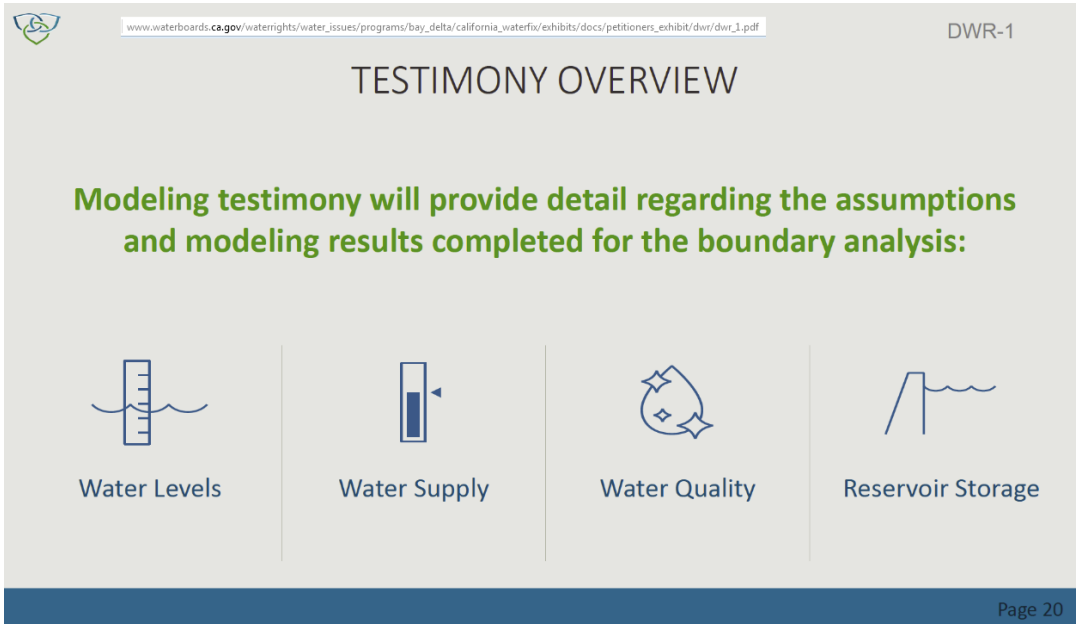
Snug Harbor Resorts, LLC

Questions for presenters: 8-4-16 re: general overview of project

Slides to be used as reference during questioning come from
DWR-1 and other official DWR/BDCP/WaterFix documents found online

Nicole S Suard, Esq, Managing Member, Snug Harbor Resorts, LLC



Focus areas for <u>Delta</u> Impact analysis: "What's changing"- boundary analysis

-Water quality in the Delta*

-Water flow for supply outside the Delta

-Water levels

-Timing

Focus areas for the Delta impact analysis:

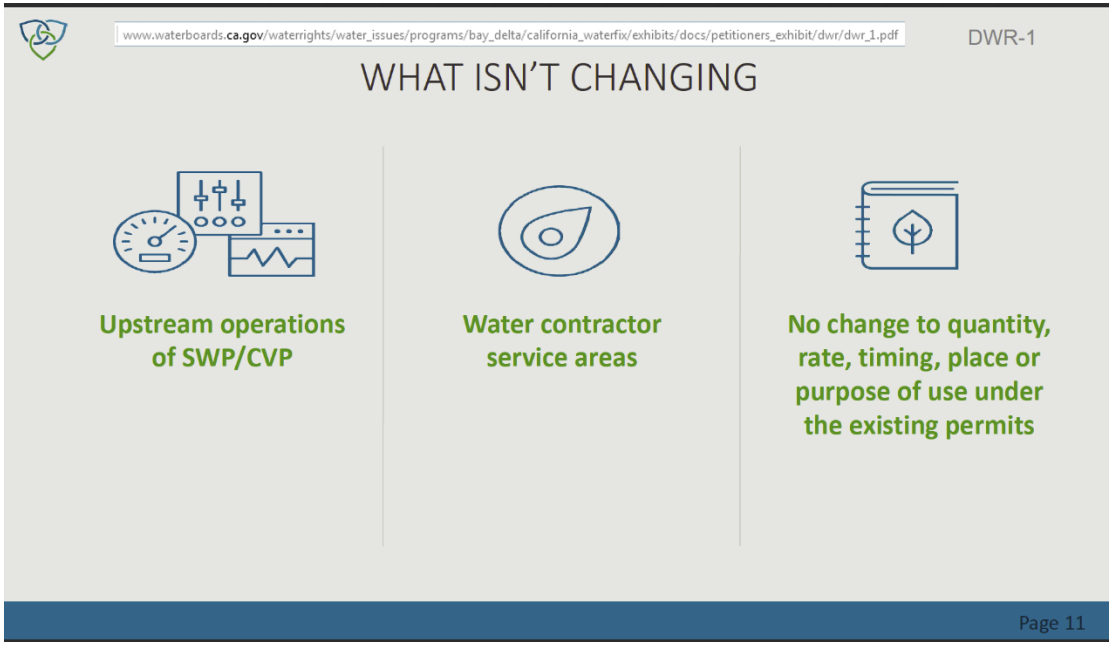
-water quantity *left* flowing through the North Delta natural channels

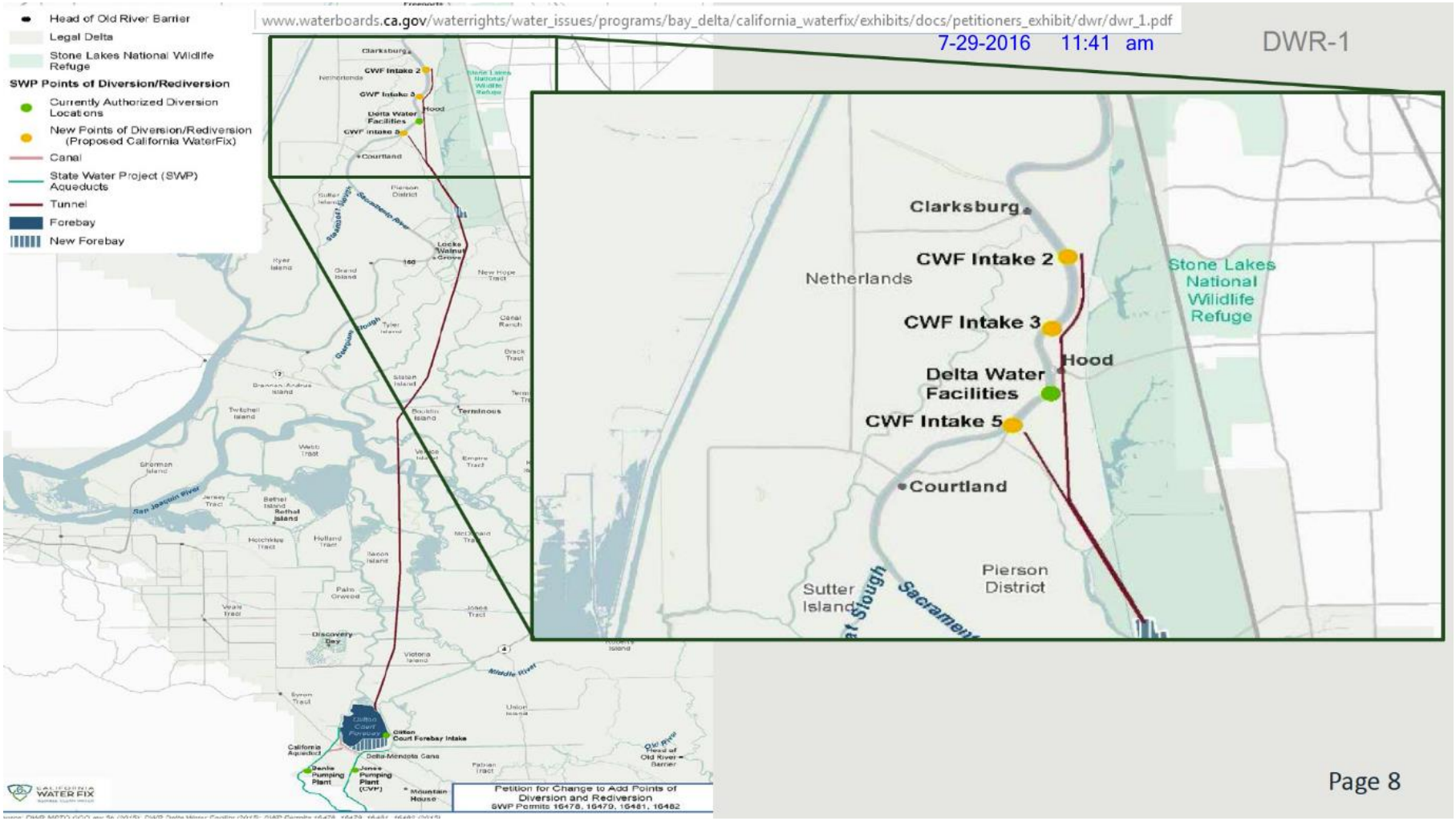
-water (flow) rate

-water (flow) timing

-upstream operations of SWP/CVP and its contractors

-purpose of (water) use under the existing permits





"No injury to legal water rights users"

