CALFED Bay-Delta Program Team-2 Modeling Information Request

Summary of Planning Studies Available for Program Alternatives

Preliminary DWRSIM studies are available, which consider combinations of the following alternative components: 1) isolated Delta conveyance, 2) north of Delta surface storage and 3) south of Delta off-aqueduct surface storage. A summary description of the alternative configurations, which corresponds best with existing DWRSIM studies along with future studies is shown below:

Summary Description of Alternative Configurations with DWRSIM Studies

Alternative Configuration	Delta Modifications					Storage Components (Maximum Storage Volumes in MAF)						Available DWRSIM Study	Future DWRSIM Study Scenario
	CVP-SWP Improvements	North Delta Channel Modifications	South Delta Modifications	Isolated Conveyance Facility (Conveyance Capacity in 1,000 CFS / Type)	Comments	Sacramento Valley Ground Water Storage	Upstream Surface Storage Sacramento River Trib.	Upstream Surface Storage San Joaquin River Trib.	In-Delta Surface Storage	San Joaquin Valley Ground Water Storage	South of Delta Aqueduct Surface Storage		
1A												472	1
1B	1											472	1
1C	1		1,2			0.5	3.0			0.5	1.0	510	2
2A	1	1,2	1,2,3									472B	3
2B	1	1,2	1,2,3			0.5	3.0	0.5		0.5	2.0	510	4
2C	1	Special	Special		Multiple Intakes				0.1			472B	3
2D	1	Special	Special		Extensive Habitat Restoration						2.0	498	5
2E	1	Special	Special		Extensive Habitat Restoration	0.5	3.0	0.5		0.5	2.0	510	4
3A	1	2	1,2,3	5 / Open Channel								475	6
3B	1	2	1,2,3	5 / Open Channel		0.5	3.0	0.5	0.2	0.5	2.0	500	7
3C	1	2	1,2,3	5 / Pipeline								475	6
3D	1	2	1,2,3	5 / Pipeline		0.5	3.0	0.5	0.2	0.5	2.0	500	7
3E	1	2	1,3	15 / Open Channel		0.5	3.0	0.5	0.2	0.5	2.0	500	8
3F	1	Special	Special	15	Chain of Lakes	0.5	3.0	0.5		0.5	2.0	500	8
3G	1	2	1,2,3	5	Deep Water Ship Channel	0.5	3.0	0.5	0.2	0.5	2.0	500	7
3H	1	Special	Special	5 / Open Channel	Extensive Habitat Restoration	0.5	3.0	0.5		0.5	2.0	500	7
3I	1	Special	Special	15 / Open Channel	5 / Multiple Intakes	0.5	3.0	0.5	0.2	0.5	2.0	500	8

CVP-SWP Improvements

1 New fish screens at the Skinner Fish facility
New fish screens at the Tracy Pumping Plant Intake
Interconnection between Tracy Pumping Plant and Clifton Court Forebay

2 Flow and stage control structures on Middle River, Grant Line Canal, and Old River or other methods to control flow, stage, and south Delta salinity

3 Channel enlargement along a 4.9 mile reach of Old River

North Delta Modifications

1 10,000 cfs Screened Hood Intake

2 Purchase of 600-foot wide alignment along Mokelumne River from I-5 to the San Joaquin River
Replacement of existing levees on one side of the existing channel with new setback levees approximately 500 feet back from the existing channel
Removal of existing levees where they obstruct the new channel and convert remaining portions into channel islands

Relocation of existing improvements displaced by the widened channel

South Delta Modifications

1 Increased permitted capacity of existing export pumps to physical capacity
New Clifton Court Forebay intake structure
Operable barrier or equivalent at the head of Old River to maintain a positive flow down the San Joaquin River

Upstream Surface Storage 3.0 MAF
Sac Valley GW Storage 0.5 MAF
Upstream Storage San Joaquin Tributary 0.5 MAF
In Delta Surface Storage 0.1 to 0.2 MAF
South of Delta Storage 2 MAF

A summary of DWRSIM studies presently available to begin the analysis for the Draft Programmatic EIR/EIS is shown below.

Summary of DWRSIM Planning Studies Available for Program Alternatives

Alternative	DWRSIM Study	Summary Description
Existing Condition	1995C6F-SWRCB-469	SWRCB 1995 WQCP Study
No Action, 1A, 1B	1995C6F-CALFED-472	CALFED Benchmark Study
2A, 2C	1995C6F-CALFED-472B	Benchmark + SDI
2D	1995C6F-CALFED-498	Benchmark + SDI + SDSS
1C, 2B, 2E	1995C6F-CALFED-510	Benchmark + SDI+NDSS+SDSS
3A, 3C	1995C6F-CALFED-475	Benchmark + SDI+5,000 IF
700K 3B, 3D-3I	1995C6F-CALFED-500	Benchmark + SDI+NDSS+SDSS+5,000 IF

Summary of DWRSIM Information/Data for Program Alternative

To assist in the analysis of the DWRSIM results for the Draft Programmatic EIR/EIS, data sets have been imported into Excel spreadsheets under various categories. A listing of the DWRSIM data set categories is shown below and any additional data can be included into the data set.

