

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

**CACHUMA PROJECT, CALIFORNIA
GUIDELINES FOR OPERATION**

PURPOSE

The purpose of these guidelines is to describe how the Cachuma Project will be operated consistent with the Cachuma Biological Opinion, Water Rights Orders, Water Service Contracts, Warren Act Contracts and the Standard Operating Procedures (SOP). Winter Storm Operations as described below will be incorporated into the SOP. These guidelines will be reviewed and amended on an as-needed basis. These guidelines, including the interim releases for fish, will be in effect until additional surcharge (1.8 or 3.0 feet) is approved and implemented. Additional requirements under the Cachuma Biological Opinion will be implemented at that time, requiring a revision to the guidelines. The priority for the release operation at Bradbury Dam is as follows:

1. Life and Property - Winter Storm Operations
2. Fish - Biological Opinion
3. Water Rights
4. Cachuma Master Water Service Contract - Project Water
5. Warren Act Contracts - Non-Project Water

The Bureau of Reclamation (Reclamation) shall operate Bradbury Dam consistent with the Cachuma Biological Opinion (BO) dated September 11, 2000 and existing Water Rights Orders while striving to accommodate the needs of all water users.

1. LIFE AND PROPERTY - WINTER STORM OPERATIONS

The Cachuma Project was not authorized as a flood control project, but has provided incidental flood control benefits. Reclamation will evaluate whether to conduct winter storm operations to attenuate flood peaks in the Santa Ynez River and decrease peak outflows from the reservoir prior to all storm events. If conducted, this will be accomplished by making **precautionary releases** to drawdown the reservoir in preparation of large storms. **Pre-releases** will then be made, at rates up to the maximum calculated inflow, to hold the reservoir at the drawdown stage until the storm inflows recede. In addition, **Gateholding** may be conducted to surcharge the reservoir and provide extra reservoir capacity. Details regarding these winter storm operations can be found in the following two documents:

1. Report of Modified Storm Operations - Bradbury Dam, Cachuma Project - Santa Barbara County, California - Prepared by Santa Barbara County Public Works Department Water Agency - December 29, 1998

2. Technical Memorandum No. BR-8130-RA-TM-00-2 - Risk Based Evaluation - Modified Storm Operations - Bradbury Dam - Prepared by Technical Service Center, U.S. Department of the Interior, Bureau of Reclamation - February, 2000

Spills occur as controlled or uncontrolled discharges at Bradbury Dam resulting from storm runoff. Precautionary releases through the spillway, river outlet works, or both in response to winter storms constitutes a **spill**. During the spill, water released through the river outlet works, spillway and the Hilton Creek Pipeline will be accounted for as spilled water. Based on daily reservoir calculations, when the storage in the reservoir is determined to be less than the full level (currently 750.75 feet) without any releases, the spill ceases to exist.

The Operations Division Chief in Reclamation's South-Central California Area Office (Operations Chief) will make the determination of the beginning and end of each spill as provided in the above guideline. Notifications will be made in accordance with the current Standing Operating Procedures and Emergency Action Plan.

2. FISH - BIOLOGICAL OPINION

The National Marine Fisheries Service (NMFS) has determined that the effects of the proposed operations of the Cachuma Project as described in Reclamation's Biological Assessment, as amended on June 13, 2000, are not likely to jeopardize the continued existence of Steelhead and are not likely to destroy or adversely modify Steelhead critical habitat. However, NMFS did conclude that incidental take is likely to occur. Therefore, NMFS has set forth in the Cachuma Biological Opinion (BO), terms and conditions and reasonable and prudent measures which Reclamation must implement in order to be exempt from the take prohibitions of the Endangered Species Act (ESA). This section covers those requirements in the BO which are in effect as of the date of this document and does not cover additional requirements which will be implemented when additional surcharge is approved and implemented.

