Attachment C

PCWA's Clarified Alternative Conditions (Public Information)

Attachment C1

PCWA Alternative Condition No. 15 – Pesticide-Use Restrictions on National Forest System Lands

PCWA Alternative Condition No. 15 – Pesticide-Use Restrictions on National Forest System Lands

Pesticides may not be used on NFS lands or in areas affecting NFS lands to control undesirable woody and herbaceous vegetation, aquatic plants, insects, rodents, non-native fish, etc., without the prior written approval of the FS. During the Annual Consultation Meeting described in Condition 1, the Licensee shall submit a request for approval of planned uses of pesticides for the upcoming year. The Licensee shall provide at a minimum the following information essential for review:

- Whether pesticide applications are essential for use on NFS lands.
- Specific locations of use.
- Specific herbicides proposed for use.
- Application rates.
- Dose and exposure rates.
- Safety risk and timeframes for application.

Exceptions to this schedule may be allowed only when unexpected outbreaks of pests require control measures that were not anticipated at the time the report was submitted. In such an instance, an emergency request and approval may be made.

Pesticide use will be excluded from NFS lands within 500 feet of known locations of Foothill Yellow-Legged Frog or Western Pond Turtles or known locations of ~~FS Special Status or~~ culturally significant plant populations. Application of pesticides must be consistent with FS riparian conservation objectives.

Pesticide use within 500 feet of known locations of special status plant populations will be implemented in accordance with the revised Vegetation and Integrated Pest Management Plan (Attachment D11)

On NFS lands, the Licensee shall only use those materials registered by the U.S. Environmental Protection Agency and consistent with those applied by the Eldorado and Tahoe National Forests and approved through FS review for the specific purpose planned. The Licensee must strictly follow label instructions in the preparation and application of pesticides and disposal of excess materials and containers. The Licensee may also submit Pesticide Use Proposal(s) with accompanying risk assessment and other FS required documents to use pesticides on a regular basis for the term of the license as addressed further in Condition No. 45, Vegetation and Integrated Pest Management Plan. Submission of this plan will not relieve the Licensee of the responsibility of annual notification and review.

Attachment C2

PCWA Alternative Condition No. 22 – Minimum Streamflows

PCWA Alternative Condition No. 22 – Minimum Streamflows

The Licensee shall maintain minimum streamflows in:

- Duncan Creek below Duncan Diversion Dam
- Middle Fork American River below French Meadows Reservoir Dam
- Middle Fork American River below Interbay Dam
- Rubicon River below Hell Hole Reservoir Dam
- North Fork Long Canyon Creek below North Fork Long Canyon Diversion Dam
- South Fork Long Canyon Creek below South Fork Long Canyon Dam
- Middle Fork American River immediately below Ralston Afterbay Dam
- Middle Fork American River below Oxbow Powerhouse

For compliance purposes, the point of measurement for each required minimum streamflow is described in the introduction to the minimum streamflow schedule for that particular stream reach. All specified streamflows are in cubic feet per second (cfs). The schedules specify minimum streamflows, by month and water year type, for each of the specified stream reaches. Streamflow compliance is based on hourly or daily average flows as described below.

Water Year Types

The streamflow and reservoir minimum pool elevation requirements have been specified for six different water year type classifications. The water year type classifications are based on either forecasts or estimates of American River unimpaired flow (acre-feet) below Folsom Lake. The water year types and associated American River unimpaired flow ranges in acre-feet (ac-ft) are provided below:

Water Year Types	American River Unimpaired Flow Below Folsom Lake (ac-ft)
Wet (W)	≥3,400,000
Above Normal (AN)	2,400,000–<3,400,000
Below Normal (BN)	1,500,000–<2,400,000
Dry (D)	1,000,000–<1,500,000
Critical (C)	600,000–<1,000,000
Extreme Critical (EC)	<600,000

The American River unimpaired flow (ac-ft) below Folsom Lake for the water year (October 1-September 30) is to be determined using the California Department of Water Resources (DWR) Bulletin 120 Forecast of Unimpaired Flow Below Folsom Lake and/or the DWR's estimated Full Natural Flow record for the American River at Folsom (California Data Exchange Center site AMF sensor 65) (http://cdec.water.ca.gov).

The Licensee shall determine the water year type for minimum streamflow requirements based on the following time periods and forecast/estimate methods using the water year types above unless otherwise specified.

Minimum Streamflow Water Year Type Determination for all Stream Reaches Except Middle Fork American River Below Oxbow Powerhouse and Below Ralston Afterbay Dam

The Licensee shall determine the water year type for minimum streamflows for all stream reaches except Middle Fork American River below Oxbow Powerhouse and below Ralston Afterbay Dam based on the following time periods and forecast/estimate methods using the water year type classifications above.

Time Period	American River Unimpaired Flow (ac-ft) below Folsom Lake Determination Method	Water Year Type Classification
June 1–October 31	DWR Bulletin 120 May Forecast[1]	See water year types above (Wet, AN, BN, Dry, C, EC)
November 1–March 14	End of Water Year Estimate of Full Natural Flows[2]	
March 15–May 31	DWR Bulletin 120 March Forecast[1]	

[1] American River unimpaired flow (ac-ft) below Folsom Lake for the water year, October 1 through September 30, is to be determined using the California Department of Water Resources (DWR) Bulletin 120 Forecast of Unimpaired Flow Below Folsom Lake.

[2] American River unimpaired flow (ac-ft) below Folsom Lake for the water year is to be determined by DWR's Full Natural Flow record for the American River at Folsom (California Data Exchange Center site AMF sensor 65) after the end of the water year (October 1–September 30) (http://cdec.water.ca.gov).

Minimum Streamflow Water Year Type Determination for Middle Fork American River Below Oxbow Powerhouse and Below Ralston Afterbay Dam

The Licensee shall determine the water year type for minimum streamflows for the Middle Fork American River below Oxbow Powerhouse and below Ralston Afterbay Dam based on the following time periods and forecast/estimate methods using the water year type classification above.

Time Period	American River Unimpaired Flow (ac-ft) below Folsom Lake Determination Method	Water Year Type Classification
June 1–October 31	DWR Bulletin 120 May Forecast[1]	See water year types above (Wet, AN, BN, Dry, C, EC)
November 1–February 14	End of Water Year Estimate of Full Natural Flows[2]	
February 15–Mar 14	DWR Bulletin 120 February Forecast[1]	
March 15–May 31	DWR Bulletin 120 March Forecast[1]	

[1]American River unimpaired flow (ac-ft) below Folsom Lake for the water year, October 1 through September 30, is to be determined using the California Department of Water Resources (DWR) Bulletin 120 Forecast of Unimpaired Flow Below Folsom Lake.

[2]American River unimpaired flow (ac-ft) below Folsom Lake for the water year is to be determined by DWR's Full Natural Flow record for the American River at Folsom (California Data Exchange Center site AMF sensor 65) after the end of the water year (October 1 – September 30) (http://cdec.water.ca.gov).

Minimum Streamflow Compliance

Compliance with the minimum flow schedules must meet the following conditions:

- All specified minimum streamflows are in cubic feet per second (cfs).
- Minimum streamflows must be released by 5 pm on the date specified in the flow schedule tables below for each location unless access to release facility is prohibited by hazardous conditions (risk to operator safety). If this occurs, FERC, FS, CDFG, and State Water Board must be notified of the circumstances as soon as possible, but no later than 3 business days after such incident and the minimum streamflows must be released as soon as practicable.
- The minimum streamflows specified from March 15–May 31 shall not be lower than the minimum streamflow that was in effect on March 14.
- The streamflow hourly running average measurements (based on flow measured in 15-minute time increments) shall never be less than the thresholds specified in the tables below for each location, except as authorized below:
    - The minimum streamflow may be temporarily modified for short periods upon approval of FS, CDFG, and State Water Board and notification of FERC.

- The minimum streamflows may be temporarily modified due to equipment malfunction or public safety emergencies reasonably beyond the control of the Licensee. If the streamflow is so modified, the Licensee shall notify FERC, FS, CDFG, and State Water Board as soon as possible, but no later than 10 days after such incident.

Implementation Schedule

The Licensee shall provide the streamflow releases within 30 days of License issuance at locations where existing infrastructure and flow gages can provide and measure the new releases. Year 1 begins 30 days after license issuance. For all other locations, the Licensee will provide streamflow releases and pool elevations according to the following schedule.

Implementation Schedule for Instream Flow and Minimum Pool Compliance.

