

*East Stanislaus Region*

# Integrated Regional Water Management Plan

## PLAN HIGHLIGHTS



**July 2013**

## East Stanislaus Region's Vision and Goals

Our Vision is to:

*Integrate projects to provide multiple benefits, resolve identified issues and conflicts, and meet the regional goals and objectives to achieve water reliability and sustainability and flood protection while protecting and enhancing the environment and regional economies and culture.*

### **Regional Goals**

#### **Water Supply**

Protect existing water supplies and water rights, and improve regional water supply reliability.

#### **Flood Protection**

Ensure flood protection strategies are developed and implemented through a collaborative process, utilizing both local and watershed-wide approaches designed to maximize opportunities for comprehensive water resource management.

#### **Water Quality**

Protect and improve water quality for beneficial uses consistent with regional interests and the RWQCB Basin Plan in cooperation with local, state and federal agencies and regional stakeholders.

#### **Environmental Protection and Enhancement**

Protect the environmental resources of the Stanislaus, Tuolumne, Merced and San Joaquin River watersheds by identifying, promoting and implementing opportunities to assess, restore and enhance natural resources of these watersheds.

#### **Regional Communication and Cooperation**

Implement and promote this IRWM Plan through regional communication, cooperation, and education.

#### **Economic and Social Responsibility**

Promote development and implementation of projects, programs and policies that are socially impartial and economically sound.

## Highlights Contents

This East Stanislaus Integrated Regional Water Management Plan (IRWMP) Highlights is a summary of the East Stanislaus IRWMP, prepared by the East Stanislaus Regional Water Management Partnership (ESRWMP) between 2010 through 2013. The Cities of Modesto, Turlock, Ceres, and Hughson, which comprise the ESRWMP, undertook development of the East Stanislaus IRWMP to foster regional communication and to cooperatively resolve potential water supply conflicts in the Region. The East Stanislaus IRWMP has 9 chapters, including a references section. An overview of Chapters 1 through 8 is provided in this Highlights document, as well as direction to where more detailed discussion and information can be found in the IRWMP.



### ***Integrated Regional Water Management Planning***

IRWM Planning is a collaborative effort to manage all aspects of water resources in a region, crossing jurisdictional, watershed, and political boundaries, and involving multiple entities to address various issues and conflicts through multi-benefit solutions. ....Page 1

### ***East Stanislaus IRWMP – The Basics***

The ESIRWM Region has distinct boundaries and participating agencies that have worked together to identify regional solutions for water resources issues in the Region. ....Pages 2 through 4

### ***Planning for and Adapting to Climate Change***

Planning for and adapting to anticipated changes in climate will be essential to ensuring water supply reliability for the Region and to protecting sensitive infrastructure against more frequent and extreme precipitation and wildfire events. ....Pages 5 & 6

### ***Governance, Coordination, and Outreach***

A governance structure was developed for the Region to maximize participation and collaboration. Ongoing coordination and outreach to public, stakeholders, and other IRWM regions is key in the development of the Region’s Plan. ....Pages 7 & 8

### ***Vision, Goals, and Objectives***

In order for the East Stanislaus Region to effectively manage its water resources, it first identified the regional water resources-related conflicts and issues to be resolved through this Integrated Regional Water Management Plan (IRWMP). ....Pages 9 & 10

### ***Regional Projects Identified and Prioritized to Meet the Region’s Goals***

Application of the project solicitation process developed by the SC and PAC allowed the Region to identify projects and programs to help achieve the Region’s goals and objectives. ....Pages 11 & 12

### ***Technical Analysis and Data Management***

The IRWMP and projects included in the Plan were developed using sound technical resources. During development and implementation of the IRWMP, stakeholders will have access to data generated by the IRWM-related activities. .... Page 13

### ***Plan Implementation***

For the East Stanislaus IRWMP to be successful, projects included in the Plan must continue to move forward and the Plan must be updated periodically. The Region developed an implementation plan to do so. ....Pages 14 & 15

## Integrated Regional Water Management Planning

The Plan Standards, summarized in **Chapter 1** of the East Stanislaus IRWMP and in DWR's 2012 Guidelines, include:

- ◆ Governance
- ◆ Region Description
- ◆ Objectives
- ◆ Resource Management Strategies
- ◆ Integration
- ◆ Project Review Process
- ◆ Impact and Benefit
- ◆ Plan Performance and Monitoring
- ◆ Data Management
- ◆ Finance
- ◆ Technical Analysis
- ◆ Relation to Local Water Planning
- ◆ Relation to Local Land Use Planning
- ◆ Stakeholder Involvement
- ◆ Coordination
- ◆ Climate Change

Integrated Regional Water Management (IRWM) Planning is a collaborative effort to manage all aspects of water resources in a region, integrating water supply, water quality, wastewater collection and treatment, and flood and stormwater management. It crosses jurisdictional, watershed, and political boundaries and involves multiple agencies, stakeholders, individuals, and entities to address various issues and conflicts through multi-benefit solutions.

In 2002, the Integrated Regional Water Management Act was created when Senate Bill 1672 was passed. The purpose of the Act was to encourage local agencies to coordinate and collaboratively manage water resources to improve water quality, quantity and reliability. Following creation of the Act, in November 2002, the voters of the State of California recognized and codified the need for integrated regional planning for the management of water resources with the passage of Proposition (Prop) 50, *the Water Security, Clean Drinking Water, Coastal and Beach Protection Act*. Central to Prop 50 was the preparation of Integrated Regional Water Management Plans (IRWMPs). IRWMPs define planning regions and identify strategies that allow for the regional management of water resources in what began as four main areas: water supply, groundwater management, ecosystem restoration, and water quality. Prop 50 provided \$500 million to fund competitive grants for preparing IRWMPs and for implementing projects that were consistent with IRWMPs. Since its inception, the IRWM program has evolved. In November 2006, California voters passed Prop 84, *the Safe Drinking Water, Water Quality, and Supply, Flood Control, River and Coastal Protection Bond Act*, providing \$1 billion for planning and implementation grant funding through the IRWM program. Prop 1E, referred to as *the Disaster Preparedness and Flood Prevention Bond Act*, was also passed at that time, providing \$300 million for IRWM Stormwater Flood Management. The California Department of Water Resources (DWR) administers the IRWM grant programs as currently funded by Props 50, 84, and 1E.