2A. Rearing Support - Target Flows

The determination of appropriate target flows is based on monthly assessments (1st day of each month) during the Cachuma Project Water Year, October 1 to September 30. The determination as to whether or not Lake Cachuma has spilled in a given Water Year is determined within that Water Year. A Water Year is deemed to begin on October 1 as a **non-spill year** until a spill occurs during that Water Year as described above. Target flows will be verified and monitored by field measurements and USGS stream gauges, respectively. Below are requirements for determining and maintaining target flows:

1. In Water Years when Lake Cachuma spills and the spill amount exceeds 20,000 acre-feet, the target flow will be 5 cubic feet per second (cfs) at the Highway 154 bridge from the last day of the spill until the end of the Water Year, September 30.

2. In Water Years when Lake Cachuma does not spill or the spill amount is less than 20,000 acre- feet and storage exceeds 120,000 acre feet, the target flow at the Highway 154 bridge will be 2.5 cfs.

3. In Water Years when the storage in Lake Cachuma is less than 120,000 acre-feet, but greater than 30,000 acre-feet, the target flow at the Highway 154 bridge will be 1.5 cfs.

4. Priority for maintaining fish habitat will be as follows:

- a) Hilton Creek
- b) Mainstem river between Hilton Creek and the Highway 154 bridge
- c) Mainstem river between Bradbury Dam and confluence of Hilton Creek

5. Residual pool depth for pools in the Alisal and Refugio reaches shall be maintained during spill Water Years and the first Water Year after a spill if Steelhead are present in the pools. Residual pool depths will be monitored by the Cachuma Fishery Biologist and additional releases necessary to maintain these pool depths will be requested by the Adaptive Management Committee (AMC).

6. During extremely dry periods when there is less than 30,000 acre-feet of storage in Lake Cachuma, Reclamation will release approximately 30 acre-feet per month to refresh the stilling basin and the long pool directly downstream of the dam. Reclamation will reinitiate consultation with NMFS during drought years.

2B. Hilton Creek Pipeline

The Hilton Creek Pipeline will be operated, according to the priorities for the main stem given above, to maintain flows between 1.5 and 5 cfs in the creek. The AMC will manage all Hilton Creek Pipeline releases, making requests for flow changes through the Operations Chief. Below are requirements for operation of the pipeline:

1. When flows are reduced in Hilton Creek, the following ramping schedule will be used:

Release Rate (cfs)	Ramping Increment (cfs)	Minimum Frequency (hours)
10-5	1	4
<5	0.5	4

This ramping schedule pertains only to the Upper Release Point (URP) and Lower Release Point (LRP) of the Hilton Creek Pipeline. It does not pertain to the stilling basin Chute Release Point (CRP).

2. Maintenance activities on the pipeline will occur only when natural flows of Hilton Creek are greater than 2 cfs or when other provisions have been made to provide flows to the creek. Natural flow in Hilton Creek will be determined by utilizing the USGS gaging station located just downstream of the URP. If it is absolutely necessary to conduct maintenance activities when there is not sufficient natural flow in the creek or alternative provisions cannot be made to deliver water to the creek, then Steelhead may be relocated to suitable habitat(s) following consultation with NMFS.

3. Water temperature entering Hilton Creek from the pipeline will not exceed 18 degrees Celsius. Temperatures will be monitored by the Cachuma Fishery Biologist and required operational changes to adjust for temperatures will be requested by the AMC.

3. WATER RIGHTS

In accordance with State Water Resources Control Board (SWRCB) Water Rights Orders, Reclamation shall release water from the Cachuma Project at rates, in the amounts and at the times requested by the Santa Ynez River Water Conservation District (SYRWCD). These releases are made through the Bradbury Dam river outlet works consistent with the flow capacity of that structure (current maximum capacity is 150 cfs) and the Hilton Creek Pipeline. The discharge through the Hilton Creek Pipeline will be limited to the rates designated by the AMC.

