

# **New Melones Revised Plan of Operations**

# IPO WQ and Fishery Objectives

Storage + Inflow		Fishery		Vernalis WQ		Vernalis Flow		CVP Contractors	
From	To	From	To	From	To	From	To	From	To
1400	2000	98	125	70	80	0	0	0	0
2000	2500	125	345	80	175	0	0	0	59
2500	3000	345	467	175	250	75	75	90	90
3000	6000	467	467	250	250	75	75	90	90

Table 1  
New Motors Operations Model - Annual Summary

Year	Historical														2007 IPO - Revised CALSW Boundary						
	New Motor Sales	New Motor Registrations	DED Sales	DED Registrations	Total Sales (Ded + New)	Total Registrations (Ded + New)	2006 Motor Sales	2006 Motor Registrations	2006 Total Sales	2006 Total Registrations	2007 Motor Sales	2007 Motor Registrations	2007 Total Sales	2007 Total Registrations	Motor Sales	Motor Registrations	Motor Sales	Motor Registrations			
1991	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
1992	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
1993	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
1994	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
1995	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
1996	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
1997	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
1998	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
1999	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2000	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2001	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2002	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2003	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2004	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2005	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2006	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2007	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2008	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2009	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2010	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2011	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2012	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2013	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2014	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2015	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2016	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2017	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2018	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2019	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2020	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2021	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2022	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2023	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2024	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2025	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2026	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2027	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2028	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2029	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2030	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2031	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2032	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2033	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2034	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2035	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2036	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2037	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2038	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2039	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			
2040	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	1000	1000	0	0	0	0			

# of Units in CALSW are not shown otherwise listed. Individual Fish Release [1] Vernalis ITC Release [2] DCR Release [3]

# Analysis of Current IPO

- Constrains releases.
- Results in several Vernalis water quality exceedances.

# Drought Reoccurrence Analysis for the Stanislaus River Basin

“The 1987-1992 drought has apparent 250-  
to 400-year reoccurrence; 1929-1934  
drought has apparent 30-to 50-year  
reoccurrence.” -Levi Brekke

# Revised IPO Planning Periods

- 1929-1934
- 1987-1992

# IPO for 1929-1934

	New Melones		Goodwin												NM Forecast Index	Missed Vernalis WQ Release	Missed Vernalis Flow Release
	New Melones Inflow	New Melones Storage	OID & SSJID Canals	Districts Other	Districts SEWD	Total OID & SSJID	SEWD NM Water	CSJWCD NM Water	Instream Fish	Dissolved Oxygen	Vernalis Water Quality	Vernalis Flow Objective	Total Goodwin Release to River	Release above Minimum			
Avg	1087		507	30	26	562	6	38	284	12	18	3	447	129		1	14
	WY	EOS	WY	M-F	WY		M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F		M-F	M-F
1929	506	1250	475	32	29	535	0	0	121	22	53	0	196	0	1902	0	0
1930	671	1085	540	31	30	601	0	0	115	23	58	0	196	0	1770	0	0
1931	438	785	457	26	8	491	0	0	99	20	70	0	189	0	1398	0	0
1932	1160	1151	545	26	30	601	0	0	118	43	18	0	179	0	1832	0	131
1933	586	908	535	27	30	591	0	0	107	27	52	0	186	0	1579	0	10
1934	498	649	493	28	13	533	0	0	90	22	64	0	176	0	1277	0	56

# Revised IPO for 1929-1934 – OID/SSJID Proposed

	New Melones		Goodwin												NM Forecast Index	Missed Vernalis WQ Release	Missed Vernalis Flow Release
	New Melones Inflow	New Melones Storage	OID & SSJID Canals	Districts Other	Districts SEWD	Total OID & SSJID	SEWD NM Water	CSJWCD NM Water	Instream Fish	Dissolved Oxygen	Vernalis Water Quality	Vernalis Flow Objective	Total Goodwin Release to River	Release above Minimum			
Avg	1087		507	30	26	562	38	79	220	0	15	0	379	144		0	28
	WY	EOS	WY	M-F	WY		M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F		M-F	M-F
1929	506	1002	475	32	29	535	0	0	174	0	24	0	198	0	1646	0	0
1930	671	839	540	31	30	601	0	0	174	0	27	0	201	0	1518	0	0
1931	438	534	457	26	8	491	0	0	174	0	32	0	207	0	1148	0	0
1932	1160	901	545	26	30	601	0	0	174	0	6	0	180	0	1572	0	131
1933	586	659	535	27	30	591	0	0	174	0	19	0	193	0	1326	0	10
1934	498	394	493	28	13	533	0	0	174	0	25	0	199	0	1023	0	53