Measure	Flow Compliance Location	Interim Conditions Time Period (after License Issuance)	New Conditions Time Period (after License Issuance)[1]
Minimum Instream Flows			
	Rubicon River below Hell Hole Dam	Within 30 Days of License Issuance through Year 3.	Year 4 - License Term
	Middle Fork American River below French Meadows Dam	Within 30 Days of License Issuance through Year 2.	Year 3 - License Term
	Middle Fork American River below Middle Fork Interbay Dam	Within 30 Days of License Issuance through Year 2.	Year 3 - License Term
	Middle Fork American River Immediately Below Ralston Afterbay Dam	Within 30 Days of License Issuance through Year 2.	Year 3 - License Term
	Middle Fork American River below Oxbow Powerhouse	--	Within 30 days - License Term
	Duncan Creek below Diversion Dam	Within 30 Days of License Issuance through Year 3.	Year 4 - License Term
	North Fork Long Canyon Creek below Diversion Dam	Within 30 Days of License Issuance through Year 4.	Year 5 - License Term
	South Fork Long Canyon Creek below Diversion Dam	Within 30 Days of License Issuance through Year 4.	Year 5 - License Term
Pulse Flows			
	Rubicon River below Hell Hole Dam	--	Year 6 - License Term
	Middle Fork American River below French Meadows Dam	--	Year 1 - License Term
	Middle Fork American River below Middle Fork Interbay Dam	--	Year 3 - License Term
	Duncan Creek below Diversion Dam	--	Year 4 - License Term
	North Fork Long Canyon Creek below Diversion Dam	--	Year 5 - License Term
	South Fork Long Canyon Creek below Diversion Dam	--	Year 5 - License Term
Down Ramp of Spill Flows			
	Rubicon River below Hell Hole Dam	--	Year 6 - License Term
	Middle Fork American River below French Meadows Dam	--	Within 30 days - License Term
Peaking Reach Ramping Rate Requirements			
	Middle Fork American River below Oxbow Powerhouse	--	Within 30 days - License Term
Recreation Flow Releases			
	Middle Fork American River below Oxbow Powerhouse	--	Within 30 days - License Term
Reservoir Minimum Pool Elevations			
	Hell Hole Reservoir	--	Year 2 - License Term
	French Meadows Reservoir	--	Year 2 - License Term

[1] Year 1 begins 30 days after license issuance.

At the locations where minimum streamflow requirements are higher than the capacity of the existing infrastructure, the Licensee will implement the new flow requirement up to the maximum capacity of the outlet works (Interim Condition) within 30 days of License issuance until modification of the infrastructure is completed.

At the locations where pulse flows or down ramp of spill flows depend on modification of existing infrastructure or construction of new Project facilities for either release or measurement of the flow, the pulse or down ramp of spill flow requirements will be

implemented within 30 days after completion of the infrastructure modification or construction project.

The reservoir minimum pool elevation requirements can be implemented with the existing Project facilities. However, the new reservoir minimum pool elevation requirements will be provided starting in Year 2 after license issuance to avoid potential mid-year changes in minimum pool requirements.

The Licensee will promptly notify FERC, State Water Board, FS, and CDFG if any issues emerge during engineering design, permitting, or construction that may delay implementation of the required streamflow releases beyond the implementation schedule identified above.

Duncan Creek below Duncan Creek Diversion Dam

The Licensee shall maintain the minimum streamflow specified in the following schedule based on month and water year type. Minimum streamflows shall be measured beginning in Year 4 at USGS gage 11427750, Duncan Canyon Creek below Duncan Diversion Dam near French Meadows, CA and a new gage at Duncan Creek Diversion Tunnel. In the interim, streamflows will be measured at the Duncan Creek near French Meadows gage (USGS Gage No. 11427700) and the Duncan Creek below Diversion Dam Gage (USGS Gage No. 11427750). When inflow to the diversion is less than the minimum streamflow, licensee shall only be required to release this Natural Flow (NF).

Duncan Creek Below Duncan Diversion Dam						
	Month	Minimum Streamflow by Water Year (cfs)				
		EC/C	DRY	BN	AN	WET
	OCT	4 or NF[1]	8 or NF	8 or NF	8 or NF	8 or NF
	NOV	4 or NF	8 or NF	8 or NF	8 or NF	8 or NF
	DEC	4 or NF	8 or NF	8 or NF	8 or NF	8 or NF
	JAN	4 or NF	8 or NF	8 or NF	8 or NF	8 or NF
	FEB	4 or NF	8 or NF	8 or NF	8 or NF	8 or NF
	MAR 1-14	4 or NF	8 or NF	8 or NF	8 or NF	8 or NF
	MAR 15-31	9 or NF	11 or NF	13 or NF	16 or NF	16 or NF
	APR	13 or NF	14 or NF	17 or NF	24 or NF	24 or NF
	MAY	13 or NF	14 or NF	17 or NF	24 or NF	24 or NF
	JUNE	7 or NF	7 or NF	9 or NF	12 or NF	12 or NF
	JULY	No Div[2]	No Div[2]	No Div[2]	No Div[2]	No Div[2]
	AUG	No Div[2]	No Div[2]	No Div[2]	No Div[2]	No Div[2]
	SEPT	No Div[2]	No Div[2]	No Div[2]	No Div[2]	No Div[2]

[1]NF: Natural Flow

[2]If July 1 inflow to the diversion exceeds the May minimum instream flow requirement for that year, then the July minimum instream flow requirement will be equal to the May minimum instream flow requirement for that year or natural inflow whichever is less. The intent is to avoid a large flow spike at the end of the diversion season on July 1.

Middle Fork American River Below French Meadows Reservoir Dam

The Licensee shall maintain the minimum streamflow specified in the following schedule based on month and water year type. Minimum streamflows shall be measured beginning in Year 3 at a new gage at the Middle Fork American River at French Meadows Dam. In the interim, streamflows will be measured at USGS gage 11427500, Middle Fork American River at French Meadows, CA.

Middle Fork American River Below French Meadows Reservoir Dam						
	Month	Minimum Streamflow by Water Year (cfs)				
		EC/C	DRY	BN	AN	WET
	OCT	8	9	10	11	13
	NOV	8	9	10	11	13
	DEC	8	9	10	11	13
	JAN	8	9	10	11	13
	FEB	8	9	10	11	13
	MAR 1-14	8	9	10	11	13
	MAR 15-31	11	11	11	15	16
	APR	11	13	13	20	20
	MAY	11	13	13	20	20
	JUNE	8	11	12	16	17
	JULY	8	9	10	11	13
	AUG	8	9	10	11	13
	SEPT	8	9	10	11	13

Middle Fork American River Below Interbay Dam

The Licensee shall maintain the minimum streamflow specified in the following schedule based on month and water year type. Minimum streamflow shall be measured beginning in Year 3 at a new USGS gage to be sited on the Middle Fork American River below Interbay Dam. In the interim, streamflows will be measured at the Middle Fork American River below Interbay Dam Gage (USGS Gage No. 11427770).

Middle Fork American River Below Middle Fork Interbay Dam					
Month	Minimum Streamflow by Water Year (cfs)				
	EC/C	DRY	BN	AN	WET
OCT	12	24	24	25	25
NOV	12	24	24	25	25
DEC	12	24	24	25	25
JAN	12	24	24	25	25
FEB	12	24	24	25	25
MAR 1-14	12	24	24	25	25
MAR 15-31	16	25	32	45	47
APR	18	27	40	65	65
MAY	18	27	40	65	65
JUNE	12	24	24	45	47
JULY	12	18	24	26	34
AUG	12	18	24	26	34
SEPT	12	18	24	26	34

Rubicon River Below Hell Hole Reservoir Dam

The Licensee shall maintain the minimum streamflow specified in the following schedule based on month and water year type. Minimum streamflow shall be measured beginning in Year 4 at a new gage at the Rubicon River at Hell Hole Dam. In the interim, streamflows will be measured at USGS stream gage 11428800, Rubicon River below Hell Hole Dam, near Meeks Bay, CA.

Rubicon River Below Hell Hole Reservoir Dam					
Month	Minimum Streamflow by Water Year (cfs)				
	EC/C	DRY	BN	AN	WET
OCT	15	20	20	25	25
NOV	15	20	20	25	25
DEC	15	20	20	25	25
JAN	15	20	20	25	25
FEB	15	20	20	25	25
MAR 1-14	15	20	20	25	25
MAR 15-31	31	35	42	55	60
APR	31	35	42	55	60
MAY	23	35	42	55	60
JUNE 1-14	19	28	31	50	50
JUNE 15-30	15	20	20	40	40
JULY	15	20	20	30	30
AUG	15	20	20	30	30
SEPT	15	20	20	30	30

North Fork Long Canyon Creek Below North Fork Long Canyon Diversion Dam

The Licensee shall maintain the minimum streamflow specified in the following schedule based on month and water year type. Minimum streamflow shall be measured beginning in Year 5 at a new gage at North Fork Long Canyon Creek below the Diversion Dam and North Fork Long Canyon Creek Diversion Tunnel gage (USGS Gage No. 11433080). In the interim, streamflows will be measured at USGS gage 11433085, North Fork Long Canyon Creek below North Fork Long Canyon Diversion Dam, near Volcanoville, CA and North Fork Long Canyon Creek Diversion Tunnel Gage (USGS Gage No. 11433080). When inflow to the diversion is less than the minimum streamflow, licensee shall only be required to release this Natural Flow (NF).

