Stanislaus County

Striving to be the Best

## Stanislaus Multi-Agency Regional

# STORM WATER RESOURCE PLAN

## PUBLIC DRAFT

April 2019

Prepared by:

STORM WATER GRANT PROGRAM

WOODARD & CURRAN

PROP 1

GOVERNOR EDMUND G. BROWN, JR.

WATER BOND 2014

RELIABILITY | RESTORATION | RESILIENCE

STANISLAUS COUNTY
DEPARTMENT OF PUBLIC WORKS

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## Acknowledgements

The development of the Stanislaus Multi-Agency Regional Storm Water Resource Plan was led by Stanislaus County. The Project Partners (Stanislaus County, City of Modesto, City of Oakdale, City of Patterson, City of Waterford, and the Eastside Water District) contributed financially to the Plan.

The Technical Advisory Committee provided valuable input throughout development of the Plan.

The Stanislaus Multi-Agency Regional Storm Water Resource Plan was funded by Proposition 1, through a Planning Grant under the State Water Resources Control Board's Storm Water Grant Program (Grant Agreement No. D1612618).



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## List of Acronyms

| | |
|---|---|
| ACS | American Community Survey |
| AF | Acre-feet |
| AFY | Acre-feet per year |
| ASBS | Areas of Special Biological Significance |
| AWMP | Agricultural Water Management Plan |
| Bay-Delta Plan | Water Quality Plan for the San Francisco Bay-Sacramento/San Joaquin Delta Estuary |
| BMP | Best Management Practice |
| CASQA | California Stormwater Quality Association |
| CEQA | California Environmental Quality Act |
| CGP | Construction General Permit |
| CSD | Community Services District |
| CVRWQCB | Central Valley Regional Water Quality Control Board |
| CVHS | Central Valley Hydrology Study |
| CWA | Clean Water Act |
| DAC | Disadvantaged community |
| Delta | Sacramento–San Joaquin Delta |
| DSC | Delta Stewardship Council |
| DWR | California Department of Water Resources |
| DWSC | Deep Water Shipping Channel |
| EDA | Economically Distressed Area |
| GHG | Greenhouse gas |
| GIS | Geographic Information System |
| GSA | Groundwater Sustainability Agency |
| GSP | Groundwater Sustainability Plan |
| HEC-RAS | Hydrologic Engineering Center's River Analysis System |
| ID | Irrigation District |
| IGP | Industrial General Permit |
| ILRP | Irrigated Lands Regulatory Program |
| IRWM | Integrated Regional Water Management |
| IRWMP | Integrated Regional Water Management Plan |
| kWh | Kilowatt-hours |
| LID | Low-Impact Development |

| | |
|---|---|
| LSJR | Lower San Joaquin River |
| MAD | Mosquito Abatement District |
| Mgd | Million gallons per day |
| Mg/L | Milligrams per liter |
| MID | Modesto Irrigation District |
| MOU | Memorandum of Understanding |
| MPN | Most Probable Number |
| MS4 | Municipal Separate Storm Sewer Systems |
| µmhos/cm | Microsiemens per centimeter |
| NDPES | National Pollutant Discharge Elimination System |
| NEPA | National Environmental Policy Act |
| NOA | Notice of Applicability |
| OID | Oakdale Irrigation District |
| O&M | Operation and maintenance |
| PID | Patterson Irrigation District |
| PSLR | Panoche-San Luis Reservoir |
| QA/QC | Quality Assurance/Quality Control |
| RCD | Resource Conservation Districts |
| RTP | Ready-To-Proceed |
| RWMG | Regional Water Management Group |
| SB | Senate Bill |
| SDWIS | Safe Drinking Water Information System |
| SED | Substitute Environmental Document |
| SGMA | Sustainable Groundwater Management Act |
| SJRECWA | San Joaquin River Exchange Contractors Water Authority |
| SJRNWR | San Joaquin River National Wildlife Refuge |
| SLDMWA | San Luis & Delta-Mendota Water Authority |
| STRGBA | Stanislaus and Tuolumne Rivers Groundwater Basin Association |
| SWAMP | Surface Water Ambient Monitoring Program |
| SWMP | Storm Water Management Program |
| SWPPP | Storm Water Pollution Prevention Plans |
| SWRCB | State Water Resources Control Board |
| SWRP | Storm Water Resource Plan |

