$1,280	\$1,347	\$1,394	\$1,437	\$1,480
Drought Induced Tree Removal	60061058	\$1,352	\$1,779	\$1,002	\$899	\$568	\$440	\$363
Sandbag Program	62761008	\$474	\$576	\$548	\$579	\$597	\$615	\$633
		\$13,398	\$17,509	\$16,595	\$17,891	\$18,170	\$19,031	\$19,599

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

Vegetation Field Operations (\$ in thousand)						
Program	Project Number(s)	FY24	FY25	FY26	FY27	FY28
Drought Induced Tree Removal	60061058	\$431	\$605	\$983	\$1,159	\$614
		\$431	\$605	\$983	\$1,159	\$614

The projected additional resource needs over the next five years FY24-28 are estimated at \$3.8 million due to a contractor bid coming in unexpectedly high for the Saratoga Creek Hazard Tree Removal and Restoration project. The increase in the bid from the original requested amount is due to multiple factors, including inflation, time in between award of contract to design, etc.

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Operations and Maintenance Environmental Support Unit (297)

The Operations and Maintenance Environmental Support Unit is responsible for managing Valley Water's SMP, implementing Instream Habitat Complexity projects, and providing additional Water Utility field operations support.

This unit coordinates routine maintenance activities under the SMP, including sediment removal, vegetation management and bank protection. The goal is to ensure activities are carried out in compliance with various regulatory permits and in a manner that minimizes environmental impact to the stream systems. Instream Habitat Complexity projects are an SMP-2 requirement, compelling Valley Water to conduct gravel augmentation and/or large woody debris (LWD) projects in each of the five watersheds--Coyote, Guadalupe, Lower Peninsula, Pajaro and West Valley. Based on the Board-adopted budget for FY23 and FY24, two new efforts will commence and be led by this unit – the Evelyn Avenue Fish Ladder Rehabilitation Project and the SMP portion of reopening the Valley Habitat Plan (VHP).



Pictured: Stevens Creek streambed restoration

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Figure V-5 FY2024-28 Projected Resource Requirements for SMP Management

