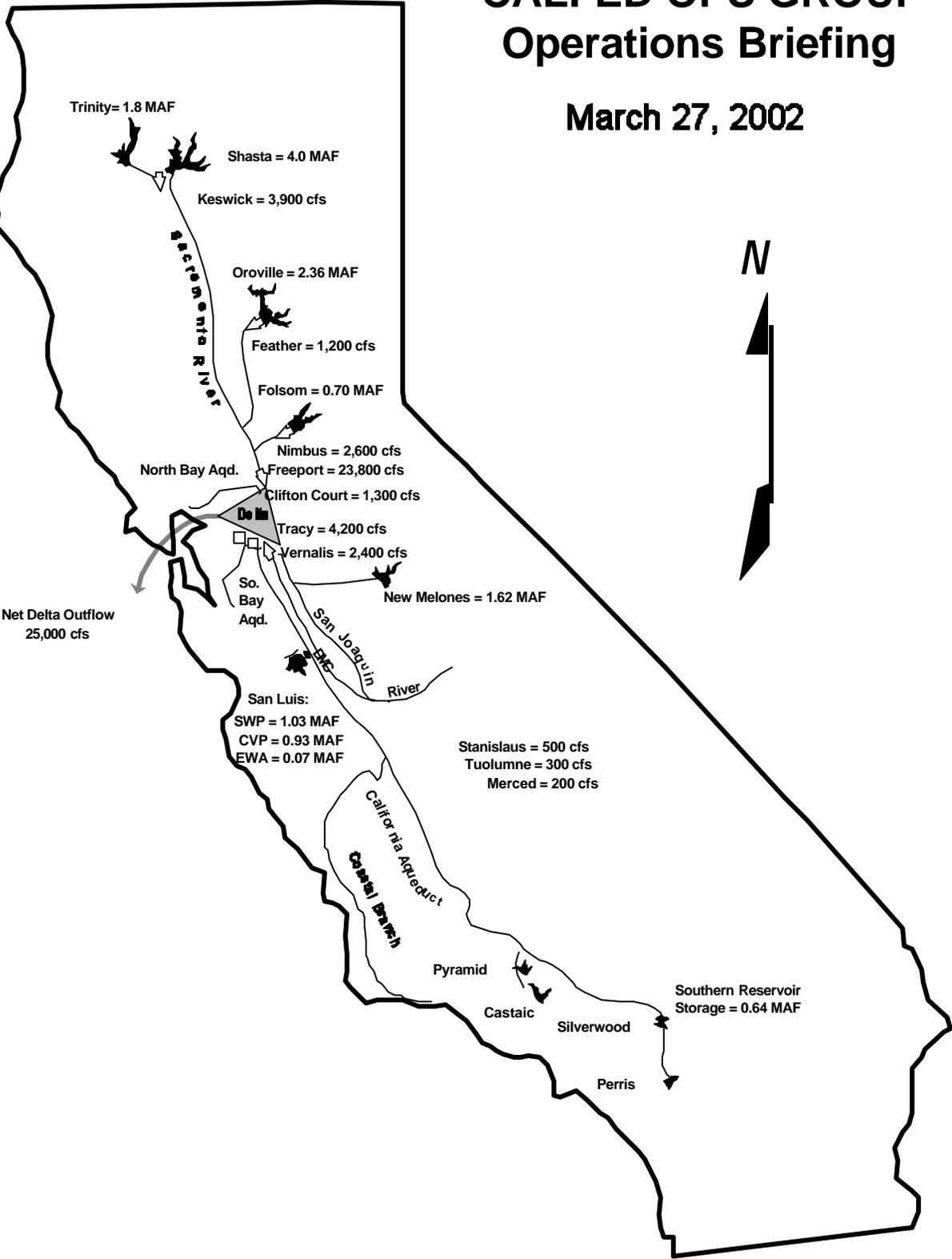


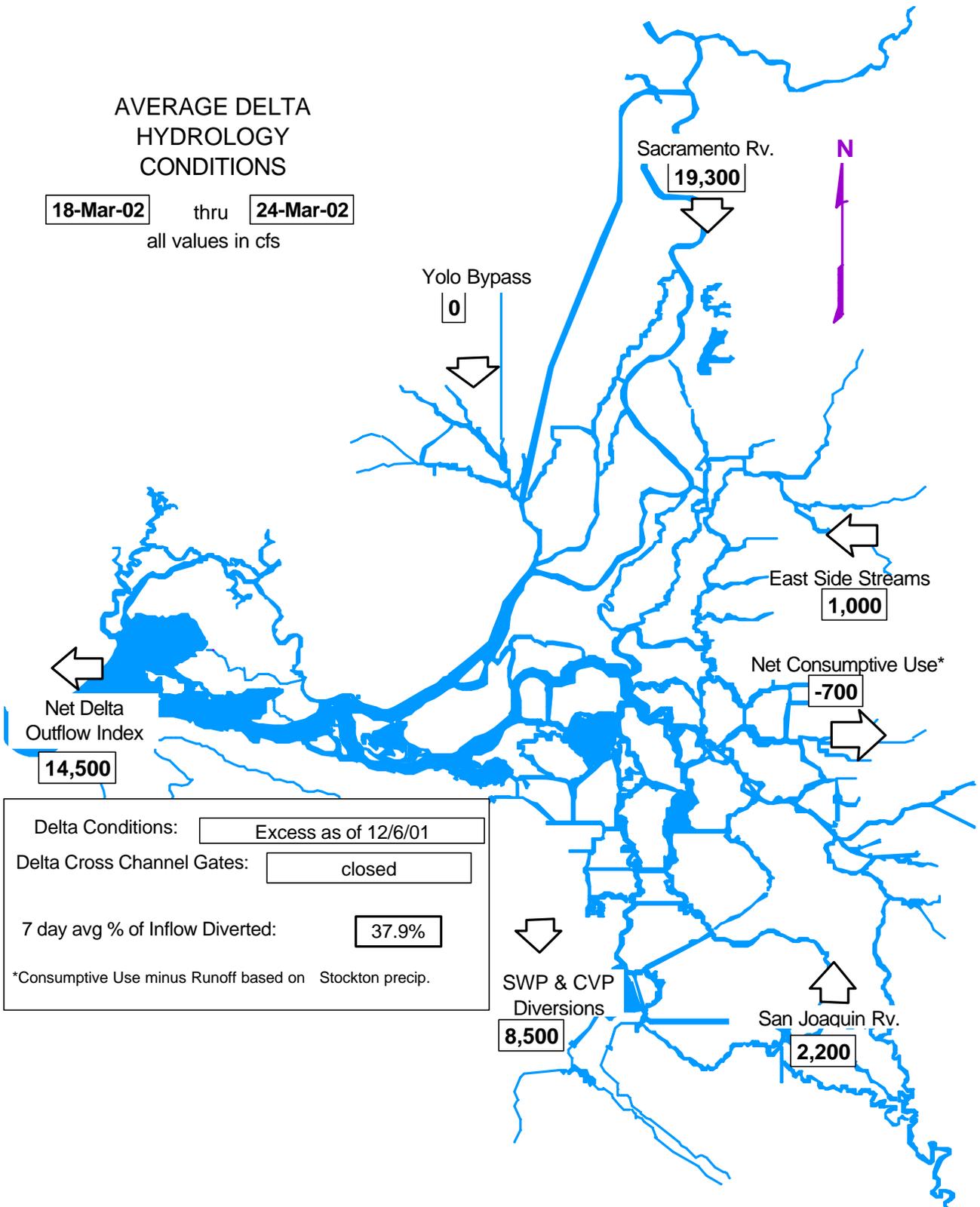
# CALFED OPS GROUP Operations Briefing

March 27, 2002



# AVERAGE DELTA HYDROLOGY CONDITIONS

**18-Mar-02** thru **24-Mar-02**  
all values in cfs



Delta Conditions:	Excess as of 12/6/01
Delta Cross Channel Gates:	closed
7 day avg % of Inflow Diverted:	37.9%
*Consumptive Use minus Runoff based on Stockton precip.	

