

**DEPARTMENT OF WATER RESOURCES AND U.S. BUREAU OF
RECLAMATION**

**Updated REPORT TO SWRCB ON EXPORT AMOUNTS TO MAINTAIN
HEALTH AND SAFETY
DURING DROUGHT**

April 8, 2014

Update 4/8/14

Due to the dynamic nature this severe drought has on water demands and on Joint SWP/CVP operations, updates to the attached report (Attachment 1) to the Board will be made on an as needed basis as conditions change, or as new information becomes available.

This update outlines:

1. The methods used to quantify SWP and CVP health and safety needs; and,
2. The volume of water already exported; and,
3. The estimated future export rates and delivery volumes needed for the rest of 2014 and 2015, assuming extreme drought conditions persist.

Our joint operation planning assumes a 2 year drought planning horizon, 2014 and 2015. When revised standards were needed under the TUCP, the maximum combined Export rate allowed was 1,500 CFS. The explicit purpose of these exports from February 1 through March 17 was to meet human health and safety needs. On March 18, 2014, the State Water Board issued an Order allowing these exports for purposes other than human health and safety once those basic needs were met.

Methods used to Quantify Health and Safety Needs

Several meetings were held with SWP contractors to develop methods and criteria to be used in calculating their health and safety needs for 2014 and 2015.

Forms were developed and sent to SWP contractors to list all their existing SWP and non-SWP water supplies, as well as their demands, with the goal of quantifying their unmet needs. Contractors were required to utilize existing SWP and non-SWP water first, including groundwater, before health and safety water could be used. The level of health and safety water use was calculated using 55 Gallons/Capita/Day.

After the forms were returned and reviewed by DWR, each of the contractors was contacted to review their submitted form and to verify their assumptions and techniques. This was an iterative process of DWR interviewing contractors and reviewing submittals; and the contractors refining their estimates and resubmitting their projections of unmet needs. These were then used to determine the projected need by geographic area listed below.

Reclamation requested information from the CVP contractors to help determine health and safety needs of the CVP. The request included estimates of the current year water demands, identification of other sources of water, population estimates, and historical municipal and industrial water supply use. Estimates of the CVP health and safety needs were determined for 2014 based on the data received. This information was used in conjunction with a figure of 50% of the historical municipal and industrial CVP water use to evaluate the CVP south of Delta municipal and industrial needs.

Water Exported between February 1 and March 31

From February 1 through March 17, 2014, approximately 20 TAF was exported from the Delta under the TUCP and classified as Health and Safety.

This includes approximately 9 TAF for the SWP from the SWP export facilities and 11 TAF for the CVP from Jones Pumping Plant, (See Table X-1 and X-2).

Estimated Future Export Needs for 2014 and 2015

The majority of the currently projected health and safety needs in SWP service areas are broken down into the following geographical areas, quantities and years:

- South Bay Area Contractors indicate they have a minimal need in 2014 and about 100 TAF need in 2015.
- Central Coast Area Contractors indicate they have a minimal need in 2014 and 2015.
- Southern California Area Contractors indicate they have a minimal need in 2014 and about 160 TAF need in 2015.

The estimated minimal need in 2014 for the three geographical areas is projected at less than 10 TAF. Hence, the estimated minimal total in 2014 and approximately 260 TAF total in 2015 assumes continued dry conditions for 2014 and equally dry conditions for 2015. The 2015 total also assumes no carryover water is available to the contractors in that year.

Because of the dynamic nature of the situation, the projected needs for health and safety water will likely fluctuate based on the actual hydrologic conditions for the remainder of 2014 and for 2015.

DWR estimates that it will be necessary to export a minimum of 200 CFS throughout the year to provide South Bay Contractor SWP carryover supplies that are inaccessible from San Luis Reservoir. Access to these carryover supplies was assumed as part of the determination of 2014 health and safety needs for South Bay Contractors. Additional SWP exports, which would bring combined exports of up to 1500 cfs (as identified in the attached February 14 report), may be periodically necessary to meet the balance of the 2014 and 2015 health and safety volumes for all contractors.