North Fork Long Canyon Creek Below North Fork Long Canyon Diversion Dam						
	Month	**Minimum Streamflow by Water Year (cfs)**				
		EC/C	DRY	BN	AN	WET
	OCT	2 or NF	2 or NF	2 or NF	2 or NF	2 or NF
	NOV	2 or NF	2 or NF	2 or NF	2 or NF	2 or NF
	DEC	2 or NF	2 or NF	2 or NF	2 or NF	2 or NF
	JAN	2 or NF	2 or NF	2 or NF	2 or NF	2 or NF
	FEB	2 or NF	2 or NF	2 or NF	2 or NF	2 or NF
	MAR 1-14	2 or NF	2 or NF	2 or NF	2 or NF	2 or NF
	MAR 15-31	6 or NF	10 or NF	7 or NF	7 or NF	7 or NF
	APR	6 or NF	10 or NF	10 or NF	11 or NF	11 or NF
	MAY 1-14	6 or NF	10 or NF	10 or NF	11 or NF	11 or NF
	MAY 15-31	2 or NF	5 or NF	10 or NF	11 or NF	11 or NF
	JUNE	2 or NF	5 or NF	5 or NF	6 or NF	6 or NF
	JULY	No Div	No Div	No Div	No Div	No Div
	AUG	No Div	No Div	No Div	No Div	No Div
	SEPT	No Div	No Div	No Div	No Div	No Div

South Fork Long Canyon Creek Below South Fork Long Canyon Diversion Dam

The Licensee shall maintain the minimum streamflow specified in the following schedule based on month and water year type. Minimum streamflow shall be measured beginning in Year 5 at a new gage at South Fork Long Canyon Creek below the Diversion Dam and South Fork Long Canyon Creek Diversion Tunnel Gage (USGS Gage No. 11433060). In the interim, streamflows will be measured at USGS gage 11433065, South Fork Long Canyon Creek below South Fork Long Canyon Diversion Dam, near Volcanoville, CA and South Fork Long Canyon Creek Diversion Tunnel Gage (USGS Gage No. 11433060). When inflow to the diversion is less than the minimum streamflow, licensee shall only be required to release this Natural Flow (NF).

South Fork Long Canyon Creek Below South Fork Long Canyon Diversion Dam						
	Month	Minimum Streamflow by Water Year (cfs)				
		EC/C	DRY	BN	AN	WET
	OCT	2.5 or NF	5 or NF	5 or NF	5 or NF	5 or NF
	NOV	2.5 or NF	5 or NF	5 or NF	5 or NF	5 or NF
	DEC	2.5 or NF	5 or NF	5 or NF	5 or NF	5 or NF
	JAN	2.5 or NF	5 or NF	5 or NF	5 or NF	5 or NF
	FEB	2.5 or NF	5 or NF	5 or NF	5 or NF	5 or NF
	MAR 1-14	2.5 or NF	5 or NF	5 or NF	5 or NF	5 or NF
	MAR 15-31	5 or NF	9 or NF	9 or NF	9 or NF	9 or NF
	APR	6 or NF	12 or NF	12 or NF	14 or NF	14 or NF
	MAY	6 or NF	12 or NF	12 or NF	14 or NF	14 or NF
	JUNE	3 or NF	5 or NF	6 or NF	7 or NF	7 or NF
	JULY	No Div	No Div	No Div	No Div	No Div
	AUG	No Div	No Div	No Div	No Div	No Div
	SEPT	No Div	No Div	No Div	No Div	No Div

Middle Fork American River Below Ralston Afterbay Dam

The Licensee shall release a minimum streamflow of 3 cfs in the Middle Fork American River below Ralston Afterbay Dam until compliance with new minimum streamflows can be met. The new minimum streamflows in the following table shall be implemented (1) after the new gaging is installed at this location and (2) upon implementation of the Spawning Habitat Improvement Plan for the Middle Fork American River Below Ralston Afterbay Dam (see Condition No. 26). At that time, the Licensee shall maintain the minimum streamflow specified in the following schedule based on month and water year. The water year type determination for Middle Fork American River below Ralston Afterbay Dam is different than for other stream reaches, as stated above.

Middle Fork American River Below Ralston Afterbay Dam*			
	Month	Minimum Streamflow by Water Year (cfs)	
		EC	All Other Years
	OCT	3	3
	NOV	3	3
	DEC	3	3
	JAN	3	3
	FEB	3	3
	MAR 1-14	3	3
	MAR 15-31	3	25
	APR	3	25
	MAY	3	25
	JUNE	3	10
	JULY	3	10
	AUG	3	10
	SEPT	3	10

*Water Year Type based on minimum flow table specific to below Oxbow Powerhouse and Ralston Afterbay Dam.

Middle Fork American River Below Oxbow Powerhouse

The Licensee shall maintain the minimum streamflow specified in the following schedule based on month and water year type. Minimum streamflow shall be measured at Middle Fork American River near Foresthill gage (USGS Gage No. 11433300). The water year type determination for Middle Fork American River below Oxbow Powerhouse is different than for other stream reaches, as stated above.

Middle Fork American River Below Oxbow Powerhouse*						
	Month	Minimum Streamflow by Water Year (cfs)					
		EC	C	DRY	BN	AN	WET
	OCT	90	125	140	165	165	200
	NOV	90	140	145	185	225	250
	DEC	90	140	145	185	225	250
	JAN	90	140	145	185	225	250
	FEB	90	140	145	185	225	250
	MAR 1-14	90	140	145	185	225	250
	MAR 15-31	100	160	210	290	375	450
	APR	100	160	210	290	375	450
	MAY	100	160	210	290	375	450
	JUNE	100	160	210	245	300	350
	JULY	100	160	200	245	300	350
	AUG	100	160	200	245	300	350
	SEPT 1-14	100	150	160	200	250	300
	SEPT 15-30	100	150	160	200	250	300

*Water Year Type based on minimum flow table specific to Oxbow Powerhouse and Ralston Afterbay Dam.

Attachment C3

PCWA Alternative Condition No. 23 – Pulse Flows

PCWA Alternative Condition No. 23 – Pulse Flows

General

The Licensee shall provide pulse flows in:

- Duncan Creek below Duncan Diversion Dam
- Middle Fork American River below French Meadows Reservoir Dam
- Middle Fork American River below Interbay Dam
- Rubicon River below Hell Hole Reservoir Dam
- North Fork Long Canyon Creek below North Fork Long Canyon Diversion Dam
- South Fork Long Canyon Creek below South Fork Long Canyon Diversion Dam

The pulse flows are specified in the following schedule by water year type. For compliance purposes, the point of measurement for each required pulse flow is included.

The Licensee shall determine the water year type for pulse flows based on the DWR Bulletin 120 April forecast of American River Unimpaired Flow (acre-feet) below Folsom Lake for the water year and the water year type classification in Condition No. 22.

Compliance with the pulse flows specified for each location in the sections below requires that the Licensee must meet the following conditions:

- All specified pulse flows are in cubic feet per second (cfs).
- Pulse flows must be initiated by 5 pm no later than one day after the date specified and subsequent flow changes must be made on the corresponding dates in the schedule (by 5 pm) unless access to the streamflow release infrastructure is prohibited by hazardous conditions (risk to operator safety). If this occurs, FERC, FS, CDFG, and State Water Board must be notified of the circumstances as soon as possible, but no later than 3 business days after such incident and the pulse flows must be released as soon as practicable. If initiation of the pulse flow occurs on a day other than that specified, then all dates in the pulse flow schedule will be shifted accordingly.
- Pulse flows must be maintained for at least the number of days (duration) identified in the pulse flow schedules specified for each location below. The pulse flow, including each step in the pulse flow down ramp, can have a duration longer than that specified; however, in the Rubicon River below Hell Hole Reservoir Dam and the Middle Fork American River below Interbay Dam, the duration can extend no longer than 4 additional days unless a spill is forecasted at Hell Hole and French Meadows reservoirs, respectively.
- Once initiated, average daily flow (average of 15-minute flow data) must at all times be no less than the required pulse flow.