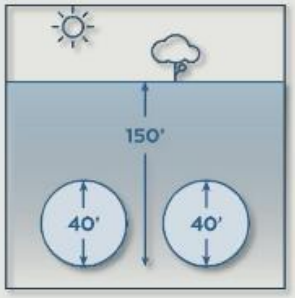
http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/petitioners_exhibit/dwr/dwr_1.pdf

www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/petitioners_

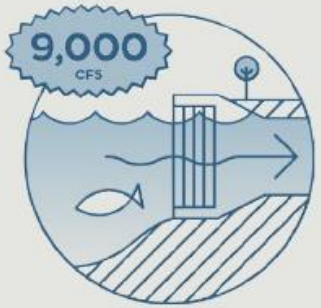
DWR-1

PHYSICAL COMPONENTS OF THE PROJECT

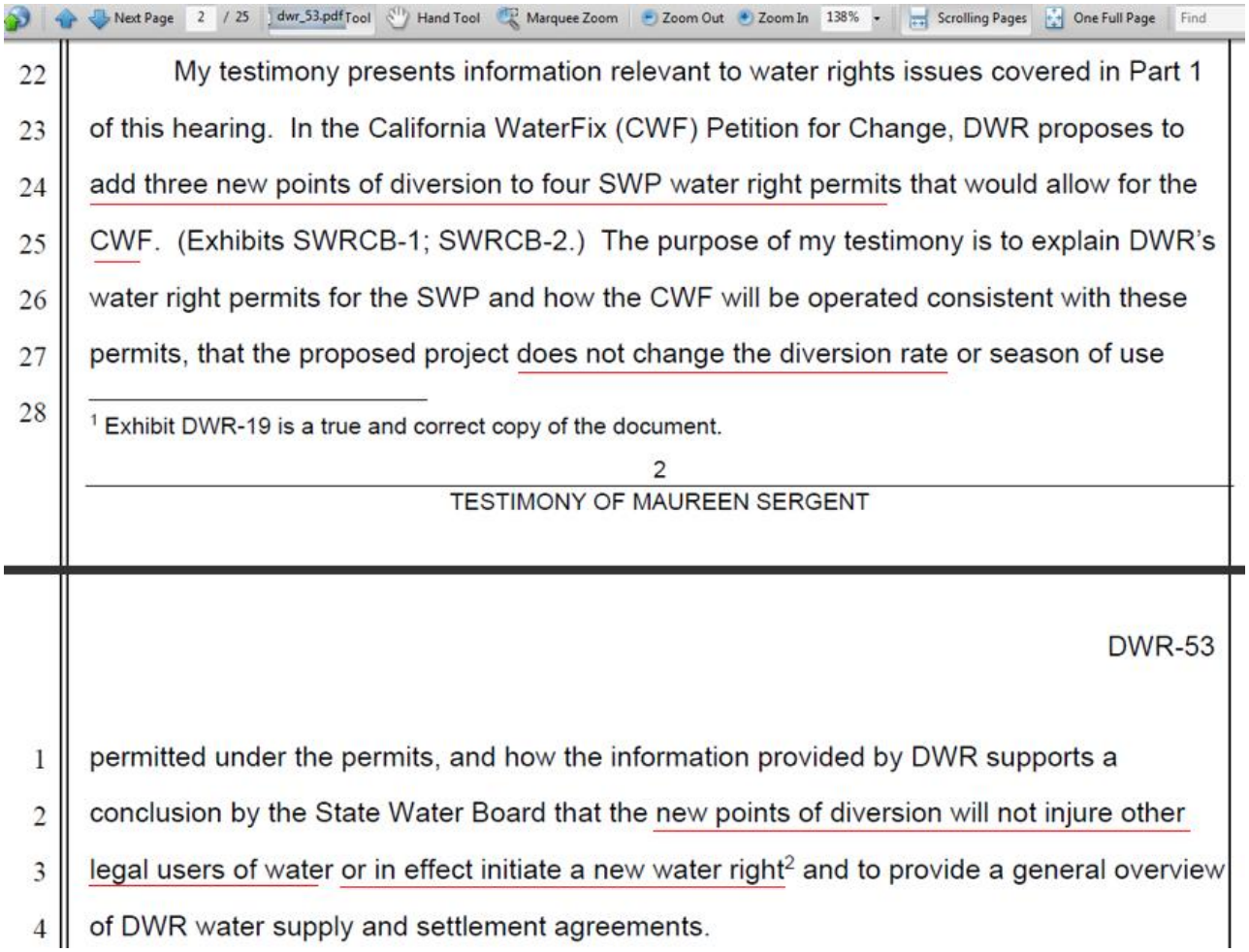
- 2 tunnels up to 150' below ground designed to protect California's water supplies



- 3 new intakes, each with 3,000 cubic-feet per second (cfs) capacity. **Average annual yield of 4.9 million acre-feet**



1. 1 cfs = 1.98 acre feet per day estimated. 9000 cfs x 1.98 = 17,820 af per day, which equals 6,504,300 acre feet per year, so why the average yield of 4.9 million acre-feet? Does it take diversion of 6.5 maf to deliver 4.9 maf?
2. Will there be overflow or pressure relief valves and if so where does that water go? Is MAXIMUM capacity for each intake 3000 cfs or is each designed to be adaptable to accept extra capacity? What is the diameter of each smaller tunnel or pipes, and the total number of tunnels or pipes, from each intake structure to the 40 foot tunnels?
3. Will those smaller tunnels or pipes be located at the bottom of the river, mid-river or near the surface?
4. What is the capacity of each 40 foot tunnel? In cfs and in acre feet?



My testimony presents information relevant to water rights issues covered in Part 1 of this hearing. In the California WaterFix (CWF) Petition for Change, DWR proposes to add three new points of diversion to four SWP water right permits that would allow for the CWF. (Exhibits SWRCB-1; SWRCB-2.) The purpose of my testimony is to explain DWR's water right permits for the SWP and how the CWF will be operated consistent with these permits, that the proposed project does not change the diversion rate or season of use

[1] Exhibit DWR-19 is a true and correct copy of the document.

permitted under the permits, and how the information provided by DWR supports a conclusion by the State Water Board that the new points of diversion will not injure other legal users of water or in effect initiate a new water right[2] and to provide a general overview of DWR water supply and settlement agreements.

1. It appears from DWR-1 and DWR-53 that petitioners claim to be diverting 6,504,300 acre feet per year of Sacramento River water *already,* so what year did you start taking Sacramento River water at that volume? For the water flow modeling, was the baseline diversion rate 6,504,3000 acre feet from the Sacramento River, and if not, how many acre feet? For example, as a comparison, how much Sacramento River water was diverted in 2000, 2005, 2010 and 2014?
2. How much water was exported from the whole Delta, in acre feet in 2015?

Below is a screen print* from the "Delta Water Balance Estimate" in thousands of acre feet, from the final version of the California Water Plan Update 2013 showing how much Sacramento River Inflow, outflow and the EXPORTS to State Water Project and Central Valley Project. In none of those years do we see 6.5 million acre feet of export or diversion from the Sacramento River, so how can DWR/USBR claim there is no change to QUANTITY of diversion from the Sacramento River? From 2011 to 2015 how much Sacramento River water has been diverted, by year?

http://www.waterplan.water.ca.gov/docs/cwpu2013/ae/water_portfolio-inflow_outflow_delta.pdf

Delta Water Balance Estimates[1] (TAF)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sacramento River Inflow	29015	21770	18360	10517	13104	18304	17129	16747	28039	11010	9557	9867	12777
Yolo Bypass Inflow	8996	1635	2961	366	708	1122	3121	707	13034	248	417	317	659
Eastside Tributaries Inflow	2096	1399	1078	372	462	534	445	1173	9679	1979	n	1231	2461
San Joaquin River Inflow	8456	3568	2846	1732	1396	1365	1373	3777	7341	1596	1234	865	1829
North Bay Aqueduct Exports	39	37	47	45	47	42	52	48	43	61	55	40	43
Contra Costa Water District Diversions at Rock Slough and Old River	160	133	126	104	121	138	120	119	116	112	135	107	94
State Water Project Exports at Banks Pumping Plant or Clifton Court Intake	2134	2439	3692	2635	2900	3458	3251	3625	3527	2954	1527	1636	2496
Central Valley Project Exports at Tracy	2474	2262	2487	2332	2505	2685	2722	2679	2628	2679	2018	1884	2141
Delta Consumptive Use[2]	1691	1691	1693	1691	1691	1691	1693	1691	1691	1691	1693	1691	1666
Delta Precipitation[2]	1423	734	956	764	758	739	753	1089	1059	477	600	662	789
Delta Outflow	43487	22542	18155	6944	9163	14050	14922	15403	43805	6216	1529	6713	2461

1 Data from DAYFLOW Program, NOTE: includes DAYFLOW corrections through 01-07-2004 (http://ep.water.ca.gov/dayflow)
2 Content Required by Water Code Section 10004.6

If 6.5 million acre feet of Sacramento River water is already being diverted from the Delta, please point out on the map the locations of the diversion points. Does DWR or USBR have smaller intakes on the Sacramento River north of Ida Island? Does DWR or USBR operate intakes on Sutter Slough, Steamboat Slough, Miner's Slough, Georgiana Slough, Elk Slough, Elkhorn Slough or in the Liberty Island or Yolo bypass area?

*Screen print from January 2014 and has been subsequently revised several times online by the drafters of CWPU 2013

Q: Does 1 cubic foot/second equal 646,320 OR 646,272 gallons a day?