The Bureau of Reclamation has used a figure of 50% of the historical municipal and industrial CVP water use as an estimate of Health and Safety needs. Reclamation reviewed data furnished by their contractors and currently estimates that the south of Delta CVP contractors would need about 260 TAF of water for Health and Safety annually. In water year 2014, about 65 TAF of that annual quantity would be needed from the CVP. This estimate will vary from year to year depending on the availability of other supplies including SWP supply and groundwater use. This Health and Safety estimate is based on 50 gallons per day per capita and 80% of historical commercial\industrial use. Reclamation also has other high priority water demands south of the Delta including water for wildlife refuges for our water rights settlement and water rights exchange contractors.

Estimated Reservoir Carryover Storages for 2015

DWR estimates that a carryover storage of approximately one million acre-feet in Lake Oroville by the end of water year 2014 (September 30, 2014) will be sufficient to meet human health and safety needs in 2015. This level of storage should be sufficient under a conservative 90% exceedence hydrologic assumption for water year 2015, while still meeting regulatory and contractual commitments. This level of carryover storage would also be sufficient under even drier conditions assuming the implementation of management actions in 2015 similar to those being put into practice this year. These actions have included modifications to implementation of D-1641 standards, planned construction of Delta Salinity Barriers, and potential curtailments to other non human health and safety uses in the Sacramento-San Joaquin River Basins.

Reclamation estimates that current projected cumulative End Of September carryover storages of CVP reservoirs (Shasta, Trinity, and Folsom) will range from about 1.4 maf (90 percent hydrology w barriers) and 1.9 maf (50 percent hydrology without barriers) . Reclamation believes these storages are adequate to meet the 2015 water year needs for the CVP. This assumes implementation of the same drought management actions as specified above. Drier conditions could entail further drought management activities.