# AVERAGE DELTA WATER QUALITY CONDITIONS

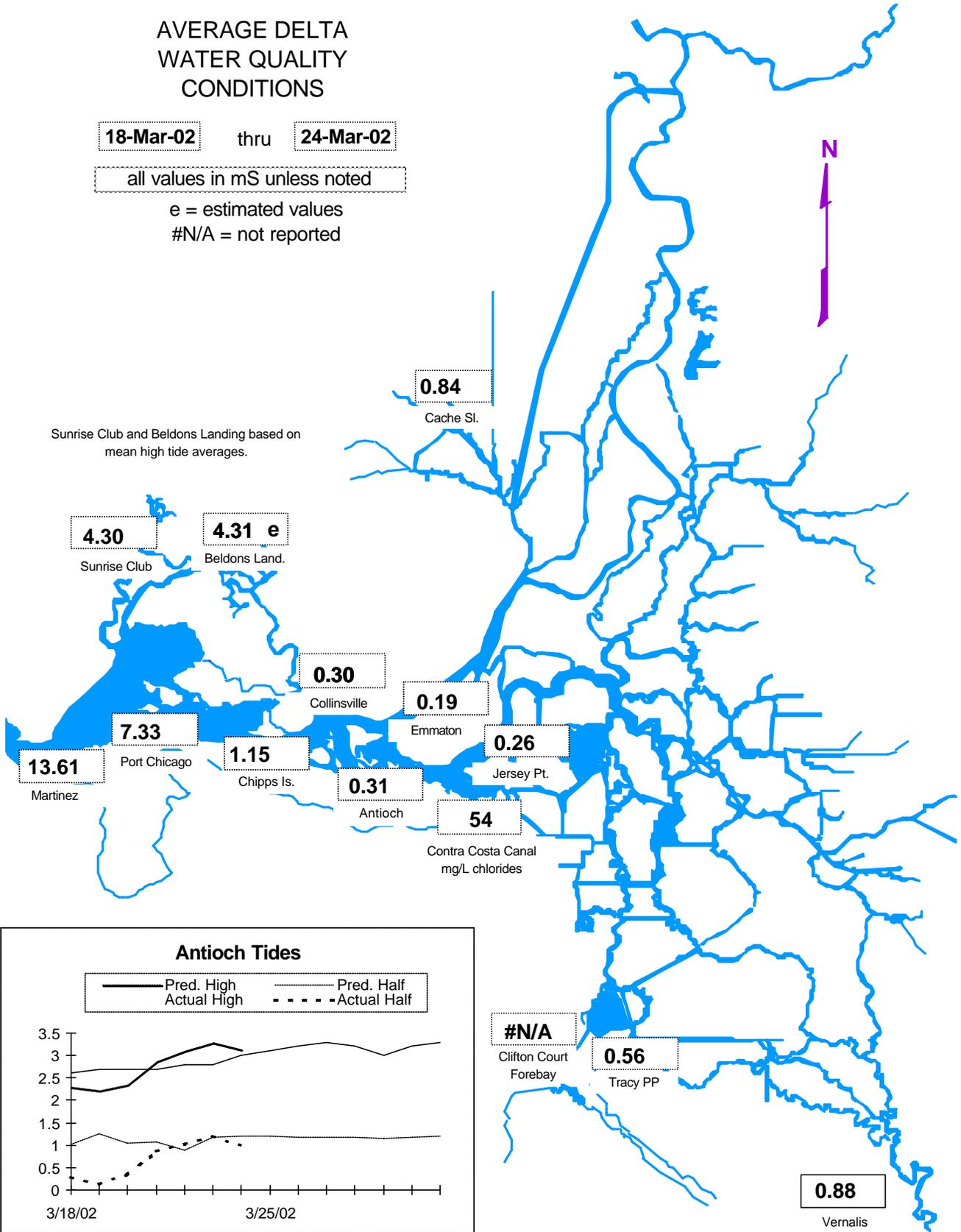
**18-Mar-02** thru **24-Mar-02**

all values in mS unless noted

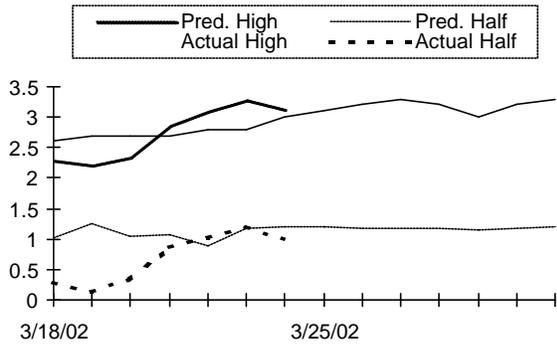
e = estimated values

#N/A = not reported

Sunrise Club and Beldons Landing based on mean high tide averages.



