

# Executive Summary

This *Integrated Regional Water Management Plan* (IRWM Plan) defines a clear vision for the management of water resources in the Westside Sacramento Region (Region) and highlights important actions needed to help accomplish that vision through the year 2035. This Westside IRWM Plan complies with the *Integrated Regional Water Management Guidelines for Proposition 84 and 1E* published by the California Department of Water Resources (DWR) in November 2012. Financial assistance from DWR and contributions from the Regional Water Management Group funded the development of this Plan.

Proposition 84 identified watershed-based funding areas throughout the state, with the Westside Region being a part of the Sacramento River Funding Area. Each Funding Area is allocated, based on population, a portion of the \$1 billion approved by the voters under Proposition 84 in 2006. Predecessor bonds, including Propositions 13 and 50, also provided incentives for development of IRWM Plans. DWR designed the IRWM planning process to be consistent with the *California Water Plan*, a statewide water resources planning document updated periodically, and DWR intends that IRWM Plans and future updates of the *California Water Plan* be integrated further in the future.

## 1.1 Introduction (Section 1)

The information contained within this IRWM Plan provides an opportunity for more than 70 water supply, land use management, flood management, and ecosystem-focused organizations operating within the Region to accomplish more than they could accomplish individually. The array of goals, objectives, selected resource management strategies, and high-priority projects represent a collective view of how to improve integrated water management throughout the Region. The Plan establishes a clear path forward both to increase the collective understanding of integrated water management throughout the Region and to respond collaboratively to the challenges of managing water and associated natural resources. If this integrated planning effort has been successful, this IRWM Plan will be a dynamic and useful planning tool for the Region. While it does not provide discretionary approval for any given project, it does provide a framework to improve understand

ing and take high-priority actions to address the major water-related challenges and opportunities facing the Region through 2035.

To represent the Region, four agencies and an association of agencies formed the Regional Water Management Group (RWMG) through a *Memorandum of Understanding* (MOU). The RWMG includes Lake County Watershed Protection District (WPD), Napa County Flood Control and Water Conservation District (FC&WCD), Colusa County Resource Conservation District (RCD), Solano County Water Agency (SCWA), and Water Resource Association (WRA) of Yolo County. The Westside RWMG satisfies the requirements of such an entity per the California Water Code (CWC) Section 10539. The participating agencies and association joined together to develop this IRWM Plan that:

- Foster[s] coordination, collaboration, and communication among entities responsible for water-related issues and interested stakeholders to achieve greater efficiencies, provide for integration of projects, enhance public services, and build public support for vital projects; and
- Facilitates regional cooperation in providing water-supply reliability, water recycling, water conservation, water-quality improvement, stormwater capture and management, flood management, wetlands enhancement and creation, and environmental and habitat protection and improvements, and other elements...

The RWMG appointed a Regional Coordinating Committee (CC) to guide development of and support implementation of the Plan. The CC consists of one staff representative and an alternate appointed from each of the agencies and association that make up the RWMG.

The collective vision presented in this Plan aims to address the major challenges and opportunities related to managing water and associated natural resources within the Region. The numerous and complex challenges and opportunities addressed in this Plan are captured in the following primary focal points:

- Continue to provide safe and reliable water supplies for a variety of uses.

- Improve habitat and ecosystem health (including the monumental challenge of addressing effects caused by numerous invasive species).
- Manage a wide array of risks including public health, fire, flood, and potential disruptions to institutional services.
- Sustain and modernize water supply, water quality, and flood management infrastructure.
- Address many significant and long-standing water quality concerns.
- Foster the reasonable use of water and associated natural resources within the Region through the adoption of evolving technologies and best management practices.
- Further the collective understanding of watershed functions and groundwater basins.
- Improve education and awareness among citizens about the importance of sustainable water and natural resources management, and the crucial roles citizens play.
- Improve opportunities for water-based recreation.
- Surface water bodies: Clear Lake, Lake Berryessa, and Indian Valley Reservoir; and
- Major water-related infrastructure: Monticello Dam, Indian Valley Dam, Cache Creek Dam, and Capay Diversion Dam.

The lakes, creeks, wetlands, sloughs, Delta, and other water features of the Region provide key habitat for many of California's most important fish and wildlife species. The Region encompasses the service areas (or partial service areas) of multiple local agencies, including more than 90 entities with water and related resource management responsibilities.

Approximately 390,000 people live within the Region today, with the majority of the Upper Cache and portions of the Valley Floor Planning Area meeting the definition of a disadvantaged community (DAC). Much of the valley area lands support significant agricultural activities. Even so, the vast majority of the land within the Region remains undeveloped. The communities throughout the Region value preservation of these open spaces and agricultural lands. In addition, many residents both inside and outside the Region demonstrate interest in restoring elements of the Region's historical environmental function.