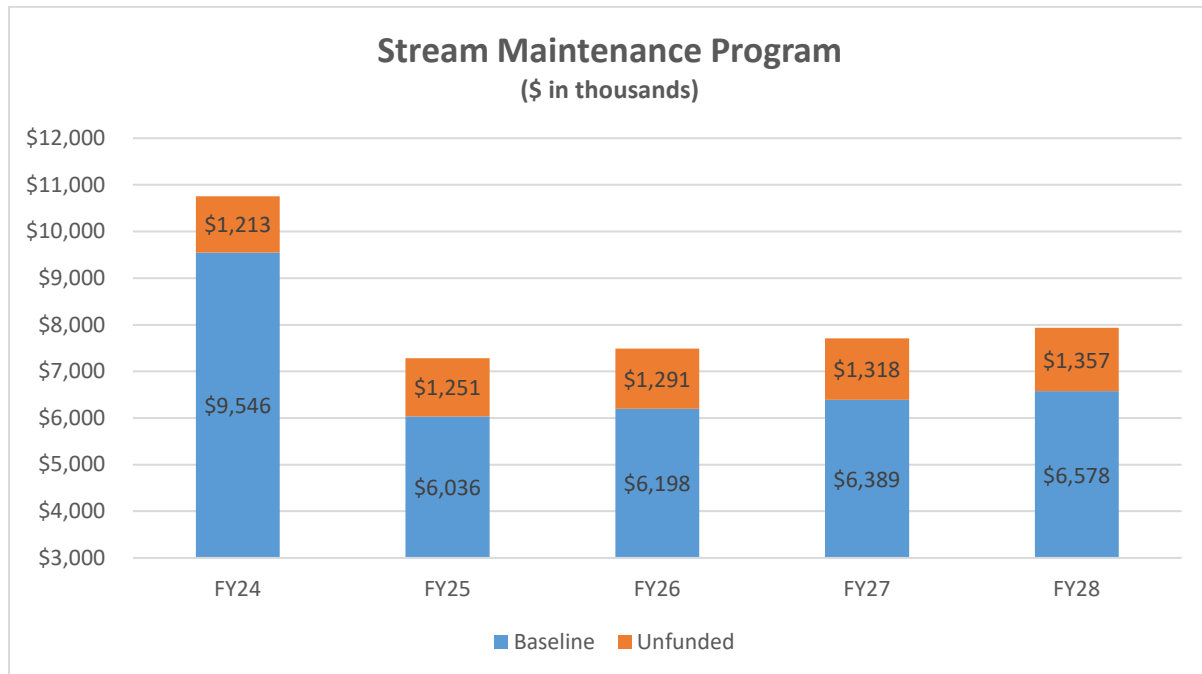


Table V-7 Projected Resource Requirements by Projects for SMP Management

Stream Maintenance Program (\$ in thousand)								
Program	Project Number(s)	FY22 (Actuals)	FY23 (Adopted)	FY24	FY25	FY26	FY27	FY28
Stream Maintenance Program Management	00041022	\$4,768	\$4,512	\$4,848	\$5,065	\$5,244	\$5,406	\$5,566
Instream Habitat Complexity	62181006	\$262	\$1,311	\$3,947	\$183	\$137	\$141	\$146
Field Operations Support	62061029	\$647	\$707	\$751	\$787	\$816	\$842	\$866
Water Resources Environmental Planning and Permitting	00741042	\$1,976	\$1,929	\$3,475	\$2,448	\$2,536	\$2,614	\$2,691
		\$5,678	\$6,530	\$9,546	\$6,036	\$6,198	\$6,389	\$6,578

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

Stream Maintenance Program (\$ in thousand)						
Program	Project Number(s)	FY24	FY25	FY26	FY27	FY28
Stream Maintenance Program Management	00041022	\$544	\$561	\$581	\$586	\$603
Instream Habitat Complexity	62181006	\$670	\$690	\$710	\$732	\$754
		\$1,213	\$1,251	\$1,291	\$1,318	\$1,357

The projected additional resource needs over the next five years from FY24-28 is estimated at \$6.4 million. This covers the request for an Assistant Water Resources Specialist II to support the Stream Maintenance Program permit compliance and the VHP reopening and annual fees to support mitigating the SMP-3. The unit also requested an Assistant Environmental Planner II position to support environmental review and permitting services for operations and maintenance activities. However, this effort would support the Water Utility Enterprise, and thus, is not included in the unfunded needs for this WS O&M and AR Plan.

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VI. CONCLUSION

In this FY24-28 WS O&M and AR Plan, an immediate need is identified for an additional \$22.8 million of funding for the WS O&M Division that would provide resources for engineering support and analysis for vegetation management, encampment clean up, increased creek erosion repair work, the Saratoga Creek Hazard Tree Removal and Restoration project, SMP permit compliance, and the upcoming Valley Habitat Plan reopening and associated fees.

In addition to the immediate O&M need, additional asset rehabilitation needs are currently estimated at approximately \$372 million. This estimated cost is preliminary and will be refined over the next few years. The work may be phased over 10 to 30 years as funding becomes available. Some of the asset rehabilitation projects identified through this effort may be funded by Project F8, which is allocated \$15 million over 15 years (FY22-36) (half funded by the Safe, Clean Water Fund and half by the Watershed and Stream Stewardship Fund), and/or by the WARP small capital improvement project, which is currently funded at approximately \$7.5-\$8 million per year. Valley Water will also be pursuing grant funding. It is likely that the magnitude of future work will exceed available funding in some future years.

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VII.APPENDIX A – 2023 SMP PROJECTS

To be determined for Final Draft in May 2023.