Why does DWR use different conversion numbers from USGS?
Compare converting CFS to gallons per day

http://www.water.ca.gov/swp/operationscontrol/docs/annual/annual01.pdf

Conversion Factors

Quantity	Multiply	By	To obtain
Area	acre	43,560	square feet
Volume	cubic foot	7.481	gallons
	cubic foot	62.4	pounds of water
	gallon	0.13368	cubic feet
	acre-foot	325,900	gallons
	acre-foot	43,560	cubic feet
	million gallons	3.07	acre-feet
Flow	cubic foot/second (cfs)	450	gallons/minute (gpm)
	gallons/minute	0.002228	cubic feet/second (cfs)
	million gallons/day	1.5472	cubic feet/second (cfs)
	cubic foot/second (cfs)	646,320	gallons a day
			acre-feet a day
			acre-feet a year
			pounds/square inch (psi)
		5	horsepower (hp)

http://md.water.usgs.gov/cfscalc/

USGS CFS Conversion Calculator

Convert to: gallons per day

CFS Value (ft³/s): 1

Convert from cfs

Result: 646272

Conversion factors for cfs calculations: 1 cfs =

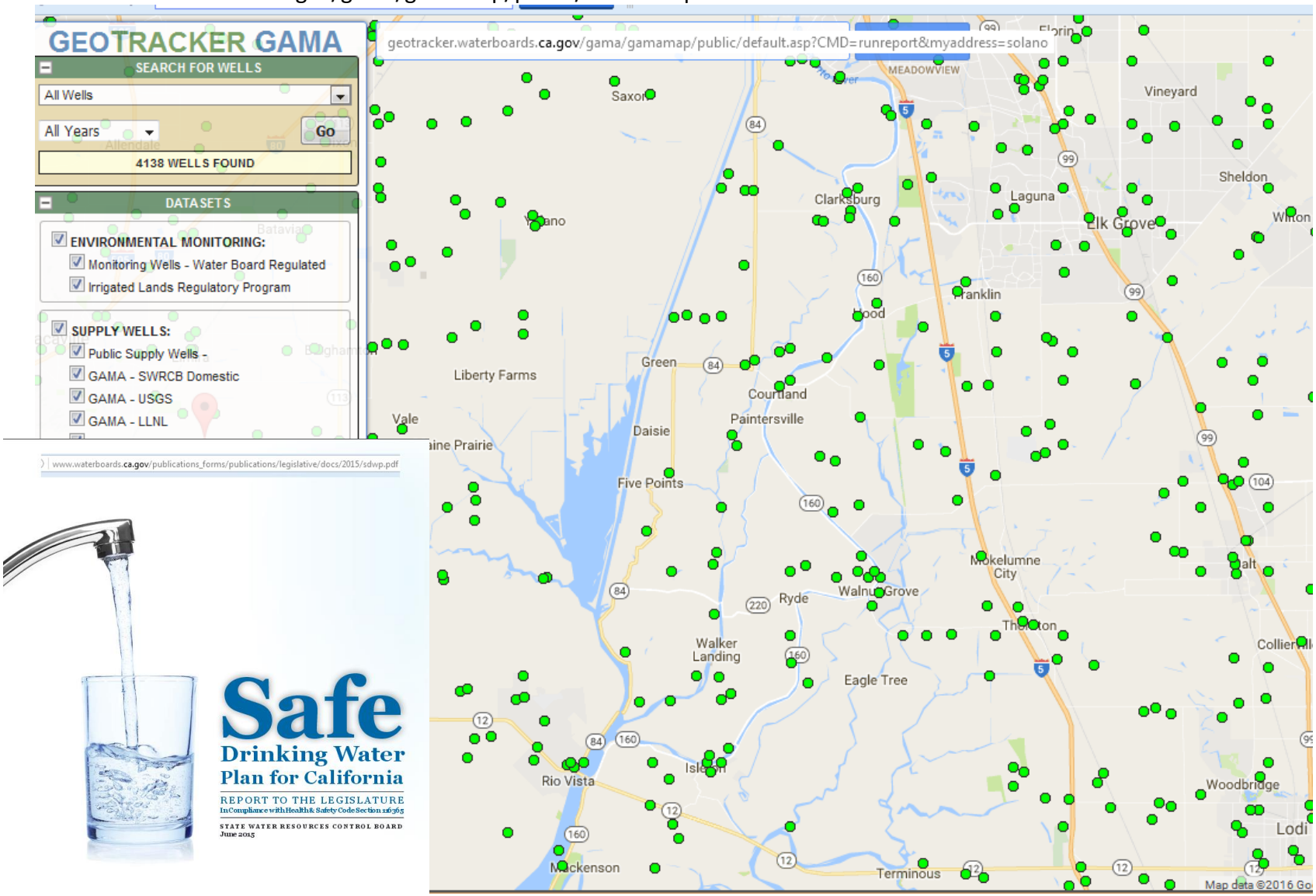
7	.48	gallons per second
448	.8	gallons per minute
26,928	.0	gallons per hour
646,272	.0	gallons per day
28	.32	liters of water per second
1,699	.2	liters of water per minute
101,952	.0	liters of water per hour
2,446,848	.0	liters of water per day
2.446848	.0	million liters of water per day
0	.646272	million gallons per day
62	.5	pounds of water per second
3,750	.0	pounds of water per minute
225,000	.0	pounds of water per hour
5,400,000	.0	pounds of water per day

close this window

26 / 33 http://www.swrcb.ca.gov/water_issues/hot_topics/strategic_plan/docs/2008_2012/020608_presentation.pdf

Inappropriate inconsistency can result in inequitable treatment, no common understanding of key water quality and water rights goals, and difficulty in achieving a meaningful evaluation of outcomes.

Geotracker.waterboards.ca.gov/gama/gamamap/public/default.asp



http://www.swrcb.ca.gov/water_issues/programs/delta_watermaster/delta_map/

Board Chair
Felicia Marcus
Visit the Water Board Members Page

- Cal/EPA
- State and Regional Water Boards' Map
- Board Priorities
- Laws/Regulations
- Plans/Policies
- Programs
- Decisions Pending and Opportunities for Public Participation

Agendas English/Español

Water Quality

Performance Report

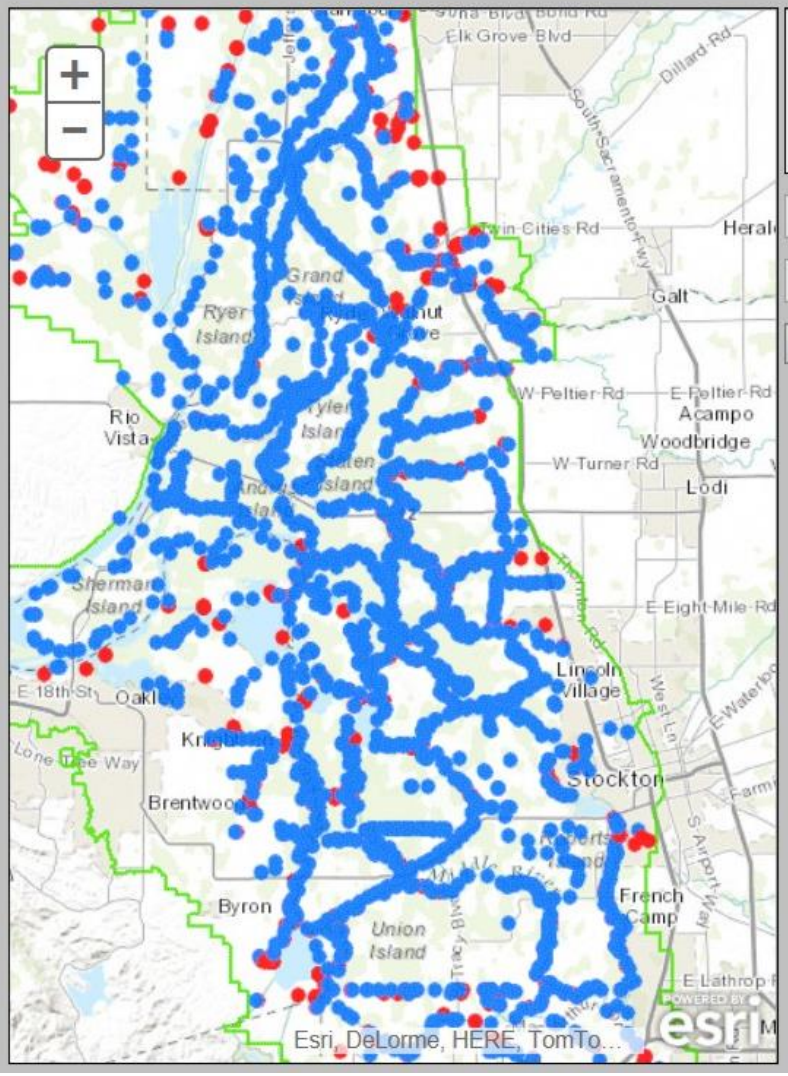
DELTA WATERMASTER

- Bay Delta Program
- eWRIMS Database
- Statement of Diversion and Use Program
- Contact Us

Water Boards

WATER RIGHTS ASSOCIATED WITHIN THE LEGAL DELTA

This interactive map displays Appropriative water rights (Permits and/or Licenses) and Statements of Water Diversion and Use water rights for islands/areas in the Legal Delta. Find water right information by clicking on a location dot on the map. Completed Island Summaries of Water Rights can be found on the Select a Delta Island or Area box on the right.



Legend Map Info

green: Legal Delta Boundary
red: Appropriative Permit or License
blue: Statement of Diversion and Use
RD: Reclamation District

Change Basemap...