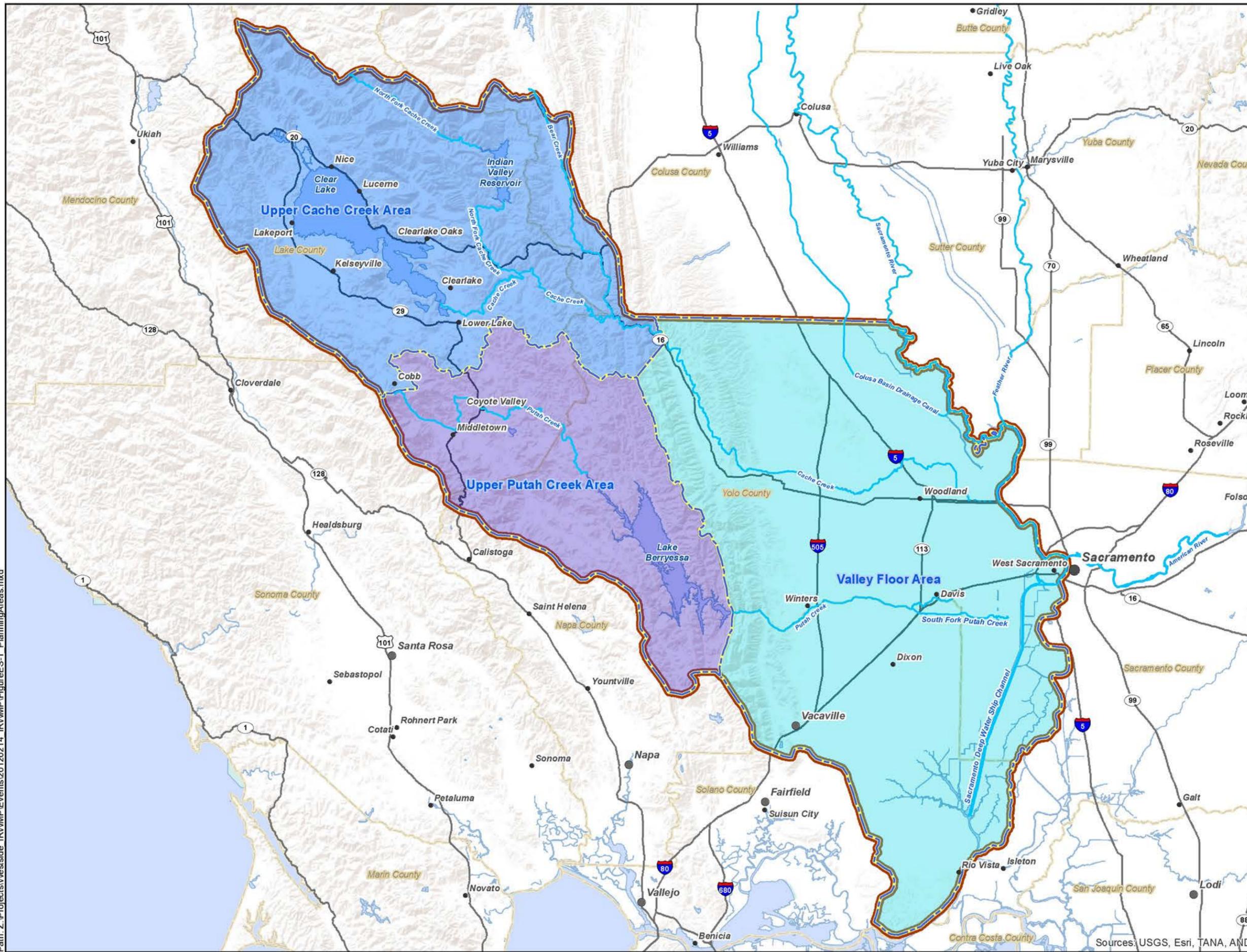
## 1.2 The Westside Region (Section 2)

The Westside Region is vast and encompasses approximately 3,000 square miles, from the Coastal mountain range in the west to the Sacramento River and Sacramento-San Joaquin River Delta on the south and east. The Region includes all of Yolo County and portions of Lake, Napa, Solano, and Colusa Counties that are within the Cache Creek and Putah Creek watersheds. Major communities within the Region include the cities of Clearlake, Davis, UC Davis, Dixon, Lakeport, Rio Vista, Vacaville, West Sacramento, and Woodland. The Westside Region includes the two principal watersheds of Putah and Cache Creeks and other areas of land in the northern portion of Yolo and Solano Counties, as shown on Figure ES-1 on the following page. Figure ES-1 also shows the 3 Planning Areas delineated for the purposes of technical analysis which include the Upper Cache Creek, Upper Putah Creek and Valley Floor Planning Areas. This Region includes areas that share many common water supply sources and groundwater basin interconnections including the following features:

## 1.3 Existing and Future Conditions (Section 3)

Section 3 provides an overview of the existing and expected future conditions for the Region that are relevant to creating an IRWM Plan. The description includes information about key water management infrastructure (both constructed and naturally occurring), summarizes and presents important data, introduces some of the major challenges, and offers observations about the current water management system based on available data. The information is organized and presented as it relates to the topics of water quantity, water quality, flood protection, environmental resources, and the potential affects from climate change.

A region the size of Westside Sacramento is extremely complex and the operational aspects of managing water and the associated infrastructure and other resources within the Region require extensive knowledge of many important details. The amount of data and information related to water management that one could consider across the Region can be overwhelming. In keeping with the

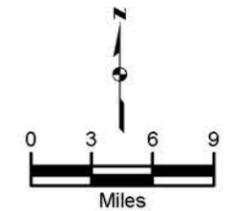


**Legend**

- Cities
- County Boundaries
- Westside Region
- Streams
- Projected Flow Pathway
- Water Bodies