2023 SMP Project List*								
Item	Watershed	Creek / Facility	Work Type	Location	Sta (From)	Sta (To)	Length (Feet)	Project Type

2023 SMP Project List*								
Item	Watershed	Creek / Facility	Work Type	Location	Sta (From)	Sta (To)	Length (Feet)	Project Type

* This is SMP work anticipated to be conducted in 2023 (FY24). While Valley Water will make every effort to undertake these projects, work may not be conducted for multiple reasons, including delays in receipt of regulatory agencies' approvals, wildlife considerations, unforeseen site conditions, and unavailability of resources, among other circumstances.

VIII. APPENDIX B – WARP PROJECT LIST (IN PROGRESS & PLANNED)

Small Caps/WARP Project List						
Creek	Location	Work type	Planning	Design	Construction ⁱ	Cost Estimate ⁱⁱ
Uvas	Miller Ave. to end of levee	ERO	FY18	FY18, FY19	FY19, FY20	N/A
Calabazas	Miller Ave. to Bollinger Rd.	ERO	FY18, FY19	FY19, FY20	FY22, FY23	\$18 million
Guadalupe River	at San Carlos St.	ERO (gabion repair)			TBD	\$1 million
Guadalupe River	at Blossom Hill Rd.	ERO (gabion repair)	FY22	FY22, FY23	FY23	\$1 million
Guadalupe River	at Malone Rd.	ERO (retaining wall repair)	FY22	FY22, FY23	FY23	\$2 million
Calabazas	Vallco Pkwy. to Stevens Creek Blvd. / Finch Ave.	ERO (RCB repair), SED	FY22	FY22, FY23	FY23	\$1 million
Coyote	Hwy. 237 to Tasman Dr.	ERO (levee repair)	FY22	FY22, FY23	FY23	\$2.25 million
Permanente	Mountain View Ave. to Park Ave.	ERO (concrete U-frame wall repair)	FY21, FY22			\$6 million
Hale	Arboleda Dr. to Rosita Ave.	ERO (concrete U-frame wall repair)				\$1 million
Regnart	Union Pacific Railroad to Bubb Rd.	ERO	FY22, FY23	FY23		\$8 million
Randol	u/s Camden Ave.	Restore LOS, levee rehabilitation				\$850,000

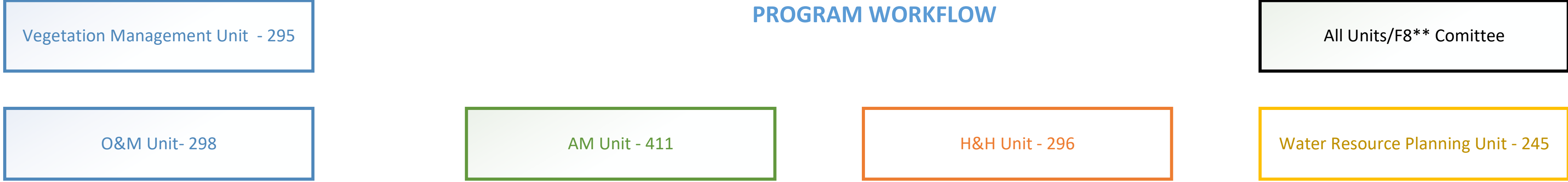
Small Caps/WARP Project List						
Creek	Location	Work type	Planning	Design	Construction ⁱ	Cost Estimate ⁱⁱ
Coyote ⁱⁱⁱ	u/s Julian St.	ERO	FY23	FY23, FY24	FY24	\$8 million
Llagas	d/s Bloomfield Ave.	ERO (levee)				\$200,000

- i. Construction FY refers to the fiscal year in which the project is awarded for construction and funds are encumbered (e.g., FY24 means project would be awarded, say, in spring 2024, with construction to start in summer 2024 (FY25).
- ii. Conceptual, high-level cost estimate and is subject to change.
- iii. Project may be subject to cost-sharing agreement with other(s).

