



PLACER COUNTY WATER AGENCY  
SINCE 1957

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David Breninger, General Manager 530.823.4850  
Ed Tiedemann, General Counsel 800.464.0030

[WWW.PCWA.NET](http://WWW.PCWA.NET)

July 18, 2011  
File No. 01030A  
**Electronically Filed**

Honorable Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

**SUBJECT: Middle Fork American River Project (FERC Project No. 2079-069)**  
Copy of Request for Water Quality Certification and Proof of Delivery

Dear Secretary Bose:

In compliance with 18 CFR Section 5.23(b)(ii), Placer County Water Agency (PCWA) provides the Federal Energy Regulatory Commission (FERC or Commission) a copy of:

- PCWA's July 15, 2011 request to the California State Water Resources Control Board (State Water Board) for Clean Water Act Section 401 Water Quality Certification for the Middle Fork American River Project (FERC Project No. 2079); and
- A copy of the return receipt as proof of the date that the State Water Board received PCWA's request.

If you have any questions regarding this filing, please contact me at (530) 823-4889.

Sincerely,

Andrew Fecko  
Resource Planning Administrator

**Attachments: Attachment 1. Transmittal letter to California State Water Resources Control Board requesting Water Quality Certification (July 15, 2011)**

**Attachment 2. Proof of the date on which the State Water Board received the request (July 18, 2011)**

**Attachment 3. FERC Service List**

Attachment 1.

Transmittal Letter to California State Water Resources Control Board  
Requesting Water Quality Certification, Dated July 15, 2011



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July 15, 2011  
File No. 01030A

Mr. Tom Howard, Executive Director  
California State Water Resources Control Board  
1001 I Street  
Sacramento, CA 95814

**SUBJECT: Middle Fork American River Project (FERC Project No. 2079)**  
Application for Water Quality Certification

Dear Mr. Howard:

By copy of this letter, Placer County Water Agency (PCWA) is applying for Water Quality Certification from the California State Water Resources Control Board (State Water Board) under Section 401 of the Clean Water Act for the Middle Fork American River Project (MFP), Federal Energy Regulatory Commission (FERC or Commission) Project No. 2079. PCWA is relicensing the MFP in compliance with Title 18 of the Code of Federal Regulations (CFR) Part 5 and FERC's Integrated Licensing Process. This Application for Water Quality Certification is being made pursuant to the California Code of Regulations (CCR), Title 23, Division 3, Chapter 28, Articles 1 and 4. As provided for in CCR, Title 23, Division 3, Chapter 28, Article 1, Section 3832, PCWA is submitting two copies of the Application for Water Quality Certification.

Consistent with the fee provisions of CCR, Title 23, Division 3, Chapter 28, Article 1, Section 3833(b)(1), PCWA is also enclosing an initial deposit of \$1,000 to cover the State Water Board's reasonable costs of processing this Application.

The Application for New License for the MFP (License Application) was filed with FERC on February 23, 2011. Concurrently, a copy of the License Application was provided to the State Water Board. The MFP is located within the Middle Fork American River Watershed. The majority of the MFP is located in Placer County, California. A small component (a portion of Ralston Afterbay Dam) is located in El Dorado County, California. The MFP serves as a multi-purpose water supply and hydro-generation project designed to conserve and control waters of the Middle Fork American River, the Rubicon River, Duncan Creek, and North and South Fork Long Canyon creeks. The MFP consists of two major storage reservoirs, five smaller regulating

Mr. Tom Howard

July 15, 2011

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reservoirs and diversion pools, and five powerhouses that began operation in 1967. As described in detail in the License Application, the Proposed Action includes implementation of several construction projects to improve operations and maintenance of the MFP, enhance environmental resources, and/or meet the requirements specified in new environmental programs and measures.

Subsequent to filing the License Application, PCWA met with representatives from FERC on April 4, 2011, and participated in a teleconference with The Louis Berger Group (FERC's contractor) on May 24, 2011. As a result of those discussions, additional information was requested by FERC and filed by PCWA, as follows:

April 4, 2011

- As discussed in the April 4, 2011 meeting and documented in a Memo of Meeting dated April 7, 2011, FERC identified that "a few additional pieces of information were needed in order for Commission staff to conduct their environmental review". This information included clarifications related to cultural resources, terrestrial resources, recreation and land use, and cost data provided in the License Application (FERC Accession No. 20110411-0029).
- On May 13, 2011, PCWA filed a response to FERC's memo requesting additional information (FERC Accession No. 20110513-0012). Concurrently, a copy of this additional information was provided to the State Water Board.

May 24, 2011

- As discussed in the May 24, 2011 phone call and documented in a Memorandum of Teleconference dated May 26, 2011, The Louis Berger Group (FERC's contractor) requested that tables provided in Attachment F of PCWA's May 13, 2011 filing be revised to present the losses and gains in megawatt-hours instead of percentages, and include the baseline values used for each powerhouse prior to the calculation of losses or gains (FERC Accession No. 20110525-5024).
- On June 15, 2011, PCWA filed a response to FERC's request for additional generation information (FERC Accession No. 20110615-5016). A copy of this additional information is provided to the State Water Board in Attachment 1.

The License Application and additional information identified above contains all the necessary information for FERC to complete the environmental analysis of the MFP. On June 7, 2011, FERC provided notice that the MFP was Ready for Environmental Analysis (REA). PCWA encourages the State Water Board to work with FERC during completion of FERC's environmental review process under the National Environmental Policy Act (NEPA).

Mr. Tom Howard

July 15, 2011

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The License Application and subsequent additional information identified above are hereby incorporated by reference into this Application for Water Quality Certification. All information required under Title 23, Division 3, Chapter 28, Article 4, Section 3856 of the CCR is provided in this Application. Other than the FERC license, the only other license, permit, or agreement required for continued MFP operation is the Water Quality Certification requested by this letter.

As Lead Agency under the California Environmental Quality Act (CEQA), PCWA will prepare the appropriate environmental document to support acceptance of the new license by PCWA's Board of Director and issuance of the Water Quality Certification by the State Water Board. PCWA understands that the Water Quality Certification cannot be issued until CEQA is complete. A schedule identifying the timeline for preparing the CEQA document, in relation to FERC's relicensing process, is provided in Attachment 2. PCWA looks forward to working closely with the State Water Board during the CEQA process.

If you have any questions regarding this letter, please contact me at (530) 823-4889.

Sincerely,



Andrew Fecko

Resource Planning Administrator

Attachments: Attachment 1. Response to FERC's Request for Additional Generation Information (June 15, 2011)  
Attachment 2. CEQA Process Schedule

Enclosure: Check in the amount of \$1,000

cc: Pamela Creedon, Executive Officer, California Central Valley Regional Water Quality Control Board, Sacramento Office



Check Date: 07/15/2011

Check # 131873

INVOICE DATE	INVOICE NUMBER	DESCRIPTION	NET AMOUNT
07/07/2011	070711	WATER QUALITY CERT AP	*****1,000.00
1731 STATE WATER RESOURCES CONTROL			\$*****1,000.00

PCWA

Water • Energy • Stewardship

THIS CHECK IS VOID WITHOUT A GREEN BACKGROUND ON THE FRONT AND A TRUE DIAMOND PATTERN & AN ARTIFICIAL FINGERPRINT WATERMARK ON THE BACK

Placer County Water Agency  
P.O. Box 6570  
Auburn, CA 95604  
(530) 823-4850

UNION BANK OF CALIFORNIA  
Auburn Office  
Auburn, CA 95603

11-49/1210

NO. 131873

Date 07/15/2011

\$\*\*\*\*\*1,000.00

Vendor # 1731

\$ \* \* \* \* \* 1,000.00  
DOLLAR \* \* \* \* \* ONE HUNDRED ZERO ZERO PERCENT ZERO ZERO

PAY ONE THOUSAND AND 00/100 DOLLARS \*\*\*\*\*

TO THE ORDER OF STATE WATER RESOURCES CONTROL BOAR  
P.O. BOX 2000  
SACRAMENTO CA 95812-2000

*Joseph H. Parker*  
AUTHORIZED SIGNATURE  
*Paul D. Burroughs*  
AUTHORIZED SIGNATURE