**Planning Areas**

- Upper Cache Creek Area
- Upper Putah Creek Area
- Valley Floor Area



Kennedy/Jenks Consultants



**Planning Areas**

K/J 1170019.00  
June, 2013

**Figure ES-1**

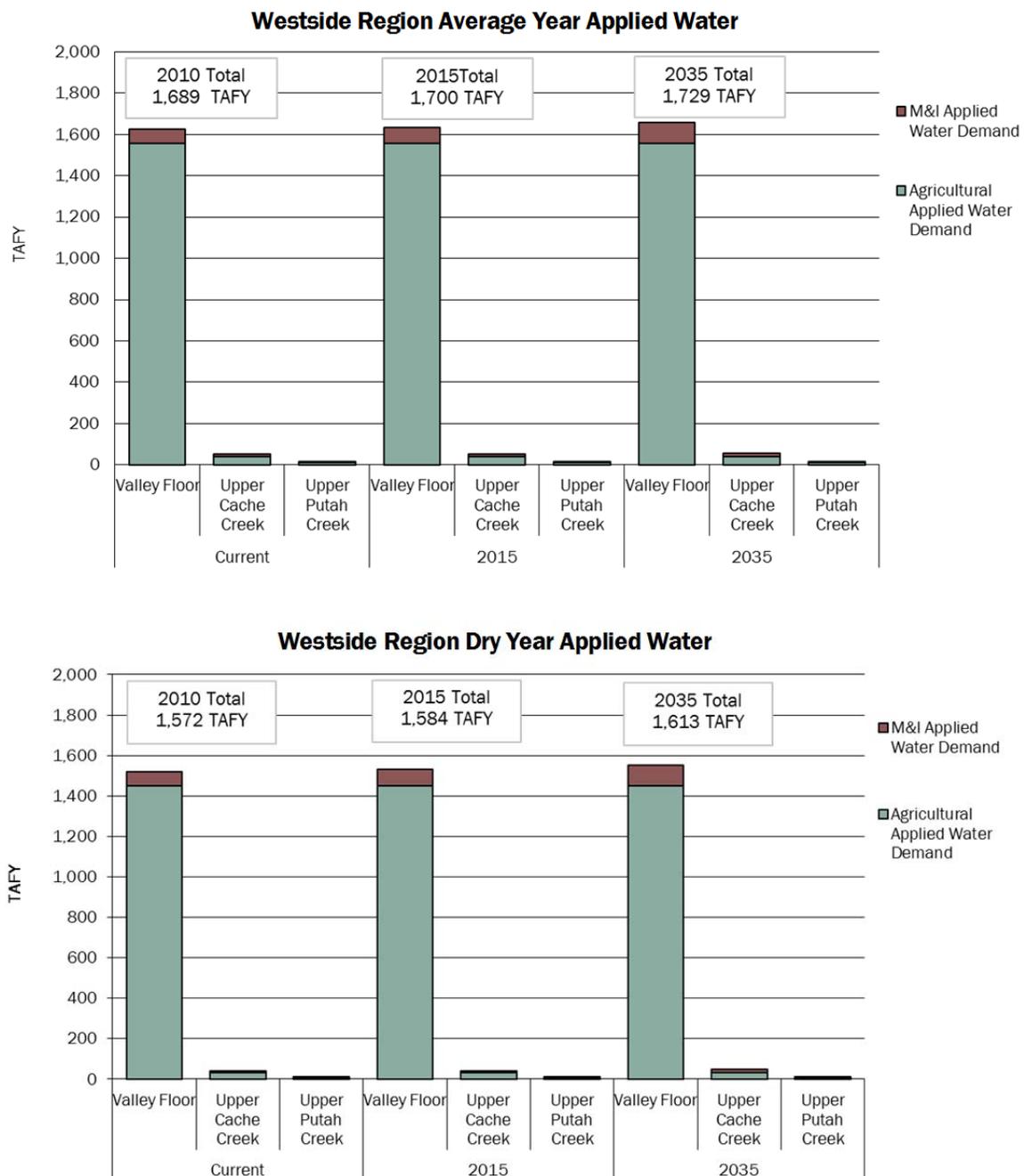
Sources: USGS, Esri, TANA, AND

goals for the IRWM planning process, strategic information is presented in this section in a synthesized way designed to help promote understanding and support decision makers and stakeholders to work together more effectively in ways that benefit the Region as a whole.

Some key points specific to the Westside Region presented in Section 3 include:

- As shown on Figure ES-2, the region uses about 1.5 million acre-feet per year (AFY) of water in an average year and about 1.7 million AFY in a dry year. Agriculture is estimated to use about 94 percent of the water in the Region on an average annual basis with 96 percent of all water used in the Region occurring in the Valley Floor Planning Area.

**Figure ES-2: Current and Future Water Demands**



- Surface water accounts for approximately 66 percent of the water used in an average year in the Region. Much of the Region also has access to groundwater allowing conjunctive management of surface water and groundwater sources for increased reliability and resilience to drought and climate change. However, those areas reliant on a single source of supply are at risk for shortages.
- Key water quality concerns center around mercury primarily in the Upper Cache Creek Planning Area and nutrients in Clear Lake; total maximum daily loads (TMDLs) have been developed for several water bodies for these constituents. Groundwater quality concerns include arsenic, boron, chromium, iron, manganese, and selenium.
- Several locations within the Region are susceptible to flood, namely the upper lake area of Clear Lake and the areas adjacent to the Sacramento River in the Valley Floor Planning Area.
- The proximity of the Westside Region to the Sacramento-San Joaquin River Delta (Delta) necessitates consideration of the myriad environmental, water quality, and flow concerns associated with Delta restoration. In addition, restoration of the Clear Lake hitch, a native fish unique to Clear Lake and management of invasive species are other significant concerns.

## 1.4 Water and Land Use Planning (Section 4)

Water management and land use are inherently linked in that the activities and processes that occur on the land directly affect the use and movement of water within a watershed. These linkages between land use and the hydrologic cycle, and similarly between water management and the ability to support particular land uses, are important to consider when making decisions about either land or water. DWR recognizes these linkages and requires that IRWM Plans describe the relationships and interactions between regional planning efforts fostered by the Regional Water Management Group and local water planning and local land use planning. Section 4 describes how land use planning and decision making are coordinated with water management planning and implementation within the Region and highlights opportunities for improved coordination particularly in the areas of improved collaboration with federal and state land management agencies and flood management.

## 1.5 Challenges and Opportunities (Section 5)

A region the size of Westside Sacramento is extremely complex and challenging. Managing the operational aspects of water and the associated infrastructure and other resources within the Region requires extensive knowledge of many important details, and presents several water-related challenges and opportunities. These challenges and opportunities were identified through multiple conversations with resource managers and other stakeholders and were informed by the information presented in Sections 2 - 4 of this Plan. The term "challenges and opportunities" is used to mean the water-related items of interest or concern within the Region. The challenges and opportunities identified include:

### Improve Education and Awareness

Raising citizens' awareness of their role in sustaining the Region's water and natural resources will be vital. Many individuals and organizations throughout the Region who are interested in water resources management are already engaged in efforts that support the work of water management entities; however, this is not enough to satisfy the objectives in this IRWM Plan. Fulfilling the vision for integrated water management presented in this Plan will require more education for and broader participation of residents within the Region.