# IPO for 1987-1992

	New Melones		Goodwin												NM Forecast Index	Missed Vernalis WQ Release	Missed Vernalis Flow Release
	New Melones Inflow	New Melones Storage	OID & SSJID Canals	Districts Other	Districts SEWD	Total OID & SSJID	SEWD NM Water	CSJWCD NM Water	Instream Fish	Dissolved Oxygen	Vernalis Water Quality	Vernalis Flow Objective	Total Goodwin Release to River	Release above Minimum			
Avg	1087		507	30	26	562	38	79	220	0	15	0	379	144		0	28
	WY	EOS	WY	M-F	WY		M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F		M-F	M-F
1987	497	1444	490	29	13	531	50	105	236	0	47	0	283	0	2278	0	0
1988	390	1026	425	26	8	459	0	0	174	0	79	0	253	0	1652	0	0
1989	648	800	546	26	30	601	0	0	174	0	55	0	229	0	1505	0	0
1990	491	489	489	26	13	527	0	0	174	0	71	0	245	0	1153	0	3
1991	502	209	478	26	30	533	0	0	174	0	33	0	207	0	830	0	0



# Revised IPO for 1987-1992 – OID-SSJID

## Proposed

	New Melones		Goodwin												NM Forecast Index	Missed Vernalis WQ Release	Missed Vernalis Flow Release
	New Melones Inflow	New Melones Storage	OID & SSJID Canals	Districts Other	Districts SEWD	Total OID & SSJID	SEWD NM Water	CSJWCD NM Water	Instream Fish	Dissolved Oxygen	Vernalis Water Quality	Vernalis Flow Objective	Total Goodwin Release to River	Release above Minimum			
Avg	1087		507	30	26	562	38	79	220	0	15	0	379	144		0	28
	WY	EOS	WY	M-F	WY		M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F		M-F	M-F
1987	497	1444	490	29	13	531	50	105	236	0	47	0	283	0	2278	0	0
1988	390	1026	425	26	8	459	0	0	174	0	79	0	253	0	1652	0	0
1989	648	800	546	26	30	601	0	0	174	0	55	0	229	0	1505	0	0
1990	491	489	489	26	13	527	0	0	174	0	71	0	245	0	1153	0	3
1991	502	209	478	26	30	533	0	0	174	0	33	0	207	0	830	0	0

# Vernalis WQ Objectives

- Periodic Review of 1995 Water Quality Control Plan – Recommended revising current objectives for salinity from 0.7 dS/m from April-August and 1.0 dS/m from September-March, to 1.0 dS/m year-round.
- Clean Water Act – Recommended removing the Lower San Joaquin River's designation as limited in water quality by salt and boron.

# Stanislaus Dissolved Oxygen Objective at Ripon

- Recommending that the current objective be moved upstream to Orange Blossom Bridge.
- Recommendation fully complies with §7 of the OCAP

# Goals for OID & SSJID

- Continue full implementation of the 1988 agreement with the USBR.
- Other parties, such as the California Sport Fishing Protection Alliance, seek to reduce District use in Below Normal, Dry, and Critical Years.



# OID-SSJID Proposal

- Attempts delivery to CVP contractors
- Varies allocations to other CVP purposes
- Contractors get water and fish get 235 TAF whenever the index is  $> 1.8$  MAF.
- $< 1.8$  MAF CVP contractors get no water and the fishery schedule is reduced to 174 TAF.
- Releases made to meet Vernalis objectives.

# Plan for 1929-1934 – OID/SSJID Proposed

	New Melones		Goodwin												NM Forecast Index	Missed Vernalis WQ Release	Missed Vernalis Flow Release
	New Melones Inflow	New Melones Storage	OID & SSJID Canals	Districts Other	Districts SEWD	Total OID & SSJID	SEWD NM Water	CSJWCD NM Water	Instream Fish	Dissolved Oxygen	Vernalis Water Quality	Vernalis Flow Objective	Total Goodwin Release to River	Release above Minimum			
Avg	1087		507	30	26	562	38	79	220	0	15	0	379	144		0	28
	WY	EOS	WY	M-F	WY		M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F		M-F	M-F
1929	506	1002	475	32	29	535	0	0	174	0	24	0	198	0	1646	0	0
1930	671	839	540	31	30	601	0	0	174	0	27	0	201	0	1518	0	0
1931	438	534	457	26	8	491	0	0	174	0	32	0	207	0	1148	0	0
1932	1160	901	545	26	30	601	0	0	174	0	6	0	180	0	1572	0	131
1933	586	659	535	27	30	591	0	0	174	0	19	0	193	0	1326	0	10
1934	498	394	493	28	13	533	0	0	174	0	25	0	199	0	1023	0	53