| | |
|---|---|
| TAC | Technical Advisory Committee |
| TDS | Total Dissolved Solids |
| TGBA | Turlock Groundwater Basin Association |
| TID | Turlock Irrigation District |
| TMDL | Total Maximum Daily Load |
| TSS | Total Suspended Solids |
| U.S. | United States |
| USACE | Unites States Army Corps of Engineers |
| USBR | Unites States Bureau of Reclamation |
| USDA | Unites States Department of Agriculture |
| USEPA | Unites States Environmental Protection Agency |
| USGS | Unites States Geological Survey |
| UWMP | Urban Water Management Plan |
| WD | Water District |
| WDR | Waste Discharge Requirements |
| WLAs | Waste Load Allocations |
| WSID | West Stanislaus Irrigation District |
| WSJ | Westside-San Joaquin |

# Executive Summary

The Stanislaus Multi-Agency Regional Storm Water Resource Plan (SWRP) is a regional watershed-based stormwater and dry weather runoff planning document that integrates water resource management strategies and priorities in Stanislaus County. Led by Stanislaus County, the SWRP was developed in collaboration with the Cities of Modesto, Turlock, Oakdale, Patterson, Ceres, and Waterford, Eastside Water District, as well as the nonprofit organizations River Partners and the Tuolumne River Trust. The primary purpose of the SWRP is to provide watershed-based planning throughout the Stanislaus County SWRP planning area. The SWRP aims to address challenges and opportunities for managing stormwater and dry weather runoff and to identify and assess multi-benefit stormwater projects, prioritizing those projects that can best address the identified water resource management goals.

In 2017, Stanislaus County was awarded a planning grant through the Proposition 1 Storm Water Grant Program to develop the Stanislaus Multi-Agency Regional SWRP. Matching funds and staff support to develop the plan were provided by Stanislaus County, Eastside Water District, and the Cities of Modesto, Oakdale, and Patterson. The SWRP was developed to be consistent with the Storm Water Resource Plan Guidelines (SWRCB, 2015) and the requirements of the Stormwater Resource Planning Act, Water Code Sections 10560 *et seq*. A checklist documenting compliance with the Water Code and SWRP Guidelines is provided as Appendix A.

## ES-1 Planning Area Overview

The Stanislaus Multi-Agency Regional SWRP planning area (Figure ES-1) aligns with the Stanislaus County boundaries, which encompasses 1,515 square miles in California's San Joaquin Valley. The planning area is bordered in the west by the Coast Range, southwest of the San Francisco Bay, and extends east to the Sierra Nevada foothills. This planning area was chosen to facilitate regional stormwater management based on the significant overlap with the County boundaries and the East Stanislaus and Westside-San Joaquin Integrated Regional Water Management Plan (IRWMP) areas, as well as the Modesto, Turlock and Delta-Mendota groundwater subbasin management planning areas. The cities of Modesto, Turlock, Hughson, Ceres, Oakdale, Newman, Waterford, Riverbank and Patterson, 10 water and irrigation districts, and a number of Community Service Districts are contained within the planning area.

The SWRP planning area is entirely within the San Joaquin River Hydrologic Region and includes the bulk of two major watersheds, the Middle San Joaquin-Lower Merced-Lower Stanislaus and the Panoche-San Luis Reservoir watersheds, as shown in Figure ES-2. The Middle San Joaquin-Lower Merced-Lower Stanislaus Watershed covers most of the planning area. Three major rivers, the Stanislaus, Tuolumne, and San Joaquin Rivers, run through the Middle San Joaquin-Lower Merced-Lower Stanislaus Watershed. The watershed also contains several reservoirs used for water supply, flood control, and hydroelectric power production. The Panoche-San Luis Reservoir Watershed covers the westernmost portion of the County and includes the eastern portion of the Coast Range, the highest point in the County (approximately 3,800 feet above sea level). Water quality concerns in the planning area include organophosphate pesticides (diazinon and chlorpyrifos) and organic carbon (which contributes to low downstream dissolved oxygen levels), total suspended solids (TSS), pyrethroids, mercury, and bacteria which may impair water bodies and limit beneficial uses. Improving water quality and protecting and enhancing impaired water bodies is a priority for the planning area.