- The pulse flow specified may be temporarily modified upon approval of FS, CDFG, and State Water Board and notification of FERC.
- During the first two pulse flow events at the small diversions (Duncan Creek below Diversion Dam, North Fork Long Canyon Creek below Diversion Dam, and South Fork Long Canyon Creek below Diversion Dam), the Licensee will test their ability to provide the down ramp portion of the pulse flow schedules specified below. The Licensee will make a good faith effort to comply with the down ramp portion of pulse flow schedules. Any deviations from the compliance criteria specified above will not be considered violations during these first two pulse flow events, but will be reported to the FS, CDFG, and State Water Board within 30 days of the occurrence. At the conclusion of each of the first two pulse flow events, the Licensee will submit a testing report to the FS, CDFG, and State Water Board. After the second pulse flow event, the Licensee will recommend modification to the down ramp portion of the pulse flow schedule(s), if needed, and will consult with FS, CDFG, and State Water Board. Following FS, CDFG, and State Water Board approval, the Licensee will submit the modified pulse flow schedule(s) to FERC.

A pulse flow schedule for each location is specified below.

Duncan Creek below Diversion Dam

The Licensee shall implement the following pulse flows beginning in Year 4 following license issuance. Pulse flows shall be measured at the Duncan Creek below Diversion Dam Gage (USGS Gage No. 11427750) and a new gage.

Wet Water Years

In Wet water years pulse flows will be provided according to the following schedule:

May 15.	Release a minimum of 150 cfs or inflow, whichever is less.
May 16.	Close diversion completely.
May 25.	Release a minimum of 190 cfs or inflow, whichever is less.
May 27.	Release a minimum of 130 cfs or inflow, whichever is less.
May 30.	Release a minimum of 90 cfs or inflow, whichever is less.
June 2.	Release a minimum of 45 cfs or inflow, whichever is less.
June 6.	Release minimum streamflow requirement.

Above Normal Water Years

In Above Normal water years pulse flows will be provided according to the following schedule:

May 7.	Release a minimum of 150 cfs or inflow, whichever is less.
May 8.	Close diversion completely.
May 10.	Release a minimum of 190 cfs or inflow, whichever is less (can reopen diversion).
May 12.	Release a minimum of 130 cfs or inflow, whichever is less.
May 15.	Release a minimum of 90 cfs or inflow, whichever is less.
May 18.	Release a minimum of 45 cfs or inflow, whichever is less.
May 22.	Release minimum streamflow requirement.

At this location, if flows (e.g., accretion or storm events) during the down ramp portion of the pulse flow sequence exceed the average flow (24 hours) of a previous step, the down ramp will not be restarted. The pulse flows will be down ramped according to the schedule specified above.

Middle Fork American River below French Meadows Dam

The Licensee shall implement the following pulse flows in beginning in Year 1 following license issuance. Pulse flows shall be measured at the Middle Fork American River at French Meadows Gage (USGS Gage No. 11427500). In Year 3 following license issuance, flows will be measured at the Middle Fork American River at a new gage at French Meadows Dam.

Wet Water Years

In Wet water years pulse flows will be provided according to the following schedule:

May 15.	Increase flows from the minimum streamflow release to a minimum of 200 cfs.
May 16.	Increase flows to a minimum of 400 cfs.
May 24.	Reduce the flow to a minimum of 275 cfs.
May 26.	Reduce the flow to a minimum of 190 cfs.
May 29.	Reduce the flow to a minimum of 115 cfs.
June 1.	Reduce the flow to a minimum of 65 cfs.
June 5.	Release minimum streamflow requirement.

Above Normal Water Years

In Above Normal years pulse flows will be provided according to the following schedule:

May 7.	Increase flows from the minimum streamflow release to a minimum of 200 cfs.
May 8.	Increase flows to a minimum of 400 cfs.
May 10.	Reduce the flow to a minimum of 275 cfs.
May 12.	Reduce the flow to a minimum of 190 cfs.
May 15.	Reduce the flow to a minimum of 115 cfs.
May 18.	Reduce the flow to a minimum of 65 cfs.
May 22.	Release minimum streamflow requirement.

If a spill is forecasted to occur at French Meadow Reservoir either (1) during the down ramp portion of the pulse flow or (2) after the end of the pulse flow, the 190 cfs portion of the pulse flow will be continued until the spill occurs or until a spill is no longer forecast. If a spill occurs during the pulse flow release, the pulse flow requirements are no longer in effect and are superseded by spill ramp down requirements (Condition No. 24).

If the average flow (24 hours) during the down ramp portion of the pulse flow sequence exceeds a previous step (due to spill or other conditions) then the pulse flow down ramp must be restarted from the previous step and the flows down ramped according to the schedule specified above.

Middle Fork American River below Middle Fork Interbay Dam

The Licensee shall implement the following pulse flows beginning in Year 3 following license issuance. Pulse flows shall be measured at a new gage in the Middle Fork American River below Interbay Dam.

Wet Water Years

In Wet water years provide a pulse flow according to the following schedule:

May 15.	Increase flows from the minimum streamflow release to a minimum of 200 cfs.
May 16.	Increase flows to a minimum of 450 cfs.
May 24.	Reduce the flow to a minimum of 360 cfs.
May 26.	Reduce the flow to a minimum of 260 cfs.
May 29.	Reduce the flow to a minimum of 155 cfs.
June 1.	Release minimum streamflow requirement.

If during pulse flow implementation there is a forced or unplanned outage at Middle Fork Powerhouse and inflow into Middle Fork Interbay is less than the specified pulse flow

required downstream, then the inflow into Middle Fork Interbay will be passed downstream.

Above Normal Water Years

In Above Normal water years provide a pulse flow according to the following schedule:

May 7.	Increase flows from the minimum streamflow release to a minimum of 200 cfs.
May 8.	Increase flows to a minimum of 450 cfs.
May 10.	After 10 am, reduce flows to a minimum of 360 cfs.
May 12.	Reduce the flow to a minimum of 260 cfs.
May 15.	Reduce the flow to a minimum of 155 cfs.
May 18.	Release minimum streamflow requirement.

If there is a forced or unplanned outage at Middle Fork Powerhouse and inflow into Middle Fork Interbay is less than the specified pulse flow required downstream, then the inflow into Middle Fork Interbay will be passed downstream.

If a spill is forecast to occur at French Meadow Reservoir either (1) during the down ramp portion of the pulse flow or (2) after the end of the pulse flow, the 260 cfs portion of the pulse flow will be continued until the spill occurs or until a spill is no longer forecast. If a spill occurs during the pulse flow release, the pulse flow requirements are no longer in effect and are superseded by spill ramp down requirements (Condition No. 24).

At this location, if flows (e.g., accretion or storm events) during the down ramp portion of the pulse flow sequence exceed the average flow (24 hours) of a previous step, the down ramp will not be restarted. The pulse flows will be down ramped according to the schedule specified above.

Rubicon River below Hell Hole Dam

The Licensee shall implement the following pulse flows beginning in Year 6 after license issuance. Pulse flows shall be measured at new gages in the Rubicon River below Hell Hole Dam.

Initially, the Licensee shall implement the pulse flows specified below. Once the Licensee has completed the Hell Hole Outlet Feasibility Study described below, the final maximum pulse flow magnitude will be between 200 and 600 cfs and will be determined based on the results of the Hell Hole Outlet Feasibility Study results. If the magnitude of the pulse flow changes, then the volume of the pulse will remain the same, but the duration and down ramp will be modified. If the magnitude of the pulse flow changes, the starting date and duration of each step will be determined in consultation with FS, CDFG, and the State Water Board and provided to FERC.

Wet Water Years

In Wet water years pulse flows will be provided according to the following schedule:

May 15. Increase flows from the minimum streamflow release to a minimum of 200 cfs.
June 21. Reduce the flow to a minimum of 150 cfs.
June 23. Reduce the flow to a minimum of 90 cfs.
June 26. Release minimum streamflow requirement.

Above Normal Water Years

In Above Normal water years pulse flows will be provided according to the following schedule:

May 1. Increase flows from the minimum streamflow release to a minimum of 200 cfs.
May 16. Reduce the flow to a minimum of 150 cfs.
May 18. Reduce the flow to a minimum of 90 cfs.
May 21. Release minimum streamflow requirement.

If a spill is forecasted to occur at Hell Hole Reservoir during the down ramp portion of the pulse flow or after the end of the pulse flow, the 200 cfs portion of the pulse flow will be continued until the spill occurs or until a spill is no longer forecast. If a spill occurs during the pulse flow release, the pulse flow requirements are no longer in effect and are superseded by spill ramp down requirements (Condition No. 24).