TABLE X-1

Date	Releases			Wilkins	Exports		OMR Index			DCC	QWEST	NDOI		Chippis EC		Collinsville EC Daily	
	Oroville	Keswick	Folsom	Slough	CCF	Jones	Daily	5 Day	14 Day	%		Daily	3-Day	Daily	14 Day	mS/cm	mS/cm
	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs	Open		cfs	cfs	cfs	mS/cm	mS/cm	mS/cm
2/1/2014	987	3,349	619	4130	393	248	-333	-261	-790	58	1970	7,149		15.68	15.68	11.27	11.07
2/2/2014	980	3,350	623	3832	391	251	-382	-287	-728	100	1966	7,243		15.25	15.72	10.66	11.12
2/3/2014	980	3,340	638	3798	397	257	-360	-309	-667	100	5115	8,205	7,532	14.97	15.75	10.63	11.18
2/4/2014	976	3,307	648	3780	392	252	-342	-330	-606	100	4985	7,898	7,782	13.90	15.75	9.90	11.21
2/5/2014	975	3,275	648	3842	395	252	-342	-352	-545	100	4772	7,712	7,938	13.01	15.65	9.25	11.19
2/6/2014	980	3,316	655	4193	389	247	-341	-354	-485	100	4875	7,767	7,792	12.67	15.49	8.60	11.11
2/7/2014	1,007	3,411	647	4330	392	242	-334	-344	-425	100	6063	9,662	8,380	12.83	15.34	8.34	11.00
2/8/2014	1,034	3,709	648	4750	398	254	-329	-338	-366	100	6336	10,420	9,283	13.36	15.19	8.26	10.82
2/9/2014	981	3,453	1,053	5620	397	809	-814	-432	-364	100	7904	13,680	11,254	12.63	14.93	8.00	10.57
2/10/2014	1,105	3,529	686	7688	394	804	-778	-519	-381	42	13420	23,585	15,895	10.45	14.43	6.61	10.12
2/11/2014	1,240	3,312	629	13838	2491	1604	-3414	-1134	-607	0	12633	26,919	21,395	8.01	13.81	4.81	9.56
2/12/2014	1,240	3,174	629	12113	3345	2269	-4024	-1872	-876	0	9919	26,566	25,690	6.34	13.07	3.44	8.91
2/13/2014	1,171	3,075	620	8806	2998	2591	-4781	-2762	-1200	0	8504	25,382	26,289	5.18	12.21	2.58	8.19
2/14/2014	1,038	2,994	619	7388	2998	2588	-4786	-3557	-1526	0	5414	18,527	23,492	4.51	11.34	2.23	7.47
2/15/2014	964	2,890	617	7007	2991	2592	-4798	-4361	-1845	0	1904	10,741	18,217	4.40	10.54	2.08	6.81
2/16/2014	961	2,890	613	6831	2993	2596	-4827	-4643	-2162	0	1064	8,097	12,455	4.30	9.75	1.96	6.19
2/17/2014	956	2,889	617	6483	2996	2608	-4850	-4808	-2483	0	841	7,467	8,768	3.93	8.97	1.85	5.56
2/18/2014	957	2,894	620	6827	2496	2601	-4400	-4732	-2773	0	1067	7,075	7,546	3.75	8.24	1.79	4.99
2/19/2014	958	2,932	610	6235	1497	2605	-3510	-4477	-2999	0	1837	7,339	7,294	3.91	7.59	1.85	4.46
2/20/2014	958	2,897	567	5535	1495	1975	-2965	-4110	-3186	0	2160	7,273	7,229	3.61	6.94	1.55	3.95
2/21/2014	956	2,751	630	5122	991	1714	-2306	-3606	-3327	0	2630	7,319	7,310	3.92	6.31	1.87	3.49
2/22/2014	954	2,773	610	4708	990	1715	-2328	-3102	-3470	0	2373	6,611	7,068	4.70	5.69	2.50	3.08
2/23/2014	951	2,731	585	4524	288	1074	-1122	-2446	-3492	0	3393	6,976	6,969	5.45	5.18	2.97	2.72
2/24/2014	955	2,708	590	4468	696	798	-1250	-1994	-3526	0	3112	6,256	6,614	5.51	4.82	2.92	2.46
2/25/2014	960	2,712	551	4284	693	801	-1258	-1653	-3372	0	2955	5,867	6,366	6.64	4.72	3.83	2.39
2/26/2014	964	2,710	563	4290	698	800	-1249	-1441	-3174	0	463	5,531	5,885	7.15	4.78	3.66	2.40
2/27/2014	960	2,618	650	4420	693	805	-1251	-1226	-2921	0	1815	7,724	6,374	8.22	5.00	4.45	2.54
2/28/2014	965	2,688	690	6924	691	827	-1250	-1252	-2669	0	1921	8,126	7,127	8.59	5.29	4.45	2.69

