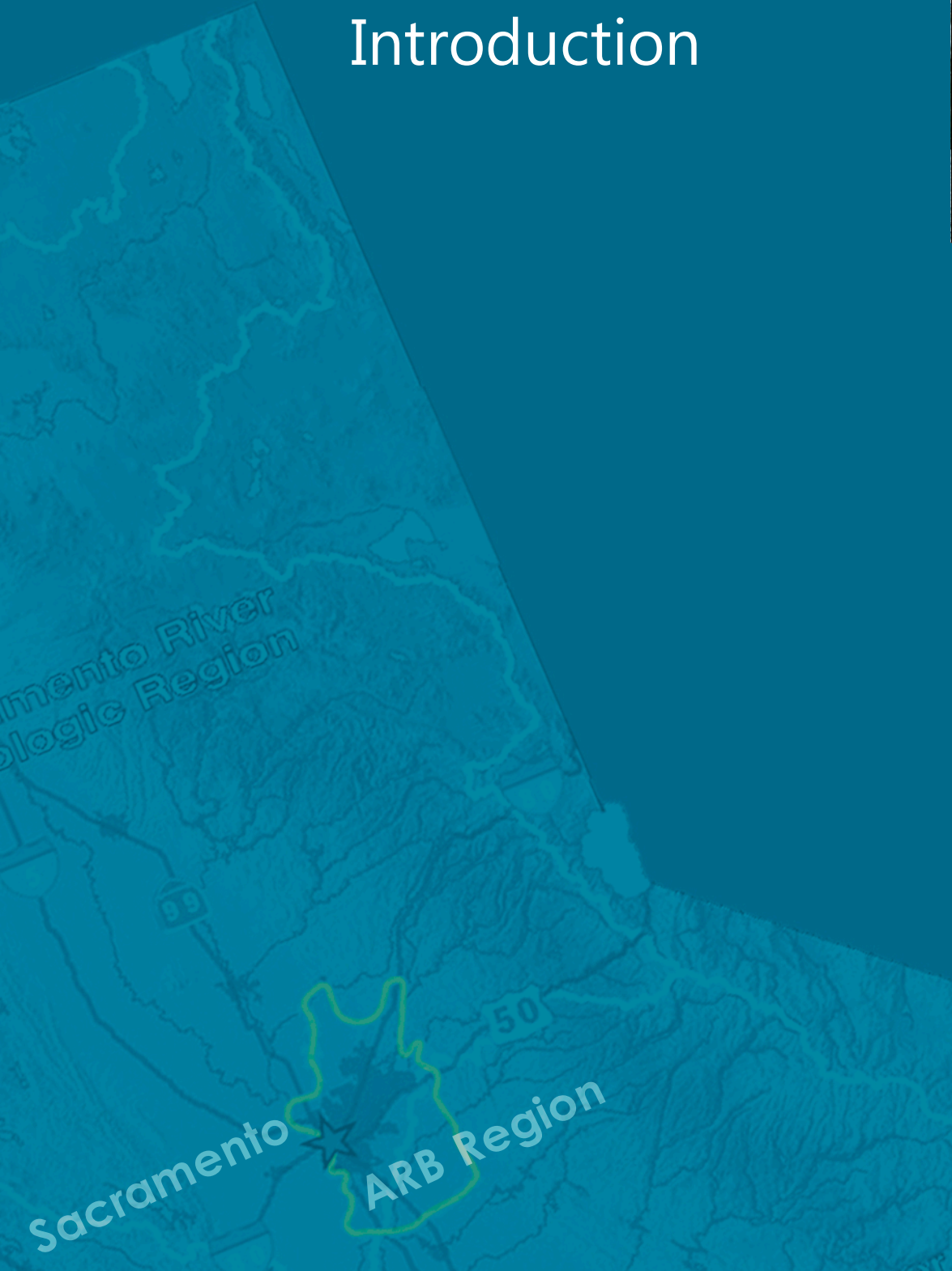
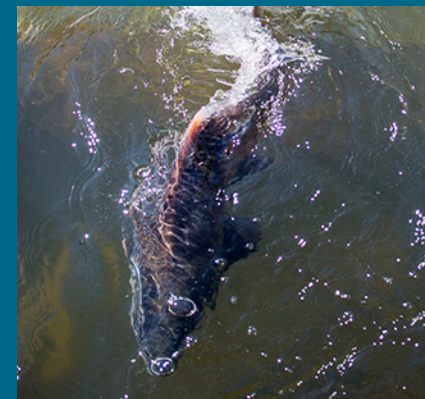