As part of that program administration, DWR released the *Proposition 84 & Proposition 1E Integrated Regional Water Management Guidelines* (Guidelines) in November 2012, a set of guidelines for IRWM implementation and planning grants, including descriptions of what must be included in an IRWMP to be eligible for the grant program. The East Stanislaus IRWMP has been constructed to meet or surpass each of those standards.

**Chapter 1, Introduction** of the East Stanislaus IRWMP provides more detailed information about where each of the Plan Standards is covered throughout the plan.

## East Stanislaus IRWMP – The Basics

The East Stanislaus Region:

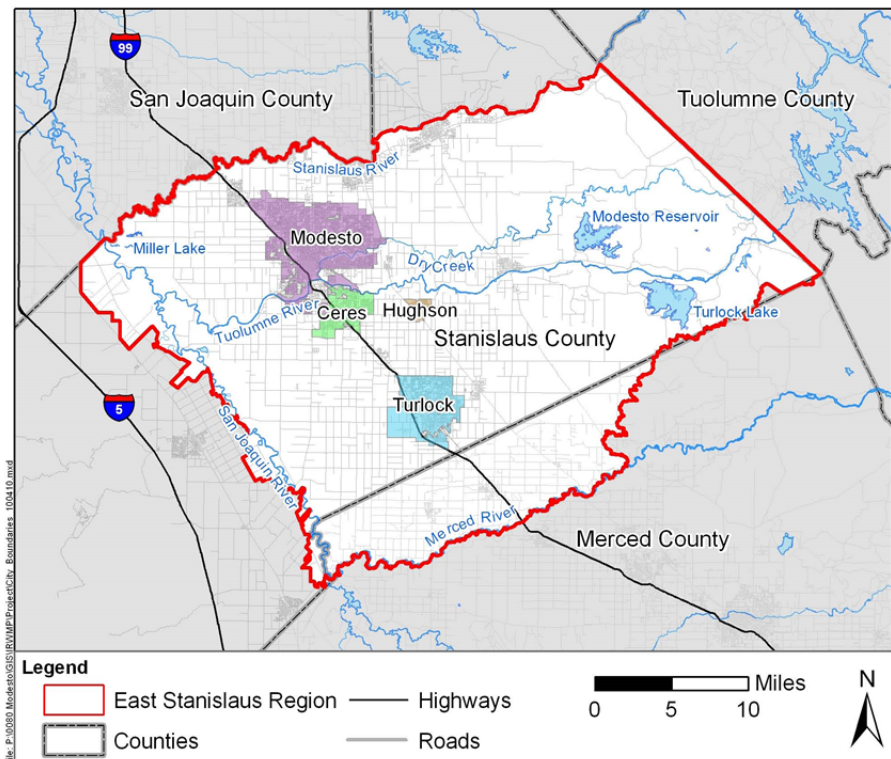
- is approximately 90 miles east of San Francisco and 70 miles south of Sacramento
- incorporates portions of both Stanislaus and Merced counties
- is bound by portions of the Stanislaus and Merced Rivers (to the north and south, respectively)
- is bisected by the San Joaquin and Tuolumne Rivers
- lies within the Middle San Joaquin-Lower Merced-Lower Stanislaus Watershed
- includes Modesto Reservoir and Turlock Lake
- overlies the entire Turlock and Modesto Groundwater Subbasins and includes a portion of the Delta-Mendota Subbasin, all within the San Joaquin Valley Groundwater Basin

The East Stanislaus IRWMP is intended to be a living plan that is to be updated regularly. The Plan summarizes regional goals and objectives for water resources management, and identifies strategies, projects, and programs intended to help meet those goals and objectives. Projects and programs included in the IRWMP are designed to

integrate multiple resource management strategies (RMSs) and to provide multiple-benefit solutions and beneficiaries, both locally and regionally.

As with other areas of the Central Valley, water resource conflicts are present as agricultural and urban demands collide, groundwater and surface water resources become impacted, and as the region continues to grow. In response to this current environment, the East Stanislaus Regional Water Management Partnership (ESRWMP) was formed and the East Stanislaus IRWM Region developed in an effort to create a regional solution for long-term water resources management. The ESRWMP, the official Regional Water Management Group for the region, is presently comprised of the Cities of Modesto, Hughson, Ceres and Turlock. The ESRWMP members signed an MOU dated August 23, 2011 (included in [Appendix A](#) of the IRWMP) which formally formed the ESRWMP. The Partnership initiated development of the East Stanislaus Region and spearheaded completion of the Region Acceptance Process (RAP) application to become an official IRWM region, approved by DWR.

By using the boundaries of existing neighboring IRWM regions as a starting point, the East Stanislaus Region was formulated to cover an area of California that lacked integrated regional water planning and to avoid major overlaps with neighboring IRWM regions. The boundaries of the East Stanislaus



IRWM Region result from a combination of IRWM and local jurisdictional boundaries and geographical and environmental considerations.

The East Stanislaus Region encompasses the service areas of multiple local agencies and maximizes opportunities for integrated water management activities. The four ESRWMP members have jurisdiction over water supply and quality, wastewater, recycled water, stormwater, and watershed/habitat in their respective service areas. Other jurisdictional entities within the Region include:

- ◆ City of Riverbank
- ◆ City of Waterford
- ◆ City of Oakdale
- ◆ Keyes CSD
- ◆ Denair CSD
- ◆ Community of Del Rio
- ◆ Community of Grayson
- ◆ Community of Hickman
- ◆ Community of Empire
- ◆ Community of Riverdale
- ◆ Turlock Irrigation District (TID)
- ◆ Modesto Irrigation District (MID)
- ◆ Eastside Water District
- ◆ Oakdale Irrigation District (OID)
- ◆ Merced Irrigation District
- ◆ Ballico-Cortez Water District
- ◆ Delhi County Water District
- ◆ Hilmar County Water District
- ◆ Stanislaus County
- ◆ Merced County
- ◆ Monterey Park Tract CSD

**Social and Cultural Makeup**

Agriculture is the primary industry in the East Stanislaus Region, except in urban areas like cities. The Region includes all or portions of five irrigation districts, providing water to over 300,000 acres.