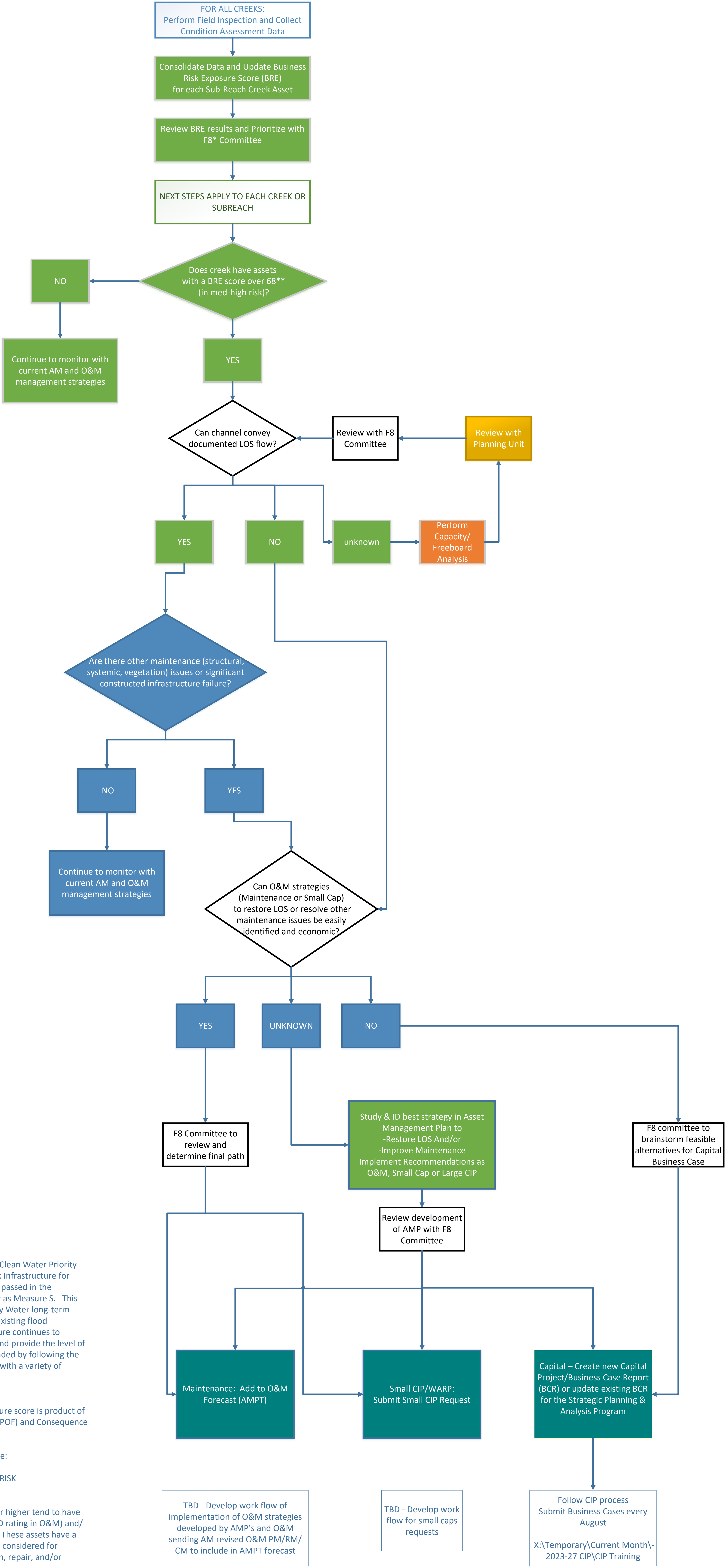
IX. APPENDIX C – WATERSHEDS STRATEGIC PLANNING WORKFLOW

DRAFT

SCI F8 - WATERSHED STRATEGIC PLANNING
PROGRAM WORKFLOW



FREQUENCY OF WORKFLOW PROCESS (2020): 5 CREEKS EVERY MONTHS TO BE ANALYZED, REVIEWED, AND PRIORITIZED BY WATERSHED UNITS
FUTURE GOAL: FREQUENCY TO REDUCE TO BI-ANNUALLY WITH UPDATED RISK SCORES AND PRIORITIZATION



