

Volume 1 The Strategic Plan (outline)

Chapter 1 Introduction

Chapter 1 Introduction outlines the process for preparing California Water Plan Update 2009 and its new features. It also explains the organization of all five volumes of Update 2009 and its Highlights brochure.

Table of Contents

- An Evolving Water Plan
 - Influences of Update 2005
 - Fair and Transparent
- An Expanded Process
 - State Agency Steering Committee
 - Multi-disciplinary Project Teams
 - Advisory Committee
 - Regional Outreach
 - Federal Government
 - SWAN and Shared Vision Planning
 - Plenary Meetings
- Inclusive Water Planning
 - Companion State Plans
 - Climate Change
 - Integrated Flood Management
 - Water Quality
 - California Native American Tribes
- Expanded Features
 - Assumptions and Estimates Brochure and Data
 - Future Scenarios
 - Regional Reports
 - Resource Management Strategies
 - Quantification of Scenarios and Management Responses
 - Progress toward Implementing Update 2005 Recommendations
- Organization of California Water Plan Update 2009

Chapter 2 Imperative to Act

Chapter 2 Imperative to Act lays out the urgent course California must take to ensure that we have enough safe and clean water through year 2050 for California's cities and towns, farms and businesses, and plants and animals when and where they need it. It describes the features of this important roadmap—themes of this Water Plan and elements of its strategic plan. It also includes key policy recommendations for State government and California for the removal of impediments and harnessing of opportunities that will help us achieve the Water Plan's vision, mission, and goals. Details of meeting these goals—through objectives and their related actions—are explained in Chapter 7 The Implementation Plan.

Table of Contents

- A Course for Action
 - An Urgency
 - Strategic Plan
- Paramount Challenges
 - A State of Diversity

- Multiple Water Uses
- Climate Change
- Future Uncertainty
- Key Initiatives and Commitments
 - Coordinating Government Planning and Management
 - Integrated Resource Planning and Management
 - Adapting to Climate Change
 - Uncertainty, Risk, and Sustainability
- Conclusion
- Recommendations

Chapter 3 Companion State Plans

The California Water Plan calls for comprehensive and integrated regional management of California’s water resources. To advance State government’s leadership and role in the water community and to promote the Water Plan’s framework, recommendations, and strategies, the State needs to better incorporate water issues, initiatives, and information from other State agencies in the Water Plan update.

This chapter and the work of a 21-member State agency Water Plan Steering Committee is a central feature of Water Plan Update 2009. Chapter 3, Companion State Plans, describes the effort to create a plan that is more than just a plan for the Department of Water Resources; rather, a State Water Plan. Update 2009 embraces companion State programs and policies in order to better understand the full possibilities and constraints for water managers.

Chapter 3 begins with an overview of institutions governing California water and describes the role of the State agency Water Plan Steering Committee in preparing a comprehensive planning document. The chapter then introduces companion State plans—those plans and programs by State agencies that have a direct connection with the Water Plan. It shows how companion State plans were used to develop and augment content in the Water Plan, including its objectives and related actions in Chapter 7 and the resource management strategies in Volume 2. The chapter concludes with a discussion of the implications of the existing policy framework of companion State plans to shape, guide, and constrain water governance in California, including potential opportunities and impediments for improving water management, integrated resource management, and planning at the statewide and regional levels.

California’s water management system is large, complex, and requires cooperation and collaboration among decision-makers at all levels of State, federal, Tribal, regional, and local entities. The Water Plan attempts to cross-reference and coordinate with other State programs to be as accurate, up-to-date, and complete as possible.

Table of Contents

- Water Management in California
 - Overview
 - Legal Framework
 - Agencies with Water-related Roles and Responsibilities
 - California Government
 - Federal Government
 - Public Agencies, Districts, and Local Governments
 - Tribal Governments, Organizations, and Communities
 - State Agency Coordination through the Water Plan Steering Committee
- Companion State Plans and the California Water Plan
 - Companion State Plans

Water Plan Recommendations, Objectives and Related Actions
 Resource Management Strategies
 Implications and Considerations
 References

Chapter 4 California Water Today

Chapter 4 California Water Today describes California’s diverse communities and environment and the impediments that challenge us in meeting all our water demands. Meanwhile, we are witnessing the effects of climate change—on hydrology (snowpack, river flows), storm intensity, temperature, winds, and sea levels. This chapter discusses how California’s policy-makers and water communities are finding ways to integrate planning and water management, promote stewardship and sustainable practices, build partnerships, enact legislation, and secure funding. Finally, this chapter explains the many facets of California’s water rights, usage, and allocation.

Table of Contents

- A State of Diversity
- Land Use and Development Patterns
- Water Conditions
 - Environmental Water
 - Inadequate Streamflows
 - Water Supply, Uses, Quality
 - Water Supply—Surface Water and Groundwater
 - Water Use
 - Water Quality
 - Project Operation and Reoperation
 - Water Governance
 - California Constitution
 - Federal Land Management
 - Tribal Water Management
 - Flood Management
- Challenges
 - Ongoing Statewide Concerns
 - Dry-year period (Drought)
 - Floods and Flooding
 - Environment/Ecosystem
 - Climate Change
 - Water and Energy
 - Contamination of Surface Water and Groundwater
 - Delta Vulnerabilities
 - Deferred Maintenance and Aging Infrastructure
 - Catastrophic Events and Emergency Response
 - Data Gathering and Sharing
 - Disadvantaged Communities
 - Funding
 - Regional and Local Challenges
- Responses and Opportunities
 - Stewardship and Sustaining Natural Resources
 - DWR Watershed and Resource Restoration Programs
 - Conservation: 20% Reduction by 2020
 - Regional/Local Planning and Management
 - Coordination of Water and Land Use Planning
 - Integrated Regional Water Management and Planning
 - Integrated Flood Planning and Management