Within the East Stanislaus Region, the communities of Keyes, Bret Harte, Bystrom, Empire, Grayson, Shackelford, West Modesto, Riverdale Park, Cowan, Parklawn, Rouse, and portions of Modesto, Turlock, Denair, Hughson, Oakdale, Waterford, and Ceres are DACs.

The Region encompasses most of Stanislaus County and a portion of Merced County. Based on the 2010 Census data, Stanislaus County had a population of 514,453, an increase of 15.1% from 2000. The County’s population is approximately 65% white, approximately 42% of which are of Hispanic or Latino origin. Asians provide the next largest demographic population, composing approximately 5% of the county’s population. Native Americans compose approximately 1% of the county’s population. Merced County is smaller than Stanislaus County (with a total population of 255,793 in 2010, a 21.5% increase from 2000); however, its population demographics are similar.

The Region is home to many disadvantaged communities (DACs). A DAC, according to the State of California, is a community with a Median Household Income (MHI) less than 80 percent of the California statewide MHI. DWR compiled the U.S. Census Bureau’s American Community Survey data for the period of 2006 to 2010. Based on this data, a community with an MHI of \$48,706 or less is considered a DAC. Involvement and participation by representatives of DACs during the East Stanislaus IRWM planning process was solicited and encouraged to help understand the issues confronted by DACs and to better address the needs of minority and/or low-income communities.

**Wastewater and Recycled Water**

Each of the four ESRWMP partner cities (Modesto, Turlock, Ceres, and Hughson) operates a wastewater treatment plant or plants, providing collection and treatment services to their respective service areas. Additionally, the Salida Sanitary District operates a wastewater treatment plant and provides wastewater

collection, treatment, and disposal for the unincorporated community of Salida. The City of Turlock produces tertiary-treated recycled water, and the City of Modesto recently upgraded its secondary

treatment plant to tertiary treatment and is now also producing recycled water. The City of Ceres treats some of its wastewater to secondary standards and sends the rest to the Cities of Turlock and Modesto for treatment. The City of Hughson does not currently produce recycled water.

Recycled water is recognized as a beneficial water supply due to its many advantages – adding a reliable water source that is consistently available regardless of droughts or climate change, offsetting potable water for other uses, and diversifying agencies’ and cities’ water supply portfolios. The Region plans to continue exploring opportunities for recycled water use in and around the region.

**Stormwater and Flood Management**

Storm drainage systems are used to reduce the chance of flooding and to meet regulatory requirements regarding stormwater runoff. In most rural parts of Stanislaus County, stormwater runoff is handled by field percolation or through roadside ditches which then drain to Dry Creek, Tuolumne River, Stanislaus River, or San Joaquin River. There are few storm drain facilities constructed in rural areas. During storms, there is occasional flooding in Stanislaus County because of a combination of factors: high groundwater levels, lo- percolation soils, and topography. Some older areas of Stanislaus County have problems with flooding during storms that exceed ½-inch per hour due to inadequate drainage. During the 170-year storm of 1997, the County experienced flooding in some areas surrounding Tuolumne River due to the release of excess water from Don Pedro Dam and Reservoir into the Tuolumne River channel. Then in 1998, during 35 days of above average rainfall, upland areas of Stanislaus County experience sheet flooding in a number of new subdivisions near saturated rural areas (Stanislaus County, 2004). Some low-lying areas of the lower reaches of the Tuolumne River, some near the confluence with Dry Creek are subject to occasional flooding. DWR prepared the Central Valley Flood Protection Plan in June 2012, which calls for DWR to work with local flood management agencies to prepare detailed Regional Flood Management Plans. The East Stanislaus Region, as part of its IRWM planning process, is currently participating in the development of a Regional Flood Management Plan for the Mid-San Joaquin Region to identify potential projects that may improve flood management.

**Water Supplies and Demands**

The cities and irrigation districts in the East Stanislaus Region are expected to have adequate water supplies to meet estimated future water demands, shown in the following table. The East Stanislaus Region’s water supplies include groundwater, local surface water, and imported surface water from the Central Valley Project (CVP).

**Projected Future Water Demands in the East Stanislaus Region in Acre-Feet per Year (AFY)**

	2010	2015	2020	2025	2030	2035
Modesto <sup>a</sup>	64,464	82,900	80,500	87,900	96,000	104,800
Turlock <sup>b</sup>	21,768	26,957	29,280	33,129	37,216	42,108
Ceres <sup>c</sup>	8,284	10,700	12,300	14,800	17,300	19,800
Hughson <sup>d</sup>	2,466	3,363	4,260	5,157	5,157	--

- a. *City of Modesto and Modesto Irrigation District 2010 Joint Urban Water Management Plan* (West Yost, 2011)
- b. *City of Turlock 2010 Urban Water Management Plan, Public Draft* (City of Turlock, 2011)
- c. *City of Ceres 2010 Urban Water Management Plan Update, Draft*. (West Yost, 2011)
- d. *City of Hughson Water System Master Plan* (Carollo, 2007)

Water quality within a watershed can be affected by a mix of point and nonpoint source discharges, and groundwater and surface water interactions. Water quality can affect water supplies for the East Stanislaus Region and overall water supply reliability.

The East Stanislaus Region, including its natural and water resources, is described in more detail in [Chapter 2, ESIRWM Region](#).

## Planning for and Adapting to Climate Change

There is mounting scientific evidence that global climate conditions are changing and will continue to change as a result of the continued build-up of greenhouse gases (GHGs) in the Earth's atmosphere. Changes in climate can affect municipal water supplies through modifications in the timing, amount, and form of precipitation, as well as water demands and the quality of surface runoff. These changes can affect all elements of water supply systems, from watersheds to reservoirs, conveyance systems, and treatment plants.