**Antioch Tides**



**DRAFT**

# Bay-Delta Standards

Contained in D-1641

**DRAFT**

CRITERIA	Mar 2002	Apr 2002	May 2002	
<b>FLOW/OPERATIONAL</b>				
<ul style="list-style-type: none"> <li>• Fish and Wildlife</li> <li>SWP/CVP Export Limits</li> <li>Export/Inflow Ratio</li> <li>Minimum Outflow - mon. - 7 day avg.</li> <li>Habitat Protection Outflow, X2</li> <li>River Flows:</li> <li>@ Rio Vista - min. mon. avg. - 7 day average</li> <li>@ Vernalis: Base -min. mon. avg. - 7 day average</li> <li>Pulse objective</li> <li>Delta Cross Channel Gates</li> </ul>		Greater of 1,500 cfs or 100% of 3-day avg. Vernalis flow ↓		
	35 % of Delta Inflow			
			*~ 25 days at Chipps ↓	
		31 days for Chipps	X2 at Collinsville - NDOI >= 7,100 cfs	
			* Projected requirement based on 90% exceedence 8RI's from March 1 forecast	
		2280 cfs	2280 cfs	2280 cfs
		1824 cfs	1824 cfs	1824 cfs
			5158 cfs	↓ gates may close
		Closed		14 days per Op's Group

