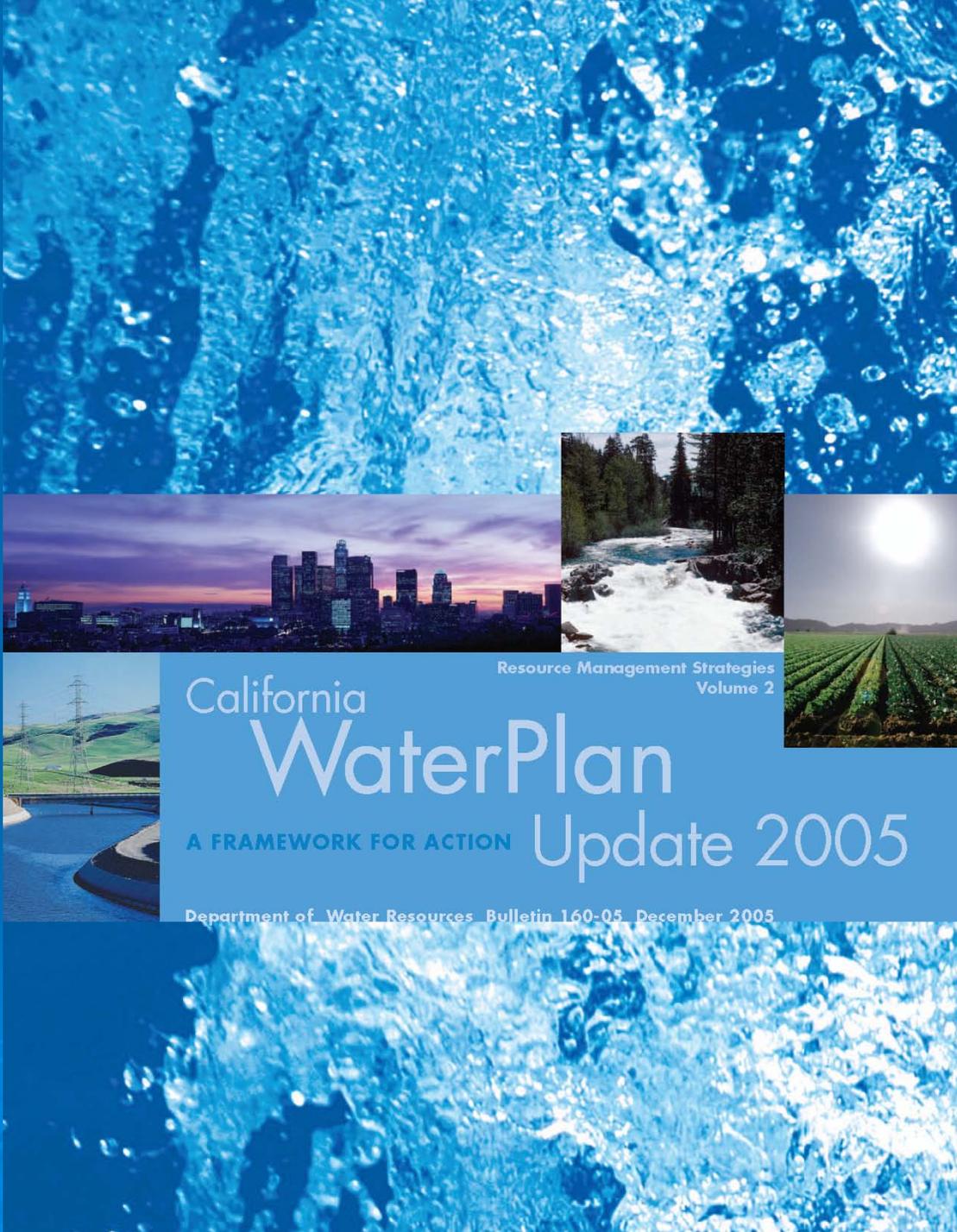


# California Water Plan Update 2009

## Flood Management Resource Management Strategies

Center for  
Collaborative Policy  
July 1, 2008



Resource Management Strategies  
Volume 2

# California WaterPlan

A FRAMEWORK FOR ACTION Update 2005

Department of Water Resources Bulletin 160-05 December 2005

# Agenda

- Welcome, Introductions, Ground Rules
- Overview of Flood RMS Approach
- Strategy Review and Discussion
  - Flood Flow Modification
  - Flood Susceptibility Modification

