

# Incorporating Climate Change into Update 2009 Scenarios

Climate Change  
Technical Advisory Group  
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# Overview

- Summarize Integrated Data and Analysis Chapter
- Provide status on quantifying scenarios for Update 2009



# Integrated Data and Analysis

## Chapter 6



# Purpose and Motivation

- Analytical capabilities and data lag behind growing challenges facing water managers
- Need new investments in our technical infrastructure
  - ◆ Support decision making in light of uncertainties
  - ◆ Support integrated regional water management



# Recent Studies and Forums

- Update 2005
- CWEMF Strategic Analysis Framework
- San Francisco Estuary & Watershed Science Paper
  - “Internalizing Climate Change - Scientific Resource Management and the Climate Change Challenges”
- DWR Climate White Paper
- SWAN



# Specific Information and Modeling Needs

- Information gaps and limitations
- 4 examples of technically challenging problems
  - ◆ Integrated regional water management
  - ◆ Integrated flood management
  - ◆ Ecosystem restoration
  - ◆ Adapting to climate change



# Implementing Shared Vision Planning to achieve long-term technical Improvements

- Water management information
- Integration of water management information
- Common model schematics
- Common conceptual models
- Modeling protocols and standards



# Implementing analytical improvements for Water Plan Update 2009

- Scenario analysis with WEAP
- Regional synthesis of information
- Conclusions and next steps



# Related Update 2009 Content

- Managing risk and uncertainty (Chapter 5)
- Climate change white paper
- Climate science paper
- August 2008 version of Proposal



# Status on Quantifying Scenarios for Update 2009



# Deliverables for Update 2009

## Using WEAP

- DWR is using WEAP platform for Update 2009 to quantify future scenarios and water management responses
  - Successful WEAP application for IEUA
  - Contracting mechanism and expertise in place
  - Graphical nature supports collaboration
  - Shorter learning curve than alternatives



# Technical Outreach and Refinement of Proposal

- December 2007 – WEAP proposal
- April 2008 – Shared Vision Planning
- June 2008 – WEAP proposal
  - Climate change
  - Environmental water
  - Flood management
  - Water quality



# Hydrologic Region Analysis

- Monthly, climate-driven demands to 2050
  - 💧 reflect global climate change projections
- Inventory current supplies by source
- Coarse representation of response packages

All 10 Hydrologic Regions, including mountain counties



# Sacramento and San Joaquin River Regions - Planning Area

- Hydrologically-based water system simulation by month to 2050
  - reflect global climate change projections
- Estimate environmental flows, system operations, deliveries, and reliability
- More direct representation of response packages

Sacramento River & San Joaquin River Hydrologic Regions



# Summary of CWP 2009 Update Scenario Framework

## Sacramento and San Joaquin River Region Analysis

Scenario Factors	Management Strategies
<p>Economic and Financial            Institutional and Political            Natural System (<b>climate factors</b>)            Technological            Social Practices</p>	<p>Water use efficiency            New surface storage            Recycled wastewater use            Desalination            Conjunctive management            Conveyance</p>
Models	Outcomes
<p>Water Evaluation And Planning model            Planning Area for Sacramento and San Joaquin River regions (monthly time step from 2005-2050)</p>	<p>Demand            Available supply            Shortage frequency and magnitude            Reliability            Delta salinity            Hydro power and flood performance            Economic measures</p>



# Approximate Project Schedule

- Project scoping
  - ◆ Scenario factors (through August)
  - ◆ Response packages (through August)
  - ◆ Performance metrics (through August)
- Model development
  - ◆ Sacramento River model (through September)
  - ◆ San Joaquin River model (through September)
- Model calibration
  - ◆ October 2008
- Scenario analysis
  - ◆ December 2008 – February 2009



# Reference Information

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