Stanislaus County overlies the San Joaquin Valley Groundwater Basin and four individual groundwater subbasins: the Eastern San Joaquin, Modesto, Turlock, and Delta-Mendota Subbasins. Consideration of groundwater supply and quality is crucial in the planning area due to the high reliance on groundwater for both domestic and agricultural uses.

Water quality and stormwater management priorities for the planning area were identified as part of the SWRP planning process. Nine priority pollutants were selected based on 303(d) list impairments to local waterbodies and TMDLs applicable to Stanislaus County. These water quality priorities include: TSS, mercury, diazinon, chlorpyrifos, selenium, diuron bacteria, pyrethroids, and total nitrogen. Other stormwater management priorities identified in the SWRP include identification of conjunctive use strategies to maximize the use of both surface water and groundwater. This strategy would include groundwater recharge and the protection of groundwater quality. Issues beyond groundwater contamination from within the County include salinity, land subsidence, and overdraft. Additional water quality priorities may include goals such as maintaining favorable wildlife habitat and aesthetic value to the community.

**Figure ES-1. Planning Area**

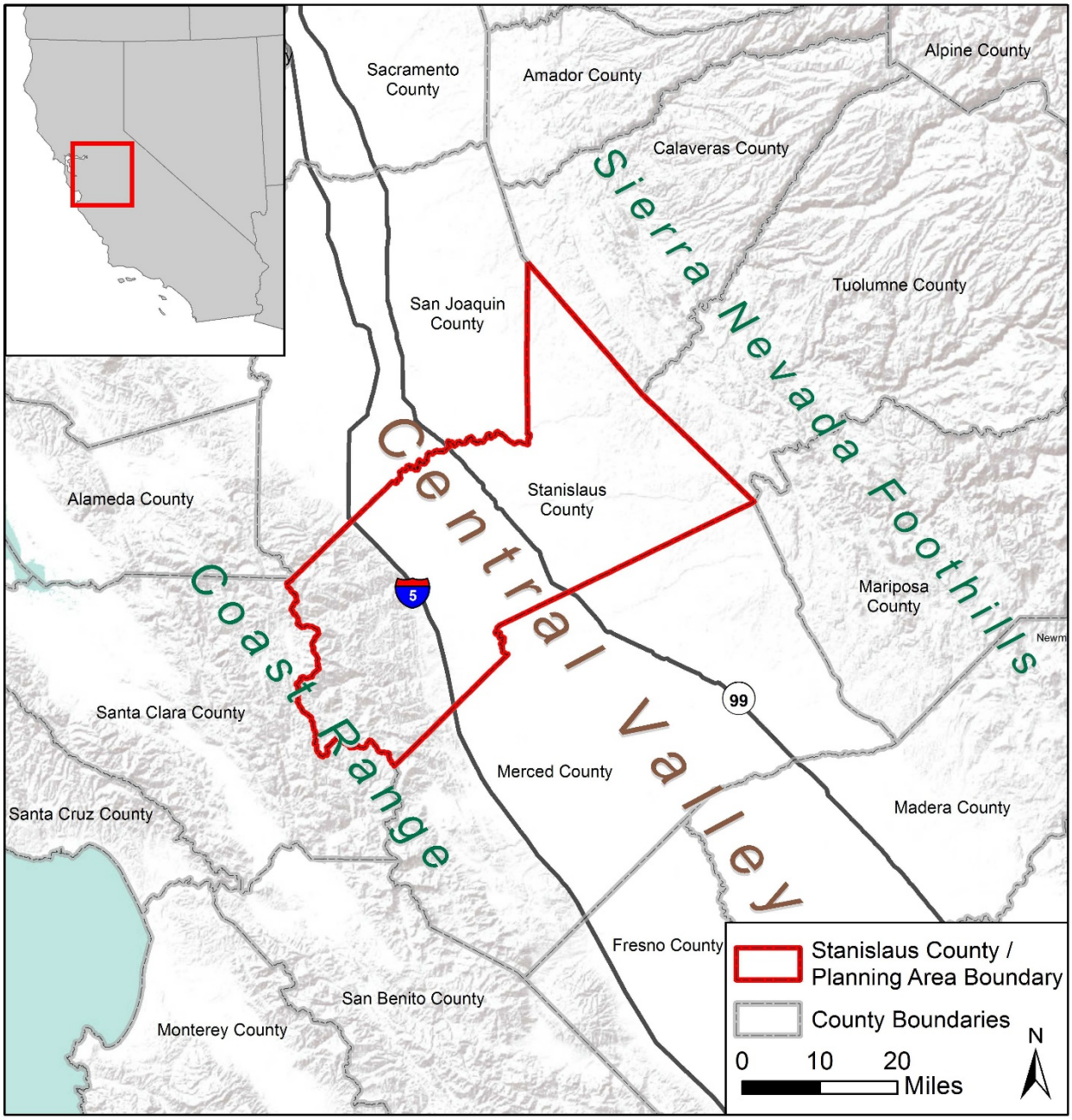
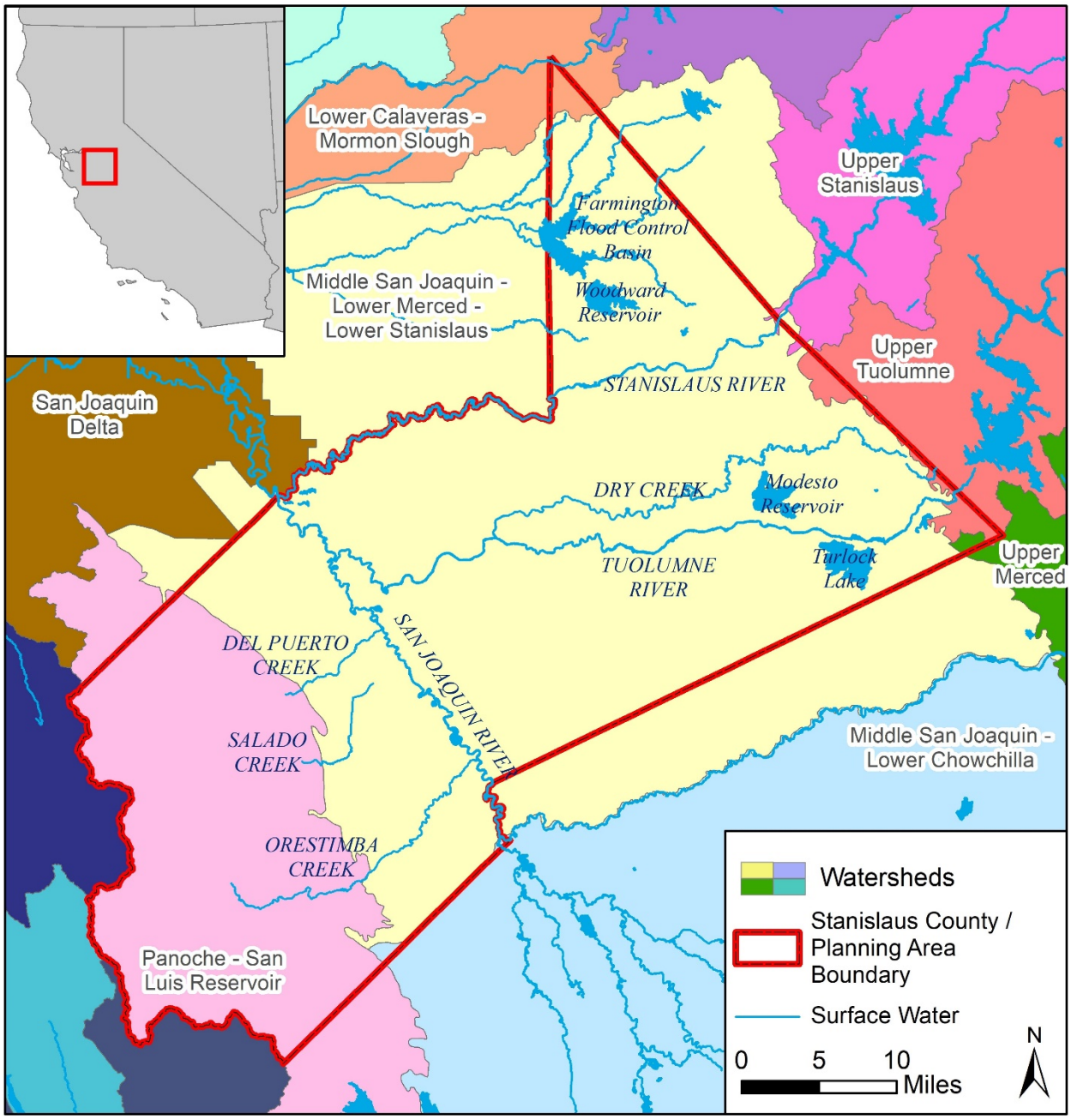


