

Copies of overheads presented to Management Team at their November 13, 1997 meeting

Preferred Alternative Development

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Schedule

- November BDAC, Management Team, Policy Group Meetings - Discuss development of three hybrid alternatives
- December BDAC, Management Team Meetings - Review three hybrid alternatives and discussion of Draft Preferred Alternative development
- December Policy Group Meeting - **Identify Draft Preferred Alternative**

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Primary Issues Addressed by Alternatives

- Ecosystem restoration, water quality, levee rehabilitation, assurances - components of all alternatives
- Water Use Efficiency and Water Transfers as supply opportunities- components of all alternatives
 - Subteam is working on this

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Primary Issues Addressed by Alternatives (cont.)

- Fish Screens
 - Whether to screen
 - How to screen
 - Where to screen
- Facility capacities
 - Intake capacities
 - Isolated facility capacity
 - Storage capacities (surface and groundwater)

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General Considerations

- If the configuration of the Delta is changed, new Delta standards will probably be needed.
 - Difficult to determine benefits of alternatives, especially water supply benefits
- IDT is considering operating criteria, and are working on specifying analysis framework

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Storage Considerations

- Difficult to size storage requirements based only on technical factors (problem common to all alternatives) Some of the Factors:
 - Contribution of Water Use Efficiency
 - Contribution of Water Transfers (consistent with need to avoid significant redirected impacts)
 - Individual economics
 - Site-specific environmental impacts
 - Costs

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Storage Considerations (cont.)

- Ground water versus surface storage
 - advantage - generally less expensive
 - disadvantage - generally slower to operate, thus less responsive to environmental and water supply needs
 - potential disadvantage - local negative effects
 - potential disadvantage - difficulty of putting together a

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Storage Considerations (cont.)

- Storage requirements should be sized based on the need for water to make the alternative function effectively (needed flows, ability to move water through Delta, need for increased supply reliability)
- Surface storage should be identified to supplement water derived from WUE, transfers, ground water.

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Storage Considerations (cont.)

- Opportunity for sharing storage benefits among CALFED purposes must be provided
- in-Delta or near-Delta storage provides immediate access to flows in the Delta, as opposed to other storage locations
 - Provides capability for future real time monitoring and operational control
- Yields of in-Delta or near-Delta storage considerably higher for a given capacity than off-aqueduct storage South of Delta

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Storage Considerations (cont.)

- in-Delta storage would
 - inundate valuable agricultural lands
 - potentially cause water quality problems
 - organic carbon
 - nuisance algal blooms
 - produce relatively small storage capacity in relation to the dam perimeter
- Operational aspects of in-Delta and near-Delta storage are similar

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Storage Considerations (cont.)

- Concepts for defining Minimum Storage size:
 - ERPP flow requirements (assuming all from storage, but actually some from transfers)
 - ERPP + Sufficient to equal No Action
 - Local Needs?
 - Flood Control?

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Storage Considerations (cont.)

- Maximum Storage Sizes
 - 3.0 MAF Sacramento Valley Surface
 - 500 TAF San Joaquin Valley Surface
 - 200 TAF in-Delta or near-Delta
 - 2.0 MAF South of Delta off-aqueduct
 - 250 TAF Sacramento Valley Ground Water
 - 500 TAF San Joaquin Valley Ground Water

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Alternative 1

- Based on 1C
- Old River Channel Enlargement
- Intertie SWP and CVP at Clifton Court
- 15,000 cfs screened intake at Clifton Court, consolidating SWP and CVP intakes
- Fish barrier on Old River at San Joaquin River
- Operable South Delta barriers, or equivalent

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Alternative 1 Considerations

- Fish Entrainment and adverse flow conditions are the largest problems
- Ability to shift pumping while maintaining exports is the primary optimizing feature
- Fish salvage and trucking will continue to be required
- Intertie with Tracy will somewhat improve CVP salinity and worsen SWP salinity.
- Overall salinity of exports and in Delta channels will not significantly change

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Alternative 2 (cont.)