X. APPENDIX D – ASSET REHABILITATION PROJECT LIST

Asset Rehabilitation Project List				
Creek or Project Name	Location	Asset Rehabilitation Notes	Approximate Length	Cost Estimate ⁱ
San Tomas Aquino ⁱⁱ	Bay to Tasman Dr. d/s Williams Rd. and u/s Smith Creek confluence Westmont Ave. to Wildcat Creek confluence	Aging concrete and modified levees and banks	2 miles	\$60 million
Stevens ⁱⁱⁱ	Crittenden Ln. to I-280	Aging concrete and modified levees and deferred creek improvements ^{iv}	3 miles	\$100 million
Adobe	d/s Charleston Rd. to Bay Barron Creek confluence to Louis Rd.	Culvert rehabilitation below Hwy. 101 Aging concrete, levee, and banks	3.6 miles	\$20 million
Berryessa	Montague Expwy. to I-680 to Sierra Creek confluence (concrete) Morrill Ave. to Messina Dr. (concrete) Messina Dr. to u/s Cropley Ave. (natural)	Aging concrete and modified banks	2.5 miles	\$1 million
Lower Coyote	McCarthy Blvd. to Montague Expwy.	Eroding banks/levees with rodent damage	3.5 miles	\$30 million
Barron	Adobe Creek confluence to Louis Rd.	Aging concrete and eroding banks with rodent damage	0.5 miles	\$20 million
Calabazas	Old Mountain View Rd. to Hwy 101	Aging concrete floodwalls and banks	1.5 miles	\$30 million
Permanente	Shoreline Amphitheater to Hwy 101	Eroding banks with rodent damage	0.5 mile	\$7 million

Asset Rehabilitation Project List				
Creek or Project Name	Location	Asset Rehabilitation Notes	Approximate Length	Cost Estimate ⁱ
Matadero	SF Bay to Middlefield Rd.	Aging concrete and eroding banks with rodent damage	2.7 miles	\$6 million
San Francisquito	d/s of Friendship Bridge	Eroding banks with rodent damage	0.6 mile	\$7 million
Thompson	Lower Silver Creek confluence to Quimby Creek	Asset Management Plan or geomorphic study to address eroding banks and sediment build-up	1.1 miles	\$25 million
Ross	Kirk Rd. to Camden Ave. Union Ave. to Camino del Cerro	Erosion and potential hydraulic improvements	1.5 miles	\$11 million
Canoas	Guadalupe River confluence to Hillsdale Dr.	Erosion and potential hydraulic improvements	1.6 miles	\$50 million
Creek in Pipe Program	Inspection and maintenance of creek in underground pipe and culverts county-wide	Preventive maintenance of creek in pipe	N/A	\$5 million
Rodent Control Bank/Levee Program	Address rodent damage on creek banks county-wide	Levee/banks with rodent damage	N/A	TBD
			TOTAL	\$372 million

- i. Conceptual, high-level cost estimate and is subject to change.
- ii. A business case report for a Capital Improvement Planning Study and Project for San Tomas Aquino Creek was submitted in FY22 but not validated. The Sustainable Infrastructure project team will revise and resubmit in FY24.
- iii. The Sustainable Infrastructure project team determined that the appropriate next step for Stevens Creek is to move forward with preparation of an updated asset management plan to develop the most sustainable and economic management strategies.
- iv. Improvement indicates an element that was omitted from original construction.



Valley Water

Clean Water • Healthy Environment • Flood Protection

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