**Figure ES-2. Watersheds**



## ES-2 Watershed Collaboration, Coordination, and Outreach

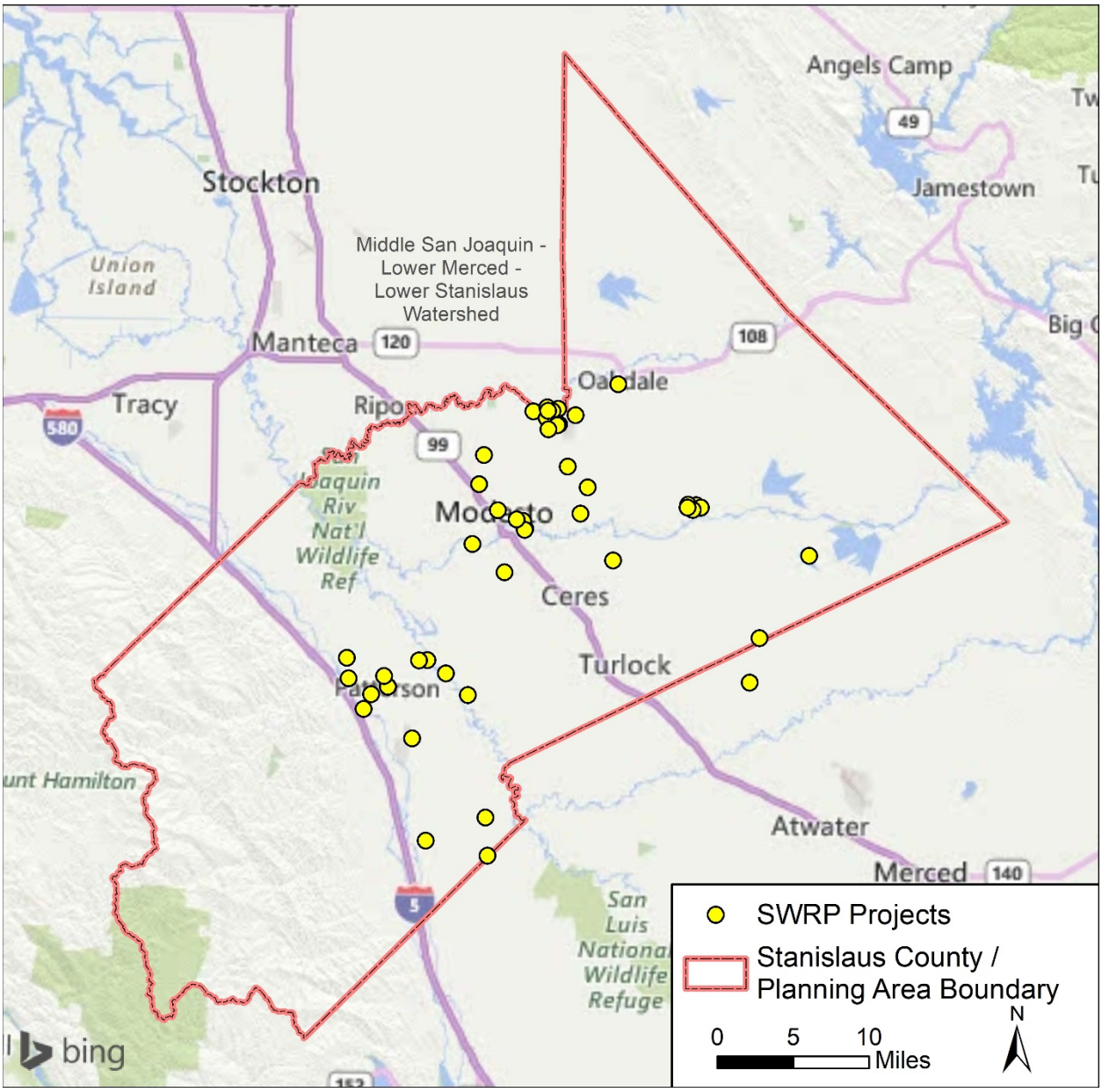
The SWRP was developed as a collaborative effort between Stanislaus County, local planning organizations that contributed both time and funds to development of the plan, and other key stakeholders identified and contacted through the SWRP planning effort. A Technical Advisory Committee (TAC), composed of agency and nonprofit representatives, was developed to provide input on planning components and support review of the plan. TAC meetings and public outreach meetings were held throughout the SWRP development to coordinate and collaborate with agencies, organizations, and nonprofit organizations. A number of disadvantaged community (DAC) representatives were identified at meetings and coordinated with directly to bolster DAC involvement in the plan development. Additional outreach occurred through development and use of the SWRP stakeholder contact list and the SWRP website.