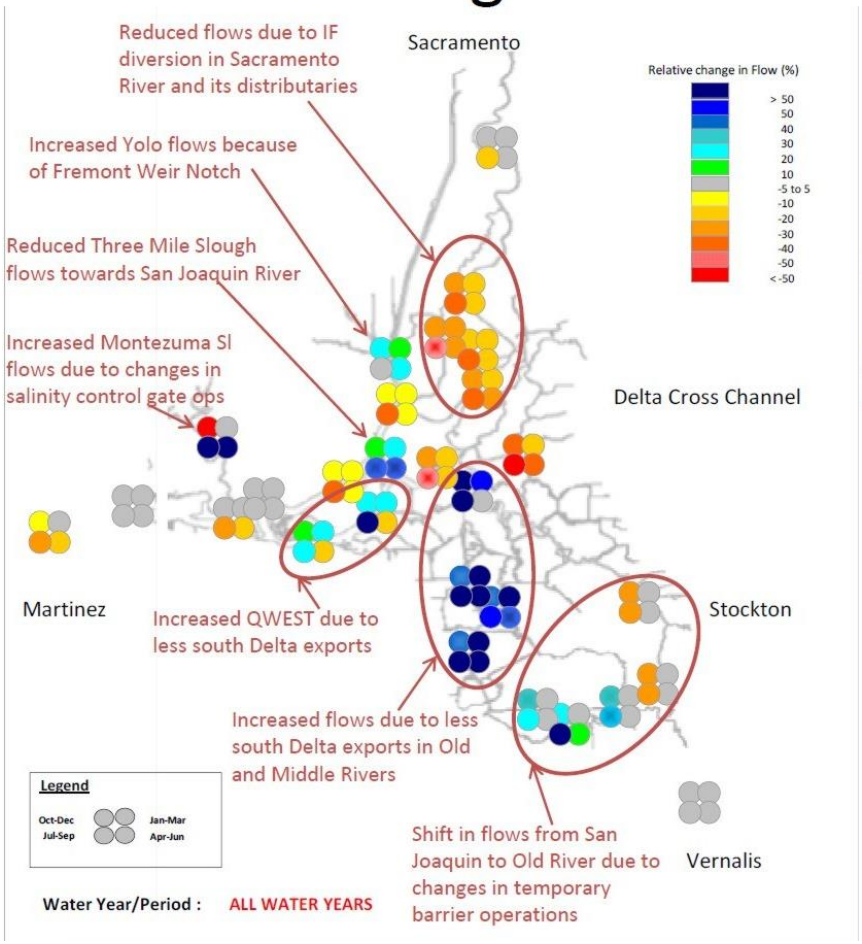
Select a Delta Island or Area...

Return to Legal Delta full extent

http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library_-_Archived/6_17_10_SC_Presentation_Modeling_Update.sflb.ashx

http://baydeltaconservationplan.com/Lists/Calendar/Attachments/112/6.17.10 SC Presentation Modeling Update.pdf

Seasonal Changes in Flow



http://baydeltaoffice.water.ca.gov/modeling/deltamodeling/AR2015/AR-2015-all.pdf 85 / 164

Methodology for Flow and Salinity Estimates 36th Annual Progress Report

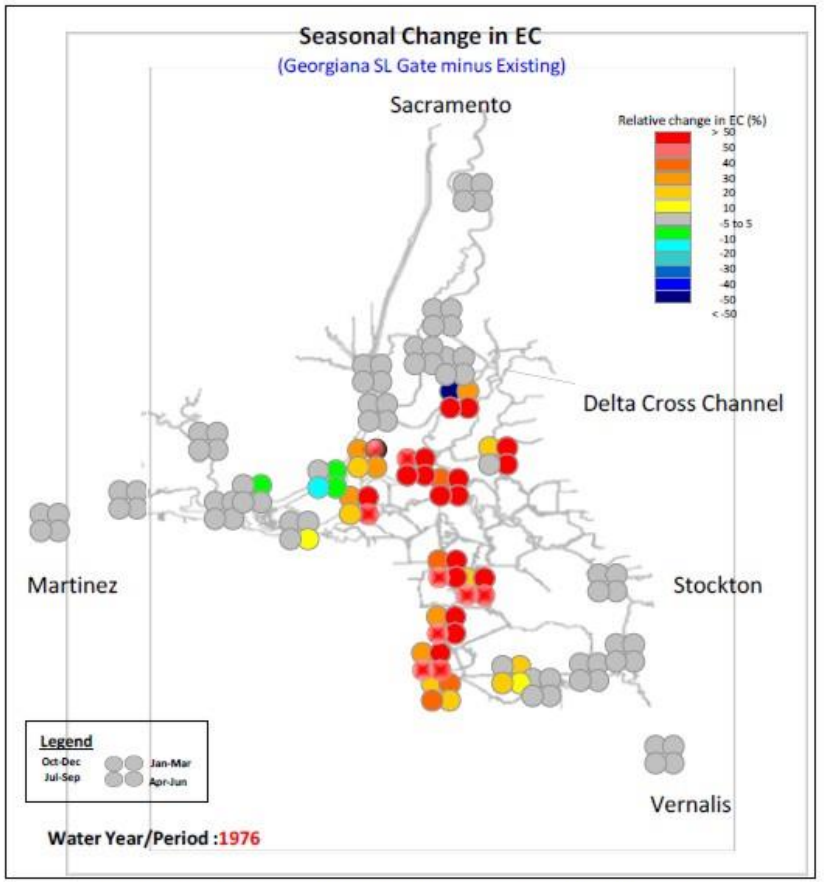


Figure 4-38 Impacts of Georgiana Slough Gate on Water Quality throughout Delta

www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/petitioners_

DWR 1

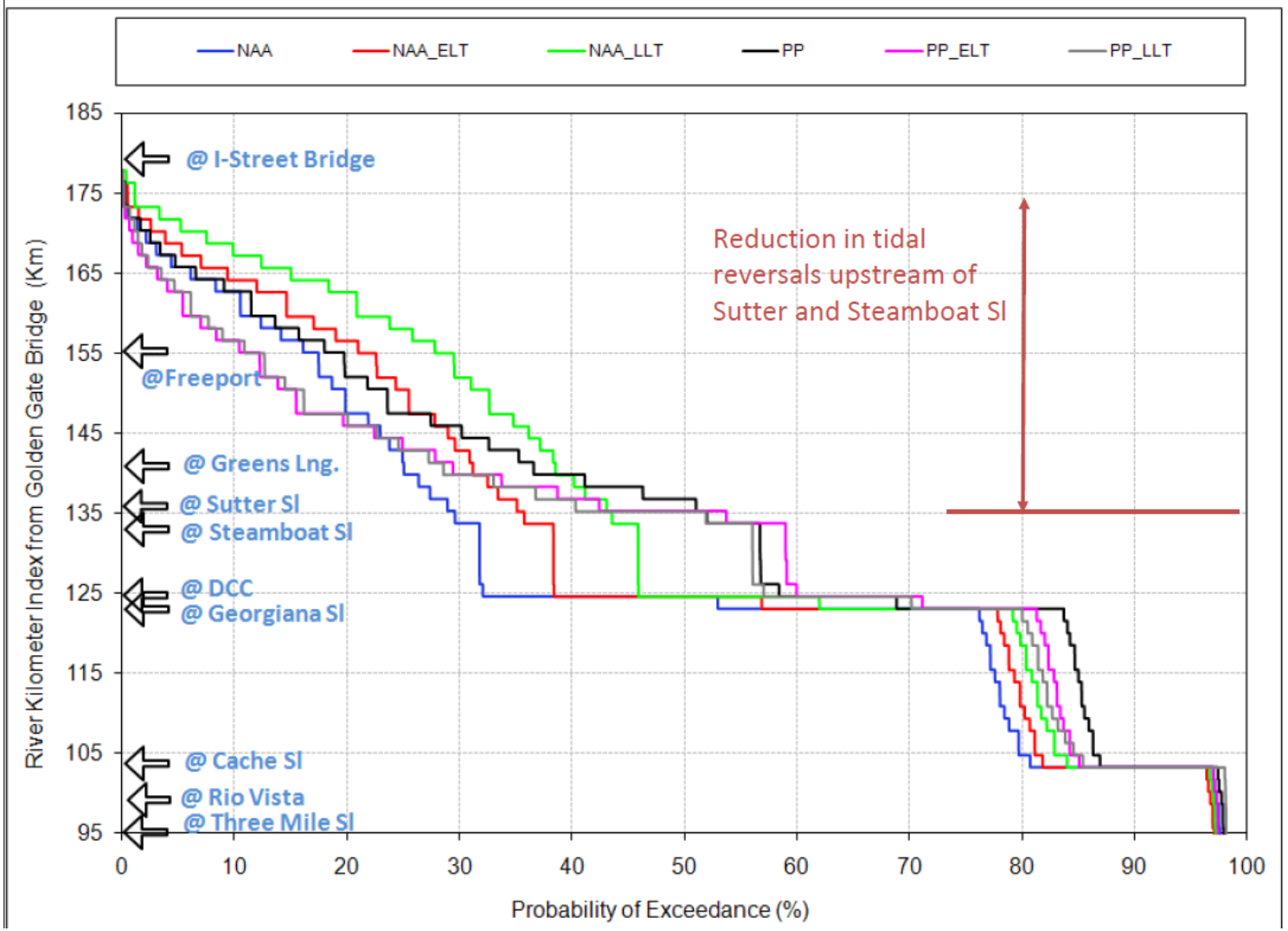
	9,000 cfs North Delta Diversion	Fall X2	Delta Outflow requirements	NMFS BiOp SJR i/e ratio	OMR Requirements	Head of Old River Barrier/Gate
No Action Alternative	No	Yes	Per D-1641	Yes	Yes; per BiOps	Temporary barrier installed in fall months
Boundary 1	Yes	No	Per D-1641	No	Yes; per BiOps	Permanent gate operating in fall months consistent with NAA
H3	Yes	Yes	Per D-1641	No	Yes; more restrictive of either BiOps or new OMR requirements identified in the RDEIR/SDEIS for Alternative 4A	Permanent gate operating in fall, winter and spring months (partial closure)
H4	Yes	Yes	Per D-1641 and increased Delta Outflow requirements during March-May	No		
Boundary 2	Yes	Yes	Per D-1641 and increased Delta Outflow goals in all months	No	Yes; more restrictive of either BiOps or new OMR requirements identified in the RDEIR/SDEIS Appendix C	Permanent gate operating in fall, winter and spring months (full closure)

Page 15

Water quantity and levels in the North Delta natural waterways: Sacramento River, Sutter Slough, Steamboat Slough, Georgiana Slough. Elk Slough, Elkhorn Slough, Miner's Slough?