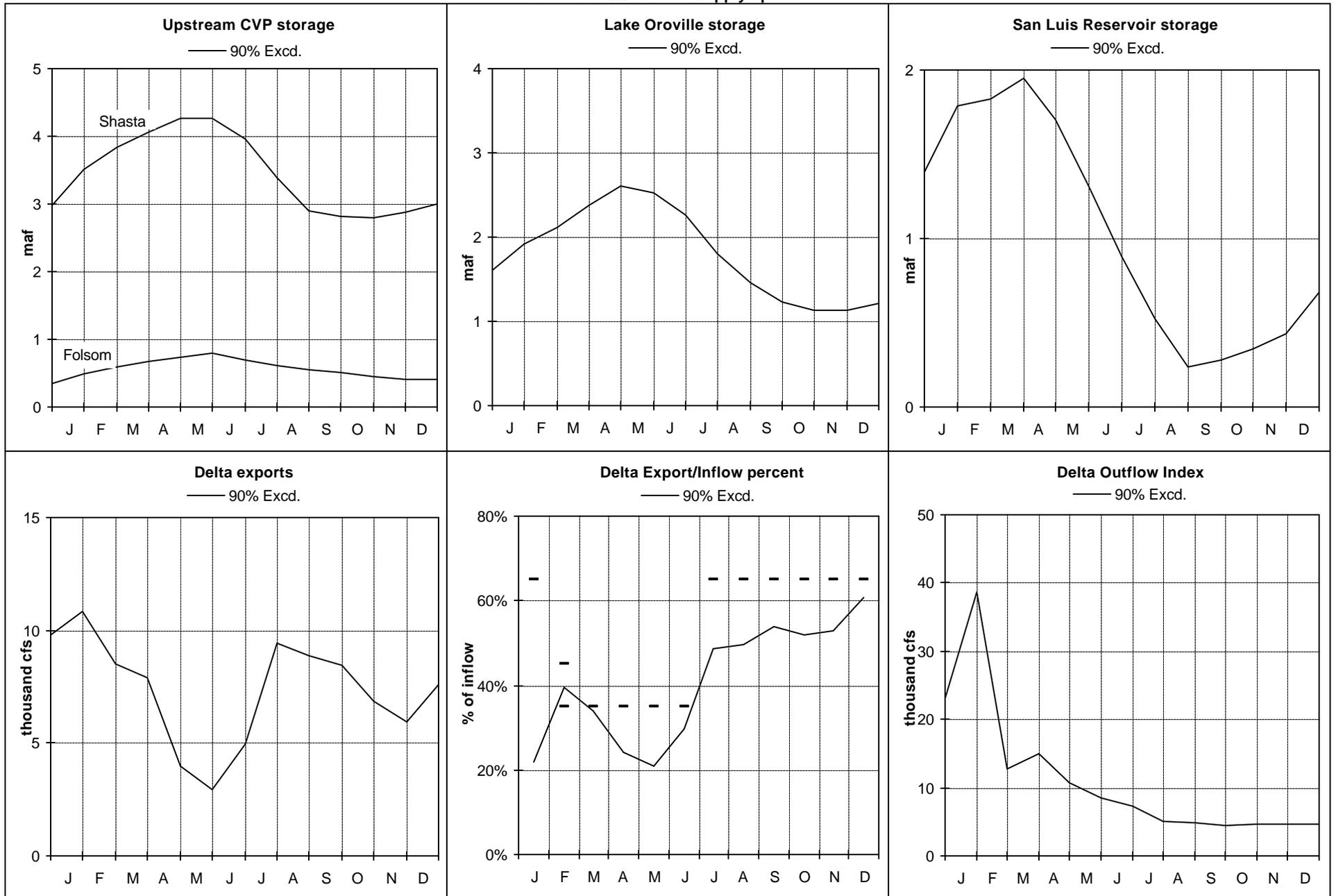
<b>WATER QUALITY STANDARDS</b>			
<ul style="list-style-type: none"> <li>• Municipal and Industrial</li> <li>All Export Locations</li> <li>Contra Costa Canal</li> </ul>		Cl <= 250 mg/l	
		Cl <= 150 mg/l for 175 days for Bleow Normal Water Year Type	
<ul style="list-style-type: none"> <li>• Agriculture</li> <li>Western/Interior Delta</li> <li>Southern Delta</li> </ul>		Max. 14-day average EC mmhos/cm: 0.45 mS/cm for Wet year	
	30 day running avg. EC <= 1.0 mS/cm	30 day running avg. EC <= 0.7 mS/cm	30 day running avg. EC <= 0.7 mS/cm
<ul style="list-style-type: none"> <li>• Fish and Wildlife</li> <li>San Joaquin River Salinity</li> <li>Suisun Marsh Salinity</li> </ul>		14-day avg; 0.44 EC	
	8.0 mhtEC	11.0 mhtEC	

**Water Year Classification: Below Normal (Based on forecast, 3/1/2002)**

SRI (40-30-30 @ 50%) = 6.8 MAF  
 SJV (60-20-20 @ 75%) = 2.2 MAF

# SWP & CVP WY 2002 Forecasted Operations.

Based on 03/12 water supply update



Flows are monthly averages.

WY 2001/2002 EWA Accounting Summary  
Based on March 12 -- 90% Exceedence Hydrology

EWA NOD and SOD Storage																	
1	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
NOD <sup>0</sup>	45							95	50	100 <sup>12</sup>							290
SOD																	

EWA Asset Acquisition in SWP San Luis <sup>1</sup>																	
2	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
E/I Relaxation			3			76											79
EWA share of SWP gain		3															3
Project Pumping to reduce EWA debt																	0
JPOD using excess flows																	0
JPOD using excess NOD storage											5 <sup>13</sup>	30 <sup>12</sup>	50 <sup>12</sup>				85
Xfer NOD purchases - Sacramento River <sup>2</sup>		4 <sup>3</sup>	11 <sup>3</sup>														15
Xfer NOD purchases - San Joaquin River <sup>2</sup>		11 <sup>5</sup>	10 <sup>5</sup>														21
SOD SWP surface purchases		11 <sup>6</sup>	9 <sup>6</sup>	12 <sup>6</sup>				13 <sup>7</sup>	13 <sup>7</sup>	10 <sup>7</sup>			117				
Loss/Sale of EWA assets <sup>11</sup>							-75										-75
Groundwater pumping SOD																	0
Exchange from CVP to SWP in SL																	0
<b>Total Monthly EWA Assets</b>		<b>30</b>	<b>33</b>	<b>12</b>	<b>0</b>	<b>76</b>	<b>-75</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>18</b>	<b>43</b>	<b>63</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>246</b>