If the average flow (24 hours) during the down ramp portion of the pulse flow sequence exceeds a previous step, then the pulse flow down ramp must be restarted from the previous step and flows down ramped according to the schedule specified above.

Hell Hole Dam Outlet Feasibility Study

Within 1 year of license issuance, the Licensee will develop a feasibility study plan and implement the study to identify the maximum pulse flow between 200 and 600 cfs that can safely and reliably be released from the Hell Hole Dam existing low level outlet over the duration of the license. The study plan will be developed in collaboration with FS, CDFG, and State Water Board and in consultation with and approval from the California Division of Safety of Dams (DSOD) and FERC. The study will be implemented within 1 year of approval of a feasibility study plan by DSOD and FERC. The study will likely be conducted over a number of years; however, a goal of final reporting by Year 6 is intended. The study plan will specify the following:

- Explicit criteria to determine whether a flow can be safely and reliably released over the duration of the new license.

- Incremental approach for releasing and evaluating flow releases from 200 to 600 cfs (e.g., 250 cfs, 300 cfs, etc.).
- Reporting schedule, including draft reports after each test flow with results of the flow evaluation, a draft final report, and a final report.
    - Report(s) will include the Licensee's engineering assessment of the study flows that were released and recommended next steps.
    - Draft reports will be submitted to FS, CDFG, and State Water Board for a 60-day review period.
    - The final report will address and incorporate comments received and will be distributed to DSOD, FERC, and FS, CDFG, and State Water Board within 90 days of the end of the comment period.

If approved by DSOD and FERC, the pulse flow release will be increased up to the magnitude deemed safe in the final report, with the following conditions:

- The same volume of water used in the interim pulse flow release will be used in the revised pulse flow release (i.e., same volume but the number of days of release will be decreased in accordance with the higher peak flow and modified down ramping schedule).
- The down ramping rate will be consistent with the rate of change specified in the interim pulse flow release and down ramping of spill schedule.

The Licensee will inspect and perform maintenance, if necessary, on the outlet works, consistent with standard Project practices, once test flows and/or pulse flows are initiated. Any concern regarding system reliability from releases will be reported promptly to DSOD, FERC, FS, CDFG, and State Water Board.

North Fork Long Canyon Creek below Diversion Dam

The Licensee shall implement the following pulse flows beginning in Year 5 after license issuance. Pulse flows shall be measured at a new gage below the North Fork Long Canyon Creek Diversion Dam and North Fork Long Canyon Creek Diversion Tunnel Gage (USGS Gage No. 11433080).

Wet Water Years

In Wet water years pulse flows will be provided according to the following schedule:

May 15.	Release a minimum of 50 cfs or inflow, whichever is less.
May 16.	Close diversion completely.
May 25.	Release a minimum of 35 cfs or inflow, whichever is less (can reopen diversion).
May 27.	Release a minimum of 21 cfs or inflow, whichever is less.
May 30.	Release minimum streamflow requirement.

Above Normal Water Years

In Above Normal water years pulse flows will be provided according to the following schedule:

May 1.	Release a minimum of 50 cfs or inflow, whichever is less.
May 2.	Close diversion completely.
May 4.	Release a minimum of 35 cfs or inflow, whichever is less (can reopen diversion).
May 6.	Release a minimum of 21 cfs or inflow, whichever is less.
May 9.	Release minimum streamflow requirement.

At this location, if flows (e.g., accretion or storm events) during the down ramp portion of the pulse flow sequence exceed the average flow (24 hours) of a previous step, the down ramp will not be restarted. The pulse flows will be down ramped according to the schedule specified above.

South Fork Long Canyon Creek below Diversion Dam

The Licensee shall implement the following pulse flows beginning in Year 5 following license issuance. Pulse flows shall be measured at a new gage on South Fork Long

Canyon Creek and the South Fork Long Canyon Creek Diversion Tunnel Gage (USGS Gage No. 11433060).

Wet Water Years

In Wet water years provide a pulse flow according to the following schedule:

May 15.	Release a minimum of 100 cfs or inflow, whichever is less.
May 16.	Close diversion completely.
May 25.	Release a minimum of 70 cfs or inflow, whichever is less (can reopen diversion).
May 27.	Release a minimum of 35 cfs or inflow, whichever is less.
May 30.	Release minimum streamflow requirement.

Above Normal Water Years

In Above Normal water years provide a pulse flow according to the following schedule:

May 1.	Release a minimum of 100 cfs or inflow, whichever is less.
May 2.	Close diversion completely.
May 4.	Release a minimum of 70 cfs or inflow, whichever is less (can reopen diversion).
May 6.	Release a minimum of 35 cfs or inflow, whichever is less.
May 9.	Release minimum streamflow requirement.

At this location, if flows (e.g., accretion or storm events) during the down ramp portion of the pulse flow sequence exceed the average flow (24 hours) of a previous step, the down ramp will not be restarted. The pulse flows will be down ramped according to the schedule specified above.

Attachment C4

PCWA Alternative Condition No. 24 – Ramping Rates

PCWA Alternative Condition No. 24 – Ramping Rates

Down Ramping of Reservoir Spill Flows

The Licensee shall "down ramp" spill flows at Hell Hole Reservoir Dam and French Meadows Reservoir Dam. Compliance with the down ramp of spill flows requires that the Licensee meet the following conditions:

- All specified minimum streamflows are in cubic feet per second (cfs).
- Down ramp of spill flows must occur during the months specified in the schedule below.
- Initiation of down ramp flows must be made on the days specified in the schedule below unless access to the streamflow release infrastructure is prohibited by hazardous conditions. If this occurs, FERC, FS, CDFG, and State Water Board must be notified of the circumstances as soon as possible, but no later than 10 days after such incident and the down ramp of spill flow must be released as soon as practicable.
- Down ramp of spill flow must be maintained for at least the number of days (duration) identified in each down ramp step. Each step of the down ramp can have a duration longer than that specified; however, at Rubicon River below Hell Hole Reservoir Dam and MFAR below ~~Interbay~~ French Meadows Dam, the total down ramp duration may be no longer than 4 additional days.
- Below French Meadows Reservoir, once the flows are set, average daily flow (average of 15-minute flow data) must at all times be no less than the required streamflow release specified in the schedule.
- Below Hell Hole Reservoir, down ramp of spill flows will be made at the new Hell Hole Dam crest gates (or a slide gate opening at the crest gates) to be installed as part of the Hell Hole Reservoir Seasonal Storage Improvement. The Licensee will consult with the FS, CDFG, and State Water Board during the design of the Hell Hole crest gates and slide gates. As such, a rating curve for the spillway crest gates (or other gate openings) will be developed as part of the improvement project and used for compliance. The gate flow release setting will be adjusted once every 24 hours. The Licensee will use the reservoir water surface elevation at that time to set the gate position (according to the rating table) to meet the required flow release for the subsequent 24-hour period. Total flow will be based on the gate setting and the average 24-hour flow of any additional releases from the bottom of the dam (e.g., powerhouse release, minimum flow pipe); the daily flow setting (gate setting + average 24-hour flow from the bottom of the dam) must at all times be no less than the required streamflow release specified in the schedule.
- During the first two spill events when down ramp of spill flows occur at Hell Hole and French Meadows reservoirs, the Licensee will test their ability to manage spill flows to provide the flow schedules specified below. The Licensee will attempt to comply with the down ramp of spill flow schedules. Any deviations

from the compliance criteria specified above will not be considered violations during these first two spill management events but will be reported to the FS, CDFG, and the State Water Board within 30 days of the occurrence. At the conclusion of each of the first two spill events, the Licensee will submit a testing report to the FS, CDFG, and State Water Board. After the second spill event, the Licensee may recommend modification to the down ramp of the spill flow schedule(s), if needed, and consultation with FS, CDFG, and State Water Board. Following FS, CDFG, and State Water Board approval, the Licensee will submit the modified down ramp of spill flow schedule(s) to FERC.

The Licensee shall provide the down ramp of spill flows specified in the following schedules.

Rubicon River below Hell Hole Reservoir Dam

The Licensee shall down ramp of spill flows at Rubicon River below Hell Hole Reservoir Dam beginning as soon as the Hell Hole Seasonal Storage Improvement is completed (anticipated to be completed in Year 5 and implemented in Year 6). The down ramp of spill flows shall be measured new gages at the Rubicon River at Hell Hole Reservoir Dam and the Rubicon River at Hell Hole Reservoir Dam Spillway (HHDS).