6.17.10+SC+Presentation+Modeling+Update-1.pdf -

Flow Reversals in Sacramento River



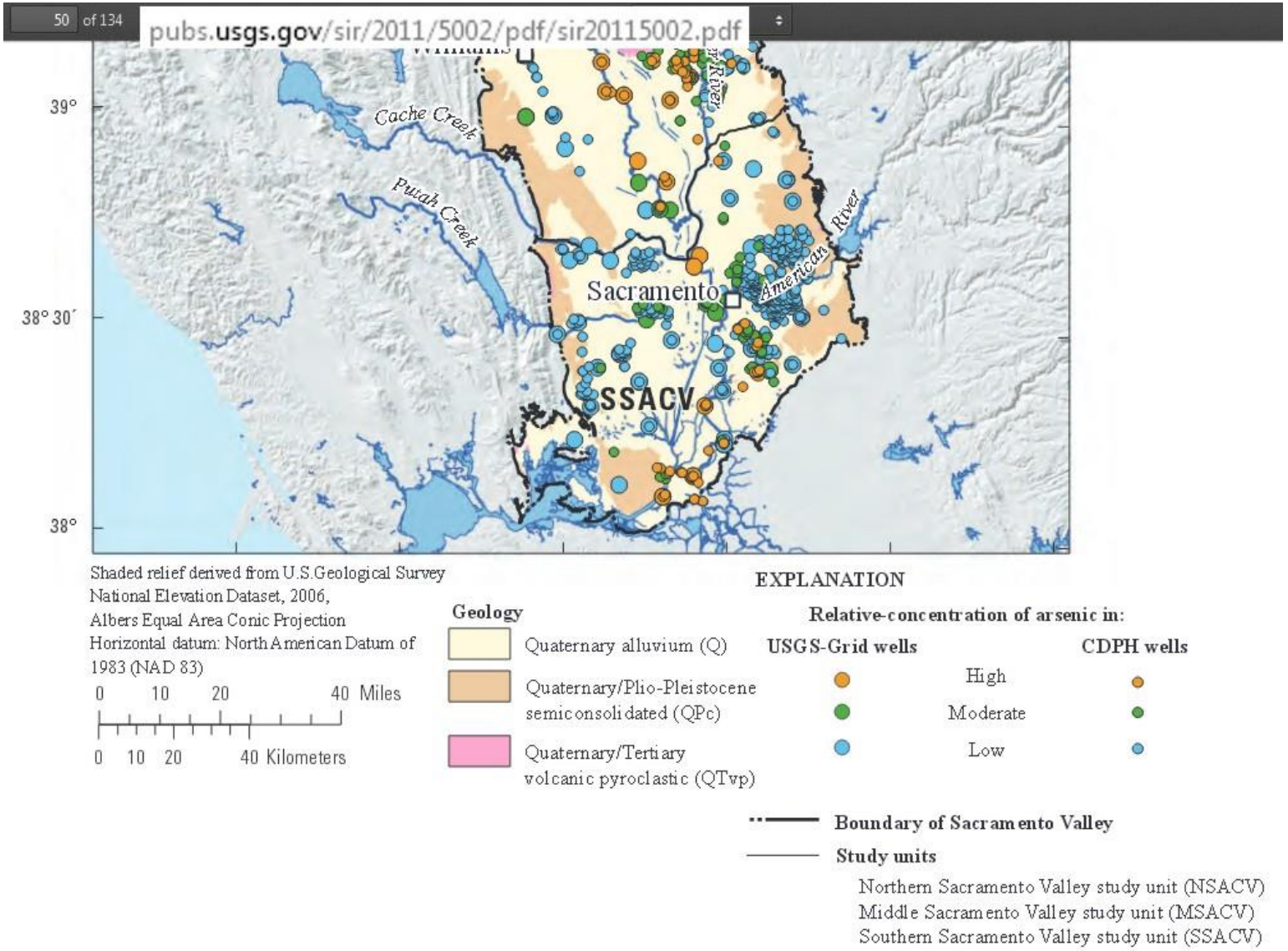


Figure 9. Relative-concentrations of arsenic in USGS-grid wells and CDPH wells, Southern, Middle, and Northern Sacramento Valley Groundwater Ambient Monitoring and Assessment (GAMA) study units, California.

"no impacts to water rights holders" see page 10, 25, 26, 29 of …
http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/petitioners_exhibit/dwr/dwr_510.pdf

One of the exhibits by DWR refers to barriers and gates.

Do you think blocking off freshwater flow into the North Delta waterways would have any impacts on water rights on Steamboat and/or Sutter Slough landowners?
Do you think it would have impacts to navigation? Impacts to humans from reduction in drinking water quality?
Impacts to businesses that are water – recreation based?

waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/petitioners_exhibit/dwr/dwr_510.pdf

11 of 61

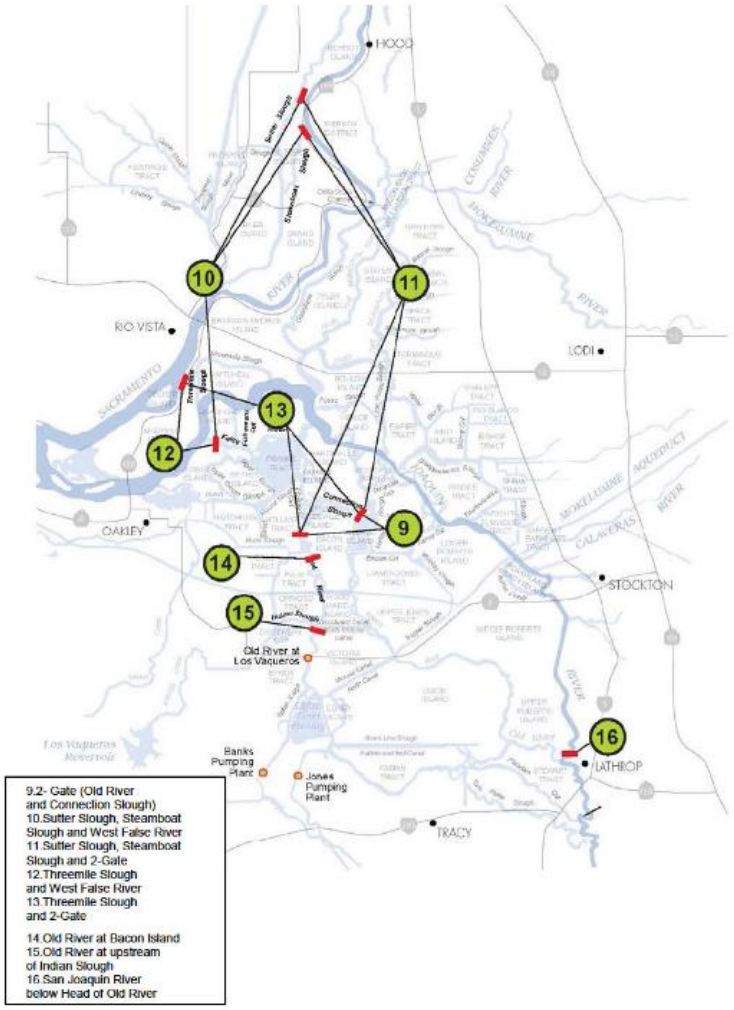
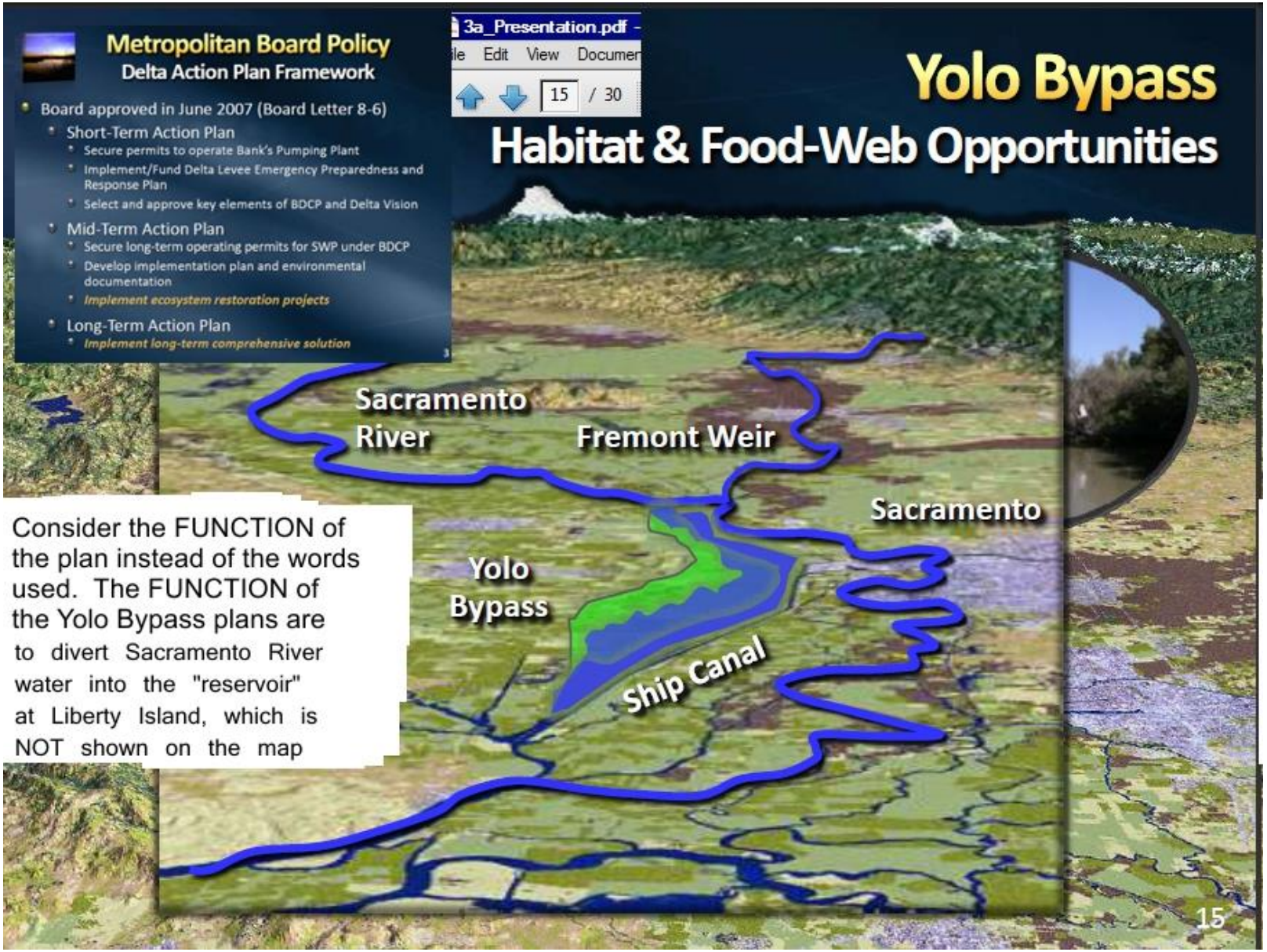


