California Water Sustainability Indicators Framework

Status Update

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Water Plan Update 2013
CA Water Sustainability Indicators – Deliverables

- Analytical Framework
- Quantitative Pilot Studies
- Gap Analysis
Organizing indicators

Water supply reliability

Water quality

Ecosystem health

Social benefits and equity

Adaptive & sustainable management
<table>
<thead>
<tr>
<th>Proposed Water Sustainability Goals and Objectives</th>
<th>Relationship to CWP 2009</th>
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<td><strong>Goal 1:</strong> Manage and make decisions about water in a way that integrates water availability, environmental conditions, and community well-being for future generations.</td>
<td>Reflects overall goal of sustainability</td>
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| **Goal 2.** Improve water supply reliability to meet human needs, reduce energy demand, and restore and maintain aquatic ecosystems and processes.  
*Objectives:* Improve water use efficiency; Increase water recycling; Increase water conservation. | CWP Objective 2, 9; RMS Reduce demand |
| **Goal 3.** Contribute to social and ecological beneficial uses and reduce impacts associated with inter-basin water transfers and to the Delta.  
*Objectives:* Improve regional water movement operations and efficiency; Investigate new water technologies; Protect ecosystem services and benefits provided by intact and naturally-functioning Delta. | CWP Objective 1, 2, 7, 11, RMS Operational efficiency |
| **Goal 4.** Increase quantity, quality, and reliability of drinking water, irrigation water, and in-stream flows  
*Objectives:* Increase conjunctive management of new and recycled water from multiple sources. | CWP Objective 3, 12, 13; RMS Increase water supply |
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| **Goal 5. Safeguard human and environmental health and secure California water supplies**  
*Objectives: Protect and restore surface water and groundwater quality; Protect the natural systems that maintain these services.* | CWP Objective 4; RMS on water quality; chapter 4 discussion of water quality sustainability indicators |
| **Goal 6. Protect and enhance environmental conditions by improving watershed, floodplain, and aquatic condition and processes.**  
*Objectives: Practice, promote, improve, and expand environmental stewardship.* | CWP Objective 5, 12, 13; RMS Natural Resources |
| **Goal 7. Integrate flood risk management with other water and land management and restoration activities.**  
*Objectives: Improve land-use/cover to reduce flood risk; Improve floodplain-channel connections.* | CWP Objective 1, 6, 12, 13; RMS Improve flood |
| **Goal 8. Support decision-making, especially in light of uncertainties, that support integrated regional water management and flood and water resources management systems.**  
*Objectives: Improve and expand monitoring, data management, and analysis.* | CWP Objective 10; various RMSs; CWP Vol. 1 Chapter 6 Integrated Data and Analysis |
Pilot: State scale

- Indicators evaluated at state extent, with varying units of analysis
Indicators being considered

- Impervious (developed) surfaces – effects on geomorphology, water quality
- Biotic index – fish and benthic macroinvertebrates
- Water use and availability
- Public support for water systems investment
- Equitable distribution of impacts & benefits
- Water footprint
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Pilot: Santa Ana Watershed Project Authority

- One Water One Watershed 2.0
- Goal & objective selection
- Indicator selection
- Indicator evaluation
- Report card

Thanks to our collaborators at SAWPA and CWH
Pilot: Preliminary results
Pilot: Preliminary results
What is a Decision Support System?

It is primarily a tool providing information relevant to a particular set or type of decisions. It is also a system that anticipates most types of relevant decisions and uses rules/guidelines to provide the “right” information for the decision.
What is the Purpose of the DST

Provide the information needed to educate water stakeholders about water conditions and influences on condition and for decision-makers, sufficient information to support decisions about water sustainability.
What is the Purpose of the DST?

• Report status and trends of water sustainability indicators
• Enable data provenance
• Provide policy-relevant planning and implementation information
Who is the Audience for a DST?

State and local policy-makers
Planners, managers, regulators
The public.
What are the Desired Capabilities?

- Organized around a theme of water sustainability
- Present conditions and trends in the state of California for selected sustainability indicators.
- Illustrate economic, environmental, and social benefits and tradeoffs
- Provide scientific bases to inform decisions on water management challenges for long-term sustainability.
- Facilitate querying the system to evaluate conditions and trends of indicators.
- Provide the ability to drill down to a number of specific issues and geographic areas of interest within a web-based GIS environment.
What are some components of the California Water Sustainability Atlas?

- Sustainability indicators
- Water footprint
- Ecological footprint
- Groundwater (GRACE)
- Plant Growth Index
- Other CA data (DWR, SWRCB, USGS, etc.)
Contact

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