3A. Water Rights Release Outlook

On or about April 10 of each year, the SYRWCD will provide Reclamation an estimate of the number and the duration of releases that may be required during the next 12 months. The estimate should also indicate when (what months) the releases will be made. Actual conditions may vary substantially from this outlook. This outlook should be conveyed in writing by the SYRWCD to the Operations Chief.

3B. Water Rights Release Operations

SYRWCD shall notify the Operations Chief when a water rights release is required. This notice will indicate the time and rate at which the release is to be initiated. This notification will be made in writing (by e-mail, fax or US Postal Service) to the Operations Chief. SYRWCD will provide this notice in advance (5 business days is preferable) of the requested release start date. Reclamation will make the releases as requested.

The need for and timing of subsequent release rate changes will be determined by the SYRWCD. Notices for these changes will be made by e-mail, fax or verbally to the Operations Chief. SYRWCD will provide as much lead-time as possible (24 hours is preferable) for these changes and Reclamation will make the changes as requested. A schedule of release rate changes will be developed and distributed as appropriate.

The following ramping schedule will be followed when reducing flows from the river outlet works:

Release Rate (cfs)	Ramping Increment (cfs)	Minimum Frequency (hours)
>90	25	4
90-30	10	4
30-10	5	4
10-5	2.5	4
5-3.5	1.5	4
3.5-2.5	1	4

A ramping schedule will be developed and distributed as appropriate. When water right releases are ramped down to a rate necessary to meet target flows for Steelhead, then the water rights release is considered to be over.

3C. Reports

Reclamation will complete the monthly *Santa Ynez River Downstream Users Accounting Report* and transmit the report by the 15th of the following month.

3D. Metering

The ultrasonic flow meter on the Bradbury Dam penstock will be used to measure the water being released from Lake Cachuma through the river outlet works. When water rights releases from Lake Cachuma and Non-Project Water are being comingled at the Bradbury Dam river outlet works, the sum of the Accusonic flow meter and the Santa Ynez Pumping Plant effluent meter will be the total water rights release. During these periods the effluent flow meter at the Central Coast Water Authority's (CCWA) Santa Ynez Pumping Plant will be used to measure Non-Project Water being pumped into Lake Cachuma.

CCWA will contract with an independent calibration technician, acceptable to Reclamation, to calibrate the ultrasonic flow meter on the Bradbury Dam penstock and the differential pressure effluent meter at the CCWA Santa Ynez Pumping Plant. This will be done on an annual basis, or more frequently if requested by Reclamation as stipulated in the Warren Act Contract. Written reports of the calibration of both meters will be submitted to Reclamation within ten (10) working days after the calibrations are completed.

4. CACHUMA MASTER WATER SERVICE CONTRACT - PROJECT WATER

Contract No. 175r-1802R, entitled *Contract Between the United States and Santa Barbara County Water Agency (Agency) Providing for Water Service from the Project (Master Contract)*, was executed on April 14, 1996. The Master Contract is effective as of May 15, 1995 through September 30, 2020. The five Cachuma Member Units (CMU) represented by the Agency and their Project Water allocation percentages are as follows:

1. Carpinteria Valley Water District - 10.94%
2. City of Santa Barbara - 32.19%
3. Goleta Water District - 36.25%
4. Montecito Water District - 10.31%
5. Santa Ynez River Water Conservation District, Improvement District No. 1 - 10.31%

Also, effective as of May 15, 1995, and for a period coterminous with the Master Contract, the Agency executed separate contracts with each of the CMU (Member Unit Contracts). In accordance with Section 13 of the Member Unit Contracts, the CMU opted to have all obligations of the Agency under the Master Contract directly discharged by the CMU and/or the Cachuma Operation and Maintenance Board (COMB), with the exception of separate obligations of the Agency under Sections 20 and 27 of the Master Contract.

