

## Volume 1 The Strategic Plan (outline)

### Chapter 1 Introduction

This chapter outlines the process for preparing *California Water Plan Update 2009: Integrated Water Management* and its new features. It also explains the organization of all five volumes of Update 2009 and its *Highlights* brochure.

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- An Evolving Water Plan
  - Influences of Update 2005
  - Fair and Transparent
- An Expanded Process
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- Inclusive Water Planning
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- Expanded Features
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  - 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

This chapter 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 road map—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.

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- A Course for Action
  - An Urgency
  - Update 2009 Strategic Plan
- Paramount Challenges
  - A State of Variability and Extremes
  - Multiple Water Uses

- Climate Change
- Future Uncertainty
- Key Initiatives and Commitments
  - Coordinating Government Planning and Management
  - Integrating Water Management
  - Adapting to Climate Change
  - Planning for Uncertainty, Risk, and Sustainability
- Conclusion
- Recommendations

### **Chapter 3 Companion State Plans**

This chapter describes the effort to create a plan that is more than just a plan for the Department of Water Resources (DWR); 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 The Implementation Plan 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.

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- Water Management in California
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  - Legal Framework
  - Agencies with Water-related Roles and Responsibilities
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    - 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

## Chapter 4 California Water Today

This chapter 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. Chapter 4 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.

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    - Water Supply—Surface Water and Groundwater
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  - Project Operation and Reoperation
  - Water Governance
    - California Constitution
    - Federal Land Management
    - Tribal Water Management
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  - Ongoing Statewide Concerns
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    - 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 Percent Reduction by 2020
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    - 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
- Strengthening Flood Protection
- Propositions and Bonds
  - Proposition 1E – Disaster Preparedness and Flood Protection Bond Act
  - Proposition 84
- Federal Water for America Initiative

## **Chapter 5 Managing an Uncertain Future**

This chapter 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.

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    - 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

- This chapter highlights key actions needed to improve water resources information and analysis by State government, particularly the Department of Water Resources (DWR), and by the many other research institutions, and federal, regional, and local water management entities.

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#### 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 (California Water and Environmental Modeling Forum) 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

Approach for Quantifying Future Scenarios for Update 2009

Regional Drivers of Water Demand and Available Supply

## Chapter 7 Implementation Plan

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

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#### 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