* Per D-1641 No Chippis days required in February

7 Chippis Island Carryover Days From February Applied to March

Days with modified D-1641 implementation covered by TUCP order ⁵

Parameters under modified D-1641 implementation covered by TUCP order

Days with modified OMR Implementation

Parameters affected by modified OMR Implementation

TABLE X-2

Date	Releases			Wilkins Slough cfs	Exports		OMR Index			DCC % Open	QWEST cfs	NDOI		Chippis EC		Collinsville EC Daily	
	Oroville cfs	Keswick cfs	Folsom cfs		CCF cfs	Jones cfs	Daily cfs	5 Day cfs	14 Day cfs			Daily cfs	3-Day cfs	Daily mS/cm	14 Day mS/cm	mS/cm	14 Day mS/cm
3/1/2014	880	2,684	718	11167	694	811	-1150	-1232	-2408	0	7357	17,041	10,964	8.10	5.56	3.86	2.82
3/2/2014	829	2,687	711	12838	2496	1458	-3240	-1628	-2295	0	6147	21,315	15,494	7.24	5.77	3.72	2.95
3/3/2014	836	2,544	659	12513	2198	2085	-3594	-2097	-2205	0	5949	25,935	21,430	5.22	5.86	2.49	2.99
3/4/2014	821	2,602	638	10272	2195	2447	-3973	-2641	-2175	0	4719	24,917	24,056	4.14	5.89	1.84	3.00
3/5/2014	823	2,661	660	17754	2792	2871	-4919	-3375	-2275	0	3845	22,513	24,455	3.60	5.86	1.50	2.97
3/6/2014	820	2,595	1,031	18238	2493	3312	-5045	-4154	-2424	0	-49	16,878	21,436	3.09	5.83	1.41	2.96
3/7/2014	818	2,648	632	15529	3488	3297	-5981	-4703	-2686	0	433	22,913	20,768	2.13	5.70	0.87	2.89
3/8/2014	821	2,543	642	15075	3487	3301	-6016	-5187	-2950	0	420	24,316	21,369	1.46	5.47	0.62	2.76
3/9/2014	819	2,448	594	12517	3351	3195	-5791	-5551	-3283	0	-507	21,275	22,835	1.17	5.16	0.41	2.57
3/10/2014	816	2,644	598	10309	3496	3326	-6020	-5771	-3624	0	-1400	17,820	21,137	1.32	4.86	0.46	2.40
3/11/2014	799	2,641	550	15615	3499	3273	-5963	-5954	-3960	0	-2384	13,936	17,677	1.29	4.48	0.39	2.15
3/12/2014	798	2,619	555	19025	2994	3361	-5601	-5878	-4271	0	-2481	11,916	14,557	1.24	4.06	0.42	1.92
3/13/2014	800	2,631	561	14038	3694	3356	-6249	-5925	-4628	0	-2801	14,763	13,538	2.28	3.63	0.48	1.64
3/14/2014	800	2,629	556	10861	3492	2736	-5518	-5870	-4933	0	-1875	16,694	14,457	2.67	3.21	0.59	1.36
3/15/2014	801	2,670	554	9105	3498	2891	-5658	-5798	-5255	0	-2507	13,344	14,933	2.18	2.79	0.56	1.12
3/16/2014	803	2,684	545	7998	3288	3338	-5896	-5785	-5445	0	-3333	9,129	13,056	2.15	2.42	0.64	0.90
3/17/2014	813	2,692	546	7253	2090	3345	-4809	-5626	-5531	0	-2383	7,726	10,067	2.64	2.24	0.88	0.79
3/18/2014	815	2,637	545	6420	2283	3350	-4995	-5376	-5605	0	-2893	6,030	7,629	3.03	2.16	1.12	0.74
3/19/2014	814	2,713	546	5531	1488	3346	-4323	-5136	-5562	0	-2379	5,513	6,423	3.49	2.15	1.32	0.73
3/20/2014	811	3,321	543	5211	1486	2753	-3826	-4770	-5475	0	-2014	4,969	5,504	4.22	2.23	1.92	0.76
3/21/2014	810	3,166	545	4986	1194	1448	-2421	-4075	-5221	0	-1777	5,441	5,308	5.29	2.46	2.70	0.89
3/22/2014	809	3,072	544	5173	1191	1001	-2031	-3519	-4936	0	-393	5,276	5,229	5.38	2.74	2.94	1.06
3/23/2014	809	3,095	543	5235	705	1000	-1612	-2843	-4637	0	-322	5,703	5,473	5.19	3.03	2.95	1.24
3/24/2014	812	3,095	548	5153	689	998	-1616	-2301	-4323	0	192	5,861	5,613	5.10	3.30	2.82	1.41
3/25/2014	814	3,077	541	4944	998	1004	-1895	-1915	-4032	0	-292	5,287	5,617	6.29	3.65	2.93	1.59
3/26/2014	819	3,068	529	4988	993	1004	-1922	-1815	-3770	0	-470	4,476	5,208	5.93	3.99	3.11	1.78
3/27/2014	817	2,935	528	5091	694	866	-1551	-1719	-3434	0	1213	6,532	5,432	5.71	4.23	2.85	1.95
3/28/2014	814	2,863	528	5314	699	801	-1498	-1697	-3147	0	1631	8,017	6,341	5.52	4.44	2.84	2.11
3/29/2014	820	2,702	529	5673	692	804	-1481	-1669	-2848	0	937	8,056	7,535	6.18	4.72	3.02	2.29
3/30/2014	815	2,699	528	6732	694	805	-1483	-1587	-2533	0	4014	12,141	9,405	6.11	5.01	3.15	2.47
3/31/2014	812	2,546	528	13867	692	804	-1430	-1489	-2292	0	4742	13,962	11,386	5.80	5.23	2.77	2.60