SIGNATURE AREA CONTAINS A KNIGHT & FINGERPRINT CHECK WORDING

⑈ 131873 ⑈ ⑆ 21000497 ⑆ 3150290766 ⑈

**Attachment 1**

**Response to FERC's Request for Additional Generation Information  
(June 15, 2011)**



PLACER COUNTY WATER AGENCY  
SINCE 1957

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David Breninger, General Manager	530.823.4850
Ed Tiedemann, General Counsel	800.464.0030
	<a href="http://WWW.PCWA.NET">WWW.PCWA.NET</a>

June 14, 2011  
File No. 01030A (2079-069)  
**Electronically Filed**

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, DC 20426

**SUBJECT: Middle Fork American River Project (FERC Project No. 2079)  
Response to the Commission's Request for Additional Generation  
Information**

Dear Secretary Bose:

Placer County Water Agency (PCWA) filed an Application for New License for the Middle Fork American River Project (FERC Project No. 2079) with the Federal Energy Regulatory Commission (FERC or Commission) on February 23, 2011. In a memo dated April 8, 2011, the FERC requested that PCWA file additional information needed for the Commission's staff to conduct their environmental review. Among other things, the Commission's memo requested that PCWA "provide loss in generation for each powerhouse and water year type under the Proposed Action." In response, PCWA provided the FERC with: (1) the percent loss in generation under the Proposed Action by powerhouse and instream flow component (i.e., MIF, pulse flow, spill downramp, and recreation flows), during the period of record (1975–2007); and (2) the percent generation loss for each powerhouse by instream flow component and by water year type. PCWA filed the information requested by the FERC on May 13, 2011. The generation information was provided in Attachment F (Tables 1 and 2) of PCWA's May 13, 2011 filing.

On May 24, 2011, Mr. Kenneth Hodge of The Louis Berger Group (Commission contractor) called Mr. Andrew Fecko of PCWA regarding PCWA's May 13, 2011 filing. Mr. Hodge requested that "the tables provided in Attachment F of PCWA's filing be revised to present the losses and gains in megawatt-hours instead of percentages, and also to include the baseline values used for each powerhouse prior to the calculation of losses or gains." This request was documented in a Memo of Teleconference dated May 26, 2011. Attachment A of this submittal provides the information requested by Mr. Hodge.

PCWA looks forward to continuing to work with FERC, resource agencies, Native American Tribes, and other interested parties on the MFP relicensing. If you have any questions regarding the additional information included in this letter, please contact Andrew Fecko, PCWA Resource Planning Administrator at (530) 823-4889 or by e-mail at [afecko@pcwa.net](mailto:afecko@pcwa.net).

Sincerely,  
PLACER COUNTY WATER AGENCY



Andrew Fecko  
Resource Planning Administrator

Attachments:

Attachment A. Generation Tables  
Attachment B. FERC Service List

**Attachment A**  
**Generation Tables**

## **List of Tables**

- Table 1. No Action Alternative versus Proposed Action Generation by Powerhouse and Instream Flow Component.
- Table 2a. No-Action Alternative versus Proposed Action Generation by Year and Water Year Type at each Powerhouse for all Instream Flow Components Combined (Minimum Flows, Pulse Flows, Spill Downramp, Recreation).
- Table 2b. Summary of the No-Action Alternative versus Proposed Action Generation by Water Year Type at each Powerhouse for all Instream Flow Components Combined (Minimum Flows, Pulse Flows, Spill Downramp, Recreation).
- Table 3a. No-Action Alternative versus Proposed Action Generation by Year and Water Year Type at each Powerhouse for Minimum Instream Flows Only.
- Table 3b. Summary of the No-Action Alternative versus Proposed Action Generation by Water Year Type at each Powerhouse for Minimum Instream Flows Only.
- Table 4a. No-Action Alternative versus Proposed Action Generation by Year and Water Year Type at each Powerhouse for Pulse Flows Only.
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- Table 5b. Summary of the No-Action Alternative versus Proposed Action Generation by Water Year Type at each Powerhouse for Spill Downramp Flows Only.
- Table 6a. No-Action Alternative versus Proposed Action Generation by Year and Water Year Type at each Powerhouse for Recreation Flows Only.
- Table 6b. Summary of the No-Action Alternative versus Proposed Action Generation by Water Year Type at each Powerhouse for Recreation Flows Only.

**Table 1. No-Action Alternative versus Proposed Action Generation by Powerhouse and Instream Flow Component. Generation Based on the Operations Model Results for the 1975–2007 Period of Record.**

Generation / Flow Component	Powerhouse					
	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	All Powerhouses
No-Action Alternative Average Annual Generation (MWh)	66,032	511,792	367,325	30,349	3,054	978,552
Proposed Action Average Annual Generation (MWh)	62,813	485,024	350,722	30,242	5,117	933,918
Average Annual Generation Difference (MWh)	-3,219	-26,769	-16,603	-107	2,063	-44,634
Minimum Instream Flows	-2,047	-19,054	-11,986	31	2,085	-30,971
Pulse Flows	-1,155	-6,979	-4,275	-128	-7	-12,544
Spill Downramp Flows	-21	-823	-472	-25	-4	-1,344
Recreation Flows	4	87	130	15	-11	225
Average Annual Percent Generation Difference (%)	-4.87%	-5.23%	-4.52%	-0.35%	67.55%	-4.56%
Minimum Instream Flows	-3.10%	-3.72%	-3.26%	0.10%	68.28%	-3.17%
Pulse Flows	-1.75%	-1.36%	-1.16%	-0.42%	-0.24%	-1.28%
Spill Downramp Flows	-0.03%	-0.16%	-0.13%	-0.08%	-0.12%	-0.14%
Recreation Flows	0.01%	0.02%	0.04%	0.05%	-0.37%	0.02%

**Table 2a. No-Action Alternative versus Proposed Action Generation by Year and Water Year Type at each Powerhouse for all Instream Flow Components Combined (Minimum Flows, Pulse Flows, Spill Downramp, Recreation). Generation Based on the Operations Model Results for the 1975–2007 Period of Record.**