The Master Contract provides for the delivery of Cachuma Project Water to the lower end of the river outlet works, the South Coast Conduit, and any additional point(s) of delivery either on Project facilities or another location(s) mutually agreed to in writing (points of diversion). The **Sustained Annual Yield** of the Cachuma Project has been determined to be 25,714 acre-feet. **Available Supply** is defined as the maximum quantity of Project Water that can be physically stored in or conveyed through Project facilities during that Water Year and shall not exceed the maximum quantity of water that can be put to reasonable and beneficial irrigation, municipal, domestic, and industrial uses within the CMU areas of service.

Three months prior to each Water Year, COMB, on behalf of the CMU, shall deliver to Reclamation (1) the total quantity of available supply that the CMU have requested be delivered during the next Water Year, which quantity shall be the proposed **Supply To Be Delivered**, (2) the schedule by month of the quantities of Project Water that are to be delivered to each CMU and any water transfers during that Water Year, which schedule shall be the proposed **Delivery Schedule**, and (3) an estimate of projected water deliveries to be made during the remainder of the repayment period.

Reclamation shall promptly either approve the Supply To Be Delivered and Delivery Schedule as proposed, or if Reclamation determines that they exceed the physical limitations of the Project, Reclamation shall approve a Supply To Be Delivered and/or Delivery Schedule modified to conform to such determination and shall apportion any decreases among the CMU according to their allocation percentages. Reclamation shall then deliver the approved Supply To Be Delivered for the Water Year according to the approved Delivery Schedule.

If it becomes necessary to spill Project Water or to release Project Water for a reason other than a delivery pursuant to a Delivery Schedule, a release for water rights or fish, and to the extent there is a continuous flow from the dam to the ocean, such water shall be made available to the CMU as **Surplus Water**. Upon determining that Surplus Water is available, Reclamation shall promptly provide COMB an estimated schedule for the availability of Surplus Water. The Surplus Water shall be available without any additional payment and shall be allocated to the CMU according to their allocation percentages.

5. WARREN ACT CONTRACTS - NON-PROJECT WATER

The Warren Act Contract between the CCWA and the United States, Contract No. 5-07-20-W1282, entitled *Contract for the Storage and Conveyance of Non-Project Water Between the United States and the Central Coast Water Authority* (Contract), is dated July 25, 1995 and expires in 2022. The Contract allows for storage and conveyance of Non-Project Water for municipal and industrial (M&I) purposes through excess capacity, which is defined as the capacity of the lake that is not needed to store or convey Project Water.

Storage and/or conveyance of up to 13,750 acre-feet of Non-Project Water per year is allowed under the Contract. Non-Project Water can be stored or conveyed if Reclamation determines that the capacity is available. Storage is defined as retention of Non-Project Water in Cachuma Lake for a period in excess of 30 days. If a spill occurs from the lake, the first water spilled shall be Non-Project Water currently in storage.

5A. Water Schedules

Water Year Schedule - By August 1 of each year, CCWA will submit a Water Schedule to Reclamation, showing projected deliveries in acre-feet, by month, for the following Water Year (Oct-Sept). This schedule must be approved by Reclamation prior to storage/conveyance of Non-Project Water. This is a requirement of the Contract. This will only be a rough estimate and actual deliveries will be based on water orders received by CCWA from their customers during the Water Year.

Monthly Schedule - During the first part of each month (10th is preferable), CCWA will submit a Monthly Water Schedule to Reclamation showing projected deliveries, by day, for the next 30 days. Deliveries should be shown by indicating the 24 hour (8:00 a.m. to 8:00 a.m.) average flow rate in cubic feet per second (cfs) and volume in acre-feet for each day.

5B. Pumping Requests and Reports

Pumping Requests - CCWA shall submit a Pumping Request Form to the Operations Chief for approval prior to initiating any pumping of Non-Project Water. This request shall include the following information:

Date of Request
Approximate Volume of Water to be Pumped in Acre-Feet
Approximate Pumping Rate in CFS
Date and Time Pumping will Commence
Date and Time Pumping will End

The time period covered in the request will be limited to 31 days. The actual rates of pumping will depend on demands on the system and therefore, the volume of water requested will be approximate. Although approved pumping requests provide data on the volume of water to be pumped, the timing of the pumping is important and should be considered when submitting and approving the requests. When the actual volume of water pumped is less than the requested amount, the remaining volume can be covered with an additional request and pumped if operational conditions permit.