Planning for and adapting to anticipated changes in climate will be essential to ensuring water supply reliability for all users and to protecting sensitive infrastructure against more frequent and extreme precipitation and wildfire events. *Chapter 3, Climate Change* summarizes anticipated climate change impacts on the State of California and the East Stanislaus Region, evaluates the impacts of those changes with regard to water resource management, assesses the vulnerability of the region to anticipated climate change impacts, and provides recommended adaptation and mitigation strategies to address uncertainty and reduce GHG emissions. In addition, a plan for ongoing data collection to fill data gaps and monitor the frequency and magnitude of local hydrologic and atmospheric changes is provided.

### Climate Change Impacts

Climate change is adding new uncertainties to already existing challenges in water resources planning within the East Stanislaus IRWM planning region. There is not a widely-diversified water supply portfolio in the region. Water supplies are derived from multiple subbasins of the San Joaquin Valley Groundwater Basin (Modesto and Turlock Subbasins) and primarily from the Tuolumne River. Climate change will impact groundwater and surface water differently, but the Region's vulnerabilities are the same regardless of the source:

- Reduced surface water availability.
- Reduced groundwater supply reliability as a result of reduced groundwater recharge and runoff.
- Potential increase in groundwater overdraft.
- Declining water quality.
- Loss of riparian habitat, wetlands and other sensitive natural communities.
- Reduced hydroelectric generation capacity.

The 2006 *Climate Action Team Report to Governor Schwarzenegger and the California Legislature* examined Intergovernmental Panel on Climate Change (IPCC) data and determined that climate change could affect California in the following ways, among others:

1. Rising sea levels along the California coastline, including the San Francisco and San Joaquin Delta due to ocean expansion.
2. Extreme heat conditions, such as heat waves and high temperatures and associated increases in frequency and duration.
3. A reduction in the snowpack and stream flow from the Sierra Nevada, affecting water supplies.
4. An increase in the severity of winter storms, modifying peak stream flows and flooding.

These changes will occur concurrently with significant population increases. Population in California is expected to increase from 34 million to 59 million people by 2040 (ICF Jones & Stokes,



2009). Historically, cities within the East Stanislaus Region have seen extremely rapid growth, so it is expected the regional population will see more population increases at a fast rate.

The East Stanislaus Region’s vulnerabilities to anticipated climate changes were prioritized based on discussions with the East Stanislaus IRWM Steering Committee (SC) and Public Advisory Committee (PAC) and considering regional understanding and sensitivities and identified regional goals and objectives. The prioritized vulnerabilities for the Region were as follows:

1. Water Supply/ Water Quality
2. Flood Management

Secondary priorities included ecosystems and habitat, water demand, and hydropower. The rationale behind the prioritization acknowledges that, while the groundwater basin appears to be relatively stable, it could easily slip into overdraft conditions, and that additional water supply reductions could induce this condition. Similarly, flooding and flood management is a major issue for the portion of the Region adjacent to the San Joaquin River, and flashier river/stream systems is only going to worsen this condition by creating new flooding conditions at other locations and significantly impacting hydropower operations (as would significant changes in river flows resulting from earlier springtime runoff and/or lower annual flows). Increasing water demands will also make the water supply conditions worse. And finally, while ecosystem and habitat issues are important, they derive from the other issues/vulnerabilities (e.g., water supply and quality, which is exacerbated by demand and flood issues), therefore ranking a lower vulnerability.

### **Climate Change Adaptation and Mitigation**

A prudent approach to addressing climate change incorporates a combination of adaptation and mitigation strategies. Climate adaptation includes strategies (policies, programs or other actions) that bolster resilience in the face of unavoidable climate impacts, while mitigation strategies include best management practices (BMPs) or other measures that are taken to reduce GHG emissions. The same Resource Management Strategies (RMSs) considered for inclusion in the goals and objectives of the Region are revisited here as approaches to diversify water management and as climate change adaptation and mitigation strategies.

Categories of applicable Resource Management Strategies (RMSs), as identified in the 2009 California Water Plan Update, that can be applied as climate change adaptation and mitigation strategies include:

- Reduce Water Demand
- Improve Operational Efficiency and Transfers
- Increase Water Supply
- Improve Water Quality
- Urban Runoff Management
- Practice Resource Stewardship
- Improve Flood Management

Within each RMS category listed above, a variety of specific strategies were identified for the region. For example, reducing water demand can be accomplished through increased agricultural water use efficiency and/or urban water use efficiency. Not all of the RMSs directly apply to climate change adaptation or mitigation, but are directed at overall system resiliency, which improves a system’s resilience to the uncertain conditions climate change could bring.

## Governance, Coordination, and Outreach

The governance structure developed for the East Stanislaus Region helps facilitate sustained regional water management and the associated IRWM processes, both now and into the future. The primary groups composing the East Stanislaus IRWM Region governance structure include the ESRWMP, the official Regional Water Management Group previously described, plus the Steering Committee (SC), the Public Advisory Committee (PAC), and the general public. In the future, additional committees or sub-committees may be formed as the need arises.

ESRWMP	Steering Committee	Public Advisory Committee
<ul style="list-style-type: none"> <li>•Members are a mix of elected officials from the four ESRWMP member agencies</li> <li>•Facilitates communication, cooperation, and education between member agencies</li> <li>•Provides oversight to SC and PAC</li> <li>•Meetings are held, as needed, at the discretion of the group</li> </ul>	<ul style="list-style-type: none"> <li>•Leads preparation and implementation of the IRWMP and future amendments / updates of the Plan</li> <li>•Representatives are those that are actively managing projects from the ESRWMP member agencies</li> <li>•Manages contracts, databases, and reporting</li> <li>•Manages budgets and schedules</li> <li>•Conveys PAC recommendations to the ESRWMP</li> </ul>	<ul style="list-style-type: none"> <li>•A stakeholder committee that provides input and recommendations to the ESRWMP and SC</li> <li>•Comprised of governmental and non-governmental organizations and DACs</li> <li>•First tier of decision making</li> <li>•Provides recommendations for developing project prioritization methodologies to the SC</li> <li>•Helps screen, integrate, and rank projects</li> </ul>

Decisions within the East Stanislaus Region are made using a consensus-based approach as demonstrated by the following examples.