Year/Type	No-Action Alternative (MWh)					Proposed Action (MWh)					Difference (MWh)					All Powerhouses
	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	
1975 Above Normal	68,892	589,298	437,391	38,384	3,257	65,786	541,879	410,085	37,929	5,643	-3,106	-47,419	-27,306	-455	2,387	-75,900
1976 Critical Dry	33,576	239,973	173,293	15,691	2,166	30,564	230,517	167,669	15,908	4,367	-3,013	-9,455	-5,624	217	2,201	-15,674
1977 Critical Dry	12,940	84,087	60,742	5,719	998	8,967	67,908	52,613	5,756	2,924	-3,972	-16,179	-8,129	36	1,926	-26,319
1978 Above Normal	71,768	609,422	459,246	35,755	2,367	67,507	553,502	422,912	34,828	4,718	-4,261	-55,921	-36,334	-927	2,351	-95,091
1979 Below Normal	52,984	405,058	301,497	29,617	3,270	49,342	374,568	280,586	29,370	5,279	-3,641	-30,490	-20,911	-247	2,010	-53,280
1980 Wet	94,846	808,558	554,816	41,339	3,471	85,865	730,152	512,361	40,580	5,696	-8,981	-78,407	-42,456	-759	2,225	-128,377
1981 Dry	36,664	270,295	201,529	19,668	3,146	35,509	262,185	197,282	20,137	5,111	-1,156	-8,110	-4,247	468	1,965	-11,079
1982 Wet	124,511	946,155	615,050	44,546	3,588	121,190	928,109	606,604	44,382	5,891	-3,321	-18,046	-8,446	-164	2,303	-27,673
1983 Wet	120,187	939,012	645,877	46,185	3,381	122,375	940,898	649,656	46,629	5,874	2,187	1,886	3,779	444	2,493	10,790
1984 Wet	105,828	784,122	544,380	41,399	3,630	94,271	695,669	490,963	40,581	6,467	-11,557	-88,453	-53,417	-818	2,837	-151,408
1985 Below Normal	42,773	355,605	266,014	25,490	3,243	43,391	344,060	257,843	25,802	5,180	617	-11,545	-8,171	311	1,937	-16,850
1986 Wet	97,080	738,646	499,539	38,539	3,433	85,395	694,231	470,881	37,492	5,534	-11,685	-44,415	-28,657	-1,047	2,100	-83,705
1987 Critical Dry	28,898	220,705	161,984	15,519	3,110	27,436	209,192	155,781	15,622	4,435	-1,462	-11,513	-6,202	103	1,324	-17,751
1988 Critical Dry	28,905	196,758	150,316	14,359	2,196	25,897	183,893	144,971	14,279	3,345	-3,008	-12,864	-5,345	-80	1,149	-20,147
1989 Below Normal	60,191	492,589	364,013	28,653	2,303	60,673	460,869	348,368	28,099	4,336	482	-31,720	-15,645	-554	2,033	-45,404
1990 Dry	36,408	276,201	204,503	19,593	3,204	36,480	278,069	206,262	20,290	4,677	72	1,868	1,760	696	1,472	5,869
1991 Dry	37,047	264,007	199,191	18,477	3,281	31,766	249,020	188,730	18,232	4,518	-5,281	-14,987	-10,461	-245	1,238	-29,736
1992 Critical Dry	31,435	226,217	165,491	15,973	3,233	30,341	221,951	163,169	16,400	4,569	-1,094	-4,266	-2,322	427	1,336	-5,919
1993 Above Normal	77,077	668,641	484,675	37,875	3,352	74,066	590,242	440,807	36,793	4,753	-3,011	-78,399	-43,867	-1,082	1,401	-124,958
1994 Critical Dry	34,435	224,107	162,969	15,222	2,185	34,658	225,851	164,889	16,077	4,482	223	1,745	1,920	855	2,297	7,039
1995 Wet	101,152	807,092	561,346	41,290	2,195	97,563	783,309	546,804	40,687	4,840	-3,589	-23,783	-14,543	-604	2,646	-39,872
1996 Wet	94,157	704,555	519,446	40,183	3,384	91,672	691,223	509,144	40,522	6,119	-2,485	-13,332	-10,302	339	2,736	-23,045
1997 Wet	92,833	760,822	511,921	38,758	3,454	89,031	695,149	467,861	38,655	6,296	-3,802	-65,673	-44,060	-102	2,842	-110,795
1998 Wet	96,812	762,238	537,311	41,540	3,341	86,767	725,671	516,427	40,841	5,834	-10,045	-36,567	-20,884	-699	2,492	-65,702
1999 Above Normal	88,788	663,485	488,717	40,494	3,285	84,360	619,057	459,073	40,352	5,799	-4,428	-44,428	-29,644	-142	2,514	-76,128
2000 Above Normal	66,471	475,070	353,302	32,800	3,292	56,893	429,583	320,690	32,982	5,889	-9,578	-45,487	-32,613	181	2,597	-84,900
2001 Dry	33,331	242,173	179,041	17,114	3,115	33,151	234,215	173,207	17,480	5,016	-180	-7,958	-5,834	367	1,900	-11,705
2002 Below Normal	57,334	426,912	326,228	30,945	3,296	54,106	390,639	300,966	30,303	4,752	-3,227	-36,273	-25,263	-642	1,456	-63,950
2003 Below Normal	67,130	512,577	400,683	35,378	3,325	66,883	518,497	399,159	35,833	4,875	-247	5,920	-1,524	455	1,550	6,154
2004 Below Normal	51,926	371,296	283,513	28,297	3,350	49,726	353,708	271,699	28,288	4,897	-2,200	-17,588	-11,814	-9	1,547	-30,064
2005 Above Normal	68,254	588,941	446,072	39,054	3,375	68,979	565,307	432,164	39,273	5,354	725	-23,634	-13,908	219	1,979	-34,619
2006 Wet	117,758	894,603	601,192	43,500	3,470	116,325	897,421	598,561	43,457	6,303	-1,433	2,818	-2,630	-44	2,833	1,544
2007 Dry	46,663	339,921	260,424	24,161	3,089	45,903	319,236	245,631	24,132	5,091	-760	-20,685	-14,794	-29	2,002	-34,265
Average Annual Generation	66,032	511,792	367,325	30,349	3,054	62,813	485,024	350,722	30,242	5,117	-3,219	-26,769	-16,603	-107	2,063	-44,634
Total Generation	2,179,053	16,889,143	12,121,711	1,001,518	100,785	2,072,837	16,005,781	11,573,818	997,989	168,865	-106,216	-883,362	-547,892	-3,529	68,080	-1,472,920

**Table 2b. Summary of the No-Action Alternative versus Proposed Action Generation by Water Year Type at each Powerhouse for all Instream Flow Components Combined (Minimum Flows, Pulse Flows, Spill Downramp, Recreation). Generation Based on the Operations Model Results for the 1975–2007 Period of Record.**

Water Year Type	No-Action Alternative					Proposed Action					Difference					All Powerhouses
	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	
<b>Generation (MWh)</b>																
Wet	104,516	814,580	559,088	41,728	3,335	99,045	778,183	536,926	41,382	5,885	-5,471	-36,397	-22,162	-345	2,551	-61,824
Above Normal	73,542	599,143	444,901	37,394	3,155	69,598	549,928	414,289	37,026	5,359	-3,943	-49,215	-30,612	-368	2,205	-81,933
Below Normal	55,390	427,340	323,658	29,730	3,131	54,020	407,057	309,770	29,616	4,887	-1,369	-20,283	-13,888	-114	1,755	-33,899
Dry	38,023	278,519	208,938	19,803	3,167	36,562	268,545	202,223	20,054	4,882	-1,461	-9,974	-6,715	252	1,715	-16,183
Critical Dry	28,365	198,641	145,799	13,747	2,315	26,310	189,885	141,515	14,007	4,020	-2,054	-8,756	-4,284	260	1,706	-13,129
Average Annual Generation	66,032	511,792	367,325	30,349	3,054	62,813	485,024	350,722	30,242	5,117	-3,219	-26,769	-16,603	-107	2,063	-206,968
<b>Percent of No-Action Alternative</b>																
Wet	100%	100%	100%	100%	100%	94.77%	95.53%	96.04%	99.17%	176.49%	-5.23%	-4.47%	-3.96%	-0.83%	76.49%	-4.06%
Above Normal	100%	100%	100%	100%	100%	94.64%	91.79%	93.12%	99.02%	169.89%	-5.36%	-8.21%	-6.88%	-0.98%	69.89%	-7.07%
Below Normal	100%	100%	100%	100%	100%	97.53%	95.25%	95.71%	99.62%	156.06%	-2.47%	-4.75%	-4.29%	-0.38%	56.06%	-4.04%
Dry	100%	100%	100%	100%	100%	96.16%	96.42%	96.79%	101.27%	154.16%	-3.84%	-3.58%	-3.21%	1.27%	54.16%	-2.95%
Critical Dry	100%	100%	100%	100%	100%	92.76%	95.59%	97.06%	101.89%	173.69%	-7.24%	-4.41%	-2.94%	1.89%	73.69%	-3.38%
Average Annual Percent	100%	100%	100%	100%	100%	95.13%	94.77%	95.48%	99.65%	167.55%	-4.87%	-5.23%	-4.52%	-0.35%	67.55%	-4.56%

**Table 3a. No-Action Alternative versus Proposed Action Generation by Year and Water Year Type at each Powerhouse for Minimum Instream Flows only. Generation Based on the Operations Model Results for the 1975–2007 Period of Record.**