In the months of May through July, if a spill or multiple spills in excess of 600 cfs daily average flow (total combined spillway flow and flow releases from the bottom of the reservoir) occur at Hell Hole Reservoir Dam, the Licensee must down ramp the declining limb of the spill(s) the day after the daily average spill flow (total combined flow) becomes less than 600 cfs as follows:

<u>First 600 cfs Spill Event Down Ramp Schedule</u>

Day 1.	Establish the daily flow setting at 600 cfs.[1]
Day 5.	Reduce the daily flow setting to 400 cfs.
Day 7.	Reduce the daily flow setting to 285 cfs.
Day 10.	Reduce the daily flow setting to 170 cfs.
Day 13.	Reduce the daily flow setting to 95 cfs.
Day 17.	Release minimum streamflow requirement.

<u>Subsequent 600 cfs (or greater) Spill Event Down Ramp Schedule (if they occur)</u>

Day 1.	Reduce the daily flow setting to 400 cfs.
Day 3.	Reduce the daily flow setting to 285 cfs.
Day 6.	Reduce the daily flow setting to 170 cfs.
Day 10.	Reduce the daily flow setting to 95 cfs.
Day 14.	Release minimum streamflow requirement.

[1] During the first spill event, there must be at least four days of the 600 cfs flow setting.

If a spill event occurs (total combined flow) in the months of May–July that does not exceed an average 24-hour flow of 600 cfs, but exceeds the 400, 285, or 170 cfs flow levels in the above schedule, the Licensee must down ramp the spill according to the lower flow levels in the schedule. Spills that do not exceed 170 cfs (24-hour average flow) will not be down ramped.

Middle Fork American River below French Meadows Dam

The Licensee shall down ramp spill flows in the Middle Fork American River below French Meadows Dam beginning in Year 1 following license issuance. The down ramp of spill flows shall be measured at the Middle Fork American River at French Meadows gage (USGS Gage No. 11427500).

In Year 3 after license issuance (Year 1 begins 30 days after license issuance), flows will be measured at the Middle Fork American River at French Meadows Gage (USGS Gage No. 11427500) and at a new gage at the Middle Fork American River at French Meadows Dam Gage.

In the months of May through July, if a spill or multiple spills in excess of 400 cfs daily average flow (total combined spillway flow and flow releases from the bottom of the reservoir) occur from French Meadows Reservoir, the Licensee will down ramp the declining limb of the spill(s) the day after daily average spill flow (total combined flow) becomes less than 400 cfs as follows:

400 cfs Spill Event Down Ramp Schedule

Day 1.	Release a minimum flow of 400 cfs
Day 2.	Reduce the flow to a minimum of 275 cfs.
Day 3.	Reduce the flow to a minimum of 190 cfs.
Day 4.	Reduce the flow to a minimum of115 cfs.
Day 5.	Reduce the flow to a minimum of 65 cfs.
Day 7.	Release minimum streamflow requirement.

If a spill event (total combined flow) occurs in the months of May through July that does not exceed an average 24-hour flow of 400 cfs, but exceeds the 275, 190, or 115 cfs flow levels, the Licensee will down ramp the spill according to the lower flow levels in the schedule. Spills that do not exceed 115 cfs (24 hour average flow) will not be down ramped.

Peaking Reach Ramping Rate and Oxbow Powerhouse Operations

The Licensee shall provide the following ramping rates in the months of March through October in the Middle Fork American River below Oxbow Powerhouse based on the flow present in the Middle Fork American River near Foresthill USGS Gage (No. 11433300):

Middle Fork American River Below Oxbow Powerhouse Ramping Rate			
Up Ramp		Down Ramp	
Gage Flow[1] (cfs)	Maximum Flow Change[2] (cfs / hr)	Gage Flow[1] (cfs)	Maximum Flow Change[2] (cfs / hr)
≤175	300	≤500	250
>175–400	450	>500–800	400
>400–750	600	>800–1300	550
>750	750	>1300	750

[1]Gage Flow is the discharge (cfs) at the Middle Fork American River near Foresthill USGS Gage (No. 11433300) at the beginning of the Oxbow Powerhouse flow change.

[2]Maximum Flow Change is the maximum increase in Oxbow Powerhouse release given the Gage Flow for the up ramp, or the maximum decrease in Oxbow Powerhouse release given the Gage Flow for the down ramp.

In Years 1 and 2 after license issuance (Year 1 begins 30 days after license issuance), the ramping rate in the Middle Fork American River downstream of Oxbow Powerhouse shall be measured at the Middle Fork American River near Foresthill Gage (USGS Gage No. 11433300.

In Year 3 after license issuance, or as soon as the new Oxbow Powerhouse Penstock gage is operational, the ramping rate requirement will be measured at the new Oxbow Powerhouse Penstock gage and the Middle Fork American River near Foresthill gage (USGS Gage No. 11433300).

During the months of November through February, the Licensee will make a good faith effort to regulate Oxbow Powerhouse flow releases in the peaking reach. This will include, to the degree possible, scheduling Oxbow Powerhouse generation to moderate peaking in the Middle Fork American River using available active Ralston Afterbay storage. If Ralston Afterbay spills due to natural flow conditions beyond the control of the Licensee, the effort to moderate Middle Fork American River peaking shall cease until control is regained or for the remainder of the period.

The Licensee shall make available to FS, CDFG, and State Water Board the streamflow records related to ramping rates upon request.

The Licensee shall be excused from complying with the ramping rate requirements in the event of law enforcement or search and rescue activities, Division of Safety of Dams compliance requirements, equipment malfunction or failure that is directly related to providing the specified ramping rates, or a large storm event that is beyond its ability to control. The Licensee shall provide notice to FS, CDFG, and State Water Board within 10 days after such an event occurs and shall provide a report documenting the reason that ramping rates were not followed within 1 month after such an event occurs.

Attachment C5

PCWA Alternative Condition No. 25 – Outages

PCWA Alternative Condition No. 25 – Outages

Unplanned Middle Fork and Ralston Powerhouse Outage (May–September)

If a short-term (less than 2 weeks) unplanned outage occurs at the Middle Fork Powerhouse and Ralston Powerhouse in May - September, the minimum flow in the Middle Fork American River below Oxbow Powerhouse (peaking reach) during the outage will be established as described below based on the water surface elevation in Ralston Afterbay:

- If the Ralston Afterbay water surface elevation is greater than 1,161 feet at the time of the outage, the minimum flow release requirement will be 200 cfs or the minimum flow specified in Condition No. 22, above, whichever is less, until the elevation reaches less than or equal to 1,161 feet.
- If the Ralston Afterbay water surface elevation is less than or equal to 1,161 feet any time during the outage, the minimum flow release requirement will be the October minimum flow specified in Condition No. 22, above.

It may be necessary to release additional water from Hell Hole Reservoir into the Rubicon River and from French Meadow Reservoir/Middle Fork Interbay into the MFAR to meet the minimum flow requirements in the peaking reach or downstream consumptive demands. In this case, release water will be split between the two rivers up to a maximum of 55 cfs release (60 cfs in Wet water years) in the Rubicon River and a maximum of 80 cfs in the MFAR below French Meadows Reservoir and below Interbay Reservoir. If these maximum flows of 80 cfs in the MFAR below Interbay Reservoir and 55 cfs (60 cfs in Wet water years) below Hell Hole Reservoir Dam are less than is necessary to meet the minimum streamflows described in the bulleted items above, the Licensee shall not release flows above these maximum flows except in the following circumstance: releases into the MFAR below Interbay Reservoir may exceed 80 cfs if necessary to meet consumptive demands and required minimum streamflows of 75 cfs at the American River Pump Station (75 cfs requirement pursuant to the Licensee's pump station mitigation requirement below American River Pump Station) upon commencement of FYLF monitoring and 24 hours advanced noticed to the FS, CDFG, and the State Water Board.

If the unplanned outage extends beyond 2 weeks, minimum streamflows in the MFAR peaking reach during the remainder of the outage will be determined in consultation with FS, CDFG, and State Water Board. The flow release in the Rubicon River during the remainder of the outage will also be determined in consultation with FS, CDFG, and the State Water Board. Flow releases in the MFAR (from French Meadows Reservoir and/or the Middle Fork Powerhouse) will be determined by the Licensee in accordance with minimum streamflow requirements, water supply demands, and operational requirements (e.g., reservoir management, power generation).

Unplanned Ralston Powerhouse Outage (June–September) – Middle Fork Powerhouse Operational

If the Middle Fork Powerhouse is operational during the short-term (less than 2 weeks) unplanned outage (and Ralston Powerhouse is not operational in June - September), water will be released from the Middle Fork Powerhouse for minimum flow compliance in the peaking reach, water supply, and to avoid or minimize spill of Hell Hole Reservoir. The minimum streamflow requirement in the MFAR below Interbay Dam will be based on the following table.