### Improve Habitat and Ecosystem Health

The Region contains habitats for a broad range of terrestrial and aquatic, state and federally recognized special-status species. In particular, aquatic species specific to the Sacramento-San Joaquin River Delta

and vernal pools, such as Delta smelt, vernal pool fairy shrimp, and steelhead, have led to ongoing preparation of habitat conservation plans by several counties in the Region as well as the California Natural Resource Agency's Bay Delta Conservation Plan.

In addition, a number of aquatic/riparian invasive plants and animal species either already occur or pose a significant threat to the Region. Invasive animal species occurring in the Region include New Zealand mud snails (currently confined to Putah Creek). Dreissenid mussels, such as quagga and zebra mussels, have not yet been found in the Region. However, because of their presence in nearby watersheds, the threat of infestation is real and the potential consequences daunting. Regional resource management agencies have already initiated activities to prevent the introduction of these mussels to the Region, but more must be done. Several invasive plant species, including *Arundo donax* (giant reed), water hyacinth, Eurasian milfoil, and reynou grass, already cause significant negative impacts in the Region.

### Provide Safe and Reliable Water Supplies

Water is used within the Region predominantly for agricultural irrigation. Municipal and industrial (M&I) use is small relative to agricultural use but vital, because it supports a number of local communities. Although some population growth is expected throughout the Region between now and 2035, agriculture is expected to remain the dominant water use into the foreseeable future.

Existing water supplies within the Region are generally sufficient to fulfill the current M&I and agricultural demands during an average water year. However, in dry years, decreased surface water availability could create negative effects for agricultural and municipal users alike. In years with decreased surface water supply, many agricultural users convert to more expensive groundwater or fallow their land for that year. Some municipal suppliers could experience occasional short-term shortages and might be required to use alternative supplies under the driest of expected conditions. This IRWM Plan includes objectives and numerous strategies to maintain or increase the reliability of water supplies for agricultural and municipal users within the Region.

Many water users rely on conjunctive water management (meaning the strategic and coordinated use of a variety of surface and groundwater sources),

which will be essential to the sustainability of a reliable water supply in the future. The water-supply portfolio for the Region is diverse and includes the following primary sources: Lake Berryessa supplied by Upper Putah Creek; Clear Lake and Indian Valley Reservoir in Upper Cache Creek; State Water Project (SWP); Central Valley Project (CVP); Sacramento River; and multiple groundwater aquifers.

Groundwater supplies have been relatively stable, especially in the eastern portion of the Region, since historical groundwater overdraft was corrected with the construction of Monticello Dam on Upper Putah Creek and Indian Valley Dam on the North Fork of Cache Creek. These dams created Lake Berryessa and Indian Valley Reservoir, respectively, which substantially increased conjunctive use of surface water and groundwater throughout Yolo and Solano Counties. Some areas that still rely solely on groundwater occasionally experience the effects of periodic overdraft and subsidence, both of which may occur after multiple years of drought conditions. An improved understanding of the interconnections between the watersheds and groundwater basins of the Region may lead to additional conjunctive water management opportunities on a regional level.



### Sustain and Modernize Infrastructure

The water management system within the Region includes a wide array of infrastructure, such as dams, canals, distribution systems, treatment systems, groundwater wells and pumps, and levees. As the infrastructure ages, the risks of disruption or damage increase. Maintaining, modernizing, and improving this extensive infrastructure to continue to provide the expected level of service will require significant investment and effort over the next 20 years.

## Foster Reasonable Use

The growing number of water-related conflicts within California, in particular related to the Sacramento-San Joaquin Delta, increase expectations to foster the reasonable use of water and promote environmental and natural resource stewardship within all regions of California. This IRWM Plan addresses opportunities to increase the wise use of water within the Region and explores ways to reduce negative impacts related to human water use and waterway management.

## Manage Risks

Citizens within the Region face a number of other water-related risks that must be managed, including public health hazards associated with water quality and water-borne pathogens; flood hazards; fires; and other potential disruptions to water supply availability. Flood hazards pose a significant challenge for certain areas within the Region, specifically the tributaries to and lakefront areas of Clear Lake, as well as the floodplains of the Sacramento River.

## Further Collective Understanding of Watersheds and Aquifers

As human activities related to water resources in the Region and demands on these resources continue to increase, a more robust understanding of the functions of the watersheds and groundwater basins becomes more crucial. This IRWM Plan summarizes much of what is known about the natural and constructed water management systems within the Region and identifies areas where additional investments to improve understanding are important.

## Address Water Quality Concerns

The protection and improvement of water quality is essential to both human health and aquatic ecosystem function. Surface water quality within the Region can affect the cost of providing safe drinking water, and it directly impacts ecosystem function. Issues such as mercury contamination, cyanobacteria management, long-term groundwater quality degradation, and other surface water quality concerns are addressed in this IRWM Plan. Groundwater quality varies throughout the Region and among different aquifer formations. Groundwater quality can affect managers' ability to meet wastewater discharge requirements in the future. Some agencies that currently rely on groundwater for drinking water supplies are working

to develop surface water supplies to help address these concerns.

## Improve Opportunities for Recreation

Finally, the lakes and streams in the Region support an array of water-based recreation including fishing, swimming, water skiing, sailing, boating, jet skiing, and white-water sports. These recreational opportunities are enjoyed by both residents of and visitors to the Region. Protecting the Region's waterways to maintain and improve recreational opportunities is important to the quality of life for residents and the economic vitality of the Region.

# 1.6 Goals and Objectives (Section 6)

The goals and objectives presented in this section represent the foundational intent of this IRWM Plan. Formulating meaningful and relevant goals and objectives for the Westside Sacramento Region required more collaboration and collective interaction than any other topic of this Plan. Section 6 presents the goals and objectives and describes how they were developed. Within this Plan, the term "goal" is used to mean a desired outcome or result for which effort will be made to accomplish it. In contrast, the term "objective" is used to mean a specific and tangible outcome that is intended to be achieved by or during a designated time.