Year/Type	No-Action Alternative (MWh)					Proposed Action (MWh)					Difference (MWh)					All Powerhouses	
	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole		
1975	Above Normal	68,892	589,298	437,391	38,384	3,257	67,931	557,493	418,921	38,173	5,661	-961	-31,805	-18,470	-211	2,404	-49,044
1976	Critical Dry	33,576	239,973	173,293	15,691	2,166	31,020	228,420	166,156	15,811	4,380	-2,556	-11,553	-7,136	120	2,214	-18,911
1977	Critical Dry	12,940	84,087	60,742	5,719	998	8,969	68,902	53,246	5,789	2,943	-3,971	-15,185	-7,496	69	1,945	-24,638
1978	Above Normal	71,768	609,422	459,246	35,755	2,367	70,022	565,861	430,331	35,217	4,772	-1,746	-43,561	-28,914	-538	2,406	-72,354
1979	Below Normal	52,984	405,058	301,497	29,617	3,270	49,414	379,981	284,200	29,597	5,296	-3,570	-25,078	-17,296	-19	2,026	-43,937
1980	Wet	94,846	808,558	554,816	41,339	3,471	90,264	763,607	533,419	41,140	5,705	-4,582	-44,951	-21,397	-199	2,233	-68,896
1981	Dry	36,664	270,295	201,529	19,668	3,146	36,134	259,029	195,098	19,988	5,123	-531	-11,266	-6,431	319	1,977	-15,932
1982	Wet	124,511	946,155	615,050	44,546	3,588	121,397	934,681	610,427	44,548	5,911	-3,114	-11,474	-4,622	3	2,324	-16,884
1983	Wet	120,187	939,012	645,877	46,185	3,381	122,630	944,530	650,421	46,634	5,920	2,443	5,518	4,544	449	2,539	15,493
1984	Wet	105,828	784,122	544,380	41,399	3,630	99,482	722,028	506,928	40,843	6,522	-6,347	-62,094	-37,452	-555	2,892	-103,556
1985	Below Normal	42,773	355,605	266,014	25,490	3,243	43,012	348,463	260,547	25,899	5,208	239	-7,142	-5,468	409	1,965	-9,997
1986	Wet	97,080	738,646	499,539	38,539	3,433	90,719	725,319	489,594	38,312	5,599	-6,361	-13,328	-9,945	-227	2,166	-27,695
1987	Critical Dry	28,898	220,705	161,984	15,519	3,110	26,897	211,411	157,117	15,702	4,463	-2,001	-9,294	-4,866	183	1,353	-14,626
1988	Critical Dry	28,905	196,758	150,316	14,359	2,196	25,878	183,337	144,503	14,246	3,362	-3,027	-13,421	-5,813	-113	1,166	-21,207
1989	Below Normal	60,191	492,589	364,013	28,653	2,303	60,673	465,545	351,511	28,295	4,345	482	-27,044	-12,502	-359	2,042	-37,381
1990	Dry	36,408	276,201	204,503	19,593	3,204	36,480	276,343	205,057	20,206	4,685	72	142	554	613	1,481	2,862
1991	Dry	37,047	264,007	199,191	18,477	3,281	31,766	250,634	189,807	18,298	4,525	-5,281	-13,373	-9,384	-179	1,244	-26,972
1992	Critical Dry	31,435	226,217	165,491	15,973	3,233	30,341	213,145	157,049	16,026	4,595	-1,094	-13,072	-8,442	53	1,362	-21,193
1993	Above Normal	77,077	668,641	484,675	37,875	3,352	76,147	624,923	463,081	37,391	4,782	-930	-43,718	-21,594	-483	1,430	-65,295
1994	Critical Dry	34,435	224,107	162,969	15,222	2,185	34,658	222,413	162,500	15,924	4,491	223	-1,694	-468	702	2,306	1,068
1995	Wet	101,152	807,092	561,346	41,290	2,195	97,750	788,214	550,136	40,866	4,861	-3,403	-18,878	-11,210	-425	2,666	-31,249
1996	Wet	94,157	704,555	519,446	40,183	3,384	92,048	694,655	511,037	40,631	6,158	-2,109	-9,900	-8,409	448	2,774	-17,196
1997	Wet	92,833	760,822	511,921	38,758	3,454	90,553	717,688	482,176	38,709	6,340	-2,280	-43,134	-29,745	-48	2,887	-72,321
1998	Wet	96,812	762,238	537,311	41,540	3,341	94,908	743,473	526,259	41,452	5,875	-1,904	-18,765	-11,052	-88	2,534	-29,274
1999	Above Normal	88,788	663,485	488,717	40,494	3,285	86,362	634,110	468,517	40,724	5,814	-2,426	-29,375	-20,200	230	2,529	-49,242
2000	Above Normal	66,471	475,070	353,302	32,800	3,292	61,222	445,793	330,445	33,008	5,902	-5,249	-29,276	-22,857	208	2,610	-54,565
2001	Dry	33,331	242,173	179,041	17,114	3,115	31,940	231,394	171,180	17,384	5,037	-1,391	-10,779	-7,861	270	1,921	-17,840
2002	Below Normal	57,334	426,912	326,228	30,945	3,296	54,107	394,113	303,334	30,429	4,761	-3,227	-32,799	-22,895	-516	1,465	-57,971
2003	Below Normal	67,130	512,577	400,683	35,378	3,325	66,922	519,357	399,648	35,841	4,878	-208	6,780	-1,035	462	1,553	7,553
2004	Below Normal	51,926	371,296	283,513	28,297	3,350	49,731	351,679	270,288	28,198	4,907	-2,195	-19,617	-13,225	-99	1,557	-33,578
2005	Above Normal	68,254	588,941	446,072	39,054	3,375	69,468	571,455	435,642	39,489	5,369	1,214	-17,487	-10,430	435	1,994	-24,274
2006	Wet	117,758	894,603	601,192	43,500	3,470	116,587	902,381	601,472	43,606	6,315	-1,171	7,777	281	106	2,846	9,839
2007	Dry	46,663	339,921	260,424	24,161	3,089	46,071	319,986	246,110	24,158	5,097	-592	-19,935	-14,315	-3	2,007	-32,837
Average Annual Generation		66,032	511,792	367,325	30,349	3,054	63,985	492,738	355,338	30,380	5,139	-2,047	-19,054	-11,986	31	2,085	-30,971
Total Generation		2,179,053	16,889,143	12,121,711	1,001,518	100,785	2,111,502	16,260,362	11,726,158	1,002,535	169,603	-67,551	-628,781	-395,553	1,017	68,818	-1,022,050

**Table 3b. Summary of the No-Action Alternative versus Proposed Action Generation by Water Year Type at each Powerhouse for Minimum Instream Flows only. Generation Based on the Operations Model Results for the 1975–2007 Period of Record.**

Water Year Type	No-Action Alternative					Proposed Action					Difference					All Powerhouses
	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	
<b>Generation (MWh)</b>																
Wet	104,516	814,580	559,088	41,728	3,335	101,634	793,658	546,187	41,674	5,921	-2,883	-20,923	-12,901	-54	2,586	-34,174
Above Normal	73,542	599,143	444,901	37,394	3,155	71,859	566,606	424,490	37,334	5,383	-1,683	-32,537	-20,411	-60	2,229	-52,462
Below Normal	55,390	427,340	323,658	29,730	3,131	53,977	409,856	311,588	29,710	4,899	-1,413	-17,483	-12,070	-20	1,768	-29,218
Dry	38,023	278,519	208,938	19,803	3,167	36,478	267,477	201,450	20,007	4,893	-1,544	-11,042	-7,487	204	1,726	-18,144
Critical Dry	28,365	198,641	145,799	13,747	2,315	26,294	187,938	140,095	13,916	4,039	-2,071	-10,703	-5,704	169	1,724	-16,585
Average Annual Generation	66,032	511,792	367,325	30,349	3,054	63,985	492,738	355,338	30,380	5,139	-2,047	-19,054	-11,986	31	2,085	-150,583
<b>Percent of No-Action Alternative</b>																
Wet	100%	100%	100%	100%	100%	97.24%	97.43%	97.69%	99.87%	177.55%	-2.76%	-2.57%	-2.31%	-0.13%	77.55%	-2.24%
Above Normal	100%	100%	100%	100%	100%	97.71%	94.57%	95.41%	99.84%	170.65%	-2.29%	-5.43%	-4.59%	-0.16%	70.65%	-4.53%
Below Normal	100%	100%	100%	100%	100%	97.45%	95.91%	96.27%	99.93%	156.46%	-2.55%	-4.09%	-3.73%	-0.07%	56.46%	-3.48%
Dry	100%	100%	100%	100%	100%	95.94%	96.04%	96.42%	101.03%	154.50%	-4.06%	-3.96%	-3.58%	1.03%	54.50%	-3.31%
Critical Dry	100%	100%	100%	100%	100%	92.70%	94.61%	96.09%	101.23%	174.49%	-7.30%	-5.39%	-3.91%	1.23%	74.49%	-4.26%
Average Annual Percent	100%	100%	100%	100%	100%	96.90%	96.28%	96.74%	100.10%	168.28%	-3.10%	-3.72%	-3.26%	0.10%	68.28%	-3.17%

**Table 4a. No-Action Alternative versus Proposed Action Generation by Year and Water Year Type at each Powerhouse for Pulse Flows only. Generation Based on the Operations Model Results for the 1975–2007 Period of Record.**