EWA Asset Acquisition in CVP San Luis																	
3	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
E/I Relaxation																	0
Project Pumping to reduce EWA debt																	0
JPOD using excess flows																	0
JPOD using excess NOD storage											40 <sup>4</sup>	40 <sup>4</sup>	25 <sup>4</sup>	10 <sup>4</sup>			115
Xfer NOD purchases - Sacramento River <sup>2</sup>											1 <sup>8</sup>	1 <sup>8</sup>	1 <sup>8</sup>	1 <sup>8</sup>	1 <sup>8</sup>		7
Xfer NOD purchases - San Joaquin River <sup>2</sup>																	0
SOD federal surface purchases																	0
Loss/Sale of EWA assets <sup>11</sup>																	0
Groundwater pumping																	0
Exchange from SWP to CVP in SL																	0
<b>Total Monthly EWA Assets</b>	<b>0</b>	<b>41</b>	<b>41</b>	<b>26</b>	<b>11</b>	<b>1</b>	<b>0</b>	<b>122</b>									

EWA Expenditures at the Export Pumps																	
4	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP export cuts					-66 <sup>9</sup>			-25	-60	-65							-216
CVP export cuts									-25	-80							-105
<b>Total Expenditures</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-66</b>	<b>0</b>	<b>0</b>	<b>-25</b>	<b>-85</b>	<b>-145</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-321</b>

EWA End-of-Month Incremental Storage Changes																	
5	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP in SL (without Source Shift)	7	30	33	12	-66	76	-75	-13	-48	-53	18	43	63	10	0	0	37
CVP in SL	0	0	0	0	0	0	0	0	-25	-80	41	41	26	11	1	0	17
NOD Storage	45	-18	-25	0	0	0	0	95	50	100	-55	-84	-90	-13	-2	0	3
Groundwater SOD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Incremental Storage Changes</b>	<b>52</b>	<b>11</b>	<b>8</b>	<b>12</b>	<b>-66</b>	<b>76</b>	<b>-75</b>	<b>83</b>	<b>-23</b>	<b>-33</b>	<b>4</b>	<b>0</b>	<b>-1</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>56</b>

EWA End-of-Month Storage Balance at Various Sites																	
6	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP in SL (without Source Shift)	7	37	70	82	16	92	17	4	-43	-96	-78	-36	27	37	37	37	
CVP SL	0	0	0	0	0	0	0	0	-25	-105	-64	-22	4	15	17	17	
NOD Storage	45	27	1	1	1	1	1	96	146	246	192	108	18	5	3	3	
Groundwater SOD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>EWA Asset Balance</b>	<b>52</b>	<b>63</b>	<b>71</b>	<b>84</b>	<b>17</b>	<b>93</b>	<b>18</b>	<b>101</b>	<b>78</b>	<b>46</b>	<b>50</b>	<b>50</b>	<b>49</b>	<b>57</b>	<b>56</b>	<b>56</b>	

San Luis Reservoir Storage Conditions																	
7	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Total Storage (base case) <sup>10</sup>		708	885	1303	1791	1833	1951	1705	1315	896	522	235	280	345	438	679	
Encroachment																	
Total Storage (EWA case)		745	955	1386	1807	1925	1968	1710	1246	696	380	177	311	397	491	732	
MWD Source Shifting	29	-10	-10	-9						25	25	8		-25	-25	-8	
<b>Storage (with MWD source shifting)</b>	<b>764</b>	<b>964</b>	<b>1386</b>	<b>1807</b>	<b>1925</b>	<b>1968</b>	<b>1710</b>	<b>1246</b>	<b>721</b>	<b>430</b>	<b>235</b>	<b>369</b>	<b>430</b>	<b>499</b>	<b>732</b>		

<sup>0</sup> 2001 NOD Storage = 20(PCWA) + 25(MID). 2002 NOD Storage = 135(YCWA) + 10(SGA). April is 85(YCWA) + 10(SGA). YCWA has firm 30 TAF; will exercise options for addition

<sup>1</sup> Aqueduct conveyance and evaporation losses are not included.