The SWRP incorporates past management and research efforts, existing plans, as well as stormwater quality and groundwater recharge technical studies performed as part of and alongside development of this SWRP. Concurrent collaboration and planning efforts of the East Stanislaus IRWMP and Westside-San Joaquin IRWMP updates were leveraged, with the integration of stakeholders, resources and projects when applicable. Relevant information and projects resulting from the Groundwater Sustainability Plans (GSPs) to be developed for the Modesto, Turlock, Eastern San Joaquin, and Delta-Mendota groundwater subbasins will be assessed and integrated into future SWRP efforts and projects, where feasible.

## ES-3 Integrated Metrics-Based Benefits Analysis

A metrics-based analysis helps illustrate how the multi-benefit projects included in the SWRP will collectively address the water resource management goals of the planning area. Projects with quantified benefits were aggregated across the planning area to estimate total SWRP benefits and assess progress toward reaching water resource management goals. The quantified benefits discussed in the SWRP are based on information provided by the project proponents to date. Quantitative information was not provided for every project, which may result in underestimation of the aggregated benefits of all SWRP projects. The locations of the projects are shown in Figure ES-3.

**Figure ES-3. SWRP Projects**



Stormwater benefits are evaluated within five different categories: water quality, water supply, flood management, environmental, and community benefits. Within each category, specific main and additional benefits have been identified. These categories and benefits align with those presented in the SWRP Guidelines (SWRCB, 2015) and are listed in Table ES-1.

**Table ES-1. SWRP Main and Additional Benefits**

| Benefit Category | | Benefit |
|---|---|---|
| Main Benefits | Water Quality Benefits | Increased filtration and/or treatment of runoff |
| | Water Supply Benefits | Water supply reliability |
| | | Conjunctive use |
| | Flood Management Benefits | Decreased flood risk by reducing runoff rate and/or volume |
| | Environmental Benefits | Environmental habitat protection and improvement, including wetland enhancement/creation, riparian enhancement, and/or instream flow improvement |
| | | Increased urban green space |
| | Community Benefits | Employment opportunities provided |
| | | Public education |
| Additional Benefits | Water Quality Benefits | Nonpoint source pollution control |
| | | Reestablished natural water drainage and treatment |
| | Water Supply Benefits | Water conservation |
| | Flood Management Benefits | Reduced sanitary sewer overflows |
| | Environmental Benefits | Reduced energy use, greenhouse gas emissions, or provides a carbon sink |
| | | Reestablishment of natural hydrograph |
| | | Water temperature improvements |
| | Community Benefits | Community involvement |
| | | Enhance and/or create recreational and public use areas |

The SWRP water quality priorities for the planning area prioritize reducing pollutant loading to 303(d)-listed water bodies and supporting existing TDMLs. Water quality benefits provided by stormwater and dry weather runoff projects in the planning area include increased filtration and/or treatment of runoff, nonpoint source pollution control, and reestablished natural water drainage and treatment. The majority of water quality projects included in the SWRP increase infiltration of stormwater to reduce specific pollutants of concern in Stanislaus County. It is estimated that by implementing all SWRP projects with water quality benefits (both conceptual and ready to proceed), there could be a reduction in TSS loading of approximately 205,000 lbs/yr and approximately 5,200 lbs/yr of trash removed from entering waterways throughout the County.