Year/Type	No-Action Alternative (MWh)					Proposed Action (MWh)					Difference (MWh)					All Powerhouses	
	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole		
1975	Above Normal	68,892	589,298	437,391	38,384	3,257	66,747	573,520	428,445	38,134	3,239	-2,145	-15,778	-8,947	-250	-18	-27,137
1976	Critical Dry	33,576	239,973	173,293	15,691	2,166	33,120	238,411	172,262	15,626	2,164	-457	-1,561	-1,030	-64	-2	-3,115
1977	Critical Dry	12,940	84,087	60,742	5,719	998	12,938	84,087	60,742	5,719	998	-1	0	0	0	0	-1
1978	Above Normal	71,768	609,422	459,246	35,755	2,367	69,253	597,826	452,177	35,308	2,325	-2,515	-11,597	-7,068	-447	-41	-21,668
1979	Below Normal	52,984	405,058	301,497	29,617	3,270	52,912	400,292	298,307	29,416	3,259	-72	-4,767	-3,189	-201	-11	-8,239
1980	Wet	94,846	808,558	554,816	41,339	3,471	90,450	775,963	534,393	40,823	3,465	-4,396	-32,596	-20,423	-515	-6	-57,936
1981	Dry	36,664	270,295	201,529	19,668	3,146	36,040	269,461	200,964	19,633	3,147	-625	-834	-564	-36	1	-2,058
1982	Wet	124,511	946,155	615,050	44,546	3,588	124,452	946,156	615,051	44,546	3,588	-59	1	1	0	0	-57
1983	Wet	120,187	939,012	645,877	46,185	3,381	119,983	937,588	645,877	46,185	3,365	-204	-1,425	0	0	-16	-1,645
1984	Wet	105,828	784,122	544,380	41,399	3,630	100,530	751,707	524,132	40,865	3,614	-5,298	-32,415	-20,248	-534	-16	-58,511
1985	Below Normal	42,773	355,605	266,014	25,490	3,243	43,152	354,137	265,077	25,459	3,239	379	-1,468	-938	-31	-5	-2,063
1986	Wet	97,080	738,646	499,539	38,539	3,433	91,759	710,099	482,076	37,792	3,375	-5,321	-28,547	-17,463	-748	-58	-52,137
1987	Critical Dry	28,898	220,705	161,984	15,519	3,110	29,437	214,853	158,101	15,274	3,096	539	-5,853	-3,883	-245	-15	-9,456
1988	Critical Dry	28,905	196,758	150,316	14,359	2,196	28,923	196,716	150,288	14,357	2,196	19	-41	-28	-2	0	-52
1989	Below Normal	60,191	492,589	364,013	28,653	2,303	60,191	492,589	364,013	28,653	2,303	0	0	0	0	0	0
1990	Dry	36,408	276,201	204,503	19,593	3,204	36,408	276,201	204,503	19,593	3,204	0	0	0	0	0	0
1991	Dry	37,047	264,007	199,191	18,477	3,281	37,047	264,007	199,191	18,477	3,281	0	0	0	0	0	0
1992	Critical Dry	31,435	226,217	165,491	15,973	3,233	31,435	226,217	165,491	15,973	3,233	0	0	0	0	0	0
1993	Above Normal	77,077	668,641	484,675	37,875	3,352	74,996	644,678	469,644	37,717	3,337	-2,081	-23,963	-15,031	-158	-15	-41,247
1994	Critical Dry	34,435	224,107	162,969	15,222	2,185	34,435	223,305	162,446	15,189	2,182	0	-802	-522	-33	-3	-1,361
1995	Wet	101,152	807,092	561,346	41,290	2,195	101,057	806,827	560,927	41,287	2,189	-95	-265	-420	-4	-6	-790
1996	Wet	94,157	704,555	519,446	40,183	3,384	93,802	704,482	519,477	40,183	3,383	-354	-73	31	0	-1	-397
1997	Wet	92,833	760,822	511,921	38,758	3,454	91,292	732,100	493,111	38,438	3,458	-1,542	-28,722	-18,809	-320	5	-49,389
1998	Wet	96,812	762,238	537,311	41,540	3,341	88,636	754,956	534,296	41,346	3,325	-8,176	-7,282	-3,015	-194	-17	-18,683
1999	Above Normal	88,788	663,485	488,717	40,494	3,285	86,769	649,938	480,213	40,175	3,279	-2,019	-13,548	-8,504	-319	-5	-24,396
2000	Above Normal	66,471	475,070	353,302	32,800	3,292	62,125	456,450	341,894	32,638	3,288	-4,346	-18,620	-11,408	-163	-4	-34,540
2001	Dry	33,331	242,173	179,041	17,114	3,115	34,542	242,952	179,594	17,149	3,112	1,211	779	553	35	-4	2,573
2002	Below Normal	57,334	426,912	326,228	30,945	3,296	57,338	426,906	326,225	30,945	3,296	5	-6	-4	0	0	-5
2003	Below Normal	67,130	512,577	400,683	35,378	3,325	67,130	512,577	400,683	35,378	3,325	0	0	0	0	0	0
2004	Below Normal	51,926	371,296	283,513	28,297	3,350	51,926	371,296	283,513	28,297	3,350	0	0	0	0	0	0
2005	Above Normal	68,254	588,941	446,072	39,054	3,375	67,734	588,158	446,019	39,054	3,373	-520	-784	-53	0	-3	-1,360
2006	Wet	117,758	894,603	601,192	43,500	3,470	117,716	894,506	601,111	43,497	3,469	-41	-97	-81	-3	0	-223
2007	Dry	46,663	339,921	260,424	24,161	3,089	46,663	339,889	260,404	24,160	3,089	0	-32	-21	-1	0	-54
Average Annual Generation		66,032	511,792	367,325	30,349	3,054	64,877	504,814	363,050	30,221	3,047	-1,155	-6,979	-4,275	-128	-7	-12,544
Total Generation		2,179,053	16,889,143	12,121,711	1,001,518	100,785	2,140,937	16,658,850	11,980,646	997,286	100,546	-38,116	-230,294	-141,065	-4,232	-239	-413,946

**Table 4b. Summary of the No-Action Alternative versus Proposed Action Generation by Water Year Type at each Powerhouse for Pulse Flows only. Generation Based on the Operations Model Results for the 1975–2007 Period of Record.**

Water Year Type	No-Action Alternative					Proposed Action					Difference					All Powerhouses
	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	
<b>Generation (MWh)</b>																
Wet	104,516	814,580	559,088	41,728	3,335	101,968	801,438	551,045	41,496	3,323	-2,549	-13,142	-8,043	-232	-11	-23,977
Above Normal	73,542	599,143	444,901	37,394	3,155	71,271	585,095	436,399	37,171	3,140	-2,271	-14,048	-8,502	-223	-14	-25,058
Below Normal	55,390	427,340	323,658	29,730	3,131	55,442	426,300	322,969	29,691	3,129	52	-1,040	-688	-39	-3	-1,718
Dry	38,023	278,519	208,938	19,803	3,167	38,140	278,502	208,931	19,802	3,166	117	-17	-7	0	-1	92
Critical Dry	28,365	198,641	145,799	13,747	2,315	28,381	197,265	144,888	13,690	2,311	17	-1,376	-911	-57	-3	-2,331
Average Annual Generation	66,032	511,792	367,325	30,349	3,054	64,877	504,814	363,050	30,221	3,047	-1,155	-6,979	-4,275	-128	-7	-52,991
<b>Percent of No-Action Alternative</b>																
Wet	100%	100%	100%	100%	100%	97.56%	98.39%	98.56%	99.44%	99.66%	-2.44%	-1.61%	-1.44%	-0.56%	-0.34%	-1.57%
Above Normal	100%	100%	100%	100%	100%	96.91%	97.66%	98.09%	99.40%	99.55%	-3.09%	-2.34%	-1.91%	-0.60%	-0.45%	-2.16%
Below Normal	100%	100%	100%	100%	100%	100.09%	99.76%	99.79%	99.87%	99.92%	0.09%	-0.24%	-0.21%	-0.13%	-0.08%	-0.20%
Dry	100%	100%	100%	100%	100%	100.31%	99.99%	100.00%	100.00%	99.98%	0.31%	-0.01%	0.00%	0.00%	-0.02%	0.02%
Critical Dry	100%	100%	100%	100%	100%	100.06%	99.31%	99.38%	99.58%	99.85%	0.06%	-0.69%	-0.62%	-0.42%	-0.15%	-0.60%
Average Annual Percent	100%	100%	100%	100%	100%	98.25%	98.64%	98.84%	99.58%	99.76%	-1.75%	-1.36%	-1.16%	-0.42%	-0.24%	-1.28%