Pumping requests will be submitted at least two business days before the date the pumping will commence. Requests will be submitted in writing using an approved form via e-mail or fax. The Operations Chief will approve or deny the request within 24 hours of receiving the request. This will be done via a reply e-mail or return fax. If the request is denied, a justification for the denial will be given.

Reclamation will strive to accommodate all requests; however, due to maintenance activities or releases for water rights or fish through the river outlet works at rates which will not allow a 50/50 mix, some requests may be denied. In these cases, Reclamation will work with CCWA in an attempt to provide an alternative plan which will allow CCWA to deliver water at a later date to meet their obligations by the end of the calendar year.

Monthly Report - By the 5th of each month, CCWA will submit a Pumping Report showing the actual volumes pumped into Lake Cachuma, by day, for the previous month. These volumes should be calculated from totalizer readings and pumping rates measured at the pumping plant. These reports are only required for months in which water was pumped and should be submitted to the Operations Chief via e-mail or fax.

Daily Report - When Non-Project Water is being stored/conveyed, CCWA will submit a Daily Pumping Report by 9:00 a.m. each day to the Operations Chief, via e-mail or fax, showing the actual pumping activities for the previous 24-hour period ending at 8:00 a.m. This report should show the flow rate (cfs) and volume (acre-feet) for each hour based on data collected at the pumping plant. It should also include the following 8:00 a.m. readings from the effluent meter at the Santa Ynez Pumping Plant:

- a) Previous day flow rate (cfs)
- b) Previous day totalizer (acre-feet)
- c) Current day flow rate (cfs)
- d) Current day totalizer (acre-feet)

5C. Metering

Non-Project Water introduced into the Lake shall be measured and recorded at the Santa Ynez Pumping Plant as stipulated in the Contract; however, all parties have agreed that the meter on the Bradbury Dam penstock will be utilized to record the amount of Non-Project Water entering the lake. Non-Project Water diverted from the Lake shall be measured and recorded at the Tecolote Tunnel North Portal. COMB currently provides for measurement and recording of water delivered through the Tecolote Tunnel.

CCWA will contract with an independent calibration technician, acceptable to Reclamation, to calibrate the ultrasonic flow meter on the Bradbury Dam penstock and the differential pressure effluent meter at the CCWA Santa Ynez Pumping Facility. This will be done on an annual basis, or more frequently if requested by Reclamation as stipulated in the Contract. Written reports of the calibration of both meters will be submitted to Reclamation within ten (10) working days after the calibrations are completed.

5D. CCWA Pipeline Operations During Low Flow Demand Periods

After extended periods with low or no flows, the CCWA pipeline water may lose its disinfectant residual. During these periods, CCWA may request that the low disinfectant residual water be pumped into Lake Cachuma with approval from the Operations Chief. In rare circumstances, this request may be made during a spill event. In such cases, CCWA may request permission, with approval from the Operations Chief, to pump the water into the lake without any discharge through the river outlet works at Bradbury Dam.

5E. Restrictions

50/50 Mix Limitation - If CCWA is pumping Non-Project Water and releases are being made from the river outlet works, no more than half of the total flow released can be Non-Project Water. No mixing will be allowed during December through June unless flow in the mainstem of the Santa Ynez River is discontinuous. Reclamation and CCWA will coordinate water delivery schedules to ensure this blending limitation is not exceeded.

Temperature - The temperature of the mixed water entering the river will not exceed 18 degrees Celsius. Temperatures of the mixed water will be monitored by the Cachuma Fishery Biologist.

Spill Events - Delivery of Non-Project Water to the reservoir by CCWA will not be made when water is being spilled from the reservoir as described in Section 1 above except as described in Section 5D above.