* Per D-1641 29 Chipps days required in March

- 7 Chipps Island Carryover Days From February Applied to March
- Days with modified D-1641 implementation covered by TUCP order
- Parameters under modified D-1641 implementation covered by TUCP order
- Days with modified OMR Implementation
- Parameters affected by modified OMR Implementation

Attachment 1

**DEPARTMENT OF WATER RESOURCES AND
U.S. BUREAU OF RECLAMATION
REPORT TO SWRCB ON EXPORT AMOUNTS TO MAINTAIN
HEALTH AND SAFETY
DURING DROUGHT**

FEBRUARY 14, 2014

**Department of Water Resources and U.S. Bureau of Reclamation
Report to SWRCB on Export Amounts to Maintain Health and Safety
During Drought¹**

As required by the January 31, 2014, State Water Resources Control Board Order Approving a Temporary Urgency Change in License and Permit Terms and Conditions Requiring Compliance with Delta Water Quality Objectives in Response to Drought Conditions (with Modifications Dated February 7, 2014) (Board Order), this report provides documentation for State Water Project (SWP) and Central Valley Project (CVP) export amounts and deliveries required to maintain public health and safety. The Board Order conditions 1 and 2 require:

1. Except as otherwise provided in condition 2, below, for a period not to exceed 180 days or until such time as this Order is amended or rescinded based on changed circumstances, the requirements of D-1641 for DWR [the Department of Water Resources] and Reclamation [U.S. Bureau of Reclamation] to meet specified water quality objectives are amended as follows:

a. The minimum Delta Outflow levels specified in Table 3 are modified as follows: the minimum Net Delta Outflow Index (NDOI) described in Figure 3 of D-1641 during the month of February shall be no less than 3,000 cubic-feet per second (cfs). In addition to base Delta Outflows, pursuant to this Order, a higher pulse flow may also be required through the Real-Time Drought Operations Management Process described below.

b. The maximum Export Limits included in Table 3 are modified as follows: the combined maximum SWP and CVP export rate for SWP and CVP contractors at the Harvey O. Banks and C.W. "Bill" Jones pumping plants shall be no greater than the minimum pumping levels required for health and safety purposes and shall be no greater than 1,500 cfs on a 3-day running average. Deliveries to SWP and CVP export contractors from the SWP and CVP shall also be limited to health and safety needs. These limitations do not apply to water transfers under non-SWP or CVP water rights or between SWP and CVP contractors. DWR and Reclamation shall refine what export amounts and deliveries are required to maintain health and safety and shall provide documentation to the State Water Board to support that determination by February 14. Based on additional information or changed circumstances, the export limits imposed pursuant to this Order may be modified through the Real-Time Drought Operations Management Process described below.

c. The Delta Cross Channel (DCC) Gate Closure requirements included in Table 3 are modified as follows: the DCC gates may be opened from February 1 through May 20 as necessary to preserve limited storage in upstream reservoirs and reduce infiltration of high salinity water into the Delta while reducing impacts on migrating Chinook salmon. Requirements for closure of the DCC gates during March through May 20 shall be determined through the Real-Time Drought Operations Management Process described below.

¹ The report is submitted in compliance with condition 1.b of SWRCB Water Rights Order Approving Temporary Urgency Change modification of D-1641 (January 31, 2014).

2. During the effective period of this Order, if precipitation events occur that enable DWR and Reclamation to comply with the Delta Outflow and DCC Gate Closure requirements contained in Table 3 of D-1641, then D-1641 requirements shall be operative, except that any SWP and CVP exports greater than 1,500 cfs shall be limited to natural or abandoned flow, or transfers as specified in condition 1b.