**Table 5a. No-Action Alternative versus Proposed Action Generation by Year and Water Year Type at each Powerhouse for Spill Downramp Flows only. Generation Based on the Operations Model Results for the 1975–2007 Period of Record.**

Year/Type	No-Action Alternative (MWh)					Proposed Action (MWh)					Difference (MWh)					All Powerhouses
	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	
1975 Above Normal	68,892	589,298	437,391	38,384	3,257	68,892	589,298	437,391	38,384	3,257	0	0	0	0	0	0
1976 Critical Dry	33,576	239,973	173,293	15,691	2,166	33,576	239,973	173,293	15,691	2,166	0	0	0	0	0	0
1977 Critical Dry	12,940	84,087	60,742	5,719	998	12,940	84,087	60,742	5,719	998	0	0	0	0	0	0
1978 Above Normal	71,768	609,422	459,246	35,755	2,367	71,768	609,422	459,246	35,755	2,367	0	0	0	0	0	0
1979 Below Normal	52,984	405,058	301,497	29,617	3,270	52,984	405,058	301,497	29,617	3,270	0	0	0	0	0	0
1980 Wet	94,846	808,558	554,816	41,339	3,471	94,846	808,558	554,816	41,339	3,471	0	0	0	0	0	0
1981 Dry	36,664	270,295	201,529	19,668	3,146	36,664	270,295	201,529	19,668	3,146	0	0	0	0	0	0
1982 Wet	124,511	946,155	615,050	44,546	3,588	124,361	941,698	612,564	44,437	3,575	-150	-4,457	-2,486	-108	-13	-7,213
1983 Wet	120,187	939,012	645,877	46,185	3,381	120,136	936,805	645,112	46,179	3,351	-51	-2,207	-765	-5	-30	-3,059
1984 Wet	105,828	784,122	544,380	41,399	3,630	105,869	783,952	544,380	41,399	3,617	41	-170	0	0	-13	-143
1985 Below Normal	42,773	355,605	266,014	25,490	3,243	42,773	355,605	266,014	25,490	3,243	0	0	0	0	0	0
1986 Wet	97,080	738,646	499,539	38,539	3,433	97,080	738,646	499,539	38,539	3,433	0	0	0	0	0	0
1987 Critical Dry	28,898	220,705	161,984	15,519	3,110	28,898	220,705	161,984	15,519	3,110	0	0	0	0	0	0
1988 Critical Dry	28,905	196,758	150,316	14,359	2,196	28,905	196,758	150,316	14,359	2,196	0	0	0	0	0	0
1989 Below Normal	60,191	492,589	364,013	28,653	2,303	60,191	492,589	364,013	28,653	2,303	0	0	0	0	0	0
1990 Dry	36,408	276,201	204,503	19,593	3,204	36,408	276,201	204,503	19,593	3,204	0	0	0	0	0	0
1991 Dry	37,047	264,007	199,191	18,477	3,281	37,047	264,007	199,191	18,477	3,281	0	0	0	0	0	0
1992 Critical Dry	31,435	226,217	165,491	15,973	3,233	31,435	226,217	165,491	15,973	3,233	0	0	0	0	0	0
1993 Above Normal	77,077	668,641	484,675	37,875	3,352	77,077	668,641	484,675	37,875	3,352	0	0	0	0	0	0
1994 Critical Dry	34,435	224,107	162,969	15,222	2,185	34,435	224,107	162,969	15,222	2,185	0	0	0	0	0	0
1995 Wet	101,152	807,092	561,346	41,290	2,195	101,062	806,770	561,346	41,290	2,184	-91	-321	0	0	-11	-423
1996 Wet	94,157	704,555	519,446	40,183	3,384	94,097	697,117	514,713	39,896	3,363	-59	-7,437	-4,733	-287	-21	-12,538
1997 Wet	92,833	760,822	511,921	38,758	3,454	92,834	760,491	511,733	38,749	3,452	0	-331	-188	-9	-2	-529
1998 Wet	96,812	762,238	537,311	41,540	3,341	96,846	760,728	536,466	41,498	3,334	34	-1,509	-845	-42	-7	-2,370
1999 Above Normal	88,788	663,485	488,717	40,494	3,285	88,788	661,278	487,283	40,409	3,279	0	-2,208	-1,434	-85	-6	-3,733
2000 Above Normal	66,471	475,070	353,302	32,800	3,292	66,471	475,071	353,303	32,801	3,292	0	1	1	0	0	2
2001 Dry	33,331	242,173	179,041	17,114	3,115	33,331	242,173	179,041	17,114	3,115	0	0	0	0	0	0
2002 Below Normal	57,334	426,912	326,228	30,945	3,296	57,334	426,912	326,228	30,945	3,296	0	0	0	0	0	0
2003 Below Normal	67,130	512,577	400,683	35,378	3,325	67,091	512,327	400,558	35,383	3,326	-39	-251	-125	5	1	-410
2004 Below Normal	51,926	371,296	283,513	28,297	3,350	51,905	371,393	283,576	28,301	3,350	-21	97	63	4	0	143
2005 Above Normal	68,254	588,941	446,072	39,054	3,375	68,285	586,942	444,858	38,977	3,368	31	-1,999	-1,214	-77	-7	-3,267
2006 Wet	117,758	894,603	601,192	43,500	3,470	117,536	889,575	598,246	43,346	3,458	-221	-5,028	-2,946	-154	-12	-8,361
2007 Dry	46,663	339,921	260,424	24,161	3,089	46,495	338,584	259,526	24,107	3,088	-168	-1,337	-899	-54	-2	-2,459
Average Annual Generation	66,032	511,792	367,325	30,349	3,054	66,011	510,969	366,853	30,324	3,050	-21	-823	-472	-25	-4	-1,344
Total Generation	2,179,053	16,889,143	12,121,711	1,001,518	100,785	2,178,358	16,861,985	12,106,139	1,000,705	100,663	-695	-27,158	-15,572	-813	-122	-44,359

**Table 5b. Summary of the No-Action Alternative versus Proposed Action Generation by Water Year Type at each Powerhouse for Spill Downramp Flows only. Generation Based on the Operations Model Results for the 1975–2007 Period of Record.**

Water Year Type	No-Action Alternative					Proposed Action					Difference					All Powerhouses
	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	
<b>Generation (MWh)</b>																
Wet	104,516	814,580	559,088	41,728	3,335	104,467	812,434	557,891	41,667	3,324	-50	-2,146	-1,196	-61	-11	-3,463
Above Normal	73,542	599,143	444,901	37,394	3,155	73,547	598,442	444,459	37,367	3,153	5	-701	-441	-27	-2	-1,166
Below Normal	55,390	427,340	323,658	29,730	3,131	55,380	427,314	323,648	29,732	3,131	-10	-26	-10	2	0	-44
Dry	38,023	278,519	208,938	19,803	3,167	37,989	278,252	208,758	19,792	3,167	-34	-267	-180	-11	0	-492
Critical Dry	28,365	198,641	145,799	13,747	2,315	28,365	198,641	145,799	13,747	2,315	0	0	0	0	0	0
Average Annual Generation	66,032	511,792	367,325	30,349	3,054	66,011	510,969	366,853	30,324	3,050	-21	-823	-472	-25	-4	-5,166
<b>Percent of No-Action Alternative</b>																
Wet	100%	100%	100%	100%	100%	99.95%	99.74%	99.79%	99.85%	99.68%	-0.05%	-0.26%	-0.21%	-0.15%	-0.32%	-0.23%
Above Normal	100%	100%	100%	100%	100%	100.01%	99.88%	99.90%	99.93%	99.93%	0.01%	-0.12%	-0.10%	-0.07%	-0.07%	-0.10%
Below Normal	100%	100%	100%	100%	100%	99.98%	99.99%	100.00%	100.01%	100.00%	-0.02%	-0.01%	0.00%	0.01%	0.00%	-0.01%
Dry	100%	100%	100%	100%	100%	99.91%	99.90%	99.91%	99.95%	99.99%	-0.09%	-0.10%	-0.09%	-0.05%	-0.01%	-0.09%
Critical Dry	100%	100%	100%	100%	100%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Average Annual Percent	100%	100%	100%	100%	100%	99.97%	99.84%	99.87%	99.92%	99.88%	-0.03%	-0.16%	-0.13%	-0.08%	-0.12%	-0.14%