Middle Fork American River Below Oxbow Powerhouse							
	Month	Minimum Streamflow by Water Year (cfs)					
		EC	C	DRY	BN	AN	WET
	JUNE	100	160	210	245	300	350
	JULY	100	160	165	190	200	200
	AUG	100	160	165	190	200	200
	SEPT	100	160	165	190	200	200

Release water in the Rubicon River and MFAR to meet the minimum streamflow in the peaking reach will be split between the two rivers up to a maximum of 55 cfs release in the Rubicon River (60 cfs in Wet water years) and a maximum of 80 cfs in the Middle Fork American River below Interbay Reservoir. If these maximum flows of 80 cfs in the MFAR below Interbay Reservoir and 55 cfs (60 cfs in Wet water years) below Hell Hole Reservoir Dam are less than is necessary to meet the minimum streamflows described in the table above, the Licensee shall not release flows above these maximum flows except in the following circumstance: releases into the MFAR below Interbay Reservoir may exceed 80 cfs if necessary to meet consumptive demands and required minimum streamflows of 75 cfs at the American River Pump Station (75 cfs requirement pursuant to the Licensee's pump station mitigation requirement below American River Pump Station) upon commencement of FYLF monitoring and 24 hours advanced noticed to the FS, CDFG, and the State Water Board.

If the unplanned outage extends beyond 2 weeks, minimum streamflows in the peaking reach during the remainder of the outage will be determined in consultation with FS, CDFG, and the State Water Board. The flow release in the Rubicon River during the remainder of the outage will also be determined in consultation with the FS, CDFG, and the State Water Board. Streamflow releases in the MFAR (from French Meadows Reservoir and/or the Middle Fork Powerhouse) will be determined by the Licensee in accordance with minimum flow requirements, water supply demands, and operational requirements (e.g., reservoir management, power generation).

Attachment C6

PCWA Alternative Condition No. 26 – Spawning Habitat Improvement Plan for the Middle Fork American River Below Ralston Afterbay Dam

PCWA Alternative Condition No. 26 – Spawning Habitat Improvement Plan for the Middle Fork American River Below Ralston Afterbay Dam

The Licensee shall, within 1 year of license issuance, complete a Spawning Habitat Improvement Plan for the 0.48 mile section of the Middle Fork American River immediately below Ralston Afterbay Dam. The Licensee shall develop the plan in consultation with USDA-FS, CDFG, State Water Board, and other interested parties. Upon FERC approval, the Licensee shall implement the plan.

Attachment C7

PCWA Alternative Condition No. 37 – Reservoir Minimum Pool Elevations and Reservoir Levels Recreation Objectives

PCWA Alternative Condition No. 37 – Reservoir Minimum Pool Elevations and Reservoir Levels Recreation Objectives

Minimum Reservoir Pool Elevations

The Licensee shall, in Year 2 after license issuance, meet or exceed the following minimum reservoir pool elevations in French Meadows and Hell Hole Reservoirs according to the following schedules. However, the Licensee shall make a good faith effort to implement the following minimum reservoir pools in Year 1.

Reservoir	American River Unimpaired Flow Below Folsom Lake (ac-ft) Bulletin 120 Forecast[1]	Date Range	WSE[2] (ft)	Date Range	WSE (ft)
French Meadows Reservoir	Wet	6/1–9/15	5,220	9/16–5/31	5,152
	Above Normal	6/1–9/15	5,220	9/16–5/31	5,152
	Below Normal	6/1–9/15	5,220	9/16–5/31	5,152
	Dry	6/1–9/1	5,200	9/2–5/31	5,152
	Critical	6/1–9/1	5,175	9/2–5/31	5,152
	Extreme Critical	6/1–9/1	5,175	9/2–5/31	5,120
Hell Hole Reservoir	Wet	6/1–Labor Day	4,530	After Labor Day–5/31	4,451
	Above Normal	6/1–Labor Day	4,530		4,451
	Below Normal	6/1–Labor Day	4,530	After Labor Day–5/31	4,402
	Dry	6/1–9/1	4,485		4,402
	Critical	6/1–9/1	4,455	After Labor Day–5/31	4,402
	Extreme Critical	6/1–9/1	4,404	9/2–5/31	4,341
				9/2–5/31	
				9/2–5/31	

[1]Unimpaired run-off of American River to Folsom Lake for current year, October 1 through September 30, as estimated by the DWR Bulletin 120 on or about the beginning of May.

[2]WSE: water surface elevation

The Licensee shall determine the water year type for the minimum pool requirements in Hell Hole and French Meadows reservoirs based on the DWR Bulletin 120 May forecast of American River Unimpaired Flow (ac-ft) below Folsom Lake for the water year and the water year type classification in Condition No. 22. The minimum pool requirements are to be implemented on June 1 of each year.

The compliance gage location for measuring reservoir water surface elevations in French Meadows is USGS Gage No. 11427400 and in Hell Hole Reservoirs is USGS Gage No. 11428700. Compliance with the reservoir minimum pool requirements requires that the Licensee meet the following conditions:

- Average weekly reservoir water surface elevation as calculated from the daily average water surface elevations at the existing reservoir gages will be used to measure compliance.
- Average weekly reservoir water surface elevations must at all times be no less than the minimum pool requirement.

For recreation purposes, the Licensee will provide FS a forecast of monthly June – November reservoir water surface elevations on or before May 15 and an updated forecast before July 1 each year. The Licensee will also provide reservoir water surface elevation information to the public via the Internet or other appropriate technologies as specified in the Recreation Plan (PCWA 2011a).

Reservoir Levels Recreation Objectives

The following objectives guide reservoir operation scheduling at French Meadows and Hell Hole Reservoirs to support mid-summer reservoir water surface elevations for reservoir-based recreation. The Licensee will make every reasonable effort to achieve the reservoir water surface elevation objectives to support recreation while at the same time meeting the primary operation purposes of the Project (e.g., water supply, water rights, hydroelectric generation). If the May 15 or July 1 reservoir water surface elevation forecasts indicate the Licensee cannot meet the operation objectives (or higher elevations), the Licensee will consult with FS by June 1 or July 15, respectively. During CD or ED water years, consultation would be to (1) determine reservoir levels based on available water (including projected water deliveries) and priorities (e.g. boat ramp access) and (2) implementation of any additional measures to be funded by Licensee due to low reservoir levels (e.g. additional patrols, shoreline protection from motorized use, additional public information). Based on this consultation, the Licensee will provide an alternative reservoir operation forecast as appropriate. The reservoir water surface elevation objectives are not compliance criteria, rather they are operation goals.

Reservoir Levels Recreation Objectives[1]

Reservoir	Water Year Type[2] and Water Surface Elevation Objectives											
	Wet		Above Normal		Below Normal		Dry		Critical		Extreme Critical	
	Date	WSE (ft)	Date	WSE (ft)	Date	WSE (ft)	Date	WSE (ft)	Date	WSE (ft)	Date	WSE (ft)
French Meadows Reservoir	7/15	5245	7/15	5245	7/15	5240	7/15	5220	7/15	5200	--	--
Hell Hole Reservoir	7/15	4590	7/15	4580	7/15	4570	7/15	4530	7/15	4530	9/1	4450

[1]Note that these reservoir water surface elevation objectives are not compliance criteria, rather they are operation goals that are mutually acceptable between the Licensee and FS.

[2]Water year types are based on the DWR Bulletin 120 May forecast.

Within 5 years of license issuance, and every 5 years thereafter, the Licensee shall prepare a report describing whether the reservoir scheduling objectives have been achieved, and if not, the reasons and time periods when the target reservoir levels were not achieved. The Licensee shall provide a copy of the report to FS, CDFG, State Water Board, and FERC.

Attachment C8

PCWA Alternative Condition No. 39 – Recreation Streamflows in the Middle Fork American River Below Oxbow Powerhouse

PCWA Alternative Condition No. 39 – Recreation Streamflows in the Middle Fork American River Below Oxbow Powerhouse

All provisions for recreation streamflows are subject to the safe operability of the Project facilities and equipment necessary to provide such streamflows. The recreation streamflows described below may be temporarily modified if required by equipment malfunction or operating emergencies reasonably beyond the control of the Licensee. If the described recreation streamflows are so modified, the Licensee shall provide Notice to FERC, FS, State Water Board, CDPR, and BLM as soon as possible but no later than 24 hours after such incident and shall provide Notice via the website to be developed by the Licensee to disseminate flow information. The described recreation streamflows may also be temporarily modified for short periods in non-emergency situations upon approval of FS. If the described recreation streamflows are so modified, the Licensee shall provide Notice to FERC, FS, State Water Board, CDPR, and BLM.