The plan goals are listed alphabetically below:

1. Acknowledge and respect the cultural values and resources of the Region.
2. Improve education and awareness throughout the Region about water, watershed functions, and ecosystems and the need for sustainable resource management to protect community health and well-being.
3. Improve the collective understanding of watershed characteristics and functions (natural and human-induced) within the Region as needed to respond effectively to evolving water resources management challenges and opportunities (e.g., climate change).
4. Improve the form and function of degraded natural channels.
5. Improve water-related public health across the Region and emphasize improvements for populations most in need.

6. Preserve and enhance water-related recreational opportunities.
7. Preserve, improve, and manage water quality to meet designated beneficial uses for all water bodies within the Region.
8. Promote reasonable use of water and watershed resources.
9. Protect and enhance habitat and biological diversity of native and migratory species.
10. Provide reliable water supplies of suitable quality for multiple beneficial uses (e.g., urban, agriculture, environmental, and recreation) within the region.
11. Reduce the risks of disruptive natural and human-caused disturbances affecting the region’s water resources, including flooding, fire,

and significant institutional interruptions that reduce resources management services.

12. Support improved regional water management through governance throughout the Region that uses science and collaboration to make fair and equitable decisions and investments.
13. Support sustainable economic activities consistent with local and state government planning efforts within the region.

The following table ES-1 presents the Plan Objectives. Each objective was prioritized by assigning it an “importance” and “urgency” priority and linked to one or more of the goals as shown. Section 6 provides a description of the quantitative and/or qualitative measurements that will be used to track completion of the objectives.

**Table ES-1: Summary of Objectives**

Summary of Objective		Importance*	Urgency**	Plan Goals
<b>Education and Awareness Focus</b>				
1	Provide and promote use of educational curricula for K-12 students designed to increase awareness of watershed and resource stewardship and how individual stewardship relates to community health and well-being, for K-12 students from July 2013 through the planning period.	Medium	Low	2, 3, 8, 12
2	Provide educational information for the adult population designed to increase awareness of watershed and resource stewardship and how individual stewardship relates to community health and well-being within the Region, from July 2013 through the planning period.	Medium	Low	2, 3, 8, 12
<b>Habitat Focus</b>				
3	Restore native vegetation and form and function along riparian corridors, canals, and other aquatic sites throughout the Region through 2035 to provide stream shading, habitat enhancement, and increased biological diversity.	Medium	Medium	1, 4, 6, 9
4	Quantify the extent of suitable life-cycle habitat currently accessible to Threatened/Endangered/Imperiled (T/E/I) native fish within the Region by December 31, 2014.	High	Medium	3, 6, 9, 12
5	Prioritize, plan, and schedule improvements in suitable life-cycle habitat accessible to T/E/I native fish within the Region by December 31, 2015.	High	Medium	3, 6, 9, 12
6	Increase availability of suitable life-cycle habitat for T/E/I native fish identified by Objective 5.	High	Medium	4, 6, 9

Summary of Objective		Importance*	Urgency**	Plan Goals
7	Prevent colonization of any regional water body by quagga mussels or zebra mussels and eliminate or prevent the spread of New Zealand mud snails from Putah Creek during the planning period.	High	High	6, 9, 10, 13
8	Establish an invasive plant management plan (including specific and measurable targeted outcomes for species of concern and a schedule to accomplish target outcomes) for the entire Region by December 31, 2015.	High	High	3, 4, 6, 9, 11, 12
9	Implement programs and projects to meet the outcomes defined in the invasive plant management plan developed through Objective 8 (according to the schedule provided in that plan).	Medium	Medium	4, 6, 9, 11
<b>Infrastructure Focus</b>				
10	Create an asset management plan for key water management infrastructure within the Region consistent with the guidance provided in the International Infrastructure Management Manual, by December 31, 2015.	Medium	Low	2, 3, 7, 10, 11, 12, 13
<b>Reasonable Use Focus</b>				
11	Meet 20% by 2020 statewide water conservation targets by December 31, 2020.	Medium	Medium	8, 10, 13
12	Increase adoption of locally cost-effective agricultural BMPs throughout the planning period.	Medium	Medium	4, 7, 8, 10, 13
<b>Recreation Focus</b>				
13	Maintain and increase water-related recreational opportunities within the Region throughout the planning period.	Medium	Low	6, 13
<b>Risk Management Focus</b>				
14	Provide adequate flood protection for all urban and rural areas within the region by December 31, 2050.	High	Medium	4, 5, 11, 13
15	Manage watershed activities and conditions to reduce the risk of large erosion events that could increase undesirable sediment loading to water bodies throughout the planning period.	Medium	Medium	4, 6, 7, 8, 11
<b>Understand Watershed Function Focus</b>				
16	Monitor planning of state and federal water-related projects and programs in the Delta and estimate potential local impacts throughout the planning period.	Medium	High	3, 12
17	Monitor conditions and improve understanding to support sustainable use of groundwater basins within the Region as an important part of water supply throughout the planning period.	High	Low	3, 7, 10, 12, 13
18	Maintain and enhance monitoring network and information sharing to support management of watersheds and natural resources within the Region throughout the planning period.	High	Medium	2, 3, 7, 10, 11, 12, 13

Summary of Objective		Importance*	Urgency**	Plan Goals
<b>Water Quality Focus</b>				
19	Address pollutant sources to meet runoff standards and satisfy targets as described in specific TMDLs within the Region throughout the planning period.	High	Medium	5, 6, 7, 9
20	Minimize accidental spillage/discharges of wastewater to receiving waters throughout the planning period.	Medium	Medium	5, 6, 7, 9, 13
21	Reduce public health risks by reducing contaminants of concern in drinking water sources throughout the planning period.	Medium	Medium	3, 7, 10, 13
22	Meet all drinking water and wastewater discharge standards within the region throughout the planning period.	High	High	5, 6, 7, 9, 13
<b>Water Supply Focus</b>				
23	Provide 100% reliability of M&I water supplies of appropriate quality to meet forecasted demands within the Region throughout the planning period.	High	Medium	1, 7, 10, 13
24	Provide agricultural water supplies of appropriate quality to support a robust agricultural industry within the Region throughout the planning period.	High	Medium	1, 10, 13

\* The “importance” assigned to each objective reflects the significance or consequence to the Region of satisfying this objective compared with other objectives.