**Table 6a. No-Action Alternative versus Proposed Action Generation by Year and Water Year Type at each Powerhouse for Recreation Flows only. Generation Based on the Operations Model Results for the 1975–2007 Period of Record.**

Year/Type	No-Action Alternative (MWh)					Proposed Action (MWh)					Difference (MWh)					All Powerhouses	
	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole		
1975	Above Normal	68,892	589,298	437,391	38,384	3,257	68,892	589,461	437,502	38,391	3,257	0	163	111	7	0	281
1976	Critical Dry	33,576	239,973	173,293	15,691	2,166	33,576	243,632	175,836	15,852	2,155	0	3,659	2,543	161	-11	6,353
1977	Critical Dry	12,940	84,087	60,742	5,719	998	12,940	83,093	60,109	5,686	979	0	-994	-633	-33	-19	-1,680
1978	Above Normal	71,768	609,422	459,246	35,755	2,367	71,768	608,660	458,894	35,813	2,354	0	-763	-352	58	-13	-1,070
1979	Below Normal	52,984	405,058	301,497	29,617	3,270	52,984	404,413	301,072	29,590	3,264	0	-646	-425	-27	-6	-1,103
1980	Wet	94,846	808,558	554,816	41,339	3,471	94,843	807,699	554,181	41,294	3,469	-3	-860	-635	-45	-2	-1,545
1981	Dry	36,664	270,295	201,529	19,668	3,146	36,664	274,285	204,277	19,853	3,133	0	3,990	2,749	185	-13	6,911
1982	Wet	124,511	946,155	615,050	44,546	3,588	124,513	944,038	613,711	44,487	3,580	2	-2,116	-1,339	-58	-8	-3,519
1983	Wet	120,187	939,012	645,877	46,185	3,381	120,187	939,012	645,877	46,185	3,381	0	0	0	0	0	0
1984	Wet	105,828	784,122	544,380	41,399	3,630	105,875	790,348	548,663	41,670	3,603	47	6,226	4,283	272	-26	10,801
1985	Below Normal	42,773	355,605	266,014	25,490	3,243	42,773	352,670	264,248	25,424	3,220	0	-2,935	-1,766	-66	-23	-4,790
1986	Wet	97,080	738,646	499,539	38,539	3,433	97,077	736,106	498,289	38,466	3,426	-3	-2,540	-1,249	-73	-7	-3,872
1987	Critical Dry	28,898	220,705	161,984	15,519	3,110	28,898	224,338	164,531	15,684	3,096	0	3,633	2,547	165	-14	6,331
1988	Critical Dry	28,905	196,758	150,316	14,359	2,196	28,905	197,355	150,811	14,394	2,179	0	598	495	35	-17	1,111
1989	Below Normal	60,191	492,589	364,013	28,653	2,303	60,191	487,913	360,870	28,458	2,295	0	-4,676	-3,143	-195	-8	-8,023
1990	Dry	36,408	276,201	204,503	19,593	3,204	36,408	277,927	205,708	19,677	3,196	0	1,726	1,205	84	-8	3,007
1991	Dry	37,047	264,007	199,191	18,477	3,281	37,047	262,392	198,114	18,411	3,274	0	-1,614	-1,077	-66	-7	-2,764
1992	Critical Dry	31,435	226,217	165,491	15,973	3,233	31,435	235,023	171,611	16,347	3,207	0	8,806	6,120	374	-26	15,275
1993	Above Normal	77,077	668,641	484,675	37,875	3,352	77,077	657,923	477,432	37,434	3,338	0	-10,718	-7,242	-440	-14	-18,415
1994	Critical Dry	34,435	224,107	162,969	15,222	2,185	34,435	228,348	165,879	15,408	2,180	0	4,241	2,911	186	-5	7,332
1995	Wet	101,152	807,092	561,346	41,290	2,195	101,152	802,773	558,434	41,115	2,190	0	-4,319	-2,913	-175	-4	-7,411
1996	Wet	94,157	704,555	519,446	40,183	3,384	94,194	708,633	522,256	40,361	3,367	38	4,078	2,810	178	-17	7,086
1997	Wet	92,833	760,822	511,921	38,758	3,454	92,852	767,336	516,604	39,032	3,407	19	6,514	4,683	275	-47	11,444
1998	Wet	96,812	762,238	537,311	41,540	3,341	96,812	753,228	531,338	41,164	3,324	0	-9,010	-5,973	-375	-18	-15,376
1999	Above Normal	88,788	663,485	488,717	40,494	3,285	88,805	664,188	489,212	40,525	3,282	17	703	495	31	-3	1,243
2000	Above Normal	66,471	475,070	353,302	32,800	3,292	66,488	477,478	354,954	32,937	3,283	17	2,408	1,652	137	-10	4,204
2001	Dry	33,331	242,173	179,041	17,114	3,115	33,331	244,216	180,516	17,175	3,098	0	2,043	1,475	61	-17	3,562
2002	Below Normal	57,334	426,912	326,228	30,945	3,296	57,328	423,444	323,864	30,819	3,286	-5	-3,469	-2,364	-126	-9	-5,973
2003	Below Normal	67,130	512,577	400,683	35,378	3,325	67,130	511,968	400,319	35,366	3,322	0	-609	-364	-13	-4	-989
2004	Below Normal	51,926	371,296	283,513	28,297	3,350	51,942	373,228	284,860	28,383	3,340	16	1,932	1,347	86	-10	3,372
2005	Above Normal	68,254	588,941	446,072	39,054	3,375	68,254	585,577	443,861	38,916	3,370	0	-3,364	-2,211	-139	-5	-5,719
2006	Wet	117,758	894,603	601,192	43,500	3,470	117,758	894,769	601,307	43,507	3,469	0	166	116	7	0	289
2007	Dry	46,663	339,921	260,424	24,161	3,089	46,663	340,539	260,866	24,190	3,086	0	619	441	29	-4	1,085
Average Annual Generation		66,032	511,792	367,325	30,349	3,054	66,036	511,879	367,455	30,364	3,043	4	87	130	15	-11	225
Total Generation		2,179,053	16,889,143	12,121,711	1,001,518	100,785	2,179,199	16,892,014	12,126,007	1,002,016	100,408	146	2,871	4,296	498	-377	7,435

**Table 6b. Summary of the No-Action Alternative versus Proposed Action Generation by Water Year Type at each Powerhouse for Recreation Flows only. Generation Based on the Operations Model Results for the 1975–2007 Period of Record.**

Water Year Type	No-Action Alternative					Proposed Action					Difference					All Powerhouses
	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	French Meadows	Middle Fork	Ralston	Oxbow	Hell Hole	
<b>Generation (MWh)</b>																
Wet	104,516	814,580	559,088	41,728	3,335	104,527	814,394	559,066	41,728	3,322	10	-186	-22	1	-13	-210
Above Normal	73,542	599,143	444,901	37,394	3,155	73,547	597,214	443,643	37,336	3,147	6	-1,929	-1,258	-58	-8	-3,246
Below Normal	55,390	427,340	323,658	29,730	3,131	55,392	425,606	322,539	29,673	3,121	2	-1,734	-1,119	-57	-10	-2,918
Dry	38,023	278,519	208,938	19,803	3,167	38,023	279,872	209,896	19,861	3,157	0	1,353	959	59	-10	2,360
Critical Dry	28,365	198,641	145,799	13,747	2,315	28,365	201,965	148,129	13,895	2,299	0	3,324	2,330	148	-15	5,787
Average Annual Generation	66,032	511,792	367,325	30,349	3,054	66,036	511,879	367,455	30,364	3,043	4	87	130	15	-11	1,773
<b>Percent of No-Action Alternative</b>																
Wet	100%	100%	100%	100%	100%	100.01%	99.98%	100.00%	100.00%	99.61%	0.01%	-0.02%	0.00%	0.00%	-0.39%	-0.01%
Above Normal	100%	100%	100%	100%	100%	100.01%	99.68%	99.72%	99.85%	99.76%	0.01%	-0.32%	-0.28%	-0.15%	-0.24%	-0.28%
Below Normal	100%	100%	100%	100%	100%	100.00%	99.59%	99.65%	99.81%	99.68%	0.00%	-0.41%	-0.35%	-0.19%	-0.32%	-0.35%
Dry	100%	100%	100%	100%	100%	100.00%	100.49%	100.46%	100.30%	99.69%	0.00%	0.49%	0.46%	0.30%	-0.31%	0.43%
Critical Dry	100%	100%	100%	100%	100%	100.00%	101.67%	101.60%	101.08%	99.34%	0.00%	1.67%	1.60%	1.08%	-0.66%	1.49%
Average Annual Percent	100%	100%	100%	100%	100%	100.01%	100.02%	100.04%	100.05%	99.63%	0.01%	0.02%	0.04%	0.05%	-0.37%	0.02%