- **Establish IRWM Plan Goals & Objectives.** Issues and Conflicts within the East Stanislaus Region were identified and presented to DWR in East Stanislaus’ Region Acceptance Process application. The SC and PAC jointly developed draft goals and objectives based on the identified Regional issues and conflicts; these are discussed in [Chapter 4](#) of the IRWMP.
- **Prioritize Projects.** A prioritization process was developed for ranking submitted projects based on the degree to which they meet the IRWM Plan goals & objectives, in addition to any other parameters the ESRWMP and committees decide upon. The process developed for this project prioritization is documented in [Chapter 5](#) of the IRWMP.
- **Implement the IRWM Plan.** The SC will be the lead in ensuring the IRWMP is implemented. Based on the MOU signed by each ESRWMP member agency, it is the personnel and financial resources of each member that facilitated the development and implementation of this IRWM Plan. The IRWMP will be implemented through a series of short-term projects and long-term projects and programs.
- **Revise and Update the IRWM plan.** The East Stanislaus IRWMP is a planning tool, and will require updates in response to emerging water management challenges and new project needs and to ensure the Plan appropriately addresses the East Stanislaus Region’s evolving needs. Similar to the implementation of the Plan, the SC will lead the effort to update and revise this Plan, as necessary, while the ESRWMP will provide the staff and financial

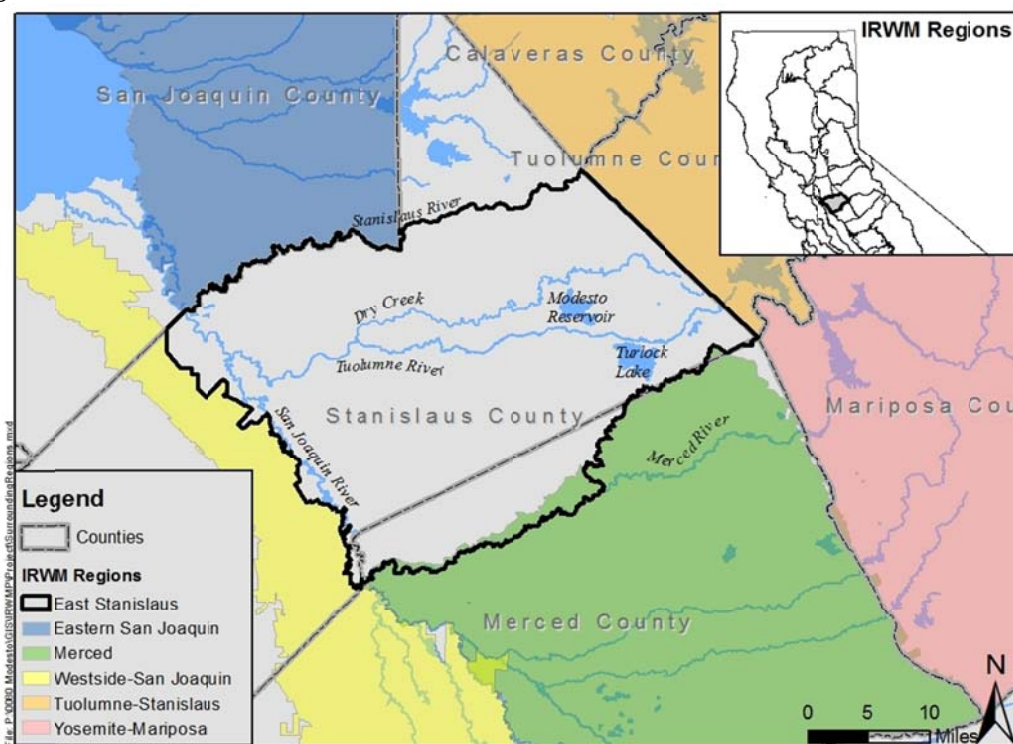
support, as necessary, to achieve this goal. This structure will help ensure the long-term sustainability of the East Stanislaus IRWMP Plan and continual implementation of the Plan into the future. **Chapter 7** of the IRWMP describes the process by which the East Stanislaus IRWMP is managed and updated.

The East Stanislaus Region understands the importance of engaging stakeholders and the general public throughout the water management planning and IRWM process. In October 2011, the SC finalized a Stakeholder Outreach and Communications Plan to specify the identified methodology and approach to ensure the timely dissemination of information associated with preparation and implementation of the East Stanislaus IRWMP to the general public and stakeholders. The Outreach Plan includes identification of goals and objectives specific to public outreach, discussion of targeted outreach to disadvantaged communities (DACs), and methods for inter-regional coordination. The Outreach Plan is included as **Appendix E**. In order to engage stakeholders, including disadvantaged and tribal communities, the East Stanislaus Region conducts various meetings that are open to the public. Other mechanisms used to ensure public awareness of the East Stanislaus IRWM process include the development and distribution of brochures, fact sheets and brief updates. Hard copies are available at meetings and electronic copies are sent to the email distribution list and posted on the Region’s website. The East Stanislaus Region website, found at [www.eaststanirwm.org](http://www.eaststanirwm.org), allows the ESRWMP to disseminate information to a wide audience. The website is regularly updated to maintain current meeting information and past project updates, press releases, meeting materials and other items of interest.

The Region’s governance structure allows for any interested party to participate in the East Stanislaus IRWM planning process. The Region has also begun coordinating with surrounding IRWM regions; the ESRWMP has an ongoing relationship with members of the Westside-San Joaquin IRWM Region in which members of the ESRWMP have attended meetings with the Westside-San Joaquin Region and participated in the planning process. The Tuolumne-Stanislaus and the East Stanislaus Regions have established an interim coordination and communication protocol.

Because development of the East Stanislaus Region is relatively new, relationships with other IRWM regions are in initial stages or have not yet materialized. The ESRWMP plans to discuss water management strategies that have or will be employed by each of the neighboring IRWM Regions to identify opportunities for inter-regional collaboration and to optimize management strategies.

More information can be found in **Chapter 4, ESIRWM Governance, Coordination and Outreach.**



## Vision, Goals, and Objectives

In order for the East Stanislaus Region to effectively manage its water resources, it first identified the regional water resources-related conflicts and issues to be resolved through the IRWMP. The Region then developed a shared vision, outlining what the future of water management will look like for the region. Goals were then developed, defining exactly what the Region would like to achieve in meeting its vision. Finally, objectives were defined for each goal. Each objective was framed to be specific, measurable and attainable, and once achieved, will move the region forward towards achieving its goals, and ultimately, its vision.

