

# California Water Plan Update 2009

## Future Scenarios Central Coast HR

### 2009 Regional Workshops

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

INTEGRATED WATER MANAGEMENT



Bulletin 160-09 • Department of Water Resources

*Volume*  
REGIONAL REPORTS

# 3

## Public Review Draft

January 2009

# 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
- Inventory current supplies by source
- Coarse representation of response packages

## 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
- ✓ More agricultural prod. -- 2000 level
- ✓ New environment water -- High
- ✓ More background water conservation

### ➤ **Expansive Growth**

- ✓ Less coordinated planning & sprawl
- ✓ Higher population growth
- ✓ More agricultural prod. -- 2000 level
- ✓ New environment water -- Low
- ✓ Less background water conservation

# Scenario Assumptions for Key Factors

## Central Coast Hydrologic Region

Scenario Factors Affecting Water Demand	Year 2005 Observed	2050 Current Trends	2050 Blueprint Growth	2050 Expansive Growth
Population (millions)	1.5	2.2	1.7	2.7
Irrigated Crop Area (thousand acre)	664	626	658	589
Background Water Conservation (% Incr.)	----	10%	15%	5%

# Scenario Water Demand Changes

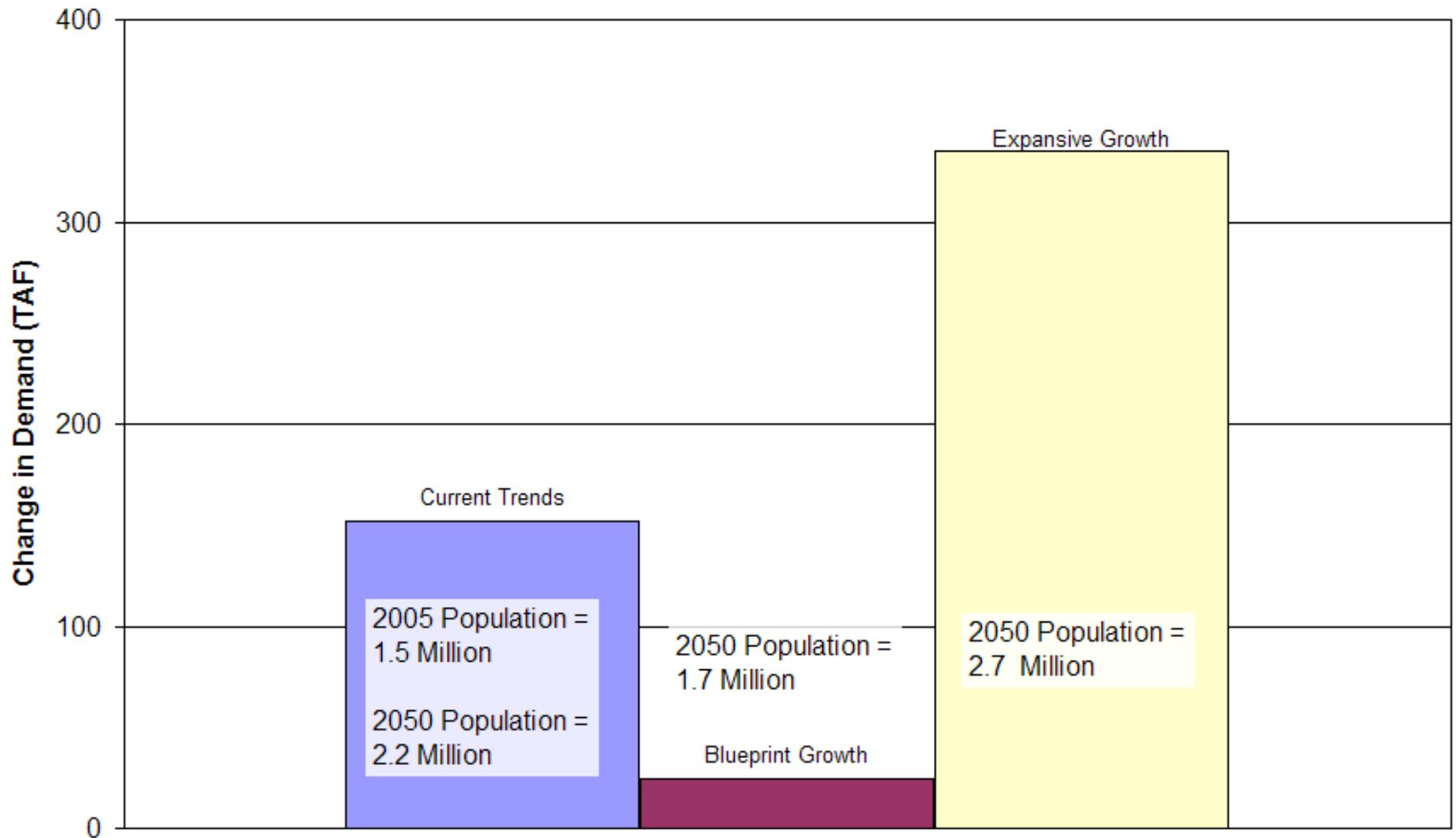
## HR Results for 1 Climate Sequence

- Change in urban water demand
- Change in irrigated agriculture water demand
- Change in environmental water
- Net Change in regional water demand

# Urban Water Demand Changes – 2005 to 2050

## Central Coast HR

**Change in 2041-2050 Average Applied Urban Water Demand  
from 1998-2002 Historical Average by Scenario  
Central Coast Region, Climate Sequence 1**



# 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

# Steps for Scenario Work

- December 2008 – February 2009
  - Develop scenario water demands
- February – May 2009
  - Develop scenario water supplies
  - Test future water management responses
- Mid-June 2009
  - Workshop on Regional and Planning Area results