Figure 4-1b Location of Phase 1 Alternatives 9 through 16

Bay-Delta Office
April 2009

Page 6

Questions on project related to DWR-510:


Metropolitan Board Policy
Delta Action Plan Framework
Board approved in June 2007 (Board Letter 8-6)
Short-Term Action Plan
Secure permits to operate Bank's Pumping Plant
Implement/Fund Delta Levee Emergency Preparedness and Response Plan
Select and approve key elements of BDCP and Delta Vision
Mid-Term Action Plan
Secure long-term operating permits for SWP under BDCP
Develop implementation plan and environmental documentation
Implement ecosystem restoration projects
Long-Term Action Plan
Implement long-term comprehensive solution
3a_Presentation.pdf
Edit View
15 / 30
Yolo Bypass
Habitat & Food-Web Opportunities
Sacramento River
Fremont Weir
Sacramento
Yolo Bypass
Ship Canal
Consider the FUNCTION of the plan instead of the words used. The FUNCTION of the Yolo Bypass plans are to divert Sacramento River water into the "reservoir" at Liberty Island, which is NOT shown on the map
15

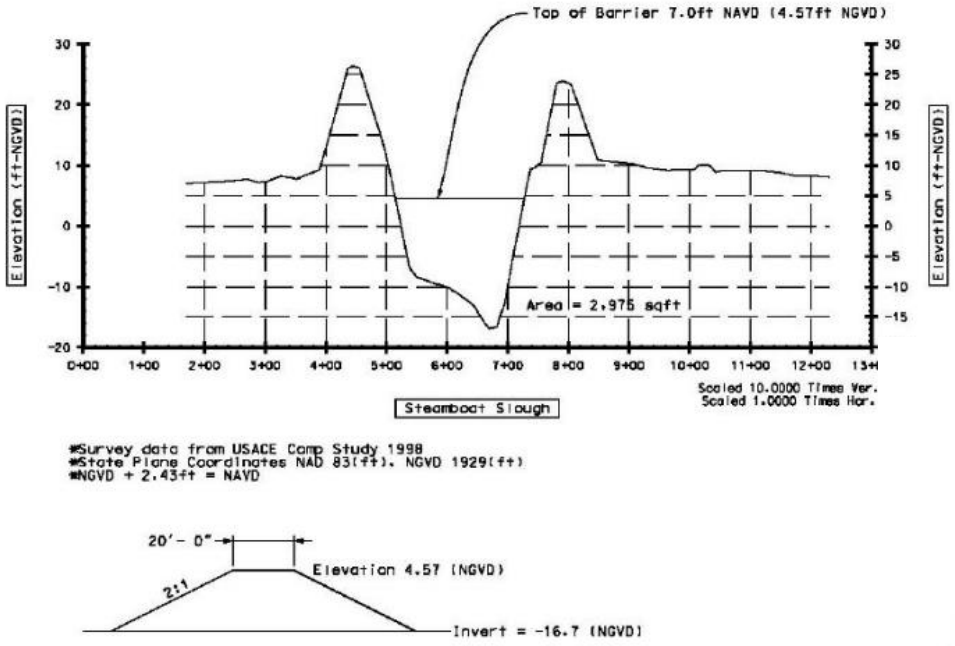
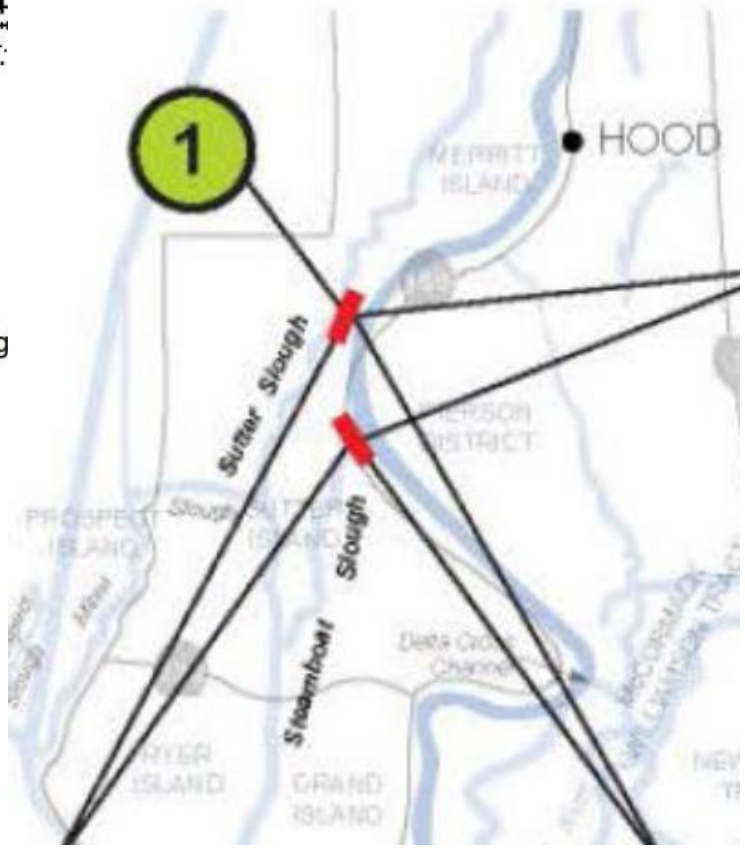
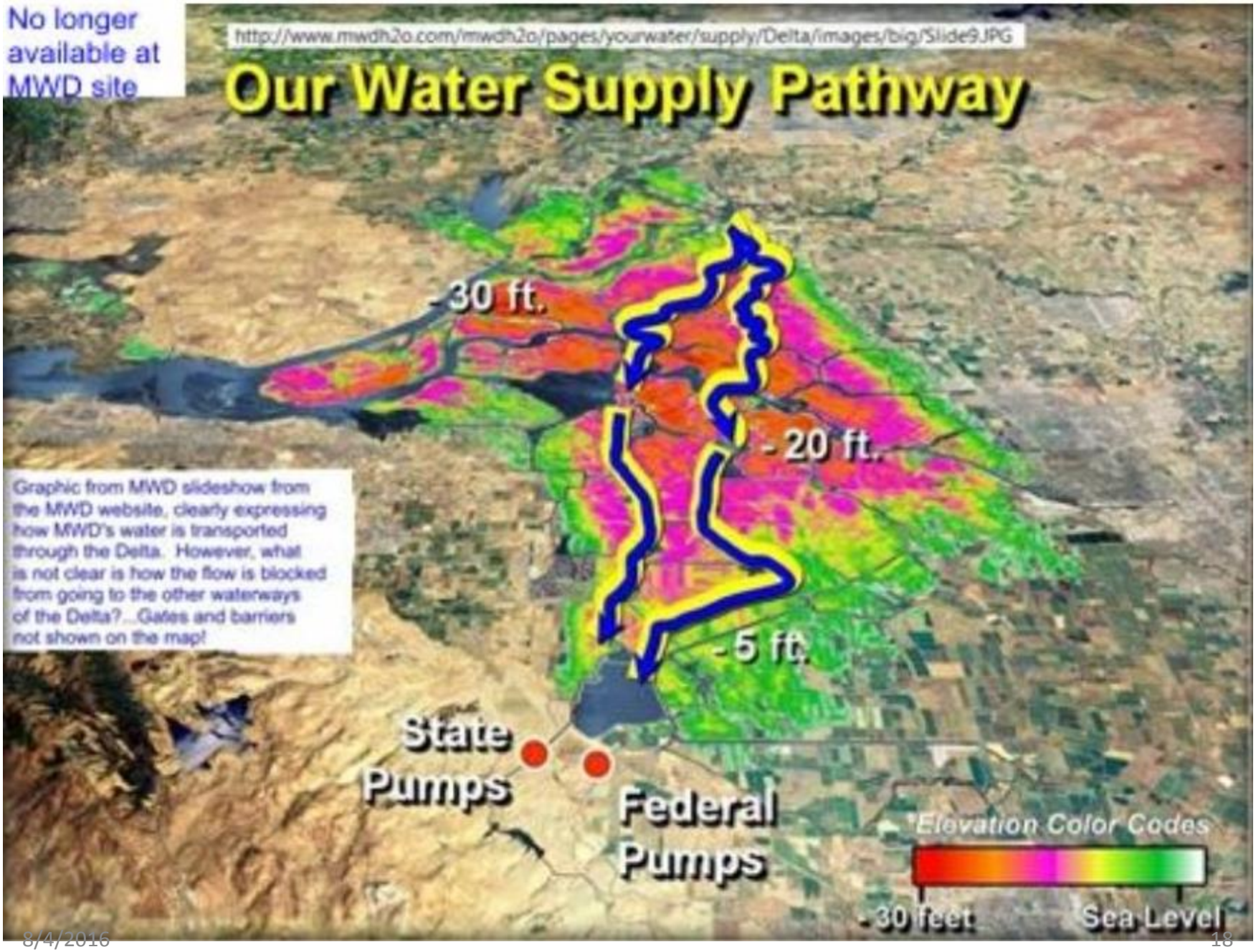
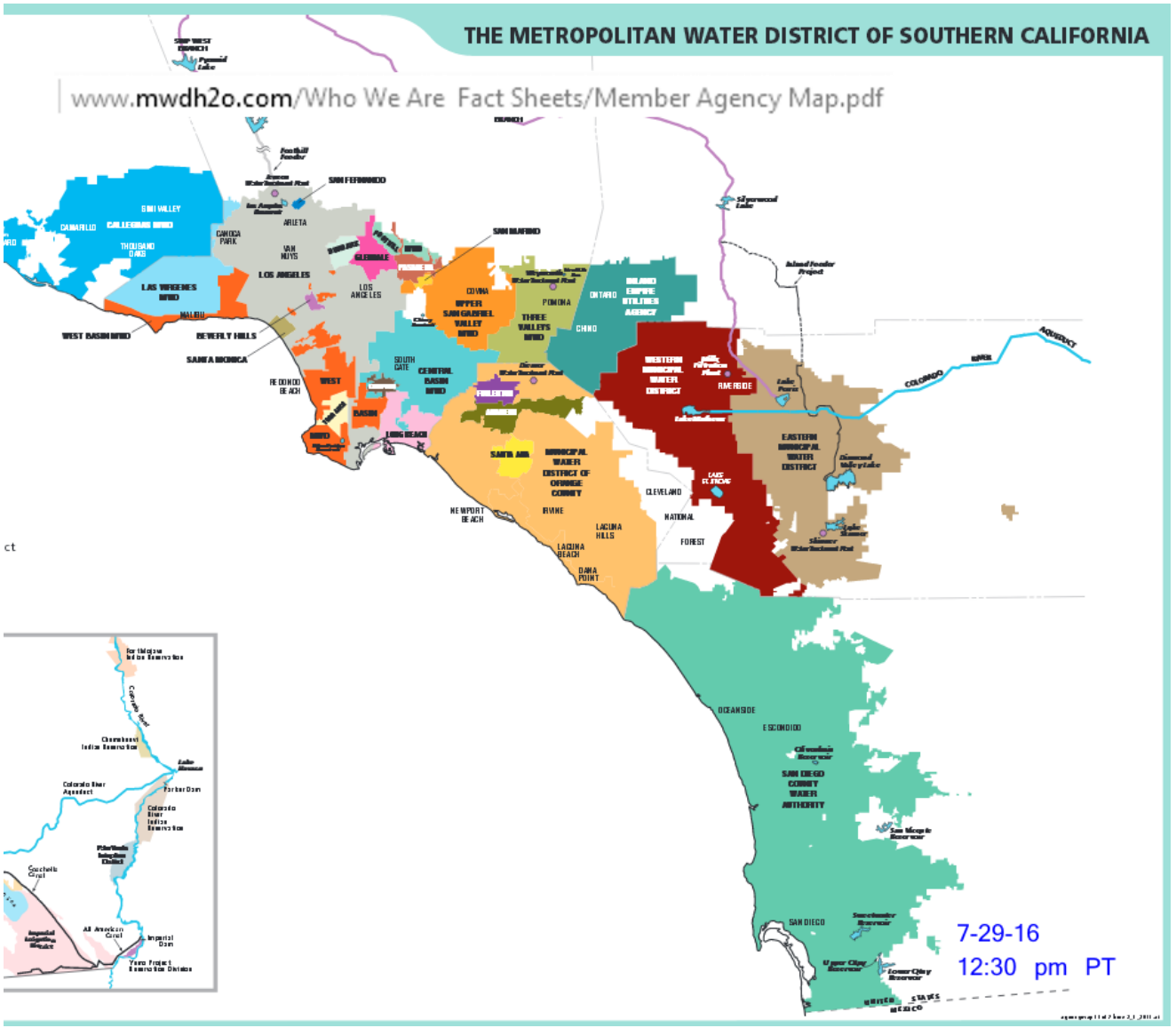