Regional conflicts, as well as the goals and objectives, were brainstormed and discussed at several SC and PAC meetings held from September 2011 through December 2011. Each committee revised an initial list of identified regional conflicts and issues; the list was finalized in January 2012. The primary water resources-related issues and conflicts identified within the East Stanislaus Region include:

- Water supply reliability
- Drinking water quality
- Water quality protection
- Groundwater overdraft / contamination / recharge
- Protection and enhancement of aquatic, riparian, and watershed resources
- Water-related needs of disadvantaged communities
- Flood protection
- Recycled water use
- Water conservation
- Aging infrastructure

Identifying the Region's issues and conflicts allowed the SC and PAC to develop goals that, if achieved, would help resolve the issues in the Region and achieve its vision. For example, the committees identified drinking water quality, water quality protection, and groundwater overdraft and contamination as issues in the region. To address these, a water quality-focused goal was developed – *Protect and improve water quality for beneficial uses consistent with regional interests and the Regional Water Quality Control Board (RWQCB) Basin Plan in cooperation with local, state, and federal agencies, and regional stakeholders*. Then, for the identified goal, a number of measurable objectives were developed that would enable the region to determine if the goal is being achieved. Goals were identified in the categories of Water Supply, Flood Protection, Water Quality, Environmental Protection and Enhancement, Regional Communication and Cooperation, and Economic and Social Responsibility. The specific goals, objectives, and associated performance measures to gauge project effectiveness in meeting the goals and objectives are detailed in [Chapter 5, Vision, Goals, and Objectives](#). As discussed later, the objectives were prioritized and weighted by the SC and PAC for application in the project prioritization process.

The East Stanislaus IRWMP also considered Resource Management Strategies (RMSs), Statewide Priorities, and Program Preferences.

After reviewing the identified conflicts and issues, the ESRWMP established a vision for the Region to act as a guiding principal throughout the IRWM planning process and establish what future regional water management will achieve.

The East Stanislaus region's vision for IRWM planning is to: *Integrate projects to provide multiple benefits, resolve identified issues and conflicts, and meet the regional goals and objectives to achieve water reliability and sustainability and flood protection while protecting and enhancing the environment and regional economies and culture.*

As described in the 2009 California Water Plan (CWP) Update, RMSs are a diverse set of strategies to meet the water-related resource management needs of each IRWM region. The ESRWMP considered all of the CWP RMSs for inclusion in the East Stanislaus IRWMP and application in the region; those that were deemed appropriate and applicable were included. A summary of the RMSs, their relevancy to the region, and the ability of achieving the regional objectives through RMS implementation are summarized in [Chapter 5.4, Resource Management Strategies](#). Similarly, Statewide Priorities were incorporated into the IRWMP. These priorities, identified by the State, were included in the Region's project prioritization process.

Statewide Priorities include:

- ◆ Drought Preparedness
- ◆ Use and Reuse Water More Efficiently
- ◆ Climate Change Response Actions
- ◆ Expand Environmental Stewardship
- ◆ Practice Integrated Flood Management
- ◆ Protect Surface Water and Groundwater Quality
- ◆ Improve Tribal Water and Natural Resources
- ◆ Ensure Equitable Distribution of Benefits

### Local Water Planning

Development of the Region's goals and objectives was made possible through local water and land use planning efforts already completed or underway by the participating entities; these efforts provided the needed basis for understanding regional conditions. Historically, there have not been any official IRWM planning efforts in the East Stanislaus Region, but entities within the East Stanislaus Region have worked together on various local water planning efforts and water projects over the years and have maintained ongoing collaborative relationship through groundwater management groups, Directors meetings, and other efforts. Some of the historical water-related planning efforts are project-based, while others are related to a broader discussion of water resources-related issues. Some of the historical local water planning efforts that have laid the foundation for the East Stanislaus IRWMP are described in [Chapter 5.7, Relation to Local Water Planning](#).

Some historical water planning efforts include:

- ◆ Groundwater management planning efforts undertaken by the Turlock Groundwater Basin Association and the Stanislaus and Tuolumne Rivers Groundwater Basin Association
- ◆ Water supply planning projects and studies like the Regional Surface Water Supply Project (underway) and the Modesto Regional Water Treatment Plant, Phases 1 & 2
- ◆ Wastewater-related efforts like the North Valley Regional Recycled Water Program and the Wastewater Regionalization evaluation
- ◆ Salt and nutrient management planning
- ◆ The Central Valley Flood Protection Plan

### Land Use Planning

Land use planning entities in the East Stanislaus Region consist of Stanislaus County, Merced County, the incorporated cities of Modesto, Turlock, Ceres, Hughson, Oakdale, Riverbank, Waterford, the Stanislaus Local Agency Formation Commission, and the Stanislaus Council of Governments. The relationship between the cities and the irrigation districts in Stanislaus County is very good, however, it is recognized that coordination between water managers and land use entities could always be improved. It is the intent of the East Stanislaus IRWM planning process to strengthen coordination among all water and land use planning entities in the Region.

## Projects

*Chapter 6, The Projects* discusses the process used to solicit projects for the East Stanislaus IRWMP, how the projects were reviewed for consistency with the Region's objectives, how they were evaluated with respect to integration, and how they were prioritized. Potential impacts and benefits from project implementation are also considered in this chapter.

- **Project solicitation** is the process by which agencies, organizations, and/or members of the public can submit project concepts for inclusion in the East Stanislaus IRWMP. In order to facilitate project solicitation, a project information form, reviewed and approved by the SC and PAC, was prepared (see [Appendix I](#) for a copy of the form). Additionally, the OPTI system for online project submittal and management was developed and posted on IRWMP website. The OPTI system allows project information to be submitted, reviewed, organized, and regularly updated electronically by the ESRWMP and project proponents. Access to project summaries is available to all interested parties with the intention of improving IRWMP transparency.
- During solicitation, 28 projects were submitted; two of these projects were ultimately combined/integrated. Of the remaining projects, 10 were Concept Projects and 17 were either Preliminary Design Complete Projects or Ready to Proceed (RTP) Projects (see [Appendix J](#) for a summary of projects submitted).
- A **project prioritization process**, developed by the PAC, was used to rank and compare the 17 Preliminary Design Complete and RTP Projects. The project prioritization process implemented using a two-step approach. The first step considered regional goals and objectives, statewide priorities and other relevant factors (such as benefit-cost ratio and multiple benefits). The second step qualitatively considered the relative greenhouse gas (GHG) emissions of the project. The resulting prioritized list of projects reflected the ability of the projects to achieve the Region's goals and objectives, Statewide Priorities and other criteria, while providing a secondary prioritization based on GHG emissions, benefits and/or mitigations.