<sup>2</sup> Carriage water loss applies to water transfers from the Sacramento River; a 10% conveyance loss applies to water transfers from the San Joaquin River.

Carriage water losses applied to the 2001 water transfers are as follows: 15% for the YCWA and OWID transfers; and 25% for the PCWA transfer.

<sup>3</sup> 2001 PCWA Transfer (Joint place of use) <sup>4</sup> 2002 YCWA Transfer (Joint place of use) <sup>5</sup> 2001 MID Transfer (Joint place of use) (purchased 25 TAF; received about 24 TAF)

<sup>6</sup> SOD 2001 SWP post lowpoint deliveries = 15(Semiotropic/Tulare ID) + 5(Cawelo) + 12(Santa Clara)

<sup>7</sup> Water acquired from KCWA Interests

<sup>8</sup> SGA Transfer

<sup>9</sup> An estimated total of 66 TAF has been expended for the 1/5-1/9 curtailment.

<sup>10</sup> Based upon the 3/7/02 DWR's 90% exceedence forecast study.

<sup>11</sup> Occurs when San Luis Reservoir is physically full. Amount is approximate.

<sup>12</sup> Reduction in CVP/SWP exports may allow water to be backed into upstream reservoirs.

WY 2001/2002 EWA Accounting Summary  
Based on March 12 -- 50% Exceedence Hydrology

EWA NOD and SOD Storage																	
1	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
NOD <sup>0</sup>	45							95	50	100 <sup>12</sup>							290
SOD																	

EWA Asset Acquisition in SWP San Luis <sup>1</sup>																	
2	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
E/I Relaxation			3			76											79
EWA share of SWP gain		3															3
Project Pumping to reduce EWA debt																	0
JPOD using excess flows																	0
JPOD using excess NOD storage																	0
Xfer NOD purchases - Sacramento River <sup>2</sup>		4 <sup>3</sup>	11 <sup>3</sup>														15
Xfer NOD purchases - San Joaquin River <sup>2</sup>		11 <sup>5</sup>	10 <sup>5</sup>														21
SOD SWP surface purchases		11 <sup>6</sup>	9 <sup>6</sup>	12 <sup>6</sup>				25 <sup>7</sup>	18 <sup>7</sup>				175				
Loss/Sale of EWA assets <sup>11</sup>							-75										-75
Groundwater pumping SOD																	0
Exchange from CVP to SWP in SL																	0
<b>Total Monthly EWA Assets</b>		<b>30</b>	<b>33</b>	<b>12</b>	<b>0</b>	<b>76</b>	<b>-75</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>219</b>

EWA Asset Acquisition in CVP San Luis																	
3	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
E/I Relaxation																	0
Project Pumping to reduce EWA debt																	0
JPOD using excess flows																	0
JPOD using excess NOD storage											25 <sup>4</sup>	30 <sup>4</sup>	30 <sup>4</sup>	10 <sup>4</sup>			95
Xfer NOD purchases - Sacramento River <sup>2</sup>											1 <sup>8</sup>	1 <sup>8</sup>	1 <sup>8</sup>	1 <sup>8</sup>	1 <sup>8</sup>		7
Xfer NOD purchases - San Joaquin River <sup>2</sup>																	0
SOD federal surface purchases																	0
Loss/Sale of EWA assets <sup>11</sup>																	0
Groundwater pumping																	0
Exchange from SWP to CVP in SL																	0
<b>Total Monthly EWA Assets</b>	<b>0</b>	<b>26</b>	<b>31</b>	<b>31</b>	<b>11</b>	<b>1</b>	<b>0</b>	<b>102</b>									

EWA Expenditures at the Export Pumps																	
4	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP export cuts					-66 <sup>9</sup>			-50	-85	-75							-276
CVP export cuts								-10	-120								-130
<b>Total Expenditures</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-66</b>	<b>0</b>	<b>0</b>	<b>-50</b>	<b>-95</b>	<b>-195</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-406</b>

