

California Water Plan Update 2009

Future Scenarios Overview and Statewide Summary

California **Water Plan** Update **2009**

INTEGRATED WATER MANAGEMENT



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Public Review Draft

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Water Plan Scenarios Used To Consider Future Uncertainty

- Three plausible yet very different conditions during 2050 planning horizon
- Explore key uncertainties facing water community
- Factors water community has little control over
- Not predictions ---- used to evaluate water management responses

Quantifying Future Scenarios for Update 2009

- Using WEAP analytical tool to quantify water demand and supplies for future scenarios and water management responses
- WEAP Hydrologic Region analysis being done for all regions --- high level, coarse representation
- WEAP Planning Area analysis for Sacramento and San Joaquin regions --- more physically based
- Each scenario evaluated with 12 climate sequences (climate change, multiple year droughts, wet years)

Hydrologic Region Analysis

- Monthly, climate-driven demands to 2050
 - reflect global climate change projections
 - Agriculture, Urban, and Environmental sectors
- Simple representation of supplies possible

All 10 Hydrologic Regions



Planning Area Analysis

Sacramento and San Joaquin River Regions

- 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



3 Baseline Scenarios for 2050

Plausible Yet Different Futures

➤ Current Trends

- ✓ Recent trends continue into the future for population, agricultural production, environmental water, and background water conservation

➤ Blueprint Growth

- ✓ More coordinated planning & infill
- ✓ Lower population growth
- ✓ Lower reduction in agricultural production
- ✓ New environment water -- High
- ✓ More background water conservation

➤ Expansive Growth

- ✓ Less coordinated planning, sprawl
- ✓ Higher population growth
- ✓ Higher reduction in agricultural production
- ✓ New environment water -- Low
- ✓ Less background water conservation

Scenario Assumptions for Key Factors

Statewide Summary

Scenario Factors Affecting Water Demand	Year 2005 Observed	2050 Current Trends	2050 Blueprint Growth	2050 Expansive Growth
Population (millions)	36.7	59.5	44.2	69.8
Irrigated Crop Area (thousand acre)	9245	8566	8999	8254
Environmental Water Instream flows & refuges (maf)	2005 Level	+1.0	+1.5	+0.6
Background Water Conservation (% Incr.)	----	10%	15%	5%

Technical Outreach for Scenario Work

- December 2007 – Scenario proposal
- April 2008 – Shared Vision Planning
- June 2008 – Refinement of scenario proposal
 - Climate change
 - Environmental water
 - Flood management
 - Water quality
- February 2009 – Review of preliminary demands
- June 2009 – Review of revised results & graphics

Focus for the afternoon

- Hydrologic Region Scale Analysis – David Groves (RAND Corp.)
 - Statewide demands by sector and scenario
 - Regional demands by scenario
- Planning Area Scale Analysis for Sacramento and San Joaquin Hydrologic Regions – Brian Joyce (Stockholm Environment Institute)
 - Regional demands by sector and scenario
 - Regional baseline supplies by scenario