CACHUMA OPERATIONS COORDINATION MEETING

On or around May 1 of each year, a Cachuma Operations Coordination Meeting will be held. All parties with an interest in Cachuma Operations will be invited. The purpose of the meeting will be to coordinate upcoming operation and maintenance activities. The Operations Chief will be responsible for planning and scheduling this meeting. Below is a list of the agencies which should be invited to the meetings:

Agency	Contact(s)	Telephone	E-Mail
US Bureau of Reclamation Mid-Pacific Region South-Central California Area Office	Antonio Buelna Darrin Williams	559-487-5117 559-487-5340	abuelna@mp.usbr.gov dwilliams@mp.usbr.gov
SYRWCD	Bruce Wales	805-693-1156	FAX 805-688-8065
SYRWCD ID #1	Chris Dahlstrom	805-688-6015	sywddahl@silcom.com
Stetson Engineers	Ali Shahroody	415-457-0701	alis@stetsonengineers.com
Central Coast Water Authority	Bill Brennan	805-688-2292 ext. 215	wjb@ccwa.com
Cachuma Operation and Maintenance Board	Bob Wignot	805-687-4011	rwignot@cachuma-board.org
Cachuma Conservation Release Board	Kate Rees	805-569-1391	krees@cachuma-board.org
City of Santa Barbara	Steve Mack	805-564-5501	smack@ci.santa-barbara.ca.us
Santa Barbara County Water Agency	Robert Almy	805-568-3440	ralmy@co.santa-barbara.ca.us
Santa Barbara County Flood Control	Tom Fayram	805-568-3440	tfayram@co.santa-barbara.ca.us
City of Lompoc	Gary Keefe	805-875-8299	g_keefe@ci.lompoc.ca.us
Goleta Water District	Kevin Walsh	805-964-6761	kdwalsh@goletawater.com
Carpinteria Valley Water District	Charles Hamilton	805-684-2816	charles@cwvd.net
Montecito Water District	Frederick Adjarian	805-969-2271	fred@montecitowater.com

A representative from the AMC will also be invited to participate in the meeting. See the following section for information and contacts for the AMC.

ADAPTIVE MANAGEMENT COMMITTEE

The Biological Opinion is based upon an adaptive management strategy that allows the recommended actions to evolve as new information becomes available. An Adaptive Management Committee (AMC) has been formed to evaluate the trends in steelhead and, if necessary, recommend alternatives and revisions to the recommended actions. The actions of the AMC will be overseen by NMFS and the Santa Ynez River Technical Advisory/Consensus Committee. The AMC is tasked with exploring new opportunities, modifying the existing programs as necessary and presenting their recommendations

to NMFS and the Consensus Committee for approval. The AMC also oversees the implementation of the monitoring program as described in the Fish Management Plan.

The AMC is made up of one representative from Reclamation (USBR), NMFS, the California Department of Fish and Game (CDFG), the Cachuma Conservation Release Board (CCRB), the Santa Ynez River Water Conservation District Improvement District #1 (SYRWCD ID #1), and the Santa Ynez River Water Conservation District (SYRWCD) representing the downstream water rights interests. Below is a current listing of the AMC members:

Agency	Name	Telephone	E-Mail
USBR	David Young	559-487-5127	dyoung@mp.usbr.gov
NMFS	Matt McGoogan	562-980-4026	matthew.mcgoogan@noaa.gov
CDFG	Mary Larson	562-342-7186	mlarson@dfg.ca.gov
CCRB	Jean Baldrige	925-988-1212	jbaldrige@entrinx.com
SYRWCD ID #1	Chuck Hanson	925-937-4606	chansonenv@aol.com
SYRWCD	Bruce Wales	805-693-1156	FAX 805-688-8065
City of Lompoc	Paul Bratovich	916-563-6368	bratovich@swri.net
USFWS	Bridget Fahey	805-644-1766	bridget_fahey@r1.fws.gov

If an issue arises that requires a decision by the AMC, the above members should be contacted in the order listed until someone is contacted.