Section 1 Introduction



Contents

1. INTRODUCTION..... 1-1
1.1. Background and Purpose 1-1
1.2. Document Organization 1-5
1.3. IRWMP Standards 1-6

List of Figures

Figure 1-1. History Leading to the 2013 ARB IRWMP Update..... 1-2
Figure 1-2. Noteworthy Events from 2013 to 2018 ARB IRWMP Update..... 1-3

List of Tables

Table 1-1. Location of 2018 ARB IRWMP Update Components 1-6

Abbreviations and Acronyms

ARB	American River Basin
DWR	California Department of Water Resources
IRWMP	Integrated Regional Water Management Plan
NAB RDCP	North American Basin Regional Drought Contingency Plan
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
RWA	Regional Water Authority
RWRP	Regional Water Reliability Plan
SWRP	Storm Water Resource Plan
WFA	Water Forum Agreement

This page left blank intentionally.

1. INTRODUCTION

The California Department of Water Resources (DWR) broadly defines integrated water management as "...a philosophy and practice of coordinating the management of water and related resources for the purpose of maximizing economic and societal benefits while maintaining the sustainability of vital ecosystems" (DWR 2012d). An Integrated Regional Water Management Plan (IRWMP), then, is the application of this concept within a region with a breadth and focus defined locally by stakeholders. The stakeholders identify major water and related resource management issues, develop goals and objectives for addressing these issues and, ultimately, implement projects that help meet these goals and objectives. The stakeholders would also monitor and evaluate the region's progress in meeting those goals and objectives set in their IRWMP. For over two decades, stakeholders dependent on the natural resources of the greater Sacramento region have been engaged in planning and implementing regional plans and projects to meet water supply demands and protect our environment. The 2018 American River Basin (ARB) IRWMP Update represents the latest iteration of our ongoing effort to achieve this balance between sustainable water resources and related ecosystems.

1.1. Background and Purpose

The greater Sacramento region has long recognized the need to better integrate water resources planning and development with consideration of protection of the natural environment. For decades, attempts to further develop water resources on the lower American River resulted in divisive litigation. In 1993, a diverse group of stakeholders recognized the need for regional solutions and began discussions to address long-term reliable water supplies for urban, agricultural, environmental, and recreational water needs. Following a nearly 7-year facilitated effort, the Water Forum Agreement (WFA) was signed in April 2000. The WFA serves as the foundation of regional integrated planning and has more than 40 signatories representing citizens groups, business interests, environmental groups, and public agencies. The WFA includes seven integrated management elements needed to meet the co-equal objectives of: (1) providing a reliable water supply for planned development to the year 2030, and (2) protecting and preserving the lower American River (from Folsom Dam to the confluence with the Sacramento River).

Section 1
Introduction

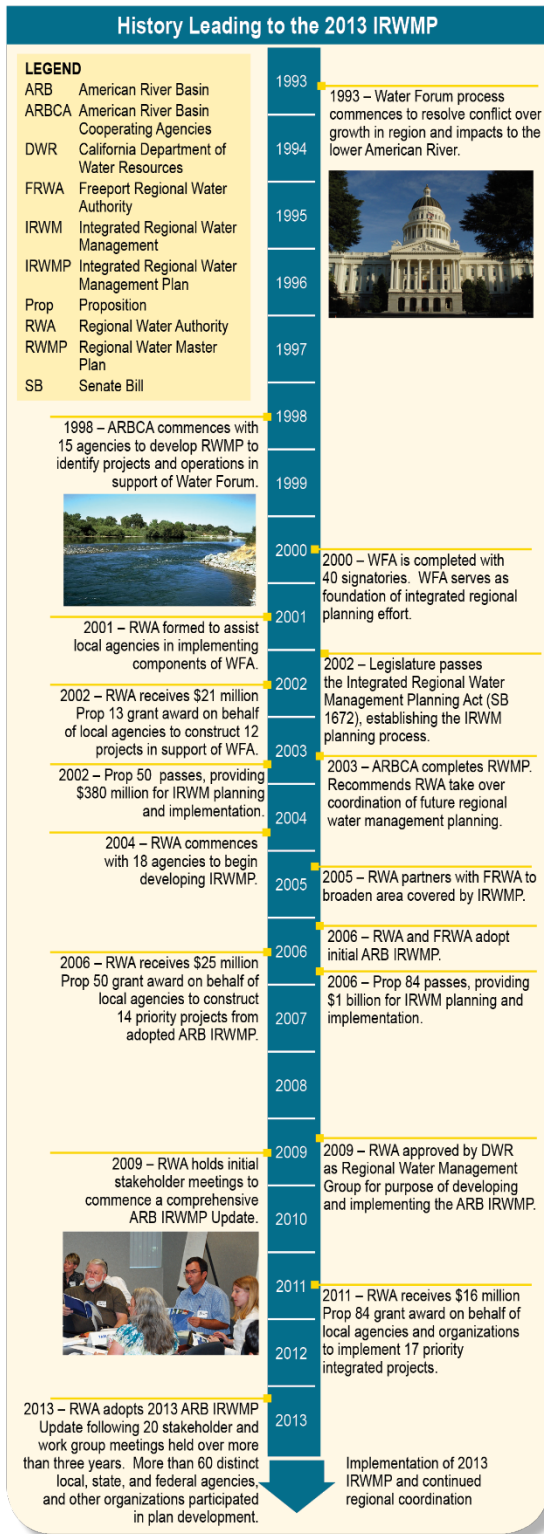


Figure 1-1. History Leading to the 2013 ARB IRWMP Update

In July 2001, water suppliers in the greater Sacramento region formed the Regional Water Authority (RWA) as a joint powers authority, in part, to help implement elements of the WFA on a regional basis. In April 2004, RWA began an effort to develop an IRWMP, which resulted in the May 2006 adoption of the first ARB IRWMP. The 2013 ARB IRWMP Update relied on extensive stakeholder input to comprehensively revise and update the previous goals and objectives and added many new stakeholder-derived considerations, such as vision and principles, to the plan. During development of the 2013 ARB IRWMP Update, the breadth of stakeholders was expanded well beyond the original WFA. **Figure 1-1** provides an overview of the events that led up to the development of the 2013 ARB IRWMP Update.

Since adoption of the 2013 ARB IRWMP Update, a number of events occurred that have underscored the need to increase the resiliency of the Region’s water systems to the impacts of climate change and other uncertainties. These events are summarized in **Figure 1-2**.



**2014
Drought State of Emergency
declared.**

- Sustainable Groundwater Management Act passes.
- Prop 1 Water Bond (AB 1471) passes, authorizing \$7.55 billion in funds for supply and watershed protection projects, with \$510 million dedicated for integrated regional water management planning.
- Senate Bill 985 passes, requiring agencies to develop stormwater resource plans to receive Prop 1 funds.
- RWA receives \$9.8 million Prop 84 grant award on behalf of local agencies and organization to implement 17 projects

2015

- Water right curtailments throughout California.
- Mandatory 25% statewide reduction in water use are enacted.
- PCWA receives \$200,000 Reclamation WaterSMART grant on behalf of local agencies to develop North American Basin RDCP.
- RWA receives \$1.7 million Prop 84 grant award on behalf of local agencies and organizations to implement four priority projects in 2013 ARB IRWMP Update.
- Water levels in Folsom Reservoir reach a record low of 135,000 acre-feet, threatening water supplies and ecosystems of the American River Basin and system-wide.

2016

- Sacramento and San Joaquin Rivers Basin Study is completed by Reclamation with partners.
- Governor issues Executive Order B-37-16, directing the establishment of long-term conservation standards.
- North American Basin Drought Planning Task Force is formed through RWA.
- Region receives \$650,000 WaterSMART grant award to develop American River Basin Study as local follow-up to the Sacramento and San Joaquin Rivers Basin Study.

**2017
Drought State of Emergency
lifted.**

- Sacramento River Funding Area receives \$3.7 million Prop 1 grant award to ensure DAC involvement in IRWM planning efforts.
- RWA receives \$250,000 Prop 1 planning grant award on behalf of local agencies and organizations to update 2013 ARB IRWMP.
- RWA holds initial stakeholder meetings to commence comprehensive ARB 2018 IRWMP Update.
- GSAs are formed.
- El Dorado County Water Agency receives \$400,000 Reclamation WaterSMART grant award on behalf of local agencies and organization to develop ARB Water Marketing Strategy.
- North American Basin RDCP is completed.

2018

- Local flooding in parts of the Region. Sacramento Weir opened for first time in over a decade.
- Local groundwater management authorities receive \$3 million in funding for development of groundwater sustainability plans for the North American, South American, and Cosumnes Subbasins.
- Prop 68 passes, authorizing \$1.19 billion in funding for water infrastructure and flooding projects.
- Regional Water Reliability Plan completed by RWA.
- ARB SWRP and West Slope SWRP are finalized and adopted.
- 2018 ARB IRWMP Update is finalized and adopted following four stakeholder workshops over two years.

LEGEND

AB	Assembly Bill	Prop	Proposition
ARB	American River Basin	RDCP	Regional Drought Contingency Plan
DAC	disadvantaged community	Reclamation	U.S. Department of the Interior, Bureau of Reclamation
GSA	Groundwater Sustainability Agency	RWA	Regional Water Authority
GSP	Groundwater Sustainability Plan	SAFCA	Sacramento Area Flood Control Agency
IRWMP	Integrated Regional Water Management Plan	SWRP	Storm Water Resource Plan



Figure 1-2. Noteworthy Events from 2013 to 2018 ARB IRWMP Update

Section 1

Introduction

Governor Edmund G. Brown Jr. declared a Drought State of Emergency in January 2014. Over the next three years, California continued to experience record-low levels of precipitation and snowpack. Balancing urban, agricultural, industrial, and environmental water needs became increasingly challenging. Following unprecedented water conservation and winter storms, Governor Brown declared an end to the drought in April 2017. Remarkably, many parts of the Region experienced localized flooding in the winter of 2017. The drought and recent flooding illustrate the need to continue to assess the Region's vulnerabilities to hydrologic extremes and climate change and implement mitigation and adaptation measures across all water sectors.

In response, regional stakeholders accelerated a series of projects and planning efforts to (1) increase the Region's resiliency to drought and the impacts of climate change, and (2) develop opportunities to expand a regional conjunctive use program. These efforts built on over two decades of collaborative water resource management, as well as partnerships with several state and federal agencies, including DWR and the U.S. Department of the Interior, Bureau of Reclamation (Reclamation). Agencies in the Region completed the North American Basin Regional Drought Contingency Plan (NAB RDCP) in the fall of 2017. The NAB RDCP was a collaborative planning effort to explore opportunities to increase the resiliency of the Region's water resources in the face of future climate and drought conditions. The effort was partially supported by a grant from Reclamation's WaterSMART Drought Response Program. More recently, agencies have collaborated on a Regional Water Reliability Plan (RWRP) to increase the reliability of water supply for public needs. Funded by the agencies, the RWRP builds upon the NAB RDCP, but further expands the scope of identified constraints and opportunities to expand a regional conjunctive use program. The NAB RDCP and RWRP, in conjunction with local climate action and sustainability plans, provide the foundation for achieving long-term water resource reliability in the Region going forward.

The 2018 ARB IRWMP Update incorporates lessons learned during the drought and recent flooding and builds upon regional adaptation planning efforts and local climate action and sustainability plans. It also reflects significant changes in water management policy, regulation, and funding opportunities that have occurred in the last five years. For example, the Sustainable Groundwater Management Act, passed in 2014, enacted landmark reforms that could significantly alter how the Region's groundwater resources are managed. In that same year, Senate Bill 985 required agencies to develop new storm water resource plans (SWRP) to receive Proposition 1 funds for storm water projects. The ARB SWRP and West Slope SWRP were finalized in July 2018 and are incorporated into this IRWMP.

The 2018 ARB IRWMP Update was developed with significant stakeholder input. Public and stakeholder feedback was provided in four Planning Forums and multiple comment processes held over a year. This comprehensive update to the 2013 ARB IRWMP includes the following new information:

1. Updated –
 - ARB Region boundaries.
 - All basic water-related, environmental, and socioeconomic data.
 - Water quality conditions.
 - Goals, principles, objectives, and strategies for meeting water resource management needs.
 - Regional climate change vulnerabilities and adaptation measures.
 - Plan performance and monitoring to include policies and procedures for adaptive management.
 - IRWMP and project financing and implementation.
 - Projects list.
2. Coordinating with and incorporating other local and regional planning efforts, such as groundwater sustainability plans, SWRPs, and local climate action and sustainability plans.

1.2. Document Organization

The 2018 ARB IRWMP Update is organized into the following sections:

- **Section 1 – Introduction.** This section introduces the 2018 ARB IRWMP Update and details how it meets the DWR 2016 IRWMP Guidelines.
- **Section 2 – Region Description.** This section describes the Region’s institutional, water resources, and environmental setting. It also describes the Region’s vulnerabilities to impacts of climate change as well as the adaptation and mitigation actions to those impacts. This section concludes with a description of the technical analysis used in developing this IRWMP.
- **Section 3 – Planning Coordination and Integration.** This section describes the process by which RWA coordinates and interacts with its stakeholders, the public, and disadvantaged communities.

Section 1
Introduction

This section also includes the IRWMP’s relation to local water and land-use planning, neighboring planning efforts, and state of California and federal agencies.

- **Section 4 – IRWMP Governance.** This section provides an overview of the Planning Forum, Advisory Committee, and RWA as the Regional Water Management Group. These elements of the governance structure evolved throughout the planning process. This section also explains the process of IRWMP adoption.
- **Section 5 – IRWMP Framework.** This section describes how the 2018 ARB IRWMP Update was developed. It details the vision, goals, principles, objectives, and strategies that guide implementation. It also describes how implementation projects were identified and prioritized, and how identified strategies will help the Region adapt to the impacts of climate change.
- **Section 6 – IRWMP Implementation.** This section describes how the 2018 ARB IRWMP Update will be implemented, including options for financing, performance monitoring, and data management. It describes the potential impacts and benefits of implementation, and how the 2018 ARB IRWMP Update will be adopted and adapted to future situations.
- **Section 7 – References.** This section lists the references used and cited throughout the IRWMP document.

1.3. IRWMP Standards

Table 1-1 lists the required components of an IRWMP (per DWR’s 2016 Guidelines) and indicates the section(s) of the 2018 ARB IRWMP Update in which each component is addressed.

Table 1-1. Location of 2018 ARB IRWMP Update Components

	Description	Location in 2018 ARB IRWMP Update
A.	Governance	
1.	Description of RWMG responsible for development and implementation of the plan.	Section 4.2.4
2.	Description of the RWMG and individual project proponents who adopted the plan.	Section 4.3
3.	Description of IRWM governance structure.	Section 4.2
4	Description of how chosen governance addresses and ensures the following:	
4a.	Public outreach and involvement processes.	Sections 3.1, 4.2
4b.	Effective decision making.	Section 4.2
4c.	Balanced access and opportunity for participation in the IRWM process.	Sections 3.1, 4.2

Table 1-1. Location of 2018 ARB IRWMP Update Components (contd.)

	Description	Location in 2018 ARB IRWMP Update
4d.	Effective communication both internal and external to the IRWM region.	Sections 3, 4
4e.	Long-term implementation of the 2018 ARB IRWMP Update.	Sections 4.2.3, 6.6
4f.	Coordination with neighboring RWMG efforts and state and federal agencies.	Sections 3.4, 3.5
4g.	Collaborative process used to establish 2018 ARB IRWMP Update objectives.	Sections 3.1, 5
4h.	How interim changes and formal changes to the 2018 ARB IRWMP Update will be performed.	Sections 5.6, 6.6
4i.	Process for updating or amending the 2018 ARB IRWMP Update.	Sections 5.6, 6.6
B. Region Description		
1.	Description of watersheds/water system.	Sections 2.6, 2.8
2.	Description of internal boundaries within the region.	Section 2.2
3.	Water supply and demand projections for a minimum 20-year planning horizon.	Section 2.9
4.	Current and future water quality conditions.	Section 2.6
5.	Description of the social and cultural makeup of the regional community and the identification of important cultural or social values.	Section 2.5.7
6.	Description of economic conditions and important trends within the region.	Section 2.5
7.	Description of major water-related objectives and conflicts.	Sections 2.10, 5
8.	Explanation of how the IRWM regional boundary was determined.	Section 2.1
9.	Identification of neighboring or overlapping IRWM regions.	Section 2.4
10.	Explanation of how plan will help reduce dependence on the Sacramento-San Joaquin Delta for water supply.	Section 2.3
11.	Description of likely climate change impacts on the region.	Sections 2.10, Appendix C
C. Objectives		
1.	Description of measureable regional planning objectives that address climate change adaptation and mitigation.	Sections 5.5, 5.6
2.	Description of objective development process.	Sections 3.1, 5
3.	Objective prioritization process.	Section 5.5
D. Resource Management Strategies		
1.	Description of RMS consideration process.	Section 5.6.7
2.	Description of how the effects of climate change on the region are factored into the RMS.	Section 5.6.8
3.	Description of how RMS reduce energy consumption.	Section 5.6
4.	Evaluation of RMS and other adaptation strategies and ability of such strategies to eliminate or minimize those vulnerabilities.	Section 2.10.2, 5.6.8
5.	Range of RMS considered to meet the IRWM objectives.	Section 5.6
6.	Description of RMSs incorporated into 2018 ARB IRWMP Update.	Section 5.6

Section 1
Introduction

Table 1-1. Location of 2018 ARB IRWMP Update Components (contd.)

	Description	Location in 2018 ARB IRWMP Update
E. Integration		
1.	Description of stakeholder/institutional integration.	Section 3
2.	Description of resource integration.	Sections 3.1, 5, 6.4
3.	Project Implementation integration.	Sections 3.1, 5.7, 6.5
F. Project Review Process		
1.	Procedures for submitting a project to the RWMG.	Section 5.7
2.	Procedures for review of projects considered for inclusion into the 2018 ARB IRWMP Update, including consideration of climate change mitigation and adaptation.	Section 5.7
3.	Description of project review factors.	Section 5.7
4.	Procedures for displaying the list of selected projects.	Section 5.7
G. Impacts and Benefits		
1.	Discussion of potential impacts and benefits within the region from 2018 ARB IRWMP Update implementation.	Section 6.5
2.	Discussion of benefits and impacts between regions.	Section 6.5
3.	Impacts and benefits directly affecting disadvantaged communities.	Section 6.5.4
4.	Impacts and benefits directly affecting environmental justice concerns.	Section 6.5.4
5.	Impacts and benefits directly affecting Native American tribal communities.	Section 6.5.4
H. Plan Performance and Monitoring		
1.	Group(s) responsible for IRWM implementation evaluation.	Section 6.3
2.	Frequency of evaluating project implementation performance.	Section 6.3
3.	Tracking via data management systems.	Sections 6.3, 6.4
4.	Description of process for using "lessons learned."	Sections 6.3, 6.6
5.	Responsibility for development of project-specific monitoring plans and activities.	Section 6.3
6.	Stage of project development that a project-specific monitoring plan will be prepared.	Section 6.3
7.	Typically required contents of a project-specific monitoring plan.	Section 6.3
8.	Description of policies and procedures that promote adaptive management, and process for adapting the IRWMP and projects as conditions change, new tools are developed, and new information becomes available.	Section 6.6
I. Data Management		
1.	Overview of data needs.	Section 6.4.1
2.	Description of typical data collection techniques.	Section 6.4.2
3.	Description of stakeholder data contributions to regional data management systems.	Section 6.4.2
4.	Entity responsible for maintaining data in the Region's data management systems.	Section 6.4.2
5.	Description of the validation or QA/QC measures.	Section 6.4.2

Table 1-1. Location of 2018 ARB IRWMP Update Components (contd.)

	Description	Location in 2018 ARB IRWMP Update
6.	Explanation of how data collected for project implementation will be transferred or shared between members of the RWMG and other interested parties.	Sections 6.4.2, 6.4.4
7.	Explanation of how the data management system supports the RWMG's efforts to share collected data.	Section 6.4.2
8.	An outline of how the data saved in the data management system will be distributed and remain compatible with state databases.	Sections 6.4.2, 6.4.4
J. Finance		
1.	List of known, as well as, possible funding sources, programs, and grant opportunities for the development and ongoing funding of the IRWMP.	Sections 6.1. 6.2
2.	List of funding mechanisms for projects that implement the IRWMP.	Section 6.2
3.	Explanation of the certainty and longevity of known or potential funding for the IRWMP and projects.	Section 6.2
4.	Explanation of how O&M costs for projects that implement the IRWMP would be covered and the certainty of O&M funding.	Section 6.2
K. Technical Analysis		
1.	Description of the technical information sources and data sets used to develop the water management needs in the IRWMP.	Section 2.11
2.	Description of studies, models, or other technical methodologies used to analyze the technical information and data sets.	Section 2.11
L. Relation to Local Water Planning		
1.	List of local water plans used in the 2018 ARB IRWMP Update.	Sections 2.10, 3.3, 3.2, 7, Appendix C, Appendix F
2.	Discussion of how the 2018 ARB IRWMP Update relates to planning documents and programs established by local agencies.	Section 3.2
3.	Description of the dynamics between the IRWMP and local planning documents.	Section 3.2
4.	Description of the consideration and incorporation of water management issues and climate change and adaptation and mitigation strategies from local plans into the IRWMP.	Sections 2.10, 3.2, 3.3, 5.6.8, Appendix C
M. Relation to Local Land-Use Planning		
1.	Description of current relationship between local land-use planning, regional water issues, and water management objectives.	Section 3.3
2.	Description of future efforts to establish a proactive relationship between land use planning and water management.	Sections 3.3, 5.5
3.	Description of the information sharing and collaboration with regional land use planning to manage multiple water demands.	Sections 3.3, Appendix C
N. Stakeholder Involvement		
1.	Description of the public process that provides outreach and an opportunity to participate in IRWMP development and implementation to the appropriate local agencies and stakeholders.	Sections 3.1, 4.2

Section 1
Introduction

Table 1-1. Location of 2018 ARB IRWMP Update Components (contd.)

	Description	Location in 2018 ARB IRWMP Update
2.	The process used to identify, inform, invite, and involve stakeholder groups in the IRWM process during development and implementation of the 2018 ARB IRWMP Update.	Sections 3.1, 4.2
3.	A discussion on how the RWMG will identify and involve DACs and Native American tribal communities in the IRWM planning effort.	Sections 3.1.4, 3.1.5, Appendix E
4.	Description of the decision making process, including IRWM committees, roles, or positions that stakeholders can occupy and how a stakeholder goes about participating in those committees, roles or positions, regardless of their ability to contribute financially to the IRWMP.	Sections 3.1, 4.2
5.	Discussion regarding how stakeholders are necessary to address the objectives and resource management strategies of the IRWMP.	Sections 4.2, 5.5, 5.6
6.	Discussion of how collaborative processes will engage a balance of interest groups in the IRWM process regardless of their ability to contribute financially to the IRWMP's development or implementation.	Section 3.1
O. Coordination		
1.	Process for coordination of projects and activities with local participants and stakeholders.	Sections 3.1, 5.7
2.	Identification of neighboring IRWM efforts and description of coordination between efforts.	Section 3.4
3.	Discussion of any ongoing water management conflicts with adjacent IRWM efforts.	Section 3.4
4.	Discussion of state, federal, and local agencies important to the development of the IRWMP and implementation of projects.	Sections 3.1, 3.5
P. Climate Change		
1.	Discussion of the IRWM region's vulnerabilities to the effects of climate change.	Sections 2.10, Appendix C, Appendix D
2.	Discussion of potential adaptation responses.	Sections 2.10, 5.6.8, Appendix C
3.	Process that considers GHG emissions when choosing between project alternatives.	Section 5.7.2
4.	List of prioritized vulnerabilities based on the vulnerability assessment and the IRWM's decision making process.	Sections 2.10.1, Appendix C, Appendix D
5.	Description of how the IRWMP considers changes to the amount, intensity, timing, quality and variability and runoff and recharge and effects of sea level rise on water supply.	Sections 2.10, 5
6.	Description of plan for further data gathering and analysis.	Sections 2.10, 2.11

Key:

ARB = American River Basin
 DAC = disadvantaged community
 GHG = greenhouse gas
 IRWM = Integrated Regional Water Management
 IRWMP = Integrated Regional Water Management Plan
 NA = not applicable
 O&M = operation and maintenance
 QA/QC = quality assurance/quality control
 RMS = resource management strategy
 RWMG = Regional Water Management Group
 state = state of California