## Break

- Flood Impact Modification
- Floodplain Restoration
- Recap Discussion

# Welcome

- Introductions
- Ground Rules

# Update 2009 Flood Management Approach

# Update 2005 Framework for Action

Vision



Vital Economy  
Healthy Environment  
High Standard of Living

2 Initiatives  
Ensure Reliable  
Water Supplies



Implement  
Integrated  
Regional Water  
Management

Improve  
Statewide Water  
Management  
Systems

3 Foundational  
Actions Ensure  
Sustainable  
Water Uses



Use  
Water  
Efficiently

Protect  
Water  
Quality

Support  
Environmental  
Stewardship

# Update 2005

## Resource Management Strategies

### Reduce Water Demand

- Agricultural Water Use Efficiency
- Urban Water Use Efficiency

### Improve Operational Efficiency & Transfers

- Conveyance
- System Reoperation
- Water Transfers

### Increase Water Supply

- Conjunctive Management & Groundwater Storage
- Desalination –Brackish & Seawater
- Precipitation Enhancement
- Recycled Municipal Water
- Surface Storage – CALFED
- Surface Storage - Regional/Local

### Improve Water Quality

- Drinking Water Treatment and Distribution
- Groundwater/Aquifer Remediation
- Matching Quality to Use
- Pollution Prevention
- Urban Runoff Management

### Practice Resource Stewardship

- Agricultural Lands Stewardship
- Economic Incentives (Loans, Grants, and Water Pricing)
- Ecosystem Restoration
- **Floodplain Management**
- Recharge Areas Protection
- Urban Land Use Management
- Water-Dependent Recreation
- Watershed Management



*A multi-faceted program to improve public safety  
through integrated flood management*



- Statewide Program
- 4 Major Activities
- Primarily funded by Propositions 1E and 84
- Emphasis on state-federal system in Central Valley & Delta
- ~10 year effort

# FloodSAFE Vision



A sustainable integrated flood management and emergency response system throughout California that improves public safety, protects and enhances environmental and cultural resources, and supports economic growth by reducing the probability of destructive floods, promoting beneficial floodplain processes, and lowering the damages caused by flooding.

# Integration

- Integrated flood management recognizes
  - **Interconnection** of flood management actions within broader **water resources** management
  - Value of **coordinating across** geographic and agency **boundaries**
  - Need to evaluate opportunities and potential impacts from a **system perspective**
  - Importance of environmental **stewardship** and sustainability

# FloodSAFE Goals



1. Reduce chance of flooding
2. Reduce consequences of flooding
3. Sustain economic growth
4. Protect and enhance ecosystems
5. Promote sustainability

# Guiding Principles

1. Approach flood risk management on a system-wide basis and prevent adverse impacts
2. Integrate land use planning with flood risk management
3. Encourage and fund projects that offer multiple or regional benefits



# Guiding Principles (cont.)

4. Protect and restore natural floodplain processes and promote environmental stewardship
5. Design and build flood protection facilities to avoid catastrophic or unexpected failures
6. Promote and fund regional planning



# Guiding Principles (cont.)



7. Adapt flood management to cope with climate change
8. Provide accurate information about flood risks to help residents and communities make safer decisions
9. Leverage state investments to provide maximum public benefits
10. Provide equitable access to decision process

# Planning Activities

**Improve  
Flood  
Management  
Systems**

FloodSAFE  
Strategic Plan

What to accomplish...

FloodSAFE  
Implementation Plan

How to accomplish...

California Water Plan  
Enhance Statewide  
Flood Management

Statewide strategic  
policy document...

Central Valley  
Flood Protection Plan

System-wide plan for improving  
integrated flood management in  
Central Valley ...

Integrated Regional Water  
Management Plans

Regional plans with State assistance...

Project Feasibility Studies

Detailed project studies ...

# Why Link FloodSAFE & Water Plan?

- Water Plan organizational structure
- Common principles, overlapping resources, and compatible planning considerations
- Both involve an interdisciplinary, multi-objective approach

# Integrated Flood Management

“A process that promotes a comprehensive approach to flood management that considers land and water resources at a watershed scale within the context of integrated regional water management, which aims to maximize the benefits of floodplains and minimize the loss of life and damage to property from flooding.”