Below is a summary of actions taken under the operations authorized by the Board Order.

Early February Operations

From February 1 through February 9, 2014, and per the Board Order, the Delta Cross Channel gates were open and the SWP and CVP (referred to jointly as the Projects) were operating to a minimum Net Delta Outflow Index of 3,000 cfs, which required Delta exports to be at minimum levels. Combined exports each day during this period were approximately 650 cfs as a short term measure to ameliorate deteriorating water quality in the Delta. However, pumping rates below 1,500 cfs are difficult for the Projects to sustain in the long term due to a combination of certain contractor demands and physical constraints of the facilities.

Reclamation must maintain flow in the Delta Mendota Canal (DMC) to allow the City of Tracy the ability to divert water directly from the DMC. Reclamation typically meets this demand by operating one small pumping unit at Jones Pumping Plant continuously. Jones Pumping Plant has six pumping units with up to five operating at any time. The pumping capacities of the units vary from about 850 cfs to about 1,050 cfs. The small pumping unit used for continuous operations has a minimum design standard of 850 cfs. The pumps were originally designed for long-term operations with minimal starts and stops. And, in accordance with this design intent, Reclamation does not cycle the pumps under normal operations. Excessive starting and stopping of the pumps from cycling the units would greatly degrade the motors and windings of the pump unit and would reduce the reliability of the pumps. This operation would lead to lengthy and costly repairs. As just experienced in February, cycling a pump unit for a short-term emergency variance may occur, but this should not be considered as an option for a sustained operation.

SWP exports during the first week of February went to meet the demands of Byron-Bethany Irrigation District and South Bay Aqueduct contractors (Alameda County Flood and Water Conservation District Zone 7, Alameda County Water District, and Santa Clara Valley Water District) whose only source of SWP water is Delta exports. Contractors that receive water supply through the South Bay Aqueduct are extremely vulnerable to water quality degradation in the Delta because there is limited storage or dilution capability on this system; water is pumped from the Delta at Banks Pumping Plant and conveyed directly through the aqueduct to water treatment plants operated by the Districts. Consequently, degradation of water quality in the Delta is felt at these water treatment plants within 24 hours. Therefore, as a contingency response for possible future salinity degradation, a portion of SWP exports (approximately 1.5 TAF) also went into storage in Lake Del Valle during the first week of February. This water will be used as blending water in the event that Delta salinity conditions become too poor to meet drinking water health and safety standards in the future. No water exported during this period was intended to be stored in San Luis Reservoir or delivered for agricultural use.

Current Operations

Following a series of precipitation events in early February, Delta outflow began to exceed 7,100 cfs and the Delta Cross Channel gates were closed on February 10. As allowed by a provision added to the Order on February 7, "if precipitation events occur that enable DWR and Reclamation to comply with the Delta outflow and Delta Cross Channel gate closure requirements contained in D-1641, then D-1641

requirements shall be operative, except that any SWP and CVP exports greater than 1500 cubic feet per second shall be limited to natural or abandoned flow.” Since February 11, the Projects have been operating to meet the terms of the D-1641 standards that had been modified by the Order; therefore, Delta exports have been increased above minimum levels to capture natural or abandoned flow. The Projects continue to comply with the requirements of the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (FWS) biological opinions², as well as the requirements set forth by the California Department of Fish and Wildlife (DFW) for the protection of Longfin Smelt. SWP water exported in excess of 1,500 cfs is currently being stored in San Luis Reservoir and may be used for SWP system-wide blending to meet drinking water health and safety standards in the event that Delta water quality conditions degrade further in the future.

The Projects currently anticipate meeting D-1641 requirements addressed by the Order through the rest of February.

Information to Develop Health and Safety Export Levels

For many reasons, DWR and Reclamation believe that ultimately the minimum health and safety export level at any one time will be a range and that 1,500 cfs is a reasonable cap on that range. The bottom of this range remains undetermined and is the focus of efforts by DWR and Reclamation at this time. Actual health and safety export levels will depend on a number of factors and should take into account not only the need to deliver water directly for drinking water, sanitation, and fire suppression purposes, but also the need to store water now for blending later for health and safety water quality considerations in the event that, without blending, Delta diversions become unusable later in the year. In addition, there are facility operational constraints. Following is a discussion of the factors that will influence this range.

