Integration of Flood Management into Water Resource Planning

California Water Plan Plenary Meeting
September 19, 2008
Content

- Integrated Flood Management
- Flood Management
  - Update 2009
  - Integrated Regional Water Management
- Looking Forward
- Breakout Discussions
- Report Backs
Traditional Flood Control

Use structural measures to capture, store, and route flows away from specific areas

– Dams and Reservoirs
– Levees, Dikes, and Flood Embankments
– Channelization
– High Flow Diversions and Bypasses
Broader Flood Management

- Non-Structural
  - Floodplain Regulation
  - Housing and Building Codes
  - Disaster Preparedness / Recovery
  - Flood Insurance
  - Information and Education
Flood Management Today

- Focus on managing risk and reward for multiple objectives
- Rely on structural and non-structural systems and actions
- Actions spread across multiple agencies
  - Federal, state, and local
  - Various roles
    - Land use
    - Flood protection
    - Operations and Maintenance
What is Integrated Flood Management (IFM)?

World Meteorological Organization:
“A process promoting an integrated… approach to flood management. It integrates land and water resources development in a river basin, within the context of integrated water resource management, and aims at maximizing the net benefits from flood plains and minimizing loss to life from flooding.”
FloodSAFE IFM Framework

- 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
Questions?
Flood Management in the California Water Plan
Update 2009

- Volume 1: Strategic Plan
  - Companion Plans: FloodSAFE
- Volume 2: Resource Mgmt Strategies
  - New Flood Strategies
- Volume 3: Regional Reports
  - New Flood Content
- Volume 4: Reference Guide
- Volume 5: (Online) Technical Guide
Update 2009 Content

- Volume 2: Resource Management Strategies
Update 2005 Resource 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

Improve Water Quality
- Drinking Water Treatment
- Groundwater Remediation
- Matching Quality to Use
- Pollution Prevention
- Urban Runoff Management

Practice Resource Stewardship
- Agricultural Lands Stewardship
- Economic Incentives
- Ecosystem Restoration
- Floodplain Management
- Recharge Areas Protection
- Urban Land Use Mgmt
- Water-Dependent Recreation
- Watershed Management
Update 2005 Strategies

Reduce Water Demand

Improve Operational Efficiency & Transfers

Increase Water Supply

Improve Water Quality

Practice Resource Stewardship
Update 2009 Strategies

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

- National Unified Program for Floodplain Management:
  - Modify Flooding
  - Preserve Natural Floodplain Functions
  - Modify Flood Impacts
  - Modify Susceptibility to Flood Damage
Flood Management Strategies (2)

- Resource Management Strategies: Initial Draft
  - Modify Flooding
  - Preserve & Restore Natural Resources
  - Modify Flood Impacts
  - Modify Flood Susceptibility
Flood Management Strategies (3)

- Resource Management Strategies: Working Draft
  - Flood Flow Modification
  - Floodplain Restoration
  - Flood Impact Modification
  - Flood Susceptibility Modification
Flood Management Strategies (4)

- Resource Management Strategies
- July 1st Strategy Workshop:
  - Flood Flow *Management*
  - Floodplain *Function* Restoration
  - Flood Impact *Reduction*
  - Flood Susceptibility Modification
Flood Management Strategies (5)

- Resource Management Strategies Proposal:
  - Flood Flow *Management*
  - Flood Impact *Reduction*
Flood Management Strategies (6)

- Resource Management Strategies: Pre-Admin Draft
  - Flood Flow Management
  - Flood Impact Reduction
Flood Management Strategies (7)

- Resource Management Strategies: Pre-Admin Draft
  - Flood Flow Management
    - Dams and Reservoirs
    - Levees, Dikes, and Flood Embankments
    - Channelization Improvements
    - High Flow Diversions and Bypasses
    - Floodplain Function Restoration
Flood Management Strategies (8)

- Resource Management Strategies: Pre-Admin Draft
  - Flood Impact Reduction
    - Floodplain Regulation
    - Housing and Building Codes
    - Information and Education
    - Disaster Preparedness
    - Flood Insurance
    - Post-Flood Recovery
Integrated Flood Management

- Flood-Focused Strategies
  - Flood Flow Management
  - Flood Impact Reduction

- Other Resource Management Strategies
  - Conjunctive Management
  - Conveyance
  - Ecosystem Restoration
  - Forest Management
  - Land Use Planning and Management
  - Surface Storage
  - System Reoperation
  - Urban Runoff Management
  - Watershed Management
Additional Flood Content

