

Bureau of Reclamation  
Mid-Pacific Region

California Department  
of Water Resources

# Upper San Joaquin River Basin Storage Investigation

## Workshop 2

July 31, 2002

# Agenda

- ◆ Meeting Overview -- Charles Gardiner
  - Agenda and Objectives
  - Participation Principles and Ground Rules
- ◆ Phase 1 Study Purpose Statement -- Jason Phillips & Bill Swanson
  - Problems and Opportunities
- ◆ Initial Study Approach -- Jason Phillips & Bill Swanson
  - Analysis Approach
  - Friant Expansion Concept
  - Initial Assumptions
- ◆ Storage Options -- Bill Swanson & \_\_\_\_\_
- ◆ Modeling Assumptions and Approach -- Yung-Hsin Sun & Walter Bourez

# Workshop Objectives

- ◆ Review and Refine Phase 1 Study Purpose Statement
  - ◆ Receive Input on Draft Problems and Opportunities
  - ◆ Understand Initial Study Approach
  - ◆ Discuss Initial Assumptions
  - ◆ Introduce Storage Options
  - ◆ Discuss Modeling Approach and Assumptions
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# Participation Principles

- ◆ Participate -- Attend the workshops
  - ◆ Learn -- Learn about resources, people, roles, and process
  - ◆ Represent -- Bring issues and interests forward from others whose interests you share
  - ◆ Cooperate -- Work with others in the workshops to share information and consider options
  - ◆ Educate -- Report back to others who share your interests
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# Workshop Ground Rules

- ◆ **Commit to Being Fully Present**
    - No cell phones, pagers, voicemail, etc.
    - Ask for what you need from the meeting process and participants
  - ◆ **Honor Our Time Limits**
    - Keep comments and discussion concise
    - Stay focused on the topic – Use the parking lot for other issues
  - ◆ **Respect Each Other**
    - Listen carefully to other team members
    - Respond to ideas and issues, not individuals
  - ◆ **Support Constructive Discussion**
    - Suggest improvements and solutions
    - Build on others' ideas – Use “and” instead of “but”
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# Study Approach

- ◆ Define Study Purpose
  - ◆ Define Goals and Objectives
  - ◆ Identify and Characterize Problems and Opportunities
  - ◆ Develop Initial Analysis Approach and Assumptions
  - ◆ Develop Initial Alternatives
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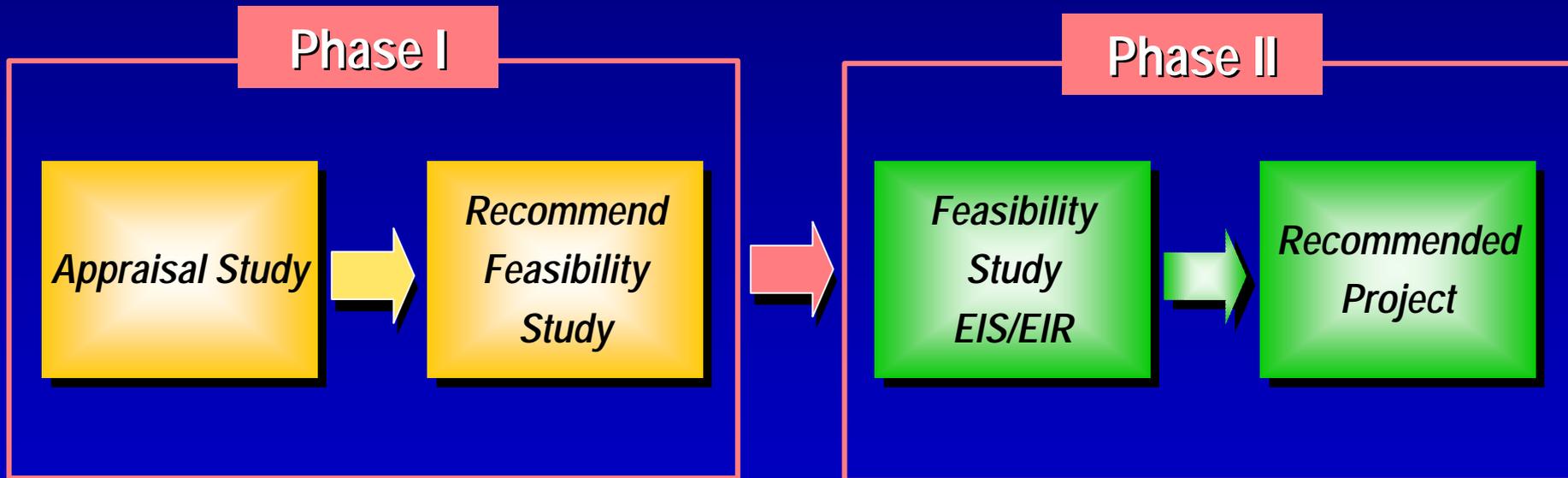
# CALFED Record of Decision