\*\* The “urgency” assigned to each objective reflects the degree to which this objective warrants speedy attention or action compared with other objectives.

Section 6 also discusses Climate Change Vulnerabilities which were prioritized relative to their relative linkage to Plan objectives. Some high priority Climate Change Vulnerabilities discussed in Section 6 include:

- 1.4: Groundwater supplies in parts of the Region lack resiliency after drought events.
- 2.6: The Region has invasive species management issues at facilities, conveyance structures or in habitat areas.
- 3.2, 3.3, 3.4: Water quality impacts such as algal blooms related to eutrophication, inability to meet beneficial uses, and vulnerability to water quality shifts during rain events occur in the Region.
- 4.5: A portion of the Region floods at extreme high tides or storm surges.
- 5.1, 5.2, 5.3, 5.4: The Region has critical, aging, infrastructure within the 200-year flood plain, some of which lies within the Sacramento-San Joaquin Drainage District and flood control facilities have been insufficient in the past.
- 6.1, 6.2, 6.3, 6.4, 6.6, 6.8: The Region includes: inland aquatic habitats vulnerable to erosion and sedimentation, estuarine habitats, including the Delta, which rely on freshwater flow, climate sensitive fauna or flora, and endangered and threatened species, and quantified environmental flows or stressors to aquatic life.



PHOTO: COLUSA COUNTY RCD

**Invasive Tamarisk in Bear Creek**

## 1.7 Resource Management Strategies (Section 7)

The Goals and Objectives for the Westside IRWM Plan presented in Section 6 describe the foundational intent of the Plan. The Plan goals represent broad focus areas for water management actions in the Region, and Plan objectives describe specific outcomes that, when achieved, will improve water-related conditions in the Region. Accomplishing these goals and objectives will require that resource managers and other stakeholders implement a variety of water management actions. Those actions could include projects, programs, or policies designed to help agencies and local governments

manage water and related resources. DWR refers to these types of projects, programs, or policies as resource management strategies (RMS). A broad list of resource management strategies were identified in the California Water Plan Update 2009 and must be considered for applicability in an IRWM Plan.

The California Water Plan Update 2009 groups RMS into six management outcomes. Table ES-2 provides a summary of the management outcomes and RMS that are described in Section 7 of the Plan. RMS that were determined to be applicable to the Westside Region are followed by a ✓, those that were determined as not applicable to the Region are followed by an ✖.

**Table ES-2: Summary of Management Outcomes and RMS**

CWP Management Outcome	Resource Management Strategies
<b>Reduce Water Demand</b>	Agricultural Water Use Efficiency ✓ Urban Water Use Efficiency ✓ Crop Idling for Water Transfers ✓ Irrigated Land Retirement ✓ Rainfed Agriculture ✓
<b>Improve Operational Efficiency and Transfers</b>	Conveyance – Delta ✓ Conveyance – Regional/local ✓ System Reoperation ✓ Water Transfers ✓ Waterbag Transport/Storage Technology ✖
<b>Increase Water Supply</b>	Conjunctive Management & Groundwater Storage ✓ Desalination Precipitation Enhancement ✖ Recycled Municipal Water ✓ Surface Storage – CALFED ✖ Surface Storage – Regional/local ✓ Dewvaporation or Atmospheric Pressure Desalination ✖ Fog Collection ✖
<b>Improve Water Quality</b>	Drinking Water Treatment and Distribution ✓ Groundwater Remediation/Aquifer Remediation ✓ Matching Quality to Use ✓ Pollution Prevention ✓ Salt and Salinity Management ✓ Urban Runoff Management ✓
<b>Practice Resources Stewardship</b>	Agricultural Lands Stewardship ✓ Economic Incentives (Loans, Grants and Water Pricing) ✓ Ecosystem Restoration ✓ Forest Management ✓ Land Use Planning and Management ✓ Recharge Area Protection ✓ Water-Dependent Recreation ✓ Watershed Management ✓
<b>Improve Flood Management</b>	Flood Risk Management ✓

✓ RMS potentially applicable to the Region.

✖ RMS not applicable to the Region.

## 1.8 Project Review and Prioritization (Section 8)

Project ideas were submitted by proponents throughout the Region for consideration to include in the Plan. The process to decide which projects to include in the Plan and how to prioritize them relied on: information submitted by the proponents that addressed a standard list of project criteria; expert judgment about the relevancy of the submitted projects; and Stakeholder discussions. The projects, programs and management actions submitted by the stakeholders were compiled, reviewed, and scored based on the information provided by the project proponents. Two “call for projects” cycles were issued to stakeholders during the preparation of the Plan. The first collected a broad list of regional projects, which was then summarized and shared with the public. The second “call for projects” provided an opportunity for stakeholders to discuss commonalities between projects, identify opportunities to integrate, and refine proposed projects or submit new projects.

The projects that were submitted by stakeholders under the two Calls for Projects demonstrate the breadth of activities needed for the Region to meet its water management objectives. 141 projects were submitted by 39 different organizations and address, to some extent, all 24 of the IRWM Plan objectives. Projects submitted range from large-scale drinking water supply projects to habitat restoration programs, flood management projects, and invasive species management initiatives. The range of projects and programs present multiple opportunities for continued resource and project integration beyond

the list of projects included in this Plan. The projects and programs submitted are summarized in Table ES-3 below by objective focus area and the table also helps to portray the broad variety of types of projects, programs, and actions that were submitted.

All projects included in the IRWM Plan are important to meet the objectives of the Region. The Coordinating Committee will encourage and support actions that advance all of the projects, regardless of their priority. However, the Coordinating Committee expects to focus their attention to supporting the implementation of projects with High Importance and High Urgency first. High Importance and High Urgency projects identified during the 2012 project prioritization process are listed in Table ES-4 on the following page. This project list will be updated and appended over time as projects are completed and new projects are identified.