# Plan for 1987-1992 – OID-SSJID Proposed

	New Melones		Goodwin												NM Forecast Index	Missed Vernalis WQ Release	Missed Vernalis Flow Release
	New Melones Inflow	New Melones Storage	OID & SSJID Canals	Districts Other	Districts SEWD	Total OID & SSJID	SEWD NM Water	CSJWCD NM Water	Instream Fish	Dissolved Oxygen	Vernalis Water Quality	Vernalis Flow Objective	Total Goodwin Release to River	Release above Minimum			
Avg	1087		507	30	26	562	38	79	220	0	15	0	379	144		0	28
	WY	EOS	WY	M-F	WY		M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F		M-F	M-F
1987	497	1444	490	29	13	531	50	105	236	0	47	0	283	0	2278	0	0
1988	390	1026	425	26	8	459	0	0	174	0	79	0	253	0	1652	0	0
1989	648	800	546	26	30	601	0	0	174	0	55	0	229	0	1505	0	0
1990	491	489	489	26	13	527	0	0	174	0	71	0	245	0	1153	0	3
1991	502	209	478	26	30	533	0	0	174	0	33	0	207	0	830	0	0



# Advantages of OID-SSJID Alternative

- Contractors get water over 75% of the time.
- Fish get 235 TAF 75% of the time and 135 TAF 25% of the time.
- Water Quality objectives met, even without “relaxing” operations.
- River gets > 200 TAF each year.

# Goals

Fish flows, VAMP, Temperature



Water Quality



X2



Dissolved Oxygen



1988 USBR Agreement



# Grasslands Bypass Analysis

- Eliminates Grasslands Bypass discharges.
- Results demonstrate plausibility of New Melones operations occurring during a 6-year drought.

# Grasslands Bypass Analysis – 1929-1934

	New Melones		Goodwin												NM Forecast Index	Missed Vernalis WQ Release	Missed Vernalis Flow Release
	New Melones Inflow	New Melones Storage	OID & SSJID Canals	Districts Other	Districts SEWD	Total OID & SSJID	SEWD NM Water	CSJWCD NM Water	Instream Fish	Dissolved Oxygen	Vernalis Water Quality	Vernalis Flow Objective	Total Goodwin Release to River	Release above Minimum			
Avg	1087		507	30	26	562	38	79	220	0	4	0	377	152		0	31
	WY	EOS	WY	M-F	WY		M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F		M-F	M-F
1929	506	1052	475	32	29	535	0	0	174	0	0	0	174	0	1678	0	0
1930	671	908	540	31	30	601	0	0	174	0	2	0	176	0	1573	0	0
1931	438	624	457	26	8	491	0	0	174	0	18	0	192	0	1225	0	0
1932	1160	988	545	26	30	601	0	0	174	0	0	0	174	0	1661	0	131
1933	586	764	535	27	30	591	0	0	174	0	2	0	176	0	1418	0	15
1934	498	513	493	28	13	533	0	0	174	0	9	0	183	0	1130	0	53

# Grasslands Bypass Analysis – 1987-1992

	New Melones		Goodwin												NM Forecast Index	Missed Vernalis WQ Release	Missed Vernalis Flow Release
	New Melones Inflow	New Melones Storage	OID & SSJID Canals	Districts Other	Districts SEWD	Total OID & SSJID	SEWD NM Water	CSJWCD NM Water	Instream Fish	Dissolved Oxygen	Vernalis Water Quality	Vernalis Flow Objective	Total Goodwin Release to River	Release above Minimum			
Avg	1087		507	30	26	562	38	79	220	0	4	0	377	152		0	31
	WY	EOS	WY	M-F	WY		M-F	M-F	M-F	M-F	M-F	M-F	M-F	M-F		M-F	M-F
1929	506	1052	475	32	29	535	0	0	174	0	0	0	174	0	1678	0	0
1930	671	908	540	31	30	601	0	0	174	0	2	0	176	0	1573	0	0
1931	438	624	457	26	8	491	0	0	174	0	18	0	192	0	1225	0	0
1932	1160	988	545	26	30	601	0	0	174	0	0	0	174	0	1661	0	131
1933	586	764	535	27	30	591	0	0	174	0	2	0	176	0	1418	0	15
1934	498	513	493	28	13	533	0	0	174	0	9	0	183	0	1130	0	53

## Projected Costs Over the Next Six Years

- Consultants (excluding fishery biologists): \$300,000 - \$600,000
- Fishery Biologists: \$1,506,000
- Attorney time: \$1,000,000
  
- Total six-year estimate: \$3-3.5 million

# Connection/Integration With Other Programs

- Friant settlement
- Grasslands Bypass, Westside Drainage Program
- SEWD application to appropriate water from the Stanislaus
- Tulloch generator
- Eastside water resource investigation
- HR2828
- Fishery/Habitat improvement  
CALFED/ESA