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### Prioritized Projects

SRWA Regional Surface Water Supply Project

Modesto Area 2 Stormwater to Sanitary Sewer Cross-Connection

Dos Rios Floodplain and Riparian Habitat Restoration

DAC & Native American Outreach and Technical Assistance

Non-Potable Water System

Integrated Stormwater Resources Management and Groundwater Augmentation Plan

Monterey Park Tract

Regional Water Needs Assessment

Municipal Well No. 41

Water Storage Reservoir NW

Dennett Dam Removal

Online Data Management System

Regional County Island Sewer Connection Study

Arsenic Mitigation Project

Regional Surface Water Treatment Plan Pipeline Turnout

Water Well No. 9

7th Street LID Storm Drainage Improvements

Well No. 9 Arsenic Treatment Facility

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During development of the project prioritization process, the SC and PAC applied weighting factors to the scoring criteria which included the categories of Regional Objectives, Statewide Priorities, Other Strategies, and Feasibility. With the Region's vision in mind, the Regional Objectives account

### Weight Factors of Scoring Criteria

Regional Objectives – 50%  
 Statewide Priorities – 25%  
 Other Strategies – 16%  
 Feasibility – 9%

for half of the total weight, as collectively, achieving the region's goals and objectives are at the forefront of successful IRWM planning. Of that, the goals were then weighted individually. The committees agreed that water supply, flood protection, and water quality are major issues that need to be addressed, so each of those categories accounts for 10% of a project's score. Then, environmental protection and enhancement, and regional communication and cooperation each account for 7% of a project's score, and lastly, but still importantly, economic and social responsibility accounts for 6% of a project's score. The planning participants

also felt the achieving the Statewide Priorities, addressing other project aspects (such as readiness to proceed) and project feasibility also merited consideration in project ranking, and assigned relative weights accordingly. The resulting percentages applied to the various project scoring criteria are summarized below. A sample project scoring sheet, also showing the assigned category weights, is included in [Appendix K](#).

Information used to evaluate the submitted projects against the prioritized criteria were provided by project proponents via the project submittal process, as previously described. A Project Review Subcommittee met on July 26, 2012 and applied the scoring criteria (both primary and secondary) to the projects submitted. The results of this prioritization process are included in [Appendix P](#) for the scoring process.

### Impacts and Benefits

The East Stanislaus IRWM partners and stakeholders recognize the importance of pursuing and integrating multiple resource management strategies to achieve the greatest and most equitable benefit for the region. Through implementation of this IRWM Plan, regional and localized benefits will be realized and potential impacts addressed. [Chapter 6.2, Impacts and Benefits](#) provides an overview of potential benefits and impacts that may result from implementation of projects or programs included in the East Stanislaus IRWM Plan. Benefits provided by project implementation include, but are not limited to: increased groundwater storage/recharge, improved water supply reliability, improved water quality, reduced land subsidence, local prosperity, long-term sustainability of water supplies, increased public education and environmental awareness, increased nutrients for landscape irrigation, potable water offsets, flood control enhancement, increased recycled water use, habitat protection, restoration, and enhancement, and more.

Implementation of East Stanislaus IRWM Plan will lead to numerous benefits including:

- A more reliable and high quality water supply.
- Cost-effective and multi-beneficial projects.
- Shared experience and resources.
- Increased regional understanding.
- Improved local understanding of water resources issues.

Potential impacts of implementation of the East Stanislaus IRWM Plan could include a variety of temporary construction-related impacts during project construction, including dust, noise, and traffic generation. Other impacts may include increased costs associated with water infrastructure financing. Additional impacts may be identified on a project-by-project basis during CEQA or NEPA analyses.

## Technical Analysis and Data Management

*Chapter 7, Technical Analysis and Data Management* is intended to ensure the efficient and effective use of available data in developing and implementing the East Stanislaus IRWMP, as well as to describe stakeholder access to data and how data generated by IRWM implementation activities can be integrated into existing State databases.

### Technical Analysis

The East Stanislaus IRWMP was developed using sound technical information, analyses, and methods. Information, documents, and studies were collected from various sources including the cities of Modesto, Turlock, Ceres, and Hughson, the Central Valley Regional Water Quality Control Board, Stanislaus County, and the DWR. Multiple local water planning and land use documents were reviewed and used to prepare the East Stanislaus IRWMP. These include Urban Water Management Plans, Water Supply Master Plans, project Environmental Impact Reports/Environmental Impact Statements, General Plans and feasibility studies. Additionally, specialized studies, such as those evaluating potential future climate change impacts in the Central Valley, were reviewed and used to prepare specific plan sections. Some of the key documents used in the East Stanislaus IRWM planning process are summarized in *Chapter 7.1, Technical Analysis*.

Projects included in the East Stanislaus IRWMP have also been found to be technically feasible based on similar projects, pilot studies, technical analyses, benefit analyses, cost estimating, modeling and simulation efforts and data assessments by the project proponents, local planners, and the IRWM planning participating entities. As the projects move closer to design and implementation, technical analyses will be conducted to confirm project feasibility and to provide any necessary feedback to modify the project's plan to improve its likelihood of success.

Beyond the analyses required to prepare the IRWMP, no additional focused models or studies were performed in support of Plan preparation. Proposed future focused studies include:

- ◆ Regional water needs assessment
- ◆ County island sewer connection study
- ◆ Integrated stormwater resources plan.

These studies, once implemented, will help the ESRWMP fill identified data gaps in regional understanding.