- ◆ Water Storage Program in the San Joaquin River Region
  - Enlargement of Friant Dam of 250 to 700 TAF or a functionally equivalent storage program
- ◆ CALFED Goals for Upper San Joaquin River Basin Storage
  - Contribute to restoration of San Joaquin River
  - Improve water quality in San Joaquin River
  - Improve water quality of urban deliveries
    - ◆ Facilitate conjunctive water management and water exchanges
- ◆ Assist in solving other regional problems
  - CALFED will join with local partners in the evaluation

# Proposed Phase 1 Study Purpose Statement

- ◆ Determine if CALFED agencies should pursue a water storage feasibility study that could meet the CALFED goals for Upper San Joaquin River Basin Storage and assist in solving other regional problems

# UPPER SAN JOAQUIN RIVER BASIN STORAGE INVESTIGATION – A Two-Phase Investigation Approach



# Study Approach

- ◆ Define Study Purpose
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- ◆ Develop Initial Alternatives

# Identifying Problems and Opportunities

- ◆ Categorization of Problems and Opportunities
    - Problems are linked to goals
    - Opportunities are addressed in concert with the problems, but would not likely be addressed alone
  - ◆ Characterization of Problems
  - ◆ Addressing the Problem with New Storage
  - ◆ Measures of Accomplishment (Metrics)
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# Problems and Opportunities

- ◆ Problems

- San Joaquin River Ecosystem
- SJR Water Quality
- Water Supply Reliability

- ◆ Opportunities

- Hydropower
  - Flood Control
  - Recreation
  - Delta Inflow
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# Water Resources Problems and Opportunities

- ◆ Is the list of Problems and Opportunities complete?
  - ◆ Are the Problems and Opportunities characterized correctly?
  - ◆ Is the Future Condition for each Problem accurately described?
  - ◆ What reasonable and foreseeable actions will affect Future Conditions?
  - ◆ Are there additional ways to identify and measure accomplishments?
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# SAN JOAQUIN RIVER ECOSYSTEM RESTORATION

- ◆ Currently, there is not adequate water supply to support potential restoration goals
- ◆ Ecosystem From Friant Dam to Merced River Subject to Many Challenges
  - Natural water supply has been diverted
  - Gravelly Ford to MP - often Dry
  - MP to Sack Dam - Delta water
  - Sack Dam to Merced - return flows
- ◆ There is no currently defined restoration goal

# SAN JOAQUIN RIVER ECOSYSTEM RESTORATION

- ◆ Litigation and settlement process are ongoing
    - Requirement for restoration has not yet been determined
    - Restoration objective has not been established
  - ◆ Future without-project assumptions
    - No additional demand for the San Joaquin River is assumed for this planning study
    - Any future requirements could be included in the study
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# SAN JOAQUIN RIVER ECOSYSTEM RESTORATION

- ◆ Study will consider how additional storage could provide water for a range of potential restoration needs
  - ◆ Potential Incremental Ecosystem Water Demands
    - Wetland and Riparian
    - Resident Fishery
    - Hatchery-produced anadromous fishery
    - Naturally-producing anadromous fishery
  - ◆ Measurement of Accomplishment
    - Ability to meet demand
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# SAN JOAQUIN RIVER WATER QUALITY

- ◆ San Joaquin River Water Quality Challenges
  - Elevated salinity, boron, and other constituents
- ◆ Total Daily Maximum Loading (TMDL) Requirements
  - Objectives based on concentration at Vernalis
  - Future objectives may be set at upstream locations