EWA Monthly Incremental Storage Changes																	
5	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP in SL (without Source Shift)	7	30	33	12	-66	76	-75	-25	-60	-50	25	25	18	0	0	0	-50
CVP in SL	0	0	0	0	0	0	0	0	-10	-120	26	31	31	11	1	0	-28
NOD Storage	45	-18	-25	0	0	0	0	95	50	100	-31	-37	-37	-13	-2	0	126
Groundwater SOD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Incremental Storage Changes</b>	<b>52</b>	<b>11</b>	<b>8</b>	<b>12</b>	<b>-66</b>	<b>76</b>	<b>-75</b>	<b>70</b>	<b>-20</b>	<b>-70</b>	<b>20</b>	<b>19</b>	<b>13</b>	<b>-2</b>	<b>0</b>	<b>0</b>	<b>47</b>

EWA Storage Balance at Various Sites																	
6	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
SWP in SL (without Source Shift)	7	37	70	82	16	92	17	-8	-68	-118	-93	-68	-50	-50	-50	-50	
CVP SL	0	0	0	0	0	0	0	0	-10	-130	-104	-72	-41	-30	-28	-28	
NOD Storage	45	27	1	1	1	1	1	96	146	246	215	178	141	128	127	127	
Groundwater SOD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>EWA Asset Balance</b>	<b>52</b>	<b>63</b>	<b>71</b>	<b>84</b>	<b>17</b>	<b>93</b>	<b>18</b>	<b>88</b>	<b>68</b>	<b>-2</b>	<b>18</b>	<b>38</b>	<b>51</b>	<b>49</b>	<b>48</b>	<b>48</b>	

San Luis Reservoir Storage Conditions																	
7	C/O	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Total Storage (base case) <sup>10</sup>		708	885	1303	1791	1833	2006 <sup>#</sup>	1761	1285	864	602	412	542	568	680	949	
Encroachment																	
Total Storage (EWA case)		745	955	1386	1807	1925	2023	1753	1207	616	405	272	451	489	602	871	
MWD Source Shifting	29	-10	-10	-9					25	25	25	25	-25	-25	-25	-25	
<b>Storage (with MWD source shifting)</b>	<b>764</b>	<b>964</b>	<b>1386</b>	<b>1807</b>	<b>1925</b>	<b>2023</b>	<b>1753</b>	<b>1232</b>	<b>666</b>	<b>480</b>	<b>372</b>	<b>526</b>	<b>539</b>	<b>627</b>	<b>871</b>		

<sup>0</sup> 2001 NOD Storage = 20(PCWA) + 25(MID). 2002 NOD Storage = 135(YCWA) + 10(SGA). April is 85(YCWA) + 10(SGA). YCWA has firm 30 TAF; will exercise options for additional

<sup>1</sup> Aqueduct conveyance and evaporation losses are not included.

<sup>2</sup> Carriage water loss applies to water transfers from the Sacramento River; a 10% conveyance loss applies to water transfers from the San Joaquin River.

Carriage water losses applied to the 2001 water transfers are as follows: 15% for the YCWA and OWID transfers; and 25% for the PCWA transfer.

<sup>3</sup> 2001 PCWA Transfer (Joint place of use) <sup>4</sup> 2002 YCWA Transfer (Joint place of use) <sup>5</sup> 2001 MID Transfer (Joint place of use) (purchased 25 TAF; received about 24 TAF)

<sup>6</sup> SOD 2001 SWP post lowpoint deliveries = 15(Semiotropic/Tulare ID) + 5(Cawelo) + 12(Santa Clara)

<sup>7</sup> Water acquired from KCWA Interests

<sup>8</sup> 2002 SGA Transfer

<sup>9</sup> An estimated total of 66 TAF has been expended for the 1/5-1/9 curtailment.

<sup>10</sup> SWP-based upon the 3/7/02 DWR's 50% exceedence forecast study/CVP-based upon the 3/1/02 USBR's 50% forecast "Mar50B2 w/Toolsa"

<sup>11</sup> Occurs when San Luis Reservoir is physically full. Amount is approximate.

<sup>12</sup> Reduction in CVP/SWP exports may allow water to be backed into upstream reservoirs.