DESCRIPTION OF CONTROL POINTS TO BE USED IN MODELING ANALYSIS

Delta Basin

Inflow

- Yolo Bypass Inflows - (CP 55 inflow)
- Total Delta Inflow w/o Precip - (delta/flow-inflow)

Instream Flow

- Eastside Streams - Consumes, Mokelumne, & Calaveras Rivers - (CP 517 downstream flow)
- Surplus Delta Outflow - (CP 91 downstream flow)

Diversion

- Total Delta Exports - TOTAL EXPORT (BANKS+TRACY+NBAY+CCC)
- Net Delta CU - (delta/flow-net_cu)
- Total Delta Outflow - (delta/flow-outflow)
- Minimum Required Delta Outflow (MRDO) - (CP 541 diversion)
- Banks Export - (CP 86 diversion)
- Tracy Export - (CP 59 diversion)
- North Bay Exports - (CP 55 diversion)
- Contra Costa Exports - (CP 57 diversion)
- Vallejo Exports - (CP 47 diversion)
- Total Diversions to Isolated Facility

Standards

- Delta Cross Channel Gate Position
- Computed Delta Export Ratio
- Computed QWEST Value
- Computed X2 Position
- Average Salinity at Emmaton
- Average Salinity at Antioch
- Average Salinity at Chips Island
- Average Salinity at Collinsville
- Average Salinity at Jersey Point
- Average Salinity at Rock Slough

Trinity Basin

Inflows

CVP Clair Engle Lake, Local Inflow (CP 1)

Instream Flows

LEWISTON L&TRINITY MIN FLOW

Exports

TRINITY R EXPORT&C. ENGLE SPILL(Through Clear Cr Tunnel)

Storages

CVP Clair Engle Lake (CP 1)

Min Required Flows

CVP LEWISTON L&TRINITY MIN FLOW

Sacramento Basin

Inflows

Sacramento R @ Cottonwood Creek, Local Inflow(CP 73)
Sacramento R At Thomes Creek, Local Inflow (CP 75)
Sacto R,Black Butte Res Release, Local Inflow (CP 76)
Sacramento Rda 10 Inflow & Div, Local Inflow (CP 77)
Rd 1500 Div To Sutter Bypass, Local Inflow (CP 31)
Navigation CP(Ncp),Da 15 Adjst, Local Inflow (CP 61)
CVP Whiskeytown L&Spring Cr Div, Local Inflow (CP 3)
CVP Shasta Lake, Local Inflow (CP 4)

Imports

TRINITY R EXPORT&C. ENGLE SPILL(Through Clear Cr Tunnel)

Instream Flow

Sacramento River at Keswick - (CP 5 downstream flow)
Sacramento River at Wilkins Slough - (CP 61 downstream flow)
DA 10 Diversion - (CP 77/diversions)
Sacramento River at Freeport - (CP 137 downstream flow)
Sacramento River at Bend Bridge
Sacramento River at Chico Landing

Min Required Flow

NAVIGATION CP(NCP),DA 15 ADJST, MIN REQUIRED FLOW

Storages

CVP Whiskeytown L&Spring Cr Div (CP 3)
CVP Shasta Lake (CP 4)
CVP Keswick Res (CP 5)
NOD Surface Storage, End of Month
NOD Groundwater Storage, End of Month

Diversions

DA 58 Diversion - (CP 74/diversions)
DA 15 Diversion - (CP 66/diversions)
DA 15 Diversion& 10 Rtn - (CP 30/diversion)
Road 1500 Diversion to Sutter Bypass - (CP 31/diversion)
DA 15 at Wilkins Slough - (CP 61/diversion)
DA 70 and Fremont Weir Spills - (CP 43/diversion)
DA 70 on Lower Sacramento River - (CP 44/diversion)

Feather River Basin

Inflows

SWP Lake Oroville & Palermo Div, Local Inflow (CP 6)
SWP Thermalito Forebay&Fish Div, Local Inflow (CP 7)

Da 69 Div& Da 67 & 68 Rtrn Flow, Local Inflow (CP 37)
Da 70 Export+Fremont Weir Spill, Local Inflow(CP 43)

Instream Flow
Feather River below Oroville-Thermolito Complex - (CP 106 downstream flow)
Feather River at Verona - (CP 49 downstream flow)
Swp Thermalito Forebay&Fish Div (CP 7)

Min Required Flow
FEATHER RIVER OCT-MAR FISH REQT

Storages
SWP Lake Oroville & Palermo Div (CP 6)
SWP Thermalito Forebay&Fish Div (CP 7)

Diversions
Feather River Service Area - (CP 67/diversion)
DA 69 - (CP 37/diversion)
Butte Creek Diversion - (CP 42/diversion)

American River Basin

Inflows
Auburn Res Site & Placer Co Div, Local Inflow (CP 17)
CVP Folsom L&San Juan&Rsvlle Dv, Local Inflow (CP 8)
CVP L Natoma & Folsom South Div, Local Inflow (CP 9)