- Screened intake at head of Clifton Court, with pumps, to consolidate SWP and CVP intakes (15,000 cfs being evaluated initially)
- Intertie between SWP and CVP at Clifton Court
- Fish barrier on Old River at San Joaquin River
- Interior South Delta barriers or equivalent

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Alternative 1 (cont.)

Storage - as described (minimum based on need; maximum based on benefit/cost)

Different ecosystem restoration features

- Relocate habitat restoration from South Delta to North and West Delta.

Different water quality features

- Increased emphasis on control of organic carbon discharges

Levee actions - same as other alternatives

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Alternative 2

- Based on 2B
- Screened intake on Sacramento River
 - 10,000 cfs capacity being evaluated initially
- Constructed channel linking Sacramento River intake and Mokelumne River
 - Because of environmental sensitivity of Snodgrass Slough
- Levee setbacks and channel enlargement on North Fork Mokelumne, with habitat
- Old River channel enlargement

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Alternative 2 (cont.)

Storage - as described (minimum based on need; maximum based on benefit/cost)

Different ecosystem restoration features

- Habitat restoration work located West of stage and flow control structures
- Limited habitat improvements on North Fork Mokelumne
- Shallow water habitat located along South Fork Mokelumne

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Alternative 2 (cont.)

- Different water quality features
 - Increased emphasis on control of organic carbon discharges
 - Possible relocation of municipal intakes (North Bay, CCWD, Tracy)
- Different levee rehabilitation features
 - Setback levees for improved water conveyance and flooding of McCormack Williamson Tract
- Being considered:
 - Relocation of North Bay Pumping Plant Intake

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Alternative 2 Considerations

- Presents problems for fish migrating upstream
- Fish will continue being diverted into Central Delta through Georgiana Slough
- Setback levees will provide important flood protection in addition to improved water conveyance capacity and in-Delta water quality
- Intertie of SWP and CVP will somewhat reduce CVP salinity and increase SWP salinity

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Alternative 2 Considerations (cont.)

- Alternative 2E recommended to be rejected due to uncertainties associated with non-screened through Delta system involving large scale flooding of Delta islands
- Operations criteria will have to be established both for Sacramento and South Delta diversions.

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Alternative 3

- Based on 3B
- 5,000 - 15,000 cfs isolated facility
 - 10,000 cfs facility is assumed for early analysis
- Possible dual points of screened intakes on Sacramento River (i.e., Hood, Freeport)
- Desirable to supply South Delta agriculture if feasible (estimated 2200 cfs peak)
- 0 to 10,000 cfs screened intake at head of Clifton Court, with pumps, to consolidate intake for SWP and CVP.

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Alternative 3 (cont.)

- Intertie SWP and CVP at Clifton Court
- Storage - as described (minimum based on need; maximum based on benefit/cost)
- Different ecosystem restoration features
 - Decreased emphasis on habitat improvements on North Fork Mokelumne
 - Increased emphasis on habitat improvements in South Delta
 - Shallow water habitat along South Fork Mokelumne

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Alternative 3 (cont.)

- Different water quality features
 - Possible relocation of municipal intakes (North Bay, CCWD, Tracy)
 - Decreased emphasis on control of organic carbon in Delta channels.
- Different Levee rehabilitation features
 - Setback levees for water conveyance along North Fork Mokelumne
- Being considered:
 - Old River channel enlargement

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Alternative 3 Considerations

- Opportunity to avoid South Delta pumping is important for fishery protection and restoration
- Isolated facility will tend to reduce through-Delta flows and increase in-Delta channel salinity.
- Supply to South Delta islands from isolated facility would eliminate fish entrainment from agricultural siphons in the Delta, while providing significant water quality improvement.

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Alternative 3 Considerations (cont.)

- San Joaquin River salt loads will decrease due to improved source water to Valley
 - May offset negative effects of reduced circulation in South Delta
- Operations criteria will have to be established both for Sacramento and South Delta diversions.

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