# SAN JOAQUIN RIVER WATER QUALITY

- ◆ Releases from Friant Dam Could Improve San Joaquin Water Quality By
  - Improving water quality at Mendota Pool which would improve agricultural return
  - Providing water directly to river for dilution - may need to bypass Mendota Pool
- ◆ Measure of Accomplishment
  - Change in water quality along San Joaquin River
  - Change in meeting water quality objectives at Vernalis

# WATER SUPPLY RELIABILITY

- ◆ Eastern San Joaquin Groundwater Basin
    - Overdraft estimated at 1 MAF annually
  - ◆ New storage could facilitate
    - Conjunctive use
    - Opportunities for water exchanges with urban areas
    - Increased reliability of CVP Friant deliveries
  - ◆ Measures of Accomplishment
    - Ability to meet demand
    - Change in overdraft amount
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# Other Potential Water Supply Effects

- ◆ South of Delta Water Supply
  - Friant deliveries to Mendota Pool could increase delivery of Delta supplies to other water users
- ◆ San Joaquin River Tributaries Water Supply
  - Improved water quality could improve New Melones water supply reliability and reduce VAMP contributions

# Study Approach

- ◆ Define Goals and Objectives
- ◆ Identify and Characterize Problems and Opportunities
- ◆ Develop Initial Analysis Approach and Assumptions
  - Friant Concept
  - Identifying Range of Potential Benefits
  - Initial Assumptions
- ◆ Develop Initial Alternatives

# Friant Enlargement Concept

- ◆ Evaluation Scenario Only - Not an Alternative
  - ◆ Increase Millerton Lake by 700 TAF in CALSIM 2 Model
  - ◆ Simulate operations with additional storage
  - ◆ Identify how problems and opportunities could be addressed
  - ◆ Use to guide definition of “Functional Equivalence”
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# Initial Analysis Approach

- ◆ How much water could enlarged Friant provide for each problem?
  - ◆ Begin with single purpose scenario for each problem
    - Operate to address needs of problem
    - Identify range of potential accomplishments for problem
    - Identify potential accomplishments for other problems and opportunities
  - ◆ Will ultimately use results to help define objectives
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# Initial Analysis Example

- ◆ Use new storage for water quality
- ◆ Identify how Friant Enlargement concept could help solve water quality problems
- ◆ Identify how other problems and opportunities could be affected
  - River Restoration
  - Water Supply Reliability
  - Flood Control
  - Hydropower
  - Delta Inflow

# Initial Analysis Assumptions on Water Use

## ◆ Operation Assumptions

- Honor current laws, rules, and regulations
  - ◆ San Joaquin River riparian rights
  - ◆ Existing Contract Amounts
  - ◆ Flood control space
  - ◆ Classification of Section 215 water

## ◆ Modeling Constraints

- Maintain long-term annual average surface water deliveries

# Measuring Potential Water Supply Related Impacts

- ◆ **Related to Increased River Demands**
  - Reduced 215 deliveries compared to No-action
  - Impacts on groundwater compared to No-action

# Measuring Potential Water Supply Related Impacts

- ◆ **Related to Increased Deliveries via Friant-Kern Canal or Madera Canal**
  - Reduced flood releases in San Joaquin River compared to No-action
    - ◆ Impacts to South of Delta water supply reliability
    - ◆ Impacts to San Joaquin River water quality
    - ◆ Impacts to San Joaquin River ecosystem

# Study Approach

- ◆ Define Goals and Objectives
- ◆ Identify and Characterize Problems and Opportunities
- ◆ Develop Initial Analysis Approach and Assumptions
  - Friant Concept
  - Identifying Range of Potential Benefits
  - Initial Assumptions
- ◆ Develop Initial Alternatives
  - Storage Options

# Preliminary Description of Surface Storage Options

- ◆ Is the list of Storage Options complete?
- ◆ Are the Storage Options characterized correctly?

# Next Steps

- ◆ Finalize Problem and Opportunity Statements
  - ◆ Refine Initial Analysis Assumptions
  - ◆ Perform Initial Single Purpose Evaluation
  - ◆ Prepare Initial Assessment of Storage Options
  - ◆ Continue to Refine Goals and Develop Objectives
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