Stormwater capture for groundwater basin recharge to augment water supply was identified as a regional watershed priority during the preparation of the SWRP. SWRP projects providing supply benefits through stormwater capture and use were aggregated across the planning area to analyze how collectively the stormwater capture projects and programs could provide water supply benefits of approximately 167,000 AFY of direct recharge, direct use, and/or in-lieu recharge/conjunctive use.

Flood management projects in the planning area can also provide water augmentation benefits by diverting flood flows to increase recharge. The SWRP projects providing flood management benefits through a reduction in potential flood volume can capture almost 28,000 AFY.

Environmental and community benefits could also be quantified as part of the SWRP. Projects providing energy reduction benefits could reduce energy consumed by over 1,500,000 kWh/year when analyzed collectively. Projects may also protect or improve over 3,500 acres of habitat. Community benefits resulting from the combined project include over 30,000 estimated visits per year to parks or other recreational areas developed or improved by the projects.

## ES-4 Project Identification and Prioritization Process

The primary purpose of the SWRP is to identify and assess multiple-benefit stormwater projects, prioritizing those projects that can best address the water resource management goals in the SWRP planning area of Stanislaus County. The project identification and quantitative assessment process for the plan included: project solicitation, project submission, eligibility screening, and the metrics-based project assessment and prioritization.

Project solicitation was the process by which public agencies, nonprofits, and members of the public submitted projects to the SWRP. The project submission process for the SWRP was built on the strategy developed during the East Stanislaus IRWMP using a web-based project submittal and data management system called Opti. The Opti system allows project information to be submitted, reviewed, organized, and regularly updated electronically by project proponents. Project summaries are also available for review to all interested parties at http://irwm.rmcwater.com/es.

Submitted projects were screened for four eligibility characteristics in order to qualify for inclusion in the SWRP. The eligibility requirements ensure that (1) projects would be submitted by applicants eligible to receive funding, (2) the project is of the appropriate type, and the project provides multiple benefits as required by the SWRP Guidelines, (3) providing at least two or more categories of Main Benefits and (4) providing at least one category of Additional Benefits. Main and Additional Benefit categories are listed in Table ES-1.

A project prioritization process was developed to prioritize individual projects and programs for implementation based on an integration of measurable factors to assure the greatest water quality, water supply, conservation, and community needs are addressed. The prioritization process was based on watershed and planning area-level water resource management priorities identified during SWRP development and was created to be a simple, objective, metrics-based tool for assessing projects. Projects were prioritized based on a system of points, allocated to reflect those priorities.

The SWRP scoring system follows guidance provided in the SWRP Guidelines, which encourage projects to be prioritized based on factors such as providing multiple benefits, ability to secure ongoing funding, use of a metrics-driven approach, location on public lands, augmentation of local water supplies, and habitat restoration.

During the 2017 solicitation period, 58 projects were submitted, of which 41 were Conceptual projects and 17 were Ready-to-Proceed (RTP) projects. A detailed list of the submitted project and project prioritization is provided in Appendix F including information about project sponsors, project descriptions, prioritization results, and benefits provided. Table ES-2 summarizes the prioritization scoring system based on the SWRP

main and SWRP additional benefits provided by the project. Additional points were awarded if a quantitative metric was provided for either a main or additional benefit.