Figure 5-3 Sectional Views of Rock Barrier at Steamboat Sloug



Wouldn't leaving only 5000 cfs of flow on the Sacramento River suspend the North Delta waterways in a permanent "drought" situation, which would trigger more pressure to install barriers and gates to increase flows on the Sacramento River, into the DDC and Georgiana Slough to help keep the Central Delta fresher? Wouldn't this create a conflict between North Delta water quality and quantity rights and that of the Central Delta?


No longer available at MWD site
http://www.mwdh2o.com/mwdh2o/pages/yourwater/supply/Delta/images/big/Slide9.JPG
Our Water Supply Pathway
- 30 ft.
- 20 ft.
- 5 ft.
Graphic from MWD slideshow from the MWD website, clearly expressing how MWD's water is transported through the Delta. However, what is not clear is how the flow is blocked from going to the other waterways of the Delta?...Gates and barriers not shown on the map!
State Pumps
Federal Pumps
Elevation Color Codes
- 30 feet
Sea Level


THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
www.mwdh2o.com/Who We Are Fact Sheets/Member Agency Map.pdf
7-29-16
12:30 pm PT

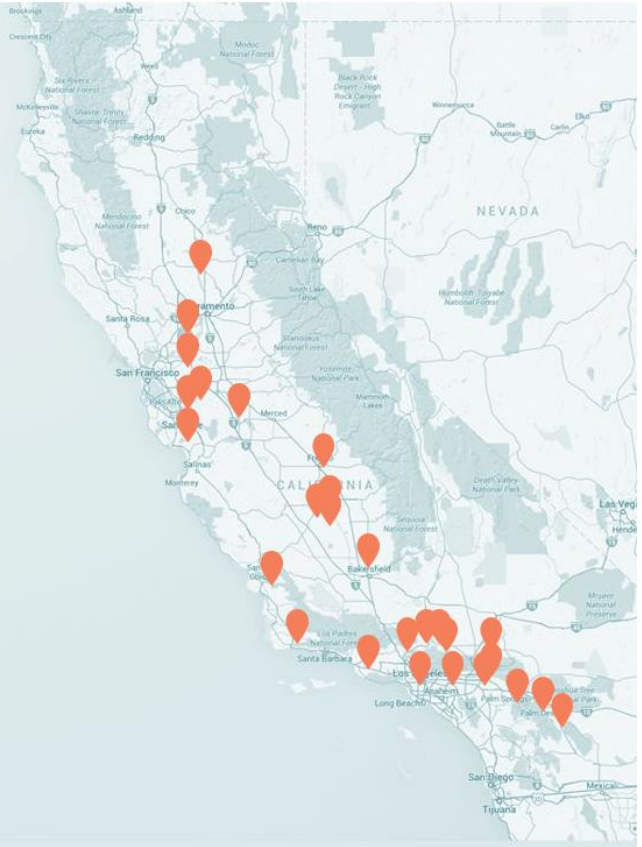
www.swc.org/our-members

state water contractors service area map

STATE WATER CONTRACTORS
FOUNDED 1982

Our Association | Our Members | Our Staff | Contact | MENU

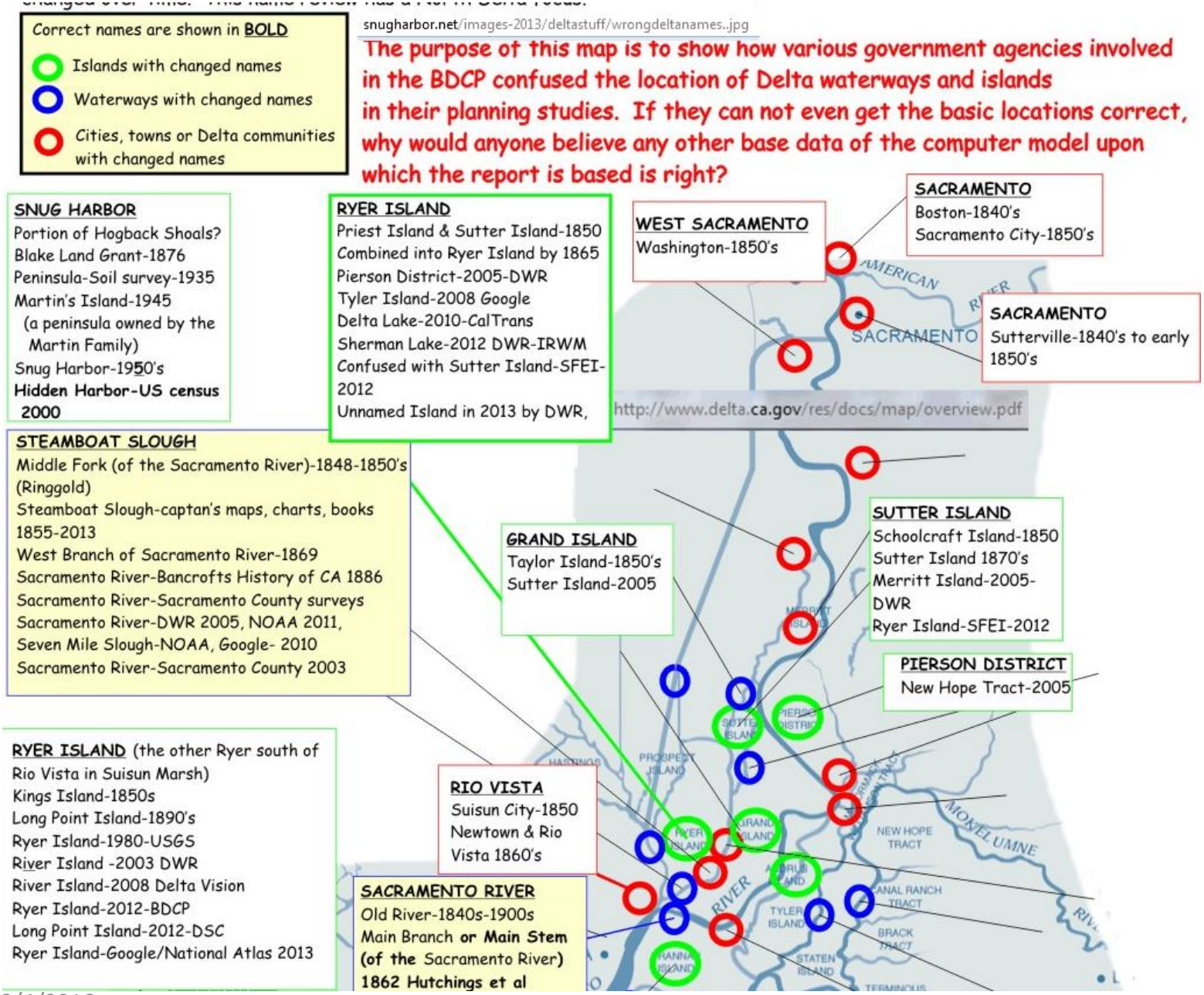
- Alameda County Flood Control & Water Conservation District Zone 7
- Alameda County Water District
- Antelope Valley-East Kern Water Agency
- Casitas Municipal Water District
- Castaic Lake Water Agency
- Central Coast Water Authority
- City of Yuba City
- Coachella Valley Water District
- County of Kings
- Crestline-Lake Arrowhead Water Agency
- Desert Water Agency
- Dudley Ridge Water District
- Empire Westside Irrigation District
- Kern County Water Agency
- Littlerock Creek Irrigation District
- Metropolitan Water District of Southern California
- Mojave Water Agency
- Napa County Flood Control & Water Conservation District
- Oak Flat Water District
- Palmdale Water District
- San Bernardino Valley Municipal Water District
- San Gabriel Valley Municipal Water District
- San Gorgonio Pass Water Agency
- San Luis Obispo County Flood Control & Water Conservation District
- Santa Clara Valley Water District
- Solano County Water Agency
- Tulare Lake Basin Water Storage District