**Attachment B**  
**FERC Service List**

## **FERC Service List**

### **American Whitewater**

Dave Steindorf  
CA Stewardship Director  
4 Baroni Dr  
Chico, CA 95928-4314

### **Mobil Natural Gas Inc.**

12450 Greenspoint Drive  
Houston, TX 77060-1905

### **Pacific Gas and Electric Company**

Alyssa Koo  
Attorney  
77 Beale Street, #B30A  
San Francisco, CA 94105

### **Pacific Gas and Electric Company**

Law Department FERC Cases  
77 Beale Street, Room 3120 B30A  
San Francisco, CA 94105-7442

### **Pacific Gas and Electric Company**

Mark Patrizio  
Attorney  
P.O. Box 7442  
San Francisco, CA 94120

### **Pacific Gas and Electric Company**

Forest Sullivan  
Senior Project Manager  
5555 Florin Perkins Road  
Sacramento, CA 95826

### **Placer County Water Agency**

Board of Directors  
Chairman  
P.O. Box 667  
Foresthill, CA 95631-0667

### **Placer County Water Agency**

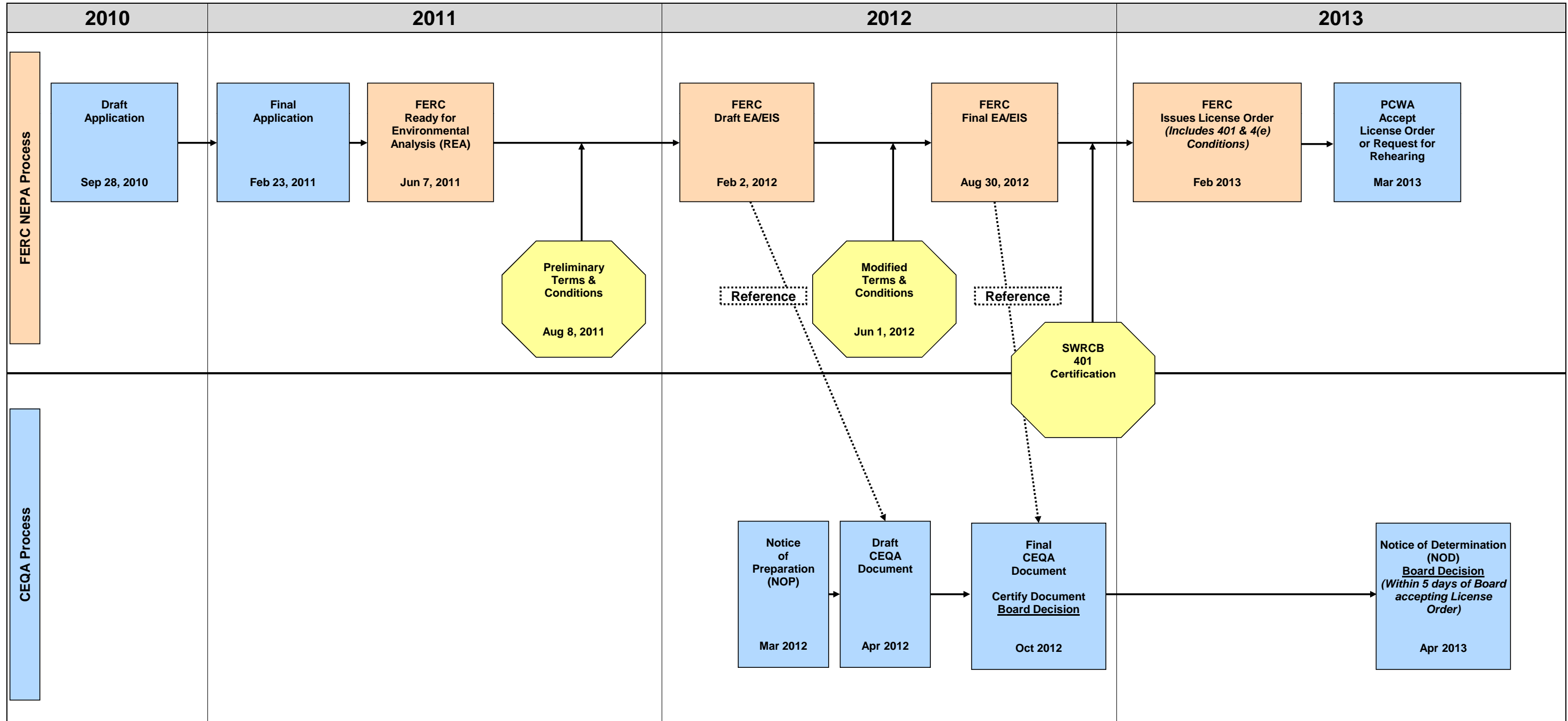
David A. Breninger  
General Manager  
P.O. Box 6570  
Auburn, CA 95604-6570

### **Placer County Water Agency**

Stephen Jones  
Manager  
P.O. Box 667  
Foresthill, CA 95631-0667

**Attachment 2**  
**CEQA Process Schedule**

# Placer County Water Agency Middle Fork American River Project Relicensing FERC Project No. 2079



Legend: PCWA FERC Resource Agencies

Attachment 2.

Proof of the Date on which the State Water Board Received the Request (July 18, 2011)



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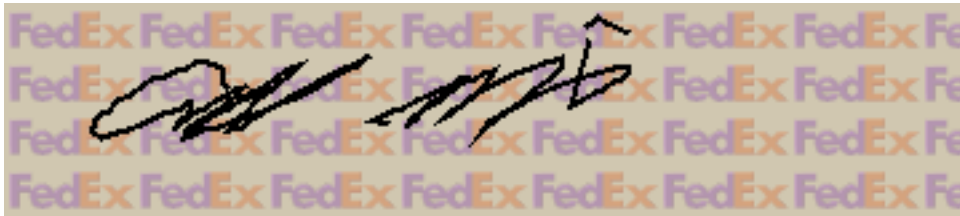
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Attachment 3.  
FERC Service List

## **FERC Service List**

**American Whitewater**  
Dave Steindorf  
CA Stewardship Director  
4 Baroni Dr  
Chico, CA 95928-4314

**Pacific Gas and Electric Company**  
Alyssa Koo  
Attorney  
77 Beale Street, #B30A  
San Francisco, CA 94105

**Pacific Gas and Electric Company**  
Mark Patrizio  
Attorney  
P.O. Box 7442  
San Francisco, CA 94120

**Placer County Water Agency**  
Board of Directors  
Chairman  
P.O. Box 667  
Foresthill, CA 95631-0667

**Placer County Water Agency**  
Stephen Jones  
Manager  
P.O. Box 667  
Foresthill, CA 95631-0667

**Mobil Natural Gas Inc.**  
12450 Greenspoint Drive  
Houston, TX 77060-1905

**Pacific Gas and Electric Company**  
Law Department FERC Cases  
77 Beale Street, Room 3120 B30A  
San Francisco, CA 94105-7442

**Pacific Gas and Electric Company**  
Forest Sullivan  
Senior Project Manager  
5555 Florin Perkins Road  
Sacramento, CA 95826

**Placer County Water Agency**  
David A. Breninger  
General Manager  
P.O. Box 6570  
Auburn, CA 95604-6570