**Table ES-2. Project Prioritization Scoring System**

| Providing SWRP Main Benefits and Additional Benefits | Points |
|---|---|
| **Providing SWRP Main Benefits** | |
| Points per benefit provided | 4 |
| Additional points if a quantitative metric can be provided for that benefit | 2 |
| **Providing SWRP Additional Benefits** | |
| Points per benefit provided | 2 |
| Additional points if a quantitative metric can be provided for that benefit | 1 |
| **Addressing Regional Watershed Priorities** | **Points** |
| **Implements water quality improvements to help achieve the goals of an existing TMDL?** | 4 |
| **Reduces pollutant discharges into a 303(d)-listed Impaired Water Body?** | 2 |
| **Augments water supply by capturing stormwater or dry weather runoff for recharge into a groundwater basin?** | 4 |
| **Does the project provide a SWRP Main or Additional Benefit to a disadvantaged community or an economically distressed area?** | 4 |
| **Progress Towards Project Implementation** | Points |
| Is the project supported by entities that have created permanent, local or regional funding? | 4 |
| Is the project located on public land? If not, is there an existing easement or right of way agreement with a local land owner? | 4 |
| **Readiness of project to proceed (award points for each one completed):** | |
| Planning Study or Feasibility Study | 1 |
| Environmental Assessment/EIR | 1 |
| Preliminary Project Design | 2 |
| Acquisition of all required environmental permits | 2 |

## ES-5 Plan and Project Implementation

Implementation of the SWRP will be completed through cooperation between Stanislaus County, the TAC, the project proponents, and stakeholders. For the SWRP to be successful, projects included in the SWRP must continue to move from conceptual and planning phases toward construction and implementation. The SWRP relies on individual projects and programs to collectively achieve the water supply, water quality, flood management, environmental, and community benefits identified in the plan.

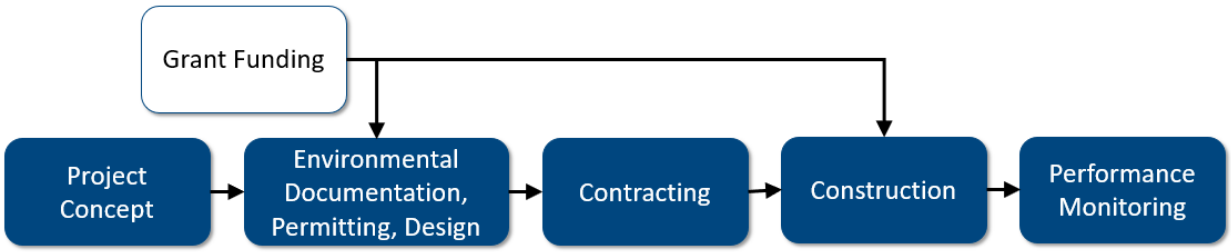
Implementing the SWRP consists of three main elements:

- Completing the design, permitting and implementation of projects included in the SWRP
- Monitoring the benefits produced by the projects included in the SWRP to ensure that project goals are being met and that SWRP objectives are being advanced
- Evaluating the SWRP at regular intervals to assess cumulative progress toward meeting the SWRP objectives and adapting the plan as necessary to ensure that objectives continue to be met

The projects included in the SWRP range from conceptual projects (which will require additional planning and design work prior to construction) to RTP projects (which may be ready for construction as soon as funding is secured). While inclusion in the SWRP does not obligate project proponents to implement projects as submitted, it is the intent of the SWRP that projects will be implemented to meet stormwater

objectives in the planning area. Project proponents are responsible for securing their own project funding and developing and implementing individual projects. A typical project lifespan is shown in Figure ES-4.

**Figure ES-4. Example Project Progression**




The SWRP is intended to be a living document and implemented as an ongoing, adaptive program. The plan identifies water resource management priorities and recommends projects based on current knowledge, as well as lays the framework for incorporating forthcoming information and future projects resulting from continued plan implementation.

Opti is publicly accessible and will serve as both a data repository and distribution mechanism. The use of Opti allows project proponents to update project information as details are solidified and benefits are further quantified. Eligible projects can be added at any time. Project performance data may also be uploaded to Opti where it can be viewed by stakeholders and members of the public. Project performance will be evaluated based on how well the targets established in the monitoring plan are met. This project information can be collectively managed in Opti and fed back into the plan's management structure to adapt the plan and projects to better meet overall objectives. Feedback obtained from community participation and public perception of individual project benefits is also expected to be an integral part of the adaptive management process for project proponents and plan partners.

This SWRP will be evaluated at regular intervals to assess cumulative progress toward meeting the SWRP objectives and the plan adapted, as necessary, to ensure that stormwater management objectives continue to be relevant and addressed.