## 1.9 Impacts and Benefits (Section 9)

This section provides an overview of the potential impacts and benefits associated with implementation of the Westside Region IRWM Plan. Because of the nature of the IRWM planning process, the impacts and benefits discussed in this Section are preliminary and not intended to be a complete list; more extensive and project-specific evaluations of impacts and benefits usually occur through project implementation. Impacts are most likely to occur over short-term periods and are associated with project implementation, with some potential long-term impacts associated with project operation. Impacts will be evaluated on a case-by-case basis during the environmental compliance process.

**Table ES-3: Summary of Project Submittals by Objective Focus Area and Project Type**

Focus Area	Feasibility Study	Implementable Program	Implementable Project	Planning
Education and Awareness		1	1	2
Habitat and Invasives	17	3	18	7
Infrastructure			19	10
Reasonable Use			1	2
Recreation			4	1
Risk Management	5		13	6
Understand Watershed Function	1		1	9
Water Quality		2	2	6
Water Supply	1	1	4	3
<b>TOTAL<sup>(a)</sup></b>	<b>24</b>	<b>7</b>	<b>63</b>	<b>46</b>

(a) One project was removed from the list because it is outside the Region.

**Table ES-4: High Importance/High Urgency Projects**

Project No.	Lead Agency/Organization	Project Title	Planned Project/Program Types
76	RWMG with selected Lead Agency	Regional Invasive Mussels Management Plan	Formation of an Invasive Species Task Force/Subcommittee to prepare a Regional Invasive Mussels Species Prevention Plan and identifies supplemental programs to be developed to fill gaps in existing programs to prevent invasive species infestation.
40	RWMG with selected Lead Agency	Regional Invasive Plants, Aquatic and Terrestrial Weeds Management Plan	Formation of an Invasive Species Task Force/Subcommittee to prepare a Regional Invasive Plants, Aquatic and Terrestrial Weeds Management/Eradication Plan that documents the extent of invasive species that could be leveraged, and identifies supplemental programs to be developed to fill gaps in existing programs to manage invasive species.
32	Solano County Water Agency	Solano Invasive Species Program	Program will prevent colonization of any regional water body by quagga or zebra mussels and eliminate or prevent the spread of New Zealand mud snails from Putah Creek.
23	Solano County Water Agency	Aquatic Nuisance Vegetation Management	The goal of the Aquatic Nuisance Species Management Plan is to minimize the harmful ecological, economic, and social impact of aquatic nuisance species through prevention and management of introduction, population growth, and dispersal into, within, and from Solano County.
54	City of Davis	Wastewater Treatment Plant Secondary and Tertiary Improvements	To meet new surface water discharge limitations at Willow Slough, the City of Davis must cease its surface water discharge to Willow Slough, all or in part, through upgrades to its existing treatment process to provide for tertiary treatment.
55	Clearlake Oaks County Water District	Plant Intake	Install a new water intake in the lake that is capable of drawing water from different depths, with installation of an Amiad pre-filter at the pier where the intakes are located. This will allow a greater control of influent turbidity and pH by controlling what depth the intake will be drawing water from.
48	Crescent Bay Improvement Company	Crescent Bay Improvement Company	Crescent Bay improvement Company has been on a Boil Water Order since 1999. There are 3 objectives to this project: 1) replace the 80-year old distribution lines which are leaking, 2) drill a well and replace surface water source with ground water, and 3) explore the feasibility of and purchase a neighboring water company and develop an intertie with that system.
87	Lake Berryessa Resort Improvement District	LBRID Wastewater Storage Pond and Disposal Improvements	This project will upgrade the wastewater storage ponds and disposal spray fields.

Project No.	Lead	Project Title	Planned Project/Program Types
	Agency/Organization		
92	Napa Berryessa Resort Improvement District	NBRID Wastewater Treatment Plant Replacement	This project will upgrade the existing WWTP. The project will also repair or replace all the existing sewer lift stations.
90	Napa Berryessa Resort Improvement District	NBRID Water Treatment Plant Replacement	The existing water treatment plant will be replaced with a new more technically advanced water treatment plant.
95	Reclamation District 2035	Sacramento River Joint Intake Project	The Project consists of a 400-cfs intake and integrally constructed pump station, new discharge pipeline and appurtenant structures, and demolition of the existing facilities.
93	Rural Community Assistance Corporation	Rural Disadvantaged Community (DAC) Partnership Project	RCAC will manage the Prop 84 grant funds to address inadequate water supply and water quality in rural disadvantaged communities (DACs) in the Westside Sacramento IRWM Region.
34	Solano County Water Agency	Research on Improving Water Treatment for Delta Sources	The project would build upon past research done at the NBA Treatment Facility, and by other Delta users, to improve water treatment methods, reduce DBPs, and improve water treatment for Delta water users, including the SWP and CVP.
110	Woodland-Davis Clean Water Agency	Davis-Woodland Water Supply Project	The project is comprised of four regional facility components: (1) a joint RD 2035/WDCWA Sacramento River Intake facility (up to 80 cfs capacity for the WDCWA); (2) 4.5 mile raw water pipeline(s) to convey untreated surface water to a water treatment facility; (3) a regional water treatment facility to treat the surface water before delivery; and (4) 10 miles of treated water pipelines to deliver treated water to local water systems.

The Westside IRWM Plan documents a shared vision for integrated water management and outlines a cooperative approach to achieve that vision. It provides regional water resources benefits largely by fostering improved coordination, collaboration, and communication among entities in the Region. Such collaboration is supported both by the Plan development process and the resulting, newly formed Plan implementation framework.

This collaborative approach to regional planning helps ensure that multiple aspects of watershed planning are considered together rather than allowing one particular geographic area or project type to dominate. It helps share benefits and impacts instead of allowing one group or geographic area to reap benefits while another withstands impacts. Also, regional planning helps ensure that projects designed to achieve one particular objective (e.g., water supply) will be supportive of (or at least compatible with) other objectives (e.g., flood management, water quality, or habitat preservation).