### Data Management

Data management is an important aspect to IRWM planning because the process encompasses multiple water and wastewater agency service areas, various watersheds, political areas, and groundwater basins, and provides the foundation on which water resource management and planning decisions are made. On a regional basis, this data management includes multiple data sources and a variety of methods for data collection, processing and management. Additionally, the IRWM planning process itself generates significant amounts of data related to the project review process and implementation of the IRWMP, such as project and Plan performance monitoring data. As such, development of a comprehensive data management system is ideal to promote the efficient and effective use of data. At present, the Region will use existing, industry-standard data collection and management procedures for implementation of IRWMP-related projects. Modification to these procedures and/or databases may occur as a result of the development of a region-wide data management system in order to ensure consistency with this new regional database once it is established. The types of data to be collected and anticipated collection and storage procedures are presented in *Chapter 7.2, Data Management*.



## Plan Implementation

For the East Stanislaus IRWMP to be successful, projects included in the Plan must continue to move forward with planning, design, permitting, environmental documentation, construction and ultimately operation. Implementation of projects and programs included in the IRWMP will help the Region achieve its identified regional goals and objectives and will contribute to solutions to address issues and conflicts in the region. The process the East Stanislaus Region will apply for IRWMP implementation is described in [Chapter 8, Plan Implementation](#).

*Implementing the East Stanislaus IRWMP consists of:*

- *Implementing projects and programs included in the IRWMP.*
- *Monitoring projects and programs included in the Plan to ensure they are meeting their goals and objectives and contributing to the East Stanislaus regional objectives.*
- *Regularly evaluating progress made in achieving regional goals*
- *Periodic updates to the IRWMP to ensure that Plan is on track to achieve regional goals.*

### **Financing**

Because the East Stanislaus IRWMP is a living document and will require implementation and updates in the future, and because there are projects included in the Plan that will be implemented to achieve the region's goals and objectives, a financing plan is necessary to help ensure funding sources are available to do so. Additionally, as projects are implemented, not only is funding necessary for capital costs, but also for ongoing operation and maintenance (O&M) of the projects. Typically, potential funding sources for IRWMP development and updates, project implementation, O&M costs are the same. These include, but are not limited to:

- Capacity fees
- User fees and rates
- General or Capital Improvement Funds
- Bonded Debt Service
- Grants
- Low-Interest Loans

[Chapter 8.2, Financing Plan](#) describes these sources and the certainty and longevity associated with each.

### **Plan Performance and Monitoring**

Plan performance and monitoring is vital in IRWM planning as it helps a region determine if implementation of its IRWMP is contributing to meeting its identified goals and objectives. Measuring the success of Plan implementation is directly related to IRWMP project implementation, and therefore, the monitoring required as part of the East Stanislaus IRWMP implementation will evaluate both project-specific performance in meeting project goals and the success of the overall IRWMP implementation in meeting the Region's goals and objectives.

Individual project proponents implementing projects through the East Stanislaus IRWMP will be responsible for collecting data in accordance with approved project-specific monitoring plans and submitting that data to appropriate statewide databases. Monitoring the East Stanislaus Plan

performance will be based on the results of project-specific performance monitoring, and cumulatively will help ensure:

- The Region is making progress towards meeting the goals and objectives as specified in the IRWM Plan.
- Projects included in the East Stanislaus IRWMP are being implemented.
- Each project in the IRWM Plan is monitored to comply with all applicable rules, laws, and permit requirements.

Project-specific monitoring plans will be prepared and implemented by the project proponents for projects that are implemented as part of the East Stanislaus IRWMP (i.e. projects funded through the IRWM grant program).

### **Plan Updates**

The East Stanislaus IRWMP is meant to be a living document and will therefore be updated periodically to reflect changing conditions such as population growth and climate change, as well as project implementation in the Region. The Region's needs will undoubtedly change in the future, and as they do, regional objectives must be re-evaluated and new, applicable regional solutions identified.

On an annual basis, the Plan implementation will be assessed as to its performance in achieving the identified regional objectives and a memorandum prepared summarizing that assessment. Further, the ESRWMP will update the East Stanislaus IRWMP when deemed appropriate; this could be when one or more of the following criteria are met:

- Five years since the last Plan adoption.
- DWR updates its IRWM Plan Guidelines and associated Plan Standards.
- DWR releases a Proposal Solicitation Package (PSP) for IRWM implementation grants.
- Project and plan monitoring have occurred leading to the identification of needed revisions to the East Stanislaus IRWMP or projects included in the Plan.

The prioritized project list, contained in the appendices of the IRWMP, will be revised, at a minimum, on an annual basis, for the first 5 years. After 5 years, the project list will be updated every 2 years. The revised project list will be vetted by the ESRWMP among regional stakeholders following updating, and upon receiving consensus, will substitute the updated project list for the current list. No formal plan adoption or re-adoption will be required for project list updating. The long-term maintenance activities to be conducted for the East Stanislaus IRWMP are summarized in the following table; the frequencies identified for each activity are minimum frequencies.

<b>Activity</b>	<b>Frequency</b>
ESRWMP Meetings (financing, regional water resources issues, other)	Quarterly
Project Solicitation, Review, Integration and Prioritization	Annually
Plan and Project Monitoring and Performance	Annually
IRWM Plan Review and Update	Every 5 years
Outreach	Quarterly

## Acronyms and References

### Acronyms

AFY	Acre-feet per year
BMPs	Best Management Practices
CVP	Central Valley Project
CWP	California Water Plan
DACs	Disadvantaged Communities
DWR	California Department of Water Resources
ESRWMP	East Stanislaus Regional Water Management Partnership
GHGs	Greenhouse gases
IPCC	Intergovernmental Panel on Climate Change
IRWMP	Integrated Regional Water Management Plan
MHI	Median Household Income
O&M	Operation and maintenance
PAC	Public Advisory Committee
PSP	Proposal Solicitation Package
RAP	Region Acceptance Process
RMS	Resource Management Strategies
RTP	Ready to Proceed
RWQCB	Regional Water Quality Control Board
SC	Steering Committee

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Prepared by:



2001 n. Main Street, Suite 400  
Walnut Creek, CA 94596

925.627.4100 T  
[www.rmewater.com](http://www.rmewater.com)