Whitewater Boating

The Licensee shall, within 30 days following license issuance, provide the recreation streamflows specified in the following schedules based on water year type, date, and time. The recreation streamflows shall be measured at the Middle Fork American River near Foresthill gage (USGS Gage No. 11433300). Recreation streamflow requirements for (1) weekday Class IV; (2) weekend Class IV; (3) Class II; and (4) and recreation events for recreation flow releases are specified below.

Weekday Class IV Run Recreation Streamflow Releases

Water Year Type	Flow Magnitude[1]	Timing	June–Labor Day	After Labor Day–Sept 30
Wet	1000 cfs	3 hrs (9 am–12 pm)	5 (M,T,W,Th,F)	4 (T,W,Th,F)
Above Normal	1000 cfs	3 hrs (9 am–12 pm)	5 (M,T,W,Th,F)	3 (T,W,F)
Below Normal	1000 cfs	3 hrs (9 am–12 pm)	4 (T,W,Th,F)	3 (T,W,F)
Dry	1000 cfs	3 hrs (8 am–11 am)	3 (T,W,F) except for Friday before Labor Day and Memorial Day[2]	2 (W,F)
Critical	1000 cfs	3 hrs (8 am–11 am)	2 (W,F) except for Memorial Day[2]	~~Water Year Type~~ --
Extreme Critical	1000 cfs	3 hrs (8 am–11 am)	1 (W)	--

Scheduled Weekend Class IV Run Recreation Flow Releases

Water Year Type	Flow Magnitude[1]	Timing	Saturday before Memorial Day–Labor Day	After Labor Day–Sept 30
Wet	1000 cfs	4 hrs (8 am–12 pm)	Saturdays and Sundays	Saturdays and Sundays
Above Normal	1000 cfs	4 hrs (8 am–12 pm)	Saturdays and Sundays	Saturdays and Sundays
Below Normal	1000 cfs	4 hrs (8 am–12 pm)	Saturdays (except for Western States 100 and Tevis Cup Race Days) and Sundays	Saturdays and Sundays
Dry	1000 cfs	3 hrs	Saturdays except for Western States 100 and Tevis Cup Race Days	Saturdays and Sundays
		(8:30 am–11:30 am)	Sundays except one Sunday[2] in July	
Critical	1000 cfs	3 hrs	Saturdays except for Western States 100 and Tevis Cup Race Days	Saturdays
		(8:30 am–11:30 am)	Sundays except one Sunday[2] in July	
Extreme Critical	1000 cfs	3 hrs	Saturdays except for Western States 100 and Tevis Cup Race Days	---
		(8:30 am–11:30 am)	Sundays except one Sunday[2] in July	

[1]Flow compliance measured at the Middle Fork American River near Foresthill USGS Gage (No. 11433300).

[2]This Sunday used for Class II Run (Confluence) boating.

Scheduled Class II Run (Confluence) Recreation Flow Releases

Water Year Type	Flow Magnitude[1]	Timing	Weekdays	Weekends		
			Memorial Day–Labor Day	Saturday before Memorial Day–June 30	July 1–Labor Day	After Labor Day–Sept 30
Wet	800 cfs	5 hrs (3 am–8 am)	--	--	Saturdays	2 Saturdays per month
Above Normal	800 cfs	5 hrs (3 am–8 am)	--	--	Saturdays	2 Saturdays per month
Below Normal	800 cfs	4 hrs (4 am–8 am)	--	2 Saturdays per Month	2 Saturdays per month	1 Saturday per month
	1000 cfs	3 hrs (4 am–7 am)	--	Western States 100 Race Day	Tevis Cup Race Day	--
Dry	1000 cfs	3 hrs (4 am–7 am)	Memorial Day and Friday before Labor Day	Western States 100 Race Day	1 Sunday in July and Tevis Cup Race Day	--
Critical	1000 cfs	3 hrs (4 am–7 am)	Memorial Day	Western States 100 Race Day	1 Sunday in July and Tevis Cup Race Day	--
Extreme Critical	1000 cfs	3 hrs (4 am–7 am)	--	Western States 100 Race Day	Tevis Cup Race Day	--

[1]Flow compliance measured at the Middle Fork American River near Foresthill USGS Gage (No. 11433300).

In addition to the above schedules, up to two unscheduled days per year may be scheduled for special whitewater flow events. Individuals, groups, or agencies may submit a request for single-day whitewater flow events to the Licensee by April 15 each year. The Licensee will select the event(s) based on available water supply and existing consumptive demands, hydro-electric generation demands, and generating unit availability. The Licensee will respond to requests for single-day flow event requests by May 15.

Whitewater boating flow requirements are superseded by the Tevis Cup and Western States 100 event recreation flows outlined in the special event recreation coordination section below.

The Licensee shall determine the water year type for recreation flow releases based on the DWR Bulletin 120 May forecast of American River Unimpaired Flow (ac-ft) below Folsom Lake for the water year and the water year type classification in Condition No. 22.

Compliance with the recreation flow releases specified below requires that the Licensee meet the following:

- All specified minimum streamflows are in cubic feet per second (cfs).
- The recreation flow releases must be provided at the time specified.

- Once initiated, the streamflow hourly running average measurements (flow measured in 15-minute time increments) must be no less than the required recreation streamflow releases.
- If there is a forced or unplanned outage at the Middle Fork Powerhouse, Ralston Powerhouse or Oxbow Powerhouse then whitewater boating flow requirements will be suspended until the powerhouse(s) are returned to service.

Special Event Recreation Coordination

The Licensee will provide the whitewater boating and special event recreation flows in the peaking reach (Middle Fork American River below Oxbow Powerhouse) as specified below.

Tevis Cup and Western States 100 Events

The Licensee will annually coordinate with representatives of the Tevis Cup and Western States 100 to identify and provide flows suitable for trail crossing conditions for these events (when such flows are controllable by the Project). The Tevis Cup/Western States 100 event recreation flows, when they occur, take priority over whitewater boating flows. Where possible, whitewater boating flows will be provided as described in the whitewater boating section above.

Wounded Warrior

If the Licensee has been notified by June 1 that a Horseshoe Bar Fish and Game Preserve Wounded Warrior Event has been scheduled during an annual maintenance outage based on an annual maintenance outage schedule posted by the Licensee (May 1) and the outage schedule changes, the Licensee will work with the event organizers to provide steady flows during the event (for up to 5 days).

Attachment C9

PCWA Alternative Condition No. 45 – Erosion and Sediment Control and Management

PCWA Alternative Condition No. 45 – Erosion and Sediment Control and Management

Within 1 year of license acceptance, the Licensee shall file with FERC an Erosion and Sediment Control Management Plan developed in consultation with FS and other interested parties, and approved by FS that will provide direction for treating Project-related erosion and controlling Project-related sedimentation within the Project and Project-affected NFS lands during the term of the new license. Upon FERC approval, Licensee shall implement the Plan.

The Plan shall include at a minimum the components included in the referenced by this condition, unless otherwise agreed to by the FS during Plan finalization. Minimum components include, but may not be limited to:

Sediment Management Plan

Upon FERC approval, the Licensee shall implement the Sediment Management Plan, attached.

Erosion Control Guidelines for Existing Project-Affected Areas

- Methods for initial and periodic inventory and monitoring of the entire Project area and Project-affected NFS lands to identify erosion sites and to assess whether these erosion sites are Project-related. For Project-related sites, the Licensee will ~~the~~ assess site condition~~s for each~~. Periodic monitoring and inventory at Project-related sites will include recording effectiveness of erosion treatment measures, and identification of new erosion sites for the term of the new license.
- Criteria for ranking and treating Project-related erosion sites including a risk rating and hazard assessment for scheduling erosion treatment measures and monitoring at each site.
- Erosion control measures that incorporate current standards, follow FS regulations and guidance (e.g. LRMP, RMO's, BMP's), are customized to site-specific conditions, and approved by FS.
- Develop and implement a schedule for treatment (e.g., repair, mitigate, monitor) of Project-related erosion sites, including a list of sites requiring immediate mitigation and schedule for their implementation.
- Effectiveness monitoring of completed erosion control treatment measures after treatment in order to determine if further erosion control measures are needed. If erosion control measures are not effective, the Licensee will implement additional erosion control measures approved by FS and continue monitoring until the site has stabilized.
- Protocols for emergency erosion and sediment control.
- Process for documenting and reporting inventory and monitoring results including periodic plan review and revision. Documentation shall include a FS compatible GIS database for maps keyed to a narrative description of detailed, site-specific, erosion treatment measures and sediment monitoring results.

Erosion Control Guidelines for New Construction or Non-Routine Maintenance

Licensee shall develop site-specific temporary erosion control measures for each project to be approved by FS. These temporary measures will prevent erosion, stream sedimentation, dust, and soil mass movement during the period of ground disturbance until replaced by permanent measures.