

Chapter 6

Integrated Data & Analysis: Informed and Transparent Decision Making

1) About this Chapter

Chapter 6 describes a roadmap and key actions needed to improve water resources information and analysis for integrated water management by State government, particularly the Department of Water Resources (DWR), and by the many other research institutions, and federal, Tribal, regional, and local water management entities. It describes how poor communication, incomplete information and lack of innovation in new analytical tools prevent water managers from achieving truly integrated water management. A framework is provided that describes how quality information and supporting analysis can inform the key policy components of the Water Plan including desired outcomes, core values, statements of intent, and recommendations. The chapter highlights new technologies and identifies important enhancements to process, analytical tools, and information need to support integrated water management. The chapter concludes with recommendations and responsibilities for implementing key technical enhancements.

This chapter is organized into the following sections.

- Purpose and motivation
- Informing the Water Plan Policy Setting with Quality Information and Analysis
- Developing new technology
- Objectives for Informed and Transparent Decision Making
- Prioritizing Action on Informed and Transparent Decision Making
- Summary

2) Purpose and Motivation

California faces significant challenges with balancing many diverse interests affected by water policy decisions. These challenges are amplified by fragmented and poorly communicated information that is informed by analyses that cannot fully evaluate the many alternative and often competing water management objectives and tradeoffs. While extensive information affecting water is collected by many State and regional programs, the information often resides in separate silos. There is a critical need for information sharing and information management to support overarching and long-term water policy decisions that cross-cut multiple State programs and provide a common and transparent understanding of water problems and solutions. Achieving integrated

water management with multiple benefits requires a transparent description of dynamic linkages between water supply, flood management, water quality, land use, environmental water, and many other factors. This chapter describes an analytical framework to support sound and effective water policy decisions, and promotes the use of collaborative processes and technical enhancements consistent with the Water Plan goals and objectives to assist decision makers with moving California toward a sustainable future.

3) Informing the Water Plan Policy Setting with Quality Information and Analysis [Vision]

[This section will describe how quality information and supporting analysis can inform the key policy components of the Water Plan including desired outcomes, core values, statements of intent, and recommendations. A list of policy relevant questions that need to be informed with information and analysis will be highlighted. This section will describe how Shared Vision Planning concepts can be applied to integrate policy and decision making with quality information and analysis, and what the Water Plan can learn from related integration efforts. This will discuss how integration includes integration of information, analysis, and processes.]

Policy Questions for the California Water Plan

The California Water Plan had a brain-storming session as part of the process its Update 2005. The session came up with twenty-eight different policy questions that California Water Plan should answer. The questions are presented in Table 1, along with what information is necessary to answer the questions, human water demand, water management system demands, ecosystem water demand, and economic and other performance indicators.

Table 1.

	Questions	Human	System	Ecosystem	Indicators
1	What are estimates of the local, regional, and statewide components of the hydrologic cycle in California?	X	X	X	
2	What are the current water management strategies and uses, what are potential future strategies and uses, and how are these estimated for all sectors (agricultural/environment/urban) and all levels (local, regional, statewide)?	X	X	X	
3	How does water quality affect water management in California and vice versa?	X	X	X	
4	How does land use affect water management in California?	X	X	X	
5	How can the sustainable use of water resources be improved?	X	X	X	
6	How can California identify and fulfill its public trust responsibilities?	X	X	X	

	Questions	Human	System	Ecosystem	Indicators
7	How do water management strategies and policies affect environmental resources?		X	X	
8	What is the effectiveness of water management strategies?		X	X	X
9	How are social equity issues affected by different water management strategies?		X		X
10	What are some of the benefits of and trade offs between different water management strategies?				X
11	How does water scarcity affect the economy, the environment and all beneficial uses?				X
12	How much do local agencies, the regions, and the State invest in each water management strategy currently and how much can/should they in the future?				X
13	Who should pay for improvements in local, regional, and statewide water management?				X
14	How do different water management strategies and policies affect crop production?				X
15	What is the remaining useful life and what are the unmet maintenance needs of existing storage and conveyance facilities?		X		
16	What are the most pressing local, regional, and statewide water management problems now and in the future and what are potential solutions to the problems?		X		
17	How should local agencies, the regions, and the state manage water during multiple year droughts?		X		
18	To what extent can local, regional, and statewide water management strategies provide adequate and reliable water of suitable quality for all beneficial uses and sustainable development under current conditions and in the future?		X		
19	Where is additional research or policy needed to improve water management?		X		
20	What is the groundwater overdraft in California's groundwater basins?		X		
21	What is the current local, regional, and statewide surface water and groundwater quality?		X		
22	What is the extent of agricultural drainage problems for current and future conditions?		X		
23	How is water stored and moved in California's water management system?		X		
24	What is the inter-relationship between water management and policies at the local, regional, statewide and federal level?		X		
25	How should water be managed in California to help prepare for catastrophic events?		X		
26	How will climate change affect water management in the future?		X		
27	How should California manage flood events and flood plains?		X		
28	How do water management strategies and policies affect hydropower production?		X		

These questions might change if stakeholders were asked again, but many of the issues remain the same and they are still relevant.

4) Developing new technology

[This section will summarize information from the Water Technology caucus about new technologies that may improve the efficacy of information and analysis]

5) Objectives for Informed and Transparent Decision Making

[This section will highlight specific objectives for technical improvements and categorize the objectives under process, analytical tools, or information/data]

Process Enhancements

- Shared Vision Planning
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Analytical tool enhancements

- Establish Modeling Protocols and Standards
- Develop Common Schematics of the Water Management System
- Develop a Common Conceptual Understanding of the Water Management System

Information and data enhancements

- Developing a Strategic Plan for Managing California's Water and Environmental Information
- Integrating Urban Water Management Plans on a Regional and Statewide Scale
- Developing the Water Planning Information Exchange
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6) Prioritizing Action on Informed and Transparent Decision Making

[This section will describe recommendations and responsibilities for implementing the objectives highlighted in Section 5]

7) Summary

8) References