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Managing Water in the West

Delta-Mendota Canal Recirculation Feasibility Study

**Stakeholder Workshop
Alternatives Development
December 12, 2006**



U.S. Department of the Interior
Bureau of Reclamation

Purpose and Outcome

- **Purpose**
 - Engage stakeholders in the development of alternatives to be considered as part of the Feasibility Study.
- **Outcome**
 - Identification of potential alternatives to be considered.

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Agenda

- **Welcome and Introductions**
- **Purpose and Outcome**
- **Review Project Objectives**
- **Identify Key Alternative Elements and Scenarios**
- **Develop Potential Alternatives**
- **Introduction to Metrics for Evaluation**
- **Next Steps**
- **Wrap-Up**

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Primary Objectives

- Meet and/or augment the Vernalis objectives and San Joaquin River water quality objectives (*D 1641*)
- Provide flow for meeting water quality and fishery flow objectives (*PL108-361*)
- Reduce salinity concentrations in the San Joaquin River for meeting water quality and fishery flow objectives (*PL108-361*)
- Reduce the reliance on the New Melones Reservoir for meeting water quality and fishery flow objectives (*PL108-361*)
- Reduce salinity and improve dissolved oxygen in the San Joaquin River (*CALFED ROD and PL108-361*)

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Secondary Objectives

- Assist in meeting south Delta water quality objectives
- Assist in improving south Delta water levels for agricultural purposes
- Other?

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Elements of Scenario Formulation

<p>Operational Priority/ CVP Exports</p> <ul style="list-style-type: none"> <input type="checkbox"/> Excess Capacity <input type="checkbox"/> No Net Loss <input type="checkbox"/> As Required <p>SWP Capacity</p> <p>Delta Pumping Priority</p> <ul style="list-style-type: none"> <input type="checkbox"/> EWA <input type="checkbox"/> Transfers <input type="checkbox"/> Joint-Point <p>Conveyance</p> <ul style="list-style-type: none"> <input type="checkbox"/> Westley Wasteway <input type="checkbox"/> Newman Wasteway <input type="checkbox"/> Mendota Pool/Sack Dam <input type="checkbox"/> Refuge Routing <input type="checkbox"/> Other Path 	<p>Operational Priority/SJ River</p> <ul style="list-style-type: none"> <input type="checkbox"/> Prior to SJRA / VAMP <input type="checkbox"/> Post SJRA / VAMP <p>Operational Priority/New Melones</p> <ul style="list-style-type: none"> <input type="checkbox"/> Prior to IPO <input type="checkbox"/> Supplemental to IPO 	<p>Operational Objective Vernalis Flow</p> <ul style="list-style-type: none"> <input type="checkbox"/> VAMP <input type="checkbox"/> Feb–June Base <input type="checkbox"/> Fall <p>Water Quality – EC</p> <ul style="list-style-type: none"> <input type="checkbox"/> Vernalis <input type="checkbox"/> Interior Stations <input type="checkbox"/> Irrigation Season <input type="checkbox"/> Non-Irrigation Season <p>Water Quality – Dissolved Oxygen</p> <ul style="list-style-type: none"> <input type="checkbox"/> Stockton DWC <p>Water Levels</p> <ul style="list-style-type: none"> <input type="checkbox"/> South Delta 	<p>Operational Constraints Incremental Export Preclusions</p> <ul style="list-style-type: none"> <input type="checkbox"/> Feb–June <input type="checkbox"/> Dec–Jan <input type="checkbox"/> Other <p>Flow Augmentation Preclusions</p> <ul style="list-style-type: none"> <input type="checkbox"/> Fall <input type="checkbox"/> Spring <input type="checkbox"/> Other
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Alternative Formulation Framework

ID	Alternative Name	Conveyance					Timing					Operational Goal			Operational Hierarchy				
		Newman Wasteway	Westley Wasteway	Mendota Pool	Aqueduct Wasteway	Refuge Routing	Feb-June (except VAMP)	VAMP Period (April 15 - May 15)	October	April-August	September - March	Flow @ Vernalis	EC @ Vernalis		New Melones Releases	SURVAMP	CVP Export Capacity		
0	No Action																		
1	Non-VAMP Flow	x					x						x				Before	Before	Excess
1W	Non-VAMP Flow Westley		x				x						x				Before	Before	Excess
1M	Non-VAMP Flow Mendota Pool			x			x						x				Before	Before	Excess
1C	Non-VAMP Flow Cal Aqueduct Wasteway				x		x						x				Before	Before	Excess
1R	Non-VAMP Refuge					x	x						x				Before	Before	Excess
2	VAMP Flow	x						x					x				Before	Before	Excess
2W	VAMP Flow Westley		x					x					x				Before	Before	Excess
2M	VAMP Flow Mendota Pool			x				x					x				Before	Before	Excess
2C	VAMP Flow CVP				x			x					x				Before	Before	Excess
2R	VAMP Refuge					x		x					x				Before	Before	Excess
3	October Flow	x								x			x				Before	Before	Excess
4	Ag WQ Summer	x									x			x			Before	Before	Excess
5	Ag WQ Winter	x										x		x			Before	Before	Excess
6	Supplement New Melones Releases	x							x				x				After	Before	Excess
7	Supplement VAMP	x							x				x				Before	After	Excess
7E	Supplement VAMP and New Melones	x							x				x				After	After	Excess

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Preliminary Evaluation Metrics

METRIC	COMPONENT	GEOGRAPHIC AREA	CRITERIA	ALTERNATIVE						
				No Action	1	2	3	4	5	6
Achieving Project Goals										
	EC	SJR Vernalis								
	Flow	SJR Vernalis								
	Reliance on New Melones	New Melones								
	DO	SJR @ Stockton Ship Channel								
	Water levels in South Delta	South Delta								
Water Supply										
	New Melones IPO performance									
	CVP SOD contractors deliveries	Delta export area								
	SJR tributary effects	Tributaries								
	Storage level changes	SLR, NM, tributaries, Sac Basin								
Water Quality										
	DO	SJR, DWSC								
	Selenium	SJR								
	EC	SJR, X2, other Delta/key locations								
	Toxics	SJR								
	Bromide	Delta M&I diversions								
	DOC	Delta M&I diversions								
Fisheries										
	Change in exports	Delta								
	Timing of export	Delta								
	DO	DWSC								
	Temperature	SJR								
	Turbidity	SJR								
	Toxics	SJR								
	Channel hydraulics	Delta								
	Source water cueing	SJR								
	Flooded channel area	SJR								
	Instream habitat	Tributaries								
	Recreational fishing	SLR								
Energy										
	Energy use	CVP, SWP								
Economics										
	Cost									
	Benefit									
Implementability										
	Operational complexity									

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Next Steps

- **Provide Comments on Potential Alternatives by Jan 9, 2007**
- **Next Stakeholder Workshop – Late Jan/Early Feb**
 - **Baseline**
 - **Common assumptions**
 - **Evaluation metrics**

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Wrap-up

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