# Update 2005 Structure

- Volume 1: Strategic Plan
  - Recommendations and Actions
- Volume 2 : Resource Management Strategies
  - Toolkit for Water Management
- Volume 3: Regional Reports
  - Summary of Local Conditions
- Volume 4: Reference Guide
- Volume 5: (Online) Technical Guide

# Update 2009 Flood Mgmt Content

- Volume 1: Strategic Plan
  - Companion Plans: FloodSAFE
- Volume 2 : Resource Mgmt Strategies
  - New Flood Management Strategies
- Volume 3: Regional Reports
  - New Flood-Related Content
- Volume 4: Reference Guide
- Volume 5: (Online) Technical Guide
  - Potential for New Flood-Related Content

# Resource Management Strategies

## Reduce Water Demand

- Agricultural Water Use Efficiency
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## Improve Operational Efficiency & Transfers

- Conveyance
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- Water Transfers

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- Economic Incentives (Loans, Grants, and Water Pricing)
- Ecosystem Restoration
- **Floodplain Management**
- Recharge Areas Protection
- Urban Land Use Management
- Water-Dependent Recreation
- Watershed Management

# Resource Management Strategies

Reduce Water Demand

Improve Water Quality

Improve Operational Efficiency &  
Transfers

Practice Resource Stewardship

Increase Water Supply

# Resource Management Strategies

- Reduce Water Demand
- Improve Operational Efficiency & Transfers
- Increase Water Supply
- Improve Water Quality
- Practice Resource Stewardship

# Resource Management Strategies

- Reduce Water Demand
- Improve Operational Efficiency & Transfers
- Increase Water Supply
- Improve Water Quality
- Practice Resource Stewardship
- Improve Flood Management



# Strategies to Improve Flood Management

- National Unified Program for Floodplain Management:
  - Modify Flooding
  - Modify Flood Impacts
  - Modify Susceptibility to Flood Damage
  - Preserve Natural Floodplain Functions

# Strategies to Improve Flood Management

## ➤ Resource Management Strategies: Initial Draft

- Modify Flooding
- Modify Flood Impacts
- Modify Flood Susceptibility
- Preserve & Restore Natural Resources

# Strategies to Improve Flood Management

## ➤ Resource Management Strategies: Working Draft

- Flood Flow Modification
- Flood Impact Modification
- Flood Susceptibility Modification
- Floodplain Restoration

# Integrated Flood Management

- Flood Management Strategies
- Other Resource Management Strategies
  - Conjunctive Management
  - Conveyance
  - Ecosystem Restoration
  - Surface Storage
  - System Reoperation
  - Urban Runoff Management
  - Watershed Management

# Strategies to Improve Flood Management

- Resource Management Strategies:  
Proposed Changes
  - Flood Flow Modification
  - Flood Impact Modification
  - Flood Susceptibility Modification
  - Floodplain Restoration

# Strategies to Improve Flood Management

## ➤ Resource Management Strategies: Proposed Changes

- Flood Flow Modification
- Flood Preparedness
- Flood Planning, Standards, Design & Regulation
- Floodplain Restoration

# Strategies to Improve Flood Management

## ➤ Resource Management Strategies: Proposed Changes

- Flood Risk Modification
- Flood Preparedness
- Flood Planning, Standards, Design & Regulation

# Flood Management Approach

- Questions of Clarification?
- Discussion of Overview
  - Integrated Flood Management definition...
  - Four Strategies...?



# Flood Management Strategy Review

# Flood Flow Modification

## ➤ Overview

- Description
- Benefits
- Potential Costs
- Major Issues
- Recommendations

# Flood Flow Modification

## ➤ Description

- Dams and Reservoirs
- Levees, Dikes, & Flood Embankments
- Channel Improvements
- High Flow Diversions and Bypasses

# Flood Flow Modification

## ➤ Potential Benefits

- Regional Benefits
- Inter-Regional Benefits
- Other:
  - Water Supply and Drought Preparedness
  - Reduce Groundwater Overdraft
  - Water Quality
  - Energy
  - Resource Stewardship

# Flood Flow Modification

## ➤ Potential Costs

- TBD

## ➤ Major Issues

- IRWM Coordination
- Potential Costs & Competition for Funds
- Population Growth
- Climate Change
- Limited Documentation of Needs

# Flood Flow Modification

## ➤ Key Recommendations

- Complete Central Valley Flood Plan
- Undertake Statewide Flood Planning
- Develop Financing Strategy

# Flood Flow Modification

- Questions of Clarification?
- What Content Should Move Forward to Advisory Committee?