Title 22 CA Code of Regulations and the Health and Safety Code CA Safe Drinking Water Act require that permitted public water systems meet drinking water standards producing drinking water that is pure and wholesome for public consumption. Surface water delivered through the SWP to Municipal and Industrial (M&I) State Water Contractors (SWC) is treated to produce drinking water that meets these standards.

Generally, minimum consumption rates of 50 gallons per capita per day may need to be augmented with water supplies for fire protection and suppression efforts throughout the season. Current drought conditions promote the need to divert south Delta exports to SWP and CVP storage facilities south of the Delta, and to reduce releases from SWP and CVP storage facilities north of the Delta for future use as a source for drinking water, sanitation, fire protection, temperature control, releases to benefit fisheries, etc.

A combined pumping rate of 1,500 cfs is the most biologically protective export rate analyzed in both the 2008 Fish and Wildlife Service biological opinion for smelt (2008 BiOp), and the 2009 NOAA Fisheries biological opinion for salmonids and green sturgeon (2009 BiOp). That rate is based on minimum municipal and refuge contractor supply demands, as well as the physical constraints at Jones Pumping Plant. At the 1,500 cfs level, negative flows in Old and Middle Rivers (OMR) and entrainment risks are reduced. Neither BiOp requires exports of less than 1,500 cfs in recognition of health and safety.

² 2008 CVP/SWP Long Term Operation Biological Opinion, and 2009 NMFS CVP/SWP Long Term Operation Biological Opinion, as confirmed by NMFS and FWS on January 31, 2014, and DFW on February 3, 2014.

Therefore, holding the maximum minimum health and safety level to 1,500 cfs will result in no additional effects to species not already analyzed in the 2008 and 2009 BiOps, would remain consistent with the Board's Order requiring compliance with both the California and federal ESA requirements³, and, therefore would not have unreasonable effects upon fish.

The Board Order restricting deliveries to SWP and CVP export contractors to health and safety needs could be read as inconsistent with the long understanding that the minimum health and safety level for export pumping is a combined 1,500 cfs, as the water pumped at those levels is needed to satisfy the pumps' physical constraints, and, importantly, refuge supplies off the DMC and San Luis Canal. Refuge deliveries are a legal requirement of the Central Valley Project Improvement Act, yet a strict reading of the Board Order would prevent any of the export water to be used for refuge supply as the refuges are CVP contractors who receive water exported from the Delta. An operation in strict compliance with this provision of the Board Order is impractical and is not consistent with safe operation of the facilities.

Conclusion

Information presented in this report represents the best available information to date on the health and safety rate of exports. DWR and Reclamation recognize that additional information may become available in the future and, and will keep the Board apprised of this additional information. DWR and Reclamation have requested from SWP and CVP contracting water agencies information about forecasted future water needs now and throughout the year. Developing this information is challenging since it is difficult to predict how conditions will change as the drought continues. Our understanding about what we can expect in terms of supply and future water quality continues to evolve as well. As stated above, the Projects' minimum health and safety export is likely to be a range, which will vary according to the circumstances and information related to water agency needs. If DWR and Reclamation determine a refinement of the minimum health and safety export level is appropriate based on the information we may obtain from the agencies, we would provide this information to the Water Board and to the Real Time Drought Operations Management Team.

If you have questions or would like more information about this report, please contact Mr. John Leahigh of DWR at 916-574-2722 or Mr. Paul Fujitani of Reclamation at 916-979-2197.

³ The United States and DWR asserted in 2007 in *NRDC v. Norton* that an export rate of 1,500 cfs was necessary to meet health and safety demands consistent with facility limitations. The court ultimately did not prohibit the Projects from taking any action to protect the structural integrity of CVP or SWP facilities.