- Volume 3: Regional Reports
  - Ch 1: State Summary
  - Ch 2: North Coast Hydrologic Region
  - Ch 3: San Francisco Bay Hydrologic Region
  - Ch 4: Central Coast Hydrologic Region
  - Ch 5: South Coast Hydrologic Region
  - Ch 6: Sacramento River Hydrologic Region
  - Ch 7: San Joaquin River Hydrologic Region
  - Ch 8: Tulare Lake Hydrologic Region
  - Ch 9: North Lahontan Hydrologic Region
  - Ch 10: South Lahontan Hydrologic Region
  - Ch 11: Colorado River Hydrologic Region
  - Ch 12: Sacramento–San Joaquin Delta
  - Ch 13: Mountain Counties
Additional Flood Content

- Volume 3: Regional Reports
  - Setting
    - Watersheds
  - Regional Water Conditions
    - Flood Management
  - Relationship with Other Regions
  - Regional Water Management
    - Flood Planning
  - Looking to the Future
    - Climate Change
Questions?
Flood and Integrated Regional Water Management (IRWM)

- Flood management strategy one of the original Prop. 50 requirements
- Flood content in existing plans varies
- Pending development of Prop. 84 guidelines
- How to enhance regional flood management?
Flood Management in IRWM (2)

- Plan Standards
  - Regional Water Management Group
  - Governance
  - Regional Description
  - Objectives
  - Water Management Strategies
  - Integration
  - Regional Priorities
Flood Management in IRWM (3)

- Plan Standards
  - Implementation
  - Project Review Process
  - Impact and Benefits
  - Technical Analysis
  - Plan Performance
  - Data Management
  - Financing
Flood Management in IRWM (4)

- Plan Standards
  - Relation to Statewide Water Management
    - Central Valley Flood Protection Plan
  - Relation to Local Land Use Planning
  - Stakeholder Involvement
  - Coordination
  - Climate Change
Questions?
Flood Management: Looking Forward

- FloodSAFE
  - Central Valley Flood Protection Plan
  - Statewide Flood Management Planning Report
- Integrated Regional Water Management
- CWP Update 2013
Central Valley Flood Protection Plan

- An integrated flood management plan for the Sacramento-San Joaquin River Flood Management System
- Required to be developed by January 1, 2012
- Required to be adopted by July 1, 2012
Sacramento – San Joaquin Valley
Focus on State Flood System

Sacramento Basin

San Joaquin Basin

Project Levees Shown in Red
CVFPP Content

- Description of system and status of current performance
- Recommendations for changes throughout system to better manage flood risk for areas currently receiving protection from State-federal system
- Consider multiple objectives
Statewide Flood Planning

- Conduct New Statewide Evaluation
  - “Recommendations for Improving and Sustaining Integrated Flood Management in California”
Statewide Flood Planning (2)

- Assess significant flood risks
- Inventory existing and future flood management needs
- Identify opportunities for integrated flood management
Statewide Flood Planning (3)

- Formulate potential flood management solutions
- Develop regional cost estimates
- Develop a finance strategy to fund improvements
Integrated Regional Water Management

- Draft / Final Guidelines
  - Timing Depends on appropriation

- Planning Funds
  - IRWM
  - Enhance Regional Flood Management

- Implementation Funds
  - IRWM (Prop. 84)
  - Stormwater (Prop. 1E)
CWP Update 2013

Central Valley Flood Protection Plan
Recommendations for Sustaining IFM

IRWM Plans

Individual IRWM Plans

2008 2009 2010 2011 2012

Update 2013
Public Review Draft
Pre-Admin. Draft
Working Draft
Initial Draft
Questions?
Breakout Discussions

- Each group to consider several questions (Refer to Handout)
- Select one person as a note taker and another to serve as a spokesperson
- Each group will report on their discussions
Breakout Questions

- **What is Integrated Flood Management?**
  - How should it be implemented at the Statewide level?
  - How should it be implemented at the Regional level?

- **What are the impediments to Integrated Flood Management and how can they be removed?**
Breakout Questions (2)

- What are the most promising opportunities for Integrated Flood Management?
- For Update 2009:
  - Is the Flood Management content ready for the Public Draft?
  - Are there issues that need to be Cross-Referenced?
Breakout Discussions

- From 2:00 to 2:45
- Followed by reports from groups
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