Instream Flow
American River at Natomas - (CP 41 downstream flow)
American River at "H" Street Bridge - (CP 64 downstream flow)

Min Required Flow
AMERICAN R, MINIMUM FLOW REQ'T

Storages
CVP Folsom L&San Juan&Rsvlle Dv (CP 8)
CVP L Natoma & Folsom South Div (CP 9)

Diversions
Placer County Water Agency Diversion - (CP 17/diversion)
San Juan/Roseville Diversion - (CP 9/diversion)
City of Sacramento Diversion + Local - (CP 64/diversion)

San Joaquin River Basin

Inflows
CVP Millerton Lake, Local Inflow (CP 18)

Instream Flows
San Joaquin River at Vernalis (CP 682 downstream flow)
SJR At James Bypass (CP 608)

Storages
CVP Millerton Lake (CP 18)

Fresno River Basin

Inflows
Hensley Lake, Local Inflow (CP 52)
CVP Madera Canal, Rtrn Flw & Gw, Local Inflow (CP 622)
SJR, Eastside ByPass Accretion, Local Inflow (CP 692)
SJR, Mud & Salt Slough Accr, Local Inflow (CP 691)

Storages
Hensley Lake (CP 52)

Diversions

Merced River Basin

Inflows
- Lake Mcclure, Local Inflow (CP 20)
- Sjr Accretions, Merced-Tuolumne, Local Inflow (CP 698)
- Merced Id Gw pumping, Local Inflow (CP 644)

Instream Flow
- Fresno R @ Mouth&Merced Id Rtrn (CP 636)
- Merced River at Crocker-Hoffman - (CP 645 downstream flow)

Min Required Flow
- Merced ID Diversion
- Merced River Mouth

Storages
- Lake Mcclure (CP 20)

Diversions
- Merced I.D. - (CP 645/diversion)

Tuolumne River Basin

Inflows
- Turlock Id Gw pumping, Local Inflow (CP 657)
- Modesto Id Gw pumping, Local Inflow (CP 660)
- Lower Tuolumne R Accretion, Local Inflow (CP 663)
- New Don Pedro Reservoir, Local Inflow (CP 81)

Instream Flow
- Tuolumne River at La Grange - (CP 662 downstream flow)

Min Required Flow
- Modesto ID
- NEW DON PEDRO MINIMUM RELEASE

Storages
- New Don Pedro Reservoir (CP 81)

Diversions
- Turlock I.D. - (CP 659/diversion)
- Modesto I.D. - (CP 662/diversion)

Stanislaus River Basin

Inflows
- New Melones Reservoir & CVP Div, Local Inflow (CP 10)
- Goodwin Dam, Ossjid Div, Local Inflow (CP 16)
- Lower Stanislaus R Diversion, Local Inflow (CP 672)

Instream Flows
- Stanislaus River at Goodwin - (CP 16 downstream flow)

Min Required Flows
- SJR Vernalis Pulse Flow
- SJR Vernalis Water Quality Flow
- Minimum Flow below Goodwin
- Minimum flow at mouth of Stanislaus

Storages
- New Melones Reservoir & CVP Div (CP 10)

Diversions
- Stockton East Diversion - (CP 10/diversion)
- Oakdale I.D. & South San Joaquin I.D. Diversion - (CP 16/diversion)
- Lower Stanislaus River Diversion - (CP 672/diversion)

CVP Deliveries

- CVP Upper DMC Project Ag Div (CP 701)
- CVP Lower DMC Project Ag Div (CP 721)

CVP Lwr DMC Exchange (CP 722)
CVP Lower DMC Volta Refuge Div (CP 723)
CVP Mendota Pool,Project Ag Div (CP 730)
CVP Mendota Pool, Exchange Div (CP 731)
Cvp Mendota Pool, Refuge Div (Cp 732)
CVP San Felipe Project, M&I Div (CP 715)
CVP San Felipe Project, Ag Div (CP 714)
CVP Cross Valley Canal Transfer (CP 720)
CVP O'neill Forebay Outlet (CP 740)
CVP R7 Loss& Swp Joint Use Rtrn (CP 751)
CVP San Luis End of Month Storage(CP 11)

Summary Deliveries

Total CVP Deliveries (w/o losses)

Summary Power

Total CVP Energy Consumption
Total CVP Energy Generation
Net CVP Energy Consumption

SWP Deliveries

SWP Coast Br, Slo+Sb Co. Fc&Wcd (CP 849)
Div To SWP South Bay Aqueduct (CP 801)
SWP A.D. Edmondston Pp (CP 864)
SWP Dos Amigos Pp (CP 828)
SWP San Luis End of Month Storage(CP 12)

Summary Deliveries

SWP - AG and MI deliveries (SWP/diversion-SWP_ent_act)
SWP - AG, MI and Interuptable deliveries (SWP/diversion-SWP_del_act)
SWP - AG, MI, Interuptable and losses deliveries (SWP/diversion-SWP_tot_act)

Summary Power

Total SWP Energy Consumption
Total SWP Energy Generation
Net SWP Energy Consumption