Water transfers and "new water rights"

Table 2 - Table A Amounts in Each Scenario (acre-feet)

SWP CONTRACTOR	1994 Baseline	2003 Baseline	2020 Baseline	2003 No Project A	2020 No Project A	2003 No Project B	2020 No Project B	2003 Proposed Project	2020 Proposed Project
County of Butte	1,200	3,500	27,500	3,500	27,500	1,594	12,388	3,500	27,500
Plumas County FC&WCD	1,200	1,690	2,700	1,690	2,700	770	1,216	1,690	2,700
City of Yuba City	9,600	9,600	9,600	9,600	9,600	4,372	4,325	9,600	9,600
Napa County FC&WCD	9,135	17,450	24,900	21,475	28,925	7,947	11,217	21,475	28,925
Solano County WA	28,080	41,000	42,000	46,756	47,756	18,672	18,920	46,756	47,756
Alameda Co. FC&WCD, Zone 7	40,000	46,000	46,000	80,619	80,619	20,950	20,722	80,619	80,619
Alameda County WD	42,000	42,000	42,000	42,000	42,000	19,128	18,920	42,000	42,000
Santa Clara Valley WD	100,000	100,000	100,000	100,000	100,000	45,543	45,048	100,000	100,000
Oak Flat WD	5,700	5,700	5,700	5,700	5,700	2,596	2,568	5,700	5,700
County of Kings	4,000	4,000	4,000	9,000	9,000	1,822	1,802	9,000	9,000
Dudley Ridge WD	57,700	57,700	57,700	61,673	61,673	26,273	25,933	57,343	57,343
Empire West Side ID	3,000	3,000	3,000	3,000	3,000	1,366	1,351	3,000	3,000
Kern County Water Agency (M&I)	134,600	134,600	134,600	134,600	134,600	61,300	60,635	134,600	134,600
Kern County Water Agency (Agric.)	1,018,800	1,018,800	1,018,800	945,800	929,800	463,987	458,953	864,130	848,130
Tulare Lake Basin WSD	118,500	118,500	118,500	96,227	96,227	53,568	53,382	96,227	96,227
San Luis Obispo Co. FC&WCD	25,000	25,000	25,000	25,000	25,000	11,386	11,262	25,000	25,000
Santa Barbara Co. FC&WCD	45,486	45,486	45,486	45,486	45,486	20,715	20,491	45,486	45,486
Antelope Valley-East Kern WA	138,400	138,400	138,400	141,400	141,400	63,031	62,347	141,400	141,400
Castaic Lake WA (31A)	12,700	12,700	12,700	12,700	12,700	5,784	5,721	12,700	12,700
Castaic Lake WA	41,500	41,500	41,500	41,500	41,500	18,900	18,695	82,500	82,500
Coachella Valley WD	23,100	23,100	111,200	33,000	133,100	10,520	50,094	33,000	133,100
Crestline-Lake Arrowhead WA	5,800	5,800	5,800	5,800	5,800	2,641	2,613	5,800	5,800
Desert WA	38,100	38,100	50,000	38,100	54,000	17,352	22,524	38,100	54,000
Littlerock Creek ID	2,300	2,300	2,300	2,300	2,300	1,047	1,036	2,300	2,300
Mojave WA	50,800	50,800	50,800	75,800	75,800	23,136	22,885	75,800	75,800
Metropolitan WDSC	2,011,500	2,011,500	1,911,500	2,011,500	1,911,500	916,088	861,080	2,011,500	1,911,500
Palmdale WD	17,300	17,300	17,300	21,300	21,300	7,879	7,793	21,300	21,300
San Bernardino Valley MWD	102,600	102,600	102,600	102,600	102,600	46,727	46,220	102,600	102,600
San Gabriel Valley MWD	28,800	28,800	28,800	28,800	28,800	13,116	12,974	28,800	28,800
San Gorgonio Pass WA	17,300	5,000	17,300	5,000	17,300	2,277	7,793	5,000	17,300
Ventura County FCD	20,000	20,000	20,000	20,000	20,000	9,109	9,010	20,000	20,000
Total Agriculture	1,220,400	1,220,400	1,220,400	1,134,100	1,118,100	555,801	549,771	1,048,100	1,032,100
Total M&I	2,933,801	2,951,526	2,997,286	3,037,826	3,099,586	1,344,199	1,350,229	3,078,826	3,140,586
Total	4,154,201	4,171,926	4,217,686	4,171,926	4,217,686	1,900,000	1,900,000	4,126,926	4,172,686


Correct names are shown in **BOLD**
Islands with changed names
Waterways with changed names
Cities, towns or Delta communities with changed names
snugharbor.net/images-2013/deltastuff/wrongdeltanames..jpg
The purpose of this map is to show how various government agencies involved in the BDCP confused the location of Delta waterways and islands in their planning studies. If they can not even get the basic locations correct, why would anyone believe any other base data of the computer model upon which the report is based is right?
SNUG HARBOR
Portion of Hogback Shoals?
Blake Land Grant-1876
Peninsula-Soil survey-1935
Martin's Island-1945
(a peninsula owned by the Martin Family)
Snug Harbor-1950's
Hidden Harbor-US census 2000
RYER ISLAND
Priest Island & Sutter Island-1850
Combined into Ryer Island by 1865
Pierson District-2005-DWR
Tyler Island-2008 Google
Delta Lake-2010-CalTrans
Sherman Lake-2012 DWR-IRWM
Confused with Sutter Island-SFEI-2012
Unnamed Island in 2013 by DWR,
WEST SACRAMENTO
Washington-1850's
SACRAMENTO
Boston-1840's
Sacramento City-1850's
SACRAMENTO
Sutterville-1840's to early 1850's
http://www.delta.ca.gov/res/docs/map/overview.pdf
STEAMBOAT SLOUGH
Middle Fork (of the Sacramento River)-1848-1850's (Ringgold)
Steamboat Slough-captan's maps, charts, books 1855-2013
West Branch of Sacramento River-1869
Sacramento River-Bancrofts History of CA 1886
Sacramento River-Sacramento County surveys
Sacramento River-DWR 2005, NOAA 2011,
Seven Mile Slough-NOAA, Google- 2010
Sacramento River-Sacramento County 2003
GRAND ISLAND
Taylor Island-1850's
Sutter Island-2005
SUTTER ISLAND
Schoolcraft Island-1850
Sutter Island 1870's
Merritt Island-2005-DWR
Ryer Island-SFEI-2012
PIERSON DISTRICT
New Hope Tract-2005
RYER ISLAND (the other Ryer south of Rio Vista in Suisun Marsh)
Kings Island-1850s
Long Point Island-1890's
Ryer Island-1980-USGS
River Island -2003 DWR
River Island-2008 Delta Vision
Ryer Island-2012-BDCP
Long Point Island-2012-DSC
Ryer Island-Google/National Atlas 2013
RIO VISTA
Suisun City-1850
Newtown & Rio Vista 1860's
SACRAMENTO RIVER
Old River-1840s-1900s
Main Branch or Main Stem (of the Sacramento River)
1862 Hutchings et al
AMERICAN
SACRAMENTO
PROSPECT ISLAND
RYER ISLAND
GRAND ISLAND
MERRITT ISLAND
SUTTER ISLAND
PIERSON DISTRICT
NEW HOPE TRACT
MOKELUMNE
CANAL RANCH TRACT
BRACK TRACT
TYLER ISLAND
STATEN ISLAND
RIVER