## **1.10 Coordination (Section 10)**

One of the key aspects of improving water resources management includes providing multiple opportunities for water managers, community stakeholders, and other organizations with interests in, to be informed and participate in the IRWM program. The RWMG is responsible for coordinating implementation activities with agencies, local participants and stakeholders within the Region, as well as state and federal agencies and IRWM Regions that are adjacent to the Westside Region. A structured approach to coordination is provided in the Plan to help reduce the likelihood of conflicts within the Region and improve utilization of resources. Activities will be facilitated by the Regional Water Management Group and Coordinating Committee, as defined under their specific responsibilities.

## **1.11 Plan Implementation Framework (Section 11)**

One of the key considerations for developing and implementing an IRWM Plan is the governance structure chosen to perform the tasks necessary to develop and implement the Plan. Section 11 describes the governance structure used for developing the Westside Plan and describes a governance structure that will support implementa-

tion and updating of the Plan over the next 20 years. These governance structures are consistent with the Integrated Regional Water Management Guidelines for Proposition 84 and Proposition 1E published by the California Department of Water Resources in November 2012.

Once the Westside IRWM Plan has been adopted, the focus of the RWMG will change significantly. Some of the activities conducted during Plan development will continue, but the emphasis will shift away from planning toward implementation and tracking of progress.

The current structure of the RWMG, which was established through an MOU with a staff led Coordinating Committee, has functioned well for managing funding and providing guidance and oversight during the Plan development process. Therefore, the Coordinating Committee recommended and the Stakeholder Group agreed that the Region should continue with a similar RWMG model through the initial phases of Plan implementation. A draft MOU amendment has been prepared (see Appendix A.1) to establish a Regional Water Management Group responsible to support the implementation of the adopted Westside IRWM Plan.

Decisions authorized by the RWMG will continue to be made using broad agreement as during the development of the Plan. All interested participants will be invited to participate as equals during Stakeholder Input Meetings to discuss implementation activities to meet the Plan objectives. The Coordinating Committee will set agendas, interact with stakeholders, and foster collaborative decisions as described in Section 10. The Westside IRWM CC meetings will follow the Brown Act provisions. If for some reason broad agreement cannot be reached between the Coordinating Committee and the Stakeholder Group related to specific items within a reasonable amount of time and effort, the Coordinating Committee will discuss the item(s) where broad agreement cannot be reached and then decide by majority vote how to proceed.

Implementation of the Westside IRWM Plan will rely on actions taken by existing agencies and organizations within the Region. The RWMG, as represented by the Coordinating Committee, will provide leadership for fostering cooperation, continuing coordination, tracking of Plan performance, and updating of the Westside IRWM Plan. The Coordinating Committee may form stakeholder subcommittees to help focus collaboration and progress on specific topics or objectives. Changes to the project list or

Plan objectives will be decided as described above and published as Plan Amendments. The Coordinating Committee will request that members of the Regional Water Management Group and project proponents adopt the Plan Amendments as an addendum to the previously adopted Westside IRWM Plan.

One of the most important aspects of IRWM Plan implementation for the Westside Region is having processes in place to ensure the public and interested stakeholders continue to be involved. This will be accomplished through multiple avenues of communication and engagement between the CC and stakeholders in order to obtain input and make sound decisions regarding regional activities.

The vast geography and complex relationships between the many water-related entities in the Region, and breadth of projects requires a multi-faceted Plan performance and monitoring strategy. The centerpiece of the performance and monitoring for the Region is measuring progress towards achieving Plan goals and objectives, Resource Management Strategies (RMS), and, ultimately, projects. Changes to the goals and objectives may affect the types of RMS that need to be implemented by stakeholders, which could also have implications on the types of projects that are included in the Plan. Project Proponents will be responsible for developing and implementing most projects, and then collecting performance monitoring data and reporting it to the RWMG. It is anticipated that progress updates will be collected from Project Proponents on an annual basis. Progress towards achieving objectives will be tracked by the Coordinating Committee and/or any subcommittees that are formed.

Performance monitoring will rely on a variety of data that will need to be managed. For the purposes of this Plan, data management includes the collection, storage, processing, and sharing of information that is developed from project-specific implementation and its relative contribution to achieving Plan objectives. The tools and strategies that the RWMG will use to organize, maintain, and share this vast amount of data will be called the Data Management System (DMS). Water-resources related data is generated in this Region from literally dozens of sources, in countless formats, and is reported in varying

frequencies to jurisdictional bodies, non-governmental agencies, water agencies, and regulators. The Westside IRWM Plan's DMS is not intended to serve as the central clearinghouse for this vast amount of information, but it has been developed to meet the Proposition 84/1E IRWM Guidelines in performing the following functions including:

- Support the Westside Coordinating Committee in their responsibilities by collecting and sharing information related to:
  - Westside IRWM project implementation
  - Westside IRWM objective progress
- Provide means for interested stakeholders, both inside and outside the Westside Region to locate needed information concerning IRWM project implementation
- Consider means to simplify the interconnection and sharing mechanisms between local and statewide data sources.

Financing of an IRWM Plan is also an enormous undertaking and requires the contributions and attention of local, state, and federal agencies to ensure success. Financing of this Westside IRWM Plan involves two distinct tracks: funding of IRWM Plan administration and tracking activities, and funding project implementation. This section provides some highlights of the anticipated funding needs for both tracks, identifies potential funding sources, and documents some of the activities that the CC and others will employ to secure additional funding.

Finally, the IRWM Plan includes implementation recommendations that are intended to provide a "road map" to guide the Coordinating Committee, especially during the first two years of implementation of the Westside IRWM Plan. Each of these Plan Recommendations is detailed and includes suggestions for: the Coordinating Committee to help form subcommittees or other mechanisms that will foster collaboration for Plan implementation, Coordinating Committee focus areas for the next 1 – 2 years, tracking progress for IRWM Plan implementation, and researching other grant opportunities for Plan implementation.