# Flood Impact Modification

## ➤ Description

- Information and Education
- Disaster Preparedness
- Post-Flood Recovery
- Flood Insurance

# Flood Impact Modification

## ➤ Potential Benefits

- Regional Benefits
- Inter-Regional Benefits
- Other Benefits?
  - Water Supply and Drought Preparedness
  - Groundwater Overdraft
  - Water Quality
  - Energy
  - Resource Stewardship

# Flood Impact Modification

## ➤ Potential Costs

- TBD

## ➤ Major Issues

- Population Growth
- Climate Change
- Limited Documentation of Needs

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## ➤ Key Recommendations

- Complete Central Valley Flood Plan
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# Flood Impact Modification

- Questions of Clarification?
- What Content Should Move Forward to Advisory Committee?



# Break



# Flood Susceptibility Modification

## ➤ Description

- Floodplain Regulation
- Development & Redevelopment Policies
- Design and Location of Facilities
- Housing and Building Codes
- Flood Proofing
- Flood Forecasting and Warning

# Flood Susceptibility Modification

## ➤ Potential Benefits

- Regional Benefits
- Inter-Regional Benefits
- Other Benefits?
  - Water Supply and Drought Preparedness
  - Groundwater Overdraft
  - Water Quality
  - Energy
  - Resource Stewardship

# Flood Susceptibility Modification

## ➤ Potential Costs

- TBD

## ➤ Major Issues

- Population Growth
- Climate Change
- Limited Documentation of Needs

# Flood Susceptibility Modification

## ➤ Key Recommendations

- Complete Central Valley Flood Plan
- Undertake Statewide Flood Planning
- Develop Financing Strategy

# Flood Susceptibility Modification

- Questions of Clarification?
- What Content Should Move Forward to Advisory Committee?



# Floodplain Restoration

## ➤ Description

- Ecosystem Restoration
- Watershed Management
- Floodplain Management

# Floodplain Restoration

## ➤ Potential Benefits

- Regional Benefits
- Inter-Regional Benefits
- Other Benefits?
  - Water Supply and Drought Preparedness
  - Groundwater Overdraft
  - Water Quality
  - Energy
  - Resource Stewardship

# Floodplain Restoration

## ➤ Potential Costs

- TBD

## ➤ Major Issues

- Population Growth
- Climate Change
- Limited Documentation of Needs

# Floodplain Restoration

## ➤ Key Recommendations

- Complete Central Valley Flood Plan
- Undertake Statewide Flood Planning
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# Floodplain Restoration

- Questions of Clarification?
- What Content Should Move Forward to Advisory Committee?



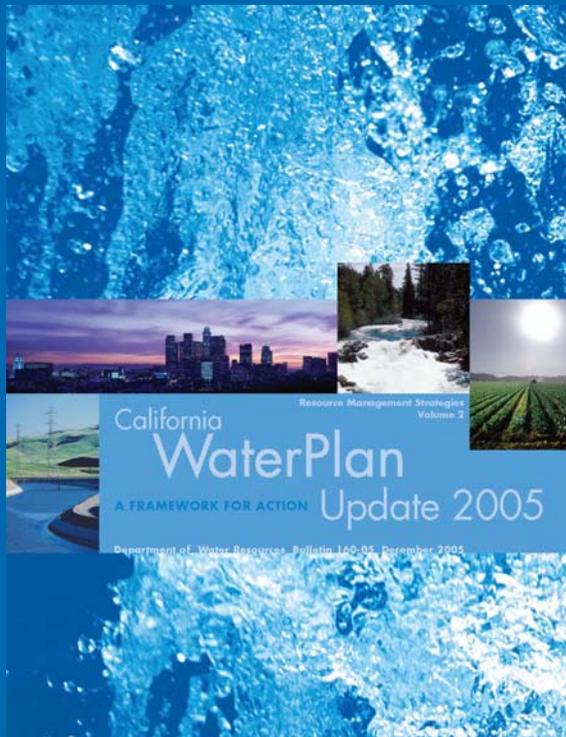
# Recap

## ➤ Four Strategies

- Combine or Consolidate?
- Other Suggestions?

## ➤ Next Steps

- Pre-Administrative Draft: September
- Plenary: September 18-19 in Sacramento
- Public Review Draft: December 31<sup>st</sup>



# Adjourn