- Statewide and Interregional Planning and Response
 - Recent Legislation and Litigation
 - Drought Response
- Governor’s Strategic Growth Plan
- AB 32 – California Global Warming Solutions Act
- State Water Resources Control Board (California Water Boards)
- Delta Planning and the Delta Vision
 - SWAN
 - AB 162
 - Central Valley Flood Protection Act of 2008
- Propositions and Bonds
 - Proposition 1E – Disaster Preparedness and Flood Protection Bond Act
 - Proposition 84
- Federal Water for America Initiative
- References

Chapter 5 Managing an Uncertain Future

Chapter 5, *Managing an Uncertain Future*, emphasizes the need for decision-makers, water and resource managers, and land use planners to use a range of considerations in planning for California’s water future in the face of many uncertainties and risks. It provides examples of uncertainties and discusses the need to assess risks in planning for a more sustainable future. The chapter presents an approach for making these evaluations and examples of what was learned during preparation of this Water Plan Update to identify the types of investments that may be useful for a more sustainable future.

Table of Contents

- Planning Approach
 - Overview
 - Traditional Planning Approach – The Past is a Model for the Future
 - New Planning Approach – Anticipate Change
- Recognizing and Reducing Uncertainty
- Assessing Risk
 - Accounting for Risk
 - Risk Assessment Examples
- Managing for Sustainability
 - What is Sustainability?
 - Sustainability Indicators
 - Examples of Managing for Sustainability
- Water Scenarios 2050—A Range of Considerations
 - Water Plan Baseline Scenario Descriptions
 - Scenario Water Demands
 - Example Regional Responses
- Summary

Chapter 6 Integrated Data and Analysis

Chapter 6 highlights key actions needed to improve water resources information and analysis by State government, particularly the Department of Water Resources, and by the many other research institutions, and federal, regional, and local water management entities. This chapter is organized into the following sections.

- Purpose and motivation for improving our technical infrastructure to support water management decisions.
- Summary of several recent efforts that have suggested specific actions needed to improve our technical capabilities.
- Description of existing technical limitations and challenges.
- Critical activities that support a long term vision for improving water resources information and analysis.
- Description of the analytical approach applied by DWR for Update 2009 to quantify future water management conditions and evaluate alternative water management strategies.

Table of Contents

Purpose and Motivation

Improving Technical Support for Decision-making in Light of Uncertainties

Improving technical support for Integrated Regional Water Management

Recent Studies and Forums for Improving Water Management Information and Analysis

Update 2005, Volume 1, Chapter 4

CWEMF Strategic Analysis Framework

San Francisco Estuary & Watershed Science paper 'Internalizing Climate Change - Scientific Resource Management and the Climate Change Challenges'

DWR Climate Change Adaptation White Paper

SWAN (Statewide Water Analysis Network)

Specific Water Management Information and Analytical Needs

Information Gaps and Limitations

Technical Challenges of Integrated Regional Water Management

Implementing Long-term Technical Improvements through Shared Vision Planning

Critical Long-term Activities

Implementing Analytical Improvements for Water Plan Update 2009

Quantifying Future Scenarios for Update 2009

Quantifying Future Scenarios by Region

Strengths and Limitations of Update 2009 Future Scenarios

Conclusions and Next Steps

References

Chapter 7 Implementation Plan

Chapter 7 lays out the implementation plan for California Water Plan Update 2009 by presenting 13 objectives and their 92 related actions.

Table of Contents

Implementation Plan Organization

Objectives and Related Actions

- Objective 1 - Promote, improve, and expand integrated regional water management to create and build on partnerships that are essential for California water resources planning, sustainable watershed and floodplain management, and increasing regional self-sufficiency.
- Objective 2 – Use water more efficiently with significantly greater water conservation, recycling, and reuse to help meet future water demands and adapt to climate change.
- Objective 3 – Advance and expand conjunctive management of multiple water supply sources—surface water and groundwater—to prepare for future droughts and climate change.
- Objective 4 – Protect and restore surface water and groundwater quality to safeguard public and environmental health and secure California’s water supplies for beneficial uses when feasible.
- Objective 5 – Practice, promote, improve, and expand environmental stewardship to protect and enhance the environment by improving watershed, floodplain, and instream functions and to sustain water and flood management systems.
- Objective 6 - Promote and practice integrated flood management to provide multiple benefits including better emergency preparedness and response, higher flood protection, more sustainable flood and water management systems, and enhanced floodplain ecosystems.
- Objective 7 – Promote and practice management for a sustainable California Delta by setting as co-equal goals a healthy Delta ecosystem and a reliable water supply for California and by recognizing the Delta as a unique and valued place.
- Objective 8 – Prepare prevention, response, and recovery plans for floods, droughts, and catastrophic events to help residents and communities make decisions that reduce the consequences of these events when they occur.
- Objective 9 – Reduce the energy consumption of water and wastewater management systems to mitigate greenhouse gas emissions.
- Objective 10 - Improve and expand monitoring, data management, and analysis to support decision-making in light of uncertainties that support integrated regional water management and flood and water resources management systems.
- Objective 11 - Identify and fund applied research on new water technology to help carry out water programs and better manage water systems.
- Objective 12 – Develop Tribal consultation, collaboration, and access to funding for water programs and projects to have more sustainable Tribal water and natural resources.
- Objective 13 – Increase the participation of small and disadvantaged communities in State processes and programs to achieve fair and equitable distribution of benefits, to consider mitigation of impacts from the implementation of State government programs and policies, and to ensure that these programs and